



Phou Xieng Thong National Protected Area

Collaborative Management Plan (2022-2026)



Phou Xiengthong National Protected Area Collaborative Management Plan (2022–2026)

Suggested Citation Department of Forestry. (2023). *Phou Xieng Thong National Protected Area collaborative management plan (2022–2026)*. Laguna, PH/Vientienne, LA: ASEAN Centre for Biodiversity and Department of Forestry, Ministry of Agriculture and Forestry of Lao PDR.

Cover design/photo Laurenz Cruz

Photo credits ASEAN Centre for Biodiversity

For inquiries Dr. Phaivanh Phiapalath
Lao Wildlife Conservation Association
p.phiapalath@gmail.com

Dr. Robert Mather
NIRAS International Consulting
Robert.Mather@niras.fi

ASEAN Centre for Biodiversity
D.M. Lantican Avenue, University of the Philippines Los Baños
Laguna, Philippines 4031
Telephone Numbers: +6349 536-2865, +632 584-4210
contact.us@aseanbiodiversity.org
www.aseanbiodiversity.org

Disclaimer This publication was produced with the assistance of the Biodiversity Conservation and Management of Protected Areas in ASEAN (BCAMP) Project of the ASEAN Centre for Biodiversity (ACB), with the support of the European Union (EU).

The views expressed in this document do also not necessarily reflect those of the Association of Southeast Asian Nations (ASEAN) or the EU. As well as, the boundaries and names shown, and the designations used on this map do not imply the official endorsement or acceptance by the Association of Southeast Asian Nations (ASEAN).

Reproduction of this publication in full or part or adaptation for local use for educational and other non-commercial purposes is authorised without prior permission from the publisher, provided that the authors and publisher are fully acknowledged.

Reproduction of this publication for sale or other commercial purposes is prohibited.

© 2023 ASEAN Centre for Biodiversity. All rights reserved. Licensed to the Department of Forestry, Ministry of Agriculture and Forestry of Lao PDR and the European Union under conditions.

ISBN: 0123456789



Lao People's Democratic Republic
Peace Independence Democracy Unity Prosperity

Ministry of Agriculture and Forestry
Department of Forestry

No. /DOF
Vientiane Capital, Dated.

7085
31 DEC 2021

ENDORSEMENT

ADOPTION AND OFFICIALLY USED PHOU XIENGTHONG NATIONAL PROTECTED AREA COLLABORATIVE MANAGEMENT PLAN FOR PHOU XIENGTHONG NATIONAL PROTECTED AREA

- Pursuance to the Forestry Law (Improved Volume) No. 64/NA, dated 13/03/2019;
- Pursuance to the Wild Animals and Aquatic Resources Law No. 07/NA, dated 24/12/2007;
- Pursuance to the Decree on Protected Areas No. 134/PM, dated 13/05/2015;
- Pursuance to Agreement of Minister of Ministry of Agriculture and Forestry, No. 3822/MAF, dated 18 August 2017 on activities and organization of Department of Forestry.

Department of Forestry Agree to:

- Article 1.** Adopt and officially use of the Phou Xiengthong National Protected Area Collaborative Management Plan for 5 years (2022-2026).
- Article 2.** Assign to Protected Area Management Division as central office to coordinate all of sectors including Central and provincial levels to propagate and implement the Collaborative Management Plan that is referred in article 1 to be successful.
- Article 3.** Concerned Departments, Center and institutes under the Ministry of Agriculture and Forestry, the Provincial Agriculture and Forestry and District levels to have a cooperation to implement the plan based on their roles and responsibilities.
- Article 4.** This agreement is effective from the date of signature.

Acting Director General
Department of Forestry



Delivered:
1. Protected Area Management Division 1 item
2. Concern sectors 1 item
3. Keeping 1 item

Bounpone SENGTHONG

Foreword

The collaborative management plan of Phou Xiengthong NPA is a strategic plan setting out a common goal, objectives and a programme of activities. It was developed through a participatory and consultative planning process involving key stakeholders of Salavan and Champasak provinces, particularly the three participating districts (Sanasomboun, Khongxedone, and Lakhonepheng), which all stakeholders are willing to share roles, responsibilities, and benefits for ensuring that the Phou Xiengthong NPA to be known tourism site with maintaining its values on historical, cultural, natural and healthy ecosystem services.

Phou Xiengthong NPA is important for socio-economy, especially for Salavan and Champasak provinces, as well as important for livelihoods of local ethnic groups who live in and adjacent to the NPA. Yet, its values particularly tourism potentials are not been used. The NPA is rich in nature as a number of important wildlife are present especially the population of Banteng, Gaur and other globally endangered species. As well as some important and rare plant species such as Mai Kha Ngoung (*Dalbergia cochinchinensis*), Mai Padong (*Dalbergia bariensis pierre*), Mai Khamphi (*Dalbergia bariensis pierre*) and Mai Dou (*Pterocarpus macrocarpus*). With a forest cover for ca. 76.11 per cent of the NPA is considered good level.

Justification of establishing the Phou Xiengthong NPA as nationally important for biodiversity conservation area as well as of Salavan and Champasak provinces for protecting biodiversity values, watershed, historical, cultural and environment, which Vision, Mission and Objectives of the Plan were defined.

Vision: Phou Xiengthong NPA is developed to be known tourism site on historical, cultural, and natural with retaining their values forever.

Goal: Phou Xiengthong NPA is developed to ASEAN Heritage Park for protecting and managing natural resources associated with livelihood development of local communities.

In order to implement this plan successfully requires to establish ownership and district implementing teams with support of district authority, including villages and Kumban with also technical support from relevant provincial and national technical teams. Thus, it needs to be financed by interested aid organisations and contributions for implementing this plan. Sustainability of Phou Xiengthong NPA management needs ownership and good capacity of provincial and district staff teams, villagers which with a mechanism of financing source from the NPA in payment for ecosystem services (biodiversity offset), water use, land use and ecotourism.

Vice-Minister, MAF

Acknowledgments

Preparation of the Phou Xiengthong NPA Management Plan had been conducted from March to December 2021, and involved many levels of stakeholders from Provincial to Kumban (village cluster) as well as village level. To make the strategic collaborative management plan, the assigned technical team has provided inputs on the strategic direction and main activities that should be implemented over the coming five years. The technical team members who have been closely involved in the preparation and contribution to the Phou Xiengthong NPA Collaborative Management Plan consists of the following:

- Dr. Teuanchay PHONGKHAMPHANH, Project Coordinator for BCAMP,
- DoF Mr. Sakounsi KEOPHILAVANH, Director of Phou Xiengthong NPA
- Ms. Vansy CHANTHAPHONE, Deputy Director of Phou Xiengthong NPA
- Mr. Sanong SENTHAVY, Deputy Director of Phou Xiengthong NPA
- Mr. Samane Ounheuan, Deputy Head of Sanasomboun DAFO – Champasak
- Mr. Khammanh SYDAMDON, Head of Khongxedone DAFO – Salavan province
- Mr. Khamphoumy KHOUNCHAVONG, Deputy Head of Lakhonepheng DAFO
- Mr. Keophithoun SENAPHANH, Staff of Phou Xiengthong NPA
- Mr. Thilaphon PHOUANGPHOUTHONE, staff of Sanasomboun DAFO – Champasak
- Mr. Vilasack CHANTHABOUASONE, staff of Phou Xiengthong NPA
- Mr. Thansamai SAYYASANE, staff of Khongxedone DAFO – Salavan province
- Mr. Somdy SAYYASANE, staff of Lakhonepheng DAFO – Salavan province

The technical team is under the supervision of Mr. Bounpone Sengthong (Acting Director General of DoF) and Mr. Bounpone Phuttha-amath (Director of Protected Area Management Division). The preparation of the management plan was facilitated by the ACB consultant team, Dr. Phaivanh Phiapalath, protected area management expert and Dr. Robert Mather (team leader/technical advisor) of NIRAS for ACB. Also, inputs from Ms. Nosrat Ravichandran (protected area management specialist, BCAMP/ACB).

Special appreciation is given to the ASEAN Centre for Biodiversity, and the EU delegation in Manila, through the Biodiversity Conservation and Management of Protected Areas (BCAMP) Project for funding and technical support. Therefore, the technical team would like to express sincere thanks to the individuals and organisations at all levels, including the donor for their fruitful cooperation and valuable inputs to develop this collaborative management plan.

Abbreviations

ACB	ASEAN Center for Biodiversity
ASEAN	Association of Southeast Asian Nations
ABD	Agro-Biological Diversity
ADB	Asian Development Bank
AHP	ASEAN Heritage Park
BCAMP	Biodiversity Conservation and Management of Protected Areas in ASEAN
BuZ	Buffer Zone
CRC	Conflict Resolution Committee
CSO	Civil Society Organisation
CUZ	Controlled Use Zone
DAFO	District Agriculture and Forestry Office
DCO	District Coordination Office
DFRM	Department of Forest Resource Management
DIT	District Implementing Team
DoF	Department of Forestry
DoNRE	District Office of Natural Resource and Environment
DRC	Conflict Resolution Committee
EdL	Electric du Laos
EIA	Environmental Impact Assessment
ESS	Ecologically Sensitive Site
FALUPAM	Forest and Agriculture Land Use Planning, Allocation and Management
FMD	Foot and Mouth Disease
GEF	Global Environmental Facility
GIS	Geographic Information System
GoL	Government of Laos
GPS	Global Positioning System
HQ	Head Quarters
IUCN	International Union for Conservation of Nature
MA	Management Authority
MAF	Ministry of Agriculture and Forestry
Mgt	Management
M&E	Monitoring and Evaluation
NA	National Assembly
NGD	National Geographic Department
NGO	Non-Government Organisation
NIRAS	International – Multidisciplinary Consulting
NPA	National Protected Area
NPF	National Protection Forest
NSEDP	National Social Economic Development Plan
NTFP	Non-Timber Forest Product
NPF	National Protection Forest
LUP	Land Use Planning
PAFO	Provincial Agriculture and Forestry Office
PFS	Provincial Forestry Section
PM	Prime Minister
PXT	Phou Xieng Thong
SBCC	Social and Behaviour Change Communications
SMART	Spatial, Monitoring, And Reporting Tool
ToR	Terms of Reference
TPZ	Totally Protected Zone

Executive Summary

Phou Xiengthong National Protected Area (NPA) is located in two provinces (Champasak and Salavan) with a gazetted area of 120,000 hectares, according to the Decree for its establishment (164/PM). However, the confirmed area is 105,690 hectares. The majority of the area belongs to Salavan province (two districts: Khongxedon for 30,884 hectares or 29.22 per cent and Lakhonepheng for 40,058 hectares or 37.90 per cent) and the rest is Champasak province (Sanasomboun district for 34,747 hectares or 32.87 per cent). The NPA comprises mostly of mountainous areas, generally between 300–500 metres above sea level, as low altitude of 120 metres above sea level at banks of the Mekong River but at peak of 600 metres above sea level. The NPA supports mainly mixed deciduous forest (50.49 per cent), evergreen forest (25.63 per cent), and dry dipterocarp forest (22.35 per cent), also Mekong River is part of the NPA, it has a stretch of 80 kilometres with wetland habitats. A number of small rivers known in the area are Houy Luang, Houy Deua, Houy Satri, Houy Phalaphang, Houy Sot, Houy Sana and Houy Bon. It has various habitat types that are particularly important for supporting wide-ranging, large mammal species and some bird species, including Mekong birds. The Mekong River section at Phou Xiengthong NPA is classified as one of biodiversity hotspots/Key Biodiversity Areas according to BirdLife International and/or the International Union for Conservation of Nature.

The biodiversity value of the Phou Xiengthong NPA places it among the national protected areas in Lao PDR. Although the NPA was considered poor biodiversity in the past compared to other declared NPAs, it was currently found at least 25 most important species of wild mammals, some birds and reptiles. A number of large and medium mammals were reported and some recently recorded during the planning process of Kumban consultations and field survey with camera trapping including: banteng, gaur, red-shanked douc langur, pangolins, silvered langur, leopard, sun bear, dhole, green peafowl etc. Most importantly, the NPA supports important populations of banteng, which is very rare in the country. Only NPA that probably holds the large population of green peafowl, long-tailed macaque, burmese porcupines, leopard cat in the country, but detailed biodiversity assessment has not been undertaken yet.

Phou Xiengthong NPA is particularly important for supporting large mammals as one of few NPAs in Lao PDR that support stronghold populations of banteng and gaur. Forest products of the NPA provide important food sources and household incomes for the local communities. Some non-timber forest products (NTFPs) are important for local communities especially Mak Chong (malva nut), Wai (rattan), Khisii (dammar resin), cardamom, bamboo, bamboo shoot, resin oil, red ant eggs, het (mushroom), orchids etc. With a forest cover for ca. 76.11 per cent of the NPA is considered good level.

The NPA has been locally managed as village base and military support with limited technical support and funding assistance. The NPA boundary demarcation has been completed at key sections, with 35 concrete pillars and some number of signs installed. Some basic facilities for the NPA exist including its sub-office at Ban Sorn Phak for Champasak province and at Ban Khou Dou for Salavan province, with some very few basic equipment and vehicles. Thus far, some management has been practised in the Phou Xiengthong NPA, but a management plan has not been in place. Capacities and ownership of both government agencies and local communities have not been strategically built.

Due to some limited alternative sources of household incomes, local villagers rely on natural resources for household uses and sale. The increasing demand for timbers, NTFPs, and wildlife cause high pressure on natural resources. Overharvest of forest products and aquatic resources by both NPA villages and outsiders put local poor villagers' livelihoods under difficult conditions. Selected logging in the past made three most valuable timber tree species rare to find in the wild such as Mai Kha Ngoung (*Dalbergia cochinchinensis*), Mai Padong (*Dalbergia bariensis pierre*), Mai Khamphi (*Dalbergia bariensis pierre*), and Mai Dou (*Pterocarpus macrocarpus*). The human population lives mostly from subsistence farming, cattle raising, and fishing. With climate change-induced events such as droughts making their lives even harder.

The northern zone that belongs to Lakhonepheng district has been partly converted to cash crop plantation such as cashew nut and cassava plantations. The people who invaded the NPA for cash crop plantation including outsiders. Meanwhile, the limited financing capacity of the responsible government institutions makes it hard to understand and address the issues. The constraint faced by the government in terms of manpower and financial resources does not allow them to providing sufficient livelihood assistance to local communities including agricultural extension services.

Phou Xiengthong NPA is similar to other protected areas (PAs) that have people living in the declared PAs. There are 61 villages of 13 village clusters located in and adjacent to the Phou Xiengthong NPA and that belong to three districts. A total of 51,567 people living in and around the NPA, of which Sanasomboun district has the highest population (20,493 people), then Khongxedone (17,278 people), and Lakhonepheng (13,796 people). Depending on the location, the villages were classified into three groups, consisting of 6 enclave villages, 1 straddling village, and 54 adjacent villages. The management of Phou Xiengthong NPA is therefore not only about wildlife conservation but also requires considering livelihood development. The collaborative management approach for the Phou Xiengthong NPA will involve working closely with at least 25 villages. The most important villages from a management perspective are located in, straddling or are immediately adjacent to the NPA, or at the periphery and having direct access roads to the NPA. Of these 61, 25 villages are considered as priority villages for livelihood support for the first Five-Year Plan — consisting of eight villages of Sanasomboun district (Ban Singsamphanh, Ban Soula, Ban Nongmek, Ban Sithouan, Ban Boungkha, Ban Sonphak, Ban Nongkhaen, Ban Kham Luang, and Ban Khampeng); nine villages of Khongxedone district (Ban Khamteu, Ban Khan Thoungxay, Ban Mouangsoum, Ban Kham-e, Ban Nongsaphang, Ban Saykham, Ban Na Pheng Yai, Ban Nakok, and Ban Sadong); and eight villages of Lakhonepheng district (Ban Tha Khansoumsao, Ban Phousikeo, Ban Phonkasi, Ban Keng Nyapheud, Ban Ta Leo, Ban Pha Bangnoy, Ban Phon Ngam, and Ban Phou Daocheng).

Key lessons learned from this management planning process were that a new collaborative management plan has to consider the capacities of the Government of Lao PDR (GoL) to implement it as well as to further strengthen the involvement and full participation of local people. It should also be based on an adaptive management planning approach, allowing for continuous improvements based on experiences gained and capacity built over time. It requires strategic direction and mechanisms to build the capacities of the NPA management team to support district technical teams, the local communities and partners to manage the NPA. The collaborative management practice has to exercise an effective and sustainable management system that aligns ecotourism development as well as wildlife monitoring and patrolling with local communities. The management of Phou Xiengthong NPA will be transferred to district authority, which the district coordination office (DCO) with district implementing teams (DIT) on outreach, law enforcement, and livelihood development to help implement the plan.

In incorporating the above lessons learned, the collaborative five-year management plan of Phou Xiengthong NPA (2022–2026) was prepared through intensive consultations with key stakeholders at all levels from village to village-cluster (Kumban), district, and provincial and national levels.

The plan has *Vision*: Phou Xiengthong NPA is developed to be known tourism site on historical, cultural, and natural with retaining their values forever. *Goal*: Phou Xiengthong NPA is developed to ASEAN Heritage Park for protecting and managing natural resources associated with livelihood development of local communities.

This plan consists of 4 parts and 12 chapters following the current Department of Forest (DoF) guideline on management planning in NPAs. *Chapters 1–8* provide an introduction, background information, threats of the Phou Xiengthong NPA including root causes of the threats; *Chapter 9* presents the conservation strategy and framework as well as providing important descriptions of management approaches; *Chapter 10* elaborates on types and principles of zonation; *Chapter 11* focuses on institutional arrangements, and *Chapter 12* describes the programme of activities. These, the *Chapters 9, 11, and 12* are considered as the most important core part of the plan, and some specific descriptions are therefore provided in this summary as follows:

Chapter 9 describes the conservation and management strategy, comprising legal and policy aspects, the management approaches to deal with illegal activities, proposed management interventions, boundary demarcation as well as the approach to control development projects occurring inside the protected area which would be having an impact on the NPA. Collaborative management starts from planning together with key stakeholders in order to develop agreed mechanisms and procedures of collaborative management. The suggested collaborative management approach aims at actively involving at least the 25 villages that are considered most relevant to the management of the Phou Xiengthong NPA. Appropriate mechanisms should be put in place to firstly enable district implementing teams to support the local villagers to fulfil their given roles and responsibilities regularly, and secondly to empower the communities by gradually handing over more responsibilities and rights to them. Especially in the beginning some livelihood assistance is required to get the villagers' participation and ownership in protected area management to be built. For 25 priority villages have been identified for the first five-year period, in which livelihood support and conservation agreements will be put in place for these villages. In principle, the provision of livelihood support should always be connected to conservation and better management of natural resources, otherwise conservation objectives are not met. The livelihood support for local communities shall primarily ensure a self-sufficiency of household food supply and secondly promote selling products for income from livelihood support activities.

Chapter 11 describes the organisation of the management system for effective management of the NPA. The Phou Xiengthong NPA management authority is the lead institution in implementing the protected area management, with relevant district offices (district agriculture and forestry offices [DAFOs]), Kum Ban village authorities. Through the mechanism of collaborative management, the Phou Xiengthong NPA management team will coordinate and facilitate its partners to plan, develop, implement and evaluate work programmes together. At the district level, it has to establish a district steering committee, district coordination office, and district implementing teams. The district steering committee for supporting the Phou Xiengthong NPA management will be established for each participating district. The committee will be chaired by the district vice governor, and vice chaired by the head of DAFO, with members from District Office of Natural Resources and Environment (DoNRE), Lao Women's Union, education and sports, public health office, police and military. Once again, The management of Phou Xiengthong NPA will be

transferred to the DCO, with technical support from the DITS on outreach, law enforcement, and livelihood development, to help implement the plan. It is meant for the four sub-technical teams that will be formed in each participating district. The DITs need to be well-trained in building their ownership, leadership/managing role, and relevant technical capacity/skills.

Chapter 12 describes the overall programme of activities. There are seven sub-programmes: General Management and Capacity Building, Collaborative Management, Biodiversity Conservation and Monitoring, Outreach and Conservation Awareness, Law Enforcement, Land Use Planning and Zoning, and Sustainable Livelihood Development. They cover a variety of topics, such as general NPA management, staffing and training needs, financing, biodiversity research and monitoring, law enforcement, community outreach, livelihood development, and ecotourism development. For each sub-programme action, the objective of the action, the desired outcome(s) and the management responses are described. Phou Xiengthong NPA is considered to be appropriately qualified for consideration as an ASEAN Heritage Park based on its biodiversity values with high potential for ecotourism. Access to the NPA is easy from Pakse City, and even Thailand as local checkpoint was used to open prior to the COVID-19 pandemic. Furthermore, Phou Xiengthong NPA has potential to be developed as a model of best practice for effective NPA management.

The total cost for the financial planning 2022–2026 is about USD 3.95 million, which is not to include the GoL kind-contribution of USD 1.17 million. The basic operational costs for the GoL are close to USD 359,680 for the five-year plan, with USD 71,960 per annum. As to implement this plan requires investment cost and to entirely pay for the consultancy costs (about USD 351,000).

To implement this plan requires investment costs for improved infrastructure, purchasing additional vehicles, equipment, and support for consultancies. The annual costs will reach a peak in 2023 at USD 1 million, and then reduce to about USD 0.35 million in 2025. In terms of budget allocation for the sub-components and programmes, the largest budget is allocated to the sub-programme: investment costs (USD 0.75 million, 21.13 per cent), then sustainable livelihood development (USD 0.58 million, 16.28 per cent), and law enforcement (USD 0.36 million, 10.12 per cent).

In conclusion, this management plan is a collaborative management plan in which to support the government's Sam Sang "3-build" strategy that the province is a strategic unit, district is an integration unit, and village is a development unit. Particularly, the local communities will play a key role under the professional and managerial leadership of the NPA management office, DIT with support from key relevant district government offices. The plan is a strategic and living document which shall be subject to regular updating and incorporation of lessons learned in line with an adaptive planning approach.

Part 1

Background to the Plan and Its Management Objectives

1 INTRODUCTION, DESIGNATION, AND STATUS OF THE NPA

Phou Xiangthong National Protected Area (NPA) is situated in Salavan and Champasak provinces, in Southern Lao PDR and by the Mekong River as its western boundary runs along the Mekong stretch for 80 kilometres. It is one of the original 18 National Biodiversity Conservation Areas (now called NPAs) of Lao PDR established on 29th October 1993 by Prime Minister Decree No. 164/PM. According to the Decree, the Phou Xiangthong NPA covers an area of 120,000 hectares (at latitudes 15°19'–15°52' N and longitudes 105°23'–105°47' E) as shown in Figure 1. The NPA has a joint international border to Thailand by Mekong River and that connects to Pha Taem National Park of Ubon Ratchathani province in Thailand.

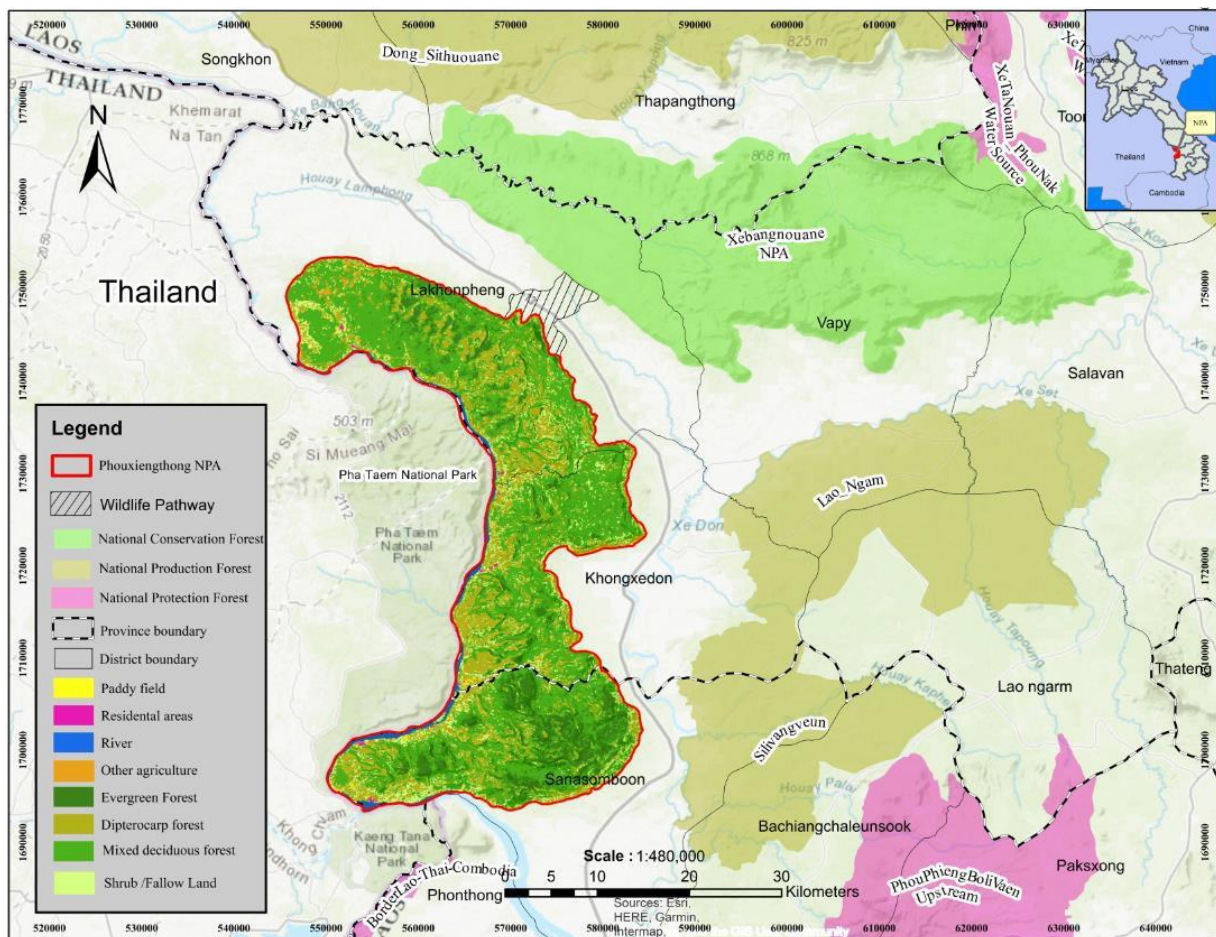


Figure 1. Forest conservation areas of Phou Xiangthong NPA and its adjacent areas

Phou Xiengthong NPA has important habitat types that are particularly important for supporting wide-ranging, some large mammal species and bird species (Duckworth et al. 1999). It is one of the NPAs of the country that support high biodiversity — a high number of wildlife species, although no comprehensive studies have been undertaken. There would be over 30 globally threatened fauna species and other flora species. At least 25 most important species of wild mammals and birds and reptiles warrant special management attention. A number of large and medium mammals were reported and some recently recorded during the planning consultation including: banteng, gaur, red-shanked douc langur, pangolin, silvered langur, leopard, sun bear, dhole, green peafowl etc. Most importantly, the NPA supports important populations of banteng, which is very rare in the country. Only NPA that probably holds the large population of green peafowl in the country.

A total of 51,567 people in 61 villages of 13 village clusters belonging to 3 districts of 2 provinces, are located in and adjacent to the Phou Xiengthong NPA. Of the populations in and around the NPA, Sanasomboun district has the highest number of population (20,493 people), then Khongxedone (17,278 people), and Lakhonepheng (13,796 people). Depending on the location, the village types of the NPA were classified into 6 enclave villages, 1 straddling village, and 54 adjacent villages.

The protected area management in Lao PDR was designed to be implemented in a participatory approach, which local communities play a key role with technical support from the local government especially provincial and district authorities. The staff of protected areas and relevant government offices will support the implementation in their mandates especially for outreach, law enforcement and livelihood development.

Thus far, the NPA has been legally managed as village base and military support with very low input from the provincial and district technical assistance. Boundary demarcation with 30 concrete posts in the part of Champasak province but only five concrete posts in the part of Salavan province. However, neither proper zones are in place and nor is any management plan available. Some basic facilities for the NPA exist, such as its sub-station office at Ban Sornphak for Sanasomboun district of Champasak province while for Salavan province only a temporary office at Khou Dou (Ban Khou Dou) where the NPA staff of the Salavan province is based today. Some very basic and few equipment in place that were funded by Biodiversity Conservation and Management of Protected Areas in ASEAN (BCAMP) project of the ASEAN Biodiversity Centre (ACB), e.g., computers, printers, GPS, hammocks etc.

2 JUSTIFICATION FOR THE SELECTION OF THE NPA

Phou Xiengthong NPA has been recognised as a site of global significance for the conservation of biodiversity, holding stronghold populations of large mammals especially banteng and gaur. It supports a high diversity of animals and plants, including a number of globally threatened (GT) species as at least 30 GT species of fauna and flora. Moreover, it would be a greater number of fauna species by including GT fish species in the Mekong River where the section is part of the NPA. The NPA is the largest forest area of the region and it also connects other conservation areas in the province and neighbouring country (see Figure 1).

Detailed biodiversity surveys have not been conducted in the NPA, although it was previously understood the NPA has no longer biodiversity value and that so no any aid funding support in the past, it was found at least 25 most important species of wild mammals and some birds and reptiles are still present in the Phou Xiengthong NPA. A number of globally threatened wild animals were reported, and some recently recorded during the planning consultation and field survey with camera trapping including: banteng, gaur, red-shanked douc langur, pangolins, silvered langur, sun bear, dhole, green peafowl, etc. Most importantly, the NPA supports some viable populations of banteng, which is very rare in the country. It is the only NPA that probably holds the large population of green peafowl, siamese fireback, burmese porcupine, leopard cat, and long-tailed macaque in the country, but detailed biodiversity assessment has not been undertaken yet.

The NPA is one of three conservation areas (together Dong Ampham and Xe Pian NPAs) in the country that support the largest remaining Banteng populations in Lao PDR. Richness of wildlife makes it the stronghold of biodiversity conservation in the southern landscape that connects Xebang Nouane NPA and Pha Taem National Park of Thailand. Interestingly, some cat species were reported in the area and that high density of leopard cat trapped by camera traps. In addition, Phou Xiengthong NPA holds very important potentials in historical and archaeological facts such as Saose (ເສົາເສ), Sao Lakhon (ເສົາຫອນ), Hin Khong (ຫິນຂອງ), Hin Hong (ຫິນຫົງ), Siphankhoun (ສີປັ່ນຂຸມ), Tham Fameu (ຖ້ຳຜາມື), Tham Khong (ຖ້ຳຄອງ), Tham Longsop (ຖ້ຳໂລງສົບ), Tham Kaeb (ຖ້ຳແກບ) (see Appendix 6).

So far, there has been some discussions on cooperation between Champasak and Ubon Ratchathani provinces for transboundary conservation (Phou Xiengthong NPA and Pha Taem National Park). Thai officials are encouraging and interested to support wildlife conservation in Phou Xiengthong NPA, which would provide mutual benefits. Transboundary conservation with Thailand therefore is necessary to ensure wildlife community in the area can freely use the shared habitats. Monitoring movement of some large mammal species through technical exchange is the most important activity to be conducted concurrently.

Meanwhile, the Phou Xiengthong NPA has high potential for designation as an ASEAN Heritage Park (AHP) due to its historical, archaeological and biodiversity values and certainly high potential for ecotourism development, with good access to the NPA from Pakse City and even from Thailand crossing at Chongmek International Border of Champasak province as well as local checkpoints for Thai visitors.

3 THE PLAN AND OBJECTIVES FOR PHOU XIENGTHONG NPA MANAGEMENT AND REGULATIVE FRAMEWORK

3.1 Phou Xiengthong Collaborative Management Plan

This is the first management plan of Phou Xiengthong NPA and it applies a collaborative management approach whereby local communities play a key role for the site management. The present Phou Xiengthong NPA Collaborative Management Plan was supported and financed through the European Union (EU) project — BCAMP in ASEAN, implemented by the ACB, with technical support provided by NIRAS International Consulting. It is designed as a collaborative management plan for 2022–2026, which was prepared in close consultation with key stakeholders and relevant district offices of the province and three participating districts in two provinces

(Salavan and Champasak). The consultations were conducted through a series of stakeholder workshops at Kumban (village cluster) to district and provincial levels and with some field visits during the consultations.

Priority activities for Phou Xiengthong NPA management during the first five-year plan (2022–2026) include restructuring the organisation of the Phou Xiengthong NPA; developing mechanisms for enhancing collaborative management, staff, and district team capacity building; complete land use planning; initiation of conservation outreach; biodiversity surveys setting up biodiversity monitoring and patrolling; forest rehabilitation; forest fire prevention; and participatory boundary delineation. It is important to strengthen the district capacity and provide some necessary equipment for supporting the implementation of the Plan.

Implementation of the Plan is challenging since the NPA management authority has very limited operational budget and management authority. Effective management of Phou Xiengthong NPA needs to have better management authority with a continuous funding stream from the GoL to maintain at least the basic operation. Local communities are expected to play a key role, but will also require technical support from competent government offices.

3.2 Relationship to Other Plans

The Phou Xiengthong NPA Collaborative Management Plan follows the regular planning phase of the five-year plan of the GoL namely the 8th National Social Economic Development Plan (NSEDP). It is in line with the five-years planning cycle of the GoL and the NSEDP (2016–2020) and the new phase of the 9th NSEDP (2021–2025). The plan will establish the foundation for collaborative management during the first few years, after which collaborative management shall become fully operational in the Phou Xiengthong NPA.

3.3 The Purpose of the Plan

The purpose of the plan is to provide clear guidance on the programme of activities to be implemented in the five years period, to achieve the defined goal and objectives of the plan. The NPA management team has to work with relevant government agencies and local communities to implement the plan. It gives strategic guidance on the shared responsibilities for the Phou Xiengthong NPA management.

Phou Xiengthong NPA collaborative management plan applies the collaborative management concept designed for local communities to manage and protect their forest resources with technical and financial support from relevant government offices and donors. The planning process involved the responsible government agencies including military, relevant villages and other major stakeholders. A DCO will be established for each participating district to help coordinate, facilitate, and support the implementation of the Phou Xiengthong NPA management plan. Therefore, these offices will take ownership to support the works of NPA in their district administrative territories through village/village cluster base management and patrolling. All areas of work related to protected area management were oriented and discussed in the orientation workshop and consultation during the process of management planning at different levels, including Kumban/village consultations.

The plan sets out a framework for PA management and a programme of activities, which will ensure that Phou Xiengthong NPA's conservation values are protected. During the village consultations the rights, roles and responsibilities of local communities were discussed and agreed.

3.4 Structure of the Plan

Following the Guideline on NPA Management Planning of the Department of Forestry (DoF, 2017) and the example of Hin Namno NPA Collaborative Management Plan (DFRM, 2015), the structure of the plan has been separated into four main parts and 12 chapters as follows:

Part I. Background and Its Management Objectives

- Chapter 1. Designation and Status of the National Protected Area
- Chapter 2. Justification for the Selection of the National Protected Area
- Chapter 3. The Plan and Objectives for the NPA management

Part II. The Setting of Phou Xiengthong National Protected Area

- Chapter 4. The Setting and History of the National Protected Area
- Chapter 5. The Bio-physical Environment
- Chapter 6. The Socio-economic Environment
- Chapter 7. Local Livelihoods and Current Use of the Natural Resources
- Chapter 8. Threats and Constraints to the National Protected Area

Part III. Management Prescriptions

- Chapter 9. Conservation Strategy and Framework
- Chapter 10. Zoning

Part IV. Management Arrangements and Programmes

- Chapter 11. Protected Area Management Arrangements
- Chapter 12. Overall Programme of Activities

3.5 Preparation of the Plan

This Collaborative management Plan was developed in accordance with the national policy and regulatory framework, relevant laws and decrees on forest, biodiversity, wildlife and environment protection, and other relevant laws and decrees of Lao PDR.

3.5.1 Policy and regulative framework

3.5.1.1 National policies relevant to protected area management

National Biodiversity Strategy and Action Plan for 2025 (revised 2016). The implementation of this strategy is based on the protection of biological diversity, which is the key to sustainable poverty reduction. The goal is to enhance the role of biodiversity as a national heritage and as a substantial contributor to poverty alleviation, as well as sustainable and resilient economic growth. Therefore, protecting biodiversity also means protecting the ecological, economic, social, cultural and spiritual values and aspirations of the people of the Lao PDR. It is a key element of livelihood strategies and food security and is best assured through in-situ conservation efforts, made possible by respecting and supporting the knowledge, innovations, and practices of local people who depend on them. The conservation and sustainable use of biodiversity resources requires stakeholder participation and cooperation at all levels.

Forestry Strategy for the year 2020 (2005). Forest protection is the main task of society to increase forest cover by 70 per cent of the country in 2020. The implementation of conservation is through the creation and management of the protected areas for protection of natural areas, species of fauna and flora to ensure the balance of nature, protecting watersheds, natural sceneries, historical and cultural values and for education and scientific research.

National Socio-economic Development Plan (New Phase 9th NSEDP, 2021–2025). The implementation of this strategic plan is based on the natural resource potentials as a factor in socio-economic development. The sustainability of national economic development needs to go hand-in-hand with environmental protection. The new NSEDP will ensure “quality” sustainable growth with green and environment-friendly development, human resource development, human well-being, governance, integration and connectivity.

National Poverty Reduction Strategy (2004). The implementation of this strategy is based on both the management of natural resources and social and cultural development.

National Ecotourism Strategy (2005). The implementation is for sustainable development in the utilisation of natural resources and poverty reduction.

