

TUYEN QUANG PROVINCE

NA HANG DISTRICT

SPECIES CONSERVATION ACTION PLAN

Local-based conservation of Tonkin Snub-nosed Monkey at the Na Hang Nature Reserve

Period: 2013 to 2017



Na Hang, November 2012

This document is prepared for the People Resources and Conservation Foundation (PRCF), within the framework of the PRCF Vietnam Program, for the project *“Strengthening community conservation of priority sites within the Ba Be / Na Hang Limestone Forest Complex, northern Vietnam”*

The project aims is to improve conservation of globally threatened species of primates (Francois’ Langur and Tonkin Snub-nosed Monkey), the White-eared Night Heron, globally threatened species of conifers and magnolias and conduct innovative community-based natural resource management at sites of high biodiversity interest in the Ba Be / Na Hang Limestone Forest Complex (Tuyen Quang and Bac Kan Provinces).

This species conservation action plan is an output of the above project implemented by People Resources and Conservation Foundation, Na Hang Nature Reserve and Tuyen Quang Forest Protection Department. It provides the framework to sustainably link conservation of forest resources with livelihood development in Nah Hang District, Tuyen Quang Province.

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Abbreviations

a.s.l	above sea level
BB Sector	Ban Bung Sector
CEPF	Critical Ecosystem Partnership Fund
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CR	Critically Endangered
DoNRE	Division of Natural Resources and Environment
DoFA	Division of Forestry and Agriculture
EN	Endangered
FFI	Fauna & Flora International
FPD	Forest Protection Department
FPS	Forest Protection Station
NHNR	Na Hang Nature Reserve
NTFPs	Non-timber forest products
PARC	Creating Protected Areas for Resource Conservation using Landscape Ecology
PC	People's Committee
PES	Payment for Environmental Services
PRCF	People Resources and Conservation Foundation
PRUP	Participatory land use planning
SCAP	Species Conservation Action Plan
SHCA	Species and Habitat Conservation Area
TK Sector	Tat Ke Sector
UNDP	United Nations Development Programme

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PREAMBLE

This Species Conservation Action Plan is based on the following legal documents:

- Law on Protection and Development of Forest No. 29/2004/QH11 approved by the National Assembly of the Socialist Republic of Vietnam dated 3rd December 2004
- Law on Environment Protection No. 52/2005/QH11 approved by the National Assembly of Vietnam dated 29 November, 2005
- Law on Biodiversity No. 20/2008/QH12 approved by the National Assembly of the Socialist Republic of Vietnam dated 13th November 2008
- Decision 310/ QĐ-CT dated 26th December 2007
- Decision 17/2009/QĐ-UBND dated 22nd October 2009. Protection and environment planning in Tuyen Quang Province to 2010.
- Decision No.274/QĐ-UB dated 9th May 1994 of the Tuyen Quang Province People's Committee on the establishment of the Na Hang Nature Reserve.
- Decision 2284/QĐ-TTg dated 13th Dec 2010. Approval to implement decision No 99/2010/NĐ-CP on date 24 Sep 2010 about Environmental Services
- Decision No.186/2006/QĐ-TTg TTg dated 14/8/2006 and 34/2011/QĐ-TTg dated 24/6/2011 edited with some articles in Decision No.186/2006/QĐ-TTg of the Prime Minister on Management regulations of Special-use Forests, Watershed Forests, and Product Forests
- Decision 1218/QĐ-Ct dated 23 Sep 2011. Establishment of steering committee to implement forest environmental service policy at Tuyen Quang Province
- Decision No.07/2012/QĐ-TTg of Prime Minister on governmental management responsibilities to forest & forestry land
- Decision 817/QĐ-CT (Tuyen Quang) dated 07 July 2011. Decision on approval of Project 'Biodiversity conservation planning at Tuyen Quang Province'
- Decree No.181/2004/NĐ-CP dated 29 October 2004 and Decree No. 38/2011/NĐ-CP dated 26 May 2011, and Joint Circular No. 07/2011/TTLT-BNNPTNT-BTNMT dated January 29, 2011 of the Ministry of Agriculture and Rural Development and the Ministry of Natural Resources and Environment guiding forest allocation and lease in association with forestland allocation and lease
- Decree No. 23/2006/ND-CP on the implementation of Forest Protection and Development Law issued by the Vietnamese Government on 3rd March, 2006 and Decree No. 98/2011/NĐ-CP on 26 October 2011, edited some articles of Decree about agriculture .
- Decree No. 32/2006/ND-CP of March 30, 2006, on Management of Endangered, Precious and Rare Forest Plants and Animals
- Decree No. 47/1996/ND-CP of August 12, 1996, on Management of Firearms, bombs and detonation materials
- Decree No. 93/2009/ND-CP on the issuance of the regulation on managing and using non-governmental funds issued by the Government on 22nd October, 2009
- Decree No. 65/2010/ND-CP of June 2010 on Detailing and guiding a number of articles of the Biodiversity Law
- Circular No. 07/2010/TT-BKH dated March 30, 2010 of the Ministry of Planning and Investment guiding the implementation of the Government's Decree No. 93/2009/ND-CP dated October 22, 2009, promulgating the Regulation on management and use of foreign non-governmental aid
- Decree No. 117/2010/NĐ-CP dated 24/12/2010 by the Government about organization and management of special use forest system.
- Circular No. 78/2011/TT-BNNPTNT Guiding the implementation of Decree No. 117/2010/ND-CP on 24/12/2010 of the Government on organization and management of special use forest system.

- Memorandum of Agreement between the Tuyen Quang Department of Agriculture and Rural Development (on behalf of the Tuyen Quang Province People's Committee) and the People Resources and Conservation Foundation dated 14th September 2010, to implement a program of cooperation to support biodiversity conservation in Tuyen Quang Province.

It is also based on the commitment of the Government of Vietnam to the following international agreements:

- United Nations Convention on Biological Diversity (CBD)
- Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)

Justification for a local-based Species Conservation Action Plan

With a global population of less than 250 individuals, Na Hang Nature Reserve in Tuyen Quang province represents one of only five known locations with recent evidence where the critically endangered Tonkin Snub Nosed Monkey (*Rhinopithecus avunculus*) occur. Each identified population located in northeastern Vietnam is geographically isolated from the other and is under strong pressure from habitat loss and hunting. Most of the remaining populations are in decline.

Within Na Hang Nature Reserve four small sub-populations remain with between 22 - 26 individuals. The sub-population in the Tat Ke sector is isolated from the three located in the Ban Bung sector with no viable means of linkage between them. Coupled with considerable pressures from local communities living in close proximity to these remaining groups and weak conservation management, this isolation places the remaining groups under extreme risk of local extirpation. Therefore, Na Hang Nature Reserve is of national and international importance in holding a primate species of global significance requiring urgent conservation action.

Goal of the Species Conservation Action Plan

The goal of the Species Conservation Action Plan is to improve management of Na Hang Nature Reserve forest through collaboration between local communities and other key stakeholders for long-term sustainable development and to stabilize the nationally and globally critically endangered population of Tonkin Snub-nosed Monkey at this site.

This species conservation action plan has been developed as a document to provide guidance for conservation measures in Na Hang district, Tuyen Quang province for the coming years. It lists activities considered necessary by the local communities, authorities and scientists to assure the survival of the remaining populations of Tonkin Snub-nosed Monkey at this site. It can be used as a baseline document for fundraising by the government and international organizations. Its activities can over the coming years be gradually included in the provincial management plans and can be implemented as funding will be available.

Objectives of the Species Conservation Action Plan

The objectives of the Species Conservation Action Plan are to:

1. Protect and stabilize the population of Tonkin Snub-nosed Monkey at Na Hang Nature Reserve
2. Actively engage local communities in Tonkin Snub-nosed Monkey conservation
3. Develop local stakeholder capacity to actively participate in the management of natural resources within the Na Hang Nature Reserve in a manner that provides long-term livelihood benefits while protecting the Tonkin Snub-nosed Monkey, and preserving the biodiversity values of the area.

1 INTRODUCTION

1.1 Forests and species of conservation value in Na Hang Nature Reserve

Ha Hang Nature Reserve

Na Hang Nature Reserve is situated at the intersection of the four communes of Khau Tinh, Son Phu, Con Lon and Thanh Tuong, Na Hang district, Tuyen Quang province. It is located between the geographic coordinates of 22°16' – 22°31' N and 105°22' – 105°29'E. The area is divided by two rivers, the Nang and Gam Rivers and hence, the Nature Reserve is an important watershed area for these rivers and tributaries. In 2002 construction of the Gam River Hydroelectric dam commenced flooding the Nang River and forming a large reservoir, effectively isolating the two sectors of the Nature Reserve, Tat Ke in the north and Ban Bung in the South (NHNRSUFPD, 2010).

The Nature Reserve was initially established by Decision No. 274/QD-UB, dated 09 May 1994, issued by the Tuyen Quang Province People's Committee. The initial gazetted area was 41,930ha, redefined in 2008 to 36,646ha and again to 22,401ha according to Decision No. 310/QD-CT dated February 2007 where the forest types were reclassified to (TQFPD, 2008):

- Strict Protection Zone: 9,099ha
- Ecological Restoration Zone: 5,737ha
- Administration Zone: 212ha.

Generally the terrain is characterised by high limestone mountain ridges with forested lower slopes. The majority of the Nature Reserve lies between 300m and 800m above sea level with the highest peak reaching around 1,064m within the Tat Ke Sector (Frontier Vietnam, 1997).

