

# Hin Namno National Protected Area Co-Management Plan



Prepared by Hin Namno National Protected Area

In association with

Department of Forestry, Division of Forest Resources Conservation and

With Technical Assistance from

IUCN Lao PDR

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Lao People's Democratic Republic  
Peace Independence Democracy Unity Prosperity  
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Ministry of Agriculture and Forestry  
Department of Forestry

No..... Dated.....

**Resolutions**

Department of Forestry, Ministry of Agriculture and Forestry  
On the implementation of Co- Management Plan for Hin Namno  
National Protected Area

- Pursuance of the Forest Strategy for the Year 2020
- Pursuance of the Forestry Law No. 04/NA, dated 24/12/2007
- Pursuance of the Law on Wild Animals and Aquatic Resources No. 07/NA, dated 24/12/2007.

The Technical Team of Hin Namno National Protected Area (NPA), with technical assistance from the International Union for Conservation of Nature (IUCN), has prepared the Co-Management Plan for Hin Namno NPA through working in cooperation with the relevant sectors in Bualapha District, Khammoune Province, village cluster heads and villagers living adjacent to the Hin Namno NPA.

This Co-Management Plan has been reviewed and finally agreed upon in the consultation workshop held in Bualapha District on September 15-16, 2009, and adopted in the Provincial meeting on October 26-27, 2009. The Management Plan is reference material for the effective management of Hin Namno NPA. However, it is also necessary that it is formulated and implemented in a manner compatible with the local situation.

Thus, the Department of Forestry, Ministry of Agriculture and Forestry, has adopted the management plan and it is effective from the signature date.

Vientiane, Dated.....

Director General, Department of Forestry

## Foreword

A Co-Management Plan is a strategic plan developed through a participatory planning approach in which stakeholders have common goals and objectives, and all parties share roles, responsibilities and benefits in a transparent process. The development of the Hin Namno Co-Management Plan was conducted through working in collaboration with many relevant sectors in Bualapha District, Khammoune Province, as well as village cluster heads and villagers living adjacent to the Hin Namno NPA.

A co-management plan is considered a new approach for Lao PDR, as no protected area management plan has yet been approved and there is a lack of practical and succinct management plans, emphasizing the role of local practitioners in response to key issues such as insufficient staffing and finance. The ultimate goal of the development of such a management plan is to take account of sustainability. As the management approach is to promote the engagement of local people, building local teams is an important step, as well as putting sustainable financial mechanisms in place to support the management plan. It also forms a reference for the management of the Hin Namno NPA. It is also necessary that the plan is formulated correctly and in accordance with the local situation. The plan should be reviewed and revised every 5 years, if needed.

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## Table of Contents

1	Introduction.....	7
1.1	Concepts of Co-Management.....	7
1.2	Objectives of Hin Namno management .....	7
1.3	Development of the Plan .....	8
1.4	Administration Committee and Protected Area Board .....	9
2	Location and Background.....	10
2.1	Location.....	10
2.2	Transportation and communication.....	11
2.3	Geographic characteristics .....	11
2.4	Ethnic Groups and Population.....	12
2.5	Culture and Beliefs.....	13
2.6	Livelihoods.....	13
2.7	Land Use .....	14
2.8	Biodiversity .....	14
2.8.1	Flora .....	15
2.8.2	Fauna.....	15
2.8.3	Important conservation areas .....	16
2.9	Threats to biodiversity.....	18
2.10	Potential for livelihood development .....	18
2.11	Projects/programmes working in Hin Namno villages.....	19
2.12	Progress of Conservation Status of Hin Namno NPA.....	19
3	Main components of the Co-Management.....	20
3.1	Roles and duties of stakeholders .....	20
3.1.1	Village level forest guards .....	20
3.1.2	Khet / Koumban level, sub-station office .....	20
3.1.3	District level, NPA Field Office .....	21
3.1.4	Provincial level, Provincial Division for Protected Areas Management .	21
3.2	The network of coordination .....	21
3.2.1	Village network.....	22
3.2.2	Khet network.....	22
3.2.3	District network .....	22
3.2.4	Other sectors' networks .....	22
3.3	Awareness raising .....	23
3.3.1	Awareness raising materials development.....	24
3.3.2	Implementing organization .....	25
3.4	Zoning .....	25
3.4.1	Conservation zone.....	26
3.4.2	Common managed zone.....	27
3.5	Patrolling and monitoring.....	29
3.5.1	Patrolling and monitoring teams.....	29
3.5.2	Patrolling.....	30
3.5.3	Monitoring .....	30
3.5.4	Field equipment .....	30
3.6	Surveys and Research.....	31
3.7	Implementation of law enforcement .....	32

3.8	Baseline data for monitoring .....	33
4	Supporting components of Co-Management .....	34
4.1	Offices and personnel.....	34
4.1.1	Offices.....	34
4.1.2	Units and technical staff.....	34
4.1.3	Staffing strategy .....	37
4.1.4	Training needs assessment.....	37
4.1.5	Training methodology.....	38
4.1.6	Incentives .....	38
4.2	Vehicles and equipment .....	38
4.3	Operations .....	39
4.3.1	Scope of office duties.....	39
4.3.2	On-duty staff .....	39
4.3.3	Meetings.....	39
4.3.4	Reporting.....	40
4.4	The vehicles and equipment management .....	40
4.5	Data storage.....	40
4.6	Finance .....	40
4.7	Sustainable financial mechanisms.....	41
4.7.1	Funding Sources.....	41
4.7.2	Fund Raising Mechanism / Strategy .....	43
4.7.3	Conservation Obligation .....	43
4.7.4	Financial Management System.....	44
4.8	Budget Forecast.....	45
4.9	Livelihood Development.....	45
4.9.1	Integrated Conservation and Development (ICAD) .....	45
4.9.2	Potential Development Activities .....	46
4.9.3	Mobilization Strategy for Protected Area Cooperation Projects .....	49
4.10	Village Benefits .....	49
	References.....	52

## List of Tables

<i>Table 1: Priority activities for Hin Namno NPA .....</i>	8
<i>Table 2: Hin Namno NPA Administration Committee.....</i>	9
<i>Table 3: Hin Namno NPA Board .....</i>	9
<i>Table 4: Names of village, khet and population in the Hin Namno NPA area.....</i>	12
<i>Table 5: List of primates found in Lao PDR and Hin Namno NPA.....</i>	17
<i>Table 6: Awareness raising activities .....</i>	25
<i>Table 7: Some main banned/permitted activities by area.....</i>	27
<i>Table 8: Composition and number of Khet ranger teams.....</i>	30
<i>Table 9: Important field equipment .....</i>	31
<i>Table 10: Time table for patrolling and monitoring.....</i>	31
<i>Table 11: Potential research topics .....</i>	31
<i>Table 12: Benefit sharing.....</i>	33
<i>Table 13: Hierarchical offices of the NPA .....</i>	34
<i>Table 14: Position, personnel at the provincial level responsible for Hin Namno .....</i>	34
<i>Table 15: Position and personnel within the field office (FO) .....</i>	35
<i>Table 16: Field Office Units (fully recruited).....</i>	35
<i>Table 17: Sub-units of the Field Office.....</i>	35

<i>Table 18: Positions and units within the sub-station office (SO)</i> .....	36
<i>Table 19: Expected staff plan for the sub-station offices</i> .....	37
<i>Table 20: Criteria for personnel assessment</i> .....	37
<i>Table 21: Required vehicles and materials</i> .....	38
<i>Table 22: Potential domestic funding sources</i> .....	41
<i>Table 23: Potential international funding sources</i> .....	42
<i>Table 24: Details of estimated premium fees for conservation</i> .....	43
<i>Table 25: Summary of potential livelihood development, by zones</i> .....	48
<i>Table 27. List of key wildlife species in Hin Namno NPA</i> .....	49

### **List of Maps**

Figure 1: Location map of Hin Namno NPA.....	10
Figure 2. Forest cover map of Hin Namno NPA.....	45
Figure 3. Location map of the villages in Hin Namno NPA.....	46
Figure 4. Important areas of biodiversity and landmarks in Hin Namno.....	47
Figure 5. Zoning map of Hin Namno NPA.....	48

# 1 Introduction

In order to create succinct and user-friendly material for local staff at the district and provincial level, this Co-Management Plan was developed as a strategic framework for effective, local site-based management. However, this plan does not provide the detailed information necessary or utilize a wholly scientific approach. In the future, the Hin Namno NPA will need a Master Plan and specific plans to govern areas such as sustainable tourism development.

This Co-Management Plan has four Chapters; the main content of the Co-Management Plan is described in Chapter 3, while other chapters are the supportive components to this plan. Activities are given in the plan, of which some activities are considered more important and of higher priority than others. Therefore, the degree of priority is defined. The priority levels for activities are classified into 3 levels as:

1 = High (need to start or be available within 3 years)  
2 = Medium (available within 5 years)  
3 = Low (available within 10 years or beyond the period)

The priority of an activity may change depending upon the capacity of financial support, human resources and other opportunities.

The objective of the development of this Co-Management Plan is to provide a strategic and systematic approach for the management of Hin Namno NPA. The plan forms a backbone document for the formulation and development of a model for the co-management of the NPA. The management plan was prepared and agreed concurrently by the relevant organizations at village, district and provincial levels. Ensuring the effectiveness of the implementation and benefits to local communities over both the short-term and long-term requires balancing the objectives of conservation and livelihood development for local people living adjacent to the protected area. In addition, the plan provides important material for mobilizing funding from interested donors.

## 1.1 Concepts of Co-Management

Co-management is a participatory planning and implementation process, which includes joint decision-making of all concerned parties working towards the same goals. Every party has shared roles and responsibilities, with transparency and benefit sharing.

## 1.2 Objectives of Hin Namno management

Hin Namno NPA is considered to have geographically outstanding values – its limestone landscapes and biological diversity. In accordance with Decree 164/PM, the area has been established to fulfill three main objectives, as below:

1. Protection of the area's biodiversity and natural values, especially the forest, plants and wildlife.
2. Protection for scientific research, cultural and tourism purposes.
3. Ensuring the use of forest resources by the villagers in a sustainable way.

Therefore, any development activities that may generate negative impacts on the area are not allowed, except as permitted by the National Assembly and Ministry of Agriculture and Forestry (MAF) and after the consideration of a full environmental impact assessment, as well as detailed socio-economic assessments allowing for cost-benefit analysis. In addition, mitigation measures are to be prepared in accordance with international standards for environmental impact assessment.

Any law enforcement shall be conducted in accordance with Decree 164/PM dated 1993, the Hin Namno Regulation dated 2009, which is formulated from the Forestry Law No.04/NA, dated 24/12/2007, and the Law on Wild Animals and Aquatic Resources No. 07/NA, dated 24/12/2007.

### 1.3 Development of the Plan

The Co-Management Plan has been developed in consultation with stakeholders and relevant sectors at the district and province, as well as village cluster heads and villagers adjacent to the area. Also, technical staff from the central level (DFRC/DoF) contributed to the development of the plan.

The plan should be reviewed every 5 years, in order to make any adjustments to suit the current situation, by working with relevant organizations. Data and results from assessments and lessons learnt from the plan implementation will be important to feed into the further development and review of the plan.

*Table 1: Priority activities for Hin Namno NPA*

Activities	Short-term < 3 years	Mid-term < 5 years	Long-term > 5 years
Staff capacity building (especially khet rangers) (1)	✓	✓	-
Education and awareness raising for villagers (1) and in schools (2)	✓	-	-
Establish and improve network of coordination (2)	✓	-	-
Biodiversity monitoring and patrolling (1)	✓	-	-
Implement law enforcement (1)	✓	-	-
Construction of field station and sub-station offices (1)	✓	-	-
Tourism facility development (1)	✓	-	-
Village livelihood development (2)	Survey	✓	-
Research (3)	survey	✓	-
Construction of boundary demarcation posts (106 posts completed); may continue to construct more posts (3)		✓	-
Construction of information signboards and other signboards including for regulations (2)	✓	-	-
Practice in sustainable financial mechanisms	✓	✓	-
Other, e.g. Lao-Vietnam cooperation	discussion	✓	-

Remarks: ✓ start; - continue where necessary



## 1.4 Administration Committee and Protected Area Board

The plan has defined two committees for assisting with management and providing advice for the implementation of the plan. These are: the Hin Namno NPA Administration Committee; and the Hin Namno NPA Board. The Hin Namno NPA Administration Committee incorporates the sectors that are directly involved in the work of Hin Namno NPA, to assist the implementation of the Hin Namno Co-Management Plan. They must participate in and host any discussions related to Hin Namno NPA management. The Hin Namno NPA Board covers the relevant sectors in Bualapha District and Khammouane Province, in order to provide advice and direction for the management of Hin Namno NPA. They are to participate in discussions or planning workshops for Hin Namno management from time to time. Each organizational member of the Committee and Board should assign its focal point responsible for Hin Namno and take part in discussions and planning workshops when it is invited. Detailed member lists are provided below:

*Table 2: Hin Namno NPA Administration Committee*

<b>Members</b>	<b>Contact number</b>
1. Protected Area Management Section, Khammouane	
2. Provincial Forestry Section, Khammouane	
3. Provincial Forestry Inspection Office, Khammouane	
4. District Agriculture and Forestry Office, Bualapha	
5. Hin Namno NPA Field station Office	
6. Rep. of involved village clusters (on case by case basis)	

*Table 3: Hin Namno NPA Board*

<b>Members</b>	<b>Contact number</b>
1. Provincial Agriculture and Forestry Office, Khammouane	
2. Bualapha Governors' Office	
3. Division of Forest Resource Conservation at national level	
4. Provincial/District Tourism Offices	
5. Bualapha Army Office	
6. Bualapha Police Office	
7. Bualapha Lao Women's Union Office	
8. Bualapha Youth Union Office	
9. Bualapha Environment Office	
10. Bualapha Education Office	
11. Bualapha Health Office	
12. Bualapha Cultural Office	
13. Bualapha Transport and Communication Office	
14. Bualapha Electricité du Laos Office	
15. Bualapha Industry Office	
16. Bualapha Land Use Planning Office	
17. Bualapha Justice Office	
18. Bualapha Finance Office	
19. Bualapha National Front for Construction	

A National Steering Committee for the Hin Namno NPA management should also be established in order to hold any discussions on international cooperation related to Hin Namno NPA as well as the implementation of Natural World Heritage site requirements (should Hin Namno NPA be designated on the World Heritage list).

