CEPF FINAL PROJECT COMPLETION REPORT

Organization Legal Name:	Wildlife Conservation Society
Project Title:	Protection of a priority population of Saola: flagship species of the Indo-Burma Hotspot
Date of Report:	24 August 2013
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CEPF Region: Indo-Burma

Strategic Direction: 1.1 Safeguard priority globally threatened species in Indochina by mitigation of major threats

Grant Amount: US$245,000

Project Dates: 1 August, 2010 to 30 June, 2013

Implementation Partners for this Project (please explain the level of involvement for each partner):

Integrated Ecosystem and Wildlife Management Project (IEWMP)– The IEWMP is a partnership project between WCS and the government of Lao PDR focusing on key biodiversity areas in Bolikhamxay. IEWMP staff assisted with the development, coordination, implementation, monitoring and reporting of all project activities.

Bolikhamxay Provincial Office of Natural Resources and Environment (PoNRE) – The PoNRE was WCS's direct counterpart for the implementation of this project. The PoNRE assisted with the development, coordination, and implementation and monitoring of all project activities.

Xaychamphone District Office of Natural Resources and Environment (DoNRE). The DoNRE is the district level government line agency responsible for protected areas in Xaychamphone. The DoNRE assisted with the development, coordination, and implementation and monitoring of all project activities.

15 communities in Xaychamphon District – All of these local communities were involved in the survey phase of the project. For all other phases a majority of these communities located around the focal protected area were involved in activities including the FPIC and PFIR processes.

Saola Working Group (SWG)- the SWG provided assistance with the development of the survey methodology. The SWG also raised the profile of Saola internationally and also developed funding proposal to further Saola conservation.

Conservation Impacts

Please explain/describe how your project has contributed to the implementation of the CEPF ecosystem profile.

This project clearly contributed to CEPF Investment Strategy 1.1 - Safeguard priority globally threatened species in Indochina by mitigating major threats. The Saola is a critically endangered species and the project has contributed to learning more about the distribution of this extremely rare species in key biodiversity areas of the Annamite Mountain Range in Bolikhamxay Province. Further to this the project has made a significant contribution to the protection of Saola in the target area by reducing the threats from illegal hunting and capture, particularly indiscriminate snaring. During the project period a new protected area was established in the Annamite Mountain range and important steps have been undertaken to establish a solid foundation upon which further management actions can reinforce and improve this new protected area. The project has also increased the public awareness profile of the species both in the target area, and internationally with assistance from the Saola Working Group. The development of local management and technical capacity was a critical component of the project and all project components involved the training of local counterparts.

Please summarize the overall results/impact of your project.

Planned Long-term Impacts - 3+ years (as stated in the approved proposal):

The northern Annamites Ecoregion (ie. Bolikhamxay Province in Laos) is a long-term conservation landscape for WCS. Our long-term (~15 years) impacts are to bring about sustainable biodiversity conservation and environmentally responsible development. Within this landscape, saola is the premiere flagship species. Saola is critically endangered and requires urgent conservation action.

Paragraph 200 400

Actual Progress toward Long-term Impacts at Completion:

The project has made significant contribution to the long-term management of a key biodiversity area in the Annamite Mountain Range and the protection of a globally threatened species, the Saola. The establishment of the Phou Sithone Endangered Species Conservation Area, and key steps taken to develop a foundation for successful management for this area, will have long-term impacts. Further to this the knowledge and capacity developed within local management staff involved in the project will contribute to advancing biodiversity conservation in Bolikhamxay in the long term. The implementation of this project has also certainly raised the profile of Saola in the project area and within government agencies in Lao PDR responsible for protected areas and species conservation.

Planned Short-term Impacts - 1 to 3 years (as stated in the approved proposal):

This project is a short term intervention will put boots on the ground to look for, protect and establish a foundation for the recovery of saola from high levels of human exploitation. This will be done with law enforcement patrols based out of forest substation and village constituency building. Within 30 months, we hope to have more substantial and long term financing.

Paragraph 200 400

Actual Progress Toward Short-term Impacts at Completion:

Considerable progress was made towards the short term impacts of the project. There are currently 13 trained and equipped law enforcement officers operating full time in the Phou Sithone Endangered Species Conservation Area. These officers have conducted regular foot patrols and have already completed 476 days of foot patrols. The results of these efforts have had a significant impact on reducing threats to Saola within the PST ESCA, with over 7 000 snares collected and destroyed. Trends of both illegal activities encountered as well as the number of snares encountered have declined significantly during the implementation of this grant period, and will continue to do. Village communities around the PST ESCA have been intimately involved in all project activities and the development of the management structure that is now been implemented in the ESCA. Through activities in this grant, communities around the PST ESCA have increased their awareness and understanding of Saola conservation and related biodiversity by more than 50%. Communities have been fully consulted and have provided valuable inputs into the development and final approval of local management regulations and zoning of the ESCA. By leveraging this CEPF investment WCS has been able to secure additional funding to continue key management actions to build on the success of this project.

Please provide the following information where relevant:

Hectares Protected:
14 186 ha

Species Conserved:

Saola, *Pseudoryx ngethinhensis*

Gibbon species, likely either *Nomascus leucogenys* or *Nomascus siki.*

WCS and our partners are yet to conduct further biodiversity surveys to confirm presence of other species in PST ESCA although it is likely the area is inhabited by other species of conservation significance including the Large-antlered muntjac (*Munitacus vuquangensis*)

Corridors Created:

No formal corridors were created in this area during the period of the project. However, negotiations are ongoing with the government and local communities regarding a 11,474ha extension which would provide connectivity with a protection forest to the north west of PST ESCA.

Describe the success or challenges of the project toward achieving its short-term and long-term impact objectives.

The success of achieving the short-term and long-term impact objectives is described above. There are several challenges to achieving the long-term impact objectives of the project. Consistently high economic growth in Lao PDR and policies to maintain and drive this growth via natural resources use and extraction pose a significant challenge to sustainably managing forest areas for biodiversity values in the long term. The

development of extractive industries in Bolikhamxay Province is continuing with new hydropower and mining concessions being considered in and around key biodiversity areas. To add to this there is an increasing trend towards allocating land for commercial agricultural enterprises such as cassava. Balancing the economic incentives of these developments with the biodiversity and environmental targets of the government will be challenging. A further challenge is the sustained financing of biodiversity and conservation management actions in the project area.

Though Lao PDR continues on a path of rapid economic growth that growth has not translated into increasing investment in protected area management or species targeted conservation interventions. Thus the management of key biodiversity areas, such as PST ESCA, in Lao PDR continue to be solely funded by external donors. This presents a significant challenge in the long term. WCS has successfully established a relationship and funding arrangement with a local extractive industry partner, the Theun Hinboun Hydropower Company, providing funds to the management of PST ESCA until the end of 2015. The company will continue to provide funds directly to the government after 2015 but whether this results in continued investment in PST ESCA will depend on the government allocation of those funds. WCS continues to encourage and support our government partners to seek other future sources of funding for conservation management in key biodiversity areas of the province.

Were there any unexpected impacts (positive or negative)?

There were no unexpected impacts.

Project Components

Project Components*: Please report on results by project component. Reporting should reference specific products/deliverables from the approved project design and other relevant information.*

Components 1 Planned:
Area(s) with high likelihood of supporting core populations of saola identified in eastern Bolikhamxay province, as a basis for on-the-ground conservation interventions

Component 1 Actual at completion:

1.1 - Survey team and methodology endorsed by the IUCN-SSC Saola Working Group

The overall project area to consider for surveys initially included all of Xaychamphone district, and parts of Viengthong and Kham Khert districts extending into the Phou Chom Voy Provincial Protected Area. Six priority zones deemed to have the highest likelihood of Saola presence were identified by members of the SWG and WCS (Figure 1).

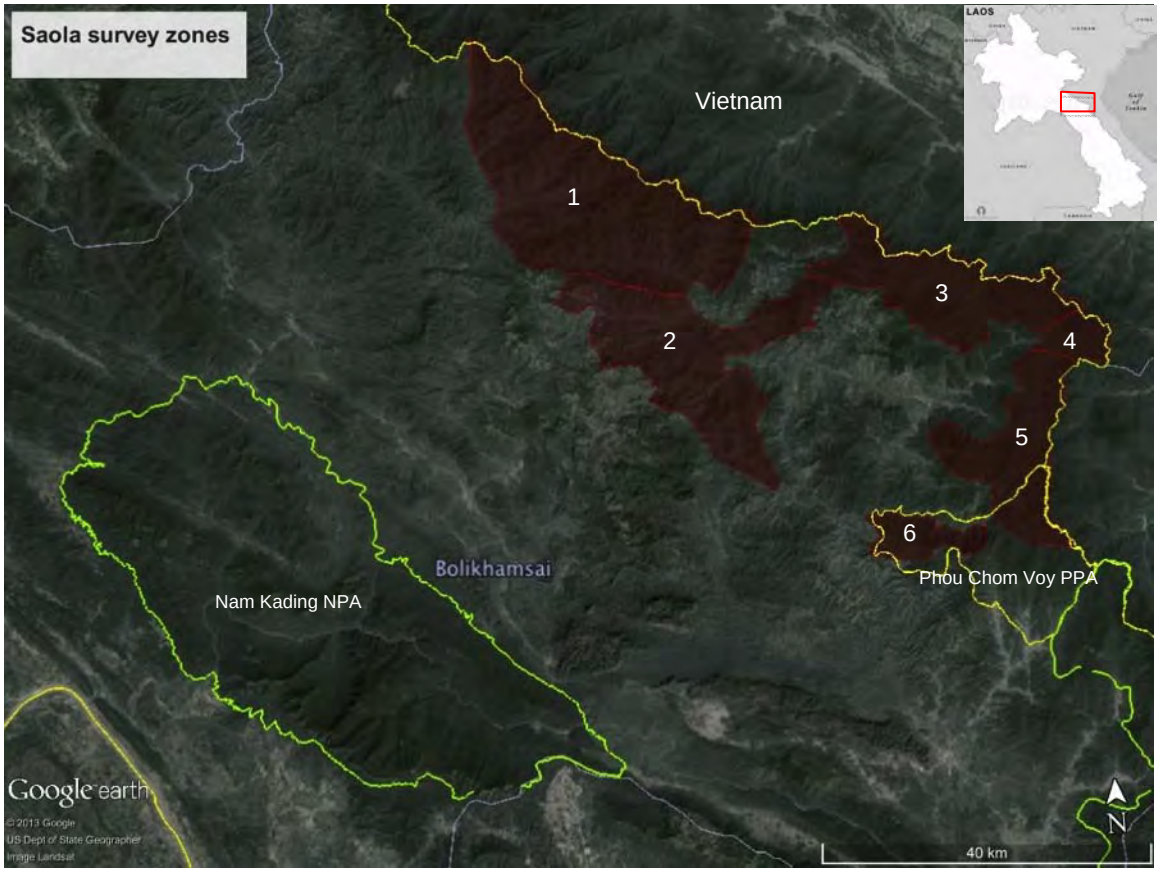


Figure 1. Six priority survey areas identified by WCS and the Saola Working Group.

The selection of these priority areas was done using all known information of previous Saola records in the area, and by assessing suitable Saola habitat and land use via recent satellite imagery. Factors considered in the analysis of satellite imagery included indicators relating to threats (human settlement locations, sizes of human settlements and settlement patterns, agriculture land use patterns, ethnic group) and habitat (terrain types, climate, stream sizes, forest integrity, and forest types). These six areas can each provide target areas for this and future survey efforts.

Considering the limited budget and time available to complete the survey, and that the areas were not accessible to international experts from the region, a methodology had to be developed that could be implemented by local national staff and provided the best quality information about the presence of Saola in north eastern Bolikhamxay province.

The development of the methodology began by collating all known information about Saola in the proposed project area. William Robichaud supplied all previous known records collected by members of the Saola Working Group. WCS also met with Integrated Ecosystem and Wildlife Management Project (IEWMP) biodiversity monitoring team to discuss more recent records, although most recent information was anecdotal based on conversations with villagers or information that had been relayed through several individuals.

We also reviewed the recommendations of the Proceeding of the First Meeting of the Saola Working Group conducted in August 2009 which provided suggested survey

methodologies. Some of these survey methodologies were yet to be tested in the field, such as hair traps and using sniffer dogs to locate dung, and were not considered for this survey effort given the time available to conduct the survey and budget limitations.

WCS then held a discussion with IEWMP management and biodiversity monitoring team to address what methods they would consider to collect 'reasonable evidence' of Saola in the project area. From this meeting a list of possible methods was drafted and forwarded to the SWG. These included;

1. Camera trapping at natural mineral licks in target areas
2. Camera trapping in forest areas highlighted as good habitat for Saola
3. Survey for signs of Saola (hoof prints, dung) and analyse dung for DNA confirmation
4. Use domestic dogs to find Saola, tracking them with eventual photo evidence
5. Community based interview surveys

Several suggested options including villagers using domestic dogs to track Saola, were immediately discouraged by WCS due to practical limitations and unmanageable risk of injuring Saola. Timmins.

The six priority zones (Figure 1) represented a vast area of the landscape and it was not possible to actually perform systematic surveys of each area. Thus a method had to be developed that would provide the best quality information possible regarding the likelihood of persistence of Saola but also considering time and budget limitations.

After several further consultations with the SWG the methodology to be used was agreed upon. This involved collecting information from local villagers via community based mapping exercises and interviews, and then ground truthing this information by conducting forest walks to priority areas and locations identified during discussions with local villagers. Any Saola sign (e.g. dung) encountered during these forest walks was recorded and camera traps were deployed in 'hotspot areas' identified by local villagers.

Community mapping was used to collect three types of information;

1) Local villager names for landscape features, such as streams, hills, and mineral licks. This was needed since so few detailed maps of the area of interest existed and this information would be useful for any future management interventions in the area, particularly enforcement.
2) The spatial patterns of forest use by local people and outsiders. This would provide us with a better understanding of where local people both collected non timber forest products and conducted hunting of wildlife.
3) The location of historical Saola records.

Since it was not practical to conduct the mapping and interview exercises with all adult members of each village the process began by asking local village leaders to identify 10 people from the village who were the most experienced hunters and gatherers who spent the most time in the forest areas around the village. It was specified that the group should contain approximately equal numbers of men and women. Often this eventuated in a group of more than 10 people but this was not a concern as long as technicians from the survey team could adequately facilitate the groups. The protocol used during the community mapping exercises is provided in Appendix 1.

Based on information obtained from the community mapping exercises, and particularly the identification of known Saola records, individuals from each village were then selected for solo interviews. Two project staff performed each interview with one villager. This allowed one team member to take accurate notes whilst the other focused on conducting the discussion. These interviews were semi structured in format with the objective of collecting key data about a Saola record by asking open questions and allowing the villager to tell their story in their own words as much as possible. Interviewers focused on obtaining information relating to the following;

1) Adequate identification –how did the person know it was a Saola, or Saola sign (e.g. dung) that they saw
2) Location – where the observation occurred
3) Timing – when the observation occurred
4) Confirmation – was anyone else present who could corroborate the record

To help record data in structured way teams used a standard Saola Record Form (Appendix 2). adapted from N. Wilklinson. As each interview progressed the data recorder filled in relevant details. We intended to record each interview using a video camera or digital audio recorder where possible.

Using information collected during the interviews the survey team then proceeded to conduct forest walks to confirm the location of each record. These forest walks also provided an opportunity to explore habitat where Saola, or Saola sign, had been sighted previously. During this time the teams collected any ungulate dung that could be from Saola. This was done using a protocol developed by the Research Center in Biodiversity and Genetic Resources in Portugal. During these forest walks the teams also deployed a limited number of camera traps at Saola 'hotspot' locations, such as mineral licks and beside small streams, identified by local villagers. These community mapping exercises, interviews, and forest walks were conducted at a total of 15 villages (Table 1, Figure 2).

Table 1. Target villages for the survey effort.

		GPS Coordinates			
	Village Name	X	Y	No. households	Population
1	Phon Ngam	478297	2060615	47	496
2	Sop Khon	474519	2066026	44	307
3	Meunag cham	479671	2069390	55	429
4	Phon Meuang	481648	2071501	46	394
5	Phon Dou	472066	2038195	56	339
6	Phieng Pho	471385	2040375	42	238
7	Kham Khouna	471806	2042071	98	408
8	Phieng Kheuang	478203	2042949	71	149
9	Kouang	481745	2043317	21	126
10	Phon Kham	501590	2055047	65	485
11	Nam On	498373	2054146	134	969
12	Sop Teung	509415	2060281	82	610
13	Vangban	500605	2053781	64	497
14	Phonman	494542	2049193	77	476
15	Nam Pan	502603	2041063	50	393

Figure 2. Village locations where survey activities were conducted

Initially WCS expected that the team to implement these methods would contain both national and international biologists with experience conducting wildlife surveys in Lao PDR, particularly searching for Saola. Following the capture of a live Saola on 20 August 2010 in survey area 2 it became clear that no international experts or WCS staff members would be permitted to enter the forest areas identified for the surveys. This was confirmed in meetings held with government of Lao officials. Given this limitation WCS conducted an extensive search to locate suitable team members for the survey. The final survey team consisted of five members; three from local government offices (both provincial and district), one from the Bolikhamxay Agriculture and Forestry College, and a research student from the National University of Lao PDR. This resulted in a small mobile team with a lot of local experience, knew the local communities, and had some technical experience regarding wildlife surveys.

Following the formation of this team all members received training from WCS and senior technical staff from the Integrated Ecosystem and Wildlife Management Project (Figure 3). This 8 day training course (20-27 March 2011) involved both class-based theory and practical field exercises covering the following topics;

1. Saola Ecology
2. Community mapping techniques
3. Techniques for conducting interviews
4. Navigating using a map and compass
5. Navigating using a GPS unit
6. Recognising and recording threats to wildlife
7. Deploying camera traps
8. Collecting ungulate dung samples
9. Developing work plans and field conduct


Figure 3. Survey team participants undertake and complete training provided by WCS

The survey conducted 3 rounds of surveys during the period April to July 2011. Each round involved approximately 30 days in the field visiting villagers and conducting forest walks. This allowed team members to report after each round before progressing to the next target area. All target villages were visited and the methods described above were implemented at each.

1.2 - Report on the distribution of Saola within the surveyed areas, showing areas with a high likelihood of supporting core populations of Saola

Community mapping

Community mapping exercises provided valuable information from each village. The results of these exercises at each village are too extensive to be presented in this report. We present the result of one village, Phon Ngam, as a representation of the information gained from these exercises. For each of the 3 field sessions a report summarising key results for each village was developed and these are available from the WCS Lao PDR Program. At each village we recorded who participated in the discussions and approximately how often they accessed forest areas nearby the village (Table 2). The participants at each village were divided into two groups with each facilitated by two members of the project survey team.

Table 2. Village members participating in community mapping exercises at Phon Ngam village.

#	Name	Age	Sex	Forest access (# per week, month, year)
1	Khay sor	53	M	3 / week
2	Mai in	48	M	4 / week
3	Xaysomboun	58	M	3 / 3 weeks
4	Maidy	30	M	5 / week
5	Xaykeo	59	M	3 / week
6	Maythong	42	M	5 / week
7	On khai	34	M	18 / month
8	Mai vone	26	M	16 / month
9	Khampom	48	M	4 / week
10	Khaikeo	32	M	13 / month

Local landscape features

Using a base map of terrain and river features in the immediate village area participants provided local names for landscape features (Figure 4 and 5). This included, for example, mountains, streams, rivers, mineral licks, and sites of cultural significance. This was the first time that these features have been mapped at such a detailed scale in each area and provides valuable information that can be used by other projects and the government in the future.

Figure 4. Villagers participate in the community mapping exercises to locate and name landscape features.

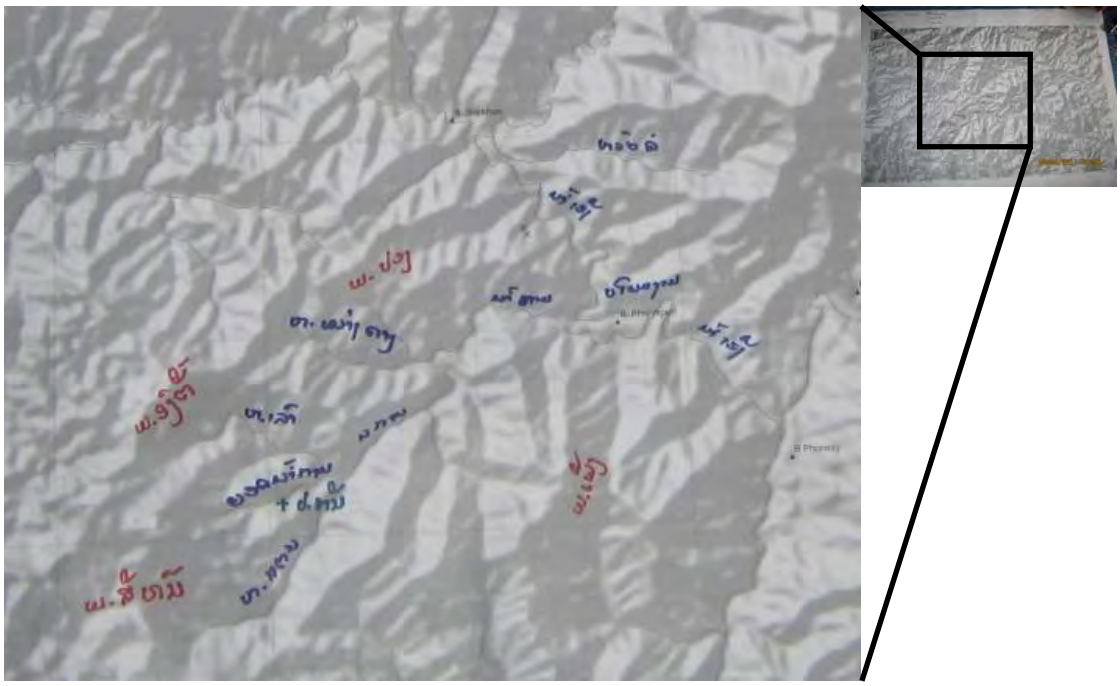


Figure 5. Local names for landscape features provided by community mapping participants at Phon Ngam village, Group 1.

Where do people collect non timber forest products (NTFP's)?
Participants provided information about where the community collected non timber forest products (NTFPs) (Figure 6 and 7). This was done using the 'beaning method'. Each member in the group was provided five beans and asked to place them on map to indicate where NTFPs were collected.

Figure 6. Villagers participate in the beaning exercises to identify areas where local communities collected and utilised NTFP's and conduct hunting.

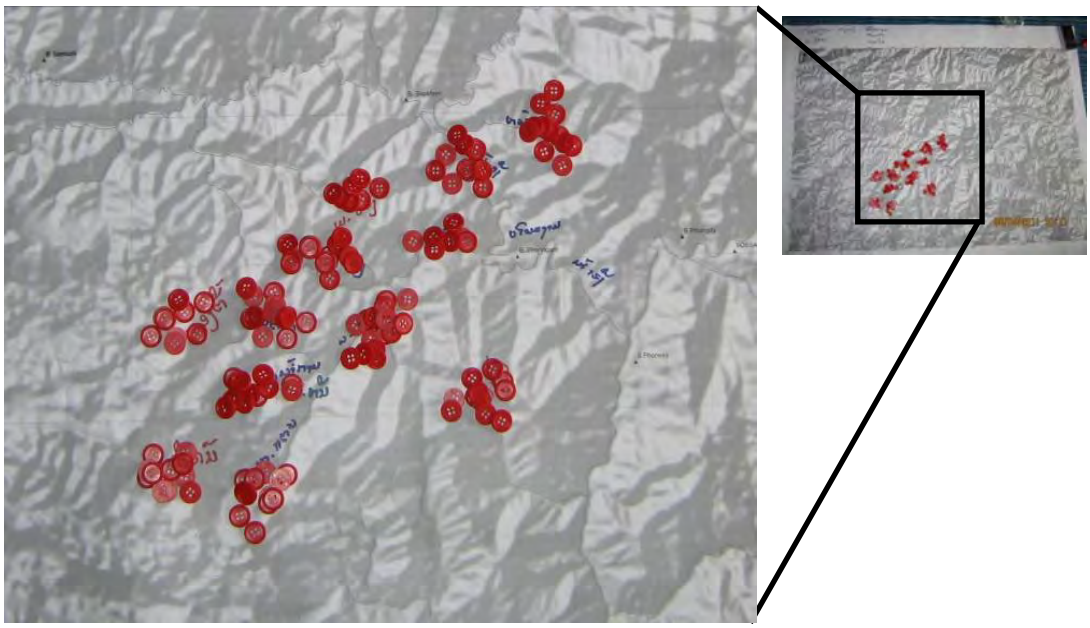


Figure 7. Areas where local community members collect NTFPs nearby Phon Ngam village, Group 2.