The terrestrial vegetation is dominated (70%) by lowland tropical forest on limestone (Trai *et al.*, 2004). Evergreen lowland forests (primary and secondary) are present on the limestone slopes of the reserve, and montane and sub-montane forests on the higher slopes and mountains (over 700m asl.) (Frontier Vietnam, 1997). There are 844 identified plant species from 127 families located in the reserve (IEBR & MONRE, 2007).

Tonkin Snub-nosed Monkey

First discovered in 1911, the Tonkin Snub-nosed Monkey was thought to be extinct until a population (two sub-populations) was rediscovered in Na Hang district, Tuyen Quang province, in 1992 (Ratajszack *et al.*, 1992). Thus giving the area of forest immediate interest for its global biodiversity conservation significance and providing motivation for the creation of a Nature Reserve to conserve the then largest known extant population of the species.

1.2 Local-based Species Conservation Action Plan

This Species Conservation Action Plan (SCAP) has been prepared following extensive consultation with local stakeholders to agree on steps necessary to protect local biodiversity values while improving management of forest resources. It comprises three parts:

- i. Chapters 1-2 describe the background to the plan, including the biodiversity values, socio-economic conditions and current management of the forest.
- ii. Chapters 3-5 describe the issues to be addressed and opportunities.
- iii. Chapters 6-8 comprise the action plan itself with a set of conservation actions, roles and responsibilities, an implementation plan and budget.

1.3 The SCAP development process

- Two PRCF-led field surveys for Tonkin Snub-nosed Monkey were conducted (one each at Tat Ke and Ban Bung Sectors) from September to November 2010 (Thach Mai Hoang, 2010).

- Formulation of the SCAP was initiated on 17th August 2011 by holding a workshop in Tuyen Quang City (Annex 1 shows a list of participants).
- Following this workshop, the planning process consisted of a data collection phase from 9th to 23rd December 2011 in which consultations were held in five villages around the forest to discuss issues threatening the Tonkin Snub-nosed Monkey, raise awareness on the Monkey and obtain an oversight on local livelihoods (Annex 2 lists the workshop participants).
- In December 2011, direct consultations were held with representatives from each Commune People’s Committee, District Agriculture and Rural Development Office and District Forest Protection Department (FPD).
- This was followed by a consultation workshop in Tuyen Quang City involving representatives from each commune’s People’s Committee, the District Department of Agriculture and Rural Development, District FPD, District police, representatives of the villages and community patrol group members. At this workshop a first draft of the SCAP was presented to the stakeholders and they were invited to comment on each section and fill the information gaps.
- The final version of the SCAP was completed in 2013 and presented to the Na Hang Nature Reserve.

2 BACKGROUND INFORMATION

This section describes the biodiversity values and socio-economic context of Na Hang Nature Reserve as a basis for the action plan. Only the status of the Tonkin Snub-nosed Monkey is described as this is the priority taxon (a small group of Francois’ Langur – *Trachypithecus francoisi* was reported, however, not observed) for which specific surveys have been carried out both the Tat Ke and Ban Bung Sectors of Na Hang Nature Reserve. Other biodiversity values in the Na Hang Nature Reserve have not been assessed and are therefore not included in this action plan.

Socio-economic data for this action plan come from official commune statistics and information gathered by teams from PRCF in December 2011, and from the stakeholder workshops held in the seven targeted villages.

2.1 Tonkin Snub-nosed Monkey



Photocredit: Le Khac Quyet (FFI) & Herbert Covert (Uni of Colorado, Boulder)

The following section is taken directly from FFI’s SCAP for Tonkin Snub-nosed Monkey at Tung Vai – Cao Ma Po – Ta van Forest, Ha Giang province (FFI, 2011). With a global population of probably less than 250 individuals, the Tonkin Snub-nosed Monkey is one of the world’s rarest primates. It is classified in the Red Data Book of Vietnam as Endangered and as Critically Endangered on the IUCN Red List of Threatened Species (Xuan Canh, L., Khac Quyet, L., Thanh Hai, D. & Boonratana, R., 2008). As such it is recognised by the Government of Vietnam and the international community as one of

the most threatened species nationally and internationally. Therefore it is afforded the highest level of legal protection in Vietnam and listed in List 1B in Prime Minister’s Decree 32/2006 being “strictly banned from exploitation and use for commercial purposes, including plants and animals of scientific or environmental value or high economic value, with very small populations in nature or in high danger of extinction”. The Tonkin Snub-nosed Monkey is also listed on Appendix one of the

Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), which the government of Vietnam has signed, recognizing that any international trade of these animals is prohibited.

Why is the Tonkin Snub-nosed Monkey population of Na Hang Nature Reserve so important? The species is endemic to northern Vietnam where it is now restricted to a small number of forest locations in Ha Giang, Tuyen Quang and Thai Nguyen provinces. The forest of Na Hang Nature Reserve supports the third largest known population of the species. This location in Na Hang district is also significant as it was the site where the species, thought to be extinct, was rediscovered in 1992 with 40 – 50 individuals estimated in the Tat Ke sector and 90 – 110 (observed 12) estimated in the Ban Bung sector (Ratajszczak *et al.*, 1992).

In 1993, Boonratana & Le (1994) observed 72 individuals and estimated 80 in the Tat Ke sector, and observed 23 individuals and estimated 50 in the Ban Bung sector. A later survey, conducted in 2004–2005 by V. T. Quan & Ma V.T (unpublished), found far lower densities, and estimated only 17–22 individuals in the Tat Ke sector. Also in 2005 Le Hong Binh estimated 50 individuals in the Ban Bung sector, however, this information lacked verifiable evidence (Le & Boonratana, 2006).

More recently PRCF-led surveys in both sectors of Na Hang Nature Reserve from September to November 2010 directly encountered and observed four Tonkin Snub-nosed Monkey groups with an estimated number of 22 – 26 individuals (Thach Mai Hoang, 2011) – refer to Table 1. If these groups are in fact the last remaining groups (probable), we could conclude that there has been a dramatic decline since the rediscovery of the species at Na Hang by Ratajszczak *et al.* in 1992.

Two other sites, both located in Ha Giang province to the north have more Tonkin Snub-nosed Monkeys. Khu Ca Species and Habitat Conservation Area, with at least 91 individuals and Tung Vai – Cao Ma Po – Ta Van Forest, Quan Ba district with a total of 42 to 53 individuals. The population at Khu Ca appears to be relatively stable.

Tonkin Snub-nosed Monkeys are a very distinctive species, with black and white colouration, a long white tail and unmistakable face. They are the largest primate in Vietnam. Being primates they are intelligent animals with complex social behaviour and are very sensitive to disturbance, especially hunting with guns (FFI, 2011). These monkeys live almost entirely in trees and require good intact forest. They eat a broad range of plants and plant parts (Le Khac Quyet *et al.* 2007) and have never been known to come into conflict with local communities, e.g. by crop-raiding.

The monkeys in Na Hang Nature Reserve are restricted to four sub-populations (one in Tat Ke and three in Ban Bung sectors) areas where forest is relatively intact. The three groups in the Ban Bung sector inhabit a contiguous area of forest and it is possible for them to interact (and inter-breed). The isolated group in the Tat Ke sector is particularly vulnerable especially to hunting as the death of just one animal will have a massive impact upon the viability of the group which is dubious at best.

Through the village SCAP consultation process, local people reported that the current sub-populations are much smaller than historical anecdotal records. Hunting is considered to be the main threat to the species with rapid declines in numbers noted both before and after the construction of the Gam River dam between 2002 and 2007. During this timeframe 10,000 workers moved to the area to work on the dam and this event may have caused irreparable damage to the remaining groups. In mid-2012, there were unverified reports that an unspecified number of animals from one of the Ban Bung sector groups were shot and killed by poachers (Tu Minh Tiep, PRCF *pers. comms.*). Due to the small size of the remaining sub-populations, any loss of individuals due to hunting will most likely contribute to local extirpation at Na Hang Nature Reserve within three to five years.

With the third largest known population of the Tonkin Snub-nosed Monkey in the world, and one that has rapidly declined in recent years at an alarming rate, protection of this forest is of high international importance to prevent extinction of this species.

Figure 1. Distribution of sub-populations of Tonkin Snub-nosed Monkey In Na Hang Nature Reserve