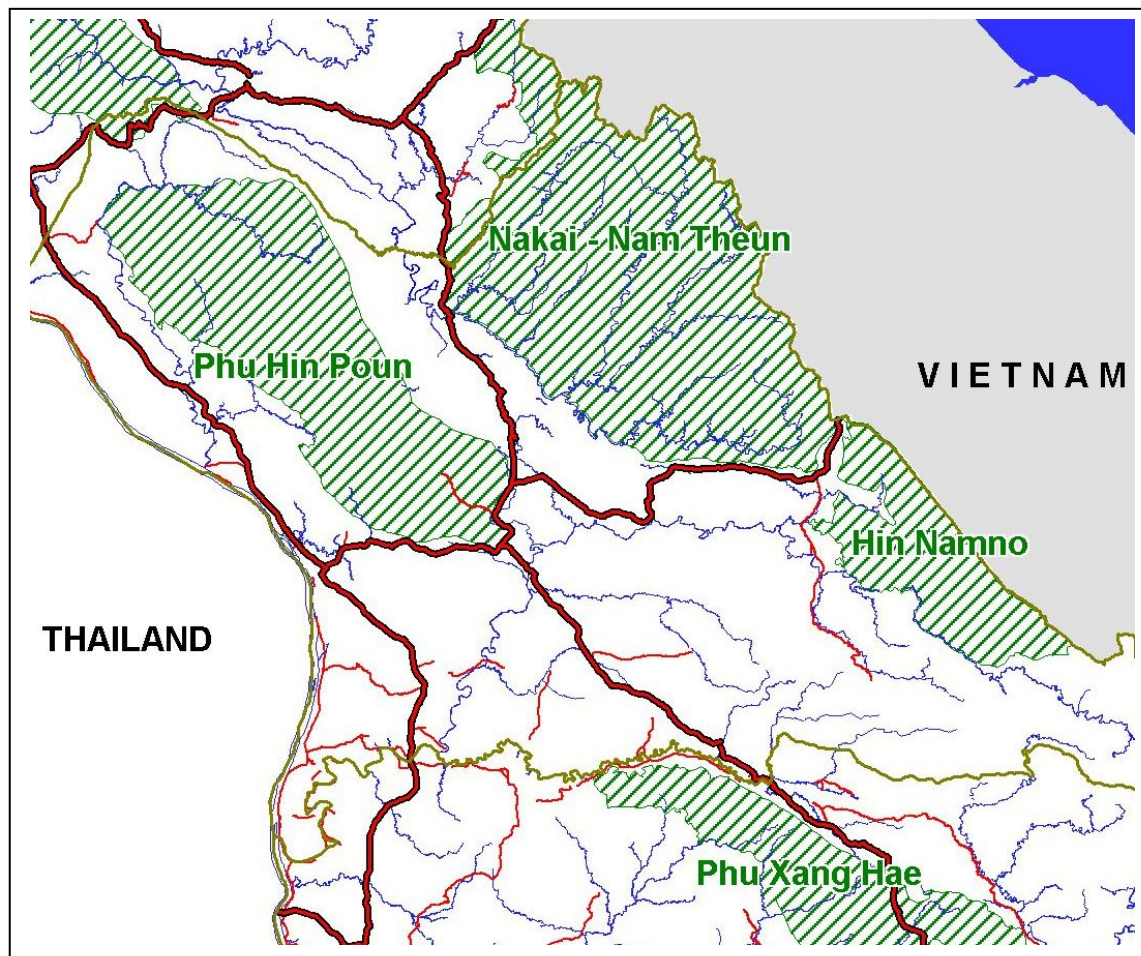
## 2 Location and Background

### 2.1 Location

Hin Namno NPA is located in Bualapha District, Khammouane Province, covering an area of 82,000 ha, at latitude 17° 15' 17" 40" and longitude 105° 43' 105° 09"). As Map 1 shows, the regional location of Hin Namno NPA and map code numbers at scale 1: 100,000 are as follows:

E – 48 – 92	E – 48 – 93
E – 48 – 104	E – 48 – 105

*Figure 1: Location map of Hin Namno NPA*



## 2.2 Transportation and Communication

Access to Hin Namno is difficult during the wet season, particularly to the areas of Khet Nongma and Khet Thaplaao. Other village clusters are better served; travel by boat is another possibility to reach Khet Dou, Lang Khang, Kha Nyou and Vangkxon during the wet season. However, the road connecting the district to Lang Khang and Khet Dou is being upgraded and therefore access to these village clusters will be more convenient once road construction is completed along with a bridge crossing at Ban Pakphanang. Khet Nongping is the closest and easiest area to access. Still, all village clusters are difficult to access during the wet season due to a lack of permanent bridges. Also, mobile phone connections are available in only a few village clusters such as Khet Dou and Lang Khang. Transportation and communication will most likely be improved in the future.

## 2.3 Geographic Characteristics

Hin Namno NPA differs from other NPAs due to its limestone character which makes it difficult to access and acts as obstacles for patrolling, including research activities. The limestone of Hin Namno is not totally bare rock; mostly it is forested, particularly at the mid-level of limestone mountains to foothills. Limestone characters are observed as bare rocks on top, and with some bushes. Small and medium trees can be found at the mid-level, depending on the degree of the gradient. However, large trees can be found in the high mountains where there is less rock. In foothill areas, there are large trees with an average height of 25 m (highest at 45m). Limestone formations are found connecting to each other at various densities and at different sizes and height levels. Generally speaking, all areas in Hin Namno are forested except for the upper limestone hills.

Flat ground areas, or plains, which are found in the valleys of limestone hills, are called “kuane” - for example, Kuane Nong, Kuane Ke, Kuane Khing, Kuane Sane, etc. These kuane areas are important habitats for wildlife and local villagers use them for collecting forest resources.

Various dimensions of caves are found in the area including the Nam Lot Xebangfai cave (7 km length) which was recently charted (NSS, 2009) and revealed to contain many previously unknown phenomena, such as the world’s largest basin, cubic pearls, strong flow/high energy cave and huge standing formations. In addition, many underground caves are found in Hin Namno NPA, which are of critical use for fishes during the dry season. For example, the well-known *Hou peo pa*, “fish cave”, is an underground cave hosting fish during the dry season. Fish emerge from the caves to appear in nearby rivers in the beginning of the wet season when heavy rains flood the mouths of the caves. At the end of the wet season the fish return to the fish caves. Most rivers in Hin Namno are seasonal and considered inactive streams during the dry season, which creates further hardships for staff to patrol in the area. Nevertheless, the areas which have water sources throughout the year include Phou Chuang (height of 1,500m above sea level), Pa Xong, Khoun Ka-arn, Nam Masai (7m long), and Nam Kaloc (3m long).

## 2.4 Ethnic Groups and Population

There are various ethnic groups living around the Hin Nam No NPA, such as Makong, Tri, Yoy, Phoutai, Kaleung, Vietic, and Salang/Kris (this ethnic group has only 28 families). The population is considered not very high, being approximately 7,000 people from 22 villages. There are no villages situated within the protected area. However, there might be more than 10,000 people who are beneficiaries of this protected area.

Table 4 shows the details of the village names around the Hin Namno NPA including some small villages. To make it easier for development, the district authority has reorganized some village structures, while the location of these villages remains unchanged. Therefore, in the context of this Co-Management Plan, these villages will be referred to according to their previous conditions, as these small villages are isolated and it is not possible to gather together for any village planning purposes.

*Table 4: Names of village, khet and population in the Hin Namno NPA area*

No	Village name	Village cluster "Khet"	House	HH	Pop	Female	Ethnic group/s
1	Thong Xang	Ban Dou	54	61	301	157	Yoy
2	Vangmaneu	Ban Dou	58	60	287	154	Phouthai and Salang
3	Ban Dou	Ban Dou	86	88	430	225	Phouthai
4	Nong No	Ban Dou	53	56	285	174	Phouthai
5	Nongseng	Ban Dou	44	46	237	129	Phouthai
6	Nongbua	Langkang	82	90	494	272	Yoy
7	Phanob	Langkang	83	88	405	203	Yoy
8	Vangkhon	Langkang	26	25	116	56	Phouthai,
9	Seanphan	Kha Nyou	50	52	295	159	Phouthai
10	Kha You	Kha Nyou	130	140	669	366	Kaleung
11	Sa-ang	Kha Nyou	144	128	657	326	Kaleung
12	Nya-wai	Pakpha-nang	49	56	229	128	Kaleung
13	Nya-wet	Pakpha-nang	31	41	227	120	Makong/Tri
14	Na Kha-yom	Nongping	48	54	248	110	Vietic
15	Thasa-at	Nongping	44	48	253	169	Kaleung and Makong
16	Nongping	Nongping	36	42	247	117	Makong
17	Thaplao	Thaplao	49	59	307	162	Makong/Tri
18	Ka-I	Thaplao	59	69	293	154	Makong
19	Thangbeng	Thaplao	42	50	249	105	Makong/Tri
20	Namchala	Nongma	58	70	224	154	Makong/Tri
21	Labouy	Nongma	41	44	267	143	Makong/Tri
22	Nongma	Nongma	92	103	528	273	Makong/Tri

(Source, 1996<sup>1</sup>)

<sup>1</sup> This information is taken from a list provided by the Hin Namno team.

## 2.5 Culture and Beliefs

Cultural identity and beliefs vary between each ethnic group but so far no detailed studies have been undertaken in the area. The ethnic groups in the area with distinctive cultures include Salang/Kris in Khet Dou, and Makong/Tri in Khet Taplao and Nongma. These groups live in relatively under-developed conditions, with high levels of illiteracy and a lack of sanitation. They also maintain particularly strong beliefs in spirits. Working with the villagers in Khet Thaplao and Nongma in particular has proven difficult for outsiders.

Salang or Kris was the original ethnic group in the Hin Namno limestone area. In the past, they lived in a scattered fashion, and this ethnic group was referred to as “yellow leaves<sup>2</sup>”. The Salang ethnic group used to live in limestone areas in Hin Namno and along the Lao-Vietnam border for many generations. It is told that approximately 100 years ago they wore pieces of clothes called “Phakatiao<sup>3</sup>” and that their main foods are wild roots. They would be the last group evolved from *Neanderthal*. Some archaeological evidence of their ancestors would likely remain in caves in the area. Nowadays, only 28 households of this ethnic group live in Hin Namno and they are probably the only population of this group remaining in the entire country. Their traditional way of life is only slightly changed since they moved to the lowland area. The Salang ethnic group has plenty of knowledge about how to survive in limestone forests, such as finding water to drink, storing water for the dry season, making Laotao<sup>4</sup>, hunting wild animals with cross-bows and giving birth in the forest. The practice of giving birth in the forest is unique to this ethnic group but it has changed nowadays.

Other ethnic groups do not have as close an interaction with the forest as the Salang. In particular, the Makong in Khet Thaplao and Nongma are not much engaged in wildlife hunting and do not work long hours. Nevertheless, some families possess lots of old kip currency, “Ngeun Man Khao<sup>5</sup>”, which they often use for dowry and rituals but never sell for income.

In the Phouthai and Yoy groups, teenagers used to stay in hay camps<sup>6</sup> for rice threshing during the crop harvest season. This tradition is rare to find in other areas. In addition, drinking rice jar wine (lao hai) is practiced by all ethnic groups in the area.

## 2.6 Livelihoods

Most of the villagers rely on farming, gardening, collecting non-timber forest products (NTFPs) and scrap metal collection for their livelihoods. Slash and burn cultivation, which used to be practiced in Khet Taplao and Nongma, is no longer allowed inside the protected area. Livestock

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<sup>2</sup> Yellow leaves is the name of a jungle people which is translated directly from the name Tong Luang. This group of people does not live in houses and has a diet based on wild roots. They move camp when the tree leaves that they used for the camp become yellow; usually it takes a week to find food surrounding the camp and relocate to other locations.

<sup>3</sup> Phakatiao is a piece of cloth that Salang use to protect their sexual organs.

<sup>4</sup> Lao means alcohol and tao means palm leaf, which Salang people use to make a kind of alcoholic drink. Salang people say that Laotao tastes as good as Beer Lao.

<sup>5</sup> Ngeun Man Khao is an old Lao kip made of metal which functions as the same as currency.

<sup>6</sup> Hay camps are made by girls and boys, and are used for overnight stays after rice threshing.

raising is also an important contributor to household incomes and livestock are considered living assets for villagers that they can sell when they need ready cash.

Village livelihoods in the area are not competitive, and villagers still maintain strong beliefs in spirits such as “Yao”, especially in Khet Thaplaio and Nongma. In addition, these villages have insufficient health services and education facilities as well as access to other public services. Due to the difficult access to and from town, the cost of living in these areas is higher; for example, household items are sold at prices double than those in Bualapha market.

The utilization of natural resources by villagers has been transformed from household consumption to commercial purposes, including the production/use of hunting tools and the methods for wildlife hunting. Due to high demand from the wildlife market, wildlife products like bones of Douc Langur, Southern Serow and orchids are widely traded. Groups of wildlife traders come to purchase such products in the villages. Because there is no management system in place, there is an over-harvesting of natural resources. Some plant species are close to local extinction, such as *Mai Doulai* and *Khetsana*. Some wildlife species in the area are also highly threatened, such as pangolin, porcupine, some species of turtles, Bengal monitor lizards, and so on.

Using a cross-bow for wildlife hunting, including for primates, is still practiced in the area, mostly by the Salang ethnic group. Using a domestic dog to pursue wild animals such as southern serow, pig and deer can also be observed. However, using hi-tech gear for wildlife hunting is reported too, such as telescopic guns introduced by outsiders, who also sometimes join local villagers in hunting.

Collecting NTFPs for household consumption and sale is important to local livelihoods, as NTFPs are important source of incomes for local villagers. Local NTFPs include boun, kom, wai, san, and thoun, among others (excepting kom and san these are all rattan species).

Hin Namno NPA has the Ho Chi Minh trail running through it, particularly along the road from Bualapha to Lang Khang, which was a target for bombing during the Indochina War. Nowadays, unexploded ordnances (UXO) still remain in the area and form obstacles for local livelihoods. Numerous villagers lose their lives every year in accidents from scrap metal collection.

## **2.7 Land Use**

Land use planning of all villages in the Hin Namno area has been completed. The areas for living/livelihood production and responsibility zones of each village are based on the regulations of land use planning and each village’s regulations. The implementation of the regulation is considered thorough compared to other national protected areas. The protected area regulation and the land use planning regulation are also referential legal documents for fining purposes. At present, encroachment into the protected areas for agriculture purposes has almost disappeared. However, issues may develop if there are no good management measures in place.

## **2.8 Biodiversity**

The biodiversity values of Hin Namno NPA are especially high, with the area being home to primates, limestone plants and bird species - it is classified as an “important bird area”. Hin Namno NPA contains unique landscapes and wildlife habitats, some

globally threatened species of wildlife and possibly some endangered plants (e.g Mai Doulai, which is not yet identified to science and has been over-harvested due to its high economic value). Hin Namno is also the only area in Lao to have Mai Doulai, as well as *Ketsana*, *Maimoun* and *kacha*, all trees with high economic value. There are 10 primate species found in the area, and Hin Namno is one of the only locations with a large population of Red-shanked Douc Langurs and Black Langurs. In addition, four hornbill species use the same habitats (Timmins and Khounboline, 1996). Each component of the Hin Namno ecosystem is described in greater detail below.