3.5.1.2 Decrees most relevant to protected areas management

Decree 164 / PM on the establishment of the Lao PDR Protected Area System (29/10/1993). The decree states national forestry reservation over the country by determining limit of forestry reserves in different areas as to protect and conserve natural resource, abundance of nature, biodiversity — species and beauty of forest landscape. Therefore, any human activities, especially infrastructure development projects that might impact on the area are prohibited unless allowed by the government.

Decree 134 / PM on Protected Areas (13/05/2015). The decree defines “protected area” as forest classified for conserving the nature, preserving plants and animal species, forest ecosystems and other valuable sites of natural, historical, cultural, tourism, environmental, educational and scientific importance.” Under it, there are various categories of protected areas, namely, (1) national park protected area, (2) natural heritage protected area, (3) historical and cultural protected area,

(4) protected area with focus on conservation of fauna, and (5) protected area for the management of the utilisation of natural resources. The decree requires payment by any infrastructure project that is located in any part of a protected area or even its buffer zone. The payment is to support the regeneration and/or planting of trees (with a specified cost of USD 800 per hectare) and additional USD 2 per hectare for the management and protection of forests in the watershed. Any entrepreneur in the field of natural tourism who runs a business within or surrounding the protected area shall contribute 10 per cent of revenue generated from the business annually. However, this decree is being revised as more detailed and specific payment by particular types of infrastructure projects will be identified and it will fully support protected area management. To implement the law and as a legal framework for protected area management, the Ministry of Agriculture and Forestry (MAF) issued the Regulation on the Management of Protected Areas, Aquatic, and Wild Animals, a revised version No. 0360 (2003), and Decree 134 / PM on Protected Areas (2015). Zoning or classification of conservation forests is provided in Article 24 of the Forestry Law (2019), where three types are distinguished: totally protected zone (TPZ), controlled use zone (CUZ), and buffer zone. The TPZ and CUZ are located in the NPAs while the corridor and buffer zones are located outside of the NPA. Although not specifically stated, there is the implication that CUZs be jointly managed by villagers with support from the government, while the TPZ remains the direct responsibility of NPA authorities.

A new decree on protected areas being prepared which is updated from the current Decree 134/PM (2015) as the most relevant articles are to promote PA registration, zoning, payments for PA management and its management authority. The registration of PA will be officially recognised as a state land with a title. The zoning for CUZ requires for two types as forest use zone and agricultural use zone, which some activities are used. Livestock is not allowed to raise in even a CUZ type 1 (forest use zone) and certainly prohibited for TPZ. The payment for PAs can be sourced from various uses of protected areas and the PA management authority which official stamp, logo and uniform will be in place.

Decree 111 / PM on National Defence Strategic Zone (24/3/2011). Decree 111 set out military strategic zones along international borders under the responsibility of military authority with limited public access. The Decree states the rights and responsibilities of the Ministry of National Defence and the capital, provincial, and district militaries to coordinate and organise tasks related to the management, inspection, protection, conservation and development. The military zone, according to Decree No. 111 is ca. 15 kilometres away from the international border; however, the most prohibited zone is 2 kilometres along the border.

3.5.1.3 Relevant laws

Law on Wild Animals and Aquatic Resources (2007) No. 07/NA, dated 24/12/2007

- General principles for the protection of wildlife and aquatic resources
- Species in List 1 (protected species) of Lao PDR are banned for hunting and trading (except government has issued a permit and for research purpose).
- Species in List 2 (managed species) shall be managed, monitored, protected and controlled used. The species on this list can be hunted in a certain number for household consumption and only outside of a totally protected zone.
- Species in List 3 (generally managed species) can be used according to the regulations.

Forestry Law (2019), No. 64/NA dated 13rd June, 2019. Conservation forest (i.e., mainly protected areas) is to protect forest abundance as well as fauna and flora species, biodiversity and ecosystems that are valuable for their nature, history, cultural significance and the beauty of landscapes that can have potential for tourism and research. The law promotes customary utilisation of forests and allows the use of timber and harvesting of forest products in conservation forest, but only for household utilisation and without adverse impact on forest resources and the environment. This reflects the rights and interest of individuals or organisations, but shall not happen in a TPZ. However, customary utilisation of forest and forest products shall be practiced in accordance with a designed plan, zones, village regulations/laws and regulations on forests and forms part of the legal framework. In addition, various types of conservation areas/protected areas are defined, including a national park.

Environmental Protection Law (Revised 2012), No. 29/NA, dated 18th December, 2012. The bodies who generate environment impact shall be responsible for the damage. Any development projects including government funded projects prior to the project construction should conduct environmental impact assessment (EIA) with sound environment impact measures. The investor is required to deposit financial Guarantee to be used in case of operator cannot fulfil the obligation and comply with the Laws of Lao PDR, including compensation to damage and loss of social and environmental assets.

Water and Water Resource Law (1996), No. 02/NA, dated 11st October, 1996. Promote protection and rehabilitation of water resources and environments. EIAs should be carried out on large development projects and requires that funds to be provided for protection and enhancing water resources, catchment, for settlement compensation associated with the projects.

Land Law (2003, revised 2019) No. 0457/NA, dated 27th February, 2019. Land in Lao PDR is the property of national community; persons have rights to use but not for trading purpose. Individuals have to preserve land in good condition. EIAs shall be required for medium and large projects and be licensed by the government. The project shall contribute to the national socio-economic development objectives, in green and sustainable direction and there shall be no detrimental environmental impacts. It strongly requires for protection of environment, society and nature, with ensuring of no soil degradation. The project developer shall be paid for taxes, environment tax, fees and charges in compliance with relevant Laws of Lao PDR.

Electricity Law (2013) No. 03/NA, dated 20th December, 2013. EIAs shall be carried out for medium and large electric dam development projects and be licensed by the government. The project shall contribute to the national socio-economic development objectives, and there shall be no detrimental environmental impacts. It strongly requires for protection of environment, society and nature, with ensuring of safety (Article 6). The environment assessment shall be associated with proposals of methods and measures for solving or mitigating any adverse impact on environment e.g water, water resources, ecology, biodiversity, habitat (Article 31), and social and cultural assets. The project developer shall be paid for environment tax in compliance with relevant Laws of Lao PDR.

Mining Law (2011) No. 02/NA, dated 20th December, 2011. The development and operation of a mine shall be compatible with environment protection and needs to demonstrate national socio-economic development and improved local livelihoods (Article 60). PAs, wildlife sanctuaries and watershed are illegal for mine development (Article 17, item 3).

Tourism Law (2005) No. 10/NA, dated 9th October, 2005. Development of tourism shall strictly respect and comply with the Laws of Lao PDR to ensure protection and maintenance of natural environment, society, national traditions, cleanliness, safety and social order (article 65).

3.5.2 Promoting collaborative management

Due to the fact that local people live in the declared PAs and depend on natural resources of the protected areas of Lao PDR, the collaborative management approach is legally promoted nationwide for the country's protected area management system. Local communities are a key player with support from the relevant government agencies for ensuring sustainability. Appropriate arrangements and mechanisms for the operation of collaborative management should be made with clear and shared rights, roles, and responsibilities. Besides, the local communities' ownership should be built through outreach, benefit-sharing, and livelihood assistance as incentives for protecting and managing the protected area. Therefore, the local villagers who are closely connected nature, know the area, and possess knowledge how to effectively manage the NPA have been consulted in the Phou Xiengthong NPA management plan preparation.

As not to leave all tasks including livelihood development of the defined NPA villages for the Phou Xiengthong NPA management authority, the participating districts have to play a better role for the NPA management within their administrative areas to ensure natural resources as sources of food for their people are used in a sustainable manner. Thus, DCOs for the NPA will be established at each participating district to help coordinate, facilitate, and support the implementation of the Phou Xiengthong NPA management plan. These DCOs with assigned district staff and some equipment in place will work with relevant district offices for community development, outreach and law enforcement, and also possible, tourism offices. As well as to support staff teams at relevant substations to manage their district administrative territories through village/village cluster base management and patrolling. All areas of work related to PA management during the planning process were oriented and discussed in the orientation workshop and consultation workshops at different levels.

The plan sets out a framework for PA management and a programme of activities, which will ensure that Phou Xiengthong NPA's values — natural, historical and, cultural values — are protected. During the village consultations the rights, roles and responsibilities of local communities were discussed and agreed. During the village consultations the rights, roles and responsibilities of local communities were discussed and agreed.

3.5.3 Planning process

Management planning is a participatory process involving all key stakeholder groups. It strives at building a common understanding among stakeholders about the values, purpose and objectives of the PA and of their role in its management. The stakeholder groups include not only communities living in or depending on the PA, but also government agencies with responsibilities relevant to management of the area as well as non-governmental organisations, community-based organisations, academia, and private sector.

This management plan has been developed in consultation with key stakeholders of Phou Xiengthong NPA at village cluster, district and provincial levels led by a national technical team of the DoF. Six village cluster meetings were conducted in March 2021 that placed at Ban

Singsomphanh, Ban Khampeng, Ban Mouangsoum, Ban Napheng Yai, Ban Bottaphanh, and Ban Phousikeo (see Figure 2). Participants (2–3 villagers) from each village were participated in their perspective village cluster meetings. The district consultation workshops were conducted in December 2019 after the Inception Workshop in the province. After the Kumban meeting and field visits were completed, district fact-finding meetings were conducted in March and April 2021. All relevant district offices participated and contributed to the development of the plan. In line with an adaptive management approach, this management plan should be reviewed every five years. Data and results from assessments and lessons learnt from the Plan implementation will be fed into the further development and review of the management plan.

The process of Phou Xiengthong NPA management plan preparation included various steps:

1. A management planning task force consisting of technical team with experts were formed to support the preparation of the Phou Xiengthong NPA management plan. Orientation workshop with stakeholders was conducted in Salavan province on March 19th, 2021, conceptualised by defining vision, goal, mission, objectives, and key activity programmes and management approaches for Phou Xiengthong NPA. The vision, goal, mission, and objectives for Phou Xiengthong NPA were formulated through stakeholder consultation workshops especially at district workshops, which were held in three participating districts.
2. Village and village cluster consultations were completed in six events of three districts, which identified together the key issues/threats and possible management interventions. Agreement on the principles of management, zoning, tasks, and responsibilities were discussed
3. Short field visits to some sections of the Phou Xiengthong NPA, where critical habitats were conducted by the joint-team of national, provincial and district staff (see Figure 3).
4. Findings from the village cluster workshops and village consultations were reported back, confirmed at district workshop (fact-finding) in the end of March 2021, confirmed the finding and incorporated possible approaches in the draft management plan by the national technical team.
5. Draft chapters of the Phou Xiengthong NPA management plan with activities were prepared and assigned for each district staff to help collect additional information, discussed on necessary activities and budgets to support the preparation of the plan.
6. The first draft of the Phou Xiengthong NPA management plan was circulated to the technical team and relevant experts/expatriates.
7. The second workshop with wider stakeholders was held in August 9th, 2021 in Champasak province, with a joint participation of the two participating provinces.
8. The third draft was prepared and sent to key technical staff team prior to the final workshop.
9. A final workshop was held on 30 December 2021.
10. The final version of the Phou Xiengthong NPA management plan was prepared and submitted for obtaining a final approval from the DoF.
11. Phou Xiengthong NPA management plan was submitted for approval and implementation.



Figure 2. Consultations for Phou Xiengthong NPA management planning



Figure 3. Field mission in the Phou Xiengthong NPA for management planning

3.7 The Goal and Objectives of the NPA Establishment

The objectives of the NPA establishment are to protect and conserve biodiversity — fauna and flora species, ecosystems, watershed, and other natural and environmental values, as well as historical, tourism and socio-cultural, education, and research values. The uses of the natural values shall be in a sustainable manner so as to provide a continuous supply of natural resources to local communities. The NPA management and its establishment in accordance with Decree 164/PM fulfils the following three main objectives:

1. To protection of the area’s biodiversity and natural values, forest and wildlife;
2. To promote scientific research, as well as cultural values and tourism; and
3. To ensure the sustainable use of natural resources by local villagers.

3.8 The Vision, Goal, Mission and Objectives for Phou Xiengthong NPA Management

Vision: Phou Xiengthong NPA is developed to be known tourism site in historical, cultural and natural with retaining their values forever

Goal: Phou Xiengthong NPA is developed to become an ASEAN Heritage Park for protecting and managing natural resources associated with livelihood development of local communities

Mission: To manage the Phou Xiengthong NPA through building of local communities and other stakeholder’s ownership in “collaborative management”

- Management Objective 1: To strengthen overall management and capacity building
- Management Objective 2: To conserve biodiversity through management measures and monitoring
- Management Objective 3: To improve sustainable livelihoods of local communities for conservation, including promoting tourism development

Part 2

The Setting of Phou Xiengthong National Protected Area

4 THE SETTING AND HISTORY OF THE NPA

4.1 Location of the Phou Xiengthong National Protected Area

Phou Xiengthong NPA is located in Southwestern Lao PDR at latitudes 15°19'–15°52' N and longitudes 105°23'–105°47' E, just along the east bank of the Mekong River and the Road No. 13 south from Lakhonepheng district of Salavan province at around Ban Vang Taleo to Ban Boungkha of Sanasomboun district, Champasak province. It connects Thailand overland (Pha Taem National Park). The NPA covers 120,000 hectares according to the Decree 164; however, the current estimate based on the recognised boundary of the NPA remains just 105,691 hectares. Therefore, it is ca. 14,309 hectares, which is lower than the declared area in 1993. The participating districts are Lakhonepheng district, which has the largest area in the NPA (40,058 hectares or 37.9 per cent), followed by Sanasomboun district of Champasak province (34,748 hectares or 32.87 per cent), and lastly Khongxedone district (30,885 or 29.22 per cent) (see Figure 4).

The Headquarters Office of Phou Xiengthong NPA is proposed to locate at Ban Khong Nakhone of Khongxedone district, by the eastern boundary of the NPA and just ca. 2 kilometres from the town of Khongxedone district or from the Road No.13 South. The road access to any districts of the NPA is very convenient and even to most of the NPA villages. There are 3 dirt roads cut through the NPA from east to west from Ban Xaykham to Ban Kamteu and from Ban Kham-E to Ban Khan Thongsay and from Ban Bouttaphan to Ban Kieng Nyapheud. Other access roads can reach to the southern section of the NPA at Ban Singsomphanh and then Ban Soula and the northern section of the NPA to reach at Ban Tha Khansoumsoua (see Figure 4).

4.2 Summary Description of the Phou Xiengthong NPA

The Phou Xiengthong NPA is considered a large NPA in Southern Laos, consisting of largely mixed deciduous, some evergreen, and dry dipterocarp forests that are particularly important for supporting a wide-range of large mammal and forest bird species. As mentioned earlier, the biodiversity values of the Phou Xiengthong NPA place it among the national protected areas in Lao PDR (Ling, 1999). Although the NPA was considered to have poor biodiversity in the past compared to the declared NPAs, it has been found to have at least 25 most important species of wild mammals, some birds, and reptiles. A number of large and medium mammals were reported and some recently recorded during the planning consultation and field surveys including: banteng, gaur, red-shanked douc langur, pangolin, silvered langur, leopard, sun bear, dhole, green peafowl, etc. Most importantly, the NPA supports important populations of Banteng which is very rare in the country. Only NPA that probably holds the large population of green peafowl, long-tailed macaque, burmese porcupines, leopard cat in the country; however, detailed biodiversity assessment has not been undertaken yet. Phou Xiengthong NPA is also particularly important for supporting large mammals as one of few NPAs in Lao PDR that support stronghold populations of banteng and green peafowl.

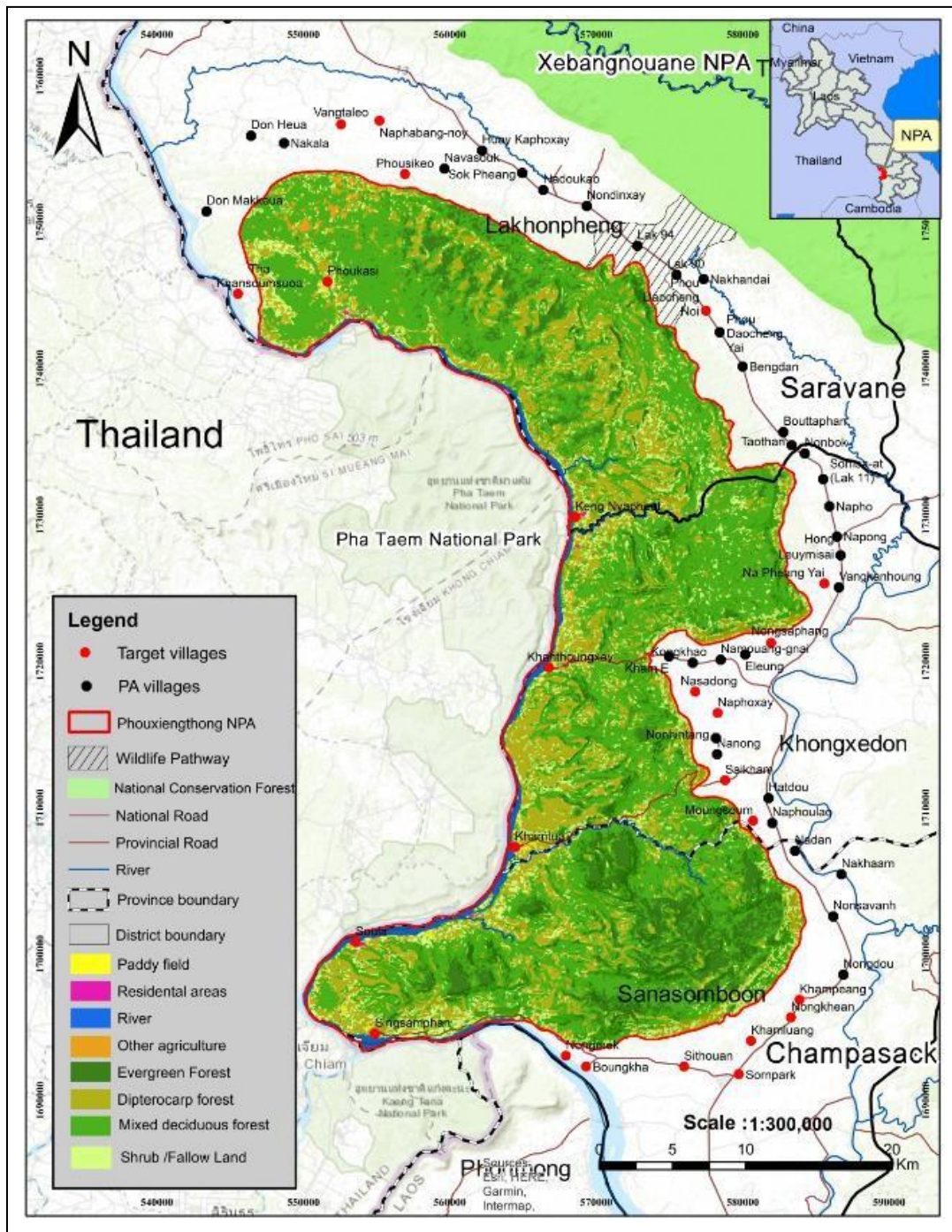


Figure 4. Boundaries of participating districts in Phou Xiangthong NPA

The local communities living in and adjacent to the Phou Xiangthong NPA largely depend on the natural resources. A total of 61 villages are relevant for the management of Phou Xiangthong NPA (Figure 1). The majority of the villages in the NPA are Lao Loum (Buddhist), and only few ethnically villages of Katang are animist. The main livelihood activities are paddy field cultivation, cattle raising, cash crop plantations (cashew nut and cassava), and trading. Apart from the agriculture, the local people rely on collecting forest products from the NPA for their incomes and food supply, handicraft development, and fisheries in the Mekong River.

4.3 Management Sub-areas for Village Responsibilities of Phou Xiengthong NPA

Phou Xiengthong NPA is located in three districts of two provinces. Three management sub-areas were defined based on district boundaries, different geographical features, and group of villages sharing the same natural resources (see Appendix 4). The purpose of defining these management sub-areas is to strengthen the presence of the Phou Xiengthong NPA management authority on-the-ground. The management zone arrangements assign clear responsibility to relevant village groups as following:

Southern section – Sanasomboun. It consists of a large forest block with some numbers of known mountains and small rivers. The known mountains are Phou Sabao, Phou Alang, Phou Luang, Phou Kang Heuan, Phou Satri, Phou Saniad, Phou Ngou, Phou Phalasi, and Phou Houaxang. The known rivers are Houy Luang and Houy Phalaphang. This section covers the whole part of the southern section of the NPA. The access road to the area through the area from Pakse City to Kum Singsomphanh through Ban Sonephak where the sub-station office is located. Access roads to the forests of the NPA are through Ban Nongmek (Latsua), Ban Bounkha, Ban Sonephak, and Ban Khampeng.

This section holds important wildlife habitat of the NPA, especially the east of Phou Sabao, Phou Saniad, Phou Alang, and Phou Luang. Only Phou Luang and Phou Saniad are one of a few places of the NPA where the red-shanked douc langur and silvered langur were recently reported. Majority of this section is part of the TPZ of the Phou Xiengthong NPA. It is the Section D of the TPZ. Notedly, it is mainly within the military zone especially Phou Luang and Phou Alang. The key villages¹ are Singsamphanh, Ban Soula, Ban Nongmek, Ban Bounkha, Ban Nongkhaen, Ban Sithouane, Ban Sonephak, Ban Kham Luang, and Ban Khampeng.

Central section – Khongxedone. It consists of mixed deciduous forest and dry dipterocarp forest with some small mountains and rivers. The known mountains are Phou Kham, Phou Daocheng, Phou Kasa, Phou Lon, Phou Nangnon, Phou Yai, Phou Choko, Phou Lan, Phou Kok, Phou Kokheng, Phou Phakptheo, Phou Khong, and Phou Lahit. The known rivers are Houy Deua, Houy Xot, Houy Pong, Houy Satri, Houy Lan, Houy Longkhong, and Houy Hinlat. A number of GT wild animals were reported and some recorded in this section. It is considered critical habitats for wildlife conservation in the area especially Phou Kham and Houy Deua.

This section is part of the TPZ of the Phou Xiengthong NPA. It is Sections B and C of the TPZ. Notedly, it is entirely within the military zone. The key villages are Ban Khamteu, Ban Khan Thoungxay, Ban Mouangsoum, Ban Kham-e, Ban Nongsaphang, Ban Saykham, Ban Na Pheng Yai, Ban Nakok, and Ban Nasadong.

Northern section – Lakhonepheng. It consists of mixed deciduous forest, evergreen forest, and dry dipterocarp forest with some known mountains and rivers. The known mountains are Phou Makthan, Phou Xiengthong, Phou Daocheng, and Phou Din. Other small mountains are Phou Lamkao, and Phou Babi. The small rivers are Houy San, Houy Xiangla, Houy Bon, Houy Sana, Houy Kathiet, Houy Vangmouang, and Houy Kong. A number of GT wild animals were reported

¹ Key village is the priority village for collaborative management and includes enclave and straddling villages as well as the poorest villages.

and some recorded in this section. It is considered as critical habitats for wildlife conservation in the area, particularly in Phou Xiengthong, Phou Makthan, and Phou Daocheng.

This section is part of the TPZ of the Phou Xiengthong NPA. It is the section A of the TPZ (see Figure 9). This zone receives some pressure from agricultural expansion (cashew nut and cassava), and cattle farming. Notably, it is mainly within the military zone, particularly within 2 kilometres from the Mekong River and down from Ban Khamleusa to Ban Kieng Nyapheud. The key villages are Ban Tha Khansoumsao, Ban Phousikeo, Ban Phonkasi, Ban Keng Nyapheud, Ban Ta Leo, Ban Pha Bangnoy, Ban Phon Ngam, and Ban Phou Daocheng.

4.4 History of the Area

4.4.1 Settlement and land use prior to establishment of the NPA

Phou Xiengthong has a long forest stretch of ca. 80 kilometres that is shaping along the Mekong River on the east bank. During the French Colonial Empire, including Laos, Phou Xieng Thong Forest (425 square kilometres) was declared as a forest reserve in 1958. From 1965 to 1975, the mountain top of the forest reserve was used as an airbase of the Americans; it is a 2-kilometre paved runway on a plateau in the southern portion of the reserve, and it is known Phou Kang Heuan. The southern section of the reserve is known as Phou Kang Heuan and was additionally declared a forest reserve in 1983. Finally, Phou Xiengthong NPA was totally declined in 1993 according to the Prime Minister Decree No. 164, dated on October 29th, 1993.

The pattern of today's settlement in and around the Phou Xiengthong NPA remains the same as in the past, but land use is different and some populations and villages have expanded. For example, Ban Soula was firstly settled by Mekong River around 1940 with one family (Mr. Soula), but this village has over 160 households today, and 2 settlements with Ban Donkoun (sub-village); it is likely to become a village in the future. Majority of the villages are located in the eastern boundary of the NPA while only six villages are located by the Mekong River. The villagers rely on paddy field cultivation, cash crop plantation (cashew nut and cassava), cattle raising, and collecting NTFPs for their livelihoods. Some communities whose settlements along the western boundary of the NPA — by the Mekong River — rely on fishing. The forest encroachment in the NPA was limited and only reported in the northern NPA that belongs to Lakhonepheng district for cassava plantation. The utilisation of natural resources and land by villagers changed from household consumption to commercial use which put pressure on the natural resources of the NPA.

4.4.2 NPA management since establishment

Management of Phou Xiengthong NPA has been slowly in progress since establishment in 1993 with barely any funding support. The first initiative was basically conducted under the government funding with some small funding support from Biodiversity Conservation Project (1996), wildlife survey by Wildlife Conservation Society (1996), and livelihood development supported for some villages of the NPA from PDI Project (1996–1998). Apart from that, it has only a small funding from the government to help maintain the management, which is quite well active for the section of Champasak province. Sum up, there has no any particular funding support for this NPA since 1998.

Due to some security reason, the main part of the NPA along the Mekong stretch was defined as military responsibility. Recently, any PA bordering an international border are legally defined a military zone according to the Prime Minister's Decree No. 111, dated on March 24th, 2011. In light of that, Phou Xiengthong NPA is one of the two NPAs with Nam Poui NPA that have joint border with Thailand and that is necessary to work closely with the military for the management particularly law enforcement, e.g., patrolling.

5 THE BIO-PHYSICAL ENVIRONMENT

5.1 Physical Features of the Area

5.1.1 Climate

Phou Xiengthong NPA lies in the Southeast Asia monsoon zone with one distinct dry (late October to early May) and one distinct wet season (late May to October). During November to February, the Northeast Monsoon brings cold, dry air and infrequent light rain. In the summer (May to August), the southwest monsoon brings warm winds carrying moisture from the Andaman Sea and the Gulf of Thailand to Lao PDR. Vertical convection causes large amounts of rainfall during the height of the monsoon season. Temperatures during cold months can range from approximate 24 °C to 28°C, but as low of 21°C in December and January; and from approximate 30 °C to 35°C during hot months, but as high of around 39°C for some day in April. Average annual rainfall at Khongxedone district is around 1,250 millimetres (1,200–1,500 millimetres). Lowest monthly rainfall of 35.5 millimetres occurs in May and highest rainfall of 150 millimetres in August.

5.1.2 Hydrology

Phou Xiengthong NPA has an outstanding mountainous range from Ban Singsomphanh of Sanasomboun district of Champasak province to upstream at Ban Tha Khansoumsoua in Lakhonepheng district of Salavan province. Phou Xiengthong NPA has a range of mountain ridges with high terrains drain mainly towards the west at the Mekong River and some few streams to the east. The average height of the mountains is ca. 350 metres above sea level with a range from 100 to 700 metres above sea level. The high mountains are mainly found on the east — at a number of mountains with the highest peaks just along the eastern boundary. The southern section, there are Phou Khong (ca. 674 metres above sea level), Phou Sabao Yai (ca. 562 metres above sea level), Phou Kang Heuan (ca. 500 metres above sea level), Phou Saniad, Phou Luang, and Phou Alang. The known small rivers in this section there are Houy Luang and Houy Phalaphang, which these rivers flow to the Mekong River on west.

The central section, there are Phou Kham, Phou Khong, and Phou Nangnone. The known small rivers in this section are Houy Deua, Houy Xot, Houy Pong, Houy Sati, Houy Lan, Houy Longkhong, and Houy Hinlat; a majority of these rivers flow to the Mekong River on west and some to east.

The northern section, there are Phou Daocheng, Phou Xiengthong, Phou Makthan, and Phou Din. The known small rivers in this section are Houy San, Houy Xiangla, Houy Bon, Houy Sana, Houy

Kathiet, Houy Vangmouang, and Houy Kong. Majority of these rivers flow to the Mekong River on west and some to east.

5.1.3 *Geology and Soils*

Phou Xiengthong NPA is mostly rock stone mountains with steep terrain especially in the southern and central sections as mainly outcrop in upper level with arable land in lower parts and foothills. The steep and rugged ridges are mostly of ancient stones as reddish black hardrock with some mesozoic sandstones. The characteristics of rock formation in this zone are considered bizarre wind carving as various rock formations are described, e.g., Hin Khong (as a fish basket container), Hin Khun Chong (as an umbrella handle), and Hin Hong (as a swan). The soil has low biomass in the higher mountains, which is not appropriate for agriculture. However, in the lower areas, in valleys, foothill, and along river banks, it is considered better soil especially the norther zone

5.2 **Biological Features**

Some rapid wildlife surveys were conducted in the past (1996) by the Wildlife Conservation Society, which was about 25 years ago. It is very outdated, and there has been no any up-to-date wildlife report available since then. Through consultations with local villagers at Kumban meeting on the management planning, Phou Xiengthong NPA made some preliminary understanding of wildlife status in the NPA. The interviews, some field survey, and camera trapping showed that Phou Xiengthong NPA still holds some important biodiversity value as some important wildlife species were recently reported.

5.2.1 *Vegetation*

A forest cover for 76.11 per cent of the NPA is considered good level (Table 1): mainly mixed deciduous forest (50.49 per cent), evergreen forest (25.63 per cent), and dry dipterocarp forest (14.43 per cent). However, the dry dipterocarp forest is not considered as part of the forest cover since its lower canopy density. These forests and their descriptions as below:

Mixed deciduous forest. This is characterised by deciduous tree species and a relatively open understory. Mixed deciduous forest in the Phou Xiengthong NPA has a distinct overall species composition and structure although shares species with SEF (*Lagerstroemia* sp.) and dry dipterocarp forest (*Dipterocarpus obtusifolius*) with canopy height of between 20 metres and 30 metres.

Evergreen forest. This forest type is the second most dominant in Phou Xiengthong NPA and characterised by a high tree density, a high proportion of evergreen tree species (> 50 per cent), some deciduous tree species, and a closed canopy with height of between 20 metres and 35 metres. Understory can be either bamboo or dense with herbs, seedlings, saplings and woody climbers. The evergreen forest type of the NPA is likely considered dry evergreen forest. The section of this forest type in the NPA is located in the lower area, mainly in the southern NPA especially around Phou Sabao and from Phou Sabao to southeast.

Dry dipterocarp forest. This forest type is dominated by trees in the family Dipterocarpaceae, occurring in quite open stands with broad leaves. This is upland dry dipterocarp forest which is different from the lowland dry dipterocarp forest, including the dominant tree species. Tree

diameter is small, and the height of the stand varies from 8–15 metres. Many species are fire resistant and have a thick bark. Most areas of dry dipterocarp forest and mixed deciduous forest in Phou Xiangthong NPA often undergo annual burning.

Based on the previous forest type analysis of Landsat images 1999–2000 of the DoF, the following vegetation types are present in Phou Xiangthong NPA (Table 1 and Figure 5).

Table 1. Area of the vegetation types of Phou Xiangthong NPA

Forest Type	Area (ha)	Per cent
Evergreen forest	27,061.20	25.63
Mixed deciduous forest	53,311.40	50.49
Dry dipterocarp forest	15,327.10	14.43
Bush	1,973.00	1.87
Paddy field	198.50	0.19
Other agriculture, including cash crop plantation	5,111.10	4.84
Settlement	19.00	0.02
Other land	287.40	0.27
Water (river, lake/pond)	2,399.50	2.27
Total	105,598.00	100.0

Note: The area for this forest type analysis using the existing boundaries of Phou Xiangthong NPA.

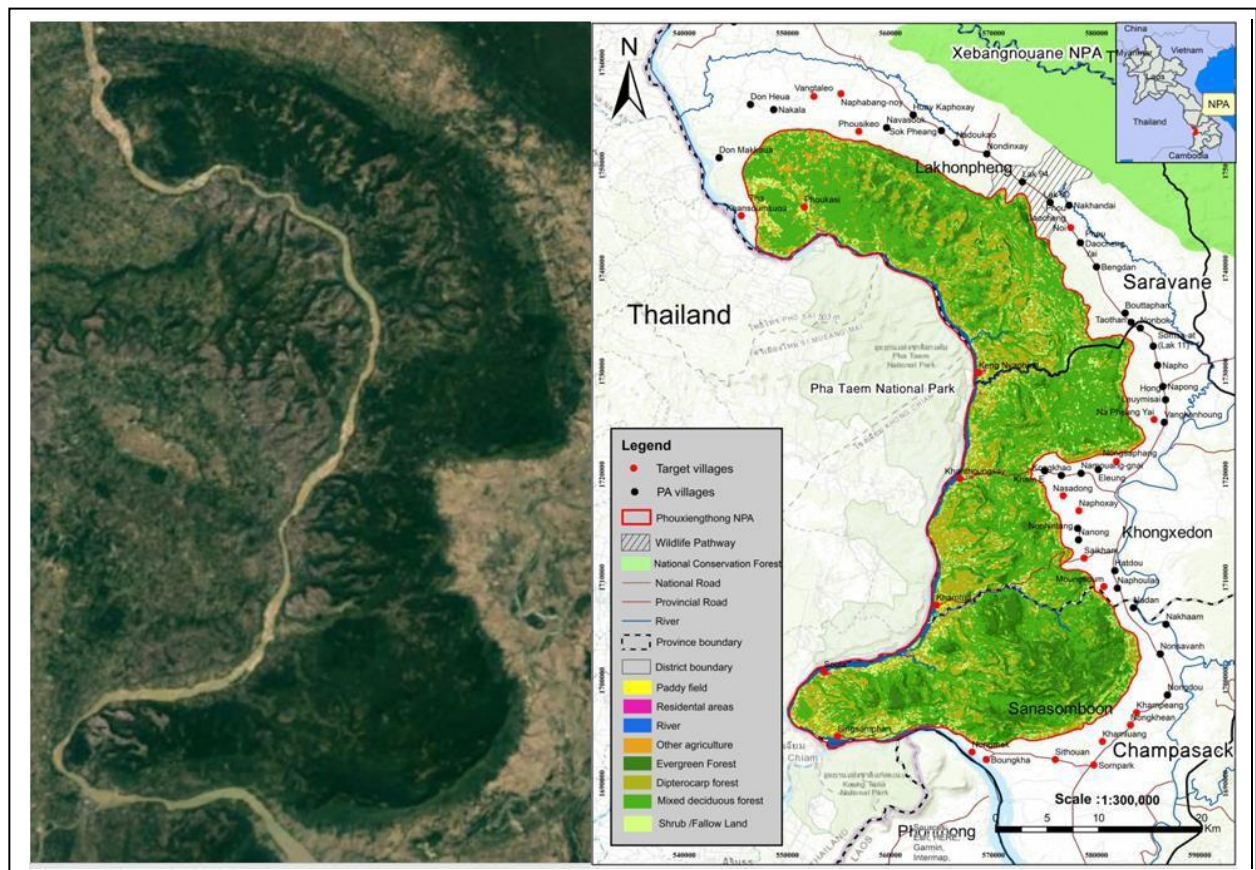


Figure 5. Forest cover and forest types of Phou Xiengthong NPA

The flora of the Phou Xiengthong NPA has not been studied, and thus knowledge of this aspect is limited. Only some important timber tree species of economic value are listed such as Mai Kha Ngoung (*Dalbergia concinchnensis*), Mai Dou (*Dipterocarpus macrocarpus*), Mai Khamphi (Mai Padong) (*Dalbergia bariensis pierre*), Mai taekha (*Azelia xylocarpa*), Mai Khaen heua (*Hopea odorata*), Mai Deng Nam (*Xylia kerril*), Mai Champa (*Michelia champac*), Mai Manpa (*Fragrans box*) Mai Champi, Mai Taehor etc. At present, it is known that some rare or endangered flora species are present in the area, including Mai Kha Ngoung (*Dalbergia concinchnensis*), Mai Padong (*Dalbergia bariensis pierre*), Mai Taekha (*Azelia xylocarpa*), Mai Dou (*Dipterocarpus macrocarpus*), and Mai Khaen heua (*Hopea odorata*).

The economically most important NTFPs are mak jong (malva nut), mak naeng (cardamom), khisii (resin), nam mang yang (resin oil), bamboo, bamboo shoots, orchids, mushrooms, wild vegetables, red ant eggs etc.

5.2.2 Habitats

Topography of Phou Xiengthong NPA consists of terrestrial forest and wetland since the part of the NPA covering the Mekong section stretch for 80 kilometres. The terrestrial forest has mainly mixed deciduous forest (53,311.4 hectares or 50.49 per cent), evergreen forest (27,061.2 hectares or 25.63 per cent), and dry dipterocarp forest (15,237.1 hectares or 14.43 per cent). The mixed deciduous forest and evergreen forest distribute throughout the NPA and support important habitats for terrestrial wild animals as some large mammal species are present (Figure 6).