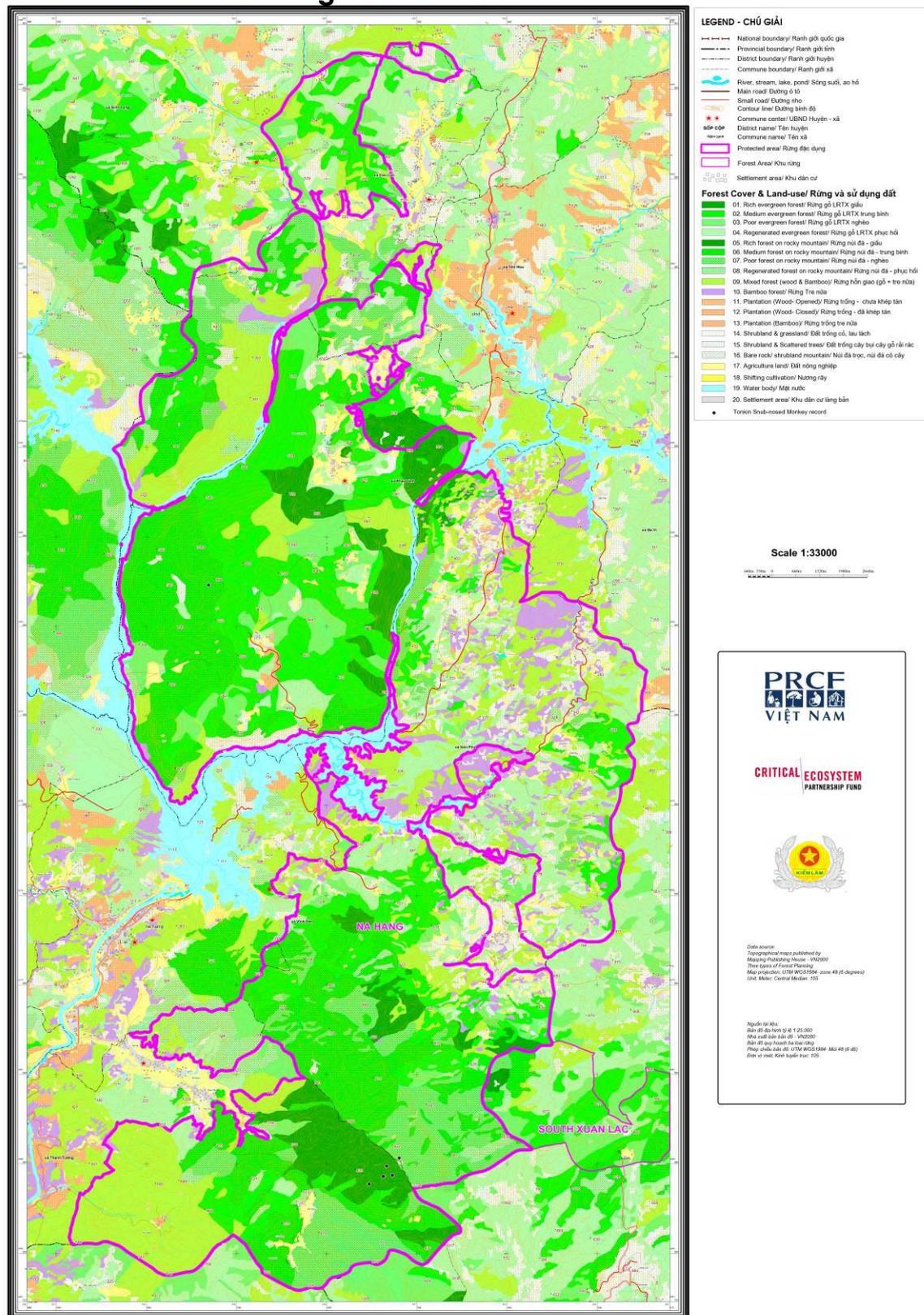


Table 1. Recent records of TSNM in the Tat Ke and Ban Bung sectors of Na Hang Nature Reserve

Group	Location		Number of individuals	Notes
	UTM (E)	UTM (N)		
1	0541726	2481164	5 – 10	Tat Ke sector (2010): Thach Mai Hoang and team observed two adult males and three adult females, with an unknown number accompanying the group.
2	0547012	2465170	7 - 10	Ban Bung sector (2010): in addition to the group of seven observed by Thach Mai Hoang and team, an estimated three others obscured by dense foliage
3	0546181	2464444	4	Thach Mai Hoang and team observed in 2010. Two individuals were heard calling with the group estimated to be four animals – troop social structure could not be determined.
4	0546826	2464687	2 - ??	Guides for the PRCF-led survey team (Thach Mai, Hoang, 2011) in 2010 observed at least two individuals, however, the exact number in the group could not be estimated.
Total estimate			22 to 26	

2.2 Socio-economic conditions

2.2.1 General demographics

Three communes in Na Hang district are the focus of this action plan: Khu Tinh (Tat Ke sector), Son Phu (Ban Bung sector) and Thanh Tuong (Ban Bung sector). Khu Tinh comprises four villages with 270 households and 1,278 inhabitants in 2011, Son Phu comprises eight villages with 573 households and 2,824 inhabitants and Thanh Tuong comprises eight villages with 684 households and 2,986 inhabitants (PRCF SCAP interviews with Commune authorities, 2011). Of these 20 villages, five villages (Na Tang and Tat Ke villages in Khu Tinh commune; Phia Chang and Na Con villages in Son Phu commune and Ban Bung village in Thanh Tuong commune) are the focus of the action plan. Figures 2 and 3 show the locations of the target villages within the Tat Ke and Ban Bung sectors respectively and their proximity to sub-populations of Tonkin Snub-nosed Monkeys.

These villages were selected based on:

- a) Location within the cores zone and closest proximity to identified Tonk Snub-nosed Monkey sub-populations;
- b) Their inhabitants cultivate and conduct agricultural activities (often encroaching upon the core zone) within the Nature Reserve;
- c) Their inhabitants have the highest degree of forest dependence and are the main forest resource users.

The five target villages belong to ethnic minorities with small numbers (if any) of the national majority Kinh ethnic group. Data shown in Table 2, was compiled during the SCAP consultation process and from official statistics.

Table 2. Overall demographic data of the five target villages

Commune/ Village	No. Of Households	Ethnicity	Proportion of poor households*(%)
Khau Tinh commune	270	Tay, Dao, H'Mong, Hoa, Kinh	357 (52%)
Na Tang	37	Dao	24 (65%)
Tat Ke	29	Tay, Dao, Kinh	20 (69%)
Son Phu commune	573	Tay, Dao, H'Mong, Muong, Nung, Kinh	326 (57%)
Phia Chang	98	Dao (1 household Tay)	94 (96%)
Na Con	65	Dao (1 household Tay)	49 (75%)
Thanh Tuong commune	684	Tay	328 (48%)
Ban Bung	42	Tay, Dao, Kinh	33 (79%)

*Based upon Khu Tinh, Son Phu and Thanh Tuong Commune Social Reports (2011).

2.2.2 Livelihoods

According to the Na Hang District People's Committee, the average annual income per person in Na Hang district during 2010 was 9.4 million VND per person (Committee for Ethnic Minorities' website 2011). In each of the target communes and villages, average annual income per person was only between 32 to 38% of Na Hang district's annual income per person (Table 3). This data also corresponds with the high percentage of poor households located within each commune and target village.

Table 3. Average annual income per person in target communes and villages compared to that overall in Na Hang district

Commune/ Village	Average annual income / person	Comparison with the Na Hang district average annual income / person*(%)
Khau Tinh commune	Approx. 3,000,000	32%
Na Tang	Approx. 3,000,000	32%
Tat Ke	Approx. 3,000,000	32%
Son Phu commune	3,000,000	32%
Phia Chang	3,000,000	32%
Na Con	3,000,000	32%
Thanh Tuong commune	3,500,000	37%
Ban Bung	3,600,000	38%

*Na Hang district average annual income per person in 2010 was 9.4million

**Based upon Khu Tinh, Son Phu and Thanh Tuong Commune Social Reports (2011).

The main agricultural cultivation activities at the five target villages are cultivation of rice, maize and cassava crops with more specialised cash crops such as Shan Tea, peanuts, soybean, green bean, vegetables (cabbage and peas) and sugar cane also cultivated and varies depending upon the village. Only two villages (Na Tang and Phia Chang) have access to irrigation although, the systems constructed here are incomplete and not all land is cultivated. Without irrigation it is only possible to cultivate one wet rice harvest per year during summer. Any surpluses of maize and rice in particular (because there is a higher market value) are sold for income.

Animal husbandry is practiced widely with most households keeping livestock, mainly poultry and pigs, followed by buffalo and cows with a small percentage of households also keeping goats, geese and fish. The high availability of fallow plots bordering forest areas of the Nature Reserve offer a good source of livestock fodder and hence, these areas of slash and burn forest offer ample

opportunities to earn cash income from animal husbandry (Van Woudenberg, 2011). Most villages also obtain some income from forestry activities from small tree plantations e.g. Xoan and Mo.

The 2010 Na Hang Nature Reserve Operational Management Plan (2010 - 2014) reported that food shortages of up to six months per annum were reported in a number of villages including Phi Trang and Na Con. This was supported by Van Woudenberg (2011) who suggested that almost 50% of households in Na Hang district are annually food insecure. Van Woudenberg also suggested that these serious shortages are often overcome by households collecting vegetable resources and NTFPs from the forest (42% of households) of which 55 – 95% of all products are harvested from the Nature Reserve.

2.3 Forest use

Each of the five target villages are enclave settlements located within the strict conservation zone of the Nature Reserve. Most households derive a considerable level of livelihood dependency from activities that directly impact the surrounding forest. No households to date have been officially allocated any forest land to undertake forest plantations.

2.3.1 Logging

In the immediate vicinity of each enclave settlement, most of the vegetation has been cleared for agricultural cultivation. In some locations such as Tat Ke and Ban Bung Villages, forest cutting cooperatives (government sponsored) operated from the early 1960s until 1992 and 1990 respectively, and cut most of the primary forest in that area. Local residents use timber for housing and fuel wood. For housing and furniture they mainly exploit *Burretiodendron hsienmu* (Nghien) and *Garcinia fragracoides* (Trai Ly) which are Group IIA species protected under Prime Minister Decree 32/2006 (NHNRSUFPD, 2010). Only a small percentage of timber cut locally is used to build and repair houses.

Illegal logging occurs mainly in the forest areas adjacent to settlements and in areas where additional access has been created as a result of heightened water levels from the Gam River impoundment (Tat Ke sector). Due to restrictions in farming land, some local people selectively exploit high-value timber species such as *Burretiodendron hsienmu* (Nghien), *Markhamia stipulata* (Thiet Dinh) and *Garcinia fragracoides* (Trai Ly) to sell to traders. However, it appears that illegal logging is undertaken largely by people from outside the area. Chainsaws are widely available to all enclave settlements and within the buffer zone.