### **2.8.1 Flora**

Due to the uniqueness of the Hin Namno NPA, the site may host a high diversity of plants, specifically plant species that grow on limestone. However, no detailed study has been undertaken in the area. It is believed there are some endemic plant species. Aerial photos reveal that Hin Namno has mostly mixed deciduous forest. The forest cover assessment made in the 1990s sets this out as 25% evergreen forest, 5% mixed forest, deciduous, dipterocarp forest, and so on (IUCN, 1995). In reality, there are many sub-forest types found in the Hin Namno NPA, including lower evergreen, hill evergreen, mixed deciduous, dry evergreen, bamboo, fallow, montane (e.g. at Phou Chuang, which reaches over 1,000 m above sea level). The fallow has an age of about 40 years. The entire Hin Namno NPA may have an estimated 520 plant species (of which 25 species are on the IUCN Red List). The dominant plant families are *Agavaceae*, *Arecaceae* - *Poaceae* (Walston and Vinton, 1999).

### **2.8.2 Fauna**

Hin Namno NPA has significant populations of Red-shanked Douc Langurs and Black Langurs, which are found in its limestone forests. With reference to Walston and Vinton (1999) there are 45 mammals (including 10 globally threatened species), 217 birds (13 globally threatened and near threatened species), and the Sooty Babbler, which is recently confirmed as a new species. Also, there are: 46 species of reptiles, of which 6 species are considered rare (Kottelat, 1998); and 130 fish species, of which 29 have not yet been identified (Kottelat, 1998). This is to certify that some fish species might not have been known to science before.

The globally important populations of wildlife living in the Hin Namno NPA include Red-shanked Douc Langurs, Black Langurs and Sooty Babblers. Hin Namno NPA is home to many primate species, forest birds (as it is an Important Bird Area according to BirdLife International). Endemic bird species are likely to be in the area, but unfortunately there are only incomplete bird surveys which do not cover all seasons. It is the only area with 4 hornbill species living in the same habitat (Timmins and Khounboline, 1996). Some small and medium mammals also inhabit the area such as leopard, clouded leopard and possibly Giant Barking Deer (Walston and Vinton, 1999; see Table 27).

Large mammals, such as Asian elephant, no longer inhabit the area, although it is believed that a herd of Guar remains in Khoun Ka-arn, and there were reports of tiger

killing buffalo at Ban Nongbua in 2009. In addition, there are reportedly 25 bat species living in the area (Walston and Vinton, 1999).

For fish species, it is expected that the underground caves in particular would be home to some endemic fish species, such as the fish holes in Nam Masai, Pakha and Nam Ngo, but no study has yet been conducted on the fish in such caves.

### **2.8.3 Important Conservation Areas**

Findings from the research reveal that there are a number of important areas for conservation in Hin Namno NPA, such as Nam Khoum, Nam Masai, Nam Kaloc, Kuane Nong, Pha Nangtok, Angsan, Kuane Ke, Kuane Khing and Khoun Ka-arn. These areas mostly belong to the area of Ban Dou. Details of each area are as follows:

- Nam Khoum is located away from human settlements. It has 6 primate species (excluding two species of loris), including a good population of Red-shanked Douc Langur (group size of about 40 animals) and Black Langur. Also, it is a nesting site for Great Hornbills and Brown Hornbills, and has a number of small and medium-sized mammals including carnivores. This area includes large flat plain providing suitable habitats for a variety of terrestrial animals.
- Nam Masai is connected to Nam Khoum, and is far from Ban Dou but close to Ban Nongping and Na Kha Nyom. Most of the area is flat and shows some patterns from 40-old fallows. Wild animals like to use this area for feeding. About 5 primate species (excluding two species of loris) inhabit the area. The habitat supports healthy populations of Red-shanked Douc Langur (one group has 35 animals) and Black Langur. However, the area is highly disturbed by Vietic ethnic groups (the Vietnamese who migrated to Lao PDR during the French colonial period, although they are now Lao citizens). These Vietnamese villagers enter the area for setting large snares. This area is rated as important for conservation as Nam Khoum.
- Nam Kaloc belongs to Ban Nongping, is located at high attitude (on average 500 m above sea level) and is connected to Nam Masai. The area is quite far from settlements. It has 5 primate species (excluding two species of loris), and supports quite good populations of Red-shanked Douc Langur and Black Langur. It is also a nesting site for Great Hornbills and Brown Hornbills. This area is the second most important site after Nam Khoum. A number of villagers from Ban Nongping enter the area for wildlife hunting and snaring.
- Khoun Ka-arn is located in the lower area, on a plain with bushes/long weeds and water sources for wildlife during the dry season, which are all important for herbivores such as sambar, muntjac and wild pig. This also makes it an important prey area for carnivores. The area used to host Guar and tiger, and it is assumed these two species would live in the area. Further, hornbills and 5 species of primate especially Red-shanked Douc Langur and Black Langur are found in this area.



- Kuane Nong is situated approximately 8 km from the Lao-Vietnam border. The area has about 5 species of primates (excluding two species of loris), and supports good populations of Red-shanked Douc Langur and Black Langur. Importantly, it is also a nesting site for Great Hornbills and Brown Hornbills and hosts some groups of Gibbons. This area is mainly used by Ban Salang, Ban Dou and Ban Vangmaneu.
- Pha Nangtok is located far from Lao settlements but quite close to the Lao-Vietnam border. However, the wildlife population remains good including the presence of 5 primate species (excluding two species of loris), including groups of Gibbons. This area was reported to have Guar over the last 15 years and Green peafowl has recently been reported.

Angsan is another site located away from settlements and with a good population of wildlife. There are 5 primate species (excluding two species of loris) including White-cheeked Gibbon with a group size of 6 animals. The area has been used by villagers from Ban Salang, Ban Dou and Vangmaneu.

Kuane Ke is located close to villages. The area is hilly limestone, and still diverse with 6 species of primates (excluding two species of loris) and good populations of both Red-shanked Douc Langur and Black Langur. Exceptionally, the area is home to many Southern Serow compared to other sites. Villagers from Ban Salang have set large snares and carried out wildlife hunting, as well as villagers from Ban Dou and Vangmaneu.

Kuane Khing is located close to villages and just by Kuane Ke. The area is also hilly limestone with high biodiversity, including 5 primate species (excluding two species of loris). There is a good population of Red-shanked Douc Langur. Villagers from Ban Salang, Ban Dou and Vangmaneu set large snares targeting Southern Serow in this area.

Hin Namno is probably the site that supports the highest number of primate species in Lao PDR (see Table 5).

Table 5: List of primates found in Lao PDR and Hin Namno NPA

No	Common name	Scientific name	Conservation status	In Hin Namno
1	Northern White-cheeked gibbon	<i>N. leucogenys</i>	CITES I, IUCN CEN, Lao I	
2	Southern White-cheeked gibbon	<i>N. siki</i>	CITES I, IUCN EN, Lao I	Yes, low-medium
3	Yellow-cheeked gibbon	<i>N. gabriellae</i>	CITES I, IUCN EN, Lao I	
4	Black crested gibbon	<i>N. concolor</i>	CITES I, IUCN CEN, Lao I	
5	Pileated gibbon	<i>Hylobates pileatus</i>	CITES I, IUCN EN, Lao I	
6	White-handed gibbon	<i>Hylobates lar</i>	CITES I, IUCN EN, Lao I	
7	Douc langur (red)	<i>Pygathrix nemaeus</i>	CITES I, IUCN EN, Lao I	Yes, very high
8	Black langur	<i>T. hatinhensis</i>	CITES I, IUCN EN, Lao I	Yes, very high
9	White-browed langur	<i>T. laotum</i>	CITES I, IUCN VU,	

No	Common name	Scientific name	Conservation status	In Hin Namno
10	Silvered langur	<i>T. germaini</i>	CITES II, IUCN EN, Lao I	
11	Dusky langur	<i>T. phayrei</i>	CITES I, IUCN EN, Lao I	
12	Long-tailed macaque	<i>Macaca fascicularis</i>	CITES II, IUCN LC, Lao II	Maybe
13	Pig-tailed macaque	<i>Macaca leonina</i>	CITES II, IUCN VU, Lao II	Yes, low
14	Stump-tailed macaque	<i>Macaca arctoides</i>	CITES II, IUCN VU, Lao II	Yes, medium
15	Assamese macaque	<i>Macaca assamensis</i>	CITES II, IUCN NT, Lao II	Yes, high
16	Rhesus macaque	<i>Macaca mulatta</i>	CITES II, IUCN LC, Lao II	Yes, low
17	Pygmy loris	<i>Nycticebus pygmaeus</i>	CITES II, IUCN VU, Lao I	Yes, low
18	Slow loris	<i>Nycticebus bengalensis</i>	CITES II, IUCN VU, Lao I	Yes, low-medium

Remarks: CR = Critically Endangered, EN = Endangered, VU = Vulnerable, NT = Near threatened, LC = Low Concerned. Lao I = Prohibited species of Lao PDR, Lao II = Managed species of Lao PDR. White-eared Black langur found in Hin Namno but not listed in this table.

## 2.9 Threats to Biodiversity

The areas under the highest threat are those along the Lao-Vietnam border (within 3-4 km of the border on a map). These areas have very low populations of wildlife, especially in northern Phou Chuang, Houy Euk, Pasong, Phou Khee Khaduane and Ta Pai (Nongma). Where the disturbances are high, there are fewer wildlife encounters. Wildlife hunting and trade is occurring and contributing to the loss of biodiversity in these areas. The high threat areas where outsiders enter for poaching include Khet Dou, Nongping, Nam Chala and Pakphanang. Some economically valuable tree species, such as Mai Doulai and Mai Ketsana, have also been over-harvested. Fortunately, forest fires are not a problem in the Hin Namno area.

## 2.10 Potential for Livelihood Development

The natural sights and resources surrounding the Hin Namno NPA provide potential for village livelihood development. For example: Nam Lot Xebangfai cave at Ban Nongping has potential for sustainable tourism development (e.g. caving and boating); Kuane Ke is home to primates for wildlife spotting and is located close to villages; and Phou Chuang provides landscape viewing and star gazing opportunities because of its high mountain location.

In addition, agricultural and other income-generating activities may include planting non perennial crops (maize), fruit trees, livestock raising, handicrafts and NTFP plantation and enrichment in suitable areas in the buffer zones (such as rattan and boun). However, soil suitability varies from khet to khet. There is a need to study appropriate activities and to identify good markets. Also, funded activities must become sustainable after the project has finished. Therefore, sustainable approaches are required, providing training and improving the skills of the villagers (see Item 4.9).

## **2.11 Projects/Programmes working in Hin Namno villages**

- World Food Programme (WFP)
- IRD, International Relief Development - Food supplement for school children
- Agriculture development project
- Livestock raising project (cows and goats) - GoL project
- UXO project ( Mine Advisory Group, MAG)
- Oji Laos tree plantation project

## **2.12 Progress of Conservation Status of Hin Namno NPA**

- 1993 – Hin Namno was declared by Decree 164 of Prime Minister 1993 as an NBCA or commonly understood National Protected Area (NPA).
- 1995 – WWF funded for village socio-economic surveys.
- 1996 – Wildlife survey by the Wild Conservation Society and the Department of Forestry.
- 1998 – Wildlife inventory in Hin Namno and its adjacent areas completed by World Wildlife Fund.
- 1999 – Land use planning in some villages.
- 2003 – WWF supported some fund for Livelihood development activities.
- 2003 – MoU signed between Provincial Governor of Khammouane and Quang Binh on transboundary protected area management.
- 2004 – Pilot project on rattan and fruit tree plantation.
- 2006 – Land use planning revised, constructed boundary posts and strengthening cooperation with Vietnam (UNESCO and IUCN).
- 2006 – Agreement of Technical Cooperation between Hin Namno NPA and Phong Nha Kebang NWH.
- 2007 – Red-shanked Douc Langur surveys (PhD research on distribution, behavior and threat by Phaivanh Phiapalath, Suranaree University of Technology, Thailand).
- 2008 – IUCN continued working in the area with funding support from LEnS.
- 2009 – Development of co-management with local communities and other stakeholders (incl. GoL staff) through series of trainings and practice, funded by LEnS/EPF Lao.
- 2009 – Continued dialogue on Natural World Heritage Site Designation.
- 2009 – Village participatory study (Master research conducted by Mr. Detsakda, University of Philippines).
- 2009 – Hin Namno NPA proposed to be National Park in the provincial meeting of Oct. 2009.

## **3 Main components of the Co-Management**

### **3.1 Roles and Duties of Stakeholders**

It is very important to define the roles, duties and responsibilities of each coordination level in supporting the management plan. The role, duties and responsibilities mentioned below concern only technical issues and relate to the Hin Namno National Protected Area (NPA). Actually, the roles and duties are as outlined in the Forest Law. This plan provides a general framework for the management of the NPA. Based on the needs for implementation of the Co-management Plan, some main activities have also been formulated.

#### **3.1.1 Village level forest guards**

Actively assist in the implementation of the Hin Namno NPA co-management plan by assuring that the forest resources are utilized accordingly to the village regulations as well as national laws and protected area regulations.

Participate in the monitoring, patrol, survey and reporting of all issues to the Koumban or Khet (the Khet or the sub-station office) in a timely manner. Duties will be carried out under the leadership of the village heads, and if the village capacity is enhanced sufficiently, forest guards and village militia will jointly implement the monitoring with khet ranger teams. Also, they will take part in activities including awareness raising and conflict resolution where appropriate.

#### **3.1.2 Khet / Koumban level, Sub-station Office**

At the Khet/Koumban level, the deputy head of the Koumban responsible for, and give advice for, protected area management activities within their areas of responsibility as to ensure the management plan is implemented properly. At this level, Khet rangers will be established for working with the sub-station offices of the NPA ensuring that the forest resources are used in accordance with village's and protected area regulations.

The khet ranger team will be formed by selecting the most active and responsible village guards (who can also be members of the village militia who are motivated). The khet ranger team will be trained and considered local staff of Hin Namno NPA. Monitoring and patrol activities should be conducted in cooperation with the village militia in that area. With regards to technical issues, khet rangers should work closely with the village guards and the sub-station offices of the NPA. At the khet level, the khet chief has the authority to fine offenders an amount not to exceed five hundred thousand kip and to punish offenders (the penalty fees for each type of offence/ species should be defined). Under the supervision of the head of the koumban, the teams responsible for checking the handling of firearms, such as in the hunting of wildlife, and those that disobey the regulations shall have their firearms confiscated. The rangers will maintain communication and go into the field on a monthly basis (as necessary) in

order to help in the resolution of conflicts over resource use. They will participate in monthly or quarterly khet meetings to report on the regulation implementation and issues happening within the khet related to the protected area management. With regards to technical matters, the khet ranger team reports to the both the district and the NPA field office, while the administration and development issues will be reported to the khet/khoumban level.