Figure 6. Forest landscape of Phou Xiengthong NPA

The key sites that some large wild animals were reported their presence including at Phou Kham, Phou Din, Phou Daocheng, Phou Xiengthong, Phou Makthan, Phou Nangnone, Phou Sabao, Phou Kang Heuan, and Phou Luang. There are several mineral licks present in Phou Xiengthong NPA, such as Pong “mineral lick” Non Dinxay (UTM: 056555 N/1743991 E), on the west of Phou Xiengthong Mountain and that belongs to Ban Non Dinsay; Pong Phou Noi at Dan Luang (UTM: 05771150 N/17278106 E); Pong Paen (UTM: 0563545 N/1746334 E at Houy Vangmon. Wild animals still use these mineral licks today. Some a few mineral licks were used by wild animals in the past, such as at Ban Phou Sikeo and Nala-ong of Ban Don Makheau, but they were converted to agricultural land and already lost today.

The wetland habitats present in the NPA consists of earth banks, rocky banks, rocky islands, sandbars, low vegetated islands, rocky islets, and sandy beaches. These habitats are found largely from upper Ban Don Koum of Sanasomboun district to Ban Tha Khansoumsoua of Lakhonepheng district.

The NPA supports populations of some important wildlife species such as banteng, gaur, sambar, bears, serows, douc langur, silvered langur, also some cat species. Importantly, it supports some good populations of green peafowl, siamese fireback, burmese porcupine, leopard cat and long-tailed macaque. Also, the Mekong section of the NPA supports a number of water birds such as little terns, river lapwaings, river terns, small pratincoles and wired-tailed swallows.

5.2.3 *Fauna*

The Phou Xiengthong NPA has various habitat types that are particularly important for supporting wide-ranging, large mammal species and bird species (Duckworth et al., 1999; Evan et al., 1996). Phou Xiengthong NPA is considered an Important Bird Area of Laos, holding both terrestrial and wetland habitats. There are a number of globally threatened species were reported in the NPA, including banteng, gaur, leopard, clouded leopard, sun bear, red-shanked douc langur, silvered langur, southern serow, otter sp., binturong, great hog badger, stump-tailed macaque, northern pig-tailed macaque, sambar, pangolins, lorises, Asian dhole, Asiatic jackal. Also, a number of birds — at least 188 species (Evan et al., 1996) and reptile species are considered important species of the NPA.

Although this NPA was not listed as important NPAs of Laos (Ling, 1999), its status today would be important than many NPAs in the country since it holds at least important populations of banteng, green peafowl, and Siamese fireback. Interestingly, some cat species were reported in the NPA, including leopard and clouded leopard, which have been well-reported in the NPA and a pair of its cubs were collected from Phou Nangnone by the villagers of Ban Khan Thoungxay in 2019. Likely, the NPA would hold a tiger today as Mr. Kee saw a female tiger with its cub in Phou Yai of Ban Khan Thoungsay for several years ago. It is in the TPZ Section C. Also, the field visit was conducted in June 2021 to identify old tiger’s footprint. Most recently, Mr. Lae from Ban Nadan confirmed its present in Phou Kangheun. He did an imitation in the cave of that area annually and he saw its footprints quite often in the area, Sanasomboun district. He also saw red-shanked douc langur in the area.

According to the previous survey (Evan et al., 1996) and with current confirmation from the village interviews during the management planning, there is a possibility that Phou Xiengthong NPA still holds at least 15 GT terrestrial animals (Table 2 and Figure 8), yet excluding some GT reptile species, which were not listed here and even more globally species to be listed for PXT NPA since the Mekong section is part of the NPA. Some of these animals were confirmed during the field visits (Figures 7 and 8).

Table 2. List of important wildlife species in Phou Xiengthong NPA

Key Species	Key Locations	Estimated % & Population Today	Possibility of Exterpation
Gaur, VU	Phou Markthan, Phou Kham, Phou Daocheng	5% (7–10)	Very High
Banteng, EN	Phou Mathan, Phou Kham, Phou Daocheng	30% (25–30)	Med
Sambar, VU	Phou Kham, Phou Daocheng, Phou Din	30% (40+)	Med
Southern serow, VU	Phou Kham, Phou Daocheng, Phou Din	30% (70+)	Low
Green seafowl, EN	Phou Kham, Phou Daocheng, Phou Din	50% (500+)	Low
Tiger, EN	Phou Kham, Phou Daocheng, Phou Din	0.5% (1–2)	Very High
Leopard, VU	Phou Kham, Phou Daocheng, Phou Din	1% (3–5)	Very High
Douc langur, CR	Phou Luang, Phou Kham, Houy Deua, Phou Din	3% (30)	Very High
Silvered langur, EN	Phou Luang, Phou Din, Houy Deua, Phou Kham	2% (15)	Very High
Gibbon, EN	Houy Deua, Phou Daocheng, Phou Kham,	0.5% (2–3)	Very High
Sunda pangolin, CR	General	10% (300)	High
Chinese pangolin, EN	General	25% (500)	High
Great Hornbill, VU	Phou Luang	1% (2)	Very High
Siamese fireback, NT	General	50% (3,000)	Low
Sun Bear, VU	Phou Daocheng, Phou Xiengthong, all	10% (30+)	Med
Burmese porcupine	General	50% (500)	Med
Brush-tailed porcupine	General	50% (1,000)	Med
Dhole (EN)	General	70% (200)	Low
Northern pig-tailed macaque, VU	Phou Lahit, Phou An-ma, Phou Phasone, Houy Deua	50% (300)	Low
Bengal slow loris	General	40%	Low
Pygmy slow loris, EN	General	50%	Low
Asiatic jackal,	General	70% (100)	Low
Long-tailed macaque, VU	Houy Deua, Mekong Riverline	50% (500)	Low

Note: This information was summarised from the discussions with six village clusters and some field verifications. These figures are just from opinion estimation.



Figure 7. Records of some important wild animals in Phou Xiengthong NPA



Figure 8. Some key wildlife species records in Phou Xiengthong NPA

Phou Xiengthong NPA has a transboundary connection by Mekong to Pha Taem National Park of Thailand, which is possible for some wildlife species can use both forest sides. It was well reported that some large mammals such as gaur crossing the Mekong River to Pha Taem National Park (Mr. Kilon *pers. comm.*, 2021), and recently by green peafowl. The biodiversity values have fairly significantly declined in Phou Xiengthong NPA in the past 20 years, which is indicated by a smaller population size of flagship species such as banteng and gaur. Some report that it is probably that gibbon and elephant are not longer in the NPA. An updated biodiversity information for the NPA is needed in the future.

Phou Xiengthong NPA is considered one of Important Bird Areas of Laos in both terrestrial and wetland habitats. Its topography consists of terrestrial forest, earth banks, rocky banks, rocky islands, sandbars, low vegetated islands, rocky islets, and sandy beaches. The NPA supports good population of green peafowl, burmese porcupines, leopard cat, long-tailed macaque and siamese fireback. The Mekong section supports a number of water birds such as little terns, river lapwaings, river terns, small pratincoles, and wired-tailed swallons.

Through the survey with assistance from camera trapping, a number of wild animals were confirmed in the NPA, including some GT species gaur and banteng (Figure 9). With all the knowledge of current wildlife status of the PXT NPA, the important or GT species were shown and that meant important wildlife habitats of the NPA (Figure 10).

About 30 years ago, the populations of banteng and gaur in the Phou Xiengthong NPA were estimated to be large, but the population size of these animals is much smaller today, estimated at 30 bantengs and 10 gaurs. Also, Asian elephant is no longer in the NPA. The loss or decline of banteng in Phou Xiengthong NPA impacts significantly on banteng conservation in Lao PDR, and would likely lead to the complete loss of bantengs in the country. Tigers, gibbona, and great hornbills are only suspected to be present in the NPA. Nevertheless, the most important species that local villagers rated during the Kumban consultation are banteng, gaur, and sambar.

Through the consultation, they realised that these species are important; but much has declined, with only banteng and sambar having some good population today especially in the norther zone that belongs to Lakhonepheng district; other species' populations remain very low. Most of these species have declined dramatically from 2013 (see Section 7.3.2) due to disturbance from illegal logging.



Figure 9. Locations of important wildlife species reports and records in PXT NPA

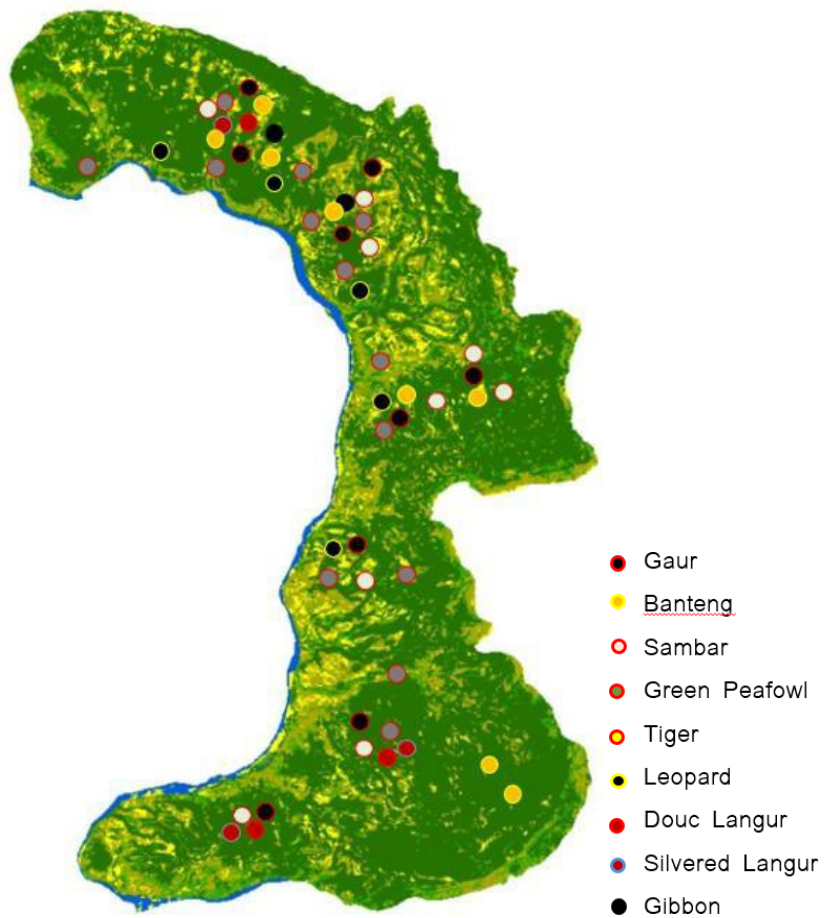


Figure 10. Locations of important wildlife species reports and records in PXT NPA

6 THE SOCIO-ECONOMIC ENVIRONMENT

6.1 Demographic Overview

6.1.1 Population

A total of 51,567 people in 61 villages of 13 village clusters are located in and adjacent to the Phou Xiengthong NPA and belong to 3 districts. Of the populations in the NPA, Sanasomboun district has the highest population (20,493 people), followed by Khongxedone (17,278 people), and Lakhonepheng (13,796 people). Depending on the location, the village types of the NPA were classified into 6 enclave villages, 1 straddling village, and 54 adjacent villages (Table 2). Of which, there are a total of 25 villages defined as target villages for the first phase of the plan.

Table 2. Population and village types by village cluster (Kumban)

District/Village Cluster	No. of Village Type			No. of HHs	Ethnic	Population
	Encl	Strad	Adjac			
Sanasomboun (14 villages)						
Boungkha	2	1	5	1,937		9,607
Soula*	X			160	Lao Loum	786
Sing Samphan*	X			190	Lao Loum	887
Khamluang*			X	189	Katang; Lao Loum	912
Sorn Phak*			X	450	Katang; Lao Loum	2361
Si Thouan*			X	258	Katang; Lao Loum	1154
Aok-Muang			X	325	Lao Loum	1451
Boungkha			X	263	Lao Loum	1424
Nong-Mek*		X		102	Katang; Lao Loum	632
Nongdou	0	0	6			
Nadan			X	224	Lao Loum	1299
Na Khaam			X	225	Lao Loum	1437
Non Savanh			X	220	Lao Loum	1742
Nong Dou			X	274	Lao Loum	1537
Kham Peang*			X	534	Lao Loum	3186
Nong Khean*			X	287	Katang; Lao Loum	1685
Sub-total	2	1	11	3,701		20,493
Khongxedone (24 villages)						
Napong	0	0	5	634		3,409
Nonbok			X	56	Lao Loum	336
Somsa-at (Lak 11)			X	74	Lao Loum	810
Napho			X	133	Lao Loum	398

Napong			X	276	Lao Loum	1,174
Hong Leuymisai			X	95	Lao Loum	691
Khong	0	0	4	538		3,030
Vang Kanhoung			X	58	Lao Loum	338
Khong Nakhone			X	235	Lao Loum	1225
Na Pheang Yai*			X	144	Lao Loum	869
Nong Saphang*			X	101	Lao Loum	598
Na Mouang	1	0	4	585		4,708
Eleung			X	59	Lao Loum	447
Na Muang			X	323	Lao Loum	1789
Kongkhao			X	96	Lao Loum	1111
Kham E (Kham Savad)			X	35	Lao Loum	395
Khan Thoungxay*	X			72	Lao Loum	966
Na Nong	0	0	6	471		4,048
Na Sadong*			X	51	Katang	781
Na Phoxay			X	78	Lao Loum	254
Na Kok*			X	83	Katang	729
Non Hintang			X	65	Lao Loum	388
Na Nong			X	94	Lao Loum	1254
Sai Kham*			X	100	Lao Loum	642
Na No	1	0	0	183		472
Kham Tue*	X			183	Lao Loum	472
Keang Huad	0	0	3	317		1,811
Na Phoulao			X	150	Lao Loum	777
Hat Dou			X	97	Lao Loum	595
Moung Soum*			X	70	Katang, Lao Loum	239
Sub-total	2	0	22	2,728		12,278
Lakhonepheng (23 villages)						
Bouttaphan	1	0	2	271		1,414
Tao Than			X	75	Lao Loum	458
Bouttaphan			X	89	Lao Loum	539
Kaeng Nyapheut*	X			107	Lao Loum	517
Beng Dan	0	0	3	394		2,124
Bengdan			X	152	Lao Loum	918
Nong Sano			X	82	Lao Loum	468
Phou Daocheng Yai			X	115	Lao Loum	738
Lak 90	0	0	5		543	3,344
Phou Daocheng Noi*			X	132	Lao Loum	932
Na Khandai			X	100	Lao Loum	619
Lak 90			X	96	Lao Loum	564
Lak 94			X	56	Lao Loum	309
Non Dinxay			X	159	Lao Loum	920

Phou Thamphouang	0	0	1	124		582
Na Phabangnoy*			X	124	Lao Loum	582
Nongseng	0	0	4	247		1,569
Vang Taleo*			X	60	Lao Loum	342
Na Kala			X	63	Lao Loum	356
Don Heua			X	37	Lao Loum	290
Don Makkeua			X	87	Lao Loum	581
Na Dou	1	0	6	937		5,180
Na Doukao			X	222	Lao Loum	1,284
Sok Pheang			X	69	Lao Loum	378
Tha Khansoumsoua*			X	162	Lao Loum	889
Phou Kasi*	X			85	Lao Loum	359
Huay Kaphoxay			X	166	Lao Loum	989
Na Vasouk			X	76	Lao Loum	458
Phou Sikeo*			X	50	Lao Loum	306
Sub-total	2		21	2,364		13,796
Total	6	1	54	7,456		51,567

Note: *Priority village for the first five-year plan of livelihood development.

The Phou Xiengthong NPA's villages are located in and belong to 14 village clusters but some village clusters have only one or two villages, which is difficult to cluster for zoning of management. These clusters are quite different from the official category of the government. In recent years, the village cluster system is not popularly used in the government system; Kumban Phatthana² has become the preferred usage instead.

For the purpose of the management planning, only the key relevant cluster areas are used and defined by zone according to their relevance. There are two clusters (Boungkha and Nongdou) of Sanasomboun district, two clusters (Na Mouang and Nanong) of Khongxedone district, and two clusters (Bouttaphan and Na Dou) of Lakhonepheng district.

6.1.2 Ethnicity and religions

The villagers belong to four different ethnic groups, mainly Lao and Khmu (katang). The ethnic groups in the Phou Xiengthong NPA can be linguistically divided into two main groups:

- *Lao group.* Lao Loum is the majority group, they speak Lao. Their livelihoods are based on paddy rice farming. They usually live in lowland areas, along roads, rivers, and valleys, which is the land with the best potential for lowland agriculture. They are relatively well-off and do not find it hard to adapt to new things. They are mostly practicing the Buddhist religion. They are politically well connected and represent their interests well with government.

² Kumban Phatthana is a sub-district development zone which all relevant small village clusters will be reclustered together and the government to provide support with facility and livelihood development.

4. *Khmu group*. Although their livelihoods were traditionally based on upland rice cultivation in a rotational slash-and-burn cultivation system, they also do some paddy field cultivation where appropriate. They practice animism and are usually serving for the military.

6.2 Settlements

There are 61 villages of 14 village clusters in the Phou Xiengthong NPA, of which there are only 6 villages where their settlements and the majority of their land uses are located inside the NPA boundary. A high number of the NPA villages belongs to Khongxedone and Lakhonepheng districts but the population is higher in Sanasomboun district.

6.2.1 Sanasomboun district

There are 14 villages of 2 village clusters of Phou Xiengthong NPA belonging to Sanasomboun district that are considered the NPA villages. There are 2 enclave villages, 1 straddle village, and 11 adjacent villages. The key village clusters are Bounkha and Nong Dou.

Village cluster 1: Bounkha – Sanasomboun district. This village cluster has eight villages, of which two enclave villages (Ban Soula and Ban Singsamphan), one straddle village, and five adjacent villages. They are Lao Loum and some Katang. These villages are not a poor; especially Ban Sing Samphan and Bounkha, which have more characteristics of an urban village. The villagers do mainly paddy field cultivation with some gardening cultivation, cattle raising and some cash crop cultivation, trading, handicraft, collecting NTFPs in the NPA occasionally and seasonally, and fishing for aquatic resources from the Mekong River throughout the year. This village cluster is an entry point to the NPA at Ban Nong-mek (Latseua). This village cluster is one of most important for collaborative management of the Phou Xiengthong NPA, especially Ban Singsamphan, Ban Soula, Ban Nong-Mek, Ban Sorn Phak. Most people entering the southern NPA are coming through this cluster. Ban Sorn Phak where the sub-station of the NPA belonging to Champasak province is located and functioning on controlling trespassers.

Village cluster 2: Nong Dou. This village cluster has six villages of the Phou Xiengthong NPA — all is an adjacent village located outside the NPA. These villages are Lao Loum, with only Ban Nong Khaen is Katang. They are not a poor village, with the villagers doing paddy field cultivation, cattle raising, cash crop cultivation, trading, handicraft, collecting NTFPs in the NPA occasionally and seasonally, and fishing aquatic resources from the Mekong River throughout the year. This village cluster is the one of entry points to the NPA at Ban Nong Khaen and Kham Peang.

Their responsibility in the NPA management to prevent outside people from entering the NPA from the southern zone needs to be strengthened. This village cluster is one of the most important villages for collaborative management of the Phou Xiengthong NPA. In particular, Ban Nong Khaen helps to prevent people from entering the NPA. Most people entering the southern NPA are also coming through this cluster.

6.2.2 Khongxedone district

A total 24 villages in 6 village clusters belong to Khongxedone district and are considered the NPA village. There are 2 enclave villages and 22 adjacent villages. The key village clusters are Na Mouang and Na Nong.

Village cluster 3: Na Mouang. This village cluster has five villages relevant to the NPA: one enclave village (Ban Khan Thoungxay) and four adjacent villages. The villages are not really poor, and they rely on paddy field cultivation, cash crop plantation (cashew nut and cassava), cattle raising, trading, collecting NTFPs in the NPA occasionally and seasonally. Only Ban Khan Thoungxay is located by the Mekong River and rely on fishing in the Mekong River throughout the year. This village cluster has an enclave village that needs to be developed for collaborative management, while other villages can help to prevent outsider encroachment to the NPA.

Village cluster 4: Na Nong. This village cluster has six villages relevant to the NPA and all is just an adjacent village; however, these villages are poor and are ethnic groups (Katang) such as Ban Na Sadong and Na Kok. They rely on paddy field cultivation, cash crop plantation (cashew nut and cassava), cattle raising, collecting NTFPs in the NPA occasionally and seasonally. They can be part of collaborative management in preventing outsiders from encroaching the NPA.

6.2.3 Lakhonepheng district

A total 23 villages of 7 village clusters belonging to Lakhonepheng district can be considered as NPA villages. There are 2 enclave villages and 21 adjacent villages. The key village clusters are Bouttaphan and Nong Dou.

Village cluster 5: Bouttaphan. There are three villages, of which one enclave village and two adjacent villages. The enclave village Ban Keng Nyapheut is located by the Mekong River. They are Lao Loum, and are not really poor; they rely on paddy field cultivation, cash crop plantation (cashew nut and cassava), and cattle raising. Also, they collect NTFPs in the NPA occasionally and seasonally, and fish for aquatic resources, especially Ban Keng Nyapheut. Therefore, this village cluster is one of the most important village clusters for collaborative management in Phou Xiengthong NPA. This village cluster should work with Kum Lak 90 and Kum Beng Dan.

Village cluster 7: Na Dou. There are seven villages in this cluster, with one enclave village and six adjacent villages. The enclave village Ban Phou Kasi is located quite close to the Mekong River, and one of its sub-village (i.e., Khan Leusa) is just settled by the Mekong River and by Ban Tha Khansoumsoua. The residents in this cluster are Lao Loum and not really poor except for Ban Phou Kasi. The villagers rely on paddy field cultivation with some gardening, cash crop plantation (cashew nut and cassava), and cattle raising. Also, they collect NTFPs in the NPA occasionally and seasonally, fish for aquatic resources, especially those from Ban Phou Kasi and Ban Tha Khansoumsoua. Ban Beng and Ban Tha Khansoumsoua collect rattans from the NPA for handicraft development and generate quite important household income for at least 40 families of Ban Beng. They earn around US 500 per year per household from this industry. Therefore, this village cluster is one of the most important village clusters for collaborative management in Phou Xiengthong NPA.

6.3 Existing Infrastructure and Community Services

6.3.1 Transport access

Access to Phou Xiengthong NPA is convenient as Road No. 13 South runs along the east boundary of the NPA from Ban Vang Taleo in Lakhonepheng district, Salavan province down to Ban Bounkha0 in Sanasomboun district, Champasak province. There are several roads access to northern boundary and southern boundary. Meanwhile, there are three roads cutting through the NPA from the east at the main road (Road No. 13 South) to west at Mekong from Ban Saykham to Ban Kham Tue, from Ban Kham E (Kham Savad) to Ban Khun Thoungxay, and from Ban Bouttaphan to Ban Keng Nyapheut. These access roads to certain communities along the Mekong River, which can be accessible by car. The topography serves as a natural self-protection. To access the NPA by car is impossible, and thus can only be accessed by foot. Those access roads are dirt roads and very bumpy to travel and reach even to Ban Singsamphan. Due to the steep terrain of the road access, it is difficult to reach the area during the rainy season to reach the communities who have settled along the Mekong River.

6.3.2 Education

Primary school. All 61 villages of the Phou Xiengthong NPA have access to a primary school. Most villages have a primary school available up to grade 5 except for the two villages of Khongxedone district and three villages of Lakhonepheng district.

Secondary school. The secondary schools are available in adjacent villages with good transportation and facilities. A total of 11 secondary schools are available in the villages of the Phou Xiengthong NPA. Of which, there are six secondary schools available for the villages of the NPA belonging to Sanasomboun district, located at Ban Nong Dou, Ban Sorn Phak, Ban Singsamphan, Ban Bounkha, Non Savad, and Ban Nongkhaen. The senior secondary schools are available in Ban Nong Dou and Ban Sorn Phak. Only one secondary school is available in the villages of the NPA belonging to Khongxedone district, located in Khong Nakhone. Also, there are other four secondary schools available in the NPA villages belonging to Lakhonepheng district, located in Ban Bouttaphan, Ban Nanong, and Ban Tha Khamsoumsoua.

Most secondary school students who go to study outside the village prefer to use a motorbikes as transportation. Attendance to primary school seems to be very good at 70 per cent of total children attending primary school. The children of Katang often drop out of school from a young age. Many families' children do not continue to secondary education after primary school. After high school, some students continue to tertiary, college, and university levels depending on the capacity of the student's financial family. Pakse City of Champasak province is the centre for education in the southern provinces, where many students continue their education. It is very close to the villages of Phou Xiengthong NPA. On the average, there are five teachers per primary school and 14 teachers for the secondary school. Hence, on the average, the educational status, school facilities, and teachers in the NPA villages are considered satisfactory.

6.3.3 Health care

Health centres have been established in some village clusters. The local villagers can access basic health care and medicinal supplies as this service is important, especially for a remote community. The centres are located in the key village clusters (Kumban) of the NPA: three in Sanasomboun district (Ban Singsamphan and Ban Kham Paeng), three in Khongxedone district (Keng Houad, Na Nong, and Na Mouang), and another three in Lakhonepheng district (Ban Tha Khansoumsoua). There are about three health workers in each health centre. Although health centres are available and offers only basic health care, the service is usually not satisfactory due to limited staff capacity, facilities, and insufficient necessary medicines.

District and provincial hospitals are also available and are easy to access due to the paved road. Also, there is a network of health care at the village level, and local health worker/mid-wife is trained and in place for basic health service.

Usually, the poor families prefer to get their traditional treatment using medicinal plants. The district hospital is used for some basic health services, and any serious case will be treated at the provincial hospital and in the hospitals in Thailand. The local villagers along the Mekong River cross to Thailand for health treatment. The major diseases are fever, dengue, malaria, blood pressure, and diarrhea. Overall, the health services, facilities, and access to health services of the NPA villages is not a major issue as long as the families have some cash available.

6.3.4 Industry and employment

There are a number of sawmill and furniture factories in the relevant districts but not adjacent to the NPA: one sawmill in Sanasomboun town, two sawmills in Khongxedone town, and two sawmills in Lakhonepheng district. All of the sawmills have suffered after the Prime Minister's Order No. 15 dated 13/5/2016 on *Strengthening Strictness of Timber Harvest Management and Inspection, Timber Transport and Business* was issued due to insufficient raw materials. All illegal sawmills and any logging throughout the country has been banned. No timber quota has been issued since then, and only some small-scale illegal log poachers remain. However, small-scale logging by local villagers for these sawmills was reported in some villages. Other local factories are located adjacent to the NPA, including one Lao brewery factory, four white-charcoal factories, and two furniture shops in Lakhonpheng district. The white-charcoal factories are the Phetphailin factory in Ban Non Dinsay, Phouvieng factory in Ban Taothan 2, Oudomxay factory in Ban Taothan 2 and Mensin factory in Ban Xanasomboun. The furniture factories are Padith furniture in Ban Non Dinxay and Soubin furniture in Ban Phou Daocheng Yai. In addition, only the World Wildlife Fund has conducted a survey for rattan conservation in some villages of Phouxieng Thong NPA (Ban Tha Khamsoumsoua and Ban Beng Dan).

6.3.5 Security and law enforcement

The main institutions ensuring security in and around the Phou Xiengthong NPA are the military and police forces. Both are present at the village, village cluster, and district levels. Village militia refers to the presence of the army at the village level whose mandate includes patrolling in the forest within their village territory. Village police refers to the presence of district police at the village level whose mandate is the security in the village. They often assist and collaborate with the village militia; each village has about 15 village militia and 10 village policemen.

Village militia and village police at the village and village cluster levels are allowed to carry guns; they are the main group responsible for forest patrols in the NPA. The members of the village patrol team (7–9 persons) are selected from each village from the village militia, village police, and village foresters. Within the village territory, the village militia and village policemen can arrest poachers or illegal loggers. However, within the military zone³ along the international border of Lao-Thai, the village patrol team needs to secure permission from and cooperate with the relevant district authority before they could patrol the area. The NPA staff occasionally joins the patrol with them. The most relevant military camps of the NPA are the Kong Roi Frontier Regiment Military 421 stationed in Sanasomboun district and the Kong Roi Frontier Regiment Military 513 stationed in Khongxedone and Lakhonepheng districts. Each Kong Roi has 4–5 units distributed within their areas of responsibility.

Almost all of the law enforcement cases are handled by the so-called conflict resolution committees formed at village, cluster, and district levels of the government system. These committees consist of elderly citizens, village chiefs, and relevant district officials. They can decide on sanctions ranging from fines to detention. At the district level, the conflict resolution committee will be chaired by district governor. The implementing rules of these committees are issued by the district justice department. Furthermore, the district governor has the authority to also directly decide on sanctions for exceptional cases where conflict resolution committees cannot agree. In addition, forest inspection exercises aimed at arresting large groups of illegal loggers are occasionally organised under the orders of the district governor. These exercises are conducted by *ad hoc* taskforces led by district army and police.

6.3.6 Tourism

Phou Xiengthong NPA has high potential for tourism development associated with nature “ecotourism” wildlife spotting, which could be designed for short and long trips. However, not much tourism activities have been developed in the area. Ban Singsamphan is the only tourism village of the NPA, with tourists visiting the known Phou Khong (Hin Khong) in Sanasomboun district. The traditional Lao-Thai border-checkpoint is open for Thai tourists for a return-day trip. The tourists normally visit this village and climb Phou Khong (Hin Khong) to see the stone formations, temples, and views from the mountain top. The villages with potential tourism sites in the NPA can be found in [Table 3](#).

Table 3. List of villages with potential tourism sites of the NPA

No	Village	Descriptions of Potential Tourism Site and Activity
1	Singsamphan	Phou Khong (fish container mountain), Singto (Lion image), Yak (Giant man image)
2	Soula	Saose (scripts on stone), Sao Lakhone (Stone post), Hin Khan Chong (Umbrella stone), Hin Hong (Swan stone), Thampha (Bhuda cave), Hoy Tin Phabath (Footprint of Buddha) Ban Don Koum: Hospital cave (30 beds), Lan mah (Horse runway), Tham khok mah (barn cave), Tham hook (loom cave)

³ The military zone, according to the Decree No. 111, is about 15 kilometres away from the international border; however, the most prohibited zone is 2 kilometres along the border.

3	Boungkha	Tham Pha leu Si (Pha Leusi cave)
4	Khamteu	Phou Lahit (Phou Long Lit), Tham Phamue (hand palm print cave), Houy Leau (blood stream), Hoi Seuasoum (tiger's footprints), Hin Nyok (Big bent rock), Ton Hai Yak (Giant ficus tree), Phou Sabao (forest mountain)
5	Khanthoungxay	Long Sop Khon Pead Sok (8-foot coffin), Tham Keab Khon Phi Bang Bot (husk cave of under cover people), Tham Tao (turtle print cave – 3 sites)
6	Xaykham	Tham Pha (Buddha cave), Tham Khong (Gong cave), Tham Nam Tok Tat (waterfall cave)
7	Na Sadong	Tham Khamkhohaeng (Vulture cave)
8	Tha Khansoumsoua	Si Phakhoum (4000 holes), Hoi Sinxay (Singxay's footprint), Khoua Nangni (Nangni's bridge), Mai Kai Pen Hin (wooden rock), Hoi Khian Phan Lem (tracks of 100 carts), Hin kham (golden rock)
9	Phou Daochengnoy	Phou Daocheng (high forest mountain for star view)
10	Khong Nakhone	Dan Phou Khong (upper rocky plain), Tham Pha (Buddha cave), Tham Meud (dark cave - underground and long cave)
11	Nam Pheng Yai	Nong Khieo (Green pool), Thong Dok Kha Chieo (Plain of Dok Kha Chieo)

6.4 Access to Forest Land in the Phou Xiengthong NPA

6.4.1 Villager access to land

In general, village access to land within the NPA is quite different from areas outside the NPA in terms of rights and use limitations. Local villagers are generally allowed to reside, farm, and use forest resources such as NTFPs (resin oil tree, honey tree, etc.) in the NPA in accordance with their customary rights and the relevant regulations. As part of the land use planning, a parcel of agricultural land is reserved for population growth, so re-allocating the land would be conducted every 10 years. Agricultural lands (e.g., paddy land) and forest use rights can be inherited by the children. However, legally, villagers are not allowed to sell the land or give land concessions to others as land title cannot be issued and no land reservation is allowed.

The land use plans of some villages are outdated; thus, they need to be reviewed and planned for reallocation, if necessary. Moreover, there is a need to demarcate and enforce the zoning and to put respective village regulations in place.

6.4.2 Border area regulations

The Prime Minister's Decree No. 111 of 2011 on National Defence Strategic Zones set out military strategic zones along international borders under the responsibility of military authority with limited public access. The Decree states the rights and responsibilities of the Ministry of National Defence and the capital, provincial, and district military to coordinate and organise tasks related to the management, inspection, protection, conservation, and development of the national defence strategic zone within their administrative areas. This also indicates the area where the border military may be involved in patrolling. The military zone along the international border of Lao PDR and Thailand is classified as a borderline zone. Thus far, the frontier military has been involved in protecting Phou Xiengthong NPA; the upper mountain and the west boundary fall under

the responsibility of the frontier military, albeit the NPA management team occasionally cooperates with the military.

6.5 Other Proposed Land Use Developments

Any development project within the NPA should avoid negative impacts, damage, and loss of natural resources. Thus, mitigation measures should be in place to minimise environmental impacts. So far, no such projects that would give negative environment impacts are being implemented in NPA. Only the proposed construction road along the Mekong River has been reported, albeit its implementation would not be done in the near future since a concrete plan is being discussed. A dam site for the Mekong hydropower project has also been proposed below Ban Tha Khansoumsoua; although a feasibility study has been conducted, there has not been any progress thus far. Likewise, EIA studies for the project have yet to be conducted and prepared.

7 LOCAL LIVELIHOODS AND CURRENT USE OF NATURAL RESOURCES

7.1 Village Livelihoods

Most local people rely on agriculture (planting rice and cash crops, cattle raising), trading, collecting NTFPs, and fishing, especially those communities residing by the Mekong River. The average household income is about LAK 700,000–1,000,000 per month. This is considered above the poverty line for rural households according to the GoL standard, which is valued at LAK 180,000. Some villages such as Ban Singsamphanh also have higher household income per month (i.e., LAK 1,400,000).

The research team that conducted consultations for this management planning did not perform a socio-economic survey. However, according to the information gathered from relevant districts, some villages of the Phou Xiengthong NPA, including Ban Soula, Ban Na Khok, Ban Na Sadong, Ban Khan Thoungxay and Ban Phou Kasi, are considered fairly poor compared to other villages. Some villages engage in handicrafts and earn good income — in Ban Beng (at least 40 families), household can earn an annual income of USD 589 per family from rattan production ([Phommasane, 2020](#)).

Based on the village status and their livelihoods, the villages located in the east boundary of the NPA have better access to markets and to other public facilities; thus, they have better livelihood opportunities than those communities who have settled along the Mekong River. Furthermore, Ban Singsamphan, Ban Kham Tue, and Ban Tha Khansoumsoua are considered better off than the other villages that have settled along the Mekong River.

Aside from paddy field cultivation, the agricultural activities practiced are livestock raising, planting cashew nut and cassava, and selling labour. The main sources of income are cash crop production, cattle raising, collecting NTFPs from the NPA, trading, handicraft making, and fishing. The cash crops are mainly cashew nuts and cassava, which the villagers in the northern and central sections have increasingly engaged in planting. It is likely that the average household income per month in the villages is higher as most of the local villagers will earn more income from cash crop plantation, cattle raising, and trading.

The local villagers raise both cows and buffalos, but prefer cows because they are easier to raise. Also, cows are preferred because of the limited cattle ranging in the area. Some villages raise a great number of cattle, for example, Ban Kham Tue (1,037 heads, of which 870 cows and 157 buffalos); Ban Tha Khansoumsoua (589 heads, of which 396 cows and 193 buffalos); Ban Singsamphan (528 heads, of which 467 cows and 61 buffalos); Ban Khan Thoungxay (300, of which 250 cows and 50 buffalos); Ban Phou Kasi (374, of which 352 cows and 22 buffalos); and Ban Soula (800 heads). Some villages with higher number of households in Kongxedone district (i.e., Ban Na Kok and Ban Na Sadong) has lower household income than the other villages in the NPA. Aside from income agricultural activities, income from collecting NTFPs, hunting, and fishing in the NPA all contribute in part to the villagers' household income. However, income demand is just enough to support the basic needs; additional income is needed to support their children's education beyond high school.

The villagers possess different assets and size of assets, which can be classified into wealthy, middle, and poor family status. The wealthy families have a good house (mostly concrete

construction house) with a large size of farmland, herd of cattle, and cars. They are mostly involved in some trading and have higher income. The middle-income families have a fairly good house (wooden house), with some plots of farmland and cattle, hand-tractors, motor bikes, fair amount of income, and some rice shortage. The poor families have limited assets, with a small house, a small size of farmland, no cattle, have low income from selling labour and from collecting NTFPs, and often experience rice shortage.

7.2 Agricultural Practices

7.2.1 *Rice cultivation and other crops*

Most local villagers do paddy field cultivation. They also cultivate some sizable gardens for cash crop plantations, and some other varieties of vegetables for household consumption. The cash crops grown are cashew nuts, cassava, chili, cucumber, eggplants etc. Terrace rice cultivation is not practiced in the area. Local people nowadays use improved rice varieties for paddy fields, and their average rice harvest is 3.5–4.5 tons per hectare, which is relatively higher than that in the past. Some families in Ban Singsamphanh has paddy rice production as high as 5 tons per hectare. However, extreme weather conditions — both drought and intense rains — may happen more frequently due to climate change, thereby impacting rice yields.