2.3.2 Hunting

Hunting is a traditional pastime of the Dao people (men) who make up the majority of the population living inside the Nature Reserve. According to Trai *et al.* (2004), it is highly probable that due to hunting pressure (supported by habitat destruction) many (not all) of the large mammal species are locally extirpated. Historically hunting by local communities of Tonkin Snub-nosed Monkey had a small local impact upon the population because it was claimed that the species was considered as 'foul-tasting'. However, most other species of primates e.g. Macaques and Francois' Langurs (*Trachypithecus francoisi*) were not immune from local hunting activities and have declined (Frontier, 1997).

A significant, yet unmeasured contributor to recent wildlife decline according to anecdotal records (village interviews during SCAP data collection 2011) was the construction of the Gam River dam. Although there had been considerable declines in wildlife numbers prior to this major infrastructure construction, higher levels of hunting were experienced during this time to supply the increased market for wildlife products. Some of this extra hunting was conducted by professional hunters from outside the local communities (TQFPD, 2009).

During the PRCF-led 2010 surveys within Na Hang Nature Reserve for Tonkin Snub-nosed Monkey, the survey team frequently heard the report of firearms, encountered fresh evidence of well used hunting camps and hunting platforms, observed numerous ground snares in both sectors and even

encountered a H'mong hunter in the forest who discarded his locally made hunting rifle as he made his escape (Thach Mai Hoang, 2011). Much of this direct evidence of hunting also occurred in close proximity to the four groups of Tonkin Snub-nosed Monkey located in these areas. So it is comes as no surprise that the species is under significant pressure from this threat.

During village interviews by PRCF and Thach Mai Hoang (2011) no firearms were directly observed in any of these households. Although some local residents suggested that it was easy to access firearms. It is presumed that people from local communities hide their firearms in the forest, similar to that reported in the neighbouring Lam Binh Watershed Protection Forest (Lam Binh district).

2.3.3 NTFPs collection

Many local residents living within the buffer zone and enclave villages locally harvest non-timber forest products (NTFPs) including orchids, rattan, bamboo shoots, bee honey, medicinal plants and edible seed/plants. NTFPs are also harvested as feed for livestock such as cattle, buffalos and pigs. These forest products often form a significant proportion of family cash income and assist poor households who face regular food security problems. It is unknown whether the level of exploitation is sustainable, however, some species such as *Paris polyphylla* Smith (Cây 7 lá 1 hoa) have been harvested intensively and are no longer as widely available as they were in previous decades.

Forest products are in high demand in local markets. If the demand for a particular NTFPs remains stable or increases as its abundance declines, its market value increases accordingly, thereby providing a large incentive for local households to continue harvesting an ever diminishing resource.

There is little awareness of the specific protection status of most NTFPs in the Nature Reserve, even amongst local authorities, and the law concerning these species is not widely publicised or known.

2.3.4 Cultivation and farming in the forest

Other than NTFPs harvesting, agricultural cultivation activities are one of the most important livelihood activities for the five enclave target villages. Uncontrolled expansion and encroachment of agricultural areas (slash and burn) into the forest of the strict protection zone represents a major pressure upon the Nature Reserve. In particular, illegal deforestation for cultivation is common at Phia Trang, Na Con and Na Tang Villages. According to official 2010 figures, 1,243 ha of fallow land exist in the Nature Reserve. 474 ha of special use-forest, 104 ha protection forest and 685ha of production forest. 275ha of fallow land was caused by slash and burn practices, of which 121 ha was former special-use forest (Van Woudenberg, 2011).

During interviews with government officials, they concede that illegal logging around the enclave villages still occurs, however, the land is used for agricultural expansion as all the land cleared is converted into agricultural production.

2.3.5 Livestock grazing

Fallow plots bordering forest areas of the Nature Reserve offer a good source of livestock fodder and space for raising a variety of livestock e.g. buffalo, cows, goats. Livestock take advantage of the slash and burned agricultural land left to fallow and graze freely until the correct season when agricultural cultivation continues. Particularly in winter (also whenever fodder is unavailable outside) livestock are allowed to graze feely inside the Nature Reserve by local residents. Such grazing inside the forest also offers protection against the extreme winter cold that claims many valuable livestock.

2.3.6 Fuel wood collection

Fuel wood is used by all households within the target villages and is collected directly from the Nature Reserve. There are no alternative fuel sources readily available and accessible.

3. MANAGEMENT OF THE NA HANG NATURE RESERVE

3.1. Government management structure

Na Hang Nature Reserve is managed by the Na Hang Nature Reserve Protection Office (Forest Protection Department) established in 1998 under Decision No. 1115/QD-UB, dated 9th November 1998 and issued by the Tuyen Quang Province People's Committee. The Tuyen Quang Forest Protection Department provides close technical and management oversight support.

In collaboration with functional agencies, local commune authorities and the community patrol teams, rangers from the Protection Office conduct regular in village dissemination activities on forest protection laws, forest land-use regulation and governmental forest policies for local people. The boundaries around the protected area and especially within the five enclave target villages are not clearly defined making law enforcement activities more difficult to define and detect.

3.2. Local community involvement

25 Community Patrol Team (CPT) members have been recruited from villages within the buffer zone or enclaves within the Nature Reserve. The main function of CPT members is to support the Na Hang Nature Reserve through their knowledge of local forest conditions, conduct law enforcement and patrolling activities. CPT activities continued after the completion of the Species Conservation Foundation's Tonkin Snub-nosed Monkey Conservation Project in 2006. From 2007, these 25 positions have been funded (salary, social and health insurance) from a recurrent budget line of the Tuyen Quang Province. The majority of CPT members are young adults in the 22 – 30 year age demographic, who has been identified as the main group entering the Reserve to conduct illegal and uncontrolled activities.

During the SCAP data collection consultations, local village participants reported that there were rare opportunities where they were consulted and their ideas on management of the Nature Reserve, particularly on issues directly affecting them, were sought. Further, their participation was mostly restricted to attendance at periodic visits from Nature Reserve rangers where information of relevance to the Nature Reserve and local authorities was read to them. Hence their involvement was limited to an inactive role.

3.3. Conservation activities

Other than limited conservation activities implemented from the declaration of the Nature Reserve in 1994, few conservation activities were implemented until the commencement of the Na Hang Rainforest Conservation Project in 1998, followed by the PARC Project¹ from 2002 to 2004, and the Species Conservation Foundation from roughly 2004 until 2006. Since 2007 there have been few conservation activities restricted mainly to CPT activities, Tonkin Snub-nosed Monkey Surveys and targeted awareness raising activities.

3.3.1. Fauna & Flora International: Na Hang Rainforest Conservation Project

In 1998 this project was implemented to strengthen the management and protection of Na Hang Nature Reserve through data gathering and capacity building. Some activities included: establishment and support of ranger patrols, management planning for Tonkin Snub-nosed monkeys, surveys etc.

3.3.2. PARC Project conservation activities

Operational Management Plan for Na Hang Nature Reserve

An operational management plan for the years 2003 to 2007 was prepared in cooperation with the Na Hang Nature Reserve Protection Office.

¹ *Creating Protected Areas for Resource Conservation Using Landscape Ecology (PARC)*

Sustainable Financing Strategy

Prepared in April 2002 this strategy consisted of four working papers including:

No. 1: Strengthening Central and Provincial Budget Support: the Case of Ba Be National Park and Na Hang Nature Reserve.

No. 2: Potential for Ecotourism to Contribute to Long-Term Financing of Ba Be National Park and Na Hang Nature Reserve.

No. 3: Potential for International Funding to Contribute to Long-Term Financing of Ba Be National Park and Na Hang Nature Reserve.

No. 4: Options for the Establishment of Trust Funds for Ba Be National Park and Na Hang Nature Reserve.

Internal Boundary Demarcation

During 2003 – 2004 the Internal boundaries of the Strict Protection and Ecological Restoration Zones were defined and still remain in use.

Survey Activities

Biodiversity (2002): Two biodiversity surveys one each in both Ban Bung and Tat Ke sectors
Wildlife and Orchid Trade in Na Hang Area (2003)

Training Needs Assessment

This activity in 2003 was conducted at two levels, namely with field grade staff (rangers, ranger leaders and senior rangers) and Management Staff (Vice Director and Director) of the Reserve.

Community ranger training

In collaboration with Na Hang District FPD a group of community members were recruited and trained as “Community Forest Rangers”. These members were intended to work with FPD rangers to patrol the proposed Francois’ Langur SHCA.

Gun Buy-back Program

From 2003-2004 a gun buy-back program was implemented and the laws on prohibition of guns and hunting were publicised, so people are aware of the illegality of hunting and gun possession.

3.3.3. Allwetter Zoo and the Zoological Society (supported by The Species Conservation Foundation)

Implemented from 2004 – 2006 activities included:

- Provide technical support to Na Hang Nature Reserve to protect the Tonkin Snub-nosed Monkey.
- Maintaining and supporting the CPT to target poaching and illegal wood felling.
- Promoting sustainable use of natural resources through development of alternative income options.
- Environmental education and information campaigns on the Tonkin Snub-nosed Monkey.
- Field studies and research on the ecology and distribution of the Tonkin Snub-nosed Monkey and other rare animal species.

3.3.4. Thach Mai Hoang (Rufford Small Grant)²

Implemented from 2010 – 2012 activities included:

- Field surveys of Tonkin Snub-nosed Monkey and monitoring status and threats to sub-populations
Design and implement a community awareness raising program;
- Offer technical guidance and advice to improve the effectiveness of the Community Patrol Teams (CPTs); and
- Develop a mechanism of supervision of new members of CPTs.