### **3.1.3 District level, NPA Field Office**

Under the supervision of the District Agriculture and Forestry Office (DAFO) of Bualapha, the NPA Field Offices are to implement the NPA management activities. In collaboration with the Provincial Division for Protected Area Management, it will carry out planning, and joint work and reporting to both the vertical and horizontal line managers. If necessary the Field Office is to consult and report directly to the national level – the Division for Forest Resources Conservation, Department of Forestry, particularly about progress, problem solving, discussion and information sharing. The staff should visit the villages on a monthly basis or at least once every quarter.

Other sectors also have a responsibility to support the management of the NPA according to their mandate. For instance, the military and police sectors are involved in the patrolling and arrest of those who break the national protected area regulations. The khoumban and district reconciliation unit should pay attention to the work of national protected area management and ensure fair benefit sharing according to the relevant agreements. Tourism Office, Education, Lao Women’s Union and Lao Front Offices will be key partners for and participate in livelihood development as well as conservation awareness raising in Hin Namno NPA.

### **3.1.4 Provincial level, Provincial Division for Protected Areas Management**

Under the supervision of the Provincial Agriculture and Forestry Office, and in cooperation with other relevant departments at national and provincial levels, the Provincial Division for Protected Areas Management implements the Party’s policies, and oversees technical issues, planning, coordination, and preparing funding proposals. One head and the deputies of the Provincial Division for Protected Areas Management are responsible for inspection, quality control, ensuring the preparation and submission of progress reports of projects for donors, facilitating the implementation of the projects, as well as the general activities of Hin Namno NPA management.

## **3.2 The Network of Coordination**

The network of coordination is a coordination system bringing together different actors with the same objective. It is very important for the effective co-management of the protected area. It implies that each level involved in the management of the NPA should have a part in the coordination network and a responsible person specially is to be nominated as the focal point. One or two people can be nominated and their contact details should be given. The coordination can be formal (written) and informal (by

phone, oral reports, discussions). Reporting timelines and modes should be agreed jointly by the sectors and focal points.

### **3.2.1 Village network**

Village forest guards are in charge of collecting information on the Hin Namno NPA, especially regarding those breaking the NPA regulations such as logging, hunting of protected species, over-harvesting of NTFPs in the protected area and entering the totally protected zones. If any clues are received, detailed investigation is required. In the case of observed infringements, occurrences should be reported urgently to the village head or khet/koumban. Any anomaly observed in the khet area should be also reported, such as traders purchasing NTFPs, timber and wild animals without permits. Therefore, the responsible person should keep records of incidents and then report to the Khet, particularly regarding any events that could generate negative impacts for the forest in general and the NPA in particular.

### **3.2.2 Khet network**

The khet team responsible for collecting information and receiving village reports concerning activities against the NPA regulations such as logging, hunting wild animals in the protected area for commercial purposes, and entering the totally protected zones. Any information given by informants shall be investigated, and if it is serious, the khet team will be deployed to the target location. The sub-station offices should organize a monthly and quarterly meeting specifically for the discussion and sharing of information concerning the forest in general and the NPA in particular. One sub-station office will be responsible for one or two village clusters relevant to that sub-station.

### **3.2.3 District network**

The Bualapha DAFO<sup>i</sup> and the NPA Field Office are responsible for supporting the implementation of Hin Namno NPA management and enforcement of relevant regulations. The district should immediately consider and respond to the khet on any serious and urgent issues and requests. If needed, the team may cooperate with Forestry Inspection staff to jointly take action on law enforcement and conflict resolution on forest related, as well as NPA related, matters. In addition, other concerned sectors should have their personnel nominated to be focal points specifically in charge of forest related matters and NPA management.

### **3.2.4 Other sectors' networks**

The NPA Field Office and the Provincial Division for Protected Areas Management have the responsibility to coordinate with other concerned stakeholders at any levels, national, provincial and district, as needed. The coordination will cover the joint planning, decision making and dealing with any issues occurring in the NPA.

- Coordination with other NPAs

It is necessary to maintain good relations, reporting and sharing of experiences with other NPAs in the province or other provinces. The sharing of technical information and invitations to each other to join activities, trainings where appropriate, can contribute to better harmonization and coordination in the management of the NPA.

- Coordination with domestic institutions

Since research is increasingly important, the National University of Laos, particularly the Faculty of Forestry and Faculty of Science, along with the, Traditional Medicine Research Center, National Agriculture and Forestry Research Institute (NAFRI) and other associations working on conservation issues, are important institutions that Hin Namno should contact for any research matters.

- International coordination

International cooperation will not be limited to only that with Vietnamese agencies. Cooperation can be expanded to other universities interested to conduct research in Hin Namno, and those with their own funds. The Phong Nha Kebang National Park of Vietnam is still the main partner. The cooperation focuses on effective measures taken for reducing the number of illegal poachers crossing the border. Besides this, technical cooperation is also important since the Hin Namno NPA is on the border with Phong Nha Kebang Natural World Heritage Site (or National Park according to the protected area categories of IUCN)

### **3.3 Awareness Raising**

#### **3.3.1 Target groups**

It is necessary to clearly define the target group in order to design appropriate tools for awareness raising. In general, there are two main target groups: outsider groups and insider groups. Outsider groups refers to those living in the city, including civil servants, military, police, business people, traders and tourists. Insider groups refer to villagers and students living adjacent to the NPA. Thus, the tools should be tailored to each group.

#### **3.3.2 Tools and methods**

- Outsider groups

The outsider groups consist mainly of educated people who are well aware of the regulations but still deliberately engage in illegal activities, such as illegal logging/hunting and wildlife trade. The measures should include strengthening awareness of the regulations, penalties and punishments, and banning persons involved in the wildlife trade. Most importantly, the enforcement team should be strong enough and any measures taken supported by the superior hierarchy. Stopping the wildlife trade does not much affect the daily livelihood earnings of the target group, since it does not form their basic livelihood needs, but is due to their greed. This is very different from the case of villagers depending on the forest for meeting their daily consumption needs. In general, the negative impacts to the Hin Namno NPA are mainly caused by outsiders. They encourage, and are in fact considered a driving force of, trade in wildlife and the

consumption of wildlife, which seems to be a fashion for well-off people and profit seekers. Without interventions, the wildlife species in question will become extinct, and awareness raising efforts should be backed up with legal measures. For this group, the awareness raising on the regulations should be the priority, followed by strengthening their perception of nature values and the sustainable use of the resources.

The communication techniques should include district loud speakers, provincial TV and radio spots (e.g. in Savannakhet Province), community information boards, brochures, study tours (e.g. for high level officers), seminars at important events, websites and other information dissemination (e.g. for tourists).

- Insider groups

The insiders are those living close to the NPA. They generally have low education levels, and thus they are not able to easily perceive the positive and negative impacts on the NPA, except for some village leaders who are quite well aware of the regulations. Stopping hunting and forest product collection would have negative impacts on the livelihoods of this group, particularly for the poor. Before taking such measures, the concerned team should conduct more in-depth investigations to understand and identify the sub-groups of villagers within a particular village. In general, the actions will focus on awareness raising on the importance of the conservation, sustainable resource use, and the regulations. Individual wildlife hunters should be gradually educated, or even warned, or given recommended alternatives for earning a living.

The communication channels may include a short drama show using puppets, the village loud speaker, radio and TV spots, and community information boards. Conservation principles should be introduced in the teaching manuals (local school curriculum) of the village schools located adjacent to the protected area, as well as enhancing school activities such as drawing contest, debates, camping, forest activities and sports competitions among Hin Namno village clusters.

### **3.3.1 Awareness Raising Materials Development**

The target groups should be studied and understood, and then the objectives and expected outputs of awareness raising defined. The materials should be planned and designed to be appropriate to the target group. The audience's perceptive capacity and the knowledge level should be assessed. The wording used should be appropriate for villagers, with visualization and attractive pictures encouraged. The content may cover the importance of the forest, the wildlife, the negative impacts of forest degradation, the extinction of certain wildlife species, the positive impacts of protection, the future opportunities and so on.



Table 6: Awareness raising activities

Activities	Frequency	Place	Month
Ads spots	3 spots per year		
School Contest	Once a year	Ban Dou, Nogma Nongping	February
Short drama	2 dramas per year		
Study tour	Once a year		
Information board	Three times per year	Village, district	
Updating NPA regulations	3 years per time		June

### 3.3.2 Implementing organization

The NPA's awareness raising team is in charge of designing and conducting the awareness raising activities, together with Khet teams and villagers, in cooperation with the district educational office, Youth Union, Women's Union and the National Front, and, in the areas where minority ethnic groups live, with the tribal elders (Thaplaou, Nongma, Nam Chala). The awareness raising activities are to be a part of the above mentioned sectors' activities. Grass roots development teams can also take this as a part of their mandates. Training and the provision of accurate information for this work is very necessary.

### 3.4 Zoning

Since the NPA has not yet been well defined in terms of zoning for conservation and management, resources utilization is still not well organized and controlled. This places significant stress on the survival of many wild life species. If hunting keeps on at the current pace in this conservation area, many species will become locally extinct soon. Therefore the zoning should be done according to the biodiversity values of the area. According to the principles of international classification for protected areas, the Hin Namno NPA can incorporate several protected area categories.

In terms of the uniqueness of its landscape, the Hin Namno limestone meets the criteria of the IUCN Category V the Protected Landscape. The NPA is also rich in biodiversity with some rare species and a forest landscape ecosystem, and is certified as an IBA (Important Bird Area); thus, it can correspond to the IUCN Category II, "National Park". Regarding the site's biodiversity, there are some rare species present, such as Red-shanked Douc Langur, Black Langur, Indochinese tiger, and White-cheeked Gibbon, which are as classified as endangered species by the IUCN Red List. So, on this basis, the area can be zoned as IUCN Category Ia "Wildlife Reserve", which can overlap with the National Park. Therefore, in the future, the NPA is very appropriate to be classified as a National Park and can have the Wildlife Reserve coinciding.

In general, according to the local point of view and realities, the NPA can be zoned in two main ways: the conservation zone and the managed zone. The conservation zone can have three sub-zones: core zone or totally protected zone (for the conservation of the species, IUCN Ia); seasonally protected zone; and tourism zones. The managed zone

aims at managing and rehabilitating the abundance of wildlife in the area's ecosystems. However, some areas will be additionally defined within the NPA for certain specific purposes and for facilitating effective management according to the plan.

### **3.4.1 Conservation zone**

The objective of the conservation zone is to protect the NPA's biodiversity, particularly wildlife species. Some areas within the zone can be used as long as the regulations and the objectives of the conservation are followed, as described below.

#### **Totally protected zone (IUCN Ia)**

Within the NPA, the totally protected zone or core zone is the area where there is abundant biodiversity. It is restricted for conservation only, as a wildlife reproduction area and sanctuary (according to the IUCN Ia - Wildlife Reserve). The totally protected zone is further divided into two zones: Nam Khoum Wildlife Reserve and Khoum Ka-an Wildlife Reserve. These areas are far from settlements and are located in the center of the Hin Namno NPA. The Nam Khoum Wildlife Reserve covers 3,600 ha. This area is the responsibility of Ban Dou, and includes places such as Nam Khoum, Kuane San, Phoutaneun, Nam Masai, Nam Kalo, and Tham Ghou Leuam (see Map 4). The Khoum Ka-an Wildlife Reserve is located in the center of the NPA, 10 km from the Xebangfai River. It covers an area of 3,800 ha; the area covers the most part of the Khoun Ka-an river from the middle reaches up (see Map 4).

Both areas mentioned above do not allow any access throughout the year, except for those with permits for conducting research and official patrols. Any transgression will be fined accordingly to the NPA regulations.

#### **Seasonally protected zone:**

Within the NPA, this area is established for the reproduction and shelter of the wildlife during the breeding season; all disturbing activities are banned, with strictly no access during the wildlife breeding season, starting from 1<sup>st</sup> July and running until 30<sup>th</sup> October each year. The area covers 13,488 ha and is located in the east, along the border with Vietnam. Places in the zone include Kuane Nong, Nongboun, Patoukhong, Kuane Phaya, Phanangtok and Tapai (see Map 4).

People can have access to this area for collecting NTFPs, trapping for small animals and using other natural resources in a sustainable manner. Firearms are forbidden except for official purposes, by reliable person with the aim of protecting themselves, and for patrolling. Any transgression will be fined accordingly to the NPA regulations (see Table 7).

#### **Tourism zone:**

Within the Hin Namno NPA, there are three designated tourism zones, which have been selected based on their sustainable tourism potential. These are: the Xebangfai Cave (Ban Nongping); Kuane Ke (Ban Salang); and Phou Chuang (Nongboua). Khet Kuan Ke has higher biodiversity and should be conserved for some rare wildlife species such

as Red-shanked Douc Langur and Black Langur that inhabit the area. The other two zones appear to have lower biodiversity but attractions include visiting/boating through the Xebangfai Cave and trekking up Phou Chuang for sight-seeing and star-gazing. Should these sites receive serious protection, they can be rehabilitated and become more abundant in biodiversity.

People can still have access to these areas for collecting NTFPs and trapping small animals for daily consumption. Firearms are forbidden, except for official purposes, by reliable persons with the aim of protecting themselves, and for patrolling, particularly in the Kuane Ke zone. If any transgression occurs, the offenders will be fined accordingly to the NPA regulations (see table 7). When the Xebangfai cave area becomes well protected, some wildlife species such as Black Langurs and other primates may come to use the area; the tourism value of the area will then increase.

### 3.4.2 Common managed zone

None of the areas mentioned above are classified as the common managed area. Villagers can utilize the forest resources according to the NPA regulations. Any transgression will be fined. For example, it is prohibited to hunt Red-shanked Douc Langur and Black Langur in any area of the NPA since they are nationally protected species, Category 1. However, in the future, if the number of certain populations is increasing, hunting these species would be allowed for a certain number of animals per year per village and in defined areas.

Table 7: Some main banned/permitted activities by area

Main activity by area	Totally protected	Protected zone		Managed	Other
		Seasonally	tourist		
Entry all year round	x	-	✓	✓	✓
Entry during the breeding season.	x	x	-	✓	✓
Logging	x	x	x	x	x
Collection of NTFPs, hunting, trapping	x	✓	✓	✓	✓
Hunting wildlife, wild pigs, small animals	x	✓	✓	✓	✓
Use of a gun	x	x	x	x	✓

### Corridor areas

Corridor areas are very important for the survival of wildlife and the protection of ecosystems, particularly for seasonal migration. The forest corridors around Hin Namno are: Na Phao corridor, where it joins with Nakai Nam Theun NPA, which was declared as a National Protected Area Corridor in 2000; and the Nongma corridor, where it connects with the Provincial Protected Area Khoun Xenongma, in which still has an abundance of forest. In addition, the Xebangfai Cave corridor, which is for the rehabilitation of forest, linking to the Provincial Protection Forest Phou Luang. These corridors should be better protected from further encroachment and new settlement in the areas should be restricted. In order to ensure good forest connectivity there should

be no new settlements in the Nongma corridor, as this area is located in and connected to the Sai Phou Luang Annamite Mountain Range of Nakai-Nam Thuen. Rare animals such as Saola and the Giant Muntjac may still exist in the Khoun Xe Nongma area. These animals were found in the 1990s, and the Saola in particular is considered one of the most endangered species in the country according to the IUCN Red List.