Which areas of forest people use to go hunting?
Participants provided information about where the community conducted hunting. This was done using the 'beaning method'. Each member in the group was provided five beans and asked to place them on map to indicate where hunting was conducted (Figure 8).

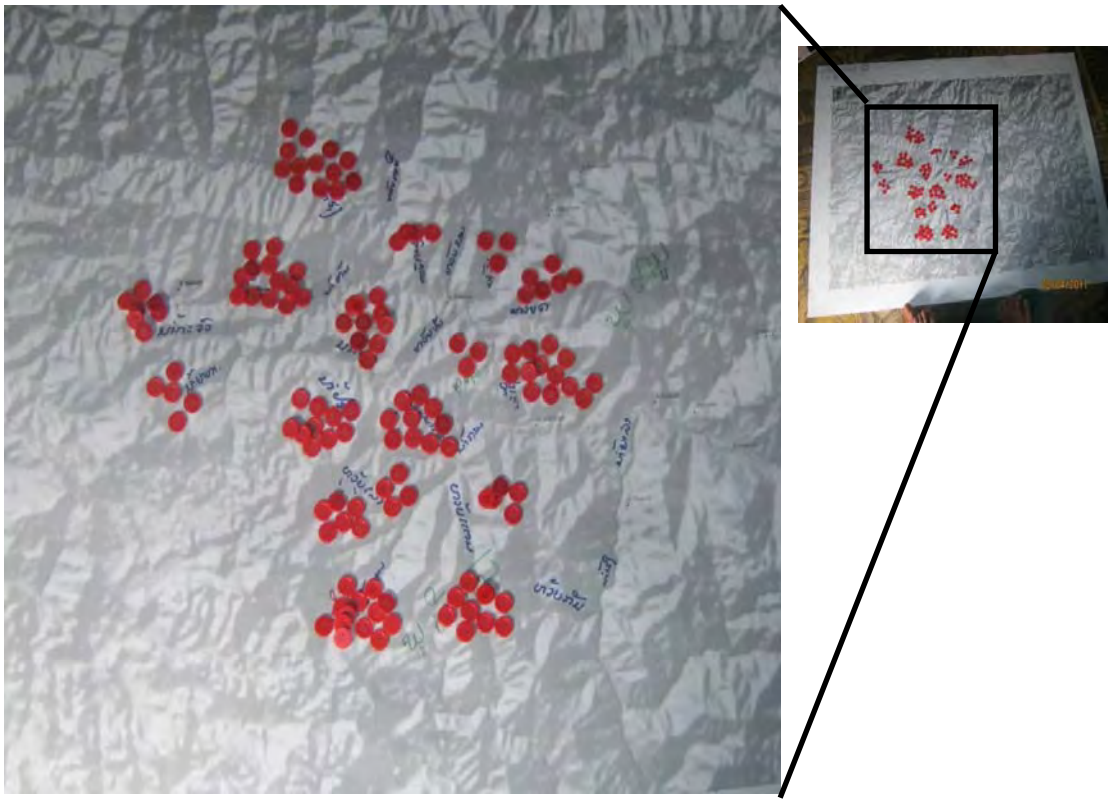


Figure 8. Areas where local community members conducted hunting nearby Phon Ngam village, group 1.

Where have people seen or encountered Saola sign in the forest
At each village participants placed beans on the map indicating where they had encountered Saola sign or seen a Saola (Figure 9). This exercise often led to members of the group not only telling their own 'saola stories' but also referring to other members of the village or nearby communities who had encountered a Saola. The information from these sessions was used to identify individuals who would then be interviewed by the team.

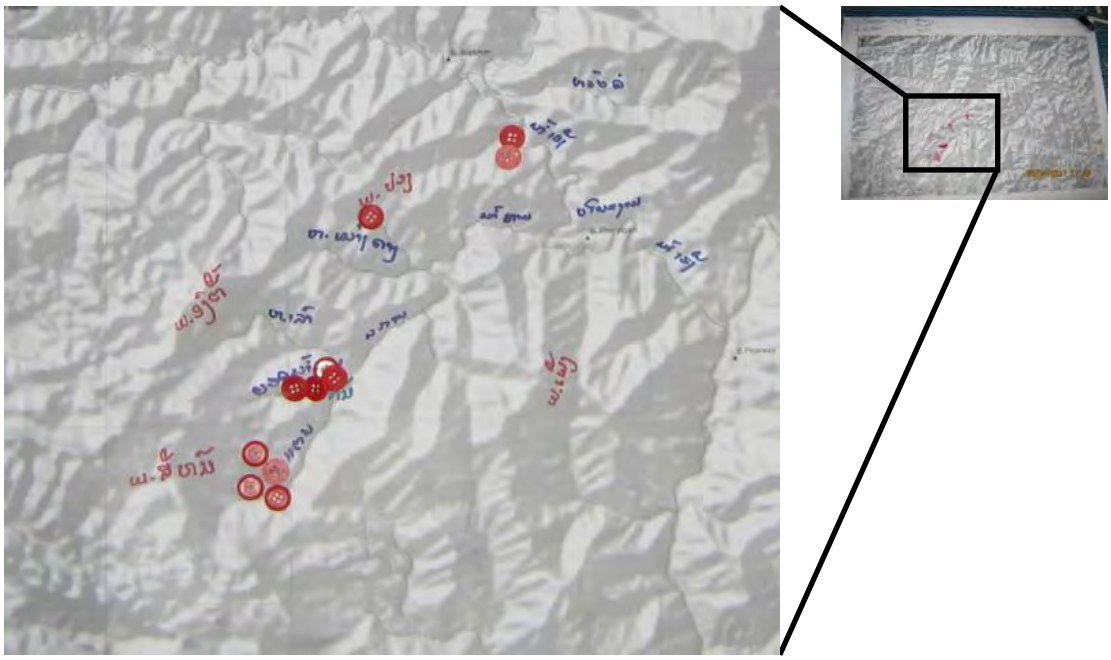


Figure 9. Locations where participants at Phon Ngam village encountered Saola in forest areas nearby the village, Group 1.

The results from both groups for each exercise were then digitised and combined to provide an overall map displaying the results for each village (Figure 10).

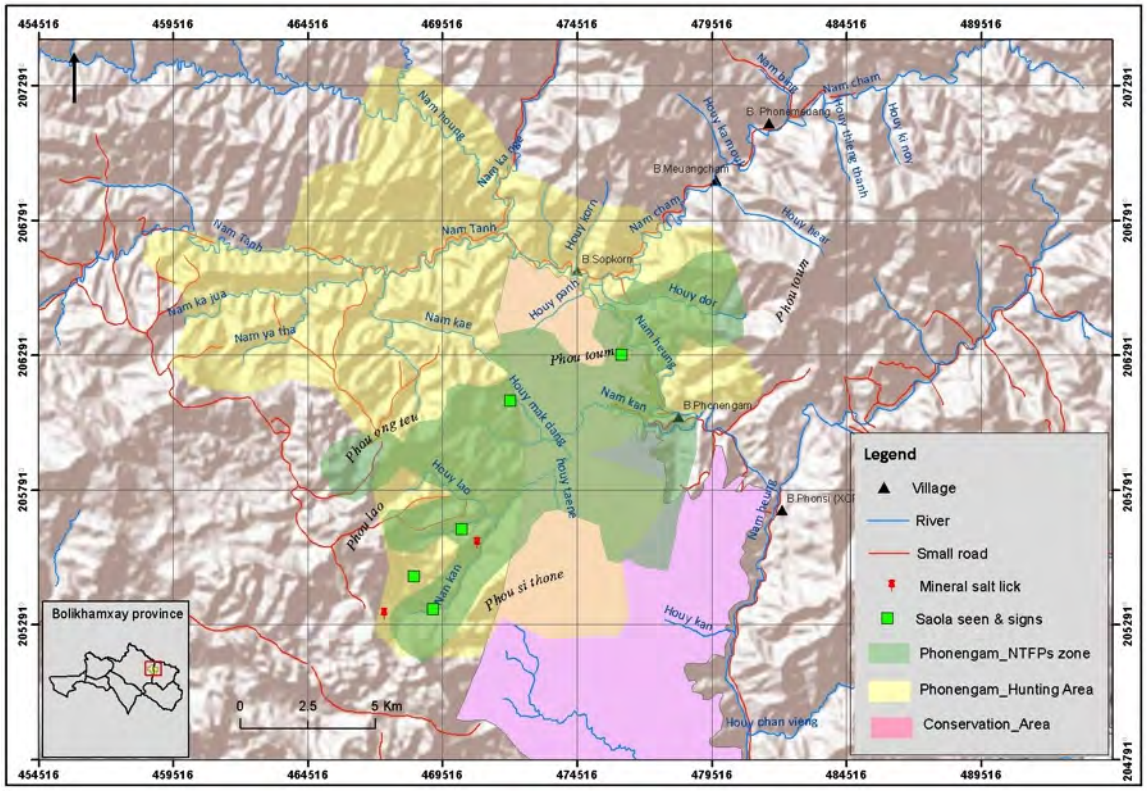


Figure 10. Results of community mapping activities at Phon Ngam village, combined.

Solo interviews

From the 15 villages visited 10 resulted in local community members providing information regarding Saola. Unfortunately all interviewees were not willing to be recorded using a video camera or a voice recorder. Nonetheless our protocol ensured that all relevant information was recorded during each interview.

A total of 45 individual records were provided (Figure 11, Tables 3, 4, and 5) during the interviews. These included sightings, captures, hoof prints and feeding sign. It can reasonably be expected that a villager can identify a Saola if it has been captured and thus these records are the most reliable. Sightings are less reliable and depend on how the animal was viewed and for how long. We place the least level of confidence in hoof prints and feeding sign. We know of no way to distinguish between Saola hoof prints and those of other similar sized ungulates in the target area. Many local communities in Lao PDR and Vietnam report that it is possible and this may warrant attention in the future. Several local communities, again in both range countries, have reported that Saola only consume particular plants which results in feeding evidence distinctive to Saola. Again this has not been confirmed and may warrant further investigation in the future.

Table 3. Saola records by type provided by interviewees.

Record type	**No. of records**
Capture	15
Sighting	15
Hoof print	4
Feeding sign	11

Three villages, Khamkhouna, Vangban, and Phon Ngam provided the greatest number of records with 15, 9 and 8 respectively. Of the 23 records provided by Khamkhouna and Phong Ngam villages 10 were reportedly direct sightings of Saola and 12 were captures of Saola. All except one record from Vangban were of feeding sign and hoof prints.

Table 4. Number of Saola records from each village

	Village	**No. of records**
1	Khamkhouna	15
2	Phon Ngam	8
3	Vangban	9
4	Phon meuang	3
5	Phian Pho	1
6	Phon Dou	1
7	Thenteuang	2
8	Phon kham	3
9	Namphan	1
10	Nam On	2

Table 5. Saola record details as provided by local informants at 10 villages.

	What kind of record?	What kind of evidence?	Was a skull/horns/other parts of the dead animal seen by researchers?	Information about this saola				Interviewee	Interview date	Where was the soala or saola sign seen?		Cordinates of sighting		When was the saola or saola sign seen?		
				Sex	Age	Weight (est.)	Village	First name		Village	Local name of area	X	Y	Date	Between years e.g. 2009-2010	Notes
1	interview	sighting	no	unknown			Phon Ngam	Mai In	8/04/11	Phon Ngam	Houy Nam Kae	468553	2063505	2/02/08	2008	
2	interview	capture	yes	male	adult	70-80 kg	Phon Ngam	Khai vone	8/04/11	Phon Ngam	Houy Kan	478292	2060570	20/01/09	2009	died
3	interview	sighting	no	unknown			Phon Ngam	Xai som boun, Kha vone and Mai kone	9/04/11	Phon Ngam	Houy Kan	470888	2060467	14/09/10	2010	
4	interview	capture	yes	unknown			Phon Ngam	Xai som boun	9/04/11	Phon Ngam	Houy Tan	475355	2055467		1995	
5	interview	feeding sign	no	unknown			Phon Ngam	Xai keo	9/04/11	Phon Ngam	Houy Kan	475222	2060267	6-7/2007-09	2007	
6	interview	sighting	no	male	adult	70 kg	Phon Ngam	On keo and Chan keo	9/04/11	Phon Ngam	Houy Tan	468020	2053132	3-4/2008-09	2008	
7	interview	capture	no	male	young		Phon Ngam	Mai on	9/04/11	Phon Ngam	Phuo tum	476048	2062865	8/2010	2010	died
8	interview	sighting	no	unknown	adult		Phon Ngam	Khan som	9/04/11	Phon Ngam	Houy Mang dang	471954	2061267	4/2008	2008	
9	interview	capture	yes	male	adult	65-70 kg	Phonemeuang	Kham ban	18/04/11	Phonemeuang	Phou nam tong	482976	2073384	1905	1989	died
10	interview	capture	no	female	adult	60-75 kg	Phonemeuang	Chia chi	18/04/11	Phonemeuang	Houy Tarn	484010	2071329	1999-2000	1999	died
11	interview	sighting	no	unknown			Phonemeuang	Kham ma ny	18/04/11	Phonemeuang	Houy Mouag	486686	2074584	1987-1988	1989	
12	interview	sighting	no	unknown			Phiangpho	Kham chan and Keou	15/05/11	Phiangpho	Houy Kan	470024	2052796	3-4/2006-07	2006	
13	interview	capture	no	male	young		Phonedou	Boun kong	12/05/11	Phonedou	Houy Ta Lell	474685	203782	3-4/1979-80	1979	died
14	interview	capture	no	unknown			Khamkouna	Mai yom	18/05/11	Khamkouna	Phou Kong	469676	2052377	8/2010	2010	died
15	interview	sighting	no	unknown			Khamkouna	Mai yom	18/05/11	Khamkouna	Phou Ka cha	475518	2049855	5/2008-09	2008	
16	interview	sighting	no	unknown			Khamkouna	Mai yom	18/05/11	Khamkouna	Houy Kan	470166	2050554	2-3/2004-05	2004	
17	interview	capture	no	unknown		60-70 kg	Khamkouna	Mai yom	18/05/11	Khamkouna	Phou Kong	469502	2052216	11/2011	2011	
18	interview	sighting	no	unknown			Khamkouna	Jone	18/05/11	Khamkouna	Houy Nam kao Poun	470658	2048751	4-5/2000	2000	
19	interview	sighting	no	unknown			Khamkouna	Mai yom	18/05/11	Khamkouna	Phou Kong	469634	2052363	9/05/11	2011	
20	interview	capture	no	female	adult		Khamkouna	Jone	21/05/11	Khamkouna	Houy Ka cha	475491	2049851	3/2006	2006	
21	interview	capture	no	male	adult		Khamkouna	Mai yom	21/05/11	Khamkouna	Phou Kong	469492	2052173	6/2010	2010	
22	interview	capture	no	female	adult		Khamkouna	Mai yom	21/05/11	Khamkouna	Phou Kong	469492	2052173	6/2010	2010	
23	interview	sighting	no	female	adult		Khamkouna	Mai yom	21/05/11	Khamkouna	Phou Kong	469502	2052216	11/2010	2010	
24	interview	capture	no	female	infant		Khamkouna	Mai yom	21/05/11	Khamkouna	Phou Kong	469567	2052282	2/2011	2011	
25	interview	capture	no	male	adult		Khamkouna	Thong San	21/05/11	Khamkouna	Phou Kong	470330	2050585	2/2006	2006	
26	interview	capture	no	male	infant		Khamkouna	Mai thong dam	21/05/11	Khamkouna	Houy Nam kao Poun	470806	2048660	2004	2004	
27	interview	capture	no	male	young		Khamkouna	Boun yeun	22/05/11	Khamkouna	Houy Ma	469683	2052351	6/2009	2009	
28	interview	capture	yes	female	adult		Khamkouna	Boun yeun	22/05/11	Khamkouna	Houy Ma	471171	2050792	6/2009	2009	
29	interview	hoof prints	yes	male	adult	60-70 kg	Phonekham	Mai kham, Manh	24/05/11	Phonekham	Houy Ka cha	475238	2049578	5-6/2005-06	2005	
30	interview	sighting	no	male			Thenteuang	Vieng xay	28/05/11	Thenteuang	Houy Hell	484640	2045593	7-8/2005-06	2005	
31	interview	sighting	no	unknown			Thenteuang	Vieng xay	28/05/11	Thenteuang	Houy Kao	484534	2047329	4-5/1995-96	1995	
32	interview	feeding sign	no	unknown			Phonekham	Kham pew	25/06/11	Phonekham	Houy Nam ta	503367	2053045	4-5/2010-2011	2010	
33	interview	feeding sign	no	unknown			Phonekham	Kham pew	25/06/11	Phonekham	Houy Nam ta	503195	2053056	4-5/1998-1999	1998	
34	interview	feeding sign	no	unknown			Nam On	Boun sai	29/06/11	Nam On	Houy Dong	497754	2050997	7-8/2001-02	2001	
35	interview	feeding sign	no	unknown			Nam On	Ma	29/06/11	Nam On	Houy Nga	499130	2051514	4-5/2010-2011	2010	
36	interview	feeding sign	no	unknown			Vangban	Say Kham	6/07/11	Vangban	Houy Na sao noy	502595	2053694	8-9/2003-04	2003	
37	interview	feeding sign	no	unknown			Vangban	Say Kham	6/07/11	Vangban	Phou Nong kom	503580	2050667	8-9/2000-01	2000	
38	interview	feeding sign	no	unknown			Vangban	Vieng xay	6/07/11	Vangban	Houy Moung ,Phou Tum	500444	2050085	4-5/2009-2010	2009	
39	field	feeding sign	no	unknown			Vangban	Boun	17/07/11	Vangban	Houy Saup	500657	2052346	17/07/11	2011	
40	field	feeding sign	no	unknown			Vangban	Boun	17/07/11	Vangban	Houy Saup	500730	2052472	17/07/11	2011	
41	field	feeding sign	no	unknown			Vangban	Boun	17/07/11	Vangban	Houy Saup	500624	2052285	17/07/11	2011	
42	field	hoof prints	no	unknown			Vangban	Say Kham	17/07/11	Vangban	Houy Na sao noy	501408	2052907	17/07/11	2011	
43	field	hoof prints	no	unknown			Vangban	Say Kham	17/07/11	Vangban	Houy Na sao noy	501625	2052691	17/07/11	2011	
44	interview	sighting	no	unknown			Vangban	Boun nuan	17/07/11	Vangban	Houy Na sao noy	503117	2052770	4-5/2009-10	2009	
45	interview	hoof prints	no	unknown			Namphanh	Sor	13/07/11	Namphanh	Houy Kai , Phou Tum	502751	2045756	12-1/2008-09	2008	

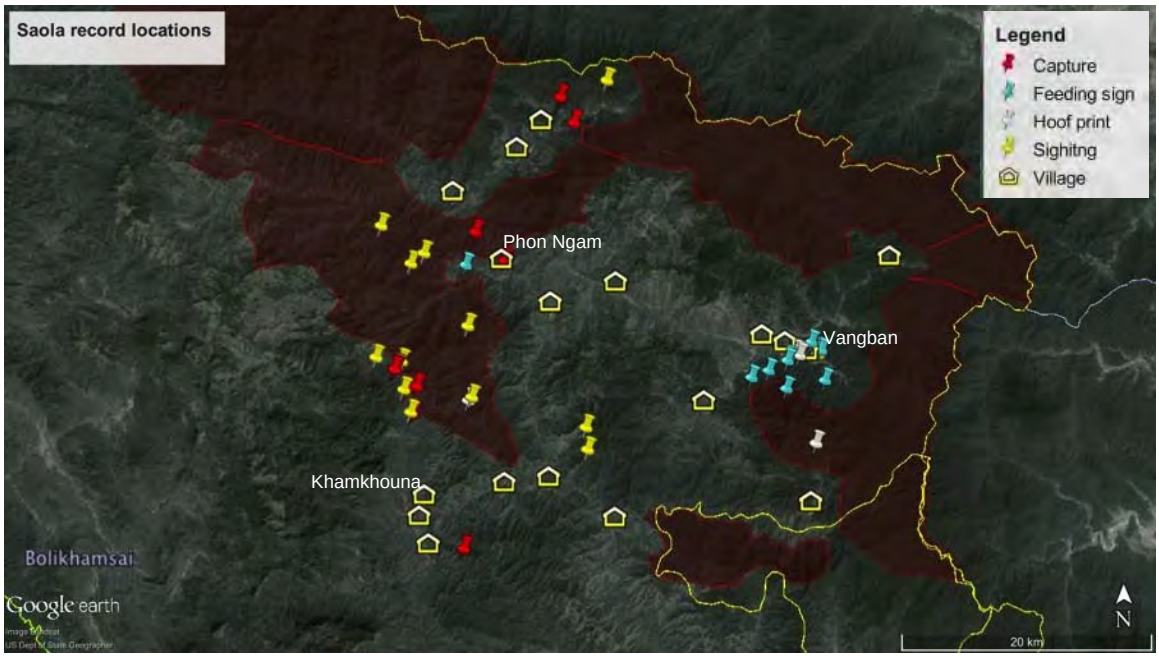


Figure 11. Location of Saola records obtained during village interviews. Each of these locations was confirmed by local informants during forest walks with the project team.

The majority of records provided were recent with 30 occurring since 2006 (Figure 12). A breakdown of these is provided in Figure 13. Residents at one village, Khamkhouna, were involved in 8 captures of Saola since 2006.

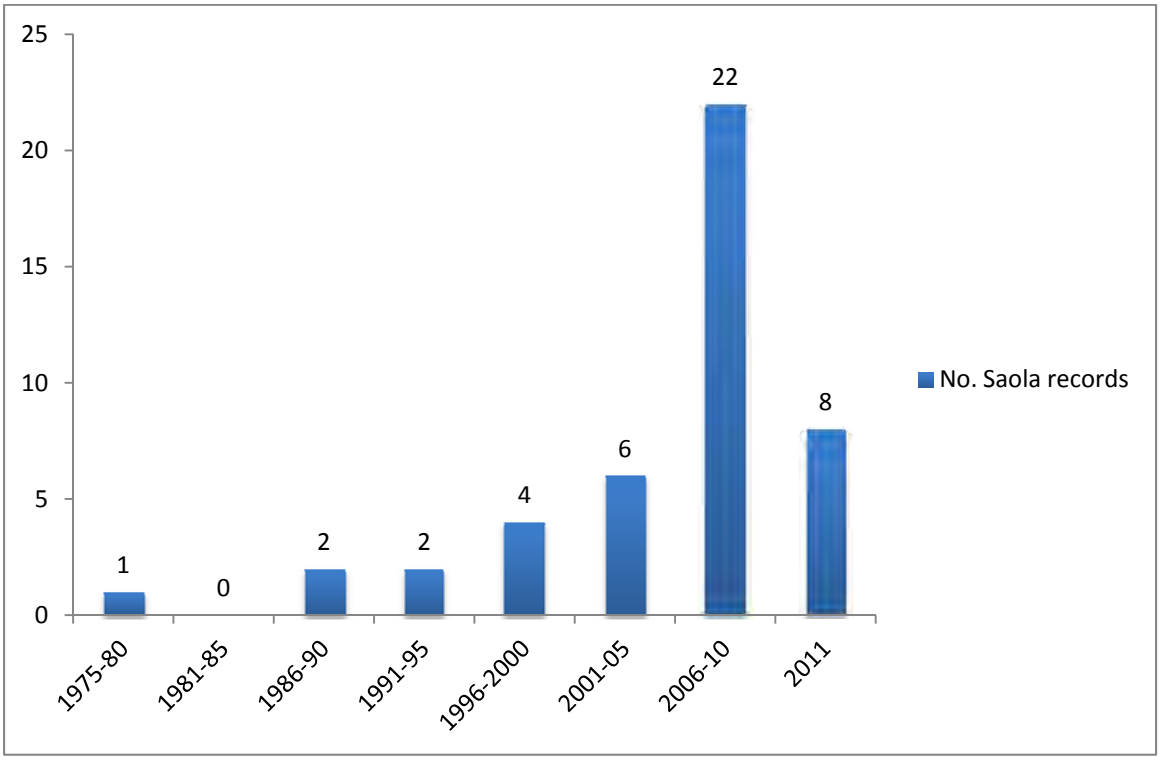


Figure 12. Number of Saola records during 5 year periods since 1975. 2011 applies to the period 1 January to 31 July 2011 only.