² Ensuring the Survival of Tonkin Snub-Nosed Monkey (*Rhinopithecus Avunculus*) in Na Hang Nature Reserve, Tuyen Quang Province, Northeastern of Vietnam

3.3.5. PRCF activities implemented (2011)

Evaluation of the performance of the Community Patrol Teams operating at Na Hang Nature Reserve
The activity compiled lessons learned since 2007 on CPT operations and sought to prepare recommendations on how to fund activities sustainably at other high conservation value locations.

Tonkin Snub Nosed Monkey surveys

From September to December 2010 PRCF led two surveys (one each in Tat Ke and Ban Bung sectors) that located four groups with an estimated 22 – 26 individuals.

4. THREATS TO THE TONKIN SNUB-NOSED MONKEYS IN NA HANG NATURE RESERVE

The following section describes the results of threat assessment surveys conducted during the 2010 PRCF-led Tonkin Snub-nosed Monkey surveys (refer to Thach Mai Hoang, 2011) and the threats listed by village participants during the SCAP data collection process. All threats are listed and discussed in relation to the Monkeys.

DIRECT THREATS

4.1. Hunting with firearms

Hunting with firearms is the major and most immediate threat to the Tonkin Snub-nosed Monkeys. Interviews with people from the five target villages identified a number of reasons for hunting with firearms. These included:

- Lack of awareness on forest protection laws. However, the hiding of guns in the forest indicate that there is awareness on the illegality of hunting
- High economic value of wildlife as specialty meat and medicines and a lack of livelihood alternatives
- Annual food insecurity and reductions in abundance of forest animals to hunt, hence most animals encountered including Tonkin Snub-nosed Monkey are now opportunistically hunted
- Easy access to locally manufacture firearms and traps
- Lack of regular and sufficient forest law enforcement patrols to act as a deterrent
- Indifferent attention and concern by various levels of government and lack of coordinated law enforcement to address hunting
- Lack of community involvement in the protection of the forest

4.2. Habitat loss

4.2.1. Clearance for cultivation

From study of a variety of references including Van Woudenberg (2011), NHNRSUFPD (2010), Le Trong Trai *et al.* (2004), Frontier Vietnam (1997), Hill & Kemp (1996), Cox (1994) and data obtained through village SCAP consultations, we develop a picture that suggests the practice of slash and burn agriculture within the landscape prior to the 1980s was minimal. It wasn't until the population of the region started to increase significantly and settlements expanded (prior to the establishment of the Nature Reserve in 1994) that this agricultural practice became more prevalent. Specifically relevant to the five target enclave settlements, slash and burn agriculture still continues (refer to section 2.3.4) as the demand for agricultural land, particularly irrigated land, increases and large numbers of households live in abject poverty.

4.2.2. Forest Fires

Forest fires are usually caused by people who enter the forest for logging, hunting, and NTFP collection. However, a significant cause particularly within the strict protection zone, is from losing

control of low intensity burns used to prepare land for cultivation and cattle grazing. This occurs mainly when burns are not supervised properly or are conducted during the wrong season. Forest fire has a potentially very high impact on the Tonkin Snub-nosed Monkey if large tracts of forest are destroyed, damaging feeding trees and reducing connectivity between key feeding areas. This may require monkeys to leave the safety of the canopy and cross broken land littered with numerous traps until they reach the next tree.

4.3. Habitat degradation

4.3.1. Logging for timber

The large external demand for timber drives uncontrolled logging throughout the Nature Reserve. Despite logging activities inside the reserve being strictly illegal, the economic incentive to continue such activities is so high that selective logging of high economic value timber species is widespread. In some cases local people from the five target enclave villages are known to participate in cutting and transportation of timber for sale to external interests.

To facilitate transportation of timber from the protected area, logs are cut into blocks or planks in the forest using petrol powered chainsaws and carried out by foot, on buffalos or loaded onto vessels on the Gam River impoundment. Van Woudenberg (2011) commented that significant loopholes in Vietnamese law made law enforcement of illegal timber extraction difficult to implement. For example, no sanctions can be laid against a person cutting trees for 'ornamental' purposes, and no inspection may be undertaken during transportation of timber if the intention of the activity is to supply wood for building a house locally. In addition, further difficulties also arise as local authorities do not have the right to arrest a person from another commune committing illegal activities in their area of responsibility.

The impact of selective clearing of timber tree species upon Tonkin Snub-nosed Monkey canopy locomotion and ranging behavior has not been evaluated. However, it is likely to be significant if logging occurs within their home range through fragmenting the forest, reducing connectivity between key feeding areas and impacting important fruiting trees such as *Garcinia fragracoides* (Trai Ly) which is a species of current local high logging demand. In addition, opportunistic hunting from loggers whilst camped in the forest and an increased risk of fire in close proximity to Tonkin Snub-nosed Monkey groups also pose considerable threats.

4.3.2. Fuelwood collection

Fuelwood collection in Vietnam does not usually involve the collection of dead wood. The preferred technique is to cut young trees and branches from larger trees with diameters of less than ten centimeters. Therefore cutting fuelwood has a massive impact on the forest since it prevents forest regeneration. A lack of alternative fuel sources and population growth maintain the demand for fuelwood.

INDIRECT THREATS

4.4. Harvesting of NTFP

Collecting NTFPs has little direct impact on Tonkin Snub-nosed Monkeys other than through opportunistic hunting for food during the time spent in the forest whilst harvesting or to supplement household food during times of food insecurity.

4.5. Livestock grazing in the forest

Uncontrolled livestock grazing in the forest surrounding enclave settlements has a direct yet minor impact on Tonkin Snub-nosed Monkey habitat, and occurs mainly when goats and cattle are kept in the forest (particularly during winter) and impact natural regeneration of the forest. A secondary indirect impact associated with livestock grazing is the increased presence of people in the forest and the risk of opportunistic hunting.

4.6. Discussion of threats

The most significant threats to the Tonkin Snub-nosed Monkey sub-populations in both sectors of Na Hang Nature Reserve are hunting with firearms followed by encroachment of agricultural land (habitat loss) and habitat degradation (illegal logging).

During the surveys PRCF-led in 2010 (refer to Thach Mai Hoang, 2011), numerous reports from firearms were heard within forest areas closely proximate to Tonkin Snub-nosed Monkey groups. In mid-2012 an unverified report was supplied to PRCF staff (by guides who had participated in the 2010 surveys) that one of the groups observed in the Ban Bung sector had been wiped out by unknown hunters. It is unclear just which group or how many monkeys were killed, however, if the report is in fact correct, the hunting of an entire group represents a tragic event. Due to the small number of groups and small numbers contained therein, the loss of one animal is significant, so with the potential loss of an entire group, it is highly likely that the species will be extirpated from Na Hang Nature Reserve within a few years unless immediate and drastic actions are implemented.

The combination of habitat removal by logging, grazing of livestock that suppresses natural forest regeneration and agricultural encroachment is expected to remove the conditions the monkeys require for their survival as they lose food sources and their living environment.

Fragmentation of the monkey groups is a longer-term threat if there is no way for the groups to inter-breed. Unfortunately the Tat Ke sub-population is isolated from the three in Ban Bung. The possibility of creating a forest corridors linkage is unfeasible due to the Gam River impoundment and human settlement which have cut all direct forest linkages and the distance (in excess of 20km) between these forest areas. A potential solution could be to translocate the group at Tat Ke to Ban Bung and then intensively protect the Ban Bung sub-populations. However, translocation of primate species is highly complex and problematic. Even if such action could be approved following correct animal welfare safeguards, the monkeys might still be hunted during the time taken to make deliberations on their behalf.

There are some long-term threats to the Na Hang Nature Reserve Tonkin Snub-nosed Monkey population that should also be considered. However, with the current threats so high and immediate, some longer-term threats are simply listed here as follows:

- The small population has inherent risks from genetic depression.
- Global climate change may lead to changes in the habitat that the monkey cannot respond to.
- Climate change may increase the level of fire danger caused by drier conditions and a forest fire could devastate all the remaining Tonkin Snub-nosed Monkey sub-population in one blow.

These threats should be considered based upon successful implementation of this action plan, when another follow-up action plan should be prepared.

5. OPPORTUNITIES FOR IMPROVED CONSERVATION

5.1. Local community involvement in forest management

Local people from the five target enclaves have a strong interest in conserving local forest due to their heavy (technically illegal) reliance upon forest resource-based income and subsistence (especially to address shortfalls in food security) opportunities. The forest also provides a very important ecological service to the area (and downstream) by regulating the essential water supply to their villages and minimizing the potential for devastating landslides.

The unique geographic locations occupied by the five enclave villages also offer opportunities for these communities to participate directly in activities that protect or conserve the forest, biodiversity and Tonkin Snub-nosed Monkey.

5.2. International and national attention for conservation of the Tonkin Snub-nosed Monkey

The Tonkin Snub-nosed Monkey is a highly distinctive, charismatic and rare species endemic to the limestone areas of the very northern parts of Vietnam. Its survival in Vietnam is of national and international concern, which is reflected in its classification in the Red Data book of Vietnam and the IUCN Red List of Threatened Species. These characteristics should attract the attention and support from national and international sources.

5.3. Improved awareness of the Tonkin Snub-nosed Monkey

According to reports from target enclave communities there is little interest in hunting the Monkeys and it is presumed that the recent reports of one group being hunted in 2012 was by outside hunters. However, due to the reliance of many enclave households upon harvesting natural resources and hunting for both subsistence and income, it can't be discounted that local households would not still hunt the species opportunistically. Therefore, raising awareness among these local communities and within adjacent buffer zone villages could have an important impact on reducing the threat from hunting to the monkeys.