### **NPA boundary zone**

The boundary of the PA has been officially defined, including in some sensitive points. There are milestones, with 106 demarcation posts constructed in accordance with the code. So, an area stretching 1 km away from the NPA boundary is considered the buffer zone. Within this zone is a sustainable development zone, where development activities will be allowed aside from the introduction of large infrastructure and private tree plantation projects. In brief, no activity is allowed unless it conforms to the decree No. 164/PM dated 1993 on the establishment of the national protected area, the Laws on Forestry (revised version) and the decree No. 04 dated 2008, or specifically allowed by the National Assembly and the Ministry of Agriculture and Forestry.

### **Authority area for patrolling**

The land and forest allocation programme is a process through which areas are assigned to each village or each Khet according to their responsibilities. Any transgression of land use regulations should be immediately reported to the forest guards of the concerned village and the village chief. Most of the area with the highest biodiversity abundance is under the responsibility of Ban Dou. Any infringements found within this area should be reported to both the hierarchy of the informant and the concerned village authority. Since Ban Dou's territory is a large, patrolling and monitoring can be done with the assistance of other villages; for instance, the Pakphanang - Nongping ranger team can help conduct patrols in the Nam Khoum Wildlife Reserve as access is easier from Khet Pakphanang.

### **Threat zone**

This area overlaps with the other areas; it is highly disturbed. Located along the Lao-Vietnam border, the area is facing challenges from illegal activities such as logging, and hunting (for commercial purposes), particularly in Phou Chuang, Houy Uek, Paxong, Phou Khikadeuane and Tapai (Nongma). Barely any wildlife is seen in this zone and its biodiversity values are decreasing. Thus, this area should receive greater attention in order to rehabilitate its biodiversity and ecosystems. The area shall be a focus for regular patrols, particularly in the rainy season to ensure there are no further transgressions.

Villagers may have the access to this area for collecting NTFPs and trapping small animals or hunting with traditional hunting gear such as cross-bow. It is permitted to hunt small animals which are not listed as protected species, such as wild pig. This should be done in accordance with the NPA regulations and the Wildlife Law.

### **Transgression control area**

This area is not located in the protected area but covers entry points where people come in and go out from the protected area for hunting. Control of this issue concerns a

number of khet and villages: Khet Ban Dou (Ban Nongno), Chorlor and the Naphao area (Nongboua); Khet Nam Chala (Ban Thangbaeng); Khet Nongping (Ban Nongping); Khet Pakphanang; and Khet Khayou (Ban Kayou). These areas should receive more attention in order to prevent the illegal harvest of forest products. Villages within these areas should be vigilant in checking visitors. Where necessary, check points will be established. Different signs should be constructed and located at sensitive locations where transgressions are likely to occur.

### **Natural forest rehabilitation zone**

The major area for forest rehabilitation is located in Khet Nongma. This zone is old fallow land, including the Phou Namlot Xebangfai, which is the only land connection between the NPA and the Phou Luang protection forest. The forest rehabilitation in this area will be done by preventing further degradation thus allowing natural rehabilitation. If really needed, planting native trees in the area will be considered. It is the only the area that allows wildlife to cross between the Hin Namno NPA and the Phou Luang protection forest. The Phou Luang protection forest is still has some abundant wildlife populations, such as Guar, Gibbon, Red-shanked Douc Langur and Black Langur. Thus, the rehabilitation and the establishment this corridor for maintaining the habitat connection is crucial.

## **3.5 Patrolling and Monitoring**

There is a slight difference between patrolling and monitoring. Patrols seek out threats and penalize the transgressors, if any. The patrol can be conducted based on a plan as well as on received information or informants' reports. It is not necessary to go to the exactly same places for the patrol, and the patrol team should be armed to deal with potentially aggressive offenders.

Monitoring, however, is aimed at is to monitoring the changes in the biodiversity and threat levels, which can be compared to baseline data. Monitoring must follow the same itinerary, with the same start and finish times and the same procedures. The team is comprise a few people (e.g. 3-4 people), moving discretely in order to observe wildlife. If not, the chances of detecting wildlife will be lower and data collected for comparative analysis would not be accurate.

### **3.5.1 Patrolling and monitoring teams**

Patrol teams will comprises khet rangers, the military, khet police and village militia (see Table 6). The monitoring team can include village militia and NPA staff (if needed) and in case the khet ranger team does not have the capacity to collect accurate information). Sometimes, villagers will implement monitoring themselves accordingly a well set-out yearly plan.

There are four main khet ranger teams in the NPA: Khet Ranger Team 1 is in charge of Khet Dou-Lang Kang; Khet Ranger Team 2 is in charge of Khet Pakphanang; Khet Ranger Team 3 is responsible for Khet Nam Chala; and Khet Ranger Team 4 is responsible for Khet Nongma. Each ranger team has four people; if necessary team can

have more members. The rangers are also the villagers who will be trained to function as local staff.

*Table 8: Composition and number of Khet ranger teams*

<b>Composition</b>	<b>Patrol</b>	<b>Monitoring</b>
Military	2	
Police	1	
Village Militia	2	2
Khet ranger	2	2
Conservation forest staff	1	0/1
<b>Total (person)</b>	<b>8</b>	<b>4/5</b>

NB: Each khet/koumban should have a khet ranger.

### **3.5.2 Patrolling**

Patrolling can be regular and irregular. The regular patrolling can be done twice a month for each khet. The irregular patrolling depends on the intelligence, or “village reports”, received. Patrolling will focus on high risk areas such as along the Lao-Vietnam border, particularly the vicinity of Phou Chuang, Paxong, Phoukhikadeuan, Tapai, Pha Nangtok and Khoun Ka-arn. A regular patrol can take 3 days up to a week each time. For other areas, there can be additional patrols as needed. The general patrol along the border at Phoukhikadeuan and Tapai should be done at least twice a year (see Table 10).

### **3.5.3 Monitoring**

Monitoring areas are defined in four main sites in Hin Namno NPA: Phou Chuang-Paxong (threat zone); Kuane Nong-Kuane Ke (seasonally managed and tourist zones); Nam Kalor-Nam Khoum (core zone) and Nong Chong-Khoun Ka-an (managed and core zones).

Monitoring should be carried out periodically - once a quarter or at least twice a year. The team can comprise of four people; if more people were involved, the team would be too large to detect wildlife and data could not be compared systematically. The methods used would be misleading and a lack of skilled staff who do not understand the needs and importance of data would affect the process. Comparison of data should be the same month of different year such as April 2007 and April 2009 or August 2007 and August 2009.

### **3.5.4 Field equipment**

Field equipment needed for monitoring and patrolling is shown in Table 9.

Table 9: Important field equipment

Material	Remark
GPS and spare batteries	German E-Trek: high sensitivity
Digital camera	
Video camera	If available
Map and compass	Scale 1: 100.000 (plasticized)
Hammock	Small and handy
Sleeping bag	Small and handy
Tent	Maybe not necessary
Plastic sheet	
Torch	
Medicine	
String	For patrolling

Table 10: Time table for patrolling and monitoring

Activities	Frequency	Places	Month
Along the border patrols	Twice/year	Along the border	Jul and Oct
Regular patrol	Twice/month	Assigned area	
Irregular patrol	Not limited	Assigned area	Depends on reports
Monitoring	Four times/year	Target areas	Feb, Jun, Sep, Dec

### 3.6 Surveys and Research

Surveys and research on various topics are very useful and provide information for conservation planning and management. Any interested researchers should have a proposal that indicates the objectives, methodology, expected outputs and budget. The surveyors or researchers should pay per diem for their assistants, staff and villagers accordingly to the Ministry of Finance's regulations. Supporting staff should be trained in the concerned field, and any surveys should be done with the cooperation of local villagers. After a survey, the outputs or reports should be produced with recommendations for further study or action. The copyright be jointly owned by the Government of Lao PDR and the researchers. Thus, survey reports/research papers, including images (if any), should be provided to the NPA office and the Provincial Division of Protected Area Management. Any equipment and materials sponsored by the research projects (if any) should be handed over to the NPA after the termination of the research.

The research topics can based on the needs of the researcher such as student researcher or academics at any level (see Table 11). The fees for any research, including filming of documentaries, are 1% of the project cost or at least US\$ 100. For the research topic which is not a priority of the NPA, an additional fee should be paid. There may be some case by case considerations for Lao students (see Table 22).

Table 11: Potential research topics

<b>Research topic</b>	<b>Methodology</b>	<b>Priority rank</b>
Feasibility study on tourism approaches	Specialist assessment	1
Black Langur surveys and cave	Expert, sampling	3
Investigation on the biodiversity of caves including fish species	Expert	2
Study on fish in sheltered caves in the dry season	Modern techniques/equipment, expert	2
Survey for any new species, confirmation of rare species in the area, such as Khounlaman, Phayre's langur and other monkey species.	Survey of the staff and some experts	1
Study on the diversity of wild birds	Bird expert (four seasons)	2
Study on the distribution and threats of Great Hornbills	Doctoral student	3
Survey for new bird species, e.g. locally known Nok Houa Hok	Bird expert, (four seasons)	2
Survey for new fish species in the North part of the Xebangfai and its tributaries within the NPA	Fish specialist (2 seasons)	2
Investigation on large mammal such as tiger and gaur, as well as medium animals like Giant muntjac	Specialist (2 seasons)	2
Study on the ecosystems of large birds e.g Crested Argus Silvered pheasant and Siamese Fireback	Doctoral student	2
Study on the use of forest limestone by Red-shanked Douc Langur in the dry season	Microchip	3
Study on the habitat sharing of primates in particular	Microchip	3
Study on the wildlife ecosystems and habitat use	Specialist	2
Investigation on the distribution of flora on limestone	Specialist, sampling	2
Study on orchid distribution on limestone, survey for new species and to assist villagers in cultivating orchids for commercial purposes	Flora specialist, sampling, CITES	2
Research and pilot for reproduction of the high value flora species in village home gardens accordingly to local potentialities	Specialist	2
Study on the ethnic cultures and traditions	Specialist	1
Study on the archeology and historical traces in caves of Hin Namno NPA.	specialist	3

### **3.7 Implementation of Law Enforcement**

Law enforcement implementation for offenders will be the responsibility of local authorities in the district and khet/koumban, in collaboration with the forestry inspection unit at the khet and the district levels in the concerned sites (if any).



However, the measures taken have to consider ethnic groups, as well as the very poor and first time offenders. Minor issues should be addressed at the khet/khoumban level to minimize long procedures. At the same time, to make the process simpler, fine rates must be set for every species of wild animals and rights must be given to every level, especially authorized persons, who will make decisions in addressing cases with an amount of less than five thousand kip. In this regard, and as reference for testing, the fine rates/fees for certain wildlife should be defined and set out in the regulation of the NPA. Responses to events/infringements must be strict and regularly updated, with village militias and village forest units committed to investigate information received, and ready to arrest and send offenders to koumban or the sub-district area (such as Lang Khang). The Conflict Resolution Committee (ConRoC) at the khet level must be established for prosecuting, reconciling and ensuring that income derived from the fines is properly allocated for the NPA (see Table 12). Therefore, the following framework and beneficiaries are identified:

*Table 12: Benefit sharing*

<b>Percentage</b>	<b>Gov't Budget</b>	<b>Informant</b>	<b>Resp. authority</b>	<b>ConRoC</b>	<b>Hin Namno NPA</b>	<b>Village/ Khet</b>
100%						

NB. Detailed of this will be more discussed in the implementation. ConRoC = Conflict Resolution Committee.

### **3.8 Baseline Data for Monitoring**

Various data must be kept and detailed baseline data be developed, especially data on biodiversity, threats and the regular sites designated for monitoring, including GIS. For example, data on biodiversity should include various maps of the monitoring sites, transects, and data recorded every time. At the same time, images should be added and reference to every important GPS point recorded. In this regard, data analysis should be carried out to show the increasing or decreasing trends of the wildlife populations each year (compared with those during the same month of each year). In addition, data on threats can be showed in graph form to indicate increases and/or decreases.

## 4 Supporting Components of Co-Management

### 4.1 Offices and Personnel

#### 4.1.1 Offices

The Hin Namno NPA is governed by three hierarchical levels: provincial, district and khet (see Table 13).

Table 13: Hierarchical offices of the NPA

Hierarchy	Name of the office	Mandate
At provincial level, “Provincial Coordination Office” (PCO) located in Thakhek District	Provincial Division of Protected Area Mgt (coordination)	Coordinating, planning, mobilizing funds, directing and reporting to different donors.
At district level “Field office” (FO), located at Ban Natoi, Bualapha District	Field Office (4-7 working rooms, a meeting room, exhibition room, a staff dormitory, a kitchen and an information room for visitors)	Implement and coordinate within the district level, report to the district and the province, direct and support the sub-station offices.
At khet level, Sub-station Offices (SO). There are four SOs located at Ban Dou, Pak Phanang, Nam Chala and Nongma	Sub-station Office (1-3 working rooms, plus a bedroom and a kitchen)	Work closely with khet/koumban, support the implementation of NPA activities.

NB: Office buildings should be well designed and located, save energy building, with similar architecture used for all khet offices. The sub-station office at Lang Khang (located at the Y junction to Ban Dou) may be bigger than the others since the Lang Khang office is responsible for Khet Lang Khang, Khet Dou.

#### 4.1.2 Units and technical staff

Units and technical staff can vary according to the demands and the budget of the NPA. Staff should have a uniform approved in terms of color and style preferably adhering to a national design, or otherwise, the NPA staff will attempt to design their uniform (to be used by khet rangers as well).

Table 14: Position, personnel at the provincial level responsible for Hin Namno

Position	Number	Required qualification	Priority
Head	1	Forestry	1
Field staff	2-4	Forestry, wildlife, biology	1
Planning	1-2	Forestry planning, business administration, data	2
Total	4-7		4(1) – 7(2)

The office at the provincial level manages more than one NPA as well as protected areas at the provincial and district levels. Only a certain number of key staff would be assigned for managing Hin Namno. At least four key, well-trained staff at the provincial coordination office (PCO) shall be recruited. The PCO is one of the components under the authority of the Provincial Division of Protected Area Management. Leading PCO staff member should be responsible for supervising Hin Namno NPA. Also, at the office there needs to be staff with capabilities in planning, project proposal development and English language.