7.2.2 *Agricultural land holding*

Land title certificates are not ubiquitous in Lao PDR, especially in remote areas and in PAs. Land use planning was conducted a long time ago in only some villages of Phou Xiengthong NPA, while land use planning have never been done at all for some villages.

The villages have agricultural land inside the NPA. There are various types of agricultural practices, including cash crop plantation and tree plantation, which account for 5,111 hectares in total. Of which, there are some sizable of paddy rice cultivation in and adjacent to the NPA such as Ban Kham Tue (138 hectares), Ban Tha Khamsoumsoau (316 hectares), Ban Singsamphan (41 hectares), Ban Soula (59 hectares), Ban Khan Thoungxay (92 hectares), Ban Kaeng Nyapheut (110 hectares), and Ban Phou Sikeo (126 hectares).

Although no land title is issued for the local villagers who possess land in the PAs, they have the right to use if they possess a land user's permit. Paying land tax is also required according to the amount of land they have declared. As such, there is an obvious incentive under-report land holdings. It can then be assumed that similar under-reporting of land holdings also occurs in the other villages in and around Phou Xiengthong NPA. In recent years, some villagers from outside the NPA have started to claim forestlands and deforested some areas for cash crop cultivation. These areas are in the northern section of the NPA belonging to Lakhonepheng district and some villages of Kongxedone district.

7.2.3 *Livestock*

Most villagers of Phou Xiengthong NPA raise cattle (cows and some buffalos), goats, pigs, etc. Livestock, especially cattle, is an important asset of the local villagers. They raise cattle (both buffalos and cows) and sell them whenever they need. However, the local villagers prefer raise

cows rather than buffalos because cows are easier to raise, do not need a large ranging area for better production. Meanwhile, buffalos need to roam freely around a large expanse of forest.

All the villages of these districts possess a number of cattle: Ban Kham Tue (1,037 heads, of which 870 cows and 157 buffalos); Ban Tha Khansoumsoua (589 heads, of which 396 cows and 193 buffalos); Ban Singsamphan (528 heads, of which 467 cows and 61 buffalos); Ban Khan Thoungxsay (300, of which 250 cows and 50 buffalos); Ban Phou Kasi (374, of which 352 cows and 22 buffalos); and Ban Soula (800 heads). The villagers can sell their cattle to cover for health treatment and schooling of their children. In fact, raising livestock is the traditional form of 'insurance' against risks when a family needs urgent cash. Any family who possesses some number of cattle means they have bank savings. However, only better-off families can afford to buy livestock. Also, medium- and small-sized livestock (e.g., pigs, poultry, and ducks) are raised for sale and for food. Raising poultry is really good business due to its high market demand (i.e., chicken roasting) in Khongxedone district.

As long as livestock for health care is secured, raising livestock is important for the local people. The common animal diseases in the area are anthracis (black blood) and bloat (belly swollen with gas); occasionally, there are incidents of haemorrhagic septicaemia, foot and mouth disease, blackleg, and anthrax etc. Vaccine for haemorrhagic septicaemia is mostly available and produced in Laos. DAFOs of the participating districts have a network of veterinary clinics in villages; they provide quite good service of vaccination for local villagers. However, many farmers are not interested in livestock vaccination due to ineffective vaccination.

7.3 Utilisation of Forest Resources

7.3.1 Selective logging

Selective logging has been a problem over the past decades not only in Phou Xiengthong NPA but also throughout the country. In Phou Xiengthong NPA, valuable hardwood species such as mai kha ngoung (*Dalbergia concinchnensis*), padong (*Dalbergia bariensis pierre*), mai dou (*Dipterocarpus macrocarpus*), and mai taekha (*Afzelia xylocarpa*) were intensively logged in the past. Illegal logging has been occurring in Phou Xiengthong NPA for the past 15 years. The population of this tree species have reportedly declined by 90 per cent in the last 10 years. As such, only young trees and seedlings of the tree species are available today. The other important tree species that were partly logged in the past are mai daeng (*Xylia xylocarpa*), mai khaen heua (*Hopea odorata*), and mai taehor (*Afzelia*).

Initially, the scale of logging was small scale; however, it increased over time and peaked in 2013–2015 until the logging ban in 2016. Commercial logging activity has been stopped after the Prime Minister's Order No. 15 (13/5/2016) —all logging activities in all forest categories is now completely banned all over the country. Local villagers and some officials were involved in illegal logging which was difficult to suppress in the past. Yet, some small-scale logging activity especially by outside villagers continues partly in some areas.

7.3.2 Hunting

Hunting of wild animals was reported but not really a serious problem in the Phou Xiengthong NPA as only some hunting birds by outsiders including some official which is ongoing until today.

It has been reported the urban people as well as some official and soldiers were involved in hunting. Some outsiders or soldiers from outside initially join with local villagers to do hunting and once they know the area, they then go hunting themselves without local guides. Our witness we found hunter team at Phou Saniad during the field visit and also another survey team found the same. The hunter team at Phou Saniad consists of 1 teacher and 3 solders who were there for bird decoying.

Local villagers use both military and homemade guns, and also village military guns for hunting for both household consumption and sale. Hunting with snares and guns with dog pursuance was fairly reported during the village cluster consultation meetings. Hunting of birds is mainly done using guns with air rifles (Peun lom) and rifles with telescopic sights (Peun vaeng). These guns are expensive and most only some non-poor persons can afford them. Hunting is difficult to control because some officials and soldiers are involved and are setting bad examples for local villagers. This issue was well reported at the village cluster meeting at Phou Kasi, Lakhonepheng district.

The main villages of the NPA are involved in wildlife hunting than other villages in the Phou Xiengthong NPA are Ban Soula, Ban Singsamphan, Ban Sorn Phak, Ban Nong Khaen, Ban Sithouan of Sanasomboun district; Ban Na Mouang, Ban Na Khok, Ban Saymon of Khongxedone district; Ban Kham Tue, Ban Saykham, Ban Na Nong, Ban Na Mone, Ban Kong Khao, Ban Kham E (Kham Savad) and Ban Khan Thoungxay of Lakhonepheng district

Due to some hunting and high disturbance from past illegal logging made a number of important wildlife species seriously declined to very few individuals and at least 1 or 2 species gone. The most important species that local villagers believed are significant to them are Asian Elephant, Gaur, Banteng, Gibbon, Tiger, Sambar, Bears, Serow, Douc Langur, Silvered Langur, Pangolins, Green Peafowl. The thorough consultations made in the 6 village clusters of the NPA revealed that a vast of these species declined significantly from the past – with e.g. elephants is not longer and Gibbon and Tiger are highly likely extirpated in the NPA (see Table 2). These, the large animals that hold some reasonable population are Banteng, Sambar, Serow and Bears. While, Green Peafowl was reported on their good population in Phou Xiengthong NPA). Since hunting is a major issue causing biodiversity loss, so it needs to be addressed strategically by working from village to village, identifying and listing of poachers in each village of each district, including officials/soldiers.

7.3.3 Fishing

Fishing is commonly practiced by local communities in the Phou Xiengthong NPA especially whose settlement along or close to the Mekong River, many villages of the Sanasomboun district, some villages of the Khongxedone and Lakhonepheng districts. Fishing is available throughout in wet season but mainly in the Mekong River in dry season. Some communities are away from Mekong River go fishing in the Mekong River. There a number of rivers and streams where some fish are available to harvest, but with lower abundance today due to overfishing. Houy Luang of Sanasomboun district that flows to the Mekong River would be the main river, and then Houy Deua. Often, illegal fishing practices and gears were reported, mainly electro- fishing. So far, there is no barrier to fish migration from the Mekong River to these rivers and streams in the NPA. This is important because many Mekong fish species seasonally migrate into tributaries/streams to spawn.

The section of the Mekong River is part of Phou Xiengthong NPA according to the map of its establishment. Fishes are quite different between the fish dweller in river/streams and Mekong

River, they are many fish species in the Mekong River, including some river fish dwellers. The important fish species that the local villagers do harvest for sale and consumption especially from Mekong River are Pa Kot, Pa Pak, Pa Sawai, Pa Phor, Pa Nang, Pa Chok, Pa Phia, Pa Pian, Pa Sakang, Pa Khoun etc (see Table 4). The fish species from Mekong River's tributaries (rivers/streams) in the NPA are Pa Khor, Pa Douk, Pa Chat, Pa Nai, Pado, Pa Lat, Pa Kang. In addition, some fish species that are globally threatened with declined population and become rare in the area are Pa Khae, Pa Eun Tadeng, Pa Kheung etc.

Table 4. Important fish species from Mekong River and its tributaries for sale and use

No	Important Fish Species	Mekong/ Tributary	Food	Sale	Decline & Rare	GT Speices
1	Pa Seu (Datniodes sp.)	M			X	X
2	Pa Park (Barbonymus gonionotus)	M	X	X		
3	Pa Ethai (Steochilus basseltii)	M	X			
4	Pa Nang deng (Hemisilurus sp.)	M		X	X	
5	Pa Chok (Cosmochilus harmadi)	M		X	X	
6	Pa Khoun (Wallage leeril)	M			X	X
7	Pa Phia (Labio chrysophekadion)	M		X		
8	Pa Men (Osphronemus exodon)	M		X		
9	Pa Yon (Pangasianodon)	M		X	X	
10	Pa Peung (Pangasius djambal)	M		X	X	
11	Pa seouy (Pangasius micronemus)	M		X	X	
12	Pa Kouang (Boesemania)	M	X	X		
13	Pa Ein (Monopterus albus)	T	X			
14	Pa Nin (Oreochromis niloticus)	T	X			
15	Pa Euntadeng (Probarbus jullieni)	M		X		X
16	Pa Khae (Baganrius Yerelli)	M		X	X	X
17	Pa Kheung (Emibgrus wuckioides)	M		X		X
18	Pa Lienfai (Barbonymus altus)	M	X	X		
19	Pa Hak khouy (Acanthopsoides)	M	X	X		
20	Pa Phor (Pangasius bocourti)	M		X		
21	Pa Sakang (Puntioplites falcifer)	M	X	X		
22	Pa Makmang (Hemicorhynchus)	M	X	X		
23	Pa Sood (Hampala)	M/T		X		
24	Pa Tong (Chitala ornate)	M	X	X		
25	Pa Kot dam (Hemibagrus wyckii)	M/T	X	X		
26	Pa Yang (Pangasius conchophilus)	M/T		X		
27	Pa Do (Channa micropeltes)	T	X			
28	Pa Khor (Channa striata)	T	X			
29	Pa Douk (Clarias sp.)	T	X			
30	Pa Chad (Poroputius deauratus)	T	X			
31	Pa Lat (Mastacembelus ormatius)	T	X			
32	Pa Khang (Channa gachua)	T	X			

33	Pa Nai (<i>Cyprinus carpio</i>)	T	X			
34	Pa Khot (<i>Hemibagrus</i> sp.)	M/T	X	X		
35	Pa Kaeng (<i>Cirrhinus molitorella</i>)	M/T	X	X		

Remarks: Only important fish for economic purpose and partly for conservation were listed. GT = Globally threatened species according to IUCN Redlist.

7.3.4 Utilisation of non-timber forest products

NTFPs collected from the Phou Xiengthong NPA are an important source of food and income of local villagers. There are some number of NTFPs available such as Mak Chong (malva nut), Wai (rattan), Khi sii (dammar resin), Mak Naeng (cardamom), Nam Mang Yang (resin oil), orchids, Het (mushroom), Nor mai (bamboo shoot), Khai mod deng (red ant egg) and wild vegetables. The importance of NTFPs varies depending on the location of the village and the local availability. Although there are some differences in using of forest products by different communities and village clusters, the percentage of the households involved in NTFPs collection is considered high. Harvesting NTFPs is not well managed or zoned, and normally is done in an unsustainable harvest manner. Many NTFPs have declined dramatically which were well reported and concerned in many villages, including rattan uses in Ban Tha Khansoumsoua and Ban Beng, made local villagers accessible to collect them further depth in the NPA. Also, it was observed during the survey at Phou Sabao as 15 Mak Chong (mulva nut trees) were felled for harvesting the fruits but it was 2 years ago. The recent village interviews at 6 village clusters revealed that NTFPs that local villagers used have declined between 30–70 per cent. Only bamboo and rattan of some village clusters remain fairly good (see Table 5).

Table 5. List of NTFPs and its current status in Phou Xiengthong NPA

No	Important NTFP species	Key Zone	Use	Trade	% Decline & Rare
1	Mak Chong (malva nut)	Phou Sabao, only Sanasomboun			60%
2	Wai (rattan cane)		X	X	30%
3	Nyot Wai (rattan shoot)		X		30%
4	Khi sii (dammar resin)			X	
5	Mak Naeng (cardamom)			X	?
6	Nam Mang Yang (resin oil)	General		X	30%
7	Orchids	General			?
8	Het (mushroom)	General, dry forest		X	?
9	Nor mai (bamboo shoot)	General	X	X	10%
10	Mak Deuay khai	mainly in Sanasomboun		X	Stable
11	Khai mod deng (red ant egg)	General	X	X	Stable
12	Wild vegetables	General	X	X	stable

Remarks: many species of mushrooms, orchids and wild vegetables were collected for use and sale.

There are no management plans existing which would describe how much of the resources can be used annually. A short study on NTFPs through participatory rural appraisal in two sample villages revealed that the villagers of Ban Beng and dramatically which were well reported and concerned in many villages, including rattan uses in Ban Tha Khansoumsoua, Lakhonepheng district, earned annual income of US\$589 per family from rattan production, it is a locally handicraft design – carrying baskets. The rattan canes were collected from Phou Xiengthong NPA and become scarce in recent years (Phommasane, 2020).

Forest products with high market value are well sought after by the local population and outsiders leading to overexploitation. Due to overharvest many NTFP species have declined in quantity. The species that local villagers believed are most significant to them are Mak Chong (malva nut), Wai (rattan), Khi Sii (dammar resin), Nam Man Nyang (resin Oil) and Mak Naeng (cardamom). Meanwhile, Ban Tha Khansoumsoua identified Teuang (pandanu) as most important priority of the NTFPs for them as they used this product for mat production (Phommasane, 2020).

Villagers suggested that sustainable harvest could be improved by protecting from cutting tree for harvesting the fruits and maturity canes (rattan), protecting young trees from forest fire and prohibiting the collection of shoots. Most importantly for Malva nut harvest in Sanasomboun district must be harvested in a sustainable manner, as well as zoning with stronger law enforcement.

7.3.5 Uncontrolled grazing

Most cattle raising is free-roaming grazing in the forest, especially the communities living along the Mekong River have a high number of cattle. Besides, some people reserve forest land in the buffer zone of the NPA for cattle raising. The cattle owners do for cattle farming to follow their cattle from time to time. Both cows and buffalos are raised and the buffalos use a larger area and go deeper in the forest. Therefore, local villagers prefer to raise cattle than buffalos such as Ban Singsamphan has 470 cows and 70 buffalos, Ban Soula has 950 cows and 150 buffalos.

7.4 PA related Employment Benefits

Employment benefits from the Phou Xiengthong NPA include hiring local villagers especially for ecotourism service and patrols, but no anyone is employed for this work and certainly none of benefits gain for the NPA. Although some initiative of tourism business at Ban Singsamphan is a community-based service with some support from provincial and district tourism offices. The tourism business generates some good income for local communities especially from service and selling products to visitors. The Phou Xiengthong NPA Management Office employs staff, some of them are coming from the participating districts. Still, overall there are limited opportunities for local villagers to gain direct and indirect benefit from the tourism operation in the NPA.

7.5 Tourism Benefits

Although small initiative of tourism activities in Phou Xiengthong NPA at Ban Singsamphan, Sanasomboun district on historical and cultural site known Phou Khong “fish container mountain” no any benefits of this activity to Phou Xiengthong NPA. It is because of no any mechanism for fees collection for the NPA. It is a community-based service and a majority of the visitors is Thai who just visit the village for a day trip through local checkpoint to enjoy Lao food and just climb Phou Khong (ພູຂີ້ໂອ່ງ). Also, some Lao visitors and foreigner from Pakse to visit this village

frequently. It is estimated that the village receives ca. 500–700 visitors per month with a peak in dry season especially during Lao New Year. Therefore, local villagers usually earn some income from boat service, selling Lao food and handicraft, local clothes and guide them to Phou Khong. It is estimated ca. US\$1,900 per month. Due to the tourism business has made Ban Singsamphanh become well developed and become a small town.

7.6 Ecosystem Service

Phou Xiangthong NPA provides four types of ecosystem service, namely provisioning services, regulating services, cultural services and supporting services. But, no research has been undertaken so far on the values of the NPA. Principally, the provisioning services are the products provided by ecosystems such as food, herbal medicines, construction materials, NTFPs, and freshwater. There are still other indirect provisioning services from the NPA for cattle grazing, maintaining water bodies for aquatic animals such as fishes, crabs and water snail, etc. Regulating services are about maintaining ecosystem function including water quality, air quality, erosion control, habitats, pollination, carbon sequestration, climate regulation, water purification, water flows, flood protection, invasive species resistance, pest and disease control. Cultural services are about recreation, tourism to wildlife and nature areas, natural scenic beauty, spirits, religious, knowledge system, research and education. These values do exist in the PXT NPA but they are not yet developed and used economically. For example, the Blue Crab “Pusi” is suspected to be a new species of the NPA and as well as “*Kop kae hin* Rock Gekko”. They are under the process of sending the samples for identification. If it is a new species this crab would be endemic to PXT NPA and probably nowhere else on earth. This will make the value for the NPA as tourist attraction and research potentials.

Supporting services are basic ecological processes that maintain ecosystems without necessarily benefiting people such as nutrient cycling, primary production, and carbon sequestration. A practical mechanism for sustainable financing based on payment for ecosystem services needs to be developed.

8 THREATS AND CONSTRAINTS TO CONSERVATION

8.1 Introduction

Understanding threats and constraints is important for management planning. The more we have understood the root causes of the threats, the better we can address them. So far, threats have not adequately been addressed because there has been no proper and effective management of different zones, while insufficient budget and staffing is a major bottleneck for the NPA management to address the threats. Since the establishment of Phou Xiangthong NPA in 1993 there has no any particular funding support from aid organisation. There were only some small funds from the government for basic management especially for boundary demarcation with some number of concrete posts in place. There are also many other factors beyond the capacity of the NPA management team.

8.2. Direct Threats to the Natural Habitats

8.2.1 *Deforestation and forest degradation*

Deforestation and degradation are not a problem in Phou Xiengthong NPA due to high dominance of Rocky Mountains. Local villagers do not do hill rice cultivation but only small gardens. In recent years where a lower terrain is being converted to cash crop plantation (cashew nut and cassava plantation) by both inside and outside villagers especially the norther section of the NPA that belongs to Lakhonepheng district and some part of Khongxedone district. Cashew nut plantation was started 15 years ago but cassava plantation was just started 3 years ago. Forest fires and illegal logging in the past contribute to forest degradation of the NPA as forest structure is open up a space when the tall trees that are the main part of the forest canopy were logged – selected logging.

8.2.2 *Habitat degradation*

As described in the foregoing sections, many activities took place in the past that caused habitat degradation including (i) illegal logging, (ii) overharvesting of NTFPs, (iii) forest fire, (iv) cash crop plantation and (v) uncontrolled livestock grazing. However, the level of habitat degradation in Phou Xiengthong NPA is not high since forest cover is not large and no hill rice and certainly no shifting cultivation. Human disturbance from entering the NPA for harvesting forest products and hunting would be an issue that made decline in quantity of key wildlife species. In addition, some intense forest fires happened in the mixed deciduous forest would make some sensitive wild animals scare away. Also, some few mineral licks in the area are no longer today and that would impact on wildlife health in long run. Anyway, the natural condition of the NPA overall, still remains quite good as some important species present, including Gaur and Banteng, and the entire proposed core zone of the NPA covering ca. 54 per cent of the NPA, remains in very good condition.

8.3 Threats to Wildlife Species

Hunting of wild animals is a problem in the Phou Xiengthong NPA that has reduced the population of many wildlife species. Some large animals such as Banteng, Gaur and large or medium cats were occasionally hunted, but often for Sambar, primates, other small mammals and forest birds. Entering the NPA to collect forest products significantly disturbs wildlife. Hunting has been reported widely in the NPA and people from both inside and outside villages including urban people and soldiers are involved. Local villagers use both military and homemade guns, and also village military rifles to hunt for both household consumption and sale. Hunting with snares and dog pursuance was also reported during the village consultation especially in Khongxedone and Lakhonepheng districts. A number of hunters were captured by camera traps showed evidence of on-going hunting. The villages who are highly involved in wildlife hunting are Ban Soula, BanSingsamphan, Ban Sorn Phak, Ban Nong Khaen, Ban Sithouan, Ban Khampaeng; Ban Na Mouang, Ban Na Khok, Ban Na Sadong, Ban Bouttaphan, Ban Lak 90, Ban Phou Daocheng and Ban Phonekasi. Hunting of birds is mainly done using air rifles (Peun lom) and rifles with telescopic sights (Peun vaeng). Entering the forest for hunting and collecting forest products and often associated with forest fire can disturb wildlife and scare them away. A major question exists as to why some large animals with large populations have declined so dramatically in number and some loss although they have not been hunted. No case of hunting elephants but they are no longer in the

area, a rumor of 1 case of hunting gaurs but they are declined a lot compared to the past. The root causes of hunting general species are because of market demand, especially from urban people, combined with the convenience of hunting gears available in markets, and access to communication, transportation etc. While at the same time, law enforcement is insufficient and there is low staff motivation to address the issues.

8.4 Threats to Aquatic Resources

Illegal fishing using electro-fishing was reported in the Phou Xiengthong NPA especially in Mekong River and some small rivers in the NPA such as Houy Luang, Houy Deua, Houy Satri, Houy Phalaphang, Houy Sot, Houy Sana and Houy Bon. Over-harvesting of aquatic resources not only fishes but also other aquatic animals made lower fish quantities available to fish today due probably to the previous overharvesting using electro-fishing. Harvesting effort in these places is now lower while to be successful people need to fish much further away from the villages. In addition to promoting more sustainable harvesting of fish and other aquatic resources it is also necessary to confiscate all the illegal fishing gears present in the NPA. Some illegal fishing gears available for sale in local markets should be confiscated as well. In this regard, it is also necessary to identify zones for no entry as part of the TPZ, and also Fish Conservation Zones (FCZ) to be defined for the rivers in the controlled used zone.

8.5 Causal Factors

8.5.1 Ineffective law enforcement

Without sufficient numbers of staff, vehicles and operational budgets as well as consistent support from relevant national, provincial and district authorities, it is challenging for the NPA management authority and villagers to control the hunting and some illegal logging in the PA. Involvement of some officials in illegal logging in the past and hunting today is particularly difficult to address.

8.5.2 Open access and unsustainable resource use patterns

The land in Phou Xiengthong NPA belongs to the GoL and the relevant government authorities lack the resources and sometimes the will to protect the land and the resources against over utilisation. Villagers have only customary user rights of the forests and forest land in their village territories since most villages in the NPA were located there prior to the NPA establishment. The local villagers use the forest land of the NPA for collecting forest products, wild food, fishing, cattle ranging. Regulations for forest resource management are adherent to PAFOs/DAFOs, which are not fully accepted by everyone and generally difficult to enforce. They also lack clear mandates and resources for forest protection as well as adequate incentives. Most of the benefits of forest protection accrue in the long-term and are not tangible, while the costs of improved protection have to be borne now.

As a result, the ownership of the NPA by the local villagers is limited and it is difficult for them to control and exclude outsiders. Due to no proper management by no zoning and effective law enforcement resulting in open access to where everyone who wants to can collect natural resources throughout the NPA, without giving any attention to sustainability. However, where is the

responsibility of military makes some restriction for free access, but some poachers who disobey regulations.

8.5.3 Weak control of settlement expansion and inward migration

The local villagers settled in the area before the establishment of the NPA. The majority of the villages are located adjacent to the NPA while only 6 villages are located inside the NPA. So far, no any new settlements in the NPA. Ban Don Koum would be only the new settlement, it is a sub-unit of Ban Soula, consists of 60 households. This new settlement was mainly a soldier who originally brought their families to live in the area and now expanded and could become a village in the future. The local people have rights to stay within the NPA, only voluntary resettlement may be an option for them to move out, but this would require compensation from the GoL. Some villagers from outside illegal reserve some land and slashed for cash crop plantation. This in turn is linked to more forest land loss in the NPA to agricultural expansion. In this regard, unless population size is controlled and agricultural land is stabilised, more forest land encroachment is foreseeable in the future.

8.5.4 Limitation of government planning perception of the NPA

NPAs are not well recognised by many decision-makers and sectoral planners. Development and infrastructure projects rank higher on the political agenda than the conservation of an NPA. Instead of integrated planning, trying to balance the different interests for the long-term benefit of the Lao people, short-term economic goals often override the GoL's conservation goals but often generate long-term negative impacts. The work of NPAs is narrowly viewed as only being the responsibility of the relevant NPA management authority. In reality, effective management of NPAs requires work that involves the local people and supports their development of sustainable livelihoods. This in turn requires all relevant provincial and district offices to take part and share in ownership.

8.6 General Constraints to Effective Conservation Management of the NPA

8.6.1 Limitation in the implementation of policy and legal framework

Although Lao PDR has good policy on biodiversity conservation and promoting community-based forest management, the implementation of the policy has not been effective. There are many factors to ineffectiveness of law enforcement as mostly from budget limitation, low number of staff capacity and ownership, unclear direction as no management plan was in place before. While, local villagers rely on forest resources with some limitations of livelihood alternatives. General regulations of PAFOs/DAFOs seem low ownership of the district authorities so law enforcement is considered low. Therefore, building ownership of the participating districts to develop their regulations and taking an enforcement is essential.

8.6.2 Limitation of definition of authority within the NPA

The NPA unit is at a low level of the government structure with limited budget and staff which has made it difficult to operate effectively. At present, the Phou Xiengthong NPA administration consists of 18 staff (including 2 volunteers, of which 10 staff and 1 volunteer in Salavan province

and 6 staff and 1 volunteer in Champasak province. The capacity of these staffing is limited as they have not received any important training of PA management. Absolutely, just these small staff numbers are likely inadequate for effectively managing the NPA of 120,000 hectares. Therefore, apart from strengthening the staff capacity and district level to help ownership for the NPA management, it is necessary to improve the institutional arrangement of Phou Xiengthong NPA by sharing of these two provinces.

8.6.3 Limited institutional capacities and resources of local partners

Acknowledging that the country has limited budget and staffing for NPA management, relevant district offices and local communities need to be involved in the collaborative management of the NPA. The successful implementation of the collaborative management approach requires strengthened capacities among all the collaborative management partners, apart from the NPA management authority it needs to include relevant government agencies especially district and some provincial offices, as well as the key villages.

8.6.4 Socio-cultural factors

Socially, variation in the capacities of the different ethnic groups do exist as some of the ethnic groups have reliance on forest resources to sustain their livelihoods, while others have been able to adapt better to agricultural systems, including paddy farming and cash crop plantations. Some are more open to adopting new agricultural technologies and improved rice varieties, etc. Occupying a large area for cash crop plantation is mainly satisfactory and better off families who can afford and able to adapt.

To address these differences, some assistance for poor families is needed. For good and mutual collaboration, it is thus recommended to recruit extension staff to work on conservation outreach and livelihoods programmes. At the same time, district and NPA staff will require some general and specific technical training on how to succeed in working with them.

Part 3

Management Prescriptions

9 CONSERVATION STRATEGY AND APPROACHES

9.1 Conservation Management Strategy

9.1.1 *Conceptual basis of collaborative management*

The Phou Xiengthong NPA is one of several NPAs of Lao PDR that has developed a collaborative management plan and will use collaborative management practice for PA management. The declared NPA which did not resettle people from the area, allows local communities to legally live inside and adjacent to the NPA, and they also rely on natural resources in the NPA for their livelihoods. To achieve the NPA management requires working with local communities and other stakeholders. Therefore, the collaborative management approach is applied as “joint management of natural resources with villages inside and adjacent to the PA and other stakeholders through mutually-agreed mechanisms that the stakeholders have developed together in order to achieve common and mutually agreed goals.” The key stakeholders must be involved in decision-making processes right from the beginning.

Collaborative management is a shared responsibility among various levels and sectors of the governance structure to support the community-based natural resource management by creating direct positive links between biodiversity conservation and development issues. As such, it is a partnership arrangement primarily between the government authorities and the local communities to share roles and responsibilities as well as benefits for protecting and managing natural resources and enhance the livelihoods of the rural communities. Effective conservation outreach is a critical step to build ownership of local villagers and relevant government offices at the district level.

9.1.2 *Approach*

The collaborative management of Phou Xiengthong NPA is a partnership where the management authority must share roles and responsibilities, not only with local communities but also relevant provincial and district offices, and could be any NGOs and private companies who would be interested to work in the NPA. The arrangements should be beneficial to all partners including benefit sharing to sustain the mechanisms.

The collaborative management approach at Phou Xiengthong NPA for first five-year plan will work closely with 61 villages, of which 25 priority villages are the most relevant for the management of the Phou Xiengthong NPA as they are located adjacent to the NPA, entrance area, and they are considered poor villages (see Table 2). The possible livelihood activities for the target villages to be promoted must not generate negative environmental impacts. There should be clear and measurable links between livelihood improvement and conservation outcomes. The technical team from Phou Xiengthong NPA management team and DAFO who are responsible for livelihood development must understand the conservation needs. Besides, they must be able to support environmental education.

Each district will have a District Coordination Office for Phou Xiengthong NPA which will function in liaison with relevant district offices on implementing outreach, law enforcement and livelihood development in the district, and will also provide back-up for the sub-station located in the district. District Implementing Teams (DIT) will include the outreach, law enforcement and livelihood development teams. Therefore, the District Coordination Office (DCO) will have staff assigned from each participating district to work for the Phou Xiengthong NPA at their districts, and they will take ownership to conduct the work according to the agreed plan.

To make the collaborative management approach and practice work effectively at Phou Xiengthong NPA, it is important to follow good governance principles such as:

- Respect for local rights and the rule of the law
- Promotion of constructive dialogue
- Fair access to information
- Accountability in decision making
- Existence of institutions and procedures for dispute resolution
- Fair and equitable sharing of benefits

9.1.3 Adaptive management of PA

The collaborative management of the PA starts from understanding the site status and defining priority issues/root causes for sustainable and systematic solutions under the principles of collaborative management. Results of the ongoing implementation of the management plan would show some good points, weak points and constraints which the implementing teams at each level - especially the district level who work on the ground, can share as lessons learnt. Those lessons learnt can be summarised and analysed together through an annual meeting for adaptive management in as part of the annual planning cycle. It is the approach of Open Standards used in order to adapt the plan appropriately and implement PA management appropriately and more effectively.

9.2 Management Policies for Phou Xiengthong NPA Management

9.2.1 Priority Villages

Acknowledging that the country has limited budget and staffing for NPA management, relevant district offices and local communities need to be involved in the collaborative management of the NPA. The successful implementation of the collaborative management approach requires strengthened capacities among all the collaborative management partners, apart from the NPA management authority it needs to include relevant government agencies especially district and some provincial offices, as well as the key villages.

Phou Xiengthong NPA has a total of 61 villages situated inside, on the boundary, and nearby the NPA. Overall, the collaborative management approach at Phou Xiengthong NPA will be working closely with 25 key villages at least, but the most important villages are those located inside the NPA, straddling the boundary, or immediately adjacent to the NPA, or are at the periphery while having direct access roads to the NPA; and are poor villages. These villages are the most importance

for establishing collaborative management during the first five-year plan and which are to be provided with necessary management interventions (see Table 2). Of these, there are 8 villages of Sanasomboun district (Ban Soula, Ban Singsamphanh, Ban Kham Luang, Ban Sorn Phak, Ban Sithouan, Ban Nong Mek, Ban Kham Paeng and Ban Nongkhaen); 8 villages of Khongxedone district (Ban Khan Thoungxay, Ban Na Sadong, Ban Nakhok, Ban Sai Kham, Ban Kham Tue and Ban Mouang Soum); and 8 villages of Lakhonepheng (Ban Khaeng Nyapheut, Ban Daocheng Noi, Ban Na Phabang Noy, Ban Vang Taleo, Tha Khan Soumsoua, Ban Phou Kasi and Ban Sikeo).

9.2.2 Land use planning

Land use planning (LUP) for zoning of the PA, is very important as a basic element of PA management planning. The first LUP of some NPA villages was conducted in 1996 which was very outdated and many of them have not had land use planning at all particularly in Khongxedone and Lakhonepheng districts.

This work is important and all the villages must be totally reviewed and newly allocated exceptionally the enclave and straddling villages of the NPA. As part of LUP, regulations on land use and conservation agreements need to be put in place to enforce it. The technique of Forest and Agriculture Land Use Planning, Allocation and Management (FALUPAM) will be applied. The enclave villages will have their land allocated within the CUZ for agricultural and other purposes based on the land use planning programme.

Although the strategy of land use planning will restrict local villagers from claiming more agricultural land by converting forest land, it is hard to solve the issues completely unless population growth stabilises. Once, this happens, then effective land use planning shall ensure that their land is used efficiently and productively. It requires regular monitoring of the land use by relevant district offices e.g DAFO. Therefore, reducing the rate of population growth in the NPA by any means can help address long-term land use conflicts and shortages.

Management Authority and villages will be signed by the district governor, witnessed by Phou Xiengthong NPA MA and other relevant district offices. The CAs should be made at least for each priority village. It is as part of their commitments and responsibilities toward PA management within their areas of responsibilities. All key partners and involved parties should acquire knowledge through trainings, workshops, study tours, information sharing, and some incentive support for fieldwork. Particularly, local villagers shall be supported in their livelihood development. The necessary funds may be mobilised from donor projects and sourcing from the NPA. Mechanisms for the benefit sharing for collaborative management of the Phou Xiengthong NPA should be developed based on available experience and to compensate villagers for the opportunity costs they incur. Ideally, to encourage compliance, benefits should be a mixture of individual and communal benefits, and need to be established as part of the conservation agreement process.

9.2.3 Illegal logging

To address and prevent illegal logging activity in the NPA, although logging has been banned there are still some cases of small-scale logging by some local villagers. The NPA management authority needs to strengthen and empower the village authority with village patrol teams. All illegal chainsaws shall be considered for confiscation in the NPA villages by a task force team. A few

chain saws may be allowed per village for house construction, but they need to be registered and managed by village authorities and only given to trusted villagers to borrow for necessary works. The management team of the Phou Xiengthong NPA must take initiative and be strengthened to work together with relevant district sectors to follow-up on the law enforcement. Each village has to prevent outsiders from illegal entry, and needs to check and report any cases. Anyone who is found in the NPA villages to purchase any forest products without permit must be reported to the village chief and relevant offices (the District Coordination Office for the Phou Xiengthong NPA)/DAFO for investigation. In particular, suspicious foreigners, including Vietnamese or Chinese traders entering the NPA villages for purchasing some forest products must be carefully inspected and not allowed to enter the NPA for any purpose without permit.

9.2.4 *Illegal hunting*

In general, wildlife hunting is not illegal but must follow the given regulations of PA management and wildlife conservation. Hunting for household consumption is fine according to the law as long as it is done using a local method and in a permitted area and involves hunting of common species. Since hunting is a key issue degrading biodiversity, it needs to be addressed strategically by working with local authorities, from village to village and district to district. All key relevant stakeholders need to take part of the responsibility to address illegal wildlife hunting, not only the priority villages but all the NPA villages. Firstly, investigate target poachers⁴ in each village and even officials of each district who are involved in hunting should be made. It needs time for local people to adapt, change and build their understanding and ownership for PA management. The local poachers should be firstly educated and warned to quit with options to change their practices, but for the non-local poachers they should be arrested immediately. The NPA management authority needs to strengthen and empower the village authority with village patrol teams to conduct law enforcement/patrolling and to have rights to arrest poachers in their village territory. All unregistered and homemade guns as well as all illegal hunting and fishing gears in the NPA villages need to be collected and destroyed. Army guns need to be registered, recorded and managed properly. All the villages that have an access road to the Phou Xiengthong NPA need to voluntarily check outsiders entering the NPA. Any hunting gears in the market should be inspected and confiscated in each district.

Dissemination of the law, and conservation education will be conducted in the NPA villages. Then, specific consultations with the target poachers of each village will be conducted to find solutions together. Most importantly, the target poachers have to be made aware that entering the TPZ, hunting in the NPA for sale with guns and even a large snare is illegal and offenders will be severely punished in line with the national wildlife law/decreed/regulations. Everyone must comply, and no exceptions shall be given especially for those outsiders, including officials and soldiers.

9.2.5 *Collection of NTFPs*

Collecting NTFPs is necessary for local communities as they rely on forest products for household consumption and household income as they must follow the law and regulations in order to prevent overharvest. Provincial and district authorities should be aware which species are becoming rare

⁴ The target poacher is the person who has been involved in either hunting or illegal logging more frequently.

and that need to be banned for harvest for some years or so unless they regenerate. The harvest of some NTFP species should be zoned and appropriate harvest techniques need to be designed and promoted particularly for Mak Chong (Malva nut and Rattan). Mak Chong is available only in Sanasomboun district, and the harvest is from cutting down the tree to collect the fruit.

Non-rare species shall be harvested in the CUZ and collected for sale with permits only. Each village shall establish a village user group for NTFP harvest and management. Only the user group shall be allowed to sell to traders and part of the revenues shall be given to the patrol team protecting the NTFP resources. Often, success factors are due to a strong village leadership, local ownership and fair benefit sharing so it is important that village leadership enhanced. In addition, cultivation of some important NTFP species in CUZ, BuZ and villagers' gardens is necessary.