5.4. Payment for environmental services

A considerable percentage of the Na Hang Nature Reserve is located within the Na Hang Dam catchment and is dually classified as Watershed Protection Forest. It is located upstream of the Na Hang reservoir and offers an environmental service essential to ensure the long term operation of the hydropower plant. There is the opportunity to link watershed protection directly to biodiversity conservation initiatives as a means to protect essential environmental services. Development of a Payment for Ecosystem Services (PES) plan is recommended as a means to ensure equitable delivery of these benefits.

5.5. Community oriented Nature-based Ecotourism

The area offers visually pleasing views of limestone karst geology and forest and now boasts an expansive impoundment lake nested within this geological and biotic setting. There is considerable potential to explore and develop community-based ecotourism activities (particularly adventure activities) that relate to the conservation of Tonkin Snub-nosed Monkeys and also the region as an Important Bird Area (IBA) with its large number of biome-restricted species (birdlife International, 2004).

Well-managed ecotourism can deliver benefits to local communities without compromising the quality of the reserve, however, development of such activities requires considerable time and effort before they can possibly realise their potential. Prior to developing tourism opportunities (or as part of the process) revolving around Tonkin Snub-nosed Monkey sub-populations, it is essential to establish home ranges and effective protection of the groups. Further, tourist numbers will need to be limited, creating exclusivity and a willingness to pay a higher premium for the experience and tourist activities well managed in order to minimize adverse impacts upon Monkeys (and other biodiversity).

6. CONSERVATION ACTIONS

In general local people, villagers and stakeholders believe that conservation of the Tonkin Snub-nosed Monkey will not be possible without livelihood improvement and sustainable forest management. There are five main areas, suggested by the villagers and other stakeholders, which needed to be addressed in order to improve the conservation of the Tonkin Snub-nosed Monkeys and of the Na Hang Nature Reserve.

This Species Conservation Action Plan proposes to provide the five target enclave villages³³ a more centrally prominent and defined role in the management of the Na Hang Nature Reserve. They have a very strong interest in maintaining the forest and can act as both responsible stewards and provide greater levels of supervision and hence, seek higher accountability of Nature Reserve staff performance. The government agencies will provide overall supervision and government and non-government organizations will provide technical support.

6.1. Forest Management

Action 1: Establish a multi-stakeholder management group

A multi-stakeholder group should be established in order to discuss, advise, approve, implement and oversee forest management measures for the entire Nature Reserve. The group would include members from a wide variety of stakeholders from both within (five target enclave villages within the strict protection zone) and outside (buffer zone) the reserve. The group should meet on a regular basis every three months and consist of no more than 20 members, including at least the following groups:

- People's Committee of Na Hang district
- Na Hang Nature Reserve Protection Office
- District Agriculture and Rural Development Office
- District Forest Protection Department
- Commune People's Committees of Khau Tinh, Son Phu and Thanh Tuong
- Police of Khau Tinh, Son Phu and Thanh Tuong
- Village representatives from Na Tang, Tat Ke, Phia Chang, Na Con villages and Ban Bung villages from within the strict protection zone and other important villages located adjacent to the reserve in the buffer zone.

Action 2: Establish enclave Management and Livelihood Committees

Due to the location of the five enclave villages within the strict protection zone and the necessity to manage these areas for conservation, the establishment of enclave management and livelihood committees to plan, manage (including benefit sharing) and coordinate sustainable management of these areas is essential. Potential activities may include management of chainsaw use, NTFPs harvesting, forest protection contracts, village regulations, local forest protection group, coordination with CPT patrols and participate in the multi-stakeholder management committee. Further, the formation of these stakeholder committees (also act as self-help groups **Action 28**) offers opportunities for them to prepare livelihood/environmental management action plans that may be linked to small grants and revolving funds (**Action 29**), and government programs for their management and implementation.

Action 3: Demarcate village boundaries

To overcome management and law enforcement ambiguities, mapping and demarcation of the boundaries between enclave villages and the surrounding strict protection zone forest should occur. Local people should participate in these activities be considered as an important stakeholder so that these boundaries are clearly understood.

Action 4: Conduct participatory resource use planning

Results from the village/ strict protection zone mapping and demarcation activities should be used as the basis for participatory resource (also land) use planning (PRUP) activities conducted with each village. Such an activity will assist villages to develop appropriate plans to improve their livelihood

³³ This SCAP only targets the five enclave villages. However, for a more comprehensive and far reaching coordinated conservation effort, development of additional strategies are recommended to engage local communities located immediately adjacent to the external boundaries of the Nature Reserve.

options and also act as an official means of verification for future official land allocation activities. Information provided by participants would need to be confirmed with physical surveys.

Action 5: Allocation of forest and agricultural cultivation land to village and households

Forest Land:

- Each village should be allocated a specific area of forest land to manage under protection contracts
- Degraded forest caused by slash and burn agriculture should be allocated equitably within villages to develop plantation forestry including species for fuel wood and housing

Agricultural land:

- Households should officially allocated agricultural cultivation on land that has already been cleared by slash and burn agriculture

Action 6: Prepare Conservation Agreements linked to land tenure

Conservation agreements with the village and households should be linked directly to land tenure and made conditional based upon official land tenure/right allocations (**Action 5**), village regulations (**Action 16**) and linked to specific performance indicators under the benefit sharing mechanism for each village (**Action 21**).

6.2. Law enforcement

Action 7: Strengthen patrolling of forest

Forest protection forces need to intensify their patrol presence and regulatory enforcement activities with the active participation of local communities. Local communities desire to be involved in legally conducting local protection patrols (with a government provided benefit sharing mechanism) and participation in the management and supervision of existing ranger and CPT patrols.

Action 8: Protecting and monitoring Tonkin Snub-nosed Monkey

Within each enclave village, authority should be allocated to village protection teams to patrol and protect both Tonkin Snub-nosed Monkeys and their habitat. These groups would be sanctioned to detect and act upon violations of forest protection law with the support of the Nature Reserve rangers and would be managed by the enclave management and livelihood committees (**Action 2**). In addition, these groups would monitor the status of monkey sub-populations and assist the Nature Reserve manage the species. An appropriate benefit sharing mechanism would need to be developed to ensure long term sustainability of the activity.

Action 9: Improve forest crime reporting

The reporting of forest crimes needs to be improved and local communities should be encouraged to actively participate in the reporting. An informant network should be established in each village with local inhabitants understanding the procedure to report incidents from non-village infringers. Crimes by village inhabitants would be managed in relation to commitments to village regulations (with associated village defined penalties – **Action 16**). The level of punishment would also be determined by the impact it would have upon the village delivering upon established performance indicators (**Action 6**). Reporting crimes by fellow village people is challenging. So to avoid vengeful retaliation, reports could be made anonymously at designated mailboxes in villages, communes and district offices.

Further, improvement of forest crime reporting could be improved if the CPT and ranger patrols coordinated their activities more effectively with local villages and visited these locations more regularly.

Action 10: Strict and clear prosecution of violators

It is essential that village people and forest law violators alike are aware that enforcement of forest, wildlife and watershed protection laws occurs. Highly visible publicity of crimes, penalties / punishment and naming of law infringers at village, commune, district and province levels on public mass media information channels is required to raise awareness of crimes and to promote compliance with the law.

Action 11: Control and limit possession of chainsaws

The local government and Nature Reserve need to issue a policy to manage and limit chainsaws within the buffer zone and in village enclaves. For enclave villages all chainsaws should be registered with the FPD and the Village management and livelihood committee.

Action 13: Control of firearms

All laws on firearm possession should be implemented and illegal firearms confiscated. A local ban on the sale of gun production materials and ammunition e.g. gunpowder and bullets should also be made. A firearms buy-back or swap for in-kind scheme (food or other items) may be a useful incentive to reduce local hunting.

Action 14: Control restaurants selling wildlife

Regular controls of restaurants known or suspected to offer wildlife should be conducted. Particular emphasis should be placed on raising awareness of restaurants on the critical status of the species.

Action 15: Rewards for people who report or stop illegal activities

Informants who report violators and contribute to the prevention of a violation of forest protection laws should be rewarded either through a financial reward or by official recognition by local commune authorities or the Nature Reserve.

Action 16: Develop and publicise village regulations

Current village regulations should be updated by each of the five enclave villages and supported by the relevant commune authority in conjunction with the Nature Reserve. Stronger emphasis should be placed upon inclusion of specific rules on forest management and biodiversity conservation. Each village should also define a suitable locally enforceable infringement and punishment system. The multi-stakeholder group should review the regulations in order to ensure that they are consistent with each other and the absence of such a group, by the Na Hang District People's Committee.

6.3. Awareness raising

Action 17: Raise awareness on Tonkin Snub-nosed Monkeys and their conservation needs

An education programme should be used to raise awareness on the species and the value of its conservation e.g. eco-tourism potential. Raising awareness of the negative impacts of illegal logging and slash and burn agriculture should also be conducted.

Action 18: Raise awareness on forest protection laws and penalties

Information on forest, wildlife and watershed protection laws and penalties should be publicized through the media and village meetings. Particular emphasis should be placed upon sharing information on Decree No. 47/1996/ND-CP (prohibiting use of firearms) and Decree No.32/2006/ND-CP (Management of Endangered, Precious and Rare Forest Plants and Animals). Posters should be printed stating prohibited actions, potential penalties and signboards set up at FPD offices.

Action 19: Raise awareness on wildlife consumption

Awareness should be raised on the negative impacts of wildlife consumption and agreements should be signed with households and restaurants to not sell or consume wildlife, particularly Tonkin Snub-nosed Monkey. Awareness on alternatives to wildlife medicines should be raised.