Table 15: Position and personnel within the field office (FO)

Position	Number	Required qualification	Priority
Head	1	Forestry	1
Deputy Head 1	1	Forestry, wildlife, biology	2
Deputy Head 2	1	Forestry, wildlife, biology	3
Technical staff	5-20	Forestry, wildlife, biology, environ't, community development	5(1) - 20(2)
Administration	1-4	Finance/accounting, English language	1(1) - 4(3)
Total	9-27		

Table 16: Field Office Units (fully recruited)

Unit	Sub-unit	Number of staff		Remark
		main	Secondary	
Patrol	Patrolling, monitoring	4	2	
Awareness raising	Awareness raising, information	2	3	
Research	Flora and fauna	2	4	
Development	Tourism, livelihoods	1	3	
Training	Training	1	1	planning
Administration	Finance, administration	1	3	
Total estimate		11	16	

NB: Secondary staff are (paid) volunteers recruited in place and trained on the job. They will be talented individuals who may have finished secondary school

Table 17: Sub-units of the Field Office

Issues	Main mandate	Number	Female
Management	Direct, coordinate, planning, reporting	3	1
Patrol	Patrol planning, training, monitoring, law enforcement	6	0
Awareness raising	Awareness raising planning, training, implementation	3	1
Wildlife	Wildlife specialist, data analysis, instruction, planning	2	0
Flora	Flora specialist, flora data analysis,	2	1

Issues	Main mandate	Number	Female
	instruction, planning		
Research	Planning, coordination and conducting research activities	2	1
Development	Planning, coordination, training and facilitation of development activities	2	1
Tourism	Planning, coordination, training and facilitation for sustainable tourism	2	2
Information	Data analysis, data storage, and data provision	1	1
Training	Planning for trainings, looking for training opportunities	1	1
Finance	Management, payroll and other financial issues	1	1
Administration	Logistics and facilitation, and supporting the technical team	3	2
<b>Total</b>		<b>27</b>	<b>12</b>

NB: There are 6 units and 17 technical issues to be covered by the Field Office. Within each unit, there should be at least one staff with a bachelor degree in the concerned field. The working style is team-based, and the wildlife, flora and research units in particular should work closely with the patrol unit; they should participate in patrols from time to time, if needed.

Table 18: Positions and units within the sub-station office (SO)

Position	Number	Required qualification	Priority
Head	1x4	Forestry, biology, agriculture	1
Patrol	2-4x4	Forestry, wildlife, biology	1
Awareness	1-2x4	Forestry, wildlife, biology	2
Tourism	1x2	English language (Khet Pak Phanang and Khet Dou)	3
Administration	0-1x4	Business administration, high school certificate, on-the-job training	3
<b>Total</b>	<b>22-34</b>		

NB: At least 2 permanent staff with a degree, plus a number of locally trained staff, are to be working at each sub-station office. The locally trained staff will be local villagers who have finished a high school. Not necessary that all khet team will be fully time working in the office. The sub-station office for Lang Khang and Nam Chala is highly prioritized for construction within the mid-term of the plan.

The Lang Khang SO is responsible for Khet Lang Khang, Khet Dou and Khet Kha Nyou. The SO for Pakphanang covers also Khet Nongping, including patrolling at the Nam Khoum Wildlife Reserve and Nong Chong. Thus, the Ban Nongping militia and forest guards should be included in the khet ranger team. The Nam Chala SO is responsible for the Khoun Ka-arn Wildlife Reserve. The SO staff numbers will vary depending on the areas of responsibilities.

Table 19: Expected staff plan for the sub-station offices

Position	Lang Lhang		Pak Phanang		Namchala		Nongma	
	A	B	A	B	A	B	A	B
Head	1		1		1		1	
Patrol	2	6	2	4	2	4	2	4
Awareness	1	2	1	2	1	2	1	2
Tourism	1	2	1	3				
Admin.	1	1	1	1	1	1	1	1
	6	11	6	10	5	7	5	7
	17		16		12		12	

NB: Each khet may need at least two staff with a degree, particularly Khet Lang Khang and Nam Chala. Part-time khet rangers from the villages may have no salary, instead receiving per diem and bonuses according to the days worked in the field and their performance. However, those who are active may be recruited as the full time khet staff. A: qualified/degree staff. B: locally trained staff

### 4.1.3 Staffing strategy

Staff recruitment can depend on the government quota allocated, or it can be financed by the project for specific employment. It can also be supported by Hin Namno itself as long as there is budget available. These funds may be generated by tourism receipts and other sources sustainably, in accordance with the sustainable financial mechanism plan. In the rationale, Hin Namno can be responsible to pay their contract staff themselves a salary. Priority shall be given to local people who are young, active, hard-working and talented, able to learn and participate in knowledge transfer. Villagers can be recruited and trained as local staff to be based at sub-station offices.

### 4.1.4 Training needs assessment

A training needs assessment for each office should be conducted, in which staff will fill in an assessment form; then, the information will be summarized and reported. The report should accurate, informative and helpful for decision making (see Table 20).

Table 20: Criteria for personnel assessment

Assessment	Criteria
Individual	Active, young, able to transfer knowledge, responsible
Relation	Needed for the Hin Namno NPA
Opportunity	Budget available, outside funds, time available
Benefits	Long term, short term benefit for the NPA
Family	Readiness, dedication and contribution
	On-the-job-training      Training other place      further formal study

The assessment will be based on both individual and organizational needs. Training opportunities will be sought, in order to upgrade staff capabilities.

#### 4.1.5 Training methodology

On-the-job-training will be dominant and participation in the other training opportunities will depend on external sponsorship. The young and active trainees can make partial personal contributions for further study, if full scholarships are available. There should be a systematic personnel development plan for further study and replacement of staff.

#### 4.1.6 Incentives

Staff remuneration should be fair and just; besides the salary and per diem, there shall also be certain fringe benefits, such training opportunities, study tours, bonuses, and care for the livelihoods of staff and their families, as well as khet rangers. The team should have a strong understanding of the local realities and motivate the staff professionally. Every year, the NPA shall provide uniforms (clothes, hats, shoes, rain jackets) to the staff and members of the khet ranger teams.

#### 4.2 Vehicles and equipment

Vehicles and equipment are significantly needed for the effective operation of NPA management. They should be well maintained, since they are public property.

Table 21: Required vehicles and materials

Item	Provincial HNN Office		Field Office		Sub-station		Total amount/item	
	Mid-term	Long-term	Mid-term	Long-term	Mid-term	Long-term	Mid-term	Long-term
Car	1	2	1	3	2	2	4	9
Motorcycle	1	3	3	10	1x2	2x4	6	21
Horse						2x2	4	4
GPS	1	3	3	6		2x4	4	18
Video		1		2				3
Digital camera	1	2	4	6	1x2	2x4	7	16
Camera trap				20				20
Binoculars	1	2	4	6	2x2	5x4	9	28
Compass	1	2	4	6	2x2	3x4	9	20
Tent	1	1	15	23	4x4	4x4	37	39
Hammock	3	5	3	6	6x2	6x4	16	35
Sleeping bag	4	9	6	15	4x4	6x4	26	50
Computer	2	5	2	6	1x2	1x4	4	15
Printer	1	1	1	3		1x4	2	8
Scanner	1	1	1	1				2
Video player			1	1			1	1
LCD and screen	1	1	1	1		1x4	2	6
Audio music player (set)			1	1			1	1

Item	Provincial HNN Office		Field Office		Sub-station		Total amount/item	
	Mid-term	Long-term	Mid-term	Long-term	Mid-term	Long-term	Mid-term	Long-term
Television			1	2		1x4	1	6
Mobile loud speaker			2	4		1x4	2	8
Radio set			1	1	1x4	1x4	5	5
Mobile radio set			9	9	1x4	1x4	13	13
Walkie talkie			4	4	5x4	5x4	24	24
Modem			1				1	
Solar cells						1x3	2	3
Station generator			1	1			1	1
Mobile generator			2	2			2	2
Fridge			3	5			3	5
Water cooler	1	1	1	1	1x4	1x4	4	6

NB: Based on availability of budget, some equipment is not high priority, such as generators, tents, audio music player. The number of equipment may not correspond to the estimates. Some items of equipment are in the process of procurement with support from IUCN/LEnS (e.g tent/sleeping bag, backpacks). The functionality of equipment must be assessed. Purchase of some items for replacement purposes is necessary.

## 4.3 Operations

### 4.3.1 Scope of office duties

Each office has its own terms of reference in order to strengthen their teams and assure progress to reach the Hin Namno NPA objectives as planned. The Provincial Division of Protected Area Management assists in the general planning, supervision of technical issues, mobilization of funds and coordination with different partners including donors. The field office and the sub-station offices have the responsibility to prepare activity plans and implement the plans. In addition, each office should provide regular progress reports.

### 4.3.2 On-duty staff

The field office at Bualapha and sub-station offices should have at least one staff member on-call for a full 24-hours in order to provide for fast and effective communication should the need arise for an urgent reporting line.

### 4.3.3 Meetings

Meetings can be regular or ad-hoc events for the purpose of discussing, reporting, sharing lessons learnt and planning. A monthly meeting should be held within each office as needed. An annual meeting will be held in Bualapha district or where appropriate, such as Lang Khang. The annual meeting is to review, exchange experiences and set up a yearly plan, as well as to carry out staff performance assessment and the select the “employee of the year”.

#### **4.3.4 Reporting**

- **Regular reports**

Each office should define the terms for reporting, such as monthly (for the team), quarterly (for the field office), and quarterly and yearly (reports to the province). The reports should be concise, effective and submitted in a timely manner.

- **Irregular reports**

Other reports, such as, oral progress reports on certain activities and urgent reports on certain contingencies can be done over the by phone or roughly written as needed. This process is important in order to inform progress, allow for consultation and to seek for advice before official written reports are prepared.

#### **4.4 The vehicles and Equipment Management**

All equipment must be registered and kept on record, with individual codes. The in-out book for the utilization of office materials should be carefully and regularly maintained. Each office should have a log-book for the vehicle use and maintenance. Each staff member should assume responsibility for equipment use and maintenance including safety and cleaning. All equipment is to be used only for the work of Hin Namno NPA; other uses will be allowed only if special permission is given.

#### **4.5 Data Storage**

Each office should have a main server or information hub where information is systematically kept with a weekly back up. A database will be installed to ensure that information is readily availability, without any losses and erasing of data (including raw data, analyzed data, reports and baseline data for monitoring such as biodiversity and threat levels).

#### **4.6 Finance**

Effective financial management is an important factor in supporting the successful implementation of any project. The sustainable financial mechanisms of the NPA need to be well developed and managed to ensure systematic financial sources. Thus, nowadays, sustainable financial mechanisms and the human resource development have



become a core issue in protected area management in Lao PDR.

## 4.7 Sustainable Financial Mechanisms

Sustainable financial mechanisms refer to approaches to ensure reliable financial resources with a transparent management system in place that are used correctly and effectively. Financial sources should be developed within the protected area, with mobilizing and looking for committed funds as the key principles. Relying on the external project donors is also necessary to some extent, such as helping to develop a sustainable system in the beginning. This focus is on how a particular protected area can finance itself and pay for the costs of site management. In order to achieve this, it is necessary to have an agreement for benefit sharing for conservation. Alongside the NPA, the Administrative Committee and Board will be in place to direct, advise and empower the use of fund, such as those sourced from fines.

Funding management, such as deposits and withdrawals, is to be carried out under a proper process, with transparency and accountability. At present, Hin Namno NPA has a bank account under the authority of the DAFO in Bualapha, where it has a reliable system in place. However, it shall have its own autonomous bank account in the future, under the authority of the Hin Namno Administrative Committee and Board, when there are many projects working at the site to oversee and advise.

Payments should be based on the real needs and the priorities identified in the Hin Namno Co-Management Plan, with a budget line available and acceptance in the yearly payment plan. In the case of suspicious expenditures, auditing may be conducted at any time.

### 4.7.1 Funding Sources

Funding for the Hin Namno NPA might be sourced from both domestic and international agencies. The domestic budget includes funds from the Government budget, as supported through the Forest Development Fund, the Environmental Protection Fund, and compensation from hydro-power projects like the Nam Theun 2 project, which is to compensate the surrounding protected areas. Additionally, funding may also be raised from land use planning, the utilization of forestry resources, tourism, fines and individual contributions. Arrangements for securing funding sources are very important. International funding sources will be sought through interested projects/programmes regarding site management or any research activities by aid projects or international organizations, such as IUCN and GTZ. There are domestic and international funding sources to be identified. The domestic funding sources will be delivered from within the country's finance available as below:

#### Domestic funding sources

Table 22: Potential domestic funding sources

##### A. Government budget

	Conditions	Budget forecast (million)	Activity/Budget line	Responsibility
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		<b>kip/annual</b>		
Forest Development Fund	Develop project planning beforehand	100 (based on fiscal year plan)	Any activities for protected areas	Provincial Division of Protected Areas Mgt, Field Station Office
Environmental Protection Fund	Discussion and writing project proposals	50 (based on fiscal year plan)	Any activities for protected areas mgt including livelihood development, equipment/materials	Provincial Division of Protected Areas Mgt, Field Station Office
Promotion Fund (through Forest Development Fund)	Discussion and develop project planning beforehand	100	Agricultural activities	Provincial Division of Protected Areas Mgt, HNN NPA Board

*B. Project Compensation*

	<b>Conditions</b>	<b>Budget forecast (million kip/annual)</b>	<b>Activity/Budget line</b>	<b>Responsibility</b>
Nam Theun II	Negotiation, planning	500	Activities for protected area management	Provincial Division of Protected Areas Mgt, HNN NPA Board
Wood Processing industries near the protected area	Negotiation, planning	100	Activities for protected areas management	HNN NPA Board

*C. Forest and Resources Use Fees*

	<b>Conditions</b>	<b>Budget forecast (million kip/annual)</b>	<b>Activity/Budget line</b>	<b>Responsibility</b>
Tourism	Sustainable Financing Mechanism	100		Committee takes on negotiations
NTFPs business	Sustainable Financing Mechanism	50		HNN NPA Board
Developments that directly impact on the protected area	Sustainable Financing Mechanism			HNN NPA Board

*D. Fines and Other Contributions*

	<b>Conditions</b>	<b>Budget forecast (million kip/annual)</b>	<b>Activity/Budget line</b>	<b>Responsibility</b>
Penalty fees	Sustainable Financing Mechanism	100		Committee takes on negotiations
Individual contributions	Donations	50		Provincial Division of Protected Areas Mgt

Education/promotion campaign for mobilizing funds is necessary, including the fund to be sought from the individual contributions.

- **International funding sources**

Table 23: Potential international funding sources

	<b>Conditions</b>	<b>Budget forecast (million kip/annual)</b>	<b>Activity/Budget line</b>	<b>Responsibility</b>
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Conservation Projects	Joint proposal development	100	Activities for protected area management	Provincial Division of Protected Areas Mgt, Field Station Office
Development Projects	Negotiation with various development projects such as WFP	Contribution	Maybe, rice will be provided based on the actual number of days spent for patrolling	HNN NPA board
Joint Project between Lao – Vietnam	Negotiation with Vietnam	50	Research, enforcement	HNN NPA board
Film/documentary	Proposal, negotiation	100		Provincial Division of Protected Areas Mgt, Field Station Office
Research /Study	Proposal, negotiation			Provincial Division of Protected Areas Mgt, Field Station Office
Carbon credits/REDD	Proposal, negotiation			HNN NPA board takes on negotiation with REDD focal points

#### 4.7.2 Fund Raising Mechanism / Strategy

Effective funding proposal submission and mobilization requires a long-term strategic plan, including the preparation of data on the importance of the site and its potentials. The Co-Management Plan should also be available in this process for the preparation of initial concept notes for conservation and livelihood development in general and for specific projects. In fund raising we should be aware of the donor selection principles, submission criteria, scope of budget available and timeframe for submission.