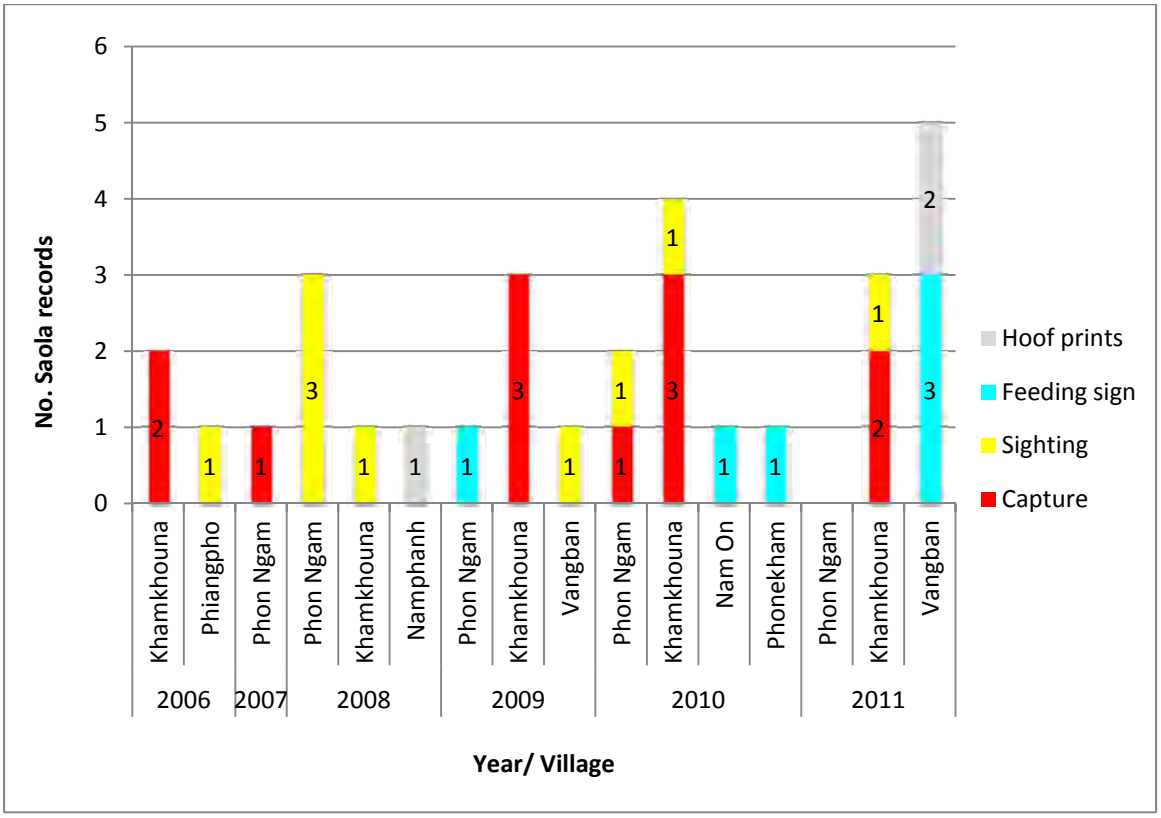


Figure 13. Type and village location of thirty Saola records between 2006-2011.

During several interviews the survey team was presented with physical evidence of previous Saola captures. This physical evidence is documented below.

Phon Ngam Village, Mr. Khai vone, preserved Saola head (Figure 14), captured and killed in 2009, record No. 2 in Table 5. The horn measurements of this specimen are provided in Table 6.

Figure 14. Preserved (dried) head from a Saola captured in 2009 at Phon Ngam village by Mr. Khai vone.

Table 6. Horn measurements for individual captured near Phon Ngam village, record No. 2.

Measurement	Left horn (cm)	Right horn (cm)
Length	33.3	35.4
Base circumference	12.8	12.8
Tip spread	18.5	
Distance between base	5	

Phon Ngam village, Mr. Mankiane, pair of Saola horns (Figure 15). This Saola record does not appear in our data as Mr. Mankiane was not available for interview and no one else at the village had knowledge of where, when, or how the horns were collected. The horn measurements of this individual are provided in Table 7.

Figure 15. A pair of Saola horns owned by Mr. Mankiane at Phon Ngam village.

Table 7. Horn measurements for individual captured near Phon Ngam village,.

Measurement	Left horn (cm)	Right horn (cm)
Length	38	37.5
Base circumference	11.8	11.9
Tip spread	N/A	
Distance between base	N/A	

Phon Ngam village, Mr. Xaisomboun, preserved Saola head (Figure 16), captured and killed in 1995, record No. 4 in Table 5. The horn measurements of this specimen are provided in Table 8.

Figure 16. Preserved (dried) head from a Saola captured in 1995 at Phon Ngam village by Mr. Xaisomboun.

Table 8. Horn measurements for individual captured near Phon Ngam village, record No. 4.

Measurement	Left horn (cm)	Right horn (cm)
Length	36.3	36.5
Base circumference	11.8	11.2
Tip spread	18.8	
Distance between base	5	

Phonmeuang village, Mr. Khamban, one Saola horn (Figure 17) from and individual captured and killed in 1989, record No. 9 in Table 5.

Figure 17. Single Saola horn from a capture near Khamkhouna by Mr. Khamban.

Khamkhouna village, Mr. Boun yeun, preserved Saola frontel (Figure 18), captured and killed in 2009, record No. 28 in Table 5. The horn measurements of this specimen are provided in Table 9.

Figure 18. Preserved (dried) frontel from a Saola captured in 2009 near Khamkhouna village by Mr. Boun yeun.

Table 9. Horn measurements for individual captured near Khamphouna village, record No. 28.

Measurement	Left horn (cm)	Right horn (cm)
Length	36.5	37.2
Base circumference	11.3	11.0
Tip spread	18.7	
Distance between base	5	

Forest walks

During forest walks the survey team accompanied local village informants to locations reported during interviews. The location of each record was confirmed according to information provided by local informants during interviews and is shown in Figure 11 and Table 5.

Despite searching for Saola dung on these walks none was collected for analysis. This was mostly due to the difficulty of locating dung in a reasonable condition for analysis.

The team also deployed several camera traps in Saola 'hotspots' identified by local guides (Figure 19). Each camera trap was deployed for 30 days before collection. No images of Saola were recorded although several other species were recorded including, Chinese serow (*Capricornis milneedwardsii*), Red muntjac (*Munitacus muntjak*), Malaysian sun bear (*Ursus malayanus*), and Siamese fireback (Figure 20). The camera traps also recorded hunters with firearms in forest areas north of Khamkhouna village

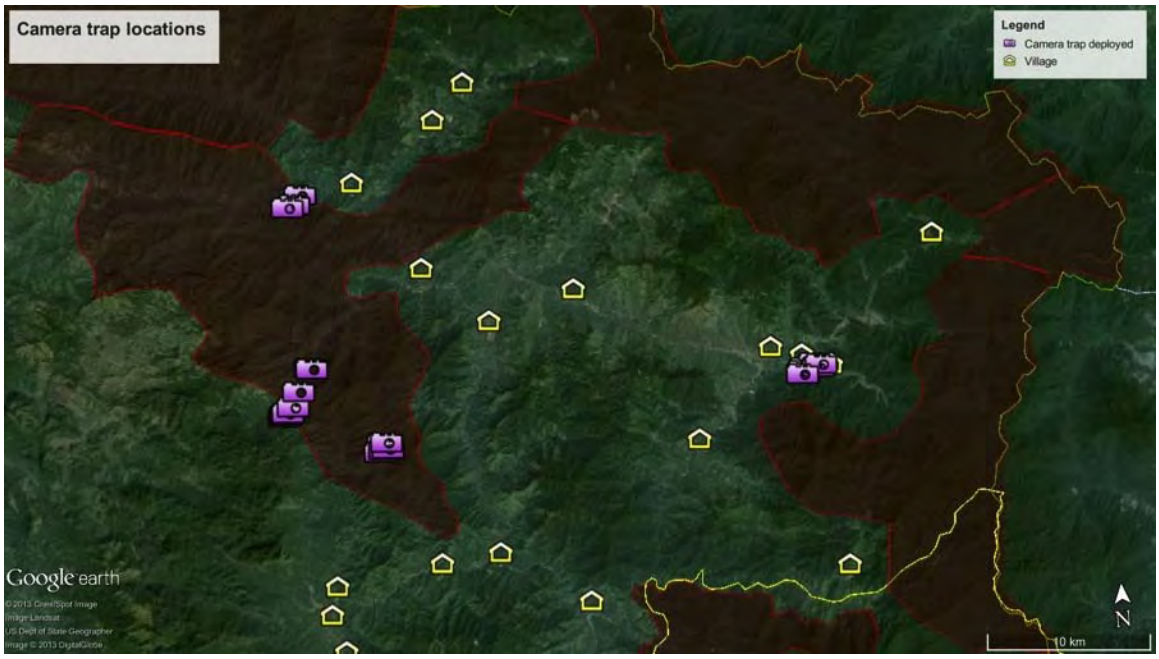


Figure 19. Location of camera traps deployed during three survey rounds.

Figure 20. Sample images from camera traps deployed at 'hotspot' locations identified by local informants. (clockwise L-R; Chinese serow (*Capricornis milneedwardsii*), Red muntjac (*Munitacus muntjak*), Malaysian sun bear (*Ursus malayanus*), hunters with firearms.

Saola capture August 2010

At 10am on Sunday 22nd August 2010 the Wildlife Conservation Society Lao Program (WCS) was notified that a Saola (*Pseudoryx nghetinhensis*) was captured by people in the Phon Ngam village area of Xaychamphon District, Bolikhamxay Province, Lao PDR; N: 18.39520; E: 104.46394 with evaluation of 695 masl. (Figure 21 and 22). This capture was the first independently confirmed sighting of a Saola for more than a decade and was reported in both international and local media, http://www.sciencedaily.com/releases/2010/09/100917090846.htm.

Based on reports from people at Phon Ngam village it is likely that the animal had been held in captivity since 19 August. The official government report suggests the animal was encountered by chance, corralled by dogs and captured. This capture method is questionable since there are several occasions during video taken at the scene when local villagers report the animal was caught in a snare. Capture by snaring is also consistent with injuries documented during the post mortem.

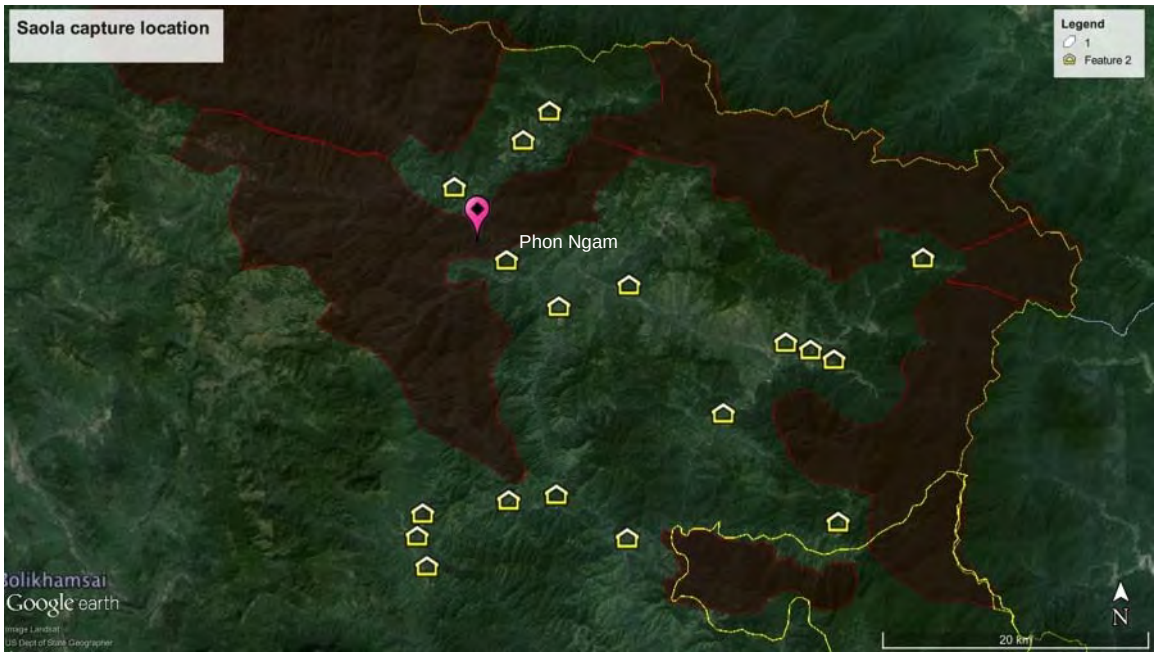


Figure 21. Location of Saola capture north west of Phon Ngam village, Xaychamphon district, Bolikhamxay Province, Lao PDR.


Figure 22. Saola captured near Phon Ngam village, Xaychamphon district, Bolikhamxay Province Lao PDR. Image taken at 16:10, 23 August 2010.

Following its capture the Saola was transferred to an improvised holding enclosure at the Toum Stream nearby the capture site and word of the capture was sent to local authorities in Xaychamphon District. This information was then relayed to staff from the Integrated Ecosystem and Wildlife Management Project (IEWMP) and WCS Lao PDR Program.

Following discussions between WCS staff and the IEWMP director a team of 2 staff from IEWMP immediately began preparations to go to the Phon Ngam village area with the objective of gathering information from villagers involved in the capture, collecting data and samples from the animal, and confirming the identification of the animal. Due to the time required to get to the remote location where the Saola was being held the field team did not reach the scene until the morning of Monday 23 August.

WCS proposed to send the WCS/IEWMP Site Coordinator, Alex McWilliam, with the field team but this request was denied by Bolikhamxay Provincial Agriculture and Forestry Office (PAFO) and Department of Forest Resource Conservation (DFRC) officials. Senior WCS Lao staff met in Vientiane, quickly drafted a data collection protocol, and organised equipment for data collection to be done by the field team. WCS further proposed that an experienced WCS staff member, a Lao national, accompany the field team to the Phon Ngam village area to help coordinate activities and ensure accurate data collection. This request was also denied by Bolikhamxay officials. It was agreed that the WCS staff member could travel to Lak Sao to meet the field team. This WCS staff member trained the field team members going to the Saola capture site about necessary skills and equipment to collect samples from the animal. The staff member also explained the data collection protocol developed in Vientiane. The objective was for the field team to get to the area as quickly as possible, collect data and samples from the animal, and then release it back into the forest as soon as possible. Following this the field team would conduct interviews with all key people involved in the capture of the Saola.

On the morning of 23 August Alex McWilliam and two other senior WCS Lao staff members developed plans to send a second team to the area, which would include a trained veterinarian. The objective of this team would be to provide support and further instructions to the first team and be on hand to assist the animal if it was unwell or injured. WCS Lao staffs met with an official from DFRC and made this recommendation but were instructed that no request for a second team had come from Bolikhamxay officials and thus no additional team could be deployed. WCS was instructed to continue supporting IEWMP and government staff sent to the Saola capture point, and to also brief the director of the Animal Health Center in case a vet was requested by Bolikhamxay officials. WCS proceeded to inform the director of the Animal Health Center in Vientiane of the situation and that if requested asked that he make a vet available from his department to travel to the area.

At approximately 6:00pm on 23 August the WCS Lao PDR received word, via several relays, that the field team had reached the site where the Saola was being held. The team had collected samples and preliminary information, and taken photographs and video of the animal. The Saola was still alive at this time, although, its condition was described as “tired and weak”. The field team planned to keep the Saola captive overnight to allow it to recover adequately and then release it in the morning. Whilst in the field there was no direct communication between WCS Lao PDR and the field team so it was not possible to relay further instructions to them after hearing this information.

WCS Lao spoke to a Bolikhamxay PAFO official and requested that a veterinarian be immediately sent to the area. The official explained that a veterinarian from Xaychamphon District Agriculture and Forestry Office (DAFO) had been sent with the original team and no further assistance was necessary at this time. Video footage later obtained from the field team showed that at 4:16pm on 23 August that Saola was unable to stand up at all and barely able to hold its head off the ground. By 4:36pm the Saola was lying on its side and barley moving.

At 11:35am on Tuesday 24 August WCS Lao PDR received information from Bolikhamxay PAFO that the Saola had died sometime during the night and that the carcass was being transported to Lak Sao. Upon arrival the specimen was examined, skinned, had its stomach contents removed, and then all parts of the carcass were transported back to Paksan for further post mortem/necropsy activities as soon as possible. WCS Lao PDR organised for Dr. Lucy Keatts, a veterinarian from the WCS Global Health Program, to travel to Paksan with her team to conduct formal post mortem/ necropsy activities.

The post mortem/ necropsy was conducted at the Bolikhamxay PAFO in Paksan. Dr. Lucy Keatts and several staff from WCS Lao PDR performed these procedures and the post mortem report is presented in Appendix 3. In total 126 samples/specimens were collected from the animal including dung. There are 698 photographs and 19 video segments of all actions undertaken starting 23 August including images of the Saola in captivity, activities in Lak Sao, and post mortem/ necropsy in Paksan.

Establishment of Phou Sithone Endangered Species Conservation Area

Following this capture incident during August 2010 the District Governor of Xaychampho proposed the establishment of the Phou Sithone Endangered Species Conservation Area (Figure 23). This proposal was approved by the provincial government on 4 march 2013 and its' designation as a provincial level conservation forest demonstrated the commitment of the district government to establish management of forest areas containing critically endangered species such as the Saola.

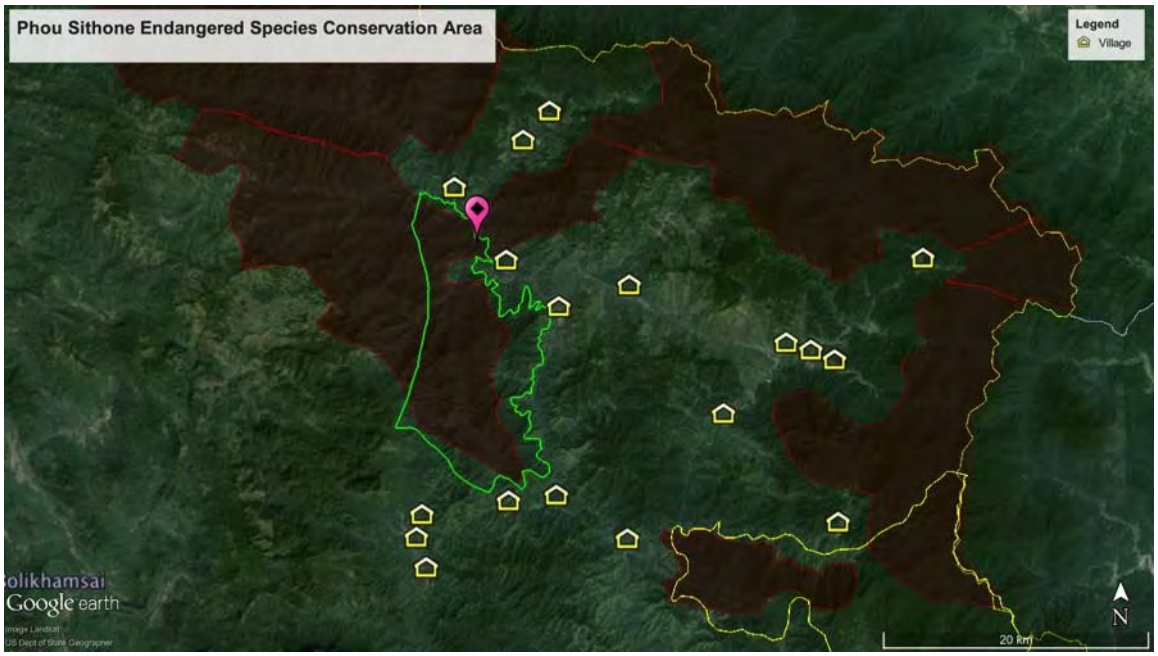


Figure 23. Location of the Phou Sithone Endangered Species Conservation Area in Xaychamphon district, Bolikhamxay Province, Lao PDR.

Conclusion

The survey work undertaken during this effort can in no way be regarded as comprehensively covering the key target areas highlighted in Figure 1. The six target areas represent a vast amount of the landscape of north-eastern Bolikhamxay and insufficient time and funding were available to adequately survey all these areas. Added to this is the difficulty of accessing the areas both logistically and politically. At the time no foreigner or WCS staff member was permitted to enter the key target areas.

Nonetheless a significant amount of information was collected which benefited the ongoing works of the project and future management interventions. The Saola records collected during the solo interviews provided the best information upon which to base the selection of an area for further project activities. The location and timing of records (sightings and captures), including the capture in August 2010, strongly suggested that the Phou Sithone Endangered Species Conservation Areas should be the target of future interventions.

1.3 Locations for substations and patrolling routes identified, in consultation with the Saola Working Group

During survey work the field teams scouted potential locations for substations. The teams also collected spatial information about established tracks they encountered during forest walks. These tactical decisions required an intimate knowledge of the landscape and threats to wildlife in the areas and as such the project team delayed the selection of substation locations and patrol routes until initial reconnaissance patrols by experienced enforcement personnel was conducted. The final location of substations and patrol routes is reported in Component 2 below.

Components 2 Planned:
Poaching of Saola halted within area(s) identified as the highest priority for targeted enforcement efforts

Component 2 Actual at completion:

2.1 - Four non-permanent substations are built at critical locations in the PCV PPA or surrounding watershed to facilitate patrolling (ie. snare collections) and rapidly respond to poacher detection.

During the course of the grant period, patrol teams carried out extensive patrolling throughout the PST ESCA gathering any information relevant to gaining a better understanding of the key areas of threats, logistical challenges and biodiversity hotspots. Based on the analysis of this data as well as consultative discussions with local villages and district officials it was decided to adapt the original plans for 4 substations to suit both the reality on the ground and the funding available.

Patrol infrastructure currently consists of the following:

1. A Northern sector with one patrol team operating out of a semi-permanent substation at Ban Phon Ngam (Figure 24.
2. A Southern sector with one patrol team operating out of a semi – permanent substation at Ban Khamkhouna.
3. A district coordinator operating out of the district offices centrally located at Ban Phone si, which up to June 2013 was also the district capital.

The current infrastructure, although only providing a basic minimum level of protection to the area, have proved to be effective in reducing current threats and operations from them will at least be sustainable under the current expected funding resources.

Future patrol infrastructure needs have been identified as the provision of permanently manned check points on key entry and exit routes to the area.


Figure 24: Semi permanent outpost at ban Phon Ngam

2.2 - 26 villagers trained as forest rangers to man the substations, and 2 staff trained in using the MIST software

In order to accomplish this objective and supported by match funding from additional grants the following activities took place.

Development of a Lao language enforcement ranger training curriculum based on the Lao context.

During 2012, the Forestry and Wildlife Enforcement Ranger Training Curriculum was developed in consultation with local national staff and WCS regional and country enforcement advisors. The curriculum was translated into Lao language and is currently available in both digital and hardcopy format. The training curriculum contained 12 modules (Table 10).