Action 20: Raise awareness on family planning

An awareness programme should be conducted encouraging families to limit the number of children to two, to both reduce pressure upon the local environment and maintain a higher quality of life for their families.

6.4. Community development**Action 21: Develop and implement a benefit sharing mechanism**

Under Na Hang Nature reserve's VCF project (2009 – 2010) trial benefit sharing mechanisms (BSMs) were developed for two villages in the Tat Ke sector. Each mechanism should be reviewed and expanded at all the five enclave target villages.

Action 22: Establish fuelwood efficient stoves

Provide participating villages with suggested plans and materials for the construction of fuel efficient stoves.

Action 23: Establish bio-gas systems

Opportunities to build bio-gas systems should be created for families with a sufficient number of pigs.

Action 24: Establish fuel wood and timber plantations

This activity will tap into government afforestation programs or private investment and use the results of PRUP activities (**Action 4**) to plan appropriate areas for fuel wood, housing and timber plantations. This would both meet local needs and diversify livelihoods rather than to continue harvesting from the Nature Reserve.

Action 25: Improve livestock husbandry methods

Assistance should be offered to improve livestock husbandry methods including technical support for husbandry, nutrition, vaccinations, introduction of alternative feed/fodder activities, animal shelters etc. These activities may be implemented as a trade-off incentive system to support conditional use of land (**Action 6**).

Action 26: Introduce and Improve efficiency of cultivation techniques

Through PRUP activities (**Action 4**) identified bare lands in villages will be used to increase the amount of arable agricultural land. New techniques for increasing agricultural productivity and introduction of new species, particularly cash crops, should be explored to diversify livelihood options. Planting of NTFPs in cultivation areas and household gardens should also be explored.

Action 27: Develop alternative income sources

Alternative income sources such as breeding of frogs, keeping of bees should be investigated jointly with local villagers. Trials should be conducted to assess the feasibility of introducing new income sources at a large scale. Priority should be given to households identified within villages who are hunters of wildlife.

Action 28: Develop village interest groups

Linked to **Action 2** (enclave management and livelihoods committees), self-help groups will be supported in villages to self-define and implement livelihood options on village land. Once the plan is

defined, each self-help group will access and manage a small grant and/or a revolving fund scheme or tap into existing government programs to assist deliver upon the actions outlined in their plans.

Action 29: Develop a small grants programme

Village development grants and a microcredit system should be implemented to encourage activities to improve local livelihoods. Distribution of grants and microcredit should be dependent on compliance with village regulations (**Action 16**) and there should be trade-offs for good environmental management. Grants could be managed by the enclave management and livelihoods committee or the Women's Union.

Action 30: Develop vocational training programmes and alternative employment opportunities

Development of a vocational training programme requires collaboration with district and provincial authorities in order to train people in vocational skills so they do not have to rely on earning a living by potentially illegal or unsustainable forest exploitation. Opportunities for employment in biodiversity conservation, watershed protection and ecotourism should be explored.

6.5. Conservation Studies

Action 31: Annual surveys of the Tonkin Snub-nosed Monkey

The status of the Tonkin snub-nosed monkey population in the forest is very precarious and is still declining. While monitoring from community conservation teams is essential on a monthly basis (**Action 8**), a census should be carried out at least annually lead by a qualified expert. Ideally this should be the same person each year. This would enable trends in the Tonkin Snub-nosed Monkey population to be closely tracked to assess the effectiveness of interventions to prevent the extinction of this species.

7. ROLES AND RESPONSIBILITIES

In the stakeholder consultation workshop (November 2012), stakeholder roles in Table 4 were proposed for implementing the species conservation action plan for the Tonkin Snub-Nosed Monkey in Na Hang Nature Reserve.

Table 4. Suggested implementing stakeholders

Action	Coordinating stakeholder	Participants	Note
1. Establish a multi-stakeholder management group	Na Hang District PC (chair); Director Na Hang Nature Reserve Protection Office and two vice chairs	Na Hang Nature Reserve Protection Office; District Agriculture and Rural Development Office; District Forest Protection Department; Commune People's Committees of Khu Tinh, Son Phu and Thanh Tuong; police of Khu Tinh, Son Phu and Thanh Tuong; village representatives from Na Tang, Tat Ke, Phia Chang, Na Con villages and Ban Bung villages.	Number of members will be enough to ensure operation, management effectiveness
2. Establish enclave Management and Livelihood Committees	Na Hang Nature Reserve, Commune PCs	District Agriculture and Rural Development Office, Commune People's Committees of Khu Tinh, Son Phu and Thanh Tuong; Village people from Na Tang, Tat Ke, Phia Chang, Na Con villages and Ban Bung villages, NGOs.	Expand role and function of village management boards
3. Demarcate village boundaries	Na Hang Nature Reserve	Relevant commune PCs, village management boards, households	Follow national and provincial laws.
4. Conduct participatory resource use planning	Na Hang Nature Reserve	Relevant commune PCs, villages, households, NGO	
5. Allocation of forest and agricultural cultivation land to village and households	Na Hang Nature Reserve and Na Hang district PC	Tuyen Quang FPD, Commune PCs, village management boards, households	Relevant agencies at the Tuyen Quang PPC will need to be consulted
6. Prepare Conservation Agreements linked to land tenure	Na Hang Nature Reserve and Commune PCs	village management boards, village people	Agreed and signed by 5 villages and individual households and Commune PCs

7: Strengthen patrolling of forest	Na Nang Nature Reserve	village management boards, NGOs, university	Patrolling information and data should be provided to villages for their oversight and patrol teams should liaise more frequently with village management boards
8: Protecting and monitoring Tonkin Snub-nosed Monkey	Na Nang Nature Reserve	village management boards, NGOs, university	
9: Improve forest crime reporting	Na Hang Nature Reserve	Commune PC, village management boards	
10: Strict and clear prosecution of violators	Na Hang People's Court	Na Hang Police, Na Hang Nature Reserve, Na Hang Department of Investigation, Commune PCs	Violations and penalties of those convicted should be broadcast over mass media throughout Tuyen Quang Province
11: Control and limit possession of chainsaws	Na Hang District FPD	Na Hang Nature Reserve, Na Hang District PD, Commune PCs, village management boards	This needs to be a coordinated inter-agency governmental initiative
12: Control of firearms	Na Hang police	Na Hang FPD, Commune PCs, village management boards	
13: Control restaurants selling wildlife	Na Hang police	Na Hang FPD, Na Hang District PC	
14: Rewards for people who report or stop illegal activities	Na Hang District PC	Na Hang Nature Reserve, Commune PCs	
15: Develop and publicise village regulations	Commune PCs, village management boards	Na Hang Nature Reserve, Na Hang District PC	Update existing regulations inclusive of conservation and environmental management objectives
16: Raise awareness on Tonkin Snub-nosed Monkeys and their conservation needs	Projects	Na Hang Nature Reserve, Department of Education & local communities	Department of Education has experience in education methodology that the FPD does not possess and could offer productive support to disseminate information more effectively
17: Raise awareness on forest protection laws and penalties	Forest Protection Department / Na Hang Nature Reserve	Department of Education, Commune PCs & local communities	
18: Raise awareness on wildlife consumption	Forest Protection Department / Na Hang Nature Reserve	Department of Education, Commune PCs & local communities	

19: Raise awareness on family planning	Na Hang Medical Center	Department of Education, Commune PC, Women's Union, village management boards	Tuyen Quang Department of Health to also provide support
20: Develop and implement a benefit sharing mechanism	Na Hang Nature Reserve	Commune PC, village management boards	Builds upon trials conducted during Na Hang Nature Reserve's VCF project
21: Establish fuelwood efficient stoves	Women's Union/NGO	Commune PC , village management board	
22: Establish bio-gas systems	Farmer's Union/NGO	Commune PC , village management board	
23: Establish fuel wood and timber plantations	DoFA	Na Hang agriculture extension center, TNUAF (Faculty of Forestry), Na Hang Nature Reserve	Locally indigenous species to Na Hang Nature reserve must be selected
24: Improve livestock husbandry methods	DoFA / Na Hang agriculture extension center	Farmer's Union, Commune PCs, village management Boards, TNUAF (Faculty of Agriculture), NGOs	Introduction of outside professional knowledge is essential to diversify and change practices
25: Introduce and Improve efficiency of cultivation techniques	DoFA / Na Hang agriculture extension center	Farmer's Union, Commune PCs, village management Boards, TNUAF (Faculty of Agriculture), NGOs	
26: Develop alternative income sources	DoFA / Na Hang agriculture extension center	Women's Union, Farmer's Union, village management Boards, TNUAF (Faculty of Agriculture), NGOs	
27: Develop village interest groups	DoFA / Na Hang agriculture extension center	village management boards, NGOs	This should be integrated into the activities of Enclave management livelihood boards (village management boards)
28: Develop a small grants programme	Women's Union/NGO	Commune PCs, village management boards	
29: Develop vocational training programmes and alternative employment opportunities	DoFA / Na Hang agriculture extension center	Commune PCs, village management boards, local communities, District Labour Union, vocational training colleges	Support from relevant TQ province departments is essential
30: Annual surveys of the Tonkin Snub-nosed Monkey	Consultants, experts	Village management boards, local communities	External technical and financial support required