9.2.6 Upland cultivation

Upland (hill rice) cultivation has not been practiced in Phou Xiengthong NPA, only slash and burn activities for cash crop plantation (cashew nut and cassava) especially in northern and central sections of the NPA that belonging to Lakhonepheng and Khongxedone districts. Land use planning is the mechanism to control forest land expansion. It needs to be ensured that agricultural activities are not expanded further into marginal forest land and the use of fires should be strictly controlled.

9.2.7 Cattle grazing

The exact impact of overgrazing is not well studied but the overall impact of grazing may be still limited and may not yet be an issue for Phou Xiengthong NPA. It is more about disturbance to wildlife by the cattle owners in case their cattle enter deep the forest. Cattle compete with wildlife for minerals and generate some conflicts from e.g. cattle being killed by tigers. In principle, there is also the possible risk of transferring diseases from domestic to wild cattle. Domestic Elephants and some cattle (buffalos) are released in the NPA for free ranging. The Domestic Elephants enter deep into the forest – the proposed TPZ. Besides, grazing areas must be identified and cattle owners must manage and control their animals in the NPA. Therefore, rotational grazing with fencing and planting weeds for feeding cattle may be a management option that needs to be explored in the future.

9.2.8 Forest restoration

Forest degradation was not observed in Phou Xiengthong NPA, only some forest area of the northern section of the NPA was recently slashed for cash crop plantation. Some forest area around Ban Phou Kasi is considered degraded but not large. Land use planning can define forest for rehabilitation and wildlife habitat. It has to identify some potential forest to be regenerated. The rehabilitation forest should still have sufficient regeneration potential to recover once effectively protected, ensuring no forest fire. Assisted natural regeneration and steering of natural successions are more appropriate forest management strategies for the NPA than plantations. Therefore, as long as forest fire is prevented it can help regenerate the forest faster and that can contribute to enhanced forest cover in the NPA.

Part of forest habitat/wildlife habitat rehabilitation, mineral licks are urgently needed for wildlife since the area has totally no mineral licks today. Therefore, artificial mineral licks should be created where appropriate such as in Houy Deua, Phou Kham, Phou Din.

9.2.9 Ecotourism development and management

Ecotourism development is one of the important activities for Phou Xiengthong NPA management and is to be developed (including necessary facilities), and promoted through a concession system and community-based approach. The necessary facilities for ecotourism will include a visitors' centre at HQ Office, sub-stations, eco-treks, camping ground, signboards of information/ direction, brochures etc. These facilities will be invested in as necessary with funding available. Meanwhile, large ecotourism development projects need to have a concession to some private companies who are interested to invest and committed toward conservation. Most importantly, it needs to have an appropriate mechanism for benefit sharing and collecting fees for the NPA management. Following the new Decree on PA (2021) as specific requirement needed for financing PAs management and as part of payment ecosystem service will be translated into practice which national regulations will be made available.

9.2.10 Environmental assessment and other mitigation measures

The NPA can be impacted from some development projects such as hydropower dam, road and mining projects but only in a few cases have biodiversity offsets been set for the NPA management although this is theoretically required by relevant laws and decrees. NPA officials have rarely been invited to discuss such development projects from the beginning of project design - the prior project consultations.

The biodiversity offsetting process ideally occurs as part of the Environmental Impact Assessment process so NPA managers/staff have to be involved. A biodiversity offset is a way to demonstrate that an infrastructure project can be implemented in a manner that results in no net loss or a net gain of biodiversity. It can be defined as “measurable conservation outcomes of actions designed to compensate for significant residual adverse biodiversity impacts arising from project development after appropriate prevention and mitigation measures have been taken”. Therefore, if any infrastructure development project is relevant to an NPA, the officials should be involved from the beginning of project design - the prior project consultations.

9.3 Management Interventions

9.3.1 Participatory land use planning

Participatory land use planning (PLUP) is an important element of land management and zoning for PA management. The pFALUPAM “participatory Forest and Agricultural Land Use Planning Allocation and Management” is recommended to apply for complete land use planning in the NPA. Both macro-zoning e.g. identifying areas of critical habitat that will be proposed as TPZ and micro-zoning at village/family plot level are required. The full participation of the villagers in the land use planning process is pivotal to have a clear and mutually- agreed understanding of land use in

the village. As many villages of the NPA do not have participatory land use plans, while others require updating.

Land Use Planning (LUP) also plays an important role in solving land use conflicts. LUP should be comprehensively conducted in all 25 target villages for the first 5 years of this plan. It needs to be ensured that the village activities are not expanded further into marginal forest land and the use of fires should be strictly prohibited. However, if some villages have just recently completed the land use planning it would just require a review.

Most importantly, it has to be ensured by the NPA MA and the local authorities that the prescriptions of the PLUPs are demarcated on-the-ground and that every villager is aware of the land use boundaries. The content of the PLUPs should be fed into village regulations and conservation agreements for the given livelihood development activities. Lastly, monitoring of land use and village regulations is necessary and shall be conducted regularly at least twice a year.

The approach/methodology used in impementation of the Phou Xiengthong Management Plan will be FALUPAM which is similar to the practice has been done in Nam Poui NPA as follows:

Mission 1. Village Geo-Mapping, village boundary, mapping/agreement, gather other necessary information for use planning.

Mission 2. Current land use and forest assessment and mapping, household level socioeconomic/ land information. Workshop: (i) review current land use/forest cover map, household data, (ii) review Agro-Biodiversity, Socio-Economic data, (ii) agree on strategy for forest and land zoning.

Mission 3. Forest and Agriculture Land Management Zonation and Planning, Drafting/Approval of Village Forest + Land Use Management Plan.

Mission 4. Monitoring of land/forest use, and adjustment of Plan, as necessary and appropriate

In the implementation of the management plan, this process needs to be completed, as the level 1 is forest and land use planning to land use area or zone level only and the level 2 is forest and land use assessment, and then planning, to family level. This level is ultimately much more effective than level 1, and should be required for all villages with agricultural land inside an NPA, but does cost more as it is more detailed which was estimated US\$8,000 per village. All the target villages of the PXT NPA should complete FALUPAM since all the villages had land use planning conducted for years ago.

9.3.2 Biodiversity conservation, research and monitoring

Biodiversity conservation needs to ensure that the diversity of species and habitats of the NPA is being maintained and enhanced. Currently, populations of many wildlife species in the NPA have declined dramatically. In order to recover and/or maintain stable population sizes, hunting has to be phased out in the Phou Xiengthong NPA. Large mammals and large birds need to be totally protected. It is expected to get confirmed at least some few gibbons in the NPA and that be totally banned for hunting.

Biodiversity recovery plans for certain species e.g Banteng and Gaur should be prepared. A TPZ must be designated and enforced effectively as to reduce disturbance. Management interventions,

law enforcement, habitat rehabilitation and transboundary collaboration will all contribute to biodiversity conservation of Phou Xiengthong NPA as a whole.

A biodiversity monitoring system should be in place to track progress with biodiversity conservation. Conducting joint monitoring with local communities to track key species and protecting their habitats is necessary. The biodiversity monitoring will record and report the presence of indicator species and changes over time which could be positive, stable or negative changes. Appropriate indicators should be identified systematically, in relation to the management objectives such as maintaining habitat connectivity, reducing forest fire, reducing hunting pressure, etc. An initial selection of three indicator species for biodiversity monitoring in the Phou Xiengthong NPA is proposed as follows:

- Banteng/Gaur: an umbrella species that can also be used as an indicator of forest fire, and in addition can be used as a flagship species in classroom education in local schools; nature interpretation for park visitors, and outreach with local communities
- Sambar: can be used as an indicator of hunting by guns.
- Green Peafowl: can be used as an indicator of large ground bird, hunting by ground snares.

Monitoring protocols which are effective and practical need to be developed and adopted which can combine both scientific-based and community-based approaches. Using the defined indicator species will inform about changes in biodiversity (positive or negative) based on the regular and repeated surveys, using a consistent monitoring methodology. The monitoring will be conducted mainly by NPA staff with local villagers who are trained on the approach and species identification. Community-based biodiversity monitoring is recommended for PXT NPA since a collaborative management approach is adopted. There will be both formal and informal (local) monitoring approaches. The formal monitoring means that the villagers (village monitoring teams) conduct regular monitoring (monthly or quarterly) with the NPA and district staff team, using a scientific sampling methodology. The informal (local) monitoring is where the villagers just report their encounters with indicator species in their village areas, and keep these records in a village log-book, which will at least inform about trends in presence or absence of the species in different parts of Phou Xiengthong NPA at different times of year, but may not allow for more detailed scientific analyses.

Monitoring for tracking a species diversity and moving patterns of large mammals through village logbooks and camera trapping will be conducted for PXT NPA. As part of collaborative management some rare and large mammals will be defined and to assign for some villages to help record when they encounter them at their village territory areas. Also, camera trapping is most important monitoring tool for tracking terrestrial animals so to design for camera trapping to be taken objectively and strategically. Of course, to record a species diversity will focus on mineral licks, water sources, mountain ridges, and at any wildlife routes.

9.3.3 Outreach and conservation awareness

Outreach and conservation awareness are designed to influence how people gain information and learn skills to become responsible citizens, as well as to explore ways to stimulate changes in specific behaviour. It is not about just dissemination of information about laws and regulations. There will be various techniques of outreach and materials to be designed which are dependent on the specific target groups and communications capacity. The approach needs to first analyse drivers

and root causes of threats to be solved, and then to understand what motivates the specific problematic behaviour of each of the target groups, as well as identifying influencers that can affect the target groups' behaviour. The overall approach is one of Social and Behaviour Change Communications (SBCC). This approach has been used successfully in the health sector for decades, but is only recently being adopted in the environmental sector. Sometimes this will need to go hand-in-hand in parallel with law enforcement to be effective. Responsible staff needs to understand the level of communication acceptance of various target groups, such as the district and provincial urban populations, officials, villagers living in and around PXT NPA, and youth/students. Opinion leaders such as trusted senior officials, NPA staff should be well educated first to function as a good example for public and local villagers, in particular. The involvement of women is key because they can help influence the behaviour of men (husbands) toward sustainable use of forest resources including hunting. To convince people living in and around PXT NPA to change their behaviour requires that we first understand what motivates that behaviour, and then design interventions that help them to discover alternative ways to achieve their objectives that may be even more beneficial for them. For target groups living further away from the NPA, communications efforts should be targeted at increasing their appreciation of the value of the ecosystem services that PXT NPA provides for them.

Different groups of people need to be addressed in different ways. To address school pupils, efforts should be made to integrate conservation related issues into existing school curricula. The purpose is to provide information to students on the importance of conservation for them, and to stimulate them into being lovers of forests and wildlife. An approach needs to be discussed with the Provincial Education and Sports Office, and relevant District Education and Sports Offices to agree on how to include some sort of local curriculum to train interested teachers in NPA villages to obtain some basic conservation knowledge. Last but not least, school teachers of the NPA villages should be provided with teaching materials related to conservation. Some conservation-related contests for the NPA villages' schools (e.g drawing, song and sport contests) should be conducted annually.

Meanwhile, it needs to assess the quality of teachers of the NPA villages as the participating District Education Offices should monitor their teachers in the NPA villages regularly. They should be well orientated and educated as to ensure no any teachers involved in timber and wildlife crimes e.g hunting and illegal fishing.

9.3.4 Law enforcement

Law enforcement should immediately begin after law dissemination and conservation outreach campaigns. As a first step, all illegal gears of hunting, fishing and logging (chainsaws) shall be collected by an *ad hoc* team throughout the participating districts. Village patrol teams shall be formed in each NPA village to conduct regular patrols with district law enforcement teams, including Phou Xiengthong NPA staff. SMART patrolling may be used in order to identify and map hotspots and threats and improve monitoring, reporting as well as follow-up. However, responses to the threats should be undertaken effectively.

Seven patrol zones have been identified according to the defined 4 TPZs (see Figure 6) as the TPZ - Zone A (northern zone) has 3 patrol zones as (i) Houy Bon, (ii) Phou Din, (iii) Phou Daocheng, the TPZ B (central north) – (iv) Phou Kham, the TPZ C – (v) Phou Yai, the TPZ D has 2 patrol zones – (vi) Phou Sabao and (vii) Phou Luang.

Table 6. List of patrol zone with key area of responsibilities and key relevant villages

Key	Patrol Zone	Proposed and relevant Kumban and key villages for responsibility of patrol.
Houy Bone		Houy Bon: the responsibility of Kum Na Dou - mainly Ban Phou Kasi and Ban Tha Khansoumsoua
Phou Din		Phou Din, Phou Xeingthong and Phou Makthan: the responsibility of Kum Na Dou - mainly Ban Phou Sikeo and Ban Sok Phaeng
Phou Daocheng		Phou Daocheng, the responsibility of Kum Lak 90 - mainly Ban Phou Daocheng Noi and Ban Lak 94 and Ban Lak 90.
Phou Kham		Phou Kham and Houy Deuae: the responsibility of Kum Na Pong and Kum Khong - Ban Na Phaeng Yai, Ban Nong Saphang and Ban Keng Nyapheut.
Phou Yai		Phou Yai and Phou Nangnone: the responsibility of Kum Na Nong and Na Mounng - Ban Saykham, Ban Na Sadong, Ban Na Phoxay, Ban Non Hintang and Ban Khan Thounsay.
Phou Sabao		Phou Sabao-Phou Kang Heuan and upper Houy Louang : the responsibility of Kum Nong Dou: mainly Ban Khampaeng, Ban Nongkhaen, Ban Kham Luang and Ban Sithouan and Ban Sor Park.
Phou Luang		Mainly Phou Luang, Phou Alang, Phou Khong, in Kum Boungkha: mainly Ban Soula, Ban Singsomphan, Ban Nong Mek and Ban Boungkha

Capacity of the priority villages for each zone will be built so that they can share responsibilities of the Phou Xiengthong NPA management through controlling access, addressing threats and conducting patrols as part of collaborative management.

The facilities are the main office proposed at Ban Khong Nakhone, 2 strategic Sub-stations at Ban Sorn Phak for Sanasomboun district and at Ban Taleo for Lakhonepheng district. In addition, 5 checkpoints will be established at Ban Latseua (Sanasomboun), Ban Kham E, Ban Xaykham, Ban Bouttaphan and Ban Tha Khamsousoua (see Figure 10). Also, the upper part of mountain range which is defined as the TPZs will be shared responsibility and managed by the military.

As part of promoting a collaborative management approach, there will be only 3 staff be deployed to stay at each Sub-station at time with support from the District Coordination Office (DCO) and the NPA HQ as some villagers will be rotated to support the field team especially for patrolling. Checkpoints will be implemented by trained villagers and with regular support from the relevant DCO and the Phou Xiengthong NPA HQ.

Field patrolling will be organised as Kumban base for the defined zones and the most relevant villages are defined above, however, those villages are the main villages which in practice could include other relevant villages. There will be a regular patrol, special and ad hoc patrols to be arranged. The regular patrol will be organised quarterly and would take for 3–5 days in the forest, mainly by trained Kumban rangers and district staff/NPA staff.

The patrol team by local rangers would be ca. 5–7 people per time which would vary by zone and purpose. Of course, important patrol mission will be coordinated and arranged with district military authority and work with relevant military camps in that particular patrol zone/TPZ of interest. The special patrol would be organised with military team, focusing along the Lao-Thai border and that

could be organised twice a year and take at least for 7 days. The key zones are the west zones of TPZ - Zone A in Lakhonepheng district and Zone B in Khongxedone district. The ad hoc patrol may be organised where necessary.

In addition, sudden, unexpected controls by an independent mobile unit shall be considered. Collected penalties shall be shared with the village patrol teams as well as informants in order to provide incentives. Effective law enforcement needs to encourage the local authority to stop illegal activities, to identify livelihood alternatives for poachers/loggers in their villages, and to prevent outside invaders.

9.3.5 Livelihood development

Although, principally livelihood development is not really the task of PA management it is necessary to include it for the PA system of Lao PDR since people are living inside declared PAs of Laos. Local villagers used to live with and rely on natural resources since ancestor. They do collect more forest products and demand more agricultural land with population growth. A people-centred approach is considered appropriate for PA management in the country. Providing livelihood development for local communities is done with a hope to achieve reduced pressure on natural resources in the NPA. Conservation agreements are to be made with the villages with which livelihood development fund/activities are granted. The conservation agreement is the commitment that the local villagers/village authority agree to, including their responsibilities for patrolling. It is about improving livelihoods of the people which is not only the responsibility of the NPA MA, but also other organisations, relevant district offices and development projects working in the area to help. Therefore, coordination of the most relevant organisations working in the area and government offices is necessary to harmonise livelihood development efforts.

In principle, support livelihood development should provide local villagers with appropriate livelihood alternatives and new income-generating possibilities. The livelihood alternatives should ensure that they can get sufficiency of food (rice and protein) which may involve development of some facilities e.g irrigation, to supply sufficient water for paddy fields and gardens. However, such high budget infrastructure development is beyond the livelihood alternatives that the management interventions of the NPA can provide. These require investment from some development projects and the government for such basic infrastructure development.

Appropriate livelihood activities for PXT NPA can be identified from the FALUPAM process of each village. However, during the rapid consultations, local interests and livelihood potentials, the list below given as suggestion for further investigation:

- Agriculture (various types of agricultural practice, including cashew nuts, tamarin, cat eye, chilli, egg plants and other vegetables;
- 5. Agro-forestry e.g nursery orchids, honey and red ant eggs etc;
- 6. Livestock raising – mainly cattle and other livestock and fish raising;
- 7. Handicraft development (various types of handicrafts made of rattan and bamboo);
- 8. Ecotourism (eco and cultural tourism in 11 potential villages (see table 3);
- 9. Vocational training (various types of skills that local villagers should be promoted, including for construction skilled workers, car mechanists, carpenters, barbers, beauty makers etc).

10. Education, support the NPA villagers to access to education can help them to get better job opportunity outside the NPA and that can reduce the pressure in the NPA
11. Public health, support some family planning can help reduce a rapid growth of human population of the NPA villages and the pressure in the NPA.

Supporting livelihood development of local communities is expected to stimulate the interest, participation and ownership of them over their natural resource management, and involves them in conducting regular patrols to curb threats, and reduce pressure on the PA. Provision of livelihood development support needs to be clearly and specifically linked to the conservation objectives of Phou Xiengthong NPA. Livelihood support should deliver conservation outcomes. These conservation outcomes need to be defined in advance, before the livelihood support is provided. One approach to this is to design livelihood support around the development of “conservation enterprises”

The success of livelihood interventions in achieving conservation objectives can be evaluated by a combination of three sets of indicators: (i) biodiversity indicators (that will reveal the ultimate conservation outcomes); (ii) law enforcement indicators (that will reveal changes in illegal behaviour inside the NPA); and (iii) livelihood/well-being indicators of the local community (that will reveal changes in the villager’s livelihood status but that contribute to make conservation impact). While this will require significant effort, it is important that this is done, because a relatively large proportion of the Phou Xiengthong NPA Management Plan implementation costs will be spent on livelihood support – and the evidence base needs to be assembled to demonstrate that this does indeed lead to conservation benefits.

The FALUPAM process can help to identify different opportunities and options available for each community. A number of possibilities to improve income that are already apparent relate to livestock, annual crops/vegetables, fish ponds, agroforestry, and handicrafts etc. Overall, cash crop plantations and livestock raising (cattle) have been popularly practiced in and adjacent villages of the NPA and interested to raise in the area, but ways must be developed to reduce the impact of these activities (conservation outcome) while at the same increasing benefits to the community (livelihood outcome). For example, cattle grazing at the moment mostly consists of allowing the cattle to roam freely in the forest - this has potentially very negative impacts, on wildlife including:

- competition with wild herbivores for grazing;
12. spread of bovid diseases from the domestic cattle to wildlife;
 13. killing of wild predators by the villagers as retaliation/protecting their livestock from being killed.

The current COVID-19 pandemic also highlights the risk of zoonotic diseases spreading to and from wildlife-livestock-humans in case of letting cattle roaming freely in the NPA. Defining specific areas for cattle grazing, and fencing these areas would therefore provide clear conservation benefits. Planting high quality food grasses, and providing vaccinations and regular veterinary care would improve the productivity of the cattle, providing livelihood benefits. This could be done in a collaborative approach, with e.g. the NPA authorities providing the budget for the fencing materials and the grass seeds, and the villagers contributing their labour.

Promotion of agricultural products, some sort of cash crop plantation which will not impact on the NPA from habitat conversion, technical support to the farmers, and that the government has to ensure the market price security and fair to the local villagers.

So far, the NPA has no financing for setting up a village development fund. Only some villages of the NPA in the past received some financial support by People Development Initiative (PDI) project (1996–1998). It was not of the fund under the NPA project, it was just a pipeline project. The focus of livelihood support shall be given predominantly to poor households depending on natural resources. During the selection process, attention also has to be given to the motivation and capacity of the households. It will be important to provide good examples which can be replicated by others so for a piloting household it is not always necessary to be the poorest household but rather be one who can secure the success and train other people. This is because the poorest households may lack the required capacity and resources to become a model farmer. On the other hand, it is also important to ensure that livelihood assistance is not subject to “elite capture” by the wealthier, better educated and better-connected families in each community.

Strong technical support from relevant district offices is pivotal to achieve any work of PA management. Government volunteers should be deployed to be working with local communities who can facilitate day-to-day livelihood development, information exchange and learning from practice. However, these volunteers must first develop a strong understanding of the conservation values and objectives of the Phou Xiengthong NPA, and how development activities can support this. Village leadership and ownership to help the poor families should be built by the extension staff. Based on past experiences, funds for village development should not be established and directly handed over to village heads. Some conflicts arise for the village development when different donors have different amounts of fund per village. In reality, the strategic village of the NPA with larger and poorer status should have a larger fund. In this regard, so as to avoid some conflict it is better that the funds shall be disbursed by DAFO/Phou Xiengthong NPA MA based on a jointly agreed village-Phou Xiengthong NPA MA action plan. It requires a proper planning, approval and monitoring system for fund delivery and management. Therefore, it is not necessary to set a specific amount of village development fund per village but rather to develop a conservation-focused livelihood development programme with defined budgets for the plan.

Meanwhile, for the long-term strategy it must be found to slow growth of the population in the NPA by any means that will help address pressure on natural resources and the demand of forest land for agricultural practice. Therefore, providing access to education and vocational training to local villagers will help them to get other opportunities beyond agriculture. Also, family planning should be part of the long-term strategy to reduce the population growth.

9.3.6 Ecotourism

Ecotourism including cultural tourism is part of community and livelihood development and also a potential funding source for Phou Xiengthong NPA Management. Under the prevailing budget constraints, the Phou Xiengthong NPA Management Authority is not in a position to make required investment in ecotourism. It needs to find good partners for ecotourism development who are strongly interested not only to take advantage of the NPA but also to generate important source of incomes for the NPA and local communities through any means of livelihood development and engagement in the ecotourism development. There is a need to identify zoning of areas with potential for tourism and to attract interested partners with financing. Some existing ecotourism initiatives in the NPA is very basic and just in Ban Singsamphan where tourists do visit to climb Phou Khong “rocky mountain” and enjoy local food – mainly Thai tourists. It is a community tourism which is certainly no any returning income from the business for the PA management.

Anyway, any tourism firms who are interested to work, in the NPA should have an agreement with the NPA based on mutual understanding of zoning of use, operation and benefit sharing.

As part of the Vision and the Goal of Phou Xiengthong NPA management, tourism development in Phou Xiengthong NPA is really needed to promote the area and possible to earn income sources. The main role of Phou Xiengthong NPA Management Authority in the promotion of ecotourism is through effective management of the NPA and better law enforcement. This will help increase the attractiveness of the Phou Xiengthong NPA for tourists. The potential tourism sites of the NPA that should be promoted, there are a number of tourism potential in many villages. The range between these sites are part of the proposed tourism zone for activities such as trekking and climbing rocks/mountains, camping, sailing, enjoy waterfalls, views, historical sites and local dishes could possibly be established as local tourism sites (see Table 3).

There are six proposed tourism sites of the Phou Xiengthong NPA, are mainly located in Ban Singsamphan, Ban Soula, Ban Kham Tue, Ban Khan Thongsay, Ban Phou Daocheng Noi and Ban Tha Khansoumsoua (see Figure 11). Some attractive tourism sites in these villages are overlapping with the TPZs. Some non-permanent construction could be allowed in the TPZ and considered from case to case, but shall not be close to critical habitats such as mineral licks.

A visitor centre with interesting exhibition materials will be prepared at the Headquarters Office at Khong Nakhone of Khongxedone district and Sub-station Office at Ban Sorn Phak. campsites in the mountains, picnic grounds and signboards for visitors steering are included in the budget of the Plan. These tourism sites are mainly located outside TPZ, except ecotrekking to climb Phou Daocheng (see Figure 11).

There will a number of tourism activities and options for tourists can be developed as a package will be starting from southern section at Ban Singsamphanh to climb Phou Khong to Ban Soula by boat up the Mekong River to see historical sites and local fishing, to Ban Don Koum to see other historical sites, to Ban Kham Tue for camping in Phou Lahit or Phou Sabao. The trip can continue to Ban Khun Thoungxay by boat to see also other historical sites, and up to Ban Keng Nyapheut and finally Ban Tha Khansoumsoua that visitors can enjoy 4000 holes at Mekong River. Interestingly, trekking up Phou Daocheng for camping with enjoying views from mountain top is highly potential and exciting.

Therefore, detailed design for tourism development in the Phou Xiengthong NPA strategically is required as to achieve the NPA to make it be known tourist destination in the future. It needs also to develop production of information and outreach materials to encourage ecotourism development (e.g. leaflets, posters, visitor maps, video clips, radio campaigns etc.). This is to communicate to interested tourism investors. Besides, the Phou Xiengthong NPA staff should get trained and then train field guides from the villages in order to support community-based ecotourism and job generation in the NPA. It is not recommended that the Phou Xiengthong NPA MA develop and manage tourism facilities themselves. Instead, they may award concessions to service providers and collect annual fees. A system needs to be established to determine appropriate fees. Fair and equitable benefit sharing of tourism revenues is another important point which needs to be addressed.

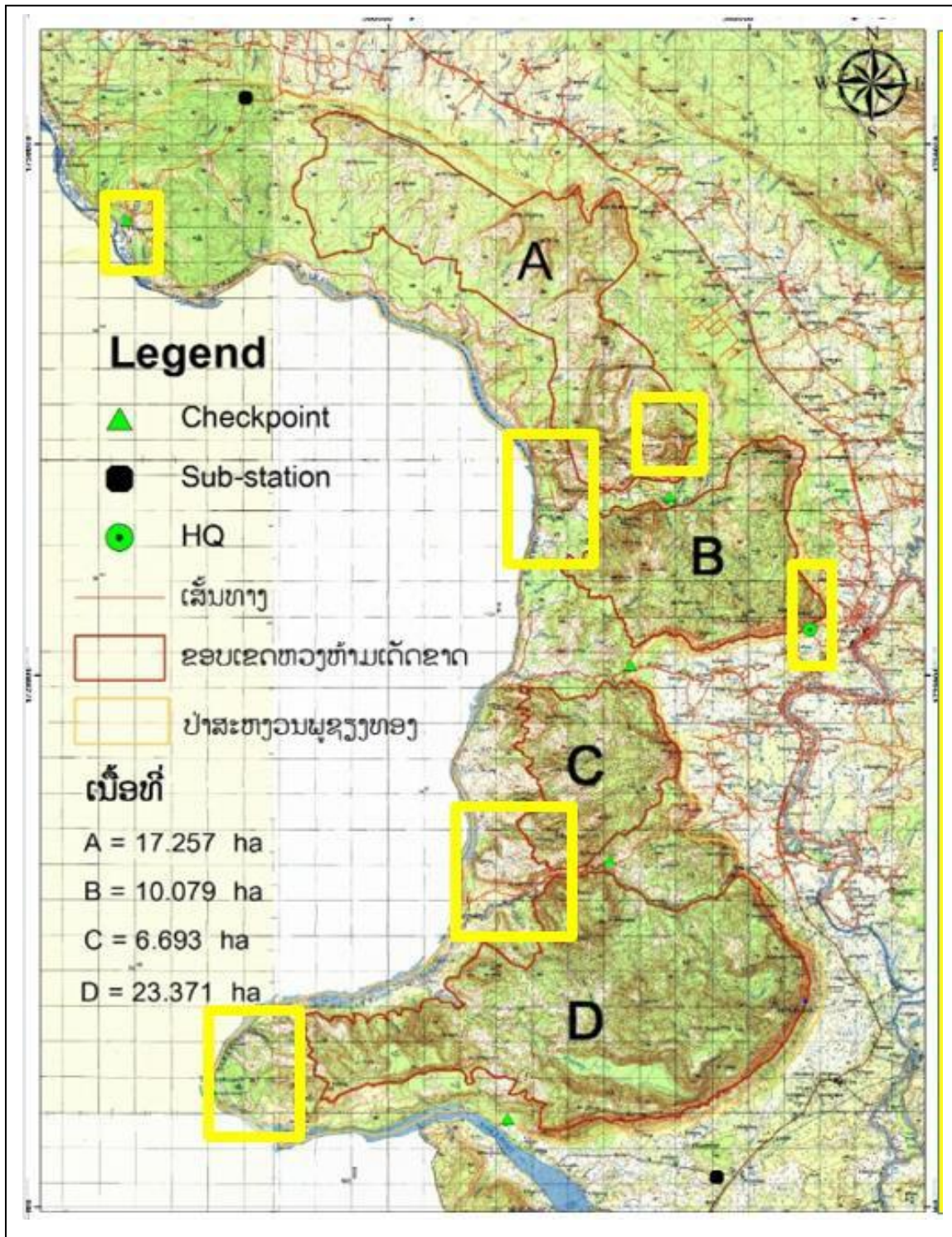


Figure 11. Locations of potential tourism sites of Phou Xiengthong NPA

9.4 PA Regulations

9.4.1 Development of regulations

As mentioned in Chapter 5 (5.3.1) above, a number of national laws and decrees apply to NPA Management and this plan is translating them into practice. The main content of the NPA regulations will be about protecting forests and wildlife - biodiversity as whole by categorising species and forest zoning for protection and management legally. The Phou Xiengthong NPA and the relevant district authority will develop the PA regulations with local communities and relevant provincial and district offices which shall then provide legal guidance on law enforcement. Zoning will be discussed through the FALUPAM process to agree on what can or cannot be permitted in the TPZ and CUZ including the sub-zones relating to village sustainable use of forests and wildlife. Conservation agreements for village collaborative management will be made as part of the NPA regulations for the villages with assisted livelihood development.

Once again it is also recommended to prescribe some general rules for approved and unapproved activities in the BuZ for which local communities' participation is strongly required. Any regulations, including conservation agreements must be prepared in close cooperation with relevant local communities of the NPA.

9.4.2 Amendment of the PA regulations

The PA regulations shall be continuously reviewed and revised to take account of new policies, new understanding of NPA values, or progress in the development of the collaborative management system. Practical experience from management practice will help improve the Phou Xiengthong NPA regulations from time to time. The village conservation agreements shall also be amended through close consultations with relevant villages and Phou Xiengthong NPA Management Authority and then endorsed by the concerned district authority.

9.5 Staffing, Office Operation and In-house Capacity Building

Phou Xiengthong NPA will use a small staff to work effectively as they can function by helping each other and facilitating other key partners to help with the majority of the ground work. Using appropriate mechanisms of the Phou Xiengthong NPA management, they can control the quality of work and ensure transparency. The steering committee for the Phou Xiengthong NPA with direct connection to DoF, PAFO and DAFOs, and DCO/DIT and local ranger teams will implement the Plan successfully.

Most importantly, the livelihood of the Phou Xiengthong NPA staff team will be developed as an example for some other NPAs regarding their staff well-being. The HQ Office with a compound of 10 ha will include various facilities including horticulture and piloting of forestry and agricultural development (see Figure 11). Most staff do stay at the HQ where they cultivate vegetables and fruits, and raise livestock (chickens, fish, goats etc). The office can demonstrate some good examples of cultivation for household incomes from which local communities around the NPA can learn.

9.6 Special Cooperation

9.6.1 Military cooperation

Phou Xiengthong NPA has a long international border with Thailand which requires military to participate in the implementation of the Phou Xiengthong NPA Management Plan. So far, military has been well participated in field patrolling and other relevant activities of the Phou Xiengthong NPA management. Since the entire western section of the NPA is defined as military zone⁵ so permission is required from the Frontier military authority to do patrolling in the area. The defined patrol zones and that relevant to military are most part of TPZs, particularly the west zone of the TPZs Zone A and B which are considered sensitive. There will be a regular, special and ad hoc patrols to be organised. The military camps which are based at the field have involved and agreed to response for management. Apart from that, military will involve in any other activities of law enforcement including gun registration and collection in their districts, as well as conservation awareness raising at military camps. For this cooperation, there will be some honorarium to support the military's responsibility for the Phou Xiengthong NPA management. As a whole, coordination mechanism between Phou Xiengthong NPA Management Section and Military should be in place. Any important decision that relevant to the military zone or any part of TPZ of the Phou Xiengthong NPA shall be requested for approval to Provincial Military and for National Defence. Therefore, the special cooperation at the national level between Department of Forestry/MAF and Department of Secretariat/Ministry of Defence to support the Phou Xiengthong NPA management will be arranged.

9.6.2 International border cooperation

The western section of Phou Xiengthong NPA has a border with Thailand by Mekong River. It is an International transboundary for 100Kilometres long from the Ban Singsamphan of Sanasomboun district to Ban Tha Khan Soumsoua of Lakhonepheng district. It connects to Pha Taem National Park. So far, the staff team of Pha Taem National Park/Ubon Ratchathani province have no had any practical cooperation with Phou Xiengthong NPA/Champasak/Salavan provinces. However, the Pha Taem National Park expressed their interest to work with Phou Xiengthong NPA for biodiversity conservation. A traditional checkpoint between Lakhonpheng district of Salavan province at Ban Paktaphan and Beung khoun Chiem district of Ubon Ratchathani will be officially established. Also, locally international border checkpoint at Ban Singsamphan of Sanasomboun district and at Ban Tha Khansoumsoua will be maintained and operated for a day visit of Thai tourists.

Therefore, some benefits from tourism development that share tourists with Pha Taem National Park and transboundary conservation with Thailand is necessary to have a discussion and develop a concrete agreement especially when this NPA is designated to AHP. In addition, staff exchange between the two countries would be defined and could be organised annually. The Thai side have better knowledge and experience in conservation which would benefit Laos from this cooperation. The target species for monitoring will be Banteng. It is necessary to know the population of Banteng

⁵ The Military zone according to the Decree No. 111 is ca. 15 kilometres away from the international border; however, the most prohibited zone is 2 kilometres along the border.

in Thai side by the Phou Xiengthong NPA and their moving patterns, including historical and current status of the species.

10 ZONING WITHIN THE PHOU XIENGTHONG NPA

10.1 Introduction

PA management planning according to the Lao Law requires zonation of PAs. There are 3 main zones according to the Forestry Law as TPZS, CUZ and the Buffer Zone (BuZ). To define a TPZ for protection of biodiversity with limited access; Special TPZ for specific and small area located outside the TPZ can be identified if necessary; to define CUZ for use under regulations for sustainable forest use, agricultural practice and other activities, Tourism Zone for tourism development which could be in the CUZ, and perhaps includes part of the TPZ, but only for activities that cause minimal disturbance, and with no permanent structures allowed in the TPZ; finally to define BuZ which lies around the NPA boundary and includes villages which help in protecting the NPA from trespassing and forest encroachment. In addition, the Corridor Zone (CZ) is not stated in the current Forestry Law (2019) nor the current PA Decree (2021) but it is necessary for NPAs especially for wildlife use so forest connectivity to other important forest block should be maintained and rehabilitated. It is stated the needs of wildlife pathways according to the Forestry Law would be part of larger buffer zone and wildlife habitat zone according to the Law on Aquatic Resources and Wild Animals (2007).

Participatory zonation is an essential approach required for local communities to engage in collaborative management. It is strictly prohibited to enter the TPZ except with a permit from the relevant offices of the government while other zones can be used under regulations but not allowing any development project that might have a negative impact on the NPA. Patrolling, eco- treks and biodiversity monitoring can be of course permitted in the TPZ.

10.2 Application and Management of Zones

10.2.1 Village management area

Since the declaration NPAs in Lao PDR includes the local people in the area, management is therefore required to recognise their rights. A NPA can be geographically divided into many smaller areas being recognised and managed by the NPA villages especially those villages of type I and type II for which their territories are completely inside or partly overlapping the NPA's boundaries. Conduct land use planning of these villages should be conducted as to identify and confirm various land use zones to make sure where strictly protected, controlled used, and agricultural use zones should be. The territory of each village management zone inside the NPA may lie mainly within the CUZ of the NPA and also partly in the TPZ, depending on the individual case and management agreements.

The process of participatory mapping of trails should be conducted in each village for planning regular patrols and biodiversity monitoring with the NPA staff, including in the TPZ. There has to be clear understanding on which area should be patrolled and monitored by which

village/village cluster. Some of the villages who have rights to use the forest resources are allowed to enter the area for patrolling and biodiversity monitoring including in the TPZ.

10.2.2 Totally protected zone (TPZ)

The TPZ is a zone where there is abundant habitat for food, shelter, and reproduction of flora and fauna. All critical habitats for key wildlife and aquatic animals must be designated as TPZ of the NPA. To identify a TPZ for protection of all critical habitats as home to biodiversity with limited access; Special TPZ for specific and small area located outside the TPZ can be identified if necessary.

Due to some fragmentation of forest habitats in Phou Xiengthong NPA by access road to local communities made the NPA to 4 TPZ blocks. There are TPZ - Zone A in northern section, Zone B in Central-North, Zone C in Central-south and Zone D in South section (see Figure 12). Most part of the TPZ of the Phou Xiengthong NPA consists of contiguous blocks of key habitats where important species were reported and currently recorded. The whole part of the TPZs is in the military zone which is actually restricted to access.

Within the TPZ it is neither allowed to cut trees nor to collect forest products according to the Law. Entering into the zone is only allowed with an official permit, for specific beneficial activities such as research, surveys, monitoring, patrolling, eco-trekking, filming, and other forms of high-end tourism etc. The permit may contain certain requirements (e.g. not to disturb wildlife, carry all garbage out, stick to certain trails or areas etc.) which the permit holder must strictly obey. There is a need to mark the boundary of the TPZ at any entrance point (trail, tractor road) with a clear sign board prepared. Checkpoints at access roads will be established and functioned locally.

For Phou Xiengthong NPA, the defined TPZ, there are 4 TPZs covering 57,400 hectares (54.36 per cent) of the total area representing all major habitat types but focusing on dense and intact natural forest. There are the TPZ - Zone A (Phou Xiengthong-Phou Daocheng, 17,257 hectares), located in northern section, Zone B (Phou Kham-Houey Deua, 10,079 hectares), Zone C (Phou Yai-Phou Nangnone, 6,693 hectares) and the Zone D (Phou Luang- Phou Sabao, 23,371 hectares as the largest Zone), located in the southern section and the TPZ D. The TPZ boundary of the NPA was defined in consultation with local communities for protecting critical forest habitats which are still used by some key wildlife species, while allow some space outside the TPZ for local communities to use. Therefore, the TPZ boundary will be some distance from local communities, most upper part of the mountains where were defined as the military zone. The key entry points are from Ban Latseau (Ban Sithouan), Ban Saykham, Ban Kham E (Ban Kham Savad), Ban Bouttaphan, and Ban Taleo (see Figure 12).

10.2.3 Controlled use zone (CUZ)

The CUZ covers 48,291 hectares (45,73 per cent) of the total area. By definition, the CUZ is the remaining area within the NPA boundary after definition of the TPZ and the rest of the agricultural land of the NPA villages. The CUZ according to the new Forestry Law (2019) excludes the agricultural land and settlement. In the CUZ local villagers are allowed to use forest and aquatic resources traditionally under agreed rules and regulations for sustainable natural resource management, to be developed through participatory land use planning (PLUP) and forest management planning. Local communities should be trained and their capacities built to work with

NPA staff and with the assistance of NPA experts to conduct law enforcement and enforce their own regulations for effective land use, and sustainable utilisation of their natural resources. In addition, tourism Zone is mostly identified and overlapping with CUZ or partly TPZ. It is mostly in the CUZ and could be partially in the TPZ of the PA but requirements will differ between the two zones. A tourism zone is an attractive area with potential for tourism facility development. The Forestry Law (2019) provides support for tourism development, but only eco-trekking is allowed in the TPZ. Most importantly, tourism activities are not allowed in the most critical habitat (ESS).

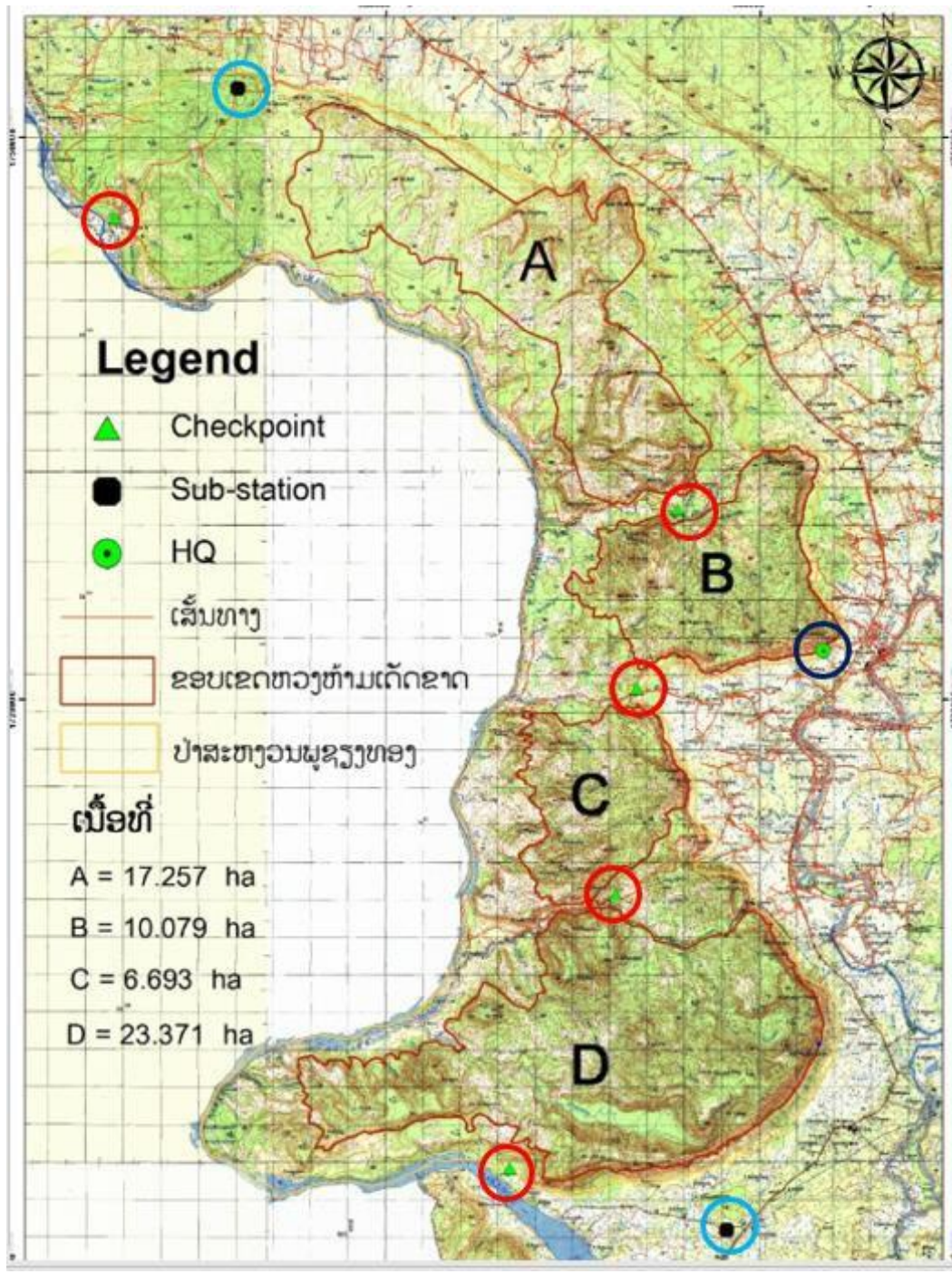


Figure 12. Proposed zoning of Phou Xiengthong NPA

10.2.4 Buffer zone

The Buffer Zone is a forest section located along the outer boundary of the NPA. According to the Protected Area Decree 134/PM (2015), and could be inside the NPA according to the Forestry Law (2019), it is between the community land use and other forest types as to buffer forest encroachment. A buffer zone is a forest zone, watershed or other kinds of land surrounding the PA with a width from 100 meters to 500 meters as determined and allocated for preventing from trespassing and destroying the PA. The average distance from the boundary proposed for the Phou Xiengthong NPA buffer zone is quite narrow. This way, the buffer zone inhabitants have a legitimate interest in preserving the NPA and preventing outsiders from doing extractive activities. However, no map of this zone is shown in this Plan since no ground checking, it is very much dependent on resulting from land use planning of the straddling villages of the NPA.

The BuZ needs to help prevent trespassing in the Phou Xiengthong NPA. Land use planning for the adjacent villages around the NPA is required to allocate land clearly for various economic, yet sustainable uses and thus preventing encroachment into the NPA. Besides, the buffer zones shall be sustainably managed and function as a protective belt around the NPA preventing outsiders from entering into the NPA. It should be the aim that buffer zone communities also benefit from the NPA, e.g. through tourism revenues or better environmental conditions.

10.2.5 Other required zones for PA management

Although the new Forestry Law (2019) does not mention a corridor zone (CoZ) it is principally required for wildlife conservation as forest corridors are necessary to connect surrounding forest areas. The Phou Xiengthong NPA possibly connects the east with Xebang Nouane NPA and the west with Pha Taem National Park of Thailand (see Fig 4). The east wildlife corridor with the Xebang Nouane NPA at Ban Lak 94 where some large animals used to cross in the past e.g elephant. However, due to degradation of forest connectivity between forest areas from some widespread of agricultural plots, also some settlement expansion along the Road No. 13 South which is increased an obstruct for wildlife movement. In case, this forest habitat is rehabilitated the herd of Asian elephants in Xebang Nouane NPA would return to the Phou Xiengthong NPA. Also, the wildlife corridor with Pha Taem National Park along the Mekong River specially the section from Ban Khan Thoungxay to Ban Tha Khansoumsoua. Therefore, these corridors have to be maintained and rehabilitated. Through the assessment it is fairly possible to rehabilitate the wildlife pathway between Phou Xiengthong NPA and Xe Bangnouane NPA around Ban Lak 94 where there are some forest patches and only one settlement (see Figure 13). This wildlife pathway should be rehabilitated and ensure no further forest expansion in the area. By doing this, it is on a hope for elephant can return to Phou Xiengthong NPA from Xe Bangnouane NPA.

In principle, any forested area can provide habitats, shelter and food for migrating wild animals. A wildlife corridor also aims to link separated populations of threatened or isolated species and allow for exchange of gene pools and ultimately genetic diversity. While some species are able to cross agricultural crop lands or plantations, other species require natural forests. Roads, fences, extensive plantations or large rivers may constitute a total barrier for some species, and the construction of tunnels or wildlife bridges are a possible mitigation action. This practice has been implemented in other countries, but not yet in Lao PDR.

In addition, within the Phou Xiangthong NPA there are three parts bisected by road runs from (i) Ban Saykham to Kham Tue, (ii) from Ban Kham E to Ban Khan Thoungxay and (iii) from Ban Bouttaphan to Ban Keng Nyapheut. Therefore, the management of the road for wildlife to use is firstly to limit the travel volume, human disturbance, and to keep some sections of the road with forest canopies connected above the road for gibbons to cross. Keeping locally dirt roads, not upgrading them for pave roads, not allow any settlement along these access roads with limiting travel at night as well as camping in the area should all be implemented.

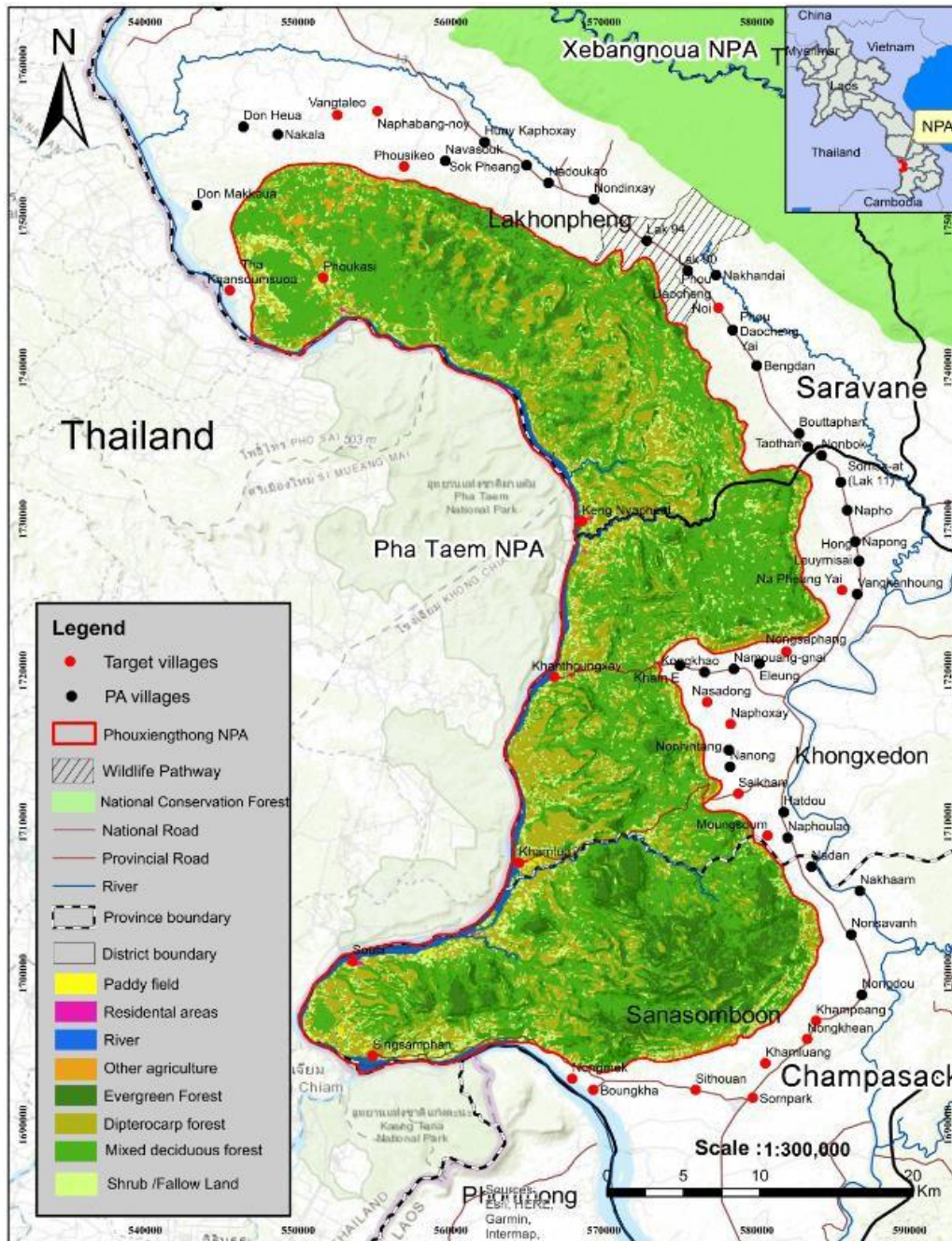


Figure 13. Proposed Wildlife Pathway with Xebang Nouane NPA

Part 4

Management Arrangements and Programme

11 PROTECTED AREA MANAGEMENT ARRANGEMENTS

This Chapter describes the organisation of the management system for effective management of the Phou Xiengthong NPA including the funding system to the support the implementation (see Annex 3).

11.1 Phou Xiengthong NPA Management Authority and Responsibilities

Phou Xiengthong NPA Management Authority (MA) is the authorised organisation legally mandated to manage the Phou Xiengthong NPA, comprising a Director, Deputy Director(s) and various technical units which have dedicated government staff. It is an organisation with authority and organisation to work within its respective area of responsibility, namely the gazetted NPA area plus the buffer zone around it. The Management Authority with technical support from Department of Forestry has functions to lead planning, coordination, implementing and monitoring activities, reporting and providing recommendations to the relevant parties following the laws of Lao PDR, aiming at preserving biodiversity, flora and fauna, including aquatic resources, environmental services and ecosystems. As NPA, covering 2 provinces and 3 districts, the organisation structure of the Phou Xiengthong NPA Management Authority (*Kong Khoum Khong Pa Sa Ngouan*) will be established and will technically report to and coordinate directly with the central government, the Department of Forestry/Protected Area Management Division for seeking of some important advice and decision. Legally, a Director of Phou Xiengthong NPA will be highly open to the government staff from Salavan province because of their larger land and covering 2 districts. The Director or Deputy Directors of the PXT NPA would be appointed by national level (Minister) since this NPA covering 2 provinces.

Finally, during the final stage of this plan preparation, the management authority of PXT NPA was approved by central level on establishing the “Kong” of PXT NPA and appointed a senior staff from Salavan PAFO as the Head and senior staff from Champasak PAFO as deputy head. Some number of staff from these provinces were assigned to form the Kong.

The Phou Xiengthong NPA MA will function as centre to liaise, facilitate and advise with key relevant stakeholders, including any development or infrastructure projects as well as NGO projects working in the NPA. Therefore, regular stakeholder meetings will be convened by PXT NPA Management Authority. The PXT NPA MA will also oversee and coordinate the work with other government offices and investors working in the PXT NPA, and ensure that any negative environmental impacts are avoided or mitigated. It is the first contact point for any development taking place in and around the PXT NPA. It has to be involved from the early planning phase in any environmental impact assessment (EIA), biodiversity offsetting or payment for environmental service (PES) scheme.

The Phou Xiengthong NPA proposed its Headquarters Office at Ban Kong Nakhone, Khongxedone district. As to support the collaborative management practice the District Coordination Offices for PXT NPA will be established for each district and must be located in the appropriate location (at DAFO in town) in order to coordinate with relevant district offices and cooperate with local authorities (village and village cluster) closely. The PXT NPA Management Authority has 2 Sub-stations (one already exists at Ban Sorn Phak of Sanasomboun district and on plan for Ban Taleo of Lakhonepheng district. As mentioned early, it is planned to have 5 checkpoints at main access roads to the NPA. These offices as part of the Law Enforcement to function in managing the assigned zones and control access. They are different from the District Coordination Office (DCO) but the DCO are to support the Sub-station, in coordination with relevant district offices, facilitate the NPA team and to support the works of the NPA mgt in their district areas with support from the HQ Office of PXT NPA. In addition, some important entry points of the NPA shall have a checkpoint which would be managed and operated locally.

There will be at least 3 staff from their perspective districts to be based at each District Coordination Office and other 3 staff at each Sub-station. These staff will be appointed from the relevant districts and some assigned from the HQ Office. Both of the Offices for PXT NPA at each district shall have sufficient space, equipped with necessary facilities and at least basic equipment. Therefore, it needs to have renovation and new construction of these offices with necessary equipment to be purchased.

11.1.1 Office, organisation and staffing

The Phou Xiengthong NPA Office has very basic facilities and equips. There are only temporary Office/sub-tation at Ban Sorn Phak for Champasak province and at Ban Kou Dou of Khongxedone district for Saravan province, 4 motorbikes, 2 computers with printers and 4 GPS units. A total of 18 staff (including 2 volunteers, of which 10 staff and 1 volunteer in Salavan province and 6 staff and 1 volunteer in Champasak province. The organisation structure of each province has two main units (Admin and Technical). The Admin Unit includes administration and planning. While, the Technical Unit has 3 Units (Extension: outreach and livelihood), Patrol: law enforcement and land use, and GIS/Mapping, but since number of staff limited they have share responsibilities in more than 1 task.

For longer-term the organisation structure of the Phou Xiengthong NPA is prepared for its upgrade status to AHP and so the Office to be named as Phou Xiengthong NPA Management Authority with sufficient staff and necessary equipment. There will be a joint team of 2 provinces. A large compound of its HQ Office is designed to be located at Ban Khong Nakhone (see Figure 14). It will be strengthened toward optimum organisation structure and staffing of 25 people. The optimum organisation structure for the NPA Management Authority according to the Guideline of the Department of Forestry will consist of Director, Deputy Director (2) and 7 Units. These units are for (i) Admin/Planning, Data and Finance, (ii) Outreach and Conservation Awareness, (iii) Biodiversity Monitoring and Research, (iv) Law Enforcement, (v) Area Management/Land Use, (vi) Livelihood Development for Conservation, and (vi) Ecotourism and Investment Mgt (see Annex 1). Head of each Unit as the member of senior staff team to in charge and implement his or her tasks of responsibilities according to the term of reference in order to plan, manage, maintain and improve, report the work designated staff progressively. Also, Terms of References for each unit (see Annex 2).

With the new organisation structure, a total of 21–25 staff should be arranged for the Phou Xiengthong NPA Management Authority, of which 2 staff at least will be allocated for each unit, he or she may have relevant knowledge, experience, skills and interested in such the work. More number of staff will be under the Law Enforcement Unit as majority of them are deployed to work at sub-stations (3).

Anyway, from the beginning these units are proposed to be clustered to 2 main units as Admin and Technical Units. The Admin Unit includes Planning and Finance. The Technical Unit includes 2 sub-units as Biodiversity Conservation and Livelihood Development (see Annex 1). This suggestion was agreed in the second consultation workshop on August 9th, 2021.

At district, there will have a District Coordination Office (DCO) to support the management of the Phou Xiengthong NPA which will be staffed by assigned district staff. About 3 district staff will be assigned to work at each DOC, especially to liaise and facilitate all the work of NPA in their districts. Also, 3 Sub-stations and 4 Checkpoints will be arranged and operated as some NPA staff will work with district staff and local villagers who are trained especially trained and trusted villagers will be assigned to work at relevant Checkpoints. There are ca. 2–3 trained villagers at a time and in a rotational basis.

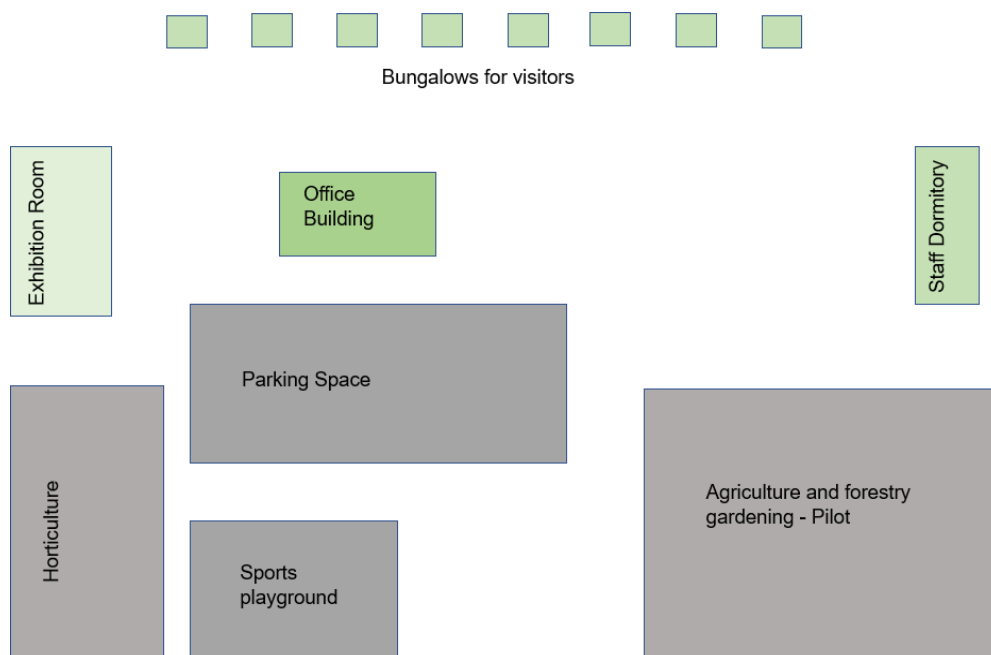


Figure 14. Plan of HQ Office compound of PXT NPA

11.1.2 Phou Xiengthong National PA steering committee

Steering Committee of the Phou Xiengthong NPA shall be chaired by Vice-Minister of Agriculture and Forestry, and Deputy-Chaired by Vice-Provincial Governor of Salavan and Champasak

provinces. The members will consist of representative Department of Forestry/MAF, Department of Secretariat/Ministry of Defence, relevant provincial offices and 3 Vice-District Governors (Khongxedone, Lakhonepheng and Sanasomboun). The key provincial offices will be the Provincial Tourism Authority, Provincial Military Office, Provincial Police Office, Provincial Education and Sports Office, Provincial Public Health Office and Provincial Lao Women's Union (see its ToR in Annex 2). The Phou Xiengthong NPA Management Authority/PAFO will function as the secretariat to the Steering Committee. The Steering committee will meet at least once a year to approve annual workplan, annual budget and reports. Furthermore, it shall provide policy advice and intersectoral solutions, for example in case of land use conflicts, law enforcement, infrastructure and development projects and sustainable financing.

In practice and for technical session, Department of Forestry would be in charge as Chairman of the steering committee with Salavan and Champasak PAFOs (see 11.1.3).

11.1.3 Phou Xiengthong NPA technical panel

The steering committee shall have a technical panel (expert group) to support on technical aspects. The technical panel for any NPA shall be chaired by Deputy Director of Department of Forestry (DoF) or PAFOs (see Annex 3), the key members consist of DoF Representative/PAMD, PAFO, Phou Xiengthong NPA, DAFO (3), Provincial Information, Cultural and Tourism Office, relevant NGO and interested firms will be invited for technical discussion session. The Phou Xiengthong NPA Management Authority is the secretariat to the Technical Panel. For some dialogue the Protected Area Management Division/DoF would be in charge as the Chair. The Technical Panel shall meet quarterly, but *ad hoc* meeting may be held if necessary.

11.1.4 District steering committee and district implementing teams

The District Steering Committee for supporting the Phou Xiengthong NPA management will be established at each participating district. The committee will be chaired by the District/Vice-District Governor, and membered by DAFO, DoNRE, Lao Women's Union, Education and Sports, Public Health, Police and Military. In each of the three districts, District Implementing Teams (DIT) will be formed for 4 main areas of work to support the Phou Xiengthong NPA management as follows:

- District Implementing Team 1. Conservation outreach and awareness raising Proposed members are: Phou Xiengthong NPA MA, Education and Sports Office, Information and Culture Office, Lao Women's Union, Lao Front for National Reconstruction.
 - District Implementing Team 2. Law enforcement. Proposed members are: Phou Xiengthong NPA MA, Forest Inspection, DAFO, Police, Army, Justice.
 - District Implementing Team 3. Livelihood development for conservation. The members are: Phou Xiengthong NPA MA, DAFO, Lao Women's Union, Education and Sports Office and Public Health Office.
14. District Implementing Team 4. Ecotourism Development. Proposed members are: Phou Xiengthong NPA MA, Information and Culture Office, Lao Women's Union, DAFO and Police.

Participation in the DIT shall be open for other interested organisations (NGOs, CBOs, private sector) or individuals (experts, volunteers) based on their professional merits and topics of interest.

As the naming implies, the focus of the DITs is on practical work in the field, in a collaborative team spirit and with a clear focus on results and impacts. It is hoped that DITs will also be able to generate some funds from development partners, once they perform efficiently. In each district there will have a District Coordination Office which will be staffed and led by DAFO in coordinating other district offices and facilitating the work of NPA in the district. Also, each district should have a conservation agreement signed by the District Governor stipulating that it is mandatory for relevant district offices to support the collaborative management of the Phou Xiengthong NPA. The DITs will be staffed by relevant district government offices.

To effectively operate under the Agreement, each DIT following the annual workplan of the management plan must first develop activity plans (monthly, quarterly) and mobilise respective budgets, secondly implementing the work timely and in a good quality, and thirdly conduct impact monitoring and identification of lessons learned. The Vice-District Governor with support from the Technical Team of the NPA/Experts will oversee the work of the DIT in his district administrative area.

To effectively operate under the Agreement, each DIT following the annual workplan of the Phou Xiengthong National Protected Area Management Plan (2022–2026) management plan must first develop activity plans (monthly, quarterly) and mobilise respective budgets, secondly implementing the work timely and in a good quality, and thirdly conduct impact monitoring and identification of lessons learned. The Vice-District Governor with support from the Technical Team of the NPA/Experts will oversee the work of the DIT in his district administrative area.

11.1.5 Village collaborative management committees

Each village shall have a Village council to function as collaborative management Committee in which all relevant and controversial issues related to Phou Xiengthong NPA to be discussed and eventually solved at the village level first. The village council may take over this role as well provided it has the time and resources for this additional task. What is important is that in the collaborative management committee different user groups, interests and gender are adequately represented.

As part of the village collaborative management committee at the village level there will be a member from patrol team, user group and village livelihood group. Rights and duties for each team, group and committee will be formulated and described in relevant agreements. The village chief in particular will have to report the work progress and impacts at monthly Kumban meetings.

11.2 The Implementation of the Plan

Task arrangements for the Plan implementation are prepared for different levels and sub-programmes for the Phou Xiengthong NPA Management Authority and its collaborative partners – Department of Forestry, the Provincial/PAFOs and participating district offices (DAFOs). At district level and for each district there will have the District Coordination Offices with overseeing by Vice-District Governors and support from District Implementing Teams.

11.2. Coordination

Phou Xiengthong NPA Management Authority is the centre for coordination to Central level (Protected Area Management Division/Department of Forestry), to Provincial level (PAFO) and to District level (DCO/DAFO) and Ground level (Sub-station/Checkpoint). The NPA MA to coordinate with the central level for obtaining some technical advice.

The NPA MA functions to implement relevant national policies, laws, decrees and to make the Phou Xiengthong NPA be protected legally. Any activities would generate some impact on the biodiversity values of the NPA shall be technically consulted to the Phou Xiengthong NPA Management Authority and also inform to PAFO to seek for some advice from the Provincial Government. These leading government bodies are the chair and vice-chair for the PXT NPA Management which they are to meet twice a year.

District level, District Agriculture and Forestry Office (DAFOs) will have District Coordination Office for supporting the NPA management within their district to help liaise other district offices and sub-station team and to facilitate the work according to the Plan. There will be 4 District Implementing Teams (DIT) to be formed to function and the District Steering Committee to oversee the work of the Phou Xiengthong NPA management from time to time regularly.

Other partners could be NGO/Donor/Firm who would have share vision and interest to support the implementation of the Plan to cooperate, develop and make the vision of the Phou Xiengthong NPA management to action.

11.2.2 Planning

Phou Xiengthong NPA Management Authority as the centre for implementation of the Phou Xiengthong NPA Management Plan which to translate the plan into annually, quarterly and monthly workplan by working closely with key partners, district teams (DCO/DIT). The annual workplan with budget will be prepared to get an approval of the Management Steering Committee for the Phou Xiengthong NPA/Department of Forestry. The participating district, DCO/DIT can plan for supporting the implementation of the Phou Xiengthong NPA according to the Plan.

11.2.3 Implementation

Following the agreed activity plan by month and quarter the Phou Xiengthong NPA will facilitate its partners especially district level to conduct the work through training and facilitating. The district technical teams will deliver the work of PA management in their districts timely and effectively.

Collaborative management: as cross-cutting theme for applying the collaborative management of PAs as all key stakeholders to be involved in the management practice from planning process. All key stakeholders for each district will be given an orientation of the collaborative management approach and facilitated by the PXT NPA MA with assistance from its experts to help implement the PXT NPA Management Plan, including necessary training and arrangements e.g committee and DITs to be in place. This work should be led by the PXT NPA MA in coordination with participating DAFOs as all the DITs to promote and apply it in Kumbans.

Biodiversity conservation: as technical work which is involved in biodiversity survey, research and monitoring. This area of work is considered specific task and led by PXT NPA MA but the biodiversity monitoring which will be conducted with participating DAFOs.

Conservation Outreach: as important campaign work to build ownership of the stakeholders especially at district to kumbans and villages for sharing responsibility of the PA management. The DIT be firstly trained by the PXT NA MA with its experts to help implement the PXT NPA Management Plan on conservation outreach, to do the work effectively in their districts and Kumbans/villages. The PXT NA MA will provide facility and additional support for the DITs to do most work.

Law enforcement: as this work is considered important, be firstly trained by the PXT NA MA with its expert to help implement the PXT NPA Management Plan on law enforcement, to do the work effectively in their districts and Kumbans/villages through routine practice and *ad hoc* response. The PXT NA MA will provide facility and additional support for the DITs to do most work. For field patrol needs to have a close cooperation with military camps in the area especially in the military zone, the whole TPZs of the NPA. So far, the management of Phou Xiengthong NPA has been well exercised with military in patrolling. Therefore, the cooperation with military for patrolling especially at the west section is necessary.

Land use planning: as basic work of PA management which is involved in zoning for various purposes of land use and protection. This work will be the responsibility of DoNREs and DAFOs in consultation with PXT NPA MA.

Livelihood development for conservation: this work is not the sole responsibility of the PXT NPA but relevant district offices as their mandates, the DAFO to take lead with assistance from expert to form the DIT on livelihood development for conservation with training. The expert will help facilitate the process of work according to the Management Plan of PXT NPA, conduct socio-economic survey, and shortlisting and selecting for the funding support. It is the on-going work that need to keep monitoring and assisting, including market study, marketing and ensuring a sustainable practice and that not generate adverse impact on the NPA.

Ecotourism development: similar to the livelihood work, the District Information and Culture Office to take lead with assistance from expert to form the DIT on ecotourism development with training. The expert will help facilitate the process of work according to the Management Plan of PXT NPA, conduct a feasibility of potential tourism facility with its action plan in place for fund raising or financing. It is the on-going work that need to keep monitoring and assisting, including market study, marketing and ensuring a sustainable practice and that not generate adverse impact on the NPA.

11.2.4 Reporting

Reporting will be prepared monthly, quarterly and annually which the Phou Xiengthong NPA Management Authority to support the DCO to work with DIT to complete their monthly, quarterly and annually for Phou Xiengthong NPA MA. Also, DCO to make a copy for DAFO and their

relevant district offices. The NPA will report to DoF and PAFO. The Sub- teams/checkpoints will make a report to DCO and Phou Xiengthong NPA MA.

11.2.5 Monitoring and Evaluation for adaptive management

Phou Xiengthong NPA Management Authority to take lead with its experts to conduct biannual and annual evaluation with DOCs/DITs. This to be prepared for annual meeting of the NPA Management Steering Committee which will be held annually at the Phou Xiengthong NPA’s HQ. The annual evaluation will include recommendations for adaptive management which will help improve for following year plans.

For the groundwork of seven sub-programmes defined in the Plan will implemented between the Phou Xiengthong NPA Management Authority and Participating Districts (DAFO/DCO) and DIT (see Table 7).

Table 7. Task arrangement of the Plan implementing for different programmes

Sub- Programme	Area of works	Key Responsibility		
		NPA	District/DAFO	Other
1. General management and capacity building	To provide general mgt and capacity building of Phou Xiengthong NPA	The expert/consultant to provide a series of training	Participate in some relevant trainings	Sectoral
2. Collaborative management	To promote collaborative management	The expert to provide necessary training for districts - DAFO	Fully participate in the trainings and arrangements	Sectoral
3. Biodiversity conservation	Conduct biodiversity Conservation, Monitoring and Research	The expert to design and conduct the work with the NPA staff team	Participate in the work of biodiversity conservation	
4. Outreach and conservation awareness	Conduct outreach and Conservation Awareness Raising	Provide training and facility for DIT to do most the work.	The DIT to lead facilitate the outreach work in their districts	
5. Law enforcement	Conduct and strengthen law enforcement	Provide training and facility for DIT to do most the work.	The DIT to lead facilitate the law enforcement in their districts	
6. Land use planning	Review and reallocate forest and land use planning	Planning and help facilitate to DAFO/ DoNRE to do.	Fully engage in the process	Partners with other projects

7. Livelihood Development for conservation	Investment for Livelihood Development for conservation	Planning and help facilitate to DIT to do most the work.	The DIT to take lead and facilitate the work in their districts	Partners with other projects
	Promote eco-tourism development	Planning and help facilitate to DIT to do most the work.	The DIT to facilitate the work in their districts	Key partners

11.3 Collaborative Management System and Stakeholders

The Phou Xiengthong NPA Management Authority is the lead institution in implementing the PA and relevant work in the NPA target villages. Through the mechanisms of collaborative management, the Phou Xiengthong NPA management team will well coordinate and facilitate its partners to plan, develop and implement and evaluate activity programmes of the NPA together. A variety of stakeholders needs to be involved to ensure an effective collaborative management. Primary stakeholders are the local villagers and local government authorities which both ideally fulfil interlinked tasks with support from the NPA management authority and relevant government offices especially at district level. Most important government offices are:

1. Central government, the MAF (MAF) is responsible for establishing a policy, legal and institutional framework for NPA management. With dissemination of legal instruments, issue an Agreement and Order, guidance with monitoring and evaluation of related to national PA management. Technical support will be provided by the Protected Area Management Division of the Department of Forestry. The Department of Forestry at central level is responsible for developing policy, strategic plan/master plans, laws, decrees and regulations of PA management. Technically, DoF will also provide technical guidelines and standardise national PA management system nationwide to ensure the management system is well developed and functional.
2. Provincial Agriculture and Forestry Office (PAFO) of the both provinces are to implement the policy, law, decrees and national regulations. With planning, coordinating and monitoring PA activities at provincial level. Some relevant activities in the NPA will be consulted with PAFO. With policy guidance and technical support of PAFO will help coordinate, to consult with and report to the Provincial Governor on the work of management progress and some key issues raised in the NPA.
3. District Agriculture and Forestry Office (DAFO) is to implement the policy, law, decrees and national regulations. To support the Phou Xiengthong NPA management as its staff will be assigned staff and based at the District Coordination Office for Phou Xiengthong NPA in the district, probably the DAFO Compound to work with key district offices, partners and kumban offices at village level. Within DAFO there are a number of relevant areas of work, for instance forestry, PA, agriculture, livestock, and irrigation which have an important role to play in the collaborative management of the Phou Xiengthong NPA.
4. Other government agencies such as the District Governor's Office (District Governor), Lao Women's Union, Tourism Office, Forestry Inspection as well as police and military. These stakeholders will be invited to join in district implementation teams in line with their institutional mandates and responsibilities to support the Phou Xiengthong NPA Mgt.

Other major stakeholders are:

15. Military
16. NGOs and CBOs working in Phou Xiengthong NPA
17. Ecotourism operators (interested firms)
18. Donors supporting projects (e.g ACB) in Phou Xiengthong NPA.

The military, apart from being membership for the provincial and district steering committee to support the Phou Xiengthong NPA management, the military camps especially the Frontier

Military will participate in field patrolling especially in the military zone shall be exceptionally arranged.

11.4 Strategic Partnerships with Development Partners

Strategic alliances with supporting development partners (donors, NGOs) are necessary for capacity development, institutional support and sustainable funding. There are a few projects working in the NPA and its buffer zone but cooperation among them is insufficient. Therefore, Phou Xiengthong NPA Management Authority will coordinate and facilitate all projects working in the NPA and also relevant sectors of the government through appropriate mechanisms. The Conservation Agreement of District Governor will include a provision to hold at least twice year coordination meeting with key stakeholders. Considering that Phou Xiengthong NPA Management Authority is the centre for coordination and facilitation, it may of course call for additional coordination meetings as necessary.

11.5 Financial Mechanisms and Support

Acknowledging that Lao PDR is still a developing country with limited funds, the Lao Government will further depend on the assistance of external donors for some time to come. Therefore, the sustainable financing strategy for NPA is necessary. Also, the GoL acknowledges that it is the ultimate government responsibility to ensure the conservation of the natural heritage and biodiversity in Lao PDR. It shall try its best to improve the existing funding system and provides at least the basic funding and staff to ensure the basic operation of the NPA management in times when no donor support is available or a funding gap between two project phases occurs.

An integral part of the sustainable financing strategy is the proposed upgrading of Phou Xiengthong NPA to an AHP. The objectives of this regional status it is to conserve biodiversity values with promoting education and recreation. This would increase the attractiveness for tourism and would allow to increase entrance fees and penalty from illegal harvest of timbers, forest products and wildlife hunting. Of course, it would also require investments in infrastructure and services, in collaboration with the private sector. Another positive effect of declaring an AHP would be the higher likelihood to attract external donor financing which could provide the financing for the necessary PA management and infrastructure. Giving out concessions for lodges or tourism facilities could be another revenue stream for Phou Xiengthong NPA Management Authority.

Another option is biodiversity offsetting for site management from development projects e.g hydropower and mining, which should be offset according to Lao Government regulations. Comprehensive watershed management programmes aimed at protection of forest and wildlife, reforestation programmes to compensate for project associated losses and environmental education programmes are planned by the company, but so far do not anything benefit the Phou Xiengthong NPA or the enclave villages. This should be renegotiated in order to Guarantee another stable funding source for Phou Xiengthong NPA. In addition, sponsorship programmes with private companies or development projects funded through corporate sustainability programmes could be another possibility to generate needed finance for Phou Xiengthong NPA management or the people living inside the NPA.

The NPA Management Authority must provide a mechanism for financial management, usage and transparent reporting and accountability for the Fund. The fund has to be managed and taken accountability. In case, it is a need to set this up it has to have the Board overseeing the fund

management. The Board should consist of representatives from central (DoF), PAFO of Salavan and Champasak provinces, key donors and NGO/CSO. In reality, the Management Steering Committee of Phou Xiengthong NPA can function this.

12 OVERALL PROGRAMME OF ACTIVITIES

This Chapter summarises the work discussed in the Phou Xiengthong Management Planning Task Force. It describes the overall programme of activities which is compartmentalised into seven different sub-programmes, addressing the three main management objectives as below:

19. *Management Objective 1*: to strengthen overall management and capacity building.
 - Sub-Programme 1. General Management and Capacity Building
 - Sub-Programme 2. Collaborative Management
20. *Management Objective 2*: to conserve biodiversity through management measures and and monitoring.
 - Sub-Programme 3. Biodiversity Conservation and Monitoring
 - Sub-Programme 4. Outreach and Conservation Awareness
 - Sub-Programme 5. Law Enforcement
21. *Management Objective 3*: to improve sustainable livelihoods of local communities for conservation.
 - Sub-Programme 6. Land Use Planning and Zoning
 - Sub-Programme 7. Sustainable Livelihood Development

Under each sub-programme, various actions have been identified, for each action, the objective of the action, the desired outcome(s) and the management responses are described. The implementation of these sub-programmes and actions will of course depend upon the timely availability of required funding.

<i>Management Objective 1: To strengthen overall management and capacity building</i>
--

12.1 Sub-Programme: General Management and Capacity Building

Successful collaborative management of Phou Xiengthong NPA requires a functional government institution (i.e. NPA Management Authority) in charge in the first place with staff capacity. Thus, this sub-programme deals with strengthening of the institutional, financial as well as human capacity for collaborative management of Phou Xiengthong NPA.

12.1.1 Institutional Strengthening

Specific Objective: To improve organisation structure of Phou Xiengthong NPA Management Authority

Desired Outcome(s): The Phou Xiengthong NPA Management structure is approved with its units, terms of reference (ToR) to be ready for AHP.

Responses:

22. Prepare draft organisation structure with units of Phou Xiengthong NPA MA.
23. Prepare and revise Terms of Reference (ToR) for each unit (see Annex 2).
24. Promote the Phou Xiengthong NPA Management Authority as the central point of coordination for all relevant works and projects within the NPA.

12.1.2 Staffing

Specific Objective: To increase the number of staff for Phou Xiengthong NPA Management Authority and for District Coordination Offices to work with their relevant district offices.

Desired Outcome(s): Appropriate number of staff to be additionally assigned for the HQ, sub-stations and District Coordination Offices to implement the NPA management.

Responses:

1. Consult with DoF, PAFO and relevant DAFO on an increase of staff number for Phou Xiengthong NPA.
2. Recruit and assign staff to work for Phou Xiengthong NPA management at the HQ.
3. Assigned staff from relevant DAFOs to work at the District Coordination Office for Phou Xiengthong NPA.
4. Orientate the staff about their job duties and the collaborative management approach

12.1.3 Strengthen Phou Xiengthong NPA status

Specific Objective: To establish an ASEAN Heritage Park.

Desired Outcome: The Phou Xiengthong NPA is established and operated systematically.

Responses:

1. Coordinate with central level about upgrading Phou Xiengthong NPA to an AHP.
2. Assist the central level to prepare the submission of Phou Xiengthong NPA for consideration as an AHP.
3. Support the evaluation of Phou Xiengthong NPA as a potential AHP by ACB.

12.1.4 In-House capacity building of the NPA staff

Specific Objective: to improve technical capacity of the Phou Xiengthong NPA MA staff in collaborative NPA management.

Desired Outcomes:

1. The Phou Xiengthong NPA staff have gained new technical knowledge and skills and apply them to better NPA management.

2. NPA staff show high motivation to implement the given tasks

Responses:

1. Conduct needs assessment to identify the real needs for training
2. Offer technical trainings by qualified experts on various topics probably including but not limited to areas such as: METT; SMART patrolling; “Beyond Enforcement Approach”; wildlife survey, research and monitoring techniques; participatory tools and methods for engaging and empowering communities; nature interpretation; tourism management; visitor safety, rescue and first aid, etc.
3. Conduct on-the-job training in various topics by experts in various topics (outreach, law enforcement, livelihoods, GIS etc.
4. Conduct study tours for the NPA staff and partners as incentive and opportunity to explore.
5. Capacity of staff livelihoods and examples of livelihood development activity.

12.1.5 NPA headquarters’ office operation

Specific Objective: To effectively operate the Phou Xiengthong NPA Headquarters’ office.

Desired Outcome: The Phou Xiengthong NPA headquarters is functioning systematically and continuously.

Responses:

1. Translate the management plan into annual, quarterly and monthly work plans
2. Conduct regular staff meetings to ensure that all staff are aware of their tasks and for reporting work progress and challenges.
3. Develop a business plan for sustainable financing mechanism of the Phou Xiengthong NPA
4. Prepare and hold various meetings of the NPA MA including some *ad hoc* meeting if needed
5. Document the results of the meetings and follow-up on them
6. Prepare and hold the Phou Xiengthong NPA Steering Committee at least once a year.

12.1.6 Infrastructure and equipment for the operation of NPA management authority

Specific Objective: Provide adequate infrastructure and equipment for Phou Xiengthong NPA MA.

Desired Outcome: Phou Xiengthong NPA MA has the needed infrastructure at HQ, sub-stations and coordination office at district level with necessary equipment for implementing the NPA management

Responses:

1. Construction of HQ Office with other support facilities e.g staff dormitory, exhibition, visitors’ Bangalows etc.
2. Construction of sub-stations (2) and checkpoints (5).

3. Renovation of District Coordination Offices (3) at relevant districts
4. Purchase office equipment and furniture for the HQ and sub-station Offices.
5. Procure transportation means (4WD pick ups, motorcycles etc
6. Purchase basic field equipment such cameras, camera traps, binoculars, GPSs, field guides and camping equipment and communication tool for outreach programme.
7. Maintain and regularly check the equipment.
8. Procure computers, printer, LCD/projector and software
9. Establish database system of the Phou Xiengthong NPA management.

12.1.7 Monitoring, evaluation, and adaptive management

Specific Objective: To establish a Monitoring and Evaluation (M&E) system for operation.

Desired Outcomes:

1. Monitoring and evaluation (M&E) system is functioning and providing reports in a timely manner.
2. All lessons learnt of successful collaborative management practice are identified and adapted into the management framework of the Phou Xiengthong NPA.
3. Management Effectiveness tracking Tool (METT) scores show improving trend over time

Responses:

1. Ensure that short activity reports are available for each completed activity and kept in the general management database.
2. Produce quarterly and bi-annual summary reports on socio-economic and biodiversity monitoring results
3. Prepare annual report with summarising all achievements and lessons learnt.
4. Summarise lesson learnt from all practices of the Phou Xiengthong NPA management.
5. Develop and revise the NPA regulations to support collaborative management
6. Conduct monitoring of all practices and apply to the management system from time to time.

12.2 Sub-Programme: Collaborative Management

For effective collaborative management of the Phou Xiengthong NPA, the NPA Management Authority has to collaborate with local governments (district, kumban, village level), local NGOs / civil society organisations, and local people who also need to be capacitated in order to fulfil their expected roles and responsibilities. Besides - to implement collaborative management effectively - mutual agreements need to be in place that clearly define the roles and responsibilities of the different institutions and stakeholders.

Relevant district offices will have to be empowered to fulfil their official mandates in providing technical support and extension services to the villages of Phou Xiengthong NPA. At village level, community responsibility and ownership to protect their forest land will have to be promoted. To

build-up a common understanding and local ownership, conservation awareness raising has to go hand in hand with capacity building measures and community action.

Apart from negotiating and signing necessary agreements with local government, this sub-programme includes practical activities on the ground, such as outreach and conservation awareness, law enforcement and village-based patrolling.

Specific Objective: To develop collaborative management in place at each participating district of Phou Xiengthong NPA to function effectively.

Desired Outcomes:

1. District agreements and village conservation agreements are well implemented with a clear understanding of their respective roles and responsibilities in the collaborative management system.
2. District Implementing Teams formed in each district with capacity and skills that being able to deliver their agreement tasks effectively.
3. District law enforcement team have capacity and skills that being able to collaborative management for Phou Xiengthong NPA is operated within the government system.
4. Coordination of relevant provincial offices, district offices and other stakeholders is improved.

Responses:

1. Discuss with involved provinces and district authorities the formation of district implementation teams for supporting collaborative mgt of Phou Xiengthong NPA
2. Prepare Terms of Reference for the District Implementation Teams (DIT) (about their roles and responsibilities for supporting Phou Xiengthong NPA collaborative management)
3. Adopt and endorse the ToR of DIT by the District Governor
4. Prepare and sign conservation agreements with key NPA villages upon management interventions in place.
5. Provide necessary trainings as to build capacity and skills of participating districts, the DIT specifically and through relevant works
6. Build ownership of the participating districts for Phou Xiengthong NPA Management
7. Organise regular meetings of the district implementation teams to review past management activities and plan for further actions
8. Monitor the adherence to the conservation agreements
9. Keep all records and reports on collaborative management meetings, membership lists, activity reports and ensure dissemination to the committee members.

<p><i>Management Objective 2: To conserve biodiversity through management measures and monitoring</i></p>
--

12.3 Sub-Programme: Biodiversity Conservation

12.3.1 Biodiversity inventory (flora and fauna)

Specific objective: To conduct biodiversity inventory of Phou Xiengthong NPA.

Desired outcome: Biodiversity status of Phou Xiengthong NPA is obtained.

Responses:

1. Prepare a ToR for biodiversity assessment
2. Recruit a team of specialists for biodiversity assessment in the Phou Xiengthong NPA.
3. Conduct biodiversity assessment through survey samplings.

12.3.2 Biodiversity inventory (population census for key large mammals)

Specific objective: To conduct population census for key large mammals of Phou Xiengthong NPA.

Desired outcome: Populations of key large mammals e.g Banteng and Gaur of Phou Xiengthong NPA are obtained.

Responses:

1. Prepare for population census of key large mammals by appropriate methodology.
2. Conduct population census of key large mammals in the Phou Xiengthong NPA.
3. Reporting and dissemination of the population census of key large mammals.

12.3.3 Biodiversity monitoring

Specific Objective: To knowledge about the biodiversity according to the defined indicator species in Phou Xiengthong NPA.

Desired Outcome: Results of biodiversity monitoring inform biodiversity status and for management planning in the Phou Xiengthong NPA.

Responses:

1. Prepare and design biodiversity monitoring system using defined indicator
2. Train NPA and relevant district staff team to help conduct biodiversity monitoring
3. Conduct systematic biodiversity monitoring using indicator species e.g Banteng
4. Set-up village logbooks for recording encounters of key wildlife species in the NPA
5. Set-up and operate camera traps for target species monitoring (species diversity) and large mammal moving patterns
6. Develop baselines for long-term biodiversity monitoring in the Phou Xiengthong NPA
7. Promote partnerships with universities/research organisations for biodiversity monitoring

8. Report, publish and disseminate results of biodiversity monitoring

12.3.4 Biodiversity research

Specific objective: To improve new knowledge about the biodiversity and species discovery in Phou Xiengthong NPA.

Desired outcome: New knowledge from research projects in the NPA has been shared, disseminated and used for conservation planning.

Responses:

1. Identify possible topics and key scientific partners for specific research projects.
2. Identify and coordinate key partners for research projects (flora and fauna – herps)
3. Provide small grants for student research projects
4. Train NPA staff team for facilitating and participating research projects
5. Conduct research projects when funding available.
6. Promote partnerships with universities/research organisations for biodiversity research
7. Report, publish and disseminate results of biodiversity research and applying for management planning.

12.3.5 Species recovery plan

Specific Objective: For Banteng and Gaur to have specific measures of protection and enhanced, but can include Gibbon if it is still present today.

Desired Outcome: Recovery plan for large mammals (Banteng and Gaur) to be available for implementation.

Responses:

1. Consult with key experts for preparation of recovery plan for large mammals in the NPA to include Banteng and gaur, also include gibbon.
2. Prepare recovery plan for large mammals (Banteng and Gaur) in Phou Xiengthong NPA.
3. Present and finalise the species recovery plan “the conservation actions”

12.4 Sub-Programme: Outreach and Conservation Awareness

Specific Objective: To increase the conservation awareness for the people living in and around Phou Xiengthong NPA.

Desired Outcome: The people living in and around the Phou Xiengthong NPA have understood and become ownership in the NPA management.

Responses:

1. Provide training to district outreach team on outreach and conservation awareness

2. Define appropriate materials for each group communication (villager, student, public)
3. Develop outreach materials to address the issues of the Phou Xiengthong NPA (leaflet, poster, flier, village speaker, radio & TV programme) etc.
4. Conduct outreach and awareness activities at village level – at least 25 target villages
5. Conduct outreach and awareness activities in schools of the target villages of the NPA
6. Support environmental events (world environmental day etc) with press releases
7. Monitor and evaluate the effectiveness of conservation outreach activities at district level

12.5 Sub-Programme: Law Enforcement

Specific objective: To effectively law enforcement

Desired outcome: Lower case of negative impacts recorded in the Phou Xiengthong NPA Responses

1. Review, orientation and collection information
 25. Hold a meeting with key partners e.g POFI, police, army, courts and DAFO on improving tactics of law enforcement with clear responsibilities
 26. Collect info of key traders, stores who sell gears or part of them for illegal hunting, fishing and logging in each district
 27. Collect info of key hunters and wildlife traders in the NPA villages, including official in each district (office).
 28. Conduct an education, awareness and law dissemination for the target groups objectively
 29. Support the district government/police in collecting all illegal gear (chainsaw, guns, fishing gears etc.) in Phou Xiengthong villages
2. Preparation and training
 30. Provide trainings for the district implementation teams in planning and evidence-based reporting (SMART) if necessary.
 31. Establish and improve village patrol teams by village cluster “zone”
 32. Provide on-the-job trainings for the village patrol teams in laws, GPS and filling reports
 33. Equip village patrol teams (uniforms, equipment, tents, hammocks, GPS, smart phone)
 34. Agree on zone for which village cluster to do and be arranged.
 35. Establish and operate a hotline and corresponding network of village informants
 36. Establish and operate a quick response mobile unit (based at HQ)
3. Conduct patrolling
 37. Support village patrols in and adjacent the Phou Xiengthong NPA by agreed zones monthly
 38. Support joint patrols with army in the military zone quarterly
 39. Conduct checkpoints and mobile patrol

4. Support and evaluation

40. Support the district coordination offices/sub-stations in coordination, supervision and monitoring village patrol teams.

41. Conduct information exchange meeting about lesson learnt in law enforcement (patrol) for the whole NPA

Management Objective 3: To improve sustainable livelihoods of local communities for conservation

12.6 Sub-Programme: Land Use Planning and Zoning

Despite being a nationally protected area, Phou Xiengthong NPA has been subject to biodiversity and forest degradation in the past due to mainly illegal logging and hunting. In order to fulfil its protective function, the conservation value of the Phou Xiengthong NPA has to be maintained, rehabilitated and enhanced. In this sub-component, all activities related to improving the land use planning, zoning, management of the natural forests are included.

12.6.1 Land use planning

Specific objective: To improve the management of the forest land by proper land use planning

Desired outcome: Forest land of the Phou Xiengthong NPA is managed and maintained based on the land use planning and zoning in the long-term interest of the villagers and biodiversity conservation.

Responses:

1. Conduct land use plans of 25 NPA villages using FALUPAM approach
2. Increase the understanding of land use planners of conservation principles and wildlife corridor management.
3. Monitor and inspect land use at villages

12.6.2 Area and zoning management

Specific objective: To complete demarcate the boundaries and zones to avoid further encroachment.

Desired outcome: Boundaries and user zones of the Phou Xiengthong NPA are managed strictly according to the NPA regulation or village land use regulations.

Responses:

1. NPA boundary to be reviewed with all demarcation posts in place appropriately.
2. TPZ boundary to be delineated and demarcated on the ground with local communities.
3. Signboards and information boards will be installed in appropriate place at visible sites, but to ensure they are good and permanent signboards.
4. Monitor boundaries and zoning to be conducted regularly

12.6.3 Forest fire prevention

Specific objective: To prevent human-induced forest fires in the Phou Xiengthong NPA by village-based forest fire prevention.

Desired outcome: Human-induced forest fires in the Phou Xiengthong NPA are prevented.

Responses:

1. Conduct awareness raising on forest fire prevention prior to the forest fire season
2. Train villagers of enclave villages in establishing fire breaks at critical locations
3. Fire breaks to be prepared before any burning activity
4. Check and warn the persons at checkpoints before entering the NPA on forest fire prevention and responsibilities.

12.6.4 Forest rehabilitation

Specific objective: To rehabilitate degraded forest of the Phou Xiengthong NPA to improved ecological conditions.

Desired outcome: Degraded forest of the Phou Xiengthong NPA is rehabilitated, by assisted natural regeneration and other necessary means.

Response:

1. Some degraded forest will be defined during the land use planning
2. Promote naturally forest rehabilitation with local communities.
3. Monitor forest rehabilitation works in the defined rehabilitation areas.

12.7 Sub-Programme: Livelihood Development for Conservation

Local community development linked to conservation has to be supported by Phou Xiengthong NPA Management Authority in order to build their cooperation for collaborative PA management. The idea to empower communities to take their sustainable development in their own hands. They shall be supported in developing sustainable livelihood alternatives for income generating activities in order to reduce their heavy reliance on natural resources. To support the livelihood activities in the PA will be closely linked to village efforts in conserving their environment. Besides, it has to be acknowledged that livelihood development is the core mandate of PAFO/DAFO, as not only the Phou Xiengthong NPA Management Authority.

12.7.1 Improve sustainable livelihoods

Specific objective: To improve the livelihood of the rural target population while at the same time conserving the natural resources.

Desired outcome: The target villages of the Phou Xiengthong NPA have better livelihood alternatives with village conservation agreements as commitment for implementation of the collaborative management.

Responses:

1. Coordination and livelihood activity monitoring at district level
 42. Coordinate with district (relevant sectors and projects) to formally establish district livelihood teams for Phou Xiengthong NPA by district governor (agreement letter)
 43. Assess available budget at district level for livelihood development at Phou Xiengthong NPA villages
 44. Conduct monitoring of livelihood activity in the NPA target villages
 45. Meeting for sharing information and identifying lessons learnt on livelihood improvement at district level
2. Prepare village action plan (target villages only)
 46. Assess and review potentials of livelihood development of the NPA villages for defining livelihood activities.
 47. Building local ownership of the defined priority villages for collaborative management and livelihood development.
 48. Draft village action plan for livelihood activities with draft conservation agreements to present and discuss the draft village action plan to the villagers (each village)
 49. Prepare final village action plan and present to district for endorsement
3. Implement the livelihood development incl. training
 50. Identify village group/leader for livelihood improvement
 51. Identify pilot families based on commonly agreed selection criteria
 52. Conduct training (of trainers) on livelihood development at village level
 53. Conduct farmer to farmer exchange visits on livelihood development
 54. Provide support for livelihood development to village and pilot families (not in cash)
4. Promote the leadership and ownership of livelihood development at local level
 55. Provide leadership training to village and cluster leaders including monitoring and reporting
 56. Empower village development group to conduct self-monitoring and reporting
 57. Refreshing local ownership of the defined priority villages for collaborative management and livelihood development.

12.7.2 Ecotourism development

Specific objective: To develop ecotourism for the benefit of the local population and the management of Phou Xiengthong NPA.

Desired outcomes:

1. Tourism sites of the PXT NPA with complete registry
2. Local people of the Phou Xiengthong NPA have better livelihood alternatives through ecotourism linked to conservation of nature and environment.
3. Tourists have a safe enjoyable, educational and value-for-money experience; understand the value of Phou Xiengthong and the threats it faces, become supporters of Phou Xiengthong conservation efforts and help communicate information to others.
4. Income from tourism helps to fund implementation of the Phou Xiengthong Collaborative Management Plan

Responses:

1. Review and discuss with potential partners for ecotourism development in the NPA – including issues of concession fees; tourist numbers/carrying capacity for different activities, etc.
2. Conduct survey for potential tourism sites with complete registry
3. Develop tourism facilities, tourism packages and services
4. Prepare marketing materials (poster, leaflets, flier etc) for ecotourism
5. Establish and disseminate rules and regulations for tourists and tour operators
6. Consult and cooperate with interested firms for developing the ecotourism activities that can benefit the local communities and the Phou Xiengthong NPA.
7. Provide some necessary small facilities such as information signboards as well as training for tour guides and monitoring the tourism activities for further development.

12.8 Work Schedule

The Work schedule of the Phou Xiengthong NPA Management Plan for five-years was prepared and arranged by component/sub-programme and activity. The first year of the Plan will be about recruitment, procurement, and some other necessary arrangements with some staff team training, as well as basic infrastructure development (HQ, sub-station and checkpoint). The second year will be about socio-economic survey as part of land use planning, village actions for livelihood development/conservation agreement, zoning, signboards with NPA boundary demarcation. For the year 3 will start financing for livelihood development through village development fund and specific trainings, also biodiversity inventory and biodiversity monitoring. Also, to start some survey for potential ecotourism development and to continue the year 4, with some support and promote this sub-programme but no budget for major tourism facility development in the Plan (see Annex 4).

12.9 Monitoring and Evaluation

Monitoring and evaluation will be conducted for measuring outputs and outcomes of the implementation of Phou Xiengthong NPA Management Plan (see Table 8). The monitoring will be conducted quarterly for tracking outputs and the evaluation will be conducted at least annually, but often a half-term (2.5 years) and final term of the Phou Xiengthong NPA Management Plan implementation. The Outputs will be measured in a number or percentage but the Outcomes will be measured in improved capacity of NPA staff and key partners in PA management; and then the

Impacts will be measured in a conservation success which indicates in a better biodiversity status – the defined indicator species showing positive impacts which better detections (more numbers of the species recorded on their site encounters), larger area of distribution and more numbers of species recorded. However, the impact measurement will be based on the biodiversity programme which therefore not clearly put in the targets of achievements in the table below:

Table 8. Key targets for monitoring and evaluation of the Phou Xiengthong NPA Management

No	Sub-programme/ key activity	Level and No of achievements			Means of Verification
		Output	Outcome	Impact	
1	General Management and Capacity Building			X	Improved capacity for the NPA management productively.
	Improve the Organisation Structure	X	X		Organisation structure of the NPA is improved in place with Units and clear ToR to better function.
	Staffing with training events	# of trainees	X		Report of training, the trainees are able to conduct their works and train others.
	Infrastructure and necessary facilities and NPA equips	# of	X		The proposed infrastructure/facilities and equipment for the NPA management are in place.
2	Collaborative management			X	The Phou Xiengthong NPA management has been well collaborated from relevant sectors.
	District collaborative committee and agreements	# of	X		District collaborative committee and agreements, DOC/DIT are available to function toward the NPA management.
	Village collaborative committee and agreements	# of	X		Village collaborative committee and agreements are available to function toward the NPA mgt as village base.
3	Biodiversity Conservation and Research			X	Knowledge of biodiversity in the NPA is improved and applied for management planning
	Biodiversity assessment	# of			Report of biodiversity assessment and population census for gibbon and elephant.
	Biodiversity monitoring	# of			Report of biodiversity monitoring conducted in effective way and to use for further conservation planning.
	Biodiversity research	# of			Report of biodiversity research projects conducted specifically and to use for further conservation planning.

4	Outreach and conservation awareness			X	The target groups have well understood and supported for the NPA management.
	Outreach material	# and sets			Report of outreach, a series of outreach materials prepared for target audiences
	Villages	# of villages (61)	X		Report of outreach, # of villages with outreach completed and the local villages are raised in their understandings and ownership for NPA management.
	Public e.g markets	# of events (30)	X		Report of outreach, # of events held and public receives better knowledge in conservation needs and cooperation.
	Schools	# of schools (61)	X		Report of outreach, # of schools with outreach completed and the school children/students receive better knowledge in conservation.
5	Law enforcement			X	Threats are addressed sufficiently
	Regulations	X			NPA Regulations in place and well disseminated.
	Poaching	# of poachers			List of target groups (hunters, loggers etc) by village and district for educating and persuading them to change their behaviours.
	Patrolling	# of patrols	X		Report of patrols held, can effectively address key threats showing lower number of cases/threats.
6	Land use planning				Forest and land have been well protected, regenerated and use the allocated land effectively.
	Review and conduct village land use	No of villages (25)			Report of land use planning, a book of village land use completion for at least 19 key villages with detailed land use planning.
	NPA Boundary	X	X		Report of completed NPA boundary with demarcation posts and signboards are in place.
	Zoning	X	X	X	Report of zoning, the TPZ with boundary demarcation posts are in place for effective law enforcement.
	Forest restoration	X			The northern zone and northern corridor to be naturally rehabilitated (ca. 1,000 hectares).

7	Livelihood Development			X	The key NPA villages have livelihood alternatives with lower pressure on the NPA
	Village group for livelihood development	25 villages			Report of livelihood work, the no of village groups for specific assisted activities formed e.g cattle raising.
	Establish Pilot families	# of			Report of livelihood work, the defined pilot families funded and can demonstrate for other.
	Assisted poor families and poachers	# of			Report of livelihood work, the defined poor families and poachers can access to the fund.
	Conservation Agreements	25 villages	X		Report of livelihood work, the CAs for village livelihood support are implemented in 25 villages and conservation objectives are tracked regularly.
	Tourism sites				Report of tourism sites with registry
	Tourism facilities and service				Report of tourism work, the ecotourism facilities are developed, generate incomes for local people/revenues for the NPA.

12.10 Financial Plan

Indicative budget of the Five-Year Plan (2022–2026) is prepared in different areas of works/sub-programmes (see Annex 5). As the Lao Government does presently not have the financial capacity to cover the full cost for making effective management of the Phou Xiengthong NPA it will depend for some time to come on external support. However, the past 20 years have shown that donor-funded project come and go (see e.g. Poulsen and Luanglath, 2005), and that there are frequently funding gaps between the different projects or even project phases. Therefore, Lao Government is committed to principally cover at least the basic cost of the staff, offices and necessary field operations (such as patrolling).

The total cost for the financial planning 2022–2026 is about USD 3.95 million which is not to include the GoL kind-contribution of USD 1.17 million. The basic operational costs for the GoL are close to USD 359,680 for the 5 - Year Plan, with USD 71,960 per annum. As to implement this plan requires investment cost and to entirely pay for the consultancy costs (about USD 351,000).

The annual costs will reach a peak in 2023 with USD 1 million, and then reduce to about USD 0.35 million in 2025. In terms of budget allocation for the sub-components, most budget is allocated to the sub-programme: Investment costs (USD 0.75 million, 21.13 per cent), then Sustainable livelihood development (USD 0.58 million, 16.28 per cent) and law enforcement (USD 0.36 million, 10.18 per cent) (see Table 9 below and detailed in Annex 5):

In case, Phou Xiengthong NPA management arrangements have been developed in place with vehicles and equipment the basic operational costs apart from GoL staff salaries will be at least USD 150,000 annum and can optimum at USD300,000. Therefore, the NPA has to have some secured budget for implementing the collaborative management of the NPA.

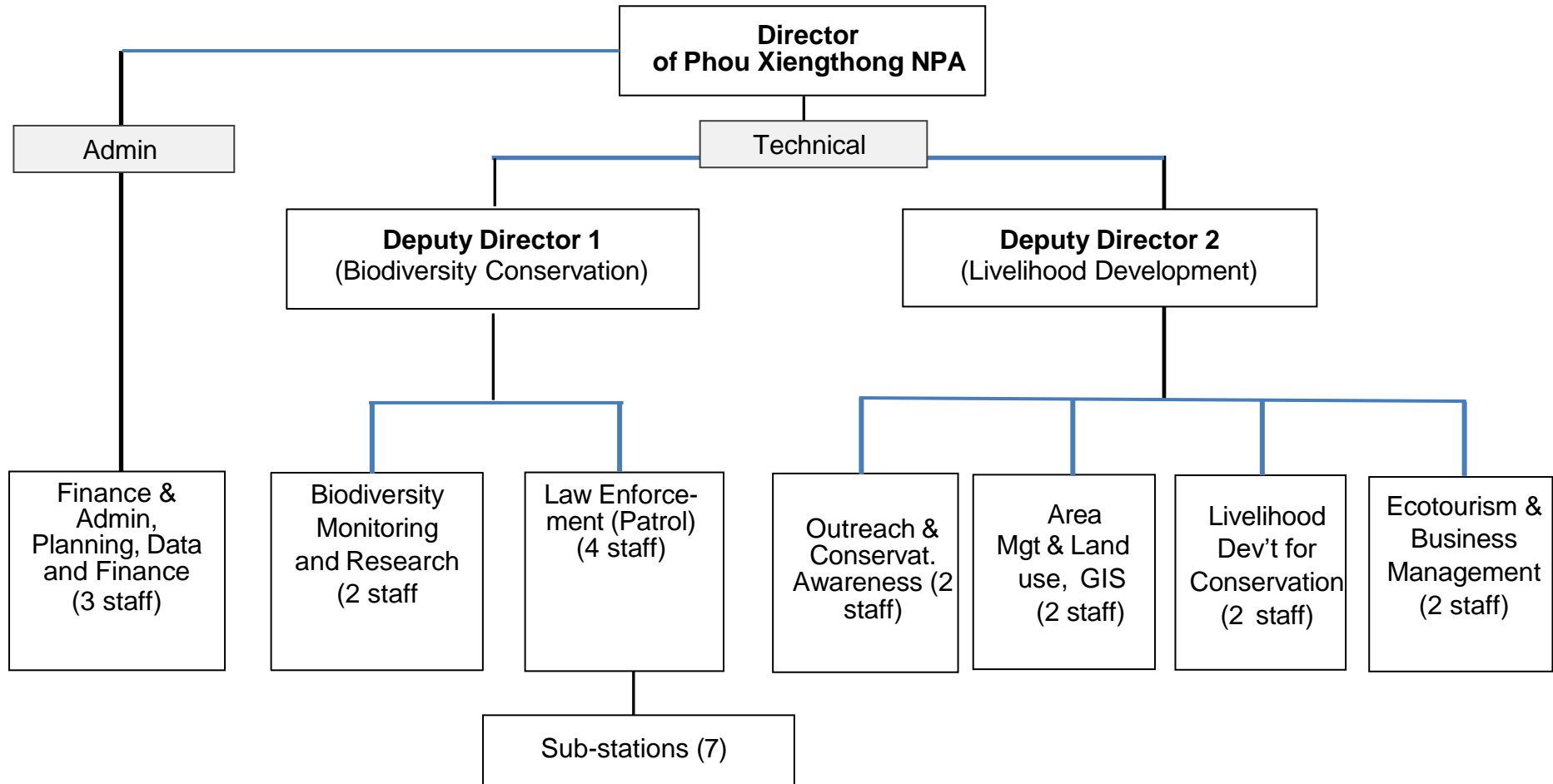
Table 9. Summary of Indicative budget plan

	Programme/Component	Budget Plan (2022-2026)					Total costs (USD)
		2022	2023	2024	2025	2026	
1	Investment costs	312,000	200,000	150,000	90,000	10,000	762,000
2	Consulting costs	75,000	90,000	90,000	57,000	39,000	351,000
3	Sub-Programmes						
3.1	General management and capacity building	27,000	60,000	82,000	45,500	39,000	253,500
3.2	Collaborative management practice	15,000	59,700	72,000	45,000	6,000	197,700
3.3	Biodiversity conservation and monitoring	3,000	89,000	91,000	72,000	39,000	294,000
3.4	Outreach and conservation awareness	11,000	90,300	61,000	-	-	162,300
3.5	Law enforcement	68,000	101,500	86,500	68,500	41,500	366,000
3.6	Land use planing and zoning	93,500	135,000	16,000	15,000	11,000	270,500
3.7	Sustainable livelihood development	7,500	28,500	173,000	294,000	82,500	585,500
4	Basic operational costs	87,040	87,040	87,040	77,360	50,950	353,430
	Sub-total costs	699,040	941,040	908,540	764,360	318,950	3,595,930
	<i>Contingency (10%)</i>	<i>69,904</i>	<i>94,104</i>	<i>90,854</i>	<i>76,436</i>	<i>31,895</i>	<i>359,593</i>
	Grand Total	768,944	1,035,144	999,394	840,796	350,845	3,955,523

REFERENCES

- Boonrattana, R. 1999. Training in Wildlife Survey and Data Analysis for the National Biodiversity Conservation Areas Dong Hua Sao and Phou Xiengthong. Report to BCP, Pakse.
- Claridge G. F. (compiler). 1996. An Inventory of the Wetlands of Lao PDR. IUCN – World Conservation Union in Bangkok, Thailand.
- DFRM. 2015. Hin Namno NPA Collaborative Management Plan, Department of Forest Resource Management, Ministry of Natural Resource and Environment, Vientiane, Lao PDR.
- DoF. 2017. Draft Guideline on Protected Area Management Planning, Department of Forestry, Ministry of Agriculture and Forestry, Vientiane, Lao PDR.
- Duckworth, J. W., Salter, R. E. and Khounbolin, K. (compiler). 1999. Wildlife in Lao PDR. 1999 Status Report. IUCN – World Conservation Union, Vientiane.
- Evans, T. D., Stones, A. J. and Thewlis, R. C. M. 1996. A Wildlife and Habitat Survey of the Phou Xiengthong Protected Area. Biodiversity Conservation Project, Pakse
- GAA, Community Development for Conservation Project (funded by German Agro-Action (GAA), implemented with assistance by Population Development International (PDI)) working in user villages of PXT
- Ling, S. 1999. Biological System of Prioritization for Protected Areas in the Lao PDR. The Wildlife Conservation Society, Vientiane, Lao PDR.
- Poulsen, M.K. and K. Luanglath (2005). Projects come, projects go: lessons from participatory monitoring in southern Laos. *Biodiversity and Conservation* (2005) 14:2591– 2610.
- Phommasane, S (2020). Participatory Rural Assessment (PRA) of NTFPs in two villages of Phou Xieng Thong NPA, LakhornPheng District, Salavan province, Department of Forestry/BCAMP/ACB.

Annex 1.
Organisation Structure of Phou Xiengthong NPA Headquarters



Annex 2.

Terms of References

for Each Unit of the Phou Xiengthong NPA

Administration Unit, Planning, Data and Finance

58. Maintain books and accounts (financial record keeping) on management
59. Manage procurement of goods and services
60. Prepare budgets and plan and monitor resource use
61. Identify staffing needs and necessary training
62. Monitor and evaluate staff performance
63. Maintain stores and inventories of equipment and supplies
64. All important information to be collect and backed-up properly.
65. Collect and to ensure all documents of projects, reports to be kept in the data system.
66. Work with other team to collect a series of reports by each team
67. Collect and to ensure all documents of projects, reports to be kept in the data system.
68. Provide necessary data and reports in cooperation with relevant units
69. Provide contributions on Admin, Planning, Data and Finance into the 5-year NPA mgt plan.