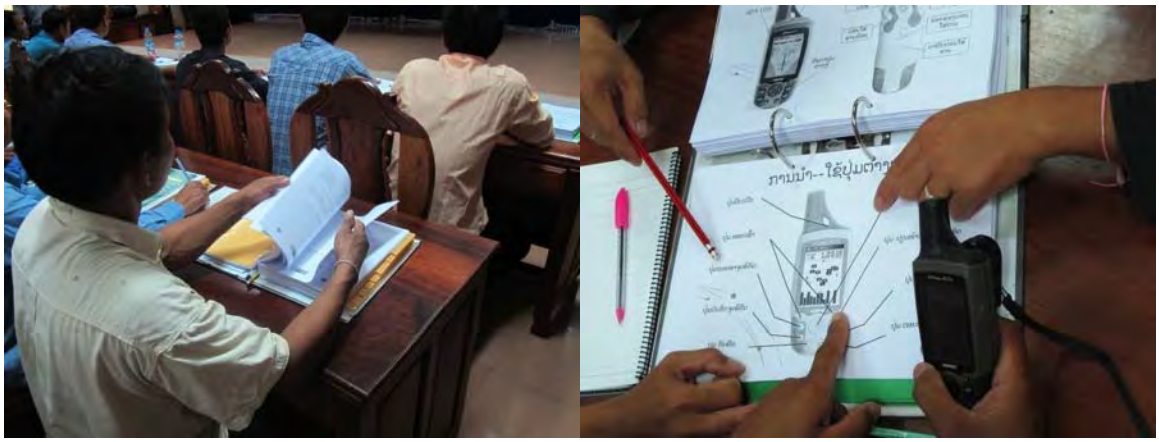
Table 10. The Forestry and Wildlife Enforcement Ranger Training Curriculum modules.

Module	Unit	Title	Topic
1. Principles of Conservation and NPA Management	1.1	Conservation principles	Knowledge of basic conservation principles and importance of wildlife
	1.2	Knowledge of basic principles of NPA management	Knowledge of basic principles of NPA management
	1.3	Management practices at the site	Management practices at the site
		Module 1 exercises	Module 1 exercises
2. Leadership	2.1	Leadership	Lead and motivate work teams (demonstrate a positive attitude, communicating with colleagues, maintain good relations on the team, code of conduct, procedures, briefings)
	2.2	Emergency situations	How to deal with emergency situations; identify and report dishonest practices; maintaining confidentiality
	2.3	Personal standards for patrolling	Maintain good standards of personal appearance and hygiene, Physical stamina, mental preparedness
	2.4	Ranger skills	Instruct in and assess work skills of team members
		Module 2 exercises	Module 2 exercises
3. Administration	3.1	Monthly reporting for patrol teams	Make effective oral and written presentations; monthly team meeting before PA mtg, standard debrief format (route, threats, medical, leadership, key animal signs)trends?
	3.2	Field trip planning	Plan and organise logistics for field trips, surveys and patrols

	3.3	Collate and present evidence of expenditure	Collate and present evidence of expenditure; Keep orderly records
	3.4	Managing equipment	Manage stores of equipment and supplies (refer to NK example); standard kit of equipment, maintenance schedules, e.g. all equipment in regularly check; operate vehicles; care for equipment
	3.5	Environmental standards for patrolling	Follow good environmental & hygienic practice in the field; latrines, fires, campsites
		Module 3 exercises	Module 3 exercises
4. Basic Enforcement	4.1	Relevant laws	Knowledge of Lao Forestry Law that relates to wildlife and the protected area, and local regulations, including lists of Lao protected species
	4.2	Introduction to CITES	Knowledge of international laws and agreements that relate to wildlife (CITES, CBD,)
	4.3	Recognising threats	Recognize and identify signs and evidence of illegal or restricted activities in the field; how to detect snares, encroachment, how to track poachers;
	4.4	General principles of enforcement	Issue informal warnings and guidance for future conduct to minor offenders; apprehend suspects correctly and legally; coordinate with law agencies; provide testimony in court; treat members of public with respect;
	4.5	Crime scenes and collecting evidence	Correctly secure, manage and process a crime scene; draw sketch maps from field data; follow procedure for violations seized or confiscated evidence
	4.6	Hostile Situation and self defence	Deal effectively with hostile situations and defend oneself against physical attack; provide enforcement security
		Module 4 exercises	Module 4 exercises
5. Advanced Enforcement Techniques	5.1	Conducting investigations, working with communities and informants	Develop and manage informant networks; Lead an investigation

	5.2	Strategy and techniques for mobile patrols and substations	Lead patrol activities; Conduct covert surveillance, track violators and conduct searches, spot checks and inspections
	5.3	Leadership, coordination and planning patrol operations	Participate in tactical enforcement operations, including extended patrols, night exercises and ambushes; conduct tactical and operational planning for enforcement operations
	5.4	Firearms- safety procedures	Handle firearms correctly and safely
		Module 5 exercises	Module 5 exercises
6. First Aid	6.1	First Aid essentials	Identify, prevent and/or provide primary treatment in the field for illness, diseases and bites; maintain medical kits,
		Module 6 exercises	Module 6 exercises
7. Navigation	7.1	Using a compass and map	Use compass and chart or map for navigation and orientation
	7.2	Using the Global Positioning System	Use GPS for geo-referencing locations and for navigation and orientation; move safely across the terrain
		Module 7 exercises (Pre test/ post test)	Module 7 exercises (Pre test/ post test)
8. Data collection and reporting	8.1	Recognising key animals	Recognise key animal species tracks and signs (including scat) of key animals for MIST forms
	8.2	Using MIST forms	Accurately record and report threat and wildlife data using MIST forms
	8.3	Communications within the protected area	Using a system to effectively communicate with the protected area
		Module 8 exercises	Module 8 exercises
9. Specimen Recovery and Animal Behaviour	9.1	Collecting samples for genetic analysis	Recovering specimens from carcasses for DNA, scat analysis
	9.2	Guidelines for managing human wildlife conflicts	Basic behavioural ecology of problem animals
		Module 9 exercises	Module 9 exercises

10. Community Outreach	10.1	Community outreach	Liaise with community groups (ethnic minorities, other nationalities, informant networks) and debrief; Mobile teams or Section head check with villages on interaction of forest patrol team and the village.
	10.2	Providing information to stakeholders	Provide basic information to stakeholders and visitors
	10.3	Conflict resolution	Conflict management people skills
		Module 10 exercises	Module 10 exercises
11. Community-based Conservation	11.1	Provide information, guidance and assistance to communities	Provide information, guidance and assistance for community-based conservation and sustainable use (e.g. Dtae outreach team module)
	11.2	Monitor compliance with any village agreements in the field (ecotourism contracts, REDD contracts)	Monitor compliance with any village agreements in the field (ecotourism contracts, REDD contracts)
		Module 11 exercises	Module 11 exercises
12. Wildlife Disease Monitoring and Reporting	12.1	Theory of emerging infectious diseases	Overview of diseases that can harm people and other animals and why rangers should monitor
	12.2	Protected area staff recording and reporting systems	How to record and report diseased or dead animals. When to alert the authorities, who to contact and what the outcome should be.
	12.3	Practical skills related to emerging infectious diseases	Theory and practice of PPE use, samples that will be taken with the NAHC mobile team, sample storage/transport protocols
		Module 12 exercises pre and post	Module 12 exercises pre and post



TOT training

Part of the capacity building strategy around the provision of ranger training, was to build capacity within local agencies to be able to deliver the curriculum to rangers, not only for PST ESCA rangers, but to the broader enforcement community both now and beyond the period of the grant.

The training of trainer (TOT) course was held over a period of 5 days from the 24 – 29 September 2012 at the PoNRE offices in Paksan Bolikhamxai Province (Figure 25).

Trainers were selected from the various agencies involved with enforcement or related modules. A total of 16 trainers were selected from 7 different agencies (Table 11) to form a core of local trainers able to conduct similar training to enforcement staff in the future.

Table 11. Trainers selected from various agencies to attend the TOT course.

Organization	**Position**
IEWMP	Outreach team leader
	Biodiversity monitoring team leader
	Finance and administration officer
	Enforcement Supervisor
	Enforcement team leader
	Deputy Director IEWMP
Provincial Public Health Department	Public health official
	Health and sanitation official
Livestock and Fisheries Division	Veterinary official
Provincial Police department	Investigations officer
	Investigations officer
Provincial Forest Inspection Division	Technical staff
Provincial Military	Military trainer
Support Trainers	
Organization	**Position**
WCS	Regional training consultant
WCS-USAID PREDICT	Veterinary
	Project officer
IEWMP	IEWMP Site - coordinator
	Assistant site - coordinator

Figure 1: Trainers selected

During the TOT course, all trainers received capacity building training or general information information around:

- An overview of the modules within the curriculum.
- Capacity building with regards to the organization and running of a training workshop.
- Capacity building with regards to the presentation of training materials.
- Capacity building around the delivery of PowerPoint presentations

- The allocation of training responsibilities (modules and study units) for the ranger training course.
- The opportunity to review all modules and to provide inputs and recommendations regarding the curriculum content.

During the weeks leading up to the ranger training course, trainers were given intensive support in the development of their lesson plans, training presentations and practical exercises.

Figure 25. Participants attend and complete the TOT course.

Ranger training

The ranger training course took place over two 13 day sessions so that half the enforcement team members could attend one of the courses, while the other half remained operational.

The courses were held at the Bolikhamxay Agriculture and Forestry College in Bolikhamxay Province and proved to be a good venue, with plenty of space for practical training and demonstrations within the grounds. Selected personal from the collage also attended the course further extending the reach of our skills development and transfer strategy.

The courses were held from 29 April – 11 May (course 1) and from 16 May – 27 May (course 2) (Figure 26). The training curriculum consisted of 11 Modules and 35 study units covering the full range of skills needed within the Lao context. The training was overseen and supervised by the WCS Site coordinator, Ben Swanepoel and the WCS Regional Enforcement Consultant, Dr. Tony Lynam.

Participants from Nam Kading National Protected Area, the Nam Ngouang South Protection Forest Area Program as well as the PST ESCA attended the two courses. A total of 12 personal from PST ESCA (all personal currently involved with the implementation of enforcement activities on PST ESCA) attended the training course. Trainees from PST consisted of the following:

District coordinator – 1
Patrol leader – 2

Deputy patrol leader – 2
District military – 4
Village militia – 3

Figure 26. Participants attend and complete the Forestry and Wildlife Enforcement Training.

Results of the training course were calculated based on the following assessment criteria:

- Daily class tests delivered at the end of each lesson.
- Final examination results held at the end of the course.
- Level of motivation as judged by a panel.

- Level of fitness as determined by a group of physical fitness tasks held at the end of the training course.

Final course results for PST ESCA staff were as follows:

83% of PST ESCA staff passed the course (Figure 27).

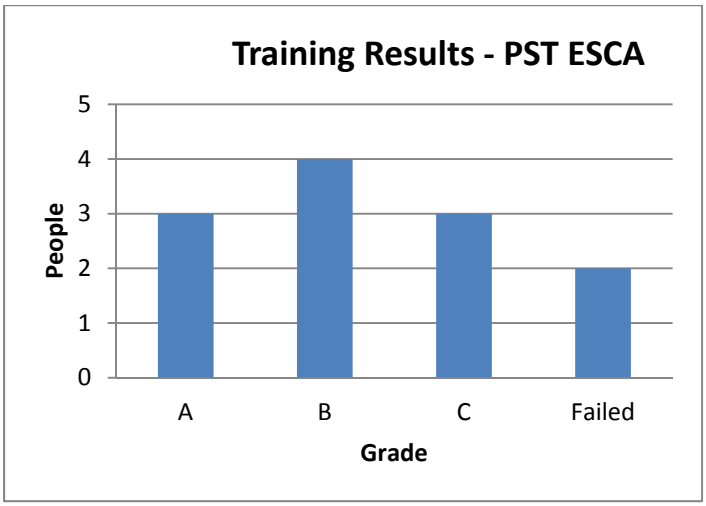


Figure 27. Final grades for PST ESCA participants attending the Forestry and Wildlife Enforcement Ranger Training.

The two people who failed were village personnel with very low levels of school education. A follow up evaluation and audit of the training results will be held in the field during late 2013.

MIST / Smart training

Two staff directly involved with the implementation of MIST and the future rollout of the new SMART patrol data management system received formal training. While all patrol data is currently managed through the MIST system, the “SMART” system will be implemented on PST ESCA once the data base has been translated into Lao language.

In November 2012, the enforcement supervisor responsible for enforcement activities within the PST ESCA was sent on a “SMART” patrol database management course held in Thailand to prepare for the transition from “MIST” to the “SMART” patrol data management system.

In order to facilitate the implementation and management of the MIST / SMART system on PST ESCA, an additional MIST officer was employed, and attended a SMART training course held in Indonesia during April 2013.

The WCS GIS officer assisted the MIST officer with capacity building regarding the development of SMART data models for PST ESCA.

In addition to the training above, A DAFO official from Xaychamphone district, Mr Sollivan Sengmoney, was selected by Xaychamphone District officials and IEWMP management team and successfully completed the 3 week certificate course:

"Biodiversity Conservation and protected Area management in Laos" held at the National University of Laos in Vientiane. Mr Sengmoney will be assisting with future management activities in the PST ESCA.

2.3.Semi-annual MIST reports, summarizing the results of daily forest patrolling for villagers, Government of Laos, and CEPF.

MIST Data from patrol activities carried out on PST ESCA were entered into the MIST data base on a monthly basis and the results analysed. Information from these reports were used to inform patrol objectives for the next month as well as for providing feedback to the IEWMP management team and provincial level reporting.

A summary of the MIST patrol reports for the duration of the grant period are as follows:

1. **Structure of enforcement teams:**

Two patrol teams were established and located at:

1. Northern sector (Ban Phon Ngam
2. Sothern sector (Ban Khamkhouna)

There were three phases of the enforcement patrol activities based on the progress of the community FPIC process.

1. Initial three month's enforcement and reconnaissance patrols.
    a. November 2011- January 2012.
    b. Two patrol teams
    c. 7 members in each team
        i. IEWMP – Team leader (1)
        ii. IEWMP – Deputy leader (1)
        iii. District military – (3)
        iv. DAFO – (1)
        v. Village guide – (1)

2. Second phase enforcement and reconnaissance patrols.
    a. July 2012 – April 2013
    b. Two patrol teams
    c. 4 members in each team
        i. IEWMP – Team leader (1)
        ii. IEWMP – Deputy leader (1)
        iii. Village guide – (1)
        iv. Village militia – (1)

3. Final established enforcement phase.
    a. May 2013 – Current
    b. Two patrol teams
    c. 6 members in each team
        i. IEWMP – Team leader (1)
        ii. IEWMP – Deputy leader (1)
        iii. District military – (2)
        iv. Villager – (2)

This summery report covers all enforcement activities carried out between November 2011 and June 2013.

2. Overall enforcement effort

Patrol coverage

The area was well covered with foot patrols during this report period, with most key areas covered on monthly basis (Figure 28).

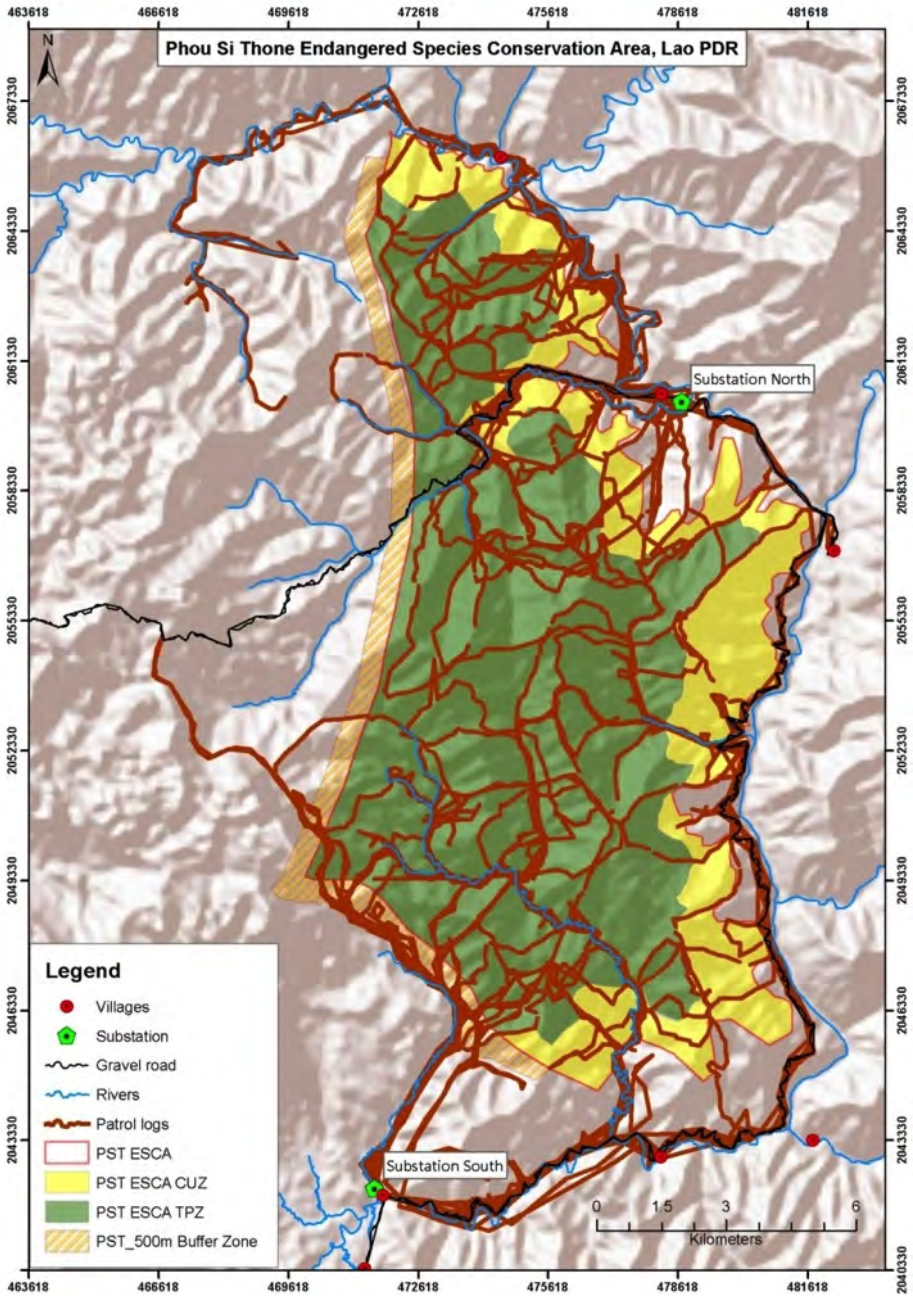


Figure 28. Foot patrol logs for all enforcement teams operating in and around PST ESCA, November 2011-June 2013.

Patrol days.
The two teams conducted a combined total of 476 days of foot patrols, an average of 31 patrol days per month (Figure 29). Low patrol months indicated on the graph (months 1, 6, 14 and 15) were months of intensive ranger training.

In general, teams each carried out 3 long foot patrols of up to 5 days per patrol, and one short patrol of about 3 days.

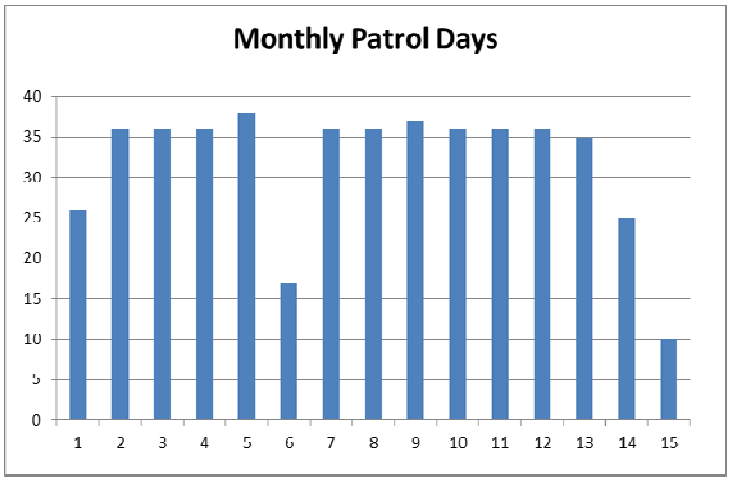


Figure 29. Days patrolled each month, two teams combined during 15 months, November 2011-June 2013.

Patrol distances:
Patrol distances vary greatly month to month based on the terrain of the area covered and the objectives set for the patrol. In very general terms, the norm is set for 80km of foot patrols per team.

A total of 5 156 km of foot patrols were carried out during this grant period, at an average of 143 km per month. Some month (1, 6, 14, 15) were months during which intensive training was delivered.

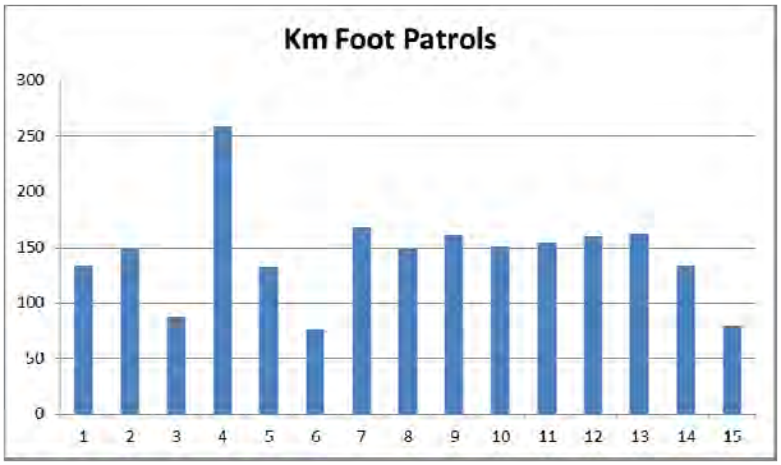


Figure 30. Distance of foot patrol each months, two teams combined during 15 months, November 2011-June 2013.

3. Enforcement results

Threats encountered

During foot patrols carried out within the PST ESCA the following threats (illegal activities) were encountered and neutralised by the patrol teams.

A total of 81 illegal incidents were encountered and neutralised, almost 70% related to illegal hunting activities (Figure 30).

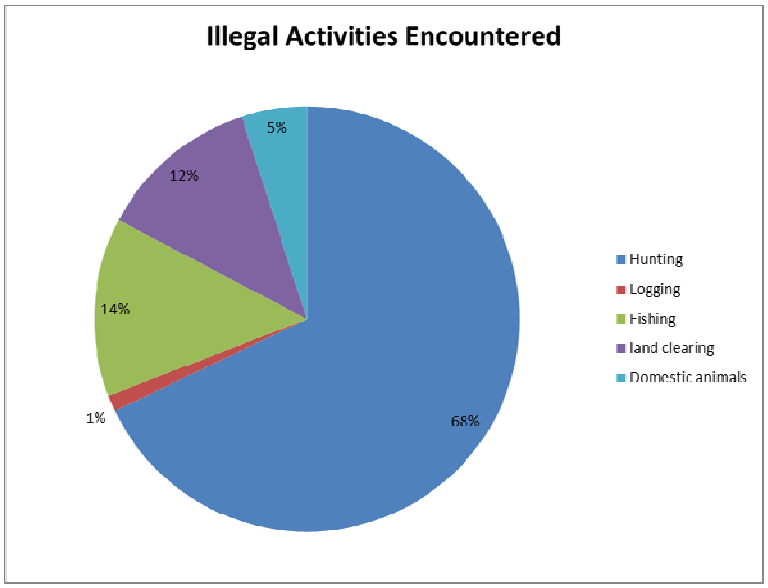


Figure 30. Illegal activities encountered during 15 months of patrolling, November 2011-June 2013.

Incidents of illegal activities encountered by patrol teams declined steadily during the duration of the grant period, directly as a result of the patrol efforts and indirectly as a result of the FPIC process (Table 12, Figure 31).

Table 12. Illegal activities encountered per quarter during 15 months of patrolling, November 2011-June 2013.

Illegal activity	1st quarter	2nd quarter	3th quarter	4th quarter	5th quarter	Total
Hunting	36	11	5	2	1	**55**
Logging	1	0	0	0	0	**1**
Fishing	0	0	2	5	4	**11**
land clearing	0	4	2	2	2	**10**
Domestic animals	0	1	3	0	0	**4**
Totals	**37**	**16**	**12**	**9**	**7**	**81**

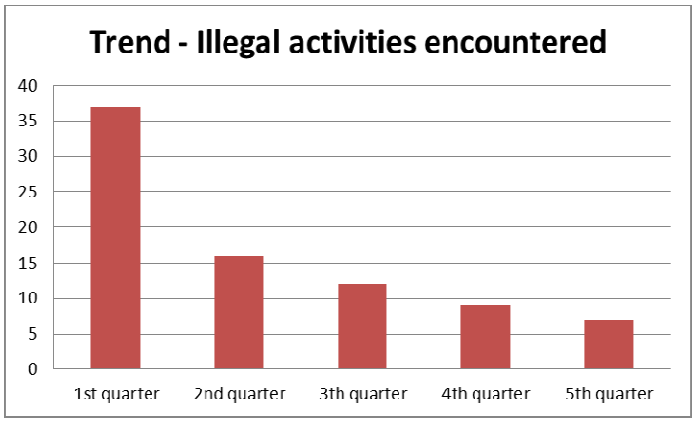


Figure 31. Illegal activities encountered per quarter during 15 months of patrolling, November 2011-June 2013.