8. IMPLEMENTATION AND BUDGET

Activity	Year of Implementation					Budget (US\$)
	2013	2014	2015	2016	2017	
Action 1: Establish a multi-stakeholder management group						15,000
Action 2: Establish enclave Management and Livelihood Committees						3,500
Action 3: Demarcate village boundaries						8,000
Action 4: Conduct participatory resource use planning						7,000
Action 5: Allocation of forest and agricultural cultivation land to village and households						??
Action 6: Prepare Conservation Agreements linked to land tenure						5,000
Action 7: Strengthen patrolling of forest						12,000
Action 8: Protection and monitoring Tonkin Snub-nosed Monkey						50,000
Action 9: Improve forest crime reporting						
Action 10: Strict and clear prosecution of violators						15,000
Action 11: Control and limit possession of chainsaws						2,000
Action 12: Control of firearms						20,000
Action 13: Control restaurants selling wildlife						5,000
Action 14: Rewards for people who report or stop illegal activities						5,000
Action 15: Develop and publicise village regulations						6,000
Action 16: Raise awareness on Tonkin Snub-nosed Monkeys and their conservation needs						6,000
Action 17: Raise awareness on forest protection laws and penalties						6,000
Action 18: Raise awareness on wildlife consumption						6,000
Action 19: Raise awareness on family planning						3,000
Action 20: Develop and implement a benefit sharing mechanism						3,000
Action 21: Establish fuelwood efficient stoves						10,000
Action 22: Establish bio-gas systems						10,000
Action 23: Establish fuel wood and timber plantations						20,000
Action 24: Improve livestock husbandry methods						15,000

Action 25: Introduce and Improve efficiency of cultivation techniques						15,000
Action 26: Develop alternative income sources						20,000
Action 27: Develop village interest groups						3,500
Action 28: Develop a small grants programme						25,000
Action 29: Develop vocational training programmes and alternative employment opportunities						20,000
Action 30: Annual surveys of the Tonkin Snub-nosed Monkey						36,000
Total						

NOTE: Most activities contained within the SCAP can be implemented individually as budget is available. If one activity can't be implemented then this should not be used as a reason to not implement or postpone other activities.

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ANNEX 1: Participants at the workshop on Conservation of Tonkin Snub-nosed Monkey at Na Hang Nature Reserve, held on 17th August 2011 in Tuyen Quang Town.

No	Name	Gender	Office – Title
1.	Từ Minh Tiệp	Male	PRCF Field coordinator in Tuyen Quang
2.	Nguyễn Đức Thọ	Male	FFI staff
3.	Nguyễn Đức Tung	Male	Manager of Tuyen Quang FPD
4.	Nguyễn Văn Hòa	Male	Tuyen Quang PPC
5.	Dương Văn Xy	Male	DARD
6.	Hoàng Văn Kiên	Male	Head of Na Hang FPS
7.	Phạm Tiến Tài	Male	Donre
8.	Hà Xuân Tiến	Male	Provincial police
9.	Nguyễn Xuân Hải	Male	Head of Na Hang Agriculture and Rural development division
10.	Dương Trọng Nghĩa	Male	Lam Binh FPS
11.	Đặng Văn Phong	Male	Natural resources and environment division
12.	Hứa Văn Lượng	Male	Lam Binh FPS
13.	Trần Thanh Lịch	Male	Conservation division– FPD
14.	Lê Ngọc Vân	Male	Head of conservation division – FPD
15.	Nguyễn Minh Xiêm	Male	Head of sector economic division – DPI

ANNEX 2: Persons consulted at target villages during collection of data for the Action Plan**i) Ban Bung village, Thanh Tuong Commune, Na Hang District: 11 – 12 December 2011**

<i>TT</i>	<i>Name</i>	<i>Sex</i>	<i>Age</i>	<i>Office – Position</i>
16.	Triệu Thế Hải	Male	38	Village Leader
17.	Nông Văn Thiên	Male	53	Village's Party Secretary
18.	Nguyễn Đức Thịnh	Male	49	Village's Vice Leader
19.	Nguyễn Thị Châu	Female	50	Women's Union's president
20.	Bàn Văn Dần	Male	25	Village's Youth Union Secretary
21.	Lương Văn Nhân	Male	34	Team leader
22.	Nông Chí Hiếu	Male	30	Veteran Union member
23.	Nông Văn Huấn	Male	29	Forest fire Police
24.	Nguyễn Văn Tám	Male	39	Farmer's Union
25.	Nông Chí Hiếu	Male	30	Youth Union
26.	Triệu Thế Thường	Male	72	Old People Union
27.	Hoàng Đức Tâm	Male	32	Thanh Tuong Commune Agriculture-Forestry Department's staff
28.	Hoàng Huy Du	Male	34	Bản Bung's forest patrol team leader
29.	Từ Minh Tiệp	Male	39	PRCF's staff
30.	Thái Thị Ngọc Trâm	Female	25	Thái Nguyên Agriculture-Forestry University's staff

ii) Nà Tạng Village, Khâu Tinh Commune, Na Hang District: 13 – 14 December 2011

<i>TT</i>	<i>Name</i>	<i>Sex</i>	<i>Age</i>	<i>Office – Position</i>
31.	Bàn Doãn Quân	Male	28	Village vice leader
32.	Triệu Thị Tàng	Female	41	Women's union
33.	Triệu Thị Pu	Female	30	Women's union
34.	Triệu Thị Sai	Female	68	Old People Union
35.	Phùng Văn Lưu	Male	40	Farmer's union
36.	Triệu Văn Cao	Male	51	Farmer's union
37.	Bàn Văn Pú	Male	25	Youth Union
38.	Triệu Thị Mấy	Female	45	Women's union
39.	Bàn Thị Mai	Female	27	Women's union
40.	Bàn Văn Thủy	Male	23	Youth Union
41.	Bàn Thái Tân	Male	34	FPD staff
42.	Bàn Văn Sai	Male	49	Commune veteran union chairman
43.	Từ Minh Tiệp	Male	39	PRCF conservation staff
44.	Thái Thị Ngọc Trâm	Female	25	Thái Nguyên Agriculture-Forestry University's staff

iii) Tát Kê village, Khâu Tinh Commune, Na Hang District: 15 – 16 December 2011

<i>TT</i>	<i>Name</i>	<i>Sex</i>	<i>Age</i>	<i>Office – Position</i>
45.	Phùng Văn Phạm	Male	44	Tát Kê village leader
46.	Quan Văn Thiết	Male	34	Tát Kê village vice leader
47.	Lý Văn Sài	Male	31	Farmer's union
48.	Quan Văn Tượng	Male	58	Old people union
49.	Nông Văn Tú	Male	36	Farmer's union
50.	Hoàng Văn Tá	Male	27	Farmer's union
51.	Hoàng Văn Tàn	Male	24	Farmer's union
52.	Nông Văn Đứng	Male	41	Farmer's union
53.	Chúc Văn Pao	Male	34	Farmer's union

54.	Vi Thị Mơ	Female	30	Women's union
55.	Bàn Thị Sinh	Female	31	Women's union
56.	Hoàng Thị Hiền	Female	29	Women's union
57.	Trần Thị Hà	Female	36	Women's union
58.	Bàn Văn Sai	Male	49	Khâu Tinh commune veteran union chairman
59.	Bàn Thái Tân	Male	34	Local FPD
60.	Từ Minh Tiệp	Male	39	Conservation staff
61.	Thái Thị Ngọc Trâm	Female	25	Thái Nguyên Agriculture-Forestry University

iv) Phia Chang Village, Sơn Phú Commune, Na Hang District: 19 – 20 December 2011

<i>TT</i>	<i>Name</i>	<i>Sex</i>	<i>Age</i>	<i>Office – Position</i>
62.	Đặng Văn Dấu	Male	28	Phia Chang village leader– Xã Sơn Phú
63.	Hoàng Xuân Hòa	Male	23	Vice village leader – police
64.	Đặng Quang Sơn	Male	31	commune veteran union member
65.	Bàn Kim Thọ	Male	40	commune veteran union member
66.	Bàn Tài Lâm	Male	51	Farmer's union
67.	Đặng Thị Chung	Female	30	Women's union
68.	Hoàng Thị Khé	Female	20	Youth union
69.	Triệu Văn Chang	Male	27	Patroller
70.	Triệu Tiến Nhất	Male	26	Patroller
71.	Triệu Tài Tiên	Male	53	Old people union
72.	Triệu Văn Phạm	Male	30	commune veteran union chairman
73.	Nguyễn Xuân Thứ	Male	50	Na Hang FPD staff.
74.	Từ Minh Tiệp	Male	39	PRCF conservation staff
75.	Thái Thị Ngọc Trâm	Female	25	Thái Nguyên Agriculture-Forestry University

v) Nà Cạn Village, Sơn Phú Commune, Na Hang District: 21 – 22 December 2011

<i>TT</i>	<i>Name</i>	<i>Sex</i>	<i>Age</i>	<i>Office – Position</i>
76.	Đặng Văn Khuân	Male	42	Nà Cạn village leader
77.	Bàn Kim Thanh	Male	49	Secretary
78.	Triệu Văn Nhậ	Male	31	Vice village leader
79.	Bàn Tài Tình	Male	36	Farmer Union
80.	Triệu Thị Coi	Female	36	Women Union
81.	Bàn Thị Khé	Female	24	People's committee
82.	Triệu Văn Tá	Male	25	Youth Union
83.	Bàn Nguyên Ngân	Male	25	Village fire fighting leader
84.	Triệu Văn Sơn	Male	45	Village committee front
85.	Triệu Xuân Thanh	Male	62	Old people union
86.	Bàn Kim Sinh	Male	68	Old people union
87.	Triệu Văn Phạm	Male	30	Son Phu commune veteran union chairman
88.	Nguyễn Xuân Thứ	Male	50	FPD staff
89.	Từ Minh Tiệp	Male	39	Conservation staff
90.	Thái Thị Ngọc Trâm	Female	25	Thái Nguyên Agriculture-Forestry University's staff