Any protected area with a proper co-management plan in place, good technical staff, consideration of community participation, as well as an Administrative Steering Committee or Board available to supervise management, including reliable financial management, will build trust for donors and generate interest. In addition, the performance, success stories and best practices are important to highlight in attracting donors.

In conclusion, preparedness is very important, as well as utilizing meeting opportunities and negotiation skills. The site should also be promoted worldwide through various means, including on websites, in the media and through the submission of concept notes. Establishing a Hin Namno website will contribute to the development of tourism and research activities. These methods will also assist in mobilizing funds from international organizations.

#### 4.7.3 Conservation Obligation

Businesses engaged in forestry and forest resources exploitation, as well as research and documentary activities, will need to pay a premium for conservation purposes, as estimated in Table 24 below.

*Table 24: Details of estimated premium fees for conservation*

Potential activities	Fee/Time	Credit	Remark
Research by international organization/projects		Sharing Reserve Rights	May be negotiable
Individual research (foreigner)		Sharing Reserve Rights	May be negotiable
Individual research (Lao) – studying in Lao PDR		Sharing Reserve Rights	
Individual research (Lao) – studying oversea		Sharing Reserve Rights	
Documentary by foreigners (1 set)	3,000 \$	Sharing Reserve Rights	Multiple entries possible
Documentary by Lao people (1 set)	100 \$	Sharing Reserve Rights	Multiple entries possible
Surveys conducted by foreign projects in the protected area		Sharing Reserve Rights	Not incl. the project officially supporting the PA
Tourism investment in or around the protected area	Concession fee	10% of income per annual	Annual basis, community approach
Entry fees for foreigners	4 \$ /person-time		
Entry fees for Lao people	1 \$ /person-time		Not include local residents
Entering for wildlife photographing in the protected area	100 \$/person-time	Reserve Rights	

Remark: \* The premium fees for conservation will be paid by the investors. Fees for some forest utilization in the area or nearby would be included in this packages which depending on case by case basis agreement. Information and photos of Hin Nam No generated will be according to co-rights reservation between the Lao government and researchers, where the government can use the information in all case without any fees.

The project approaches utilized in Hin Nam No should work towards conservation and community benefits. The tourism approaches will need to be negotiated and to follow an implementation plan (with a community approach). The business sector needs to prepare and submit proper proposals, including cost-benefit analysis and environmental and social impact assessment, to the Provincial Division of Protected Areas Management. This division will then submit it to higher levels as required.

#### 4.7.4 Financial Management System

The budget for the NPA must be well arranged and managed. All funds are to be deposited at the local bank. The approval for payment will require 3 signatures, but steps must also be taken to ensure that the budget is released on time and according to the technical plan. The budget will need to be consistent with the activities that are agreed upon by protected area board. In the case of an emergency, the Head of the Field Office can approve budget releases within 1 million Kip, which must also be agreed on by the focal point at the provincial level, base on the agreed financial policy. Regulations to govern the budget and management of funds will be prepared.

The payment plan has to be in accordance with the agreed annual plan and activities proposed (Budget Plan as per Table 24), which may include:

##### Budget for fixed assets

- Construction and office maintenance
- Vehicles and equipment

### **Budget for operation costs**

- Office administration costs
- Intern/hired staff salaries and volunteer costs
- Travel costs
- Allowance for villagers and staff for field survey, or expatriate costs, if any.
- Surveys, conservation, research and livelihood development activities

## **4.8 Budget Forecast**

The budget is to be identified annually, but the specific budget can be adjusted based on the actual needs and circumstances and budget approval. Detailed budget is not provided adhere to this plan which depends on the capacity of budget supports and priority activities set in the plan.

## **4.9 Livelihood Development**

The livelihood development activities for villagers living adjacent to the protected areas are one of the tasks to be covered by the protected area management plan, based on the assumption that on providing assistance/opportunities to the villagers, they will reduce their direct reliance the NPA's natural resources, benefiting from adequate food consumption, greater household incomes and partial reduction of their poverty. However, livelihood development activities in NPAs should recognize and support the activities that do not generate negative impacts on the protected areas in both the long and short term, including consideration of the sustainability of those activities. Strengthening the capacities, labour skills or other skills for implementation or managing such activities is also necessary. Planning skills for businesses and trading is also necessary because human development is the key to success to in people helping themselves in the future.

Therefore, development projects in the protected area should use the integrated conservation and development approach known as ICAD. Nevertheless, if the villages located far away from the NPA there is not necessary to use the ICAD approach.

### **4.9.1 Integrated Conservation and Development (ICAD)**

In the Lao context, ICAD activities seem very appropriate for protected area management since every NPA has local villagers living in or around the site. Local people are to be the guards for forest resources in their protected areas. The plan will ensure that the livelihood development activities are clearly linked to conservation. For example, in association with development activities, it is necessary to avoid introducing any non-native species to the area. The introduction of non-native plants to the area for livelihood purposes may result in such plants spreading quickly (i.e. as an invasive species) and finally dominating native plants.

Before any assistance can be given for improving the livelihoods of villagers, discussion and negotiation with the villagers and village clusters should be fully conducted as to meet village commitments and conservation obligations. Livelihood

development activities should avoid giving grants, implementing projects on people's behalf, providing things that they do not ask for, involving work in which they have no interest or familiarity, or lacking a negotiation processes. Ownership will be built through the involvement of people in the process, and their contribution in local materials, labour, and/or cash, including their involvement in the decision making process.

#### **4.9.2 Potential Development Activities**

There are various feasible activities to be promoted, consistent with their potential for benefit and good marketing, including local skills. Some potential activities are identified below.

##### **Sustainable Tourism Development**

Tourism development may rely on external investment or aid projects. These activities have to be properly analyzed and planned, especially to ensure proper protection and reduction of negative impacts to the protected area. In the meantime, there is a need to build the capacity of local villagers to take ownership in providing tourism services. Therefore, private investors will also need to build the capacity of local communities as to provide the best services. Accommodation will be a community based approach (home-stay), and avoid giving concessions to private sector actors to take over. Appropriate areas for the promotion of tourism include Khet Nongping (boating in the Xebangfai cave), Khet Dou (wildlife spotting), and Khet Lang Kang (Phou Chuang landscape and star gazing).

- Khet Nongping is close to Bualapha District but access to the area is slightly difficult in the wet season. There are about 5 villages that would gain direct benefits from tourism business. Boating up from Bualapha District to Khet Nongping is an attractive trip for visitors. Before services can begin operation, activities must be well surveyed and properly managed in order to prevent negative impacts on the cave ecosystem. This is particularly the case for the areas that cannot even be walked upon. Other potential tourist sites in the Bualapha District should also be surveyed in order to extend the tour package in the area, such as the Xieng Xeu water fall, Phou Dak Maiphansi “thousand Flower mountain” and Ho Chi Minh trail which is along the road to Nongma - this historical trail is important to tourism.
- Kuane Ke, close to Ban Vangmaneu, is easy to access in the dry season but it is difficult to find enough water to use and drink during this time. It is necessary to carry water from the village.
- Phou Chuang is closed to Ban Nongbua. Access to the area is easy but visitors will need to trek up the mountain. UXO remains in the proposed tourism area so should be completely removed before starting up any tourism operations. This area was an old army camp, established on the hill during the Indochina War.

##### **Sustainable Agricultural Development**

Agricultural development is the main strategy for district development, which is aiming to reduce poverty by the year 2010. Agriculture production focuses on the planting of annual crops, fruits, livestock and production for export to the border market in Vietnam. These include:

- Planting annual cash crops, using natural fertilizers (such as planting maize and soy beans after harvesting), for which the suitable zones are in Khet Kayou, Nongma and the Thaplao area.
- Fruits and vegetables are grown in suitable soils, such as in the Ban Dou area (limes and various vegetables), Nongma (banana), Thaplao (banana), and Nongping (banana and various vegetables) A feasibility study for market supplies and processing is still required.
- Livestock raising, especially for goats and cows, is done in groups and uses the revolving fund. However, regular vaccinations for livestock are needed. Specific livestock types should be identified for certain villages, such as those that do not have gardening close to the village, which would create conflicts between livestock keepers and gardeners. For livestock grazing zones, grazing section allocation and fodder production might be necessary. Grasses or weeds to be planted for livestock should not include invasive species that could have a negative impact on ecosystems in the area. The suitable areas for livestock keeping are Nongma, Nongping and Lang Khang.
- Raising poultry and native fishes in some villages is an alternative option.
- Training should be provided on how to cultivate mushrooms and vegetables in order to supply the markets in the Lang khang area and Bualapha District, because currently these markets usually purchase vegetables from Thakhek, the provincial capital. The suitable areas are Khet Dou, Lang khang and Pakphanang.
- Rice production could be increased using bio-fertilizer and a single seedling for transplanting.

#### **Sustainable Non-Timber Forest Products (NTFPs) Development:**

This will include proper management, as well as enrichment in the buffer zones or outside the NPA, as to reduce the over-use of forest resources in the area.

- The establishment of management arrangements, as sustainable use of the forest resources in its habitat relates to the harvesting system.
- Added value or processing NTFPs (such as packaging and various handicrafts like stone or wood carving to sell as souvenirs).
- Planting some NTFPs (in place or gardening) for those species with high market demand.
- Establishing orchid gardens for commercial purposes.

## Other Development Activities

Other development activities that are not directly linked to conservation but would benefit communities in the long run include education and health sector improvements, especially in Khet Thaplao and Nongma which completely lack these facilities. Family planning is considered important in order to control the growth of the population in/around the protected area; sanitation is also another important area to be improved, as illness can reduce the availability of labour, another obstacle to effective development.

Access to clean, safe water, Village First Aids Kits, Traditional Birth Attendants (TBAs), and Village Health Workers are other suggestions, including the promotion of consuming domestic animals to reduce the use of wildlife products. Teaching methods can also be developed (improved capability of teachers and local curriculum) by adding some basic knowledge of conservation in primary schools of the Hin Namno area and adjacent villages. In addition, children should be encouraged to attend school and to continue in further studies at a higher level, potentially contributing to the conservation of the area, as it needs educated people to come back to work in their home villages.

## Management principles

The Hin Namno Field Station Office (FO) will act as coordination of the relevant stakeholders and other offices at the district and provincial level for the implementation of village development tasks in the NPA. Villagers should take the lead roles in development and livelihood activities, as Hin Namno staff should focus on conservation work such as patrolling (not working as a tour guides, for instance).

The NPA office will monitor and manage the budget in cases where those development activities are funded by the Hin Namno management project. It will provide consultation services to the participating sectors to ensure that activities will produce positive impacts for the protected area, consistent with efforts to address climate change (climate proofing, mitigation and adaptation) and helping villagers to reduce poverty and improve cooperation for conservation. Additionally, to ensure that development proceeds together with conservation, discussions and negotiation must take place as practice for the co-management plan. Development activities should also accord with district development strategies.

*Table 25: Summary of potential livelihood development, by zones*

<b>Area</b>	<b>Major potentials</b>	<b>Secondary potentials</b>	<b>Remarks</b>
Khet Dou	Weaving, planting (limes, vegetables)	Tourism, handicrafts, rice farming, NTFPs	Only when the tourists using the services
Lang Khang	Livestock, planting (vegetables)	Tourism	
Kayou	Planting (vegetables), rice farming	Weaving, NTFPs	
Nongping	Tourism, handicrafts, bananas	Soy bean, livestock, vegetables	Only when the tourists using the services
Thaplao	Banana, corn, soy bean		N/A
Nongma	Corns, bananas, beans and		



	livestock		
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*NAFRI 2009: Modified from the survey report on agriculture and forest land allocation zones for Bualapha District, Khammouane Province.*

### **4.9.3 Mobilization Strategy for Protected Area Cooperation Projects**

At times, there are many projects working in the villages around the protected area. Thus we need to understand the objectives of these projects. Seeking ways to link various work together can help to improve local villagers' livelihoods. We should also engage others to help them understand the work of the protected area, such as by showing its role as the main source of foods and income for local villagers. However, it is equally important to never initiate contact by criticizing other project activities based on your own views, rather than properly understanding the projects. This could lead to a failure of communication. Sometimes, different development actors will have their own rationales and views, based on different development principles.

After reaching a mutual understanding, the discussion and negotiation process should start with the exchange of constructive feedback on activities that would directly impact the protected area in the long run. Avoid criticism of others' work in ways that would harm the atmosphere. Coordination with other projects is necessary to assist them to understand the activities which might be friendly or otherwise to the protected area. The introduction of livelihood development activities can include bringing non-native animals and plants from other countries to raise. These introductions can lead to the spread of invasive species and native animals, such as fish, can become threatened with extinction, leading to changes in the area's ecosystems.

On the other hand, activities that work hand in hand with conservation can maintain or increase incomes sources for local villagers and help to address poverty. The assistance given by development projects should include adherence to commitments/obligations for conservation. Also, they might provide some motivating activities, such as a "food for work" programme which compensates patrolling of the protected area with rice.

### **4.10 Village Benefits**

The Hin Namno Co-management Plan is designed for the villagers (villages and khets) to be key players in site management, with support from government and for the sake of the villagers. There will be good village ownership if they receive benefits. Benefits that the villagers would gain are:

- ✓ Per diem when they do field work;
- ✓ Benefit sharing from involvement in law enforcement actions in which penalty fees are obtained;
- ✓ Opportunities to learn jobs/skills
- ✓ Village and khet institutions receive incomes from the implementation of sustainable financing mechanisms;
- ✓ Income from tourism businesses (providing service and selling products);

- ✓ Project assistance regarding livelihood development, and local capacity and skills;
- ✓ Forest resources are protected and function well in maintaining of local livelihoods.