The distribution of threats occur over a wide area within the ESCA with some baize towards previous village land use areas (Figure 32).

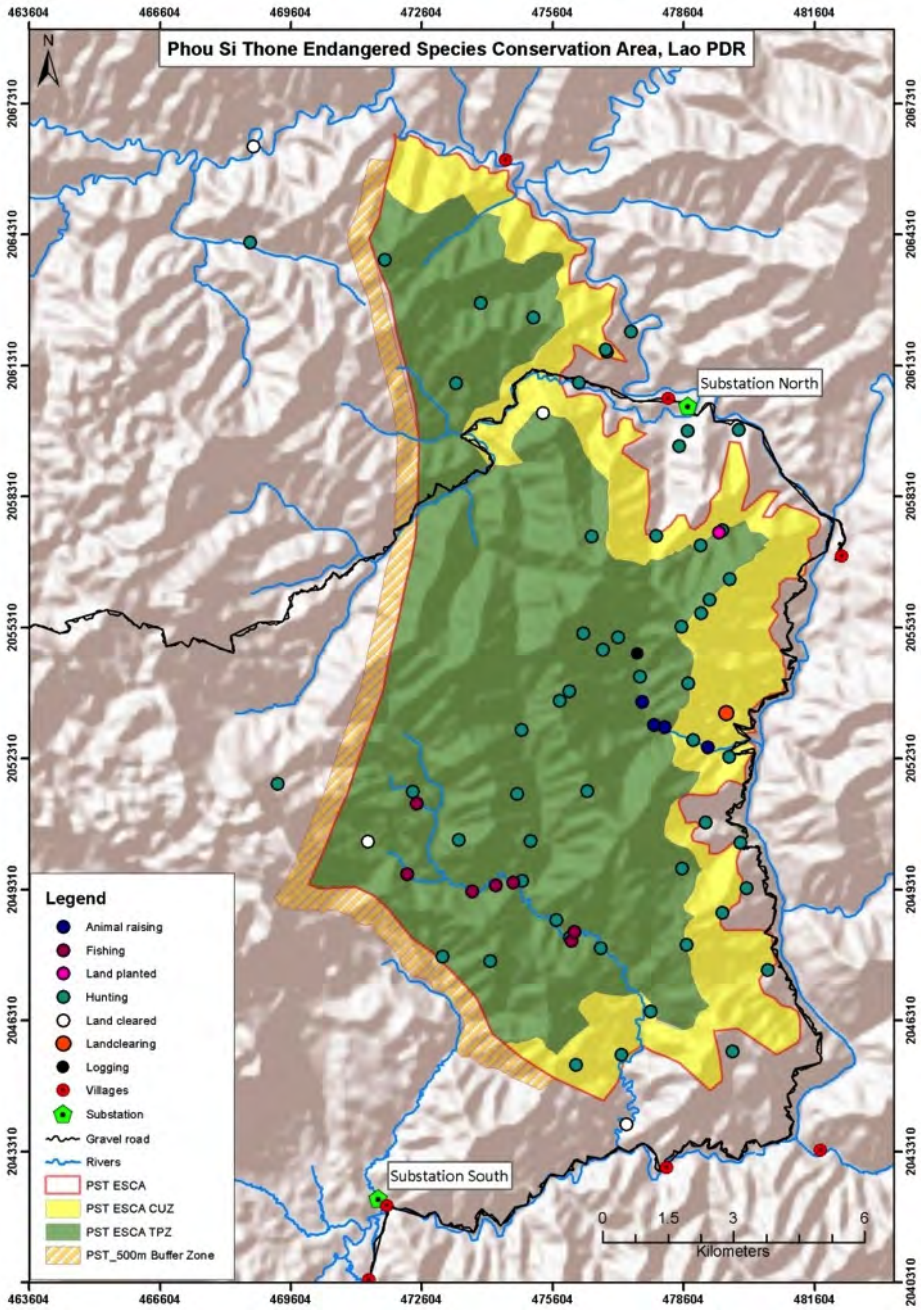


Figure 32. Distribution of threats encountered during 15 months of patrolling, November 2011-June 2013.

Offenders apprehended

A total of 18 people were apprehended during foot patrols, hunting or fishing equipment confiscated and the people taken to the local village authorities (Table ?, Figure ?). Emphasis was focused on education and awareness as patrolling activities were running parallel with the FPIC process of zonation and regulation development. Further to this it is the custom of enforcement program in forest areas of Lao PDR to issue warnings and educate offenders for the first two offences per person.

Table 13. Number of sanctions issued during 15 months of enforcement, November 2011-June 2013.

Illegal activity	Verbal warning	Writen warning	Fines	Arrests	totals
Hunting	7	2	0	0	9
Fishing	9	0	0	0	9
Totals	**16**	**2**	**0**	**0**	**18**

Reduction of threats

Snares

Great emphasis was placed on the patrol teams to reduce the number of snares in the PST ESCA due to the real threat these items pose Saola.

As a result, a total of 7,058 snares were collected, removed and destroyed (Figure 33). As seen in the overall illegal activity encounters, trends of snare detection decreased dramatically over the duration of the grant period.

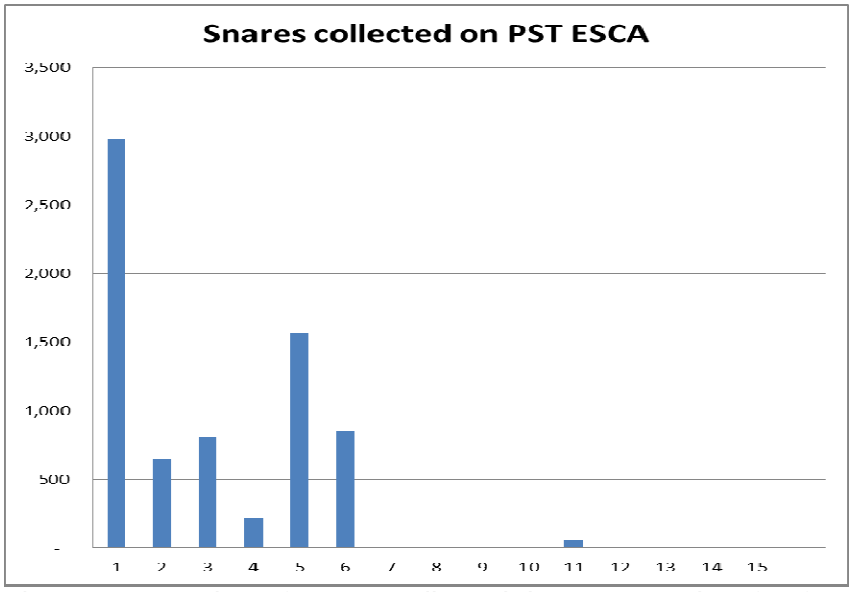


Figure 33. Number of snares collected dung 15 months of enforcement operations, November 2011-June 2013.

Guns

Few weapons were seen or heard in the forest during this grant period with a total of four weapons encountered and confiscated (Figure 34).

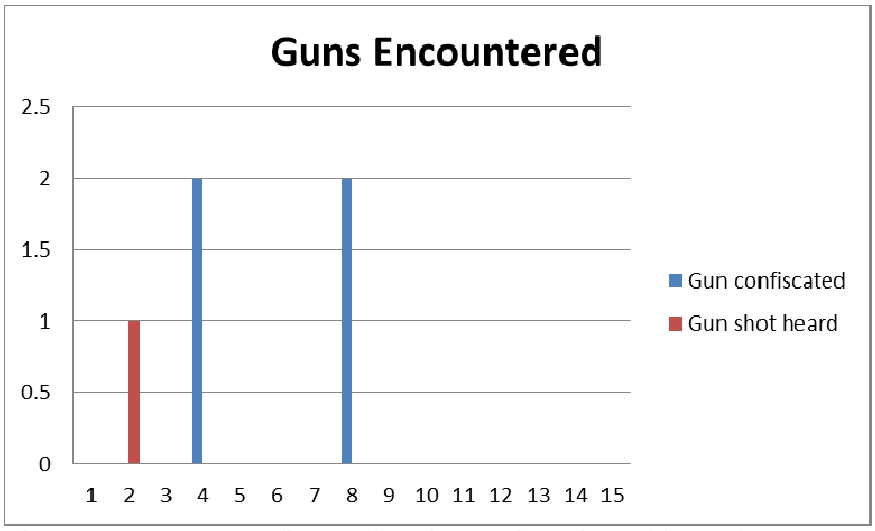


Figure 34. Guns confiscated and gun shots heard by enforcement teams during 15 months of operations, November 2011-June 2013.

Wildlife trade

Only two incidents were recorded regarding the confiscation of wildlife or wildlife products (Table 14).

Table 14. Incidents involving confiscation of wildlife.

Species	Number	Alive/dead	Whole/Parts	Total wieght(kg)	Sources	Purpose
Wildpig	3	alive	whole	21	Huaikan area	Home use
Serrow	1	alive	Whole	12	Piengkhuan	Trade

4. Biodiversity monitoring

A secondary function of the enforcement patrol teams is to collect opportunistic biodiversity data while on patrol. Based on the MIST data, the following observations were recorded during the grant period (Table 15, Figure 35).

When analysing the data it is important to note the following:

- Saola dung and hoof prints are unverified and need to be treated with caution.
- Although gibbon sightings appear to be unusually high, it is very encouraging and this species definitely needs further investigation.

Species	Observation	Total
Gibbon	Sighting	136
	Call	5
Saola	Dung seen	4
	Hoofprint seen	9
Serrow	Sighting	6
Wildpig	Sighting	44
Otter	Sighting	7
Samba	Sighting	2
Munjac	Sighting	6
Total		**219**

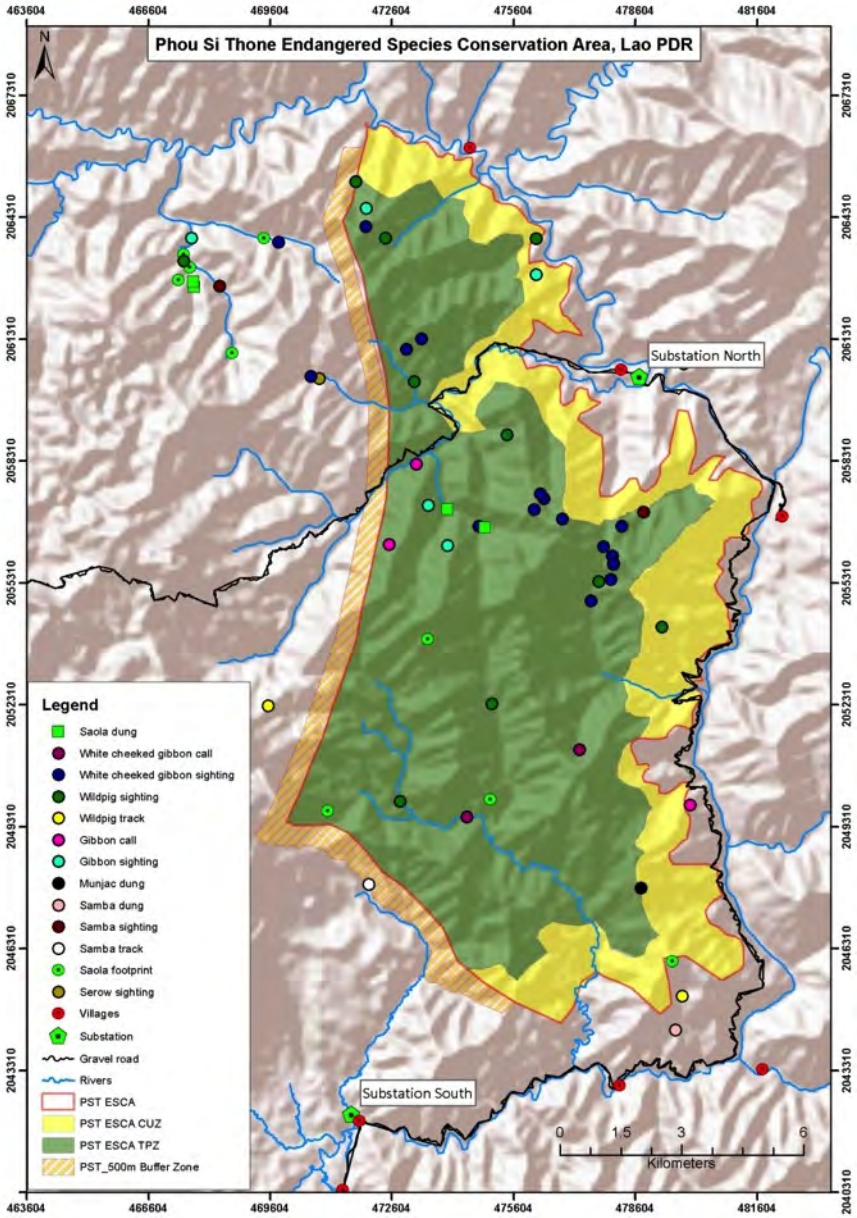


Figure 35. Wildlife species encountered (e.g. sighting, sign) during 15 months of enforcement operations, November 2011-June 2013.

Wildlife disease surveillance
Rangers received training on the identification and reporting of incidents of wildlife disease.
There were no incidents reported during this report period.

5. General comments

Based on the MIST data and results the following general observation can be made:

- Threats encountered show a marked decrease from the beginning of enforcement patrolling to the current period. This could be attributed not only to the enforcement operations, but also to the intensive outreach and community engagement activities during the FPIC process that ran in parallel to the enforcement activities.
- The threat of snares on PST ESCA appears to have been almost eliminated which is very encouraging although unlikely the real situation in the field. It is likely that hunters have adapted their snaring strategy to counter the enforcement efforts, and our teams need to be aware of this and adapt accordingly.
- An area needing attention is the prosecution of offenders, and now that all regulations and zoning has been approved we need to motivate the enforcement staff to be more assertive in their enforcement of these regulations and associated sanctions.
- In terms of infrastructure, we need to invest in at least two strategically placed semi-permanent checkpoints to monitor key access points around the PST ESCA. This will be receiving more attention during the coming period.
- There still exists a challenge with regards to providing onsite technical inputs to the patrol teams by foreigners due to the sensitivity of the area regarding security. This aspect is currently also receiving attention.


2.4.Saola distribution report: Maps showing where saola are known to occur and not to occur, based on camera traps and feces, and local expert knowledge.

As expected very little direct evidence of Saola was encountered by enforcement teams during the project period. Current information is presented in Component 1 and Figure 35.

Component 3 Planned.
Village-level constituency to help Saola protection and recovery efforts established

Component 3 Actual at completion:

3.1 - Report on the outcomes of village PRIDE campaigns.

Between September and October 2010, the PRIDE campaign was implemented in key 12 villages around the PST ESCA. Outcomes of the village pride campaign were determined by means of conducting pre and post evaluations to the actual campaign. The pre and post evaluation quantify the results of the outreach campaign and the effectiveness of the methods used during the campaign in achieving the objectives set for the outreach activity.

1. Evaluation design

The evaluation took the form of a questioner consisting of 27 questions designed to test the knowledge or awareness of the main subject areas of the outreach campaign.

The questionnaire was administered to the same individuals, firstly during a pre survey to establish a baseline of knowledge and awareness, and then again during the post survey which took place 6 weeks after the outreach campaign, to establish the level and direction of change in knowledge and awareness.

The questionnaire was administered verbally during one to one interviews conducted between the villager and a member of the project staff.

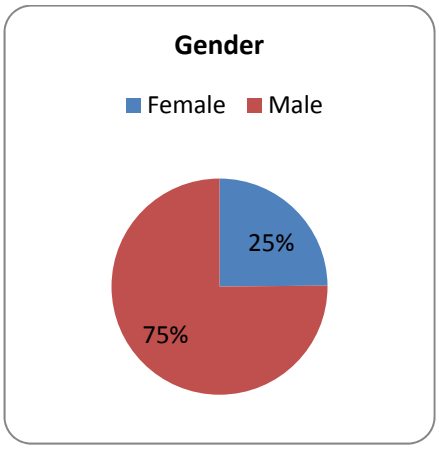
Sample size:
338 questioners were completed in a total of three villages

Campaign target villages - 12
Sample – 3
Sample % - 25%

Individuals attending the outreach campaign – 3 685
Sample – 338
Sample % - 9.17%

2. Biographical data
Biographical profile of the people sampled during the survey are as follows:

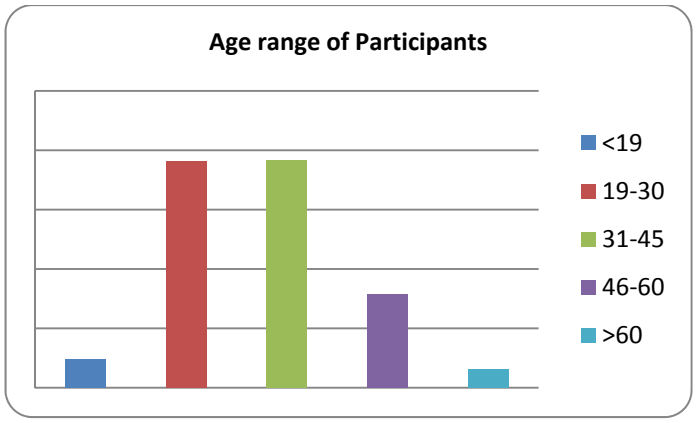
Gender:



Gender	%
Male	75%
Female	25%

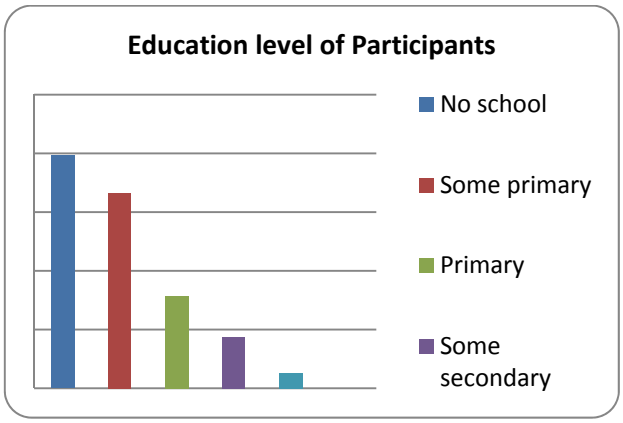
Age:

Age group	%
<19	5%
19-30	38%
31-45	38%
46-60	16%
>60	3%



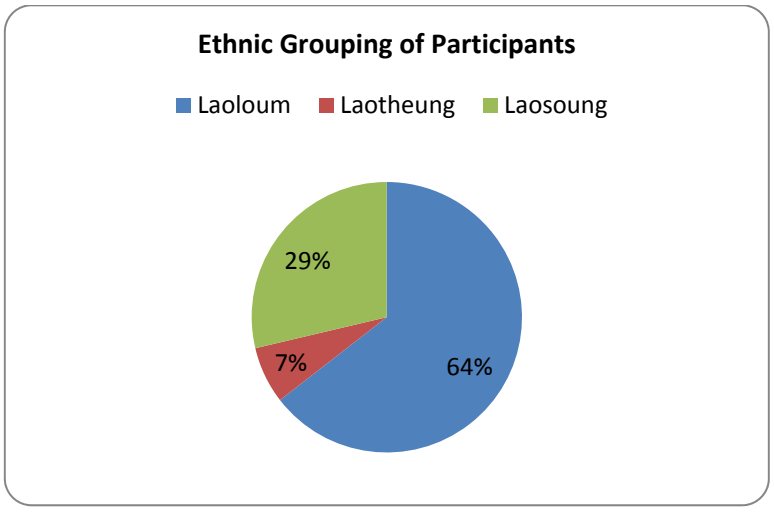
Level of education:

Education	%
No school	40%
Some primary	33%
Primary	16%
Some secondary	9%
Secondary	3%
Higher secondery	0%



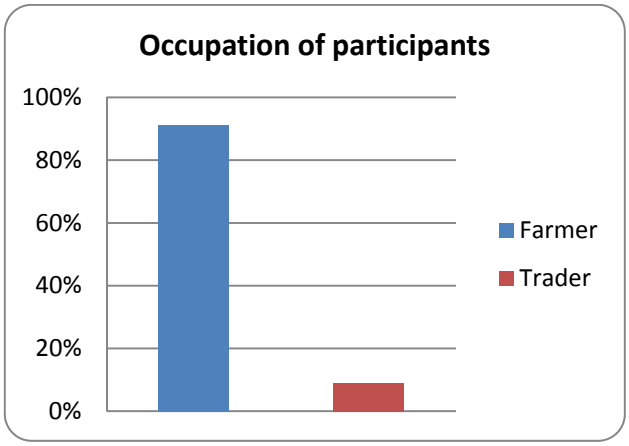
Ethnic grouping:

Ethnic group	%
Laoloum	64%
Laotheung	7%
Laosoung	29%



Occupation:

Occupation	%
Farmer	91%
Trader	9%
Government	0%
Labourer	0%
Handicraft maker	0%
Trader	9%



3. Results

3.1. Summary of results

After the outreach campaign there was an average positive increase of 52% in the knowledge and awareness of the outreach subject areas.

The two areas that scored the ***highest*** in terms of ***awareness*** after the campaign were: Awareness of wildlife trade (97%), and general Saola information (94%)
The two lowest scores of awareness after the campaigns were; how to be personally involved in conservation efforts (62%) and awareness of the value of biodiversity (68%) (Table 15, Figure 36)

The highest ***positive change*** was related to the awareness of wildlife trade (75% positive shift), and awareness of the conservation status of Saola (63%) while the lowest change was in the awareness of the respondents personal ability to influence conservation change (28%) and the awareness of general illegal hunting legislations (37%).

One positive result of the campaign was the reduction in the number of "I don't know" answers after the outreach campaign. The total average % of "I don't know" answers dropped from 28% down to 2%, indicating that people have a wider general knowledge and awareness of the subjects covered. I would argue that this change also indicates that people felt more confident to engage on these issues after the outreach campaigns.

Table 15. Summary results of outreach campaign pre and post tests.

Subject Area.	Pre	Post	Shift
Awareness of Saola	49%	94%	45%
Awareness of conservation status of Saola	18%	81%	63%
Awareness of general illegal hunting legislations	37%	75%	37%
Recent exposure to EE activities and products (previous 6 months)	9%	71%	63%
Awareness of the value of biodiversity	12%	68%	56%
Awareness of importance of personal involvement in conservation	34%	62%	28%
Awareness of wildife trade and legislation	22%	97%	75%

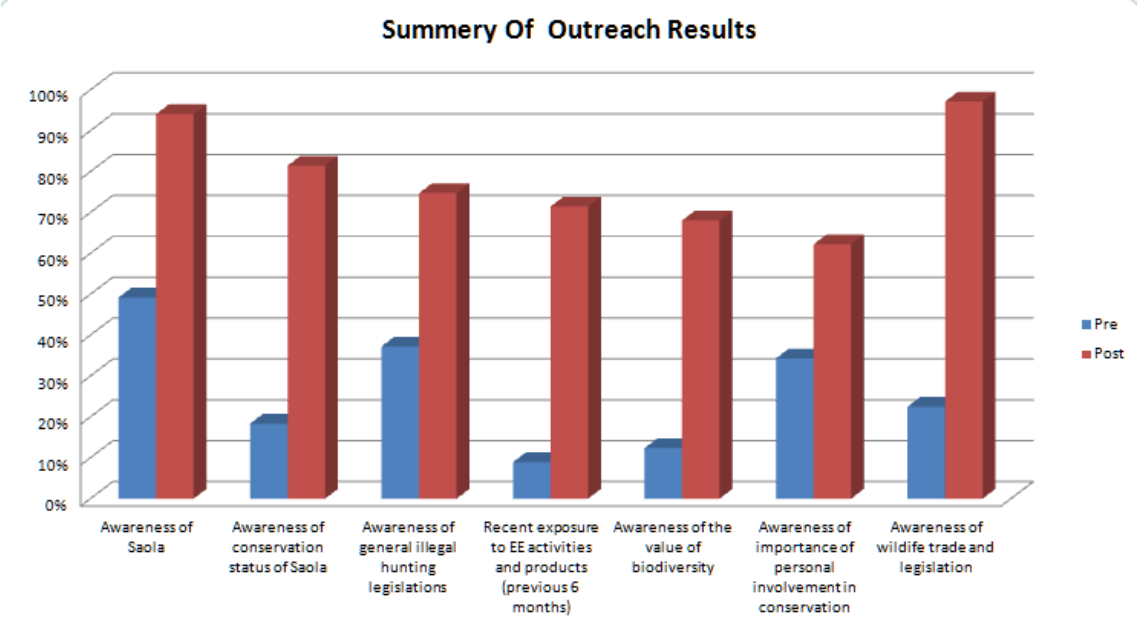
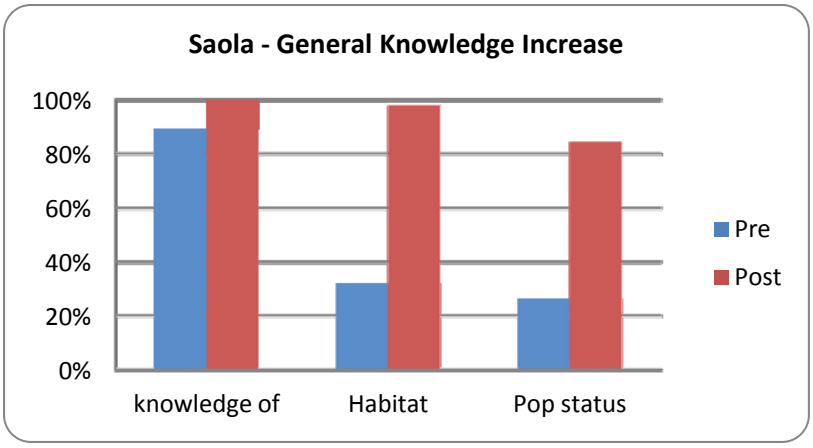


Figure 36. Summary results of outreach campaign pre and post tests.

3.2. Results per subject area for the outreach campaign

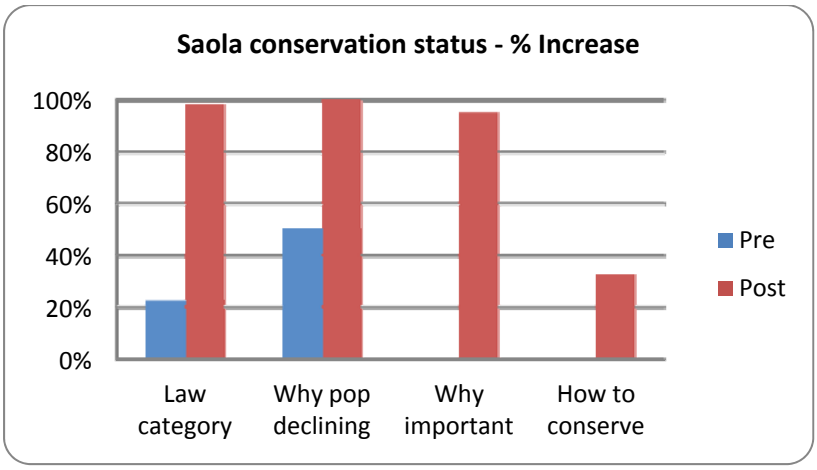
3.2.1. Awareness of Saola



Awareness level post campaign – 94%
Awareness increase – 45%

This subject had the second highest level of increase of awareness after the outreach activities. Although most people had heard about the Saola, the main increase of knowledge occurred in the area of Saola habitat and the current population status within the PST ESCA.

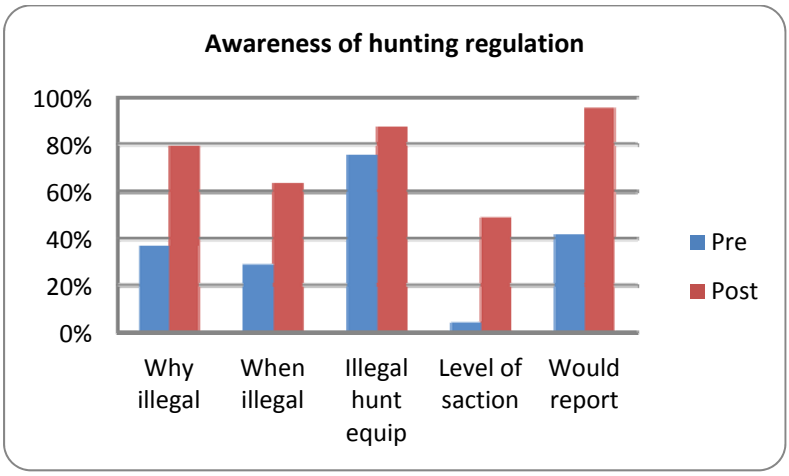
3.2.2. Awareness of conservation status of Saola



Awareness level post campaign – 81%
Awareness increase – 63%

This subject had the second highest level of awareness change as a result of the outreach activities. The main knowledge gap highlighted was why the conservation of Saola is important and how to assist in the conservation of the species.

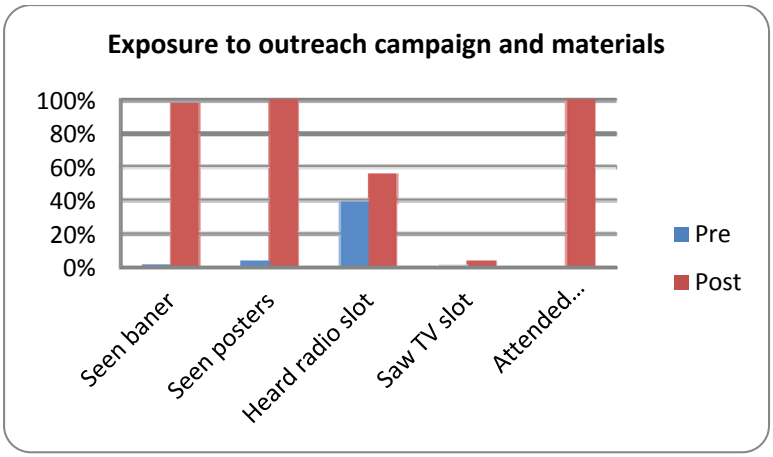
3.2.3. Awareness of general illegal hunting legislation



Awareness level post campaign – 75%
Awareness increase – 37%

Scores in this area seem to indicate that when peoples understanding of regulations grew, so did their feeling that sanctions should be higher, as did their willingness to report illegal activities.

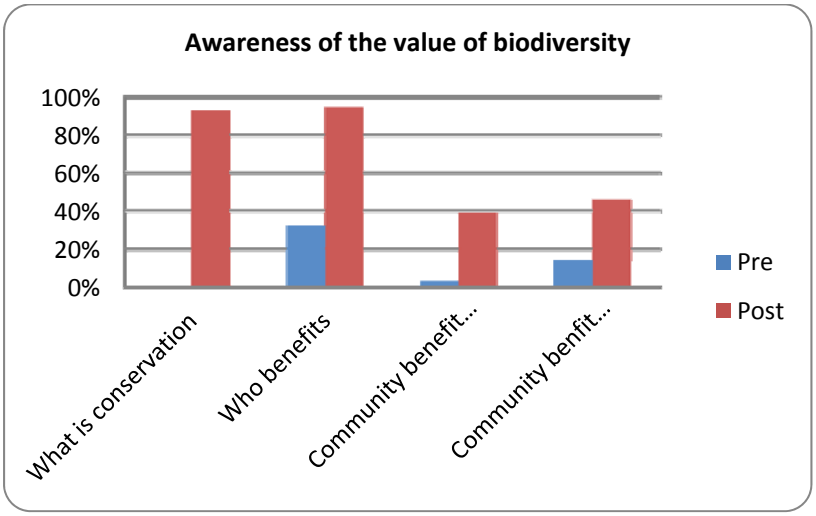
3.2.4. Exposure to the outreach campaign



Exposure to the different outreach activities – 71%
Increased level of exposure – 63%

Everyone who took part in the survey also attended the physical outreach campaign in their villages. Relevance here is the exposure to the TV slot, which was low at the village level but could still have had a broader provincial coverage.

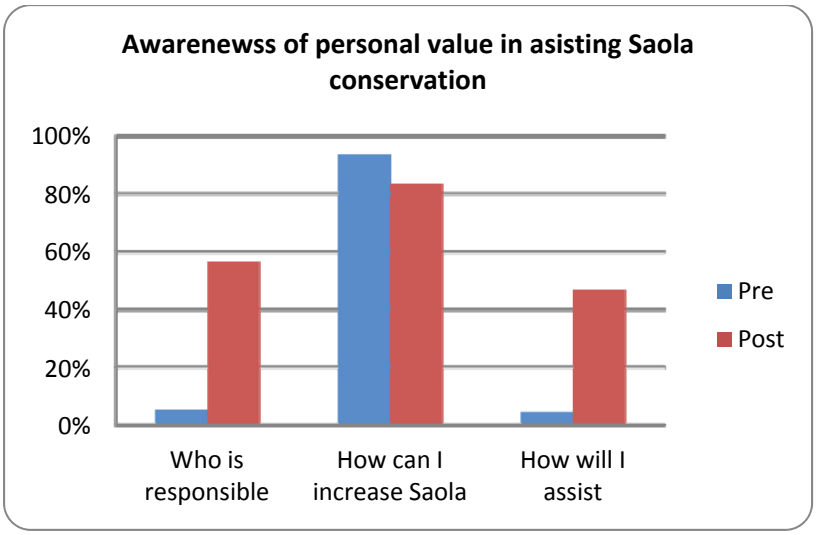
3.2.5. Awareness of the value of biodiversity



Awareness level post campaign – 68%
Awareness increase – 56%

Interesting was that almost no one appeared to understand what conservation meant, or how it would benefit the community. Most of our outreach activities focus on the benefits of conservation to communities, and this is demonstrated by these results.

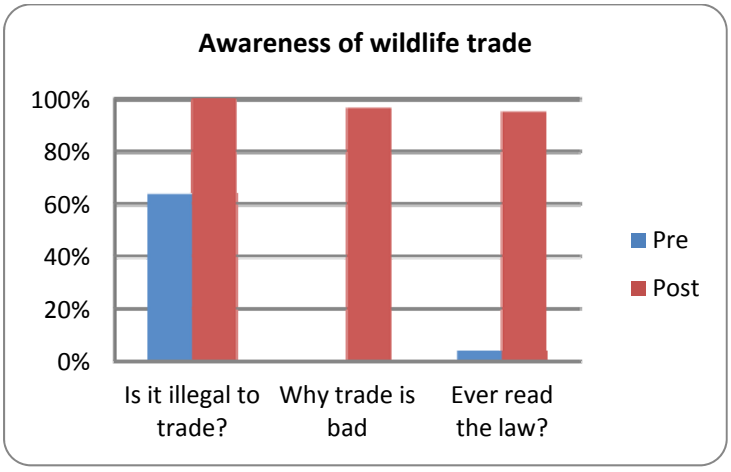
3.2.6. Awareness of personal value in assisting Saola conservation



Awareness level post campaign – 62%
Awareness increase – 28%

This was the subject that achieved the lowest change in awareness. We would need to focus more attention on awareness of practical ways villages can be involved directly in Saola Conservation.

3.2.7. Awareness of wildlife trade



Awareness level post campaign –97%
Awareness increase – 75%

This subject showed the highest change and the highest level of awareness post campaign. Wildlife trade is definitely an area that needs more attention in our outreach campaigns, and new activities need to be developed to deal specifically with this aspect.

3.2 - Implementation of the Process Framework for Involuntary Restrictions monitored, negatively affected persons identified, and appropriate benefits provided to eligible persons

Based on the process framework for involuntary restrictions, the following activities were carried out in key villages around the PST ESCA.

Stakeholder workshop
On 9 September 2011, a stakeholder's workshop was held over a period of two days in lak Sow.

Objectives:
The main objectives of the meeting were to:

- Provide feedback to the stakeholders as to the results of the preliminary Saola survey activity recently held.
- Provide information on enforcement operations on Nam Kading NPA as a model to be used for relevant discussions of enforcement on PST ESCA.
- To provide a platform for open discussion and inputs with regards to conservation of Saola within the PST ESCA.
- For stakeholders to develop a conceptual model for the protection of Saola in and around the PST ESCA

Attendance:

The meeting was well attended, with a full range of stakeholders from 3 districts and a total of 7 villages.

Position / organisation	People
District governor	2
Deputy district governor	1
PAFO	2
DAFO	5
IEWMP	8
WCS	2
News media	1
National University of Lao	1
Village foresters	9
Village head	7
Village leadership	5
officials	3
Village zone officials	2
TOTAL	**48**

Main results:
The meeting provided an excellent platform for feedback and discussion, resulting in a number of ideas and proposals.

The main discussions revolved around:

- Target groups for outreach activities
- Support for upcoming zonation and regulation development
- Ways to improve village livelihoods.
- The establishment of Saola “working groups” at different levels within the province.

The conceptual model process was well represented and the final outcome was the Saola conservation conceptual model for PST ESCA with the direct threats identified by the group as hunting and habitat loss. Interventions groups were: Outreach and awareness, protection activities and Village livelihood development (Figure.

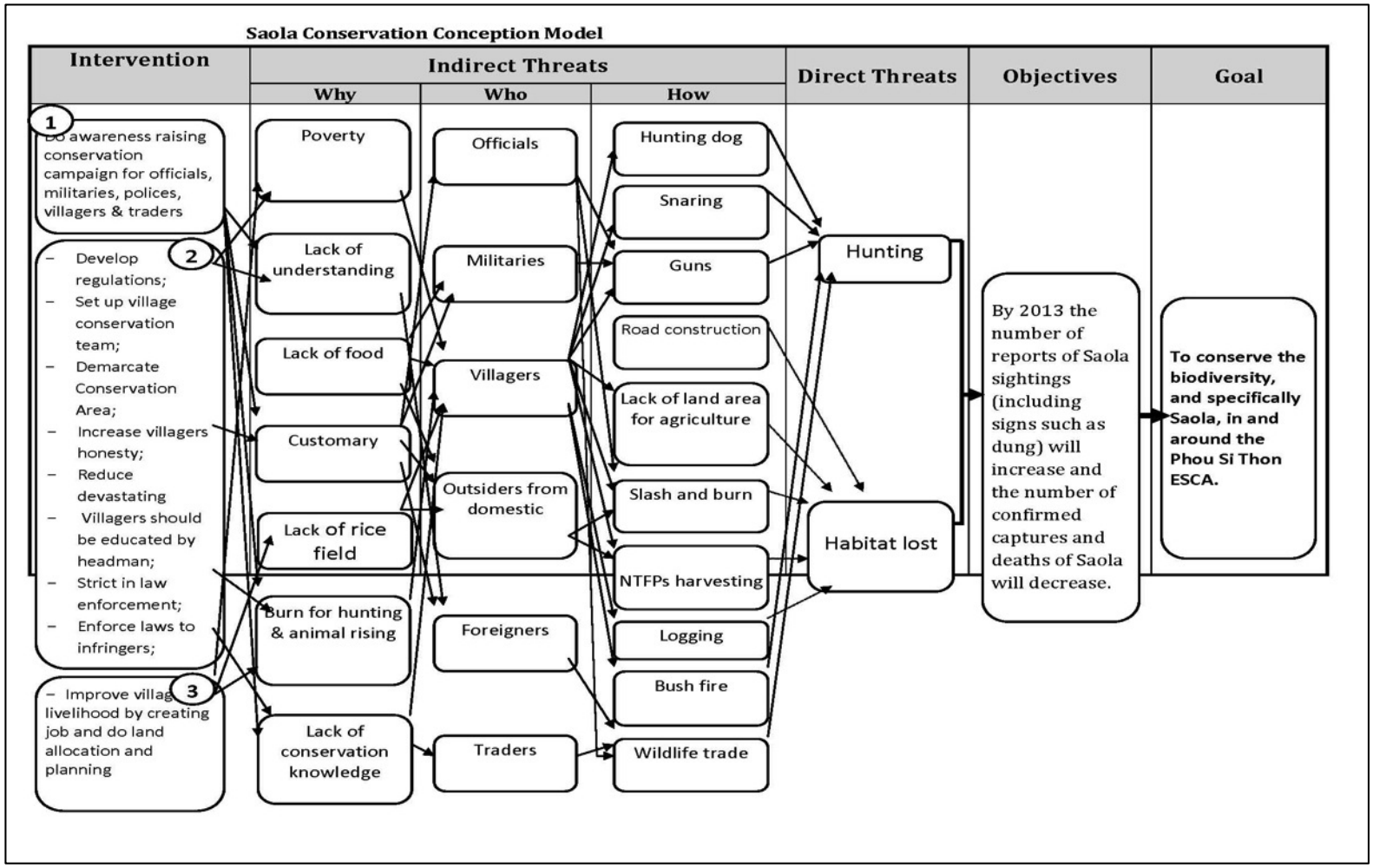


Figure 36. Conceptual model for conservation management in PST ESCA.

Outreach campaign
(See component 3.1)

Development local management regulations and zonation
The first step in the development of this activity was to study data received from the preliminary Saola survey, community mapping and stakeholder meeting activities. Based on the analysis of this information, a proposal was developed for:

1. The zonation of the PST ESCA into a Total protection zone (TPZ) and a Controlled Use Zone (CUZ)
2. Proposed regulations for the PST ESCA.

Local regulations highlight the main regulations, especially hunting, logging, shifting cultivation and domestic animals. Fines imposed for key illegal activities were also adapted based on the local situation and its relevance to the PA.

District consultation meeting – Zonation and regulations development.
On 27 June 2012, we presented the proposals to the district authorities at a meeting held at lak Sow.

Objectives:
The objectives of the meeting were:

- To outline the FPIC process.
- To obtain inputs relating to the zonation and regulations proposals.
- To obtain support for the next round of FPIS activities to be carried out in the field.

Attendance:
The meeting was chaired by the Xaychamphone District Governor and attended by the relevant district and village officials.

Position / organisation	People
District governor	1
Deputy district governor	1
Military	1

Police	1
IEWMP	3
WCS	1
Village zone officials	2
TOTAL	**10**

Results:
Good discussions and inputs were received during the meeting and a number of suggestions and changes were incorporated into the two proposal documents.
The main results or discussion points were:

- The District Governor explained that the district boundary had been moved, and recommended that we assist the district in a proposal to extend the boundary of the PST ESCA up to the position of the new district boundary. This would in effect increase the size of PST ESCA from 14 126 ha to 20 631 ha. (see map #)
- A number of suggested changes were made to the two proposals, and based on the changes, the meeting approved the proposals.
- The chairman approved the FPIC process activities in the field and promised to provide any assistance in the implementation of the activities.
- The District Governor agreed to identify a district official to act as district coordinator to the project.

As an outcome to the meeting, the two proposals were updated with the relevant recommended changes and a map produced reflecting these new updates.

IEWMP staff assisted the District Governor in drawing up a proposal for the extension of the PST ESCA boundary as per the recommendations of the meeting. This proposal was submitted to the provincial authorities for approval and is currently still in the approval process.


First round of village consultation – Zonation and regulation development
This activity took place from 18 July to 2 August 2012 by a team of technical staff from the IEWMP project in partnership with district and village authorities.

Key villages selected:

Six villages were selected for these activities based on their proximity to the boundary of the PST ESCA and their degree of dependence on the natural resources within the area.

1) Ban Phone si;
2) Ban Phone ngam;
3) Ban Sop khon;
4) Ban Khamkhouna;
5) Ban Phiang keung, and
6) Ban Kouang.

Village	Number of households	Population
Phonesi	230	725
Phone ngam	74	496
Sopkhon	44	307
Khamkhouna	98	408
Phiengkheung	24	149
Kouang	21	126
TOTALS	**491**	**2,211**

Implementation team:

The implementation team consisted of 6 people**:**

1. Team leader - Somxay Chaleunsack, Deputy head of IEWMP. Responsible for district coordination.
2. Technical advice - Ben Swanepoel, Site coordinator WCS – Assist with protocol development and technical input.
3. Regulation adviser - Phoungeun Vongphouthone - Law enforcement supervisor from IEWMP – responsible for leading discussions and advice regarding enforcement regulations,
4. Activity implementation in field - Xaysompheng Sengkhamyong, Assistant Site coordinator, IEWMP – responsible for overall implementation od protocols in field.
5. Technical assistant - Pasert, field assistant from IEWMP.
6. Technical assistant - Khamvai, District coordinator, Xaychamphone District office.

These people formed the core team responsible for all activities related to the FPIC process.

Activity goal

The goal of the activity was to facilitate a Free Prior Inform Consultation (FPIC) process around the development of the enforcement framework so that communities would have a real input into any decision making process related to their livelihoods and cultural heritage.

Objective of the activity

- Provide an overview of the FPIC process
- Obtain community inputs, ideas, concerns and comments related to the zonation and regulations proposed, ensuring that the consultative process was fair and informed.

- Gather baseline data from each village related to pervious and current zonation plans or local regulations.
- Confirm geographical information such as place names, rivers mountains etc for accurate mapping of zonation area.

Methods used:
Consultations were held separately in each of the six villages selected. Separate maps pertaining to each village land use area depicting local names and places were produced and used as bases for the discussions.

In order to ensure consistency in the process, the following agenda was followed during each of the villages visited.

Day one:

1) Meet with the Village executive with the following agenda
    a. Introductions
    b. Outline the FPIC process and timeline for future activities
    c. Brief overview of Zonation and regulations
    d. Complete questionnaire with executive
        - Contact person for the process, including contact details
        - Information on LUP
        - Current village regulations (Photo copy if possible)
    e. Make logistical arrangements for the consultation process tomorrow.
    f. Resources needed:
        - Questionnaire form
        - Presentations / Documents (non electronic)
            - FPIC process outline
            - Copy of Zonation and regulations proposals
            - Village executive questionnaire

Day two:

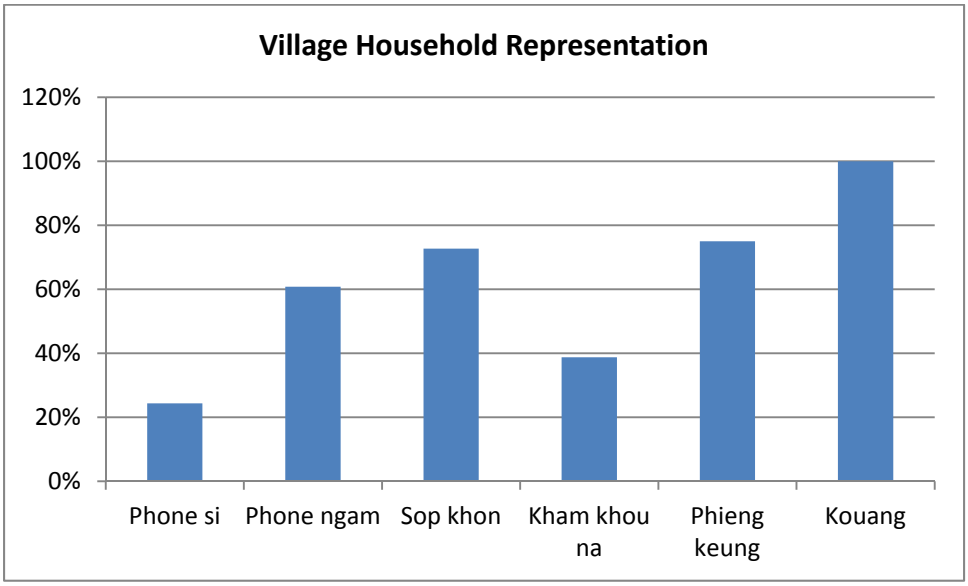
1) Opening address
    a. Welcome and introductions
    b. Purpose of consultation
        i. To provide information regarding the upcoming management activities.
        ii. To hear the views ideas and support for two aspects of PST ESCA management, Zonation and Regulations.
        iii. To record these views / ideas and try to incorporate them into the management strategy for the area.
        iv. To gain the support of the community for the protection of the PST ESCA.
2) Ice-breaker game
    a. Must allow for active participation – Stimulate interest and concentration
    b. Reward based
    c. Repeatable during the presentation
    d. Build up to finale and reward at the end of the meeting – To retain attention and attendance.
3) Introduction to Zonation
    a. Four zones and what they mean in terms of limitations and regulations.

4) Zonation PST
    a. Present map of PST Zonation proposal and provide orientation
    b. Explain zones on the map.
5) Zonation – Local area
    a. Present map of local area and ensure orientation
    b. Explain zones on the map
6) Discussion
    a. Allow for discussion (actively encourage discussion)
        i. In what way will this Zonation plan limit your previous access to recourses?
        ii. How will this affect your current livelihoods in the short term?
        iii. In what way will this limit your access to spiritual and cultural sites?
        iv. Can you think of any way to improve on the current plan?
    b. Record all important issues raised
        i. Name of person
        ii. Position / role
        iii. Key idea or request
        iv. Action
7) Summery and consensus of decisions
    a. Must try to reach consensus on all decisions
    b. If not, then record in details the issues for later discussion and attention.
8) Ice breaker continue
9) Regulations introduction
    a. Laws already relevant to PST
10) Highlight main regulations relevant to Village
    a. Take max of 4 - 6 main regulations to focus on
11) Discussions
    a. Allow for discussion (actively encourage discussion)
        i. In what way will these regulations limit your previous access to resources?
        ii. How will this affect your current livelihoods in the short term?
        iii. In what way will this limit your access to spiritual and cultural sites?
        iv. Can you think of any way to improve on the current regulations?
12) Summery and consensus of decisions
    a. Must try to reach consensus on all decisions
    b. If not, then record in details the issues for later discussion and attention.
13) Next steps in the process
14) Final ice breaker game and prizes
15) Signing of minutes
    a. Everyone present must sign (or thumb print)
16) Meeting close and thanks
17) Group photos

Results of the activity:

Representation
A total overall household representation of 43% was achieved during the process which is high based on the fact that villages are usually busy with some form of livelihood activities on a daily basis.

Each village has a slightly different system of representation, so in one village all households were represented, while in others, individuals represented a cluster of households.



Results of zonation consultation
Each village participated actively in the process and provided recommendations regarding:

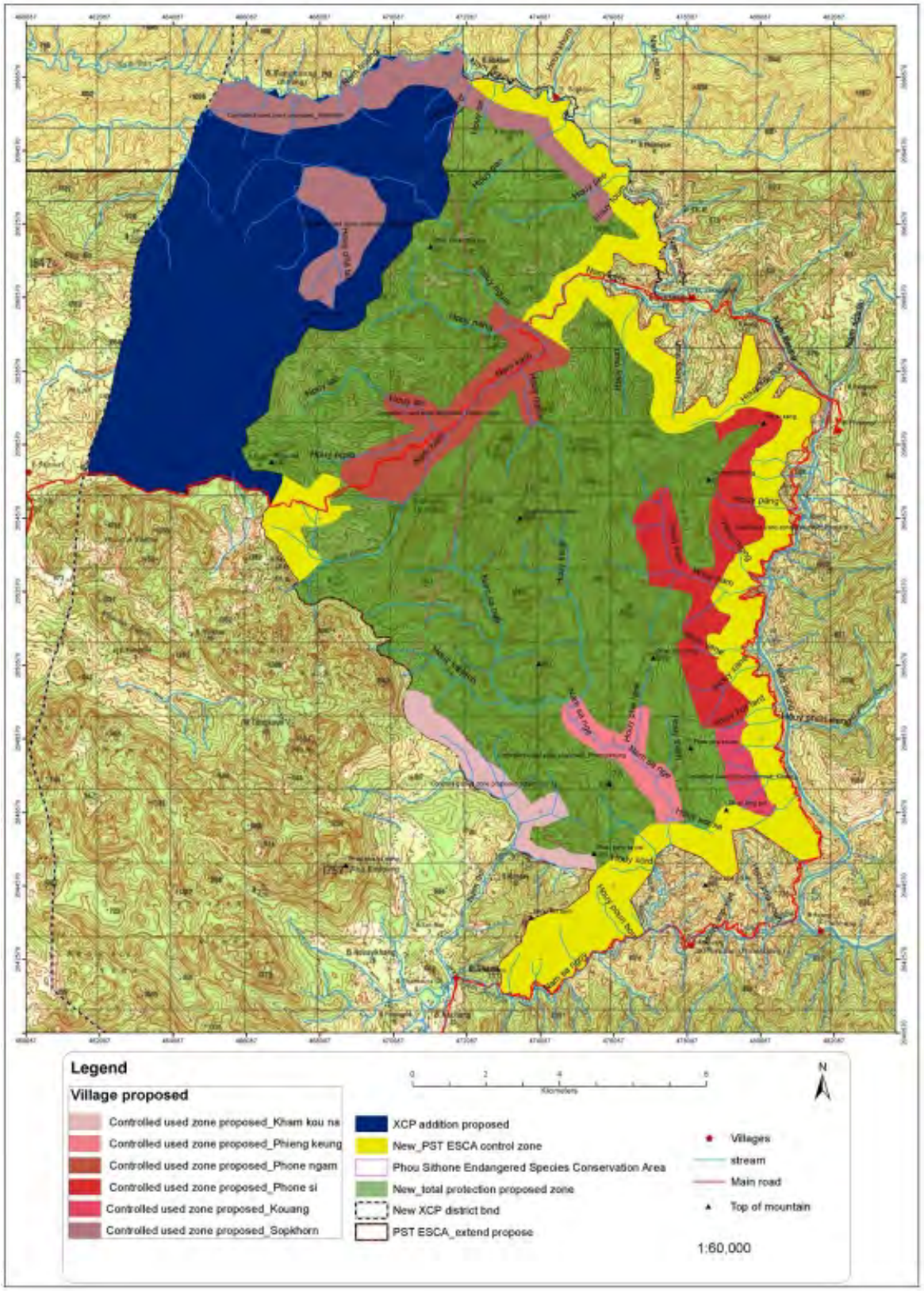
- The area to be allocated as the TPZ where no activities are to take place.
- The areas to be set aside as the CUZ where limited access to sustainable harvesting of NTFP are to be allowed.

All inputs received during the consultation process were recorded and mapped. A final map containing the combined inputs of all villages was produced (see figure 3)

Consensus was reached over a few important aspects such as:

- Where possible, boundaries between the zones should follow geographical boundaries such as rivers, roads and ridgelines.
- Households currently utilizing areas now inside the TPZ for agriculture should be given a reasonable time period of two seasons to stop the activities and that during this time no new agricultural land is to be cleared.

Generally speaking villages understood the principles around the zonation policy and stated that they would be willing to abide by the final decisions of the district and provincial authorities.


Legend
Village proposed
Controlled used zone proposed_Kham kou na
Controlled used zone proposed_Phieng keung
Controlled used zone proposed_Phone ngam
Controlled used zone proposed_Phone si
Controlled used zone proposed_Kouang
Controlled used zone proposed_Sopkhorn
XCP addition proposed
New_PST ESCA control zone
Phou Sithone Endangered Species Conservation Area
New_total protection proposed zone
New XCP district bnd
PST ESCA_extend propose
Villages
stream
Main road
Top of mountain
1:60,000
N

Results of PST ESCA regulation consultations

The already tried and tested regulations of the Nam Kading NPA were revised to make allowances for any PST ESCA specific situations and this document was used as a framework for discussions.

Generally speaking, villages agreed with the regulations, although some felt that fines were too low. All suggestions and inputs were recorded.

Collection of baseline information

Information was collected on current or past zonation activities at each village. In most cases zonation consisted of a very broad based village land use map painted onto a wooden board. In all cases, the maps were outdated and still included large areas within the PST ESCA as they were produced prior to the legal declaration of the Protected Area.

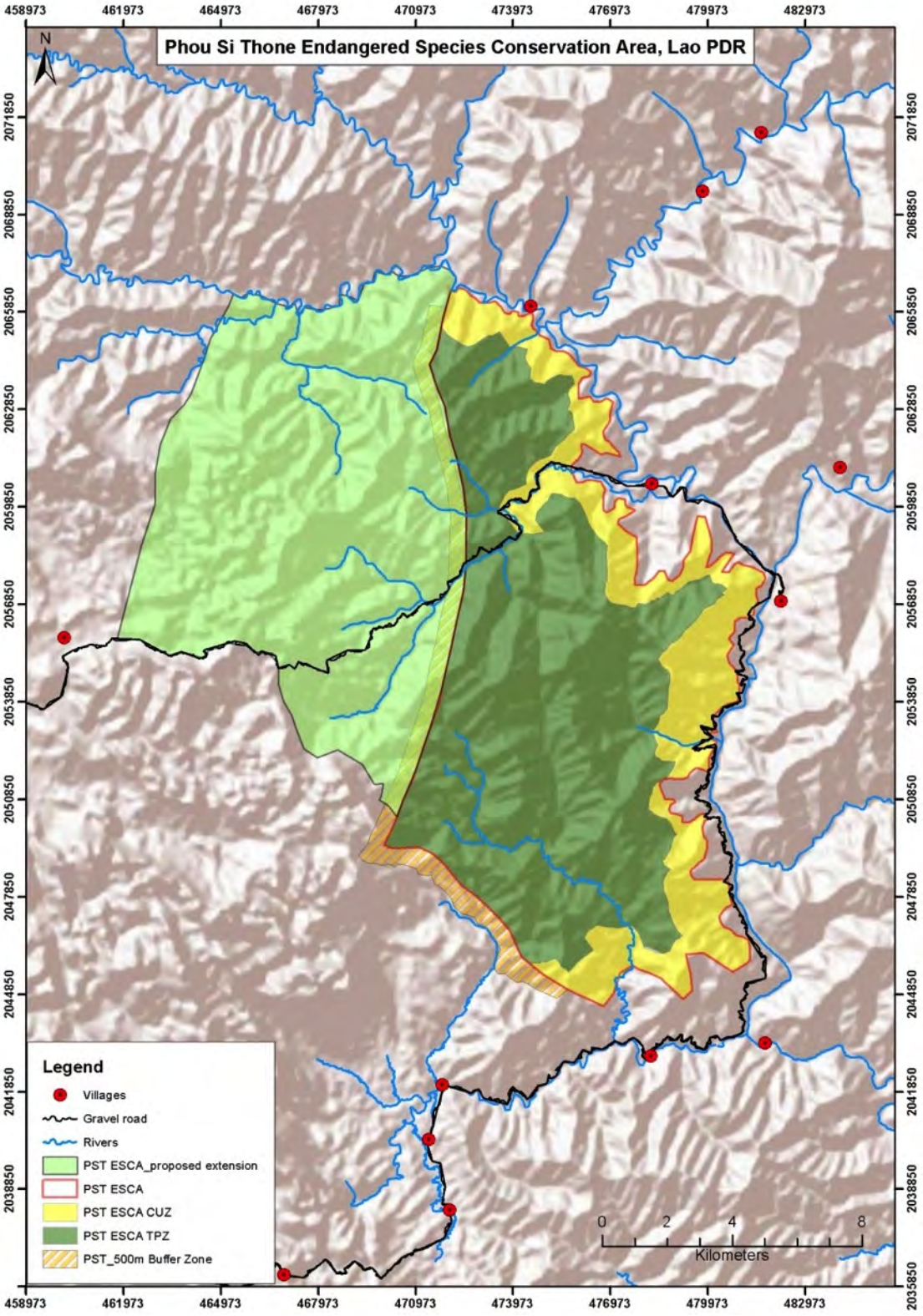
Two villages had written local regulations, also outdated and no longer relevant to the current situation.

Revision of inputs related to the first round of consultation

Technical inputs and recommendations were provided for all comments and suggestions received during the consultation process.

Many villages had proposed large areas of natural forest inside the TPZ to be allocated for NTFP as well as slash and burn activities. These areas were however not recommended by the technical advisors and were subsequently also rejected by district officials.

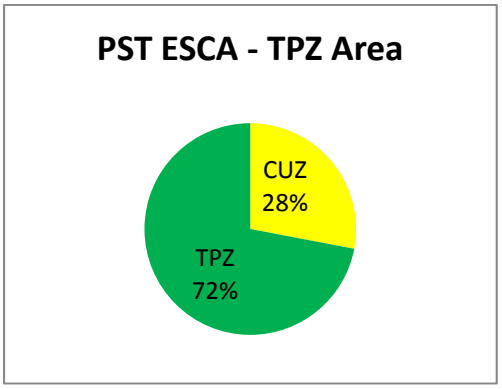
Based on all these considerations, a final revised zonation map was produced.



Total area is as follows:

Area	Ha

CUZ	3,972
TPZ	10,222
Proposed extension	11,474
TOTAL	**25,668**



All inputs around the regulations were discussed in detail and a final draft regulation document was drawn up.


Second round of village consultation – Zonation and regulation development.

On 19th September 2012, a meeting was held at the Xaychamphone district office in Phonesi.

Meeting objective:

Provide feedback to representatives of the district authorities and communities with regards to:

- The current progress of the FPIC process.
- Final results of the consultation process with regards to the zonation and regulation development.
- Obtain final inputs and recommendations regarding these maps and documents.
- To obtain official approval from the district authorities for the signing off on the two documents.
- To agree on the next steps in the process.

Attendance

All relevant local stakeholders were invited to the discussions. All 6 village representatives were present as were all district zone officials.

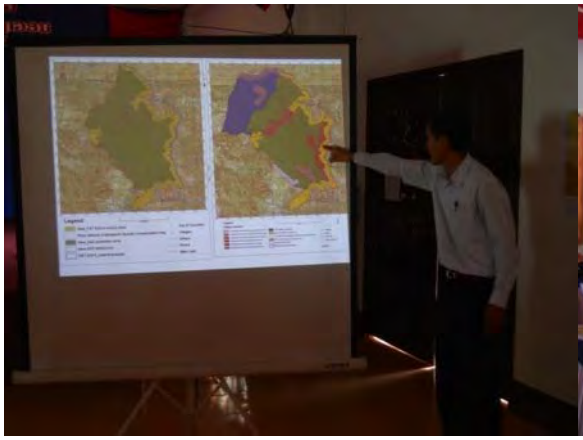
Position / organisation	People
Deputy district governor (meeting chairman)	1
Head of district administration office	1
DAFO deputy	1
DoNRE deputy	1
District administration office	1
IEWMP deputy director	1
WCS site coordinator.	1

IEWMP site coordinator assistant	1
IEWMP law enforcement supervisor	1
IEWMP officer	1
District police	1
District journalist	1
zone head	3
village head	6
TOTAL	**21**

Result:

Key results of the meeting were as follows:

- Final consensus on PST ESCA zonation and final approval by district governor.
- Final agreement of the position of the PST ESCA extension proposal.
- Final consensus on PST ESCA regulations, with some changes made:
    - Increase in the amount of fines for illegal snaring.
    - No hunting dogs allowed within the CUZ or the TPZ.
- District governor agreed to submit extension and regulation proposal to provincial authorities for approval with documental and technical support from IEWMP.



Final approval.

Final Provincial approval was obtained for both PST ESCA zonation and regulations documents.

The PST ESCA proposal was submitted to the provincial authorities, but to date no final approval has been obtained. We at IEWMP will continue to follow the approval process and assist the district in any way possible to make this extension a reality.

Physical boundary demarcation of the TPZ (Total Protection Zone)

From 7th till 24th December 2012, a small team from IEWMP combined with the district officials in order to carry out the demarcation activity in the six key villages.

The implementation team consisted of:

IEWMP technical and management staff – 4
Local villages - 18

Objective of activity:

The objective was to place physical markers in key access areas as a visual indicator of the location of the TPZ. This is necessary to provide clarity to the villages as well as to assist enforcement teams in the application of the regulations pertaining to the two zones of PST ESCA, the CUZ and the TPZ.

Activity methods:

The position of the demarcation signs were predetermined using:

- Results of the consultation process
- Consultation with enforcement patrol teams
- Spatial analysis of GIS maps of the area.

Final positions also took into account;

- Consultation with local villages
- Actual situations and conditions found in the field during implementation.

During activities in the field, the implementation team first met with village authorities and discussed the objectives, received inputs and support for logistical arrangements.

Field work was then undertaken, and GPS locations of the actual position of the demarcation markers were taken. (See figure:)

Results of the demarcation activity

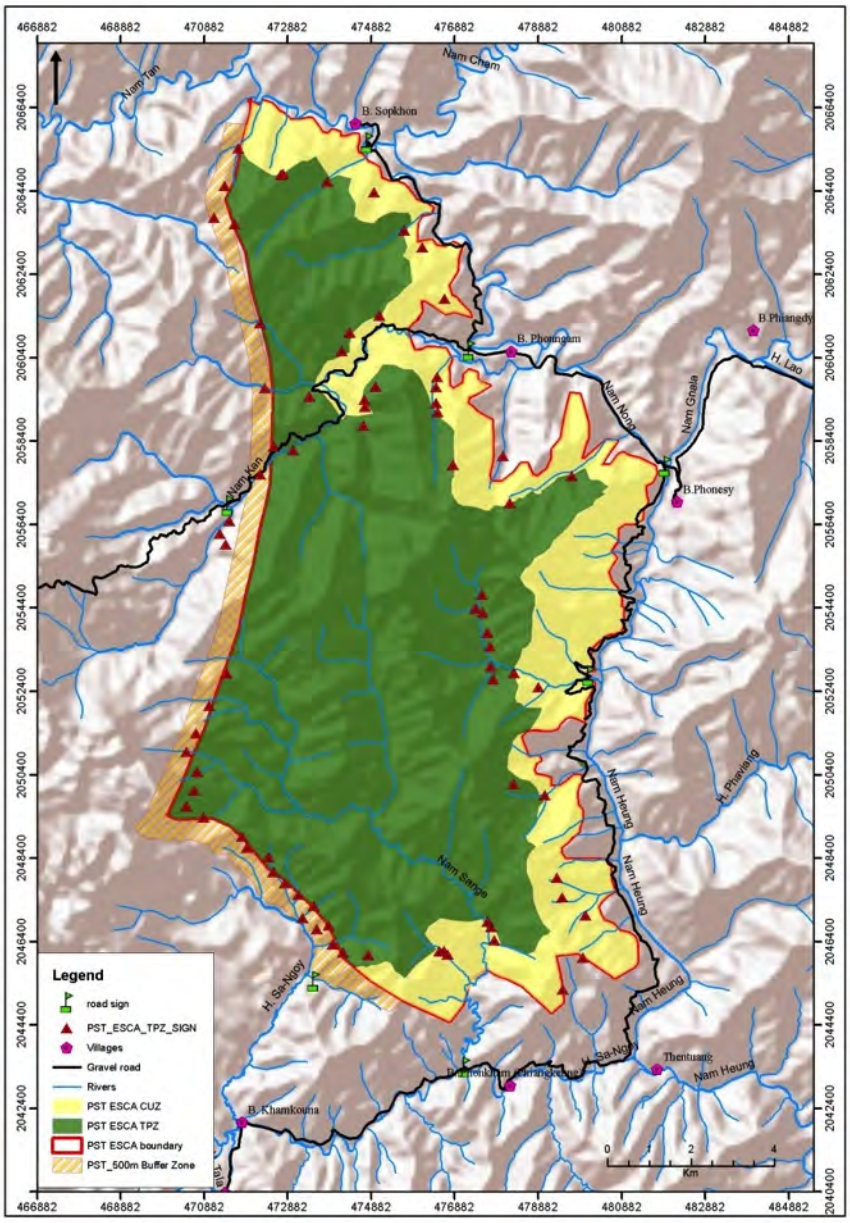
<u>Field demarcation signs.</u>

- 78 signs erected at key points accessed by local villages in their daily tasks of collecting NTFP's.

This is only the first phase in the demarcation of the zonation areas and many more markers will need to be placed in the field to adequately demarcate this ESCA. The amount of markers placed in the field was limited to the budget available to this activity.

Road signs

In addition to the field markers, 7 road sign boards were erected on main access routes in and around the PST ESCA.



Distribution of approved zonation and regulation documents

As a final step in the FPIC process involving the zonation and regulations of PST ESCA, a meeting was held in each of the 6 target villages in order to:

- Distribute final documents as well as support documentation and resources.
- Provide an overview of the documentation and answer any questions related to the implementation of the enforcement activities.
- Provide contact details and explain support mechanisms for enforcement or biodiversity related incidents that could potentially occur.
- Explain and discuss the way forward regarding current and future enforcement and village development activities.

The activity was conducted from 14th to 23rd March 2013 by the IEWMP technical team in partnership with local district and village officials.

IEWMP – 4 persons
District coordinator
Village representatives – 26

Results of the activity:

- Village regulations and demarcation maps signed by the village head in each of the six key villages.
- Distribution of documents:
    - Copy of regulations – 50 copies
    - PST ESCA zonation map – 20
    - Local village level zonation maps – 18
    - Wildlife protection categories lists (with photos of each species) – 10
    - CEPF project posters - 20

Zonation maps and posters were placed by the implementation team at public places such as schools, district notice boards and community meeting areas within each village.

Affected persons monitoring (APM)

In order to establish how communities around the PST ESCA could potentially be effected (Negatively or positively) it is important to develop a monitoring strategy to identify and mitigate measures to reduce the impacts on these communities.

The following strategy outline was drawn up to facilitate this process:

A. Initial phase

The following activities will be carried out within the key villages' sharing a common boundary with the current declared area of the PST ESCA.

1. **Collect baseline data.**
   a) Collect and evaluate for relevance, current partner datasets
   b) Conduct PRA
   c) Collect relevant socioeconomic data
   d) Conduct pilot nutritional studies through NUOL student project.

2. **Analyse data and develop implementation plan**
   a) Identify areas of risk (peoples, places, products)
   b) Develop indicators to use for monitoring and evaluation
   c) Based on the above, develop a monitoring plan and protocols.

B. EPM mitigation

Based on the baseline data collected, strategies will need to be developed in conjunction and cooperation with partner agencies to attempt to mitigate any negative impacts related to the improved application and enforcement of the Lao forestry, wildlife and aquatic laws pertaining to the PST ESCA.

1. **Mitigation strategy**
   a) Identify current and future infrastructural, financial and capacity inputs from partners (GOL, LUX, WWF, etc)
   b) Identify development / resource gaps
   c) Develop a mitigation strategy and implementation plan
   d) Begin with implementation

2. **Monitoring and evaluation**
   a) Implement annual monitoring plan
   b) Back to "Analysis and Mitigation strategy"

Based on the funding available for these activities through the CEPF grant, the following two important baseline activities took place during this grant period:

1. **Collect baseline data.**
   a) Collect and evaluate for relevance, current partner datasets
   b) Conduct PRA

Collect and evaluate for relevance, current partner datasets

We identified three sources of socio economic and village livelihoods data that could have use with regards to establishing a baseline and longer term monitoring of the village socio economic situation within the villages around the PST ESCA.

1) THPC household surveys (certain villages within Bolikhamxay province.
2) GoL socio economic data database of Bolikhamxay Province.
3) Luxemburg development project database of Bolikhamxay Province.

An evaluation on the usefulness of these data sets is as follows:

Summary

Survey	Organization	Coverage (us)	Seasonality	Value
Household Survey	THPX	1 Target village	Annually	Supplementary data for Ban Gouang
Socio economic survey	GoL	All villages	Annually	Provide district / Provincial level context
Nutritional studies	NUOL / IEWMP	1 Village (non key)	Once	Test methodology and evaluate benefit for implementation in target villages
Infrastructure development plans	LUX	All target villages	Updated regularly	Inform mitigation activities
Village grants / financing info	LUX	All target villages	Updated regularly	Inform mitigation activities

THPC annual Household survey

	HH survey - THPC	Relevance	Monitoring potential
1	Biographical information	Indirect - Medium	Background information
2	Home ownership	Indirect - Low	Background information
3	Agricultural land ownership	Indirect - Low	Background information
4	Access to drinking water	Indirect - Medium	Background information
5	Sanitation facilities	Indirect - Medium	Background information
6	Health	Indirect - High	Relevance to malnutrition and nutritional deficiencies
7	Access to electricity	Indirect - Medium	Impact on collecting wood and making charcoal
8	School attendance	Indirect - Low	Background information
9	Rice sufficiency	Indirect - High	Level of pressure on Natural resources
10	Rice deficiency	Indirect - High	Level of pressure on Natural resources
11	Source of rice supplementation	Direct and high	Level of pressure on Natural resources
12	THPC support	Direct and high	Mitigation measures
13	Crop production (past 12 months)	Indirect - High	Agricultural trends / food security
14	Livestock production past 12 months	Indirect - High	Agricultural trends / food security
15	Recent fish catch	Direct and high	Changes in NTFP use
16	Broad income breakdown past 12 months	Direct and high	Changes in income derived from NTFP
17	Wildlife observed	Direct and high	Wildlife population trends in CUZ

This survey is carried out annually by THPC staff, but only one of the surveyed villages corresponds with our project area and key villages, Ban Gouang.

As the survey is only applied to one of our target villages, it had limited value to our EPM project, but can be used as complementary information for Ban Gouang

GOL Annual Socio – economic survey

	GOL - Annual district / Provincial socio economic surveys	Relevance	Monitoring potential
1	Poverty information	Indirect - High	Pressure on NTFP
2	Village area	Indirect - Medium	Background information
3	Agricultural area	Indirect - Medium	Background information
4	access to facilities	Indirect - Low	Background information
5	Breakdown of economic activity	Direct and high	Trends in economic activities
6	Male female	Indirect - Medium	Population trends (Growth rate / pressure on NTFP)
7	Age profile	Indirect - Medium	Population trends (Growth rate / pressure on NTFP)
8	Population date	Indirect - Medium	Population trends (Growth rate / pressure on NTFP)
9	Mortality data	Indirect - Medium	Population trends (Growth rate / pressure on NTFP)
10	Immigration	Indirect - Medium	Population trends (Growth rate / pressure on NTFP)
11	Employment categories (private or public	Direct and high	Dependence on NTFP
12	Temp labor activities	Direct and high	Dependence on NTFP
13	Dwelling types	Indirect - Low	Background information
14	Sanitation	Indirect - Low	Background information
15	Clean water	Indirect - Low	Background information
16	Electricity	Direct and high	Type of activities -pressure on wood / charcoal etc
17	Education	Indirect - Low	Background information
18	Agriculture yields	Indirect - High	Agricultural trends / food security

These surveys are carried out annually by the district officials in all villages within the province, including the project villages. While information contained in the survey is fairly broad, it does provide a good contextual socio economic framework at a province, district and village level.

Some Important information that could be gained from the analysis of this data is as follows:

- Village population growth trends. (Are demands for resources growing or shrinking?)
- Average level and trends of poverty within the village / district level. (Dependence on natural resources for daily survival needs)
- Access to facilities that could improve access to markets, improve production capabilities, improve access to intensification of agriculture. (Are new or improved economic activities or resources' coming on line that will impact the village / district)

This dataset can be consulted on an annual basis to provide *the overall socio economic context* within which the more detailed PRA results can be evaluated.

For more detailed socio economic data for each village, it could be more beneficial to collect data directly from the village authorities to ensure more village relevant data and to promote discussion around future and current social economic developments not included in the GOL survey.

LUX, and other NGO's working in this district

	LUX - Current and future planed interventions	Relevance	Monitoring potential
1	Details of village grants to be issued	Direct and high	Mitigation
2	Details of village infrastructural interventions	Direct and high	Mitigation and opens new avenues of exploitation

Important information available annually to be used to evaluate potential livelihood improvements and opportunities for collaboration with other NGO's operating in the district.

Conduct participatory rural appraisal (PRA) also known as rapid rural appraisal (RRA) activity.

This activity provided the main source of baseline data that will be needed for the EPM as it was tailor-made to answer questions and monitor trends relevant to livelihoods impacted by improved PA management on PST ESCA.

The methodology developed by WCS relating to the RRA was applied to this PPA process. Full details of the methodology are contained in the WCs manual “Methods manual for RRA”.

The methodology recommends the following steps in the data gathering process:

1. Establishing relationships with villages.
2. Explaining the objectives of the activity
3. Listing forest resources
4. Ranking forest resources
5. Participatory sketch mapping of resource areas
6. Location ranking
7. Resource trends
8. Problem analysis
9. Wealth ranking
10. Income and expenditure ranking
11. Seasonal calendar
12. Summary of data and conclusion

Implementation of the activity followed these steps

Objective of the activity:

The main objectives of this activity were:

- To assess the current status and importance of natural resource use by villagers within the 6 villages.
- Identify challenges facing villages with regards to current and future natural resource use.
- Identify opportunities for the development of livelihood activities linked to the natural resources of PST ESCA.

Target villages:

1. Sopkhone,
2. Phon Ngam,
3. Phonesi,
4. Kouang,
5. Phieng keuang
6. Khamkouna

The implementation team consisted of:

- Mr. Somxay Chaleunsack, Deputy head of IEWMP National Project Director and Forest Resources Management Unit, PoNRE as local authorities permission and coordination
- Mr. Xaysompheng Sengkhamyong, IEWMP Assistant Site Coordinator as field technical advisor on PRA survey
- Mr. Bounthanom Sithixay, IEWMP officer on PRA survey
- Mr. Pasert Chanthavongsa, IEWMP officer on PRA survey
- Two persons from DoNRE and DAFO
- Approximately 504 family representatives were involved this activity implementation.

Training of the implementation team.

On 31 may 2013 in preparation for the PRA activity, a two day training course was held at XCP administration office in Phone Si.

10 persons selected from IEWMP staff and XCP district officials was provided with training on the implementation of the RRA according the protocols for this activity set out in the WCS “Methods manual for RRA”

Training modules presented during the course consisted of the following:

- Introduction to PRA
- Establishing relationships with villages
- Abundance listing of forest resources or NTFPs
- Ranking of NTFPs importance species
- Participatory sketch mapping of NTFPs location
- NTFPs decline or trend
- Problem analysis
- Wealth ranking
- Income and expenditure ranking
- Seasonal calendar

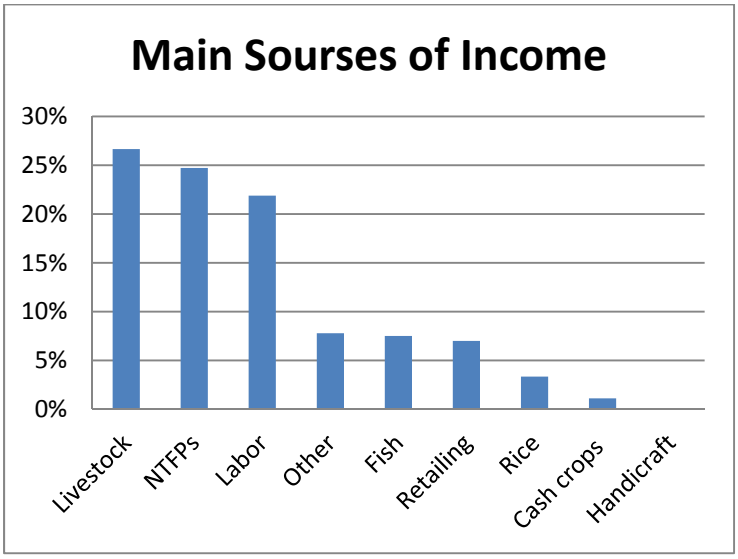
PRA activity
The PRA activity took place during the month of June 2013.

The following is a summary of the most important data collected at the 6 villages during the survey. A full report is available.

Main sources of income

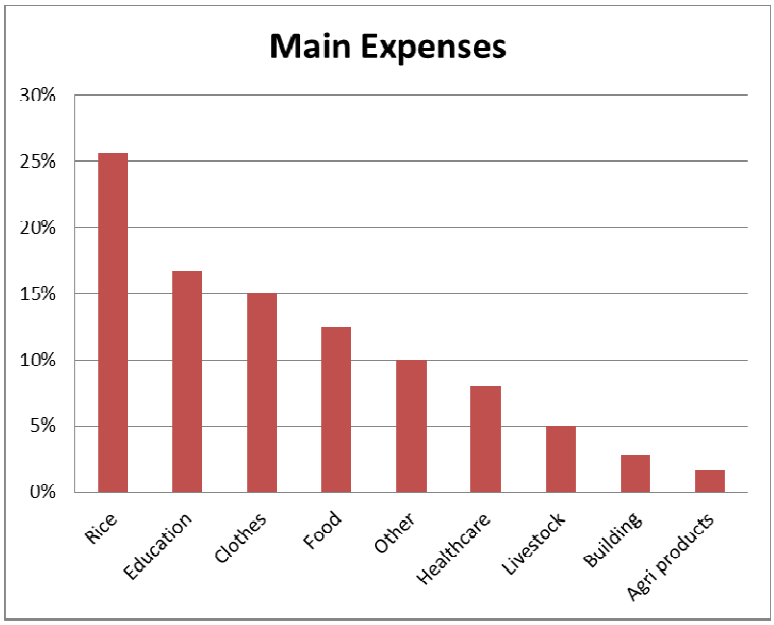
It is clear that Forest resources rank high in terms of income generation for villages around PST ESCA, second only to livestock rising.

Village	Livestock	NTFPs	Labor	Other	Fish	Retailing	Rice	Cash crops	Handicraft
Sopkhone	37%	37%	20%	7%	0%	0%	0%	0%	0%
Phonengam	5%	53%	27%	0%	2%	3%	7%	3%	0%
Phonesi	27%	13%	17%	10%	0%	27%	3%	3%	0%
Ban Kouang	22%	23%	11%	8%	33%	2%	0%	0%	0%
Phiengkeung	37%	8%	30%	17%	7%	2%	0%	0%	0%
Khamkouna	33%	13%	27%	5%	3%	8%	10%	0%	0%
Average	**27%**	**25%**	**22%**	**8%**	**8%**	**7%**	**3%**	**1%**	**0%**
Rank	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**



Main sources of expenditure.

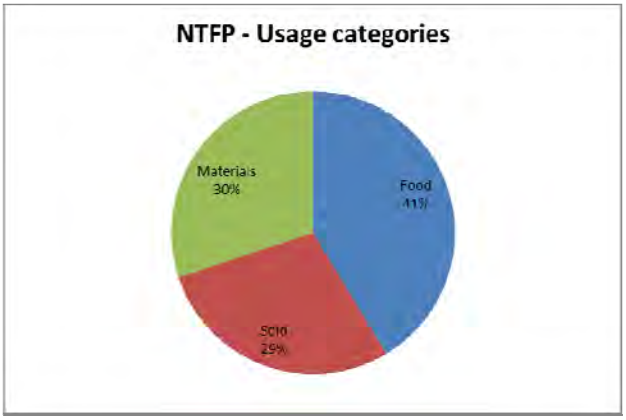
Village	Rice	Education	Clothes	Food	Other	Healthcare	Livestock	Building costs / maintenance	Agricultural products
Sopkhone	27%	0%	20%	10%	17%	13%	13%	0%	0%
Phonengam	20%	15%	17%	17%	7%	12%	7%	3%	3%
Phonesi	23%	3%	20%	12%	10%	7%	5%	0%	3%
Ban Kouang	30%	13%	10%	18%	17%	5%	3%	3%	0%
Phiengkeung	30%	27%	13%	13%	5%	5%	0%	7%	0%
Khamkouna	23%	42%	10%	5%	5%	7%	2%	3%	3%
Average	**26%**	**17%**	**15%**	**13%**	**10%**	**8%**	**5%**	**3%**	**2%**
Rank	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**



Abundance listing of forest resources.

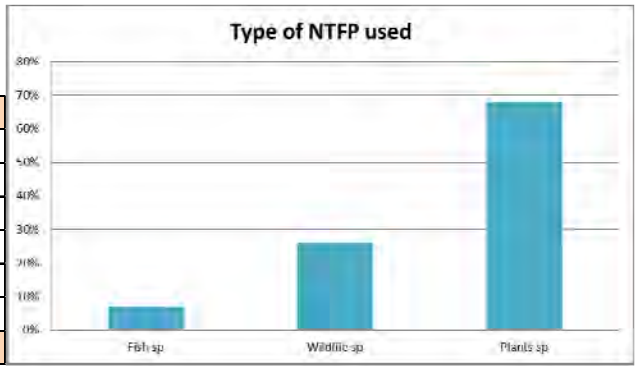
Of the 96 NTPF species identified as been collected for use by villages around PST ESCA, 71% of these forest resources are used directly for their daily personal needs. NTFP resources thus still contribute significantly to the daily survival of villages around PST ESCA.

Village	Food	Sold	Materials
Sopkhone	32%	21%	47%
Phonengam	25%	38%	38%
Phonesi	33%	38%	29%
Kouang	54%	26%	20%
Phiengkeung	61%	16%	23%
Khamkouna	43%	33%	25%
Total	**41%**	**29%**	**30%**



The type of NTFP species used are as follows:

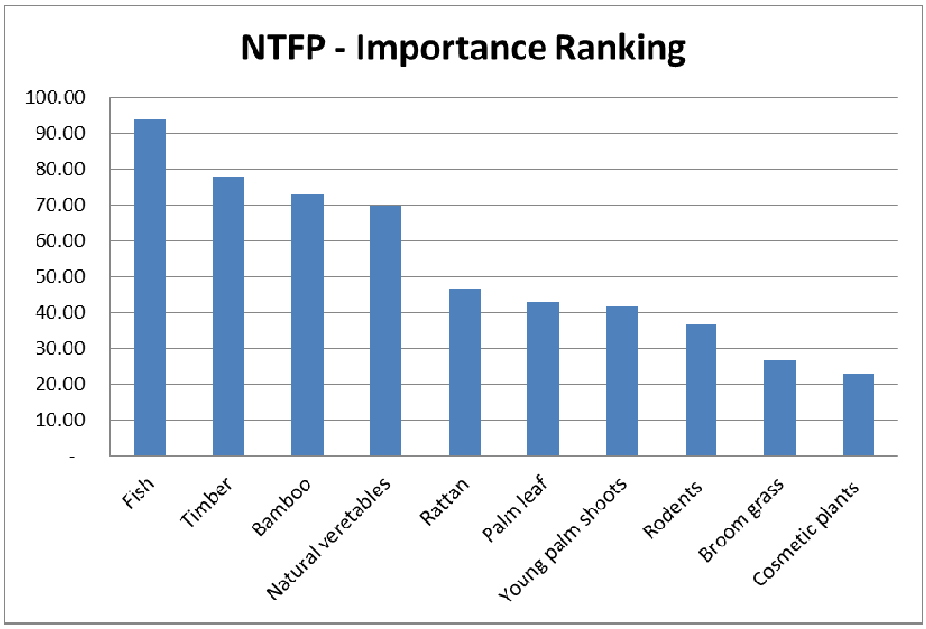
Village	Fish sp	Wildlife sp	Plants sp
Sopkhone	11%	16%	74%
Phonengam	8%	13%	79%
Phonesi	10%	14%	76%
Kouang	3%	34%	69%
Phiengkeung	6%	42%	52%
Khamkouna	4%	37%	59%
Average	**7%**	**26%**	**68%**



Ranking of NTFP importance:

The following NTFP's were considered to be the top 10 most important resources and are ranked as follows:

NTFP	Sopkhon	Phonengam	Phonesi	Ban Kouang	Phiengkeung	Khamkouna	Score	Ranking
Fish	17	14	18	11	16	18	**94**	1
Timber	15	14	8	8	14	19	**78**	2
Bamboo	13	12	11	10	13	14	**73**	3
Natural veretables	10	15	9	14	10	12	**70**	4
Rattan	6	9	12	7	9	4	**47**	5
Palm leaf	10	7	-	9	7	10	**43**	6
Young palm shoots	#	-	10	13	13	6	**42**	7
Rodents		8	7	8	8	6	**37**	8
Broom grass	12	5	-	10	-	#	**27**	9
Cosmetic (Coscitum usitatum)	8	9	6	-	-	#	**23**	10



NTFP - Trends

In almost all cases, villages believe that resources are on the decline and will continue to decline over the next 5 years.

Key reasons stated are:

- Over utilization
- Habitat destruction
- New market demands
- Lack of land use management
- Lack of management / enforcement

English name	5 years ago	Current status	5 years prediction	Causes
Fish	Plenty	Declined	Continue to decline	Over fishing, Lack of patrolling, week on regulation enforcing and non indiginous fish species introduced by THXP.
Hardwood timber	Plenty	Declined	Continue to decline	Over cutting, lack of management and zonning
Bamboo	Plenty	Declined	Continue to decline	Overharvesting, reach maturity to early.
Natural vegetable	Plenty	Plenty	Decline	Over harvesting and habitat destruction
Calamus sp.	Plenty	Declined	Continue to decline	Over harvesting and habitat destruction
Kaw (Livistona cochinchinensis)	Plenty	Declined	Continue to decline	Over harvesting and habitat destruction
Palm young shoot (Daemonorops schmidtianna)	Plenty	Declined	Continue to decline	Over harvesting and lack of management and zonning
Rodents	Plenty	Plenty	Decline	
Broom grass	Plenty	Declined	Continue to decline	Over harvesting and new markets to Vietnam
Cosmetic (Coscitum usitatum)	Plenty	Declined	Continue to decline	Over harvesting and lack of management and zonning

Problem analysis:

Using the top 10 NTFP for each village, an exercise was conducted to provide possible solutions to the sustainable harvesting or these key TNFPs in order to:

1. Halt the decline of the resource
2. Find ways to increase the harvest sustainably

A summary of the problem analysis of the top three resources are as follows:

Fish:

Fish					
Village	**Problem**	**Causes**	**Possible solutions**	**Activity**	**Responsibility**
SOPKHON	Declining catch	Outside people fishing Non indigenous fish species introduced into the system by THPC	Implement stricter enforcement of the current fish conservation zone (FCZ) regulations. Discuss with THPC fishery team	Revise fish conservation zone regulation and improve management.	Village authority, DAFO, DoNRE
Phonesi	Declining catch	Over fishing, only recently developed a FCZ.	Implement stricter enforcement of the current fish conservation zone (FCZ) regulations.	Increase village awareness of FCZ, purpose and regulations.	District and village
Ban Kouang	Declining catch	Result of damming Non indigenous fish species introduced into the system by THPC	Implement stricter enforcement of the current fish conservation zone (FCZ) regulations. Discuss with THPC fishery team	Revise fish conservation zone regulation and improve management.	Provincial, District, and village
Phiengkeung	Declining catch	Population growth, Unsustainable harvesting.	Set up FCZ	Survey the area to set up FCZ including regulation, awareness and management plan.	Provincial, District, and village
Khamkouna	Declining catch	Population growth, Unsustainable harvesting.	Set up FCZ	Survey the area to set up FCZ including regulation, awareness and management plan.	Provincial, District, and village

Timber products

Timber products					
Village	**Problem**	**Causes**	**Possible solutions**	**Activity**	**Responsibility**
SOPKHON	Declining availability	Overharvesting Increased population growth.	Review village land use zoning Identify areas for harvesting and follow regulation when using.	Carry out PLUP activity including zoning od areas for harvesting, regulations and management plan	District and village
Phonengam	Declining availability	Overharvesting Increased population growth.	Carry out land use zoning and develop management plan for harvesting.	Carry out PLUP activity including zoning od areas for harvesting, regulations and management plan	Provincial, District, and village
Phonesi	Declining availability	Population growth Uncontrolled logging Slash and burn	Carry out land use zoning and develop management plan for harvesting.	Carry out PLUP activity including zoning od areas for harvesting, regulations and management plan	Village authority, DAFO, DoNRE
Phiengkeung	Declining availability	Slash and burn Illegal logging	Increase awareness and understanding of impacts of unsustainable harvesting	Carry out PLUP activity including zoning od areas for harvesting, regulations and management plan	Village
Khamkouna	Declining availability	Overharvesting Slash and burn	Improve forest fire management Control slash and burn activities.	Carry out PLUP activity including zoning od areas for harvesting, regulations and management plan	District and village

Bamboo

Bamboo					
Village	**Problem**	**Causes**	**Possible solutions**	**Activity**	**Responsibility**
SOPKHON	Declining availability	Overharvesting Early maturation	Commercial planting	Set up babboo plantation (trial)	Provincial, District, and village
Phonesi	Declining availability	Early maturation	Commercial planting	Set up babboo plantation (trial)	Provincial, District, and village
Khamkouna	Declining availability	Habitat descuction due to uncontrolled wild fires Early maturation	Improve wildfire management Control slash and burn activities	Zonation of areas for bamboo production	District and village

Comments

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Based on the results of the PRA, a number of important observations can be made.

1. Forest resources still make up a significant part of the daily survival needs of villages. (71% of forest resources collected are used directly by villages and not sold)
2. Forest resources are the second most important income generator in villages around the PST ESCA.
3. Almost all of the top forest resources are on the decline.
4. There are a handful of common reasons for this decline.
    a. Over utilization
    b. Population growth
    c. Habitat destruction
    d. Lack of adequate land use zoning and management

e. Lack of enforcement of regulation
f. Lack of awareness of regulations

5. There are a handful of solutions that could be applied to these problems that would make a significant difference to the livelihoods of villages around PST ESCA.

    a) PLUP in all key villages
    b) Establishment of fish Conservation Zones
    c) Improvements to current FCZ's
    d) Trial of intensive bamboo production area.
    e) Increased awareness around current regulations regarding zoned areas.
    f) Improved enforcement of current regulations
    g) Improved fire management

The task from this point on is to find the most appropriate activities and apply them to areas with the highest need, and this will be a challenge for all the stakeholders over the next period.

3.3 - Report on the nutrition training and support for the loss of access to non-timber forest products in areas targeted for enforcement efforts

Nutritional training and support activities for loss of access to NTFP's flows directly from the completion and analysis of the FPIC process combined with the findings of the PRA baseline study.

Throughout this grant period, activities within the SPT ESCA have proved to be challenging given the security situation of the area, the difficult logistics of the area and the daily work cycles of the villages. The process of the FPIC as well as the PFIR have followed a pace and course directed by the needs and considerations of villages as well as the logistical and political realities of the area.

During this grant period all activities under the agreed FPIC and PFIR processes were carried out in the key villages around the PST ESCA. (see relevant report sections). The PRA activity has now also provided us with the data and information needed to develop a needs driven monitoring and mitigation strategy. Prioritisation of activities will very much be based on the real needs of the communities. As this body of data and information is analysed over the next month, we will be in a strong position to develop relevant and effective mitigation activities.

Already plans are in place for the implementation of a number of livelihood development activities related to NTFP's in a number of key villages. While nutritional training did not

emerge as a priority activity at this early stage of the consultation process, it remains an important part of the overall mitigation process currently still in progress.

3.4 -Report documenting Saola stories and occurrence based on conversation with local people

1. On 13/1/2013 Mr Maimi and Mr Maikong both from Phongam villager were travelling to Lakxao by motorbike. On the return trip on the 16/1/2013just past Phonkham village they saw a male Saola near the road (17:15 pm) about 50 meters away from them. The Saola was in vegetation about 40 – 43 cm of height. They were able to watch the Saola undetected for up to 6 minutes before it walked back into the forest.

2. On 23/1/2013 Mr Khaimanh and Mr Onxieng, both from Phon ngam villagers were travelling to Viengthong District by motorbike for their relative's wedding. One the return trip, 25/1/2013 at about 15:05 pm they saw a male Saola walking along the Namkan stream. About 50m from their position. They were not able to photograph the animal as it was raining at the time and the Saola was in dense forest. The Saola was a male, with horns of about 25cm in length.

Components 4 Planned:
Foundation of management capacity and financial support put in place to sustain Saola protection activities in the targeted area(s)

Component 1 Actual at completion:

4.1 Three Annual Reports of conservation activities in the targeted area(s).

Two regular reports were completed for conservation activities in the targeted area. These were;

1. CEPF biannual progress reports were made available to government counterparts
2. The government prepared their own monthly reports which were submitted to relevant government agencies.

4.2 Bi-annual financial reports to the GOL and CEPF.

Financial reports were submitted to CEPF in accordance with the grant reporting schedule. In addition to this WCS provided regular financial updates to the government of Lao PDR counterparts at the Provincial Office of Natural Resources and Environment.

4.3 Contact made with at least 7 new donor sources. At least two major funding proposals for Saola conservation prepared. If REDD feasibility is positive, voluntary