Outreach and Conservation Awareness Unit

70. Conduct a problem analysis and develop an outreach strategy to suppress the emerging threats to an NPA in partnership with other stakeholders.
71. To support, training, encourage and supervise district outreach team
72. Develop monthly, three monthly and annual work plans for outreach activities.
73. Organise village meetings to discuss sustainable livelihood related issues and conservation issues in relation to the zoning.
74. Deliver structured community awareness programmes.
75. Design awareness/education publications and materials.
76. Research and design curriculum-based schools programmes.
77. Organise environmental education campaigns in schools, with emphasis on buffer zones.
78. Conduct attitude surveys in local communities.
79. Organise special events e.g wildlife day, tree planting events, nature camps.
80. Provide information to, and work with, the mass media, including local radio, journalists from newspapers and magazines, television companies to promote PA issues.
81. Provide contributions on Community Outreach into the 5-year NPA mgt plan.

82. Work with other units and relevant offices for strengthening a collaborative management in the NPA as whole through outreach campaigns and other assistance e.g livelihood and ecotourism assistance that can benefit the conservation.

Biodiversity Monitoring and Research Unit

83. To support, training, encourage and supervise district biodiversity monitoring teams
84. Promote a Biodiversity Research network, championed by interested national and international academics or researchers (if possible).
- Collate research reports and records on all aspects of biodiversity.
 - Promote biodiversity assessments on selected taxonomic groups.
85. Act as counterparts to visiting researchers
86. Organise a biodiversity monitoring programme (any monitoring method designed).
87. Organise annual or regular censuses of endangered and threatened species.
- Organise camera trapping surveys and line transect surveys
 - Hold annual / biannual meetings to discuss research priorities
 - Produce an annual report on biodiversity achievements
88. Provide contributions on Biodiversity Research into the 5-year NPA mgt plan.

Law Enforcement Unit

89. To support, training, encourage and supervise district law enforcement teams
90. Design law enforcement strategy to guide implementation of field activities
91. If needed, establish multi-functional ranger stations at strategic locations, particularly in remote border areas.
92. Establish checkpoints along roads entering the PA.
93. Establish patrolling sectors within the PA.
94. Design and develop a result-based monthly patrol plan to effectively suppress emerging threats to NPA
95. Monitor the boundary to ensure no encroachment or removal of boundary posts.
96. Supervise capacity building of village patrolling units.
97. Undertake patrols in the PA, recording both threats and significant biodiversity sightings.
98. Establish a mobile patrol unit, which operates both with the PA and the BuZ.
99. Maintain a biodiversity and law enforcement database.
100. Organise regular monthly meetings of senior law enforcement staff.
101. Organise a patrolling strategy, comprising short patrols (1–2 days), long patrols (5–15 days), information gathering, road blocks, making and monitoring village agreements.

102. Establish a legal working group to act as crime prosecution unit to deal with illegal activities may occur in the NPA
103. Provide contributions on Law Enforcement into the 5-year NPA mgt plan.

Area Management, Land Use and GIS Unit

104. Define zones and demarcate boundaries of TPZ and NPA boundaries
105. Review NPA boundaries at where land use conflicts
106. Collect all information of zones, NPA boundaries, including number of posts and signboards.
107. To define necessary boundaries of zones of the NPA.
108. To construct NPA boundary demarcation posts and signboard
109. Collect all information of development projects associated with the Phou Xiengthong NPA.
110. Participate in surveys of proposed project development in the NPA
111. Hold annual / biannual meetings to discuss zoning and boundary issues
112. Produce an annual report on area management achievements
113. Collate monthly GPS tracking data from patrolling teams, biodiversity monitoring teams, livelihood development teams.
114. Work with other team to collect a series of reports by each team
115. To produce a series of maps of the NPAs based on the needs
116. Provide contributions on Area Mgt and Land Use into the 5-year NPA mgt plan.

Livelihood Development for Conservation Unit

117. Assist the relevant district offices to review and define priority villages for detailed socio- economic assessment
118. Establish district livelihood development team for each district
119. Develop monthly, three monthly and annual work plans for livelihood development activities.
120. Assist the relevant district offices to conduct socio-economic surveys
121. Work with the relevant district offices to identify most important activities of livelihood development by village for financing
122. Assist the relevant district offices to study and identify some potentials of processing, including handicraft development.
123. Establish a village livelihood development fund with operations

124. Assist the relevant district offices to survey market needs and supply of products from local villagers
125. Ensuring no negative impact to the NPA associated with livelihood induction.
126. Monitor and facilitate livelihood development activities.
127. Report monthly, three monthly and annual reports of livelihood development of the NPA villages.
128. Work with other units and relevant offices for strengthening a collaborative management by
129. ensuring that the livelihood assistance will benefit the conservation.
130. Provide contributions on Livelihood Developemnt into the 5-year NPA mgt plan.

Ecotourism and Investment Management Unit

131. Establish a local ecotourism network or association, linking to the provincial tourism authority, private tour companies, service providers and hotels, and other local tourism sites to promote ecotourism within the NPA.
132. Develop monthly, three monthly and annual work plans for tourism activities.
133. Identify recreation opportunities and appropriate recreation activities, including “tourism products”.
134. Establish a fund mechanism from ecotourism to enhance support from local communities and other partners.
135. Promotion and marketing of tourism products.
136. Operate entrance ticketing and sales points.
137. Guide visitors on specialised activities.
138. Identify information needs about visitors.
139. Collect information about visitors and activities.
140. Design interpretative trails and information signs/exhibits.
141. Define CUZs for recreation and locations based upon appropriateness and compatibility.
142. Develop, monitor and supervise tourism concessions and commercial concessions, particularly involving local communities.
143. Lead development of tourism strategies and plans, linking to private sector.
144. Collect and register all investment projects, business, shops relevant to ecotourism.
145. Work with other units and relevant offices for strengthening a collaborative management in the NPA by ensuring that the ecotourism assistance will benefit the conservation.
146. Provide contributions on Ecotourism and Investment Management into the 5-year NPA mgt plan.

Annex 3

Draft Minister's Agreement on the Phou Xiangthong NPA Steering Committee



LAO PEOPLE'S DEMOCRATIC REPUBLIC
Peace, Independence, Democracy, Unity and Prosperity
====00000====

Ministry of Agriculture and Forestry

No...../MAF

Vientiane, Dated.....

Draft Agreement on Establishing Steering Committee of Phou Xiangthong National Protected Area and its Arrangement for Supporting the Collaborative Management

- Pursuant to the Government's Decree No. 134/GoL, dated 13rd November, 2015 on Protected Areas;
- Pursuant to the Forestry Law No. 64/NA, dated 13/06/2019
- Pursuance Prime Minister's Decree No. 262/PM, dated 28th July, 2012 on Organisation and Activities of Ministry of Agriculture and Forestry;

Minister of MAF agrees:

Article 01. Establish the Phou Xiangthong NPA Steering Committee

1. Vice-Minister, MAF	Chair
2. Vice Provincial Governor of Salavan and Champasak	Vice-Chair
3. Deputy Director of Department of Forestry	Member
4. Director of Salavan and Champasak PAFO	Member
5. Department of Secretariat/Ministry of Defense	Member
6. Director of Provincial Planning and Investment	Member
7. Director of National Front Construction	Member
8. Director of Provincial Information, Culture and Tourism	Member
9. Director of Provincial Lao Women's Union	Member
10. Director of Provincial Military Office	Member
11. Director of Provincial Education and Sports	Member
12. Director of Provincial Public Health	Member
13. Director of Provincial Police Office	Member
14. Vice-District Governor of Sanasomboun District	Member
15. Vice-District Governor of Khongxedone District	Member
16. Vice-District Governor of Lakhonepheng District	Member
17. Head, Sanasomboun DAFO	Member
18. Head, Khongxedone DAFO	Member
19. Head, Lakhonepheng DAFO	Member

Article 02. Role and Responsibility of the Phou Xiengthong NPA Steering Committee

1. Provide advice and direction of the Phou Xiengthong NPA Management based on its management plan; be consistent with national socio-economic development plan; and relevant international treaty that Laos is being a party;
2. To appoint technical steering committee) of the Phou Xiengthong NPA Management;
3. To improve organisation structure and appoint director and deputy directors of the Phou Xiengthong NPA Management Authority;
4. Help negotiate with some concerned investors for mitigation adverse impacts and raising fund for the Phou Xiengthong NPA management;
5. Help solve some problems incur in the province related to the NPA management.

Article 03. Establish District Steering Committee (for each district)

- | | |
|--|------------|
| 1. Vice-District Governor | Chair |
| 2. Head, DAFO | Vice-Chair |
| 3. Head, National Front Construction | Member |
| 4. Head, District Information, Culture and Tourism | Member |
| 5. Head, District Lao Women's Union | Member |
| 6. Head, District Education and Sports | Member |
| 7. Head, District Public Health | Member |
| 8. Head, District Military Office | Member |
| 9. Head, District Police Office | Member |

Article 04. Role and Responsibility of the District Steering Committee

1. Provide advice and direction of the Phou Xiengthong NPA Management based on its management plan; be consistent with national socio-economic development plan;
2. Provide advice and technical support for the District Coordination Office/Technical Teams for the implementation of the Phou Xiengthong NPA Management according to its management plan;
3. Monitor and evaluate the Phou Xiengthong NPA Management conducted in the district;
4. Help solve some problems incur in the district related to the NPA management.

Article 05. Establish the Phou Xiengthong NPA Mgt Technical Panel

- | | |
|--|------------|
| 1. Deputy Director of Department of Forestry | Chair |
| 2. Deputy Director of Salavan and Champasak PAFO | Vice-Chair |
| 3. Rep. of Department of Forestry | Member |
| 4. Rep. of Provincial Forest Inspection Office | Member |
| 5. Rep. of Provincial Military Office | Member |
| 6. Rep. of Provincial Lao Women's Union | Member |
| 7. Head or Deputy Head of Sanasomboun DAFO | Member |
| 8. Head or Deputy Head of Khongxedone DAFO | Member |
| 9. Head or Deputy Head of Lakhonepheng DAFO | Member |
| 10. Rep. of other organisations e.g NGOs | |

Article 06. Roles and Responsibilities of the Phou Xiengthong NPA Mgt Technical Panel

5. Provide advice for the implementation of the Phou Xiengthong NPA Management Authority to be consistent with national socio-economic development plan;
6. Provide technical advice for the implementation of the Phou Xiengthong NPA Management according to its management plan;
7. To provide advice for developing management plan, annual workplan and budget;
8. To approve the annual plan and budget plan with consistent support;
9. To hold a meeting to report the progress of the implementation of the Phou Xiengthong NPA management plan;
10. Each member shall appoint 2 provincial staff to coordinate this work at provincial level and 2-3 district staff to participate at district level as District Implementing Team to support the collaborative management.
11. To monitor, inspect and evaluate the management and implementation of the Phou

Xiengthong NPA management.

Article 07. Management authority of the Phou Xiengthong NPA

1. Phou Xiengthong NPA Management Authority is an unit of the government structure with at least 20 staff being operated under PAFO of Salavan and Champasak Provinces;
2. The Office has administrative level at deputy director of Provincial Forestry Section;
3. The Office has to have its bank account in Khongxedone District with management authority;
4. For decision making process of land survey for concession will be made in consultation with central level, the Department of Forestry, MAF;
5. For technical, staff and financial matter, the Office has direct line of coordination with Protected Area Management Division of Department of Forestry, MAF;
6. All relevant projects being proposed; planned or having worked in the Phou Xiengthong NPA shall consult and report to the Phou Xiengthong NPA MA regularly;
7. The Managing team of the Phou Xiengthong NPA Management Authority shall do administration, management, planning, financing and reporting regularly.

Article 08. Roles and Responsibilities of the managing team of the Phou Xiengthong NPA Management Authority

1. To do procurement, purchase equipment/goods and recruit staff, contact staff (including experts) for the Phou Xiengthong NPA Management Authority in close cooperation with PAFO of Salavan and Champasak Provinces to ensure of principal judgment and through transparency process;
2. To do administration, planning, budgeting and reporting to appropriate levels to ensure it is transparency, accountability and timely;
3. To implement the Phou Xiengthong NPA mgt plan as well as other government's policies, laws, decrees, plans, regulations as to ensure for consistency;
4. To conduct and participate in research, surveys, and any missions are relevant to protected area management and undertake in and adjacent to the NPA;
5. To coordinate and cooperate with all relevant government offices in the province, participating districts for implementing the PA mgt;
6. To collect data, storage, analysis and dissemination the result of work;
7. To prepare and revise NPA management plan, regulations from time to time;
8. To collect fees from tourism business in the NPA and other relevant development projects that generate negative impact on the NPA including survey projects for concession;
9. To evaluate staff performance, management and work delivery;
10. To keep records of all works conducted including administration, financial and technical aspect.

Article 09. The Working System

1. The implementation of the work will be collectively made by consensus among the managing team of the Phou Xiengthong NPA Management Authority, assigning particular tasks to individual staff with one final decision.
2. The work will be conducted based on the plan, programme and projects with priorities and milestones set periodically.
3. To work with relevant sectors closely from central to provincial, district and site level.
4. The work will be implemented under direction, having inspected, encouraged and conducted for lessons learnt, evaluated through a series of meetings from weekly to monthly, quarterly, bi-annually and annually.

Article 10. The Budgeting

1. The financial sources for Phou Xiengthong NPA management will from interested donors, aid projects, carbon credits and government.
2. The financing will be managed by the Phou Xiengthong NPA Management Authority under the oversight of the Phou Xiengthong NPA Management Technical Steering Committee.
3. Third party or the State Inspection organisation can inspect the financial matter of the Phou

Xiengthong NPA, if necessary.

Article 11. The Implementation

Departments, centre, institutions within Ministry of Agriculture and Forestry, any relevant organisations, partners working in the Phou Xiengthong NPA as well as the participating districts, appointed persons shall be aware and implement it effectively.

Article 12. The Effectiveness

This agreement takes effectiveness from the date of signature.

Minister,

Ministry of Agriculture and Forestry

Annex 5. Indicative Budgets

I Basic Budget Costs for Phou Xiengthong NPA Management Authority										
No	Item	Unit	Unit cost	Amount per year	Budget Plan (2022-2026)					Total costs (USD)
					2022	2023	2024	2025	2026	
1	Staff cost				58,290	58,290	58,290	48,610	22,200	245,680
1.1	Salaries				16,800	16,800	16,800	16,800	0	67,200
1.1.1	GoL staff from GoL budget	month	500	12						
1.1.2	Volunteers (7)	month	200	12	16,800	16,800	16,800	16,800		67,200
1.2	Allowances for unplanned activities				41,490	41,490	41,490	31,810	22,200	178,480
1.2.1	Director	day	30	60	1,800	1,800	1,800	900	900	7,200
1.2.2	Deputy Director (2)	day	30	60	3,600	3,600	3,600	1,800	1,800	14,400
1.2.3	Unit Heads (6)	day	25	50	7,500	7,500	7,500	7,500	3,750	33,750
1.2.4	Technical Staff and adm (7)	day	25	50	7,500	7,500	7,500	6,250	3,750	32,500
1.2.5	Field Station (6)	day	25	50	3,750	3,750	3,750	3,750	3,750	18,750
1.2.6	District Coordination staff (9)	day	15	50	6,750	6,750	6,750	3,750	3,750	27,750
1.2.7	Villagers for Checkpoints (15)	day		0	0	0	0	0	0	0
1.2.8	Volunteers (6)	day	15	50	4,500	4,500	4,500	4,500	4,500	22,500
1.2.9	District Livelihood team (12 staff)	day	7	30	2520	2520	2520	1260		8,820
1.2.10	District Law Enforcement team	day	7	30	1890	1890	1890	1050		6,720
1.2.11	District outreach team	day	7	30	1680	1680	1680	1050		6,090
2	Office Running Cost (incl. Communication)				17,400	17,400	17,400	17,400	17,400	87,000
2.1	Headquarter Office	month	700	12	8,400	8,400	8,400	8,400	8,400	42,000
2.2	Field Station (2)	month	100	12	2,400	2,400	2,400	2,400	2,400	12,000
2.3	District Coordination Office (3)	month	100	12	3,600	3,600	3,600	3,600	3,600	18,000
2.4	Checkpoints (5)	month	50	12	3,000	3,000	3,000	3,000	3,000	15,000
3	Transportation (Fuel and Maintenance) Costs				12,600	12,600	12,600	12,600	12,600	27,000
3.1	4WD Vehicle (5)	month	120	12	7,200	7,200	7,200	7,200	7,200	36,000
3.2	Motorcycles (15)	month	30	12	5,400	5,400	5,400	5,400	5,400	27,000
Total					88,290	88,290	88,290	78,610	52,200	359,680

II Investments for Phou Xiengthong NPA Management Authority

No	Item	Unit	No	Unit cost	Budget Plan (2022-2026)					Total costs (USD)
					2022	2023	2024	2025	2026	
1	Buildings and access				0	200,000	150,000	62,000	5,000	417,000
1.1	HQ Office and staff dormitory	No	1	150,000		100,000	50,000	5,000	5,000	160,000
1.2	Bungalow for visitors and camping ground	Lump sum	1	50,000		50,000				50,000
1.3	Sub-Station offices (2)	No	2	25,000		50,000				50,000
1.4	District Coordination Offices (3) Renovation	No	3	15,000			45,000			45,000
1.5	Checkpoints (5)	No	5	5,000			25,000			25,000
1.6	Visitor Centre (Exhibition house) and other facilities	No	1	57,000				57,000		57,000
1.7	Road access to the HQ office and other necessary	Lump sum	1	30,000			30,000			30,000
2.	Vehicles				227,000	0	0	3,000	5,000	235,000
2.1	4WD Vehicle (5) for HQ ans sub-stations	No	5	40,000	200,000					200,000
2.2	Motorcycles (16: 4xHQ, 6xSS, 6xDCO)	No	16	1,500	24,000					24,000
2.3	Reparation	No	1	3,000	3,000			3,000	5,000	11,000
3.	Equipment				85,000	0	0	25,000	0	110,000
3.1	Photocopy Machines (1)	No	1	2,500	2,500					2,500
3.2	Computers and Printers (12: 6xHQ, 3xSS, 3xDCO)	No	12	1,500	18,000					18,000
3.3	Cameras (17: 4xHQ, 3xSS, 6xDCO, 4CP)	No	17	500	8,500					8,500
3.4	Binoculars (10: 4xHQ, 3xSS, 3xDCO)	No	10	100	1,000					1,000
3.5	Camera traps (50 Units) for HQ	No	50	300	15,000					15,000
3.6	LCD/projectors	No	2	1,500	3,000					3,000
3.7	Outreach materials (speakers, amplify)	No	4	3,000	12,000					12,000
3.8	Uniforms for staff and village patrol team	Lump sum	1	10,000	10,000			10,000		20,000
3.9	Other necessary office and field equipment	Lump sum	3	5,000	15,000			15,000		30,000
Total					312,000	200,000	150,000	90,000	10,000	762,000
Remarks: HQ = Headquarters Office, SS = Sub-station, DCO = District Coordination Office, CP = Checkpoint										

III Consultancy for Phou Xiengthong NPA Management Authority

No	Item	Unit	Amoun	Unit cost	Budget Plan (2022-2026)					Total costs (USD)
					2022	2023	2024	2025	2026	
1	International Consultants				0	0	0			0
	Fees				0	0	0			0
1.1	Biodversity Coonservation Advisor	Month	12	5,000						
2	National Consultants				75,000	90,000	90,000	57,000	39,000	351,000
	Fees				75,000	90,000	90,000	57,000	39,000	351,000
2.1	Protected Area Management Advisor	Month	30	4,000	24,000	24,000	24,000	24,000	24,000	120,000
2.2	Law Enforcement Expert	Month	18	3,000	18,000	18,000	18,000			54,000
2.3	Livelihood and land use Expert	Month	24	3,000	18,000	18,000	18,000	18,000		72,000
2.4	Outreach Expert	Month	18	2,500	15,000	15,000	15,000			45,000
2.5	Tourism expert	Month	24	2,500		15,000	15,000	15,000	15,000	60,000
	Total				75,000	90,000	90,000	57,000	39,000	351,000

12 Activity Programme and Budget for Phou Xiengthong NPA Management										
No	Activity	Unit	Unit cost	Amount	Budget Plan (2022-2026)					Total costs (USD)
					2022	2023	2024	2025	2026	
12.1	General management and capacity building				27,000	60,000	82,000	45,500	39,000	253,500
12.1.1	Organizational structure				3,000	1,000	-	-	-	4,000
12.1.1.1	Prepare and propose new organisation structure of PXT NPA with appointing a director, deputy directors, units as well as roles and responsibilities of each unit in order to make ready for becoming a ASEAN Heritage Park in the near future.	Event	1,000	2	2,000					2,000
12.1.1.2	Approval of Ministry on the organization structure of PXT NPA with appointing a director, deputy directors, units as well as roles and responsibilities of each unit.	Event	1,000	1	1,000	1,000				2,000
12.1.2	Staffing				5,000	1,000	-	-	-	6,000
12.1.2.1	Recruit staff based on the wanted posts	Event	1,000	3	1,000					1,000
12.1.2.2	Recruit district staff for supporting the NPA management in each district	Event	1,500	1	1,500					1,500
12.1.2.3	Conduct training needs assessment for staff by TA	Event	1,500	1	1,500					1,500
12.1.2.4	Orientate direction and co-management approach to the staff team by TA	Event	1,000	2	1,000	1,000				2,000
12.1.3	Upgrade to ASEAN Heritage Park status				2,500	5,000	-	-	-	7,500
12.1.3.1	Coordinate with central government for preparation PXT ASEAN Heritage Park	Event	1,000	1	1,000					1,000
12.1.3.2	Prepare the document with central government for establishing PXT AHP	Event	1,500	2	1,500	1,500				3,000
12.1.3.3	Conduct assessment, consultation and preparation for establishing PXT AHP	Event	3,500	1		3,500				3,500
12.1.4	Regulations of AHP				-	3,000	16,500	-	-	19,500
12.1.4.1	Prepare draft regulations of PXT AHP through a participatory approach	Lumpsum	3,000	1		3,000				3,000
12.1.4.2	Conduct consultation on the draft regulations of PXT AHP with relevant stakeholders	Event	3,000	1			3,000			3,000
12.1.4.3	To revise and finalize for approval of draft regulations of PXT AHP	Lumpsum	3,000	1			3,000			3,000
12.1.4.4	District regulations for AHP management (be equally implemented to all kumban and villages)	Lumpsum	3,500	3			10,500			10,500

12.1.5	Capacity building for PXT NP staff and its partners by TA/experts				3,000	23,500	23,500	13,000	5,000	68,000
12.1.5.1	Training 1. Admin, office management, planning, reporting and data system including filing	Event	1,500	3	1,500	1,500	1,500			4,500
12.1.5.2	Training 2. Outreach with activity plan for district team and villages	Event	1,500	3	1,500	1,500	1,500			4,500
12.1.5.3	Training 3. Law enforcement with activity plan for district team and villages	Event	1,500	2		1,500	1,500			3,000
12.1.5.4	Training 4. Biodiversity conservation and biodiversity monitoring practice	Event	1,500	2		1,500	1,500			3,000
12.1.5.5	Training 5. Forest fire prevention with activity plan for villages with activity plan for district team	Event	1,500	3		1,500	1,500			3,000
12.1.5.6	Training 6. Forest rehabilitation with activity plan for district team and villages	Event	1,500	2		1,500	1,500			3,000
12.1.5.7	Training 7. Livelihood development and extension with activity plan for district team	Event	1,500	3		1,500	1,500			3,000
12.1.5.8	Training 8. English (vocational training at Phou Xiengthong NPA HQ)	Event	5,000	4		5,000	5,000	5,000	5,000	20,000
12.1.5.9	Study tours for managers and staff team	Event	8,000	3		8,000	8,000	8,000		24,000
12.1.6	In-house capacity building of PXT NPA team				3,000	13,000	16,000	16,000	16,000	64,000
12.1.6.1	Conservation Outreach practice	Event/y	3,000	1	3,000	3,000	3,000	3,000	3,000	15,000
12.1.6.2	Law enforcement practice and network of information	Event/y	5,000	1		5,000	5,000	5,000	5,000	20,000
12.1.6.3	Livelihoods of staff and livelihood development examples (pilot at HQ)		5,000	1		5,000	5,000	5,000	5,000	20,000
12.1.6.4	Exhibition and facilitation practice	Lumpsum	3,000	1			3,000	3,000	3,000	9,000
12.1.7	Meetings of protected area management				9,000	9,000	9,000	9,000	9,000	45,000
12.1.7.1	Meeting of Phou Xiengthong NPA Steering Committee	Event/y	3,000	1	3,000	3,000	3,000	3,000	3,000	15,000
12.1.7.2	Annual staff meeting (information exchange, lessons learned)	Event/y	3,000	1	3,000	3,000	3,000	3,000	3,000	15,000
12.1.7.3	Meetings with stakeholders and development partners	Lumpsum	3,000	1	3,000	3,000	3,000	3,000	3,000	15,000
12.1.8	M&E, Adaptive Management				1,500	1,500	3,000	1,500	6,000	13,500
12.1.8.1	Conduct METT exercise involving key experts and stakeholders	Event	1,500	2			1,500		1,500	3,000
12.1.8.2	Review the results and impacts of the different components	Lump sum	1,500	1	1,500	1,500	1,500	1,500	1,500	7,500
12.1.8.3	Improve the NPA management plan as needed		3,000	1					3,000	3,000
12.1.9	Sustainable Financing				-	3,000	14,000	6,000	3,000	26,000
12.1.9.1	Study and identify financing sources for Phou Xiengthong AHP	Lump sum	5,000	1			5,000			5,000
12.1.9.2	Facilitate to support for the development of financing sources e.g ecotourism	Event	3,000	1			3,000	3,000		6,000
12.1.9.3	Prepare for developing financial mechanism management	Event	3,000	2		3,000	3,000			6,000
12.1.9.4	Funding mobilization	Lump sum	3,000	1			3,000	3,000	3,000	9,000

12 Activity Programme and Budget for Phou Xiangthong NPA Management										
No	Activity	Unit	Unit cost	Amount	Budget Plan (2022-2026)					Total costs (USD)
					2022	2023	2024	2025	2026	
12.2	Collaborative management				15,000	59,700	72,000	45,000	6,000	197,700
12.2.1	Conservation agreements for collaborative management				10,500	8,700	3,000	3,000	3,000	28,200
12.2.1.1	<i>Establish district agreements by District Governor on collaborative management of PXT NPA (1 agreement per district) incl. establishment of district implementation teams (e.g. outreach, law enforcement, livelihood support etc)</i>				10,500	-	-	-	-	10,500
12.2.1.1.1	Discuss with district government on developing the district agreements to support the collaborative management of PXT NPA.	District	1,000	3	3,000					3,000
12.2.1.1.2	Draft the district agreement for collaborative management (policy, DAFO, NFC, LWU, Education and project)	District	1,000	3	3,000					3,000
12.2.1.1.3	Endorse the district agreement and implementation by District	District	1,500	3	4,500					4,500
12.2.1.2	<i>Village conservation agreements in selected target villages (14)</i>				-	8,700	3,000	3,000	3,000	17,700
12.2.1.2.1	Prepare a model for village conservation agreements	Village	200	6		1,200				1,200
12.2.1.2.2	Sign village conservation agreements for 25 villages as part of livelihood activity	Village	300	25		7,500				7,500
12.2.1.2.3	Monitor with district the implementation of conservation agreements regularly	District	1,000	3			3,000	3,000	3,000	9,000
12.2.2	Training for district teams (DOC/DIT)				-	21,000	30,000	12,000	-	63,000
12.2.2.1	Conduct training in outreach and conservation awareness with exercises	District	3,000	3		9,000	9,000			18,000
12.2.2.2	Conduct training in law enforcement with exercises	District	3,000	3		9,000	9,000			18,000
12.2.2.3	Conduct training in livelihood development with exercises	District	3,000	3			9,000	9,000		18,000
12.2.2.4	Leadership training	Time	3,000	1		3,000	3,000	3,000		9,000
12.2.3	Support training activities of relevant office districts				-	18,000	27,000	18,000	-	63,000
12.2.3.1	Conduct outreach, conservation campaigns and training by District outreach team	District	3,000	3		9,000	9,000			18,000
12.2.3.2	Conduct law enforcement by district law enforcement team	District	3,000	3			9,000			18,000
12.2.3.3	Conduct training activities for livelihood development by district livelihood deve't team	District	3,000	3			9,000	9,000		18,000
12.2.3.4	Other necessary relevant activities and training activities by district teams	District	3,000	3		9,000	9,000	9,000		27,000
12.2.4	Meetings and evaluation and adaptive management				4,500	12,000	12,000	12,000	3,000	43,500
12.2.4.1	Quarterly meeting	District	1,500	3	4,500	4,500	4,500	4,500		18,000
12.2.4.2	Evaluation and adaptive management meeting (bi-annual and annual) by PXT NPA MA	Lump sum	3,000			3,000	3,000	3,000	3,000	12,000
12.2.4.3	Other necessary meetings (ad hoc)	District	1,500	3		4,500	4,500	4,500		13,500

12 Activity Programme and Budget for Phou Xiengthong NPA Management

No	Activity	Unit	Unit cost	Amount	Budget Plan (2022-2026)					Total costs (USD)
					2022	2023	2024	2025	2026	
12.3	Biodiversity conservation and monitoring				3,000	89,000	91,000	72,000	39,000	294,000
12.3.1	Biodiversity Inventory				1,000	51,000	25,000	26,000	-	103,000
12.3.1.1	Prepare for recruiting biodiversity assessment team (ToR for advertisement)	Lump sum	1,000	1	1,000					1,000
12.3.1.2	Conduct biodiversity assessment by the assigned specialist team	Lump sum	50,000	1		50,000				50,000
12.3.1.3	Conduct population census of key large mammal species	Lump sum	50,000	1			25,000	25,000		50,000
12.3.1.4	Reporting and disseminations	Lump sum	1,000	1		1,000		1,000		2,000
12.3.2	Biodiversity monitoring				-	33,000	60,000	30,000	33,000	156,000
12.3.2.1	Design and prepare for long-term biodiversity monitoring (indicator and camera trapping)		3,000	1		3,000				3,000
12.3.2.2	Conduct biodiversity monitoring of an indicator species	Lump sum	30,000	1			30,000			30,000
12.3.2.3	Conduct species diversity and large mammal monitoring by camera trapping	Lump sum	30,000	1		30,000	30,000	30,000	30,000	120,000
12.3.2.4	Prepare baselines for biodiversity monitoring in PXT NPA	Lump sum	3,000	1					3,000	3,000
12.3.3	Biodiversity research				2,000	5,000	6,000	6,000	5,000	24,000
12.3.3.1	Preparation for specific biodiversity research of interests and research proposals	Lump sum	3,000	1		3,000			3,000	6,000
12.3.3.2	Contact academia institutes for research fund raising	Lump sum	2,000	1	2,000	2,000			2,000	6,000
12.3.3.3	Conduct biodiversity research projects (including support some student research projects)	Lump sum	5,000	1			5,000	5,000		10,000
12.3.3.4	Reporting and disseminations	Lump sum	1,000	1			1,000	1,000		2,000
12.3.4	Species recovery plan				-	-	-	10,000	1,000	11,000
12.3.4.1	Define and prepare for large mammal recovery plan e.g Banteng, gibbon, douc and gaur	Lump sum	10,000	1				10,000		10,000
12.3.4.2	Incooperate the species recovery plan into any management interventions by TA									
12.3.4.3	Reporting and disseminations	Lump sum	1,000	1					1,000	1,000

12 Activity Programme and Budget for Phou Xiengthong NPA Management

No	Activity	Unit	Unit cost	Amount	Budget Plan (2022-2026)					Total costs (USD)
					2022	2023	2024	2025	2026	
12.6	Conducting land use planing and zoning				93,500	135,000	16,000	15,000	11,000	270,500
12.6.1	Land use planning and village forest land certification				80,000	120,000	-	-	-	200,000
12.6.1.1	Conduct new land use planning for target villages at household level with land use certificates	Village	8,000	25	80,000	120,000				200,000
12.6.1.2	Assist villagers to set-up local bylaws on land use	Village								
12.6.2	Area and zoning management				-	1,500	4,000	4,000	4,500	14,000
12.6.2.1	Review and improve the NPA boundaries with additional signs and posts especially in Salavane	Post	50	50			1,500	1,000		2,500
12.6.2.2	Signboards of regulations and information at appropriate access for TPZ.	Sign	100	50			1,000	1,500	3,000	5,500
12.6.2.3	Monitor land uses, boundaries and zoning	Lump sum	1,500	1		1,500	1,500	1,500	1,500	6,000
12.6.3	Forest fire prevention in the NPA				13,500	13,500	4,500	4,500	-	36,000
12.6.3.1	Conduct awareness raising on forest fire prevention prior to the forest fire season	District	1,500	3	4,500	4,500	4,500	4,500		18,000
12.6.3.2	Train villagers of the key villages in establishing fire breaks at critical locations	District	1,500	3	4,500	4,500				9,000
12.6.3.3	Control the use of fire in agricultural land preparation (and enforce it after notification)	District	1,500	3	4,500	4,500				9,000
12.6.4	Forest rehabilitation in the NPA (apart from land use) and wildlife pathways				-	-	7,500	6,500	6,500	20,500
14.6.4.1	Assist villages to set-up nurseries for indigenous tree species	District	2,500	3			7,500			7,500
14.6.4.2	Support in preparing actions and conducting basic village forest management and rehabilitation	Lump sum	5,000	1				5,000	5,000	10,000
14.6.4.3	Monitor forest rehabilitation works at villages, including wildlife pathways	Lump sum	1,500	2				1,500	1,500	3,000

12 Activity Programme and Budget for Phou Xiengthong NPA Management

No	Activity	Unit	Unit cost	Amount	Budget Plan (2022-2026)					Total costs (USD)
					2022	2023	2024	2025	2026	
12.7	Improving sustainable livelihoods of local communities				7,500	28,500	173,000	294,000	82,500	585,500
12.7.1	Improve sustainable livelihood development				7,500	28,500	148,000	234,000	22,500	440,500
12.7.1.1	<i>Coordination and monitoring at district level</i>				7,500	10,500	18,000	18,000	13,500	67,500
12.7.1.1.1	Coordinate with district (relevant sectors and projects) on improved comm. dev't	Event	1,500	3	4,500	4,500	4,500	4,500		18,000
12.7.1.1.2	Formally establish district livelihood teams for PXT by district governor (agreement letter)	District	500	3	1,500					1,500
12.7.1.1.3	Assess available budget at district level for livelihood development at PXT villages	District	500	3	1,500	1,500				3,000
12.7.1.1.4	Conduct livelihood activity monitoring in target villages (regular visits) by district teams	District	3,000	3			9,000	9,000	9,000	27,000
12.7.1.1.5	Meeting for sharing information and identifying lessons learnt on livelihood improvement at district level	District	1,500	3		4,500	4,500	4,500	4,500	18,000
12.7.1.2	<i>Target village selection for livelihood development</i>				-	3,000	-	-	-	3,000
12.7.1.2.1	Review potentials of livelihood development of the NPA villages	District	1,000	3		3,000				3,000
12.7.1.2.2	Define priority for co-management based on location (enclave and straddling villages) with threats and natural resource dependence	District	1,000	3		-				-
12.7.1.3	<i>Prepare village action plan (target villages only)</i>				-	15,000	100,000	150,000	-	265,000
12.7.1.3.1	Livelihood development programme (livelihood activities)	Village	10,000	25			100,000	150,000		250,000
12.7.1.3.2	Conduct village conservation awareness and ownership for sustainable livelihood development, including training of teams	Village	300	25		7,500				7,500
12.7.1.3.3	Identify village group/leader, pilot families for livelihood improvement	Village		25						-
12.7.1.3.4	Prepare, present and discuss the draft village action plan to the villagers	Village	300	25		7,500				7,500
12.7.1.4	<i>Implement the livelihood development incl. training</i>				-	-	27,000	54,000	9,000	90,000
12.7.1.4.1	Conduct training (of trainers) on livelihood development at village level	Village	300	25			18,000	45,000		63,000
12.7.1.4.2	Conduct farmer to farmer exchange visits on livelihood development	Time	3,000	3			9,000	9,000	9,000	27,000
12.7.1.5	<i>Promote the leadership and ownership of livelihood development at local level</i>				-	-	3,000	12,000	-	15,000
12.7.1.5.1	Provide leadership training to village and cluster leaders including monitoring and reporting	Village	300	25			3,000	4,500		7,500
12.7.1.5.2	Empower village development group to conduct self-monitoring and reporting	Village	300	25				7,500		7,500
12.7.2	Tourism development				-	-	25,000	60,000	60,000	145,000
12.7.2.1	Conduct survey and register all potential tourism sites for development and concession	Lumpsum	25,000	1			25,000			25,000
12.7.2.2	Develop tourism facilities in Phou Xiengthong NPA	Lumpsum	50,000	1				50,000	50,000	100,000
12.7.2.3	Prepare materials for tourist potential communication	Lumpsum	5,000	1				5,000		5,000
12.7.2.4	Assist potential entrepreneurs/investors in preparing business plans (provide matching funds?)	Lumpsum	5,000	1				5,000	5,000	10,000
12.7.2.5	Design and prepare billboards for tourism info and trash bills	Lumpsum	5,000	1					5,000	5,000

Annex 6.
Photos of Tourism Artifacts of Phou Xieng Thong NPA





ເສົາເສ ແລະ ຫີນຫຼັກຄອນ



ຂອງ

ປ່າສະຫງວນແຫ່ງ
ຊາດ, ມູຊຽງທອງ
ແຂວງສາລະວັນ
ELV: 118
E: 573665