*Table 26. Logframe of the plan implementation*

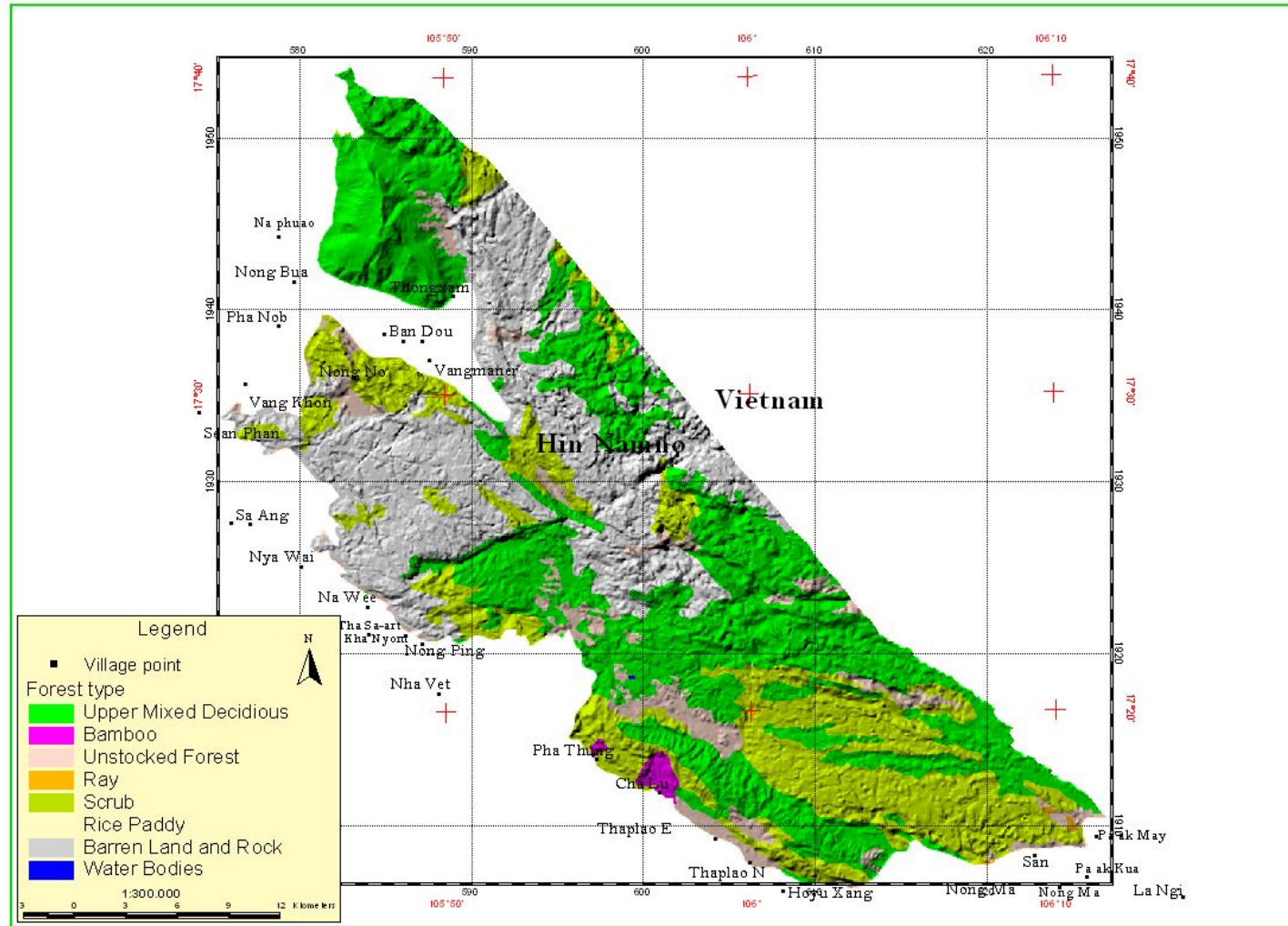
	<b>Indicator</b>	<b>Means of verification</b>	<b>Assumption</b>
<b>Goal</b>	Wildlife data, number of wild animals found is increased, while wildlife threats go down. Villagers gain better income and their ownership of Hin Namno management.	Report of biodiversity monitoring, report of village poverty assessment	Wildlife information and village poverty indications would not change satisfactorily within 3 to 5 years.
<b>Outcome</b>	Villagers and officials able to manage the Hin Namno NPA by themselves.	Villagers are involved in the processes of implementing of Hin Namno NPA	Limited capacity of villagers would make difficult in the implementation
<b>Output</b>	Increased in numbers of activities completed and outputs.	Annual report	Dissemination of local knowledge gained to other would be limited.
<b>Objective</b>	-completion the implementation of the protected area management activities set	Reports of the activities done	Budget constraints and limit of human resources would not lead to complete by the plan

# Appendices

## References

- IUCN, (1995). Protected Area *Fact—Sheets. Annex 3 to the Mid 1995 Status Report on Protected Area System Planning and Management in Lao PDR*. Lao Swedish Forestry Cooperation Programme.
- Kottelat, M. (1998). “Fishes of the Nam Theun and Xebangfai basins, Laos with diagnoses with 22 new species”. *Exploratory Freshwaters*. Vol. 9, No.1 p1-128.
- Timmins, R. J. and Khounboline, K. (1996). *A Preliminary wildlife and habitat survey of Hin Namno National Biodiversity Conservation Area, Khammouane Province, Lao PDR*. The Wildlife Conservation Society, Vientiane.
- NAFRI, National Agriculture and Forest Research Institute (2009). *Report on surveys and zone classification for agriculture and Forests in Boualapha district, Khammouane province to the year 2020*. Vientiane.
- National Speleologist Society (NSS) News, 2009.
- Walston, J. and Vinton, M. (1999). *A Wildlife and habitat surveys of Hin Namno National Biodiversity Conservation Area and adjacent areas, Khammouane Province, Lao PDR*. WWF Lao Project Office, Vientiane.

Figure 2. Forest cover map of Hin Namno NPA



**Figure 3. Location map of the villages in Hin Namno NPA**

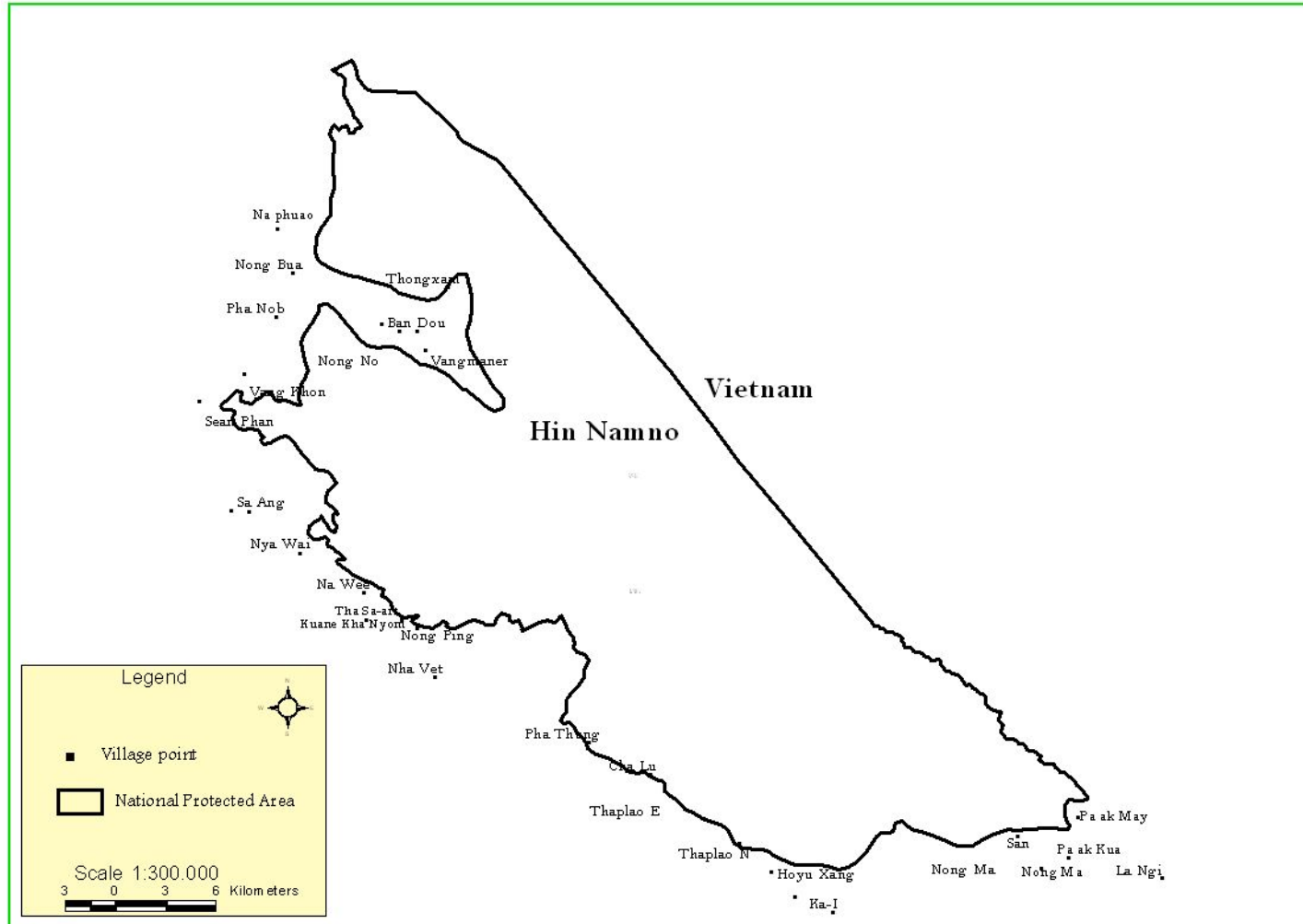


Figure 4. Important areas of biodiversity and landmarks in Hin Namno







Table 27. List of key wildlife species in Hin Namno NPA

No	Common name	Scientific names	Internat. Conserv. status	Current status
1	Bar-back Partridge	<i>Arborophila brunneopectus</i>	ART	
2	Silver Pheasant	<i>Lophura nycthemera</i>	ART	
3	Siamese Fireback	<i>Lophra diardi</i>	IUCN-VU	
4	Grey Peacock Pheasant	<i>Polyplectron bicalcaratum</i>	ART	
5	Crested Argus	<i>Rheinardia ocellata</i>	IUCN-VU	
6	Green Peafowl (?)	<i>Pavo muticus</i>	IUCN-VU	
7	White Wing Duck (?)	<i>Cairana scutulata</i>	IUCN-EN	
8	Red-collared Woodpecker	<i>Picus rabieri</i>	IUCN-VU	
9	Great Hornbill	<i>Buceros bicornis</i>	ART	
10	Brown Hornbill	<i>Anorrhinus tickelli</i>	IUCN-NT	
11	Rufous-necked Hornbill	<i>Aceros nipalensis</i>	IUCN-VU	
12	Wreathed Hornbill	<i>Aceros leucocephalus</i>	ART	
13	Crested Kingfisher	<i>Megaceryle lugubris</i>	ART	
14	Coral-billed Ground Cuckoo	<i>Carpococcyx renauldi</i>	IUCN-NT	
15	Yellow-vented Green Pigeon	<i>Treron seimundi</i>	IUCN-NT	
16	River Lapwing	<i>Vanellus duvaucelli</i>		
17	Lesser Fish Eagle	<i>Ichthyophaga humillis</i>	IUCN-NT	
18	Rufous-winged Buzzard	<i>Butastur liventer</i>	IUCN-NT	
19	Pied Falconet	<i>Microhierax melanoleucos</i>	IUCN-NT	
20	Spot-billed Pelican (?)	<i>Pelecanus philippensis</i>	IUCN-VU	
21	Blue-rumped Pitta	<i>Pitta soror</i>	IUCN-NT	
22	Bar-bellied Pitta	<i>Pitta elliotii</i>	IUCN-NT	
23	White-winged Magpie	<i>Urocissa whiteheadi</i>	IUCN-NT	
24	Indochinese Green Magpie	<i>Cissa hypoleuca</i>	IUCN-NT	
25	Hill Myna	<i>Gracula religiosa</i>	ART	
26	Sooty Babbler	<i>Stachyris herberti</i>	IUCN-VU	
27	Rufous-throated Fulvetta	<i>Alcippe rufogularis</i>	IUCN-NT	
28	Mountain Fulvetta	<i>Alcippe peracensis</i>	ART	
29	Chinese Pangolin	<i>Manis pentadactyla</i>	IUCN-NT	Rare to find
30	Sundan Pangolin	<i>Manis javanica</i>	RR	Rare to find
31	Dhole	<i>Cuon alpinus</i>	IUCN-VU, CITES II	Rare to find
32	Assamese macaque	<i>Macaca assamensis</i>	IUCN-VU	
33	Rhesus macaque	<i>Macaca mulatta</i>	IUCN-NT	
34	Bear macaque	<i>Macaca arctoides</i>	IUCN-VU	
35	Pig-tailed macaque	<i>Macaca nemestrina</i>	IUCN-VU	
36	White-cheeked gibbon	<i>Hylobates lencogenys</i>	IUCN-EN, CITES I	Scarce
37	Douc langur (red)	<i>Pygathrix nemaus nemaus</i>	IUCN-EN	Hunt a lot
38	Black langur	<i>Trachypithecus hatinhensis</i>	IUCN-EN	Hunt a lot
39	Asiatic Black Bear	<i>Ursus thibetanus</i>	IUCN-VU, CITES II	Rare to find
40	Oriental small-clawed Otter	<i>Aonyx cinerea</i>	IUCN-NT, CITES II	
41	Large Otter		IUCN-VU	
42	Owston's palm civet (?)	<i>Hemigalus owstoni</i>	IUCN-VU	
43	Leopard Cat (?)	<i>Prionailurus bengalensis</i>	RR, CITES II	
44	Asiatic Golden Cat (?)	<i>Catopuma temminckii</i>	IUCN-NT, CITES II	
45	Marbled Cat	<i>Pardofelis marmorata</i>	IUCN-DD, CITES I	
46	Clouded Leopard	<i>Neofelis nebulosa</i>	IUCN-VU, CITES I	

No	Species	Scientific names	Internat. Conserv. status	Current status
47	Tiger	<i>Pantheras tigris</i>	IUCN-EN, CITES I	
48	Asian Elephant (?)	<i>Elephas maximus</i>	IUCN-EN, CITES I	
49	Guar (?)	<i>Bos guarus</i>	IUCN-VU, CITES I	
50	Southern Serow	<i>Naemorhedus sumatraensis</i>	IUCN-VU, CITES I	Hunt a lot
51	Saolao (?)	<i>Pseudoryx gnhetinhensis</i>	IUCN-EN, CITES I	
52	Black giant squirrel	<i>Ratufa bicolar</i>	IUCN-EN, CITES II	
53	Inornate squirrel		RR	
54	Cambodian striped squirrel	<i>Callosciurus inornatus</i>	RR	
55	Asiatic Soft-shell	<i>Amyda cutilaginea</i>	IUCN-VU	
56	Wattle-necked Softshell	<i>Palea steindacheri</i>	IUCN-NT	
57	Yellow-headed Temple Turtle	<i>Hieremys annandalei</i>	IUCN-VU	
58	Elongate Tortoise	<i>Indotestudo elongate</i>	CITES II, IUCN VU	

(Timmins and Khounboline, 1996; Walston and Vinton, 1999; Duckworth et al., 1999)

Remark: EN = Endangered (IUCN 1996)  
VU = Vulnerable  
NT = Near threatened  
ART = At Risk in Thailand  
DD = Data Deficient  
RR = Regional Rare (?) = insufficient data to confirm the presence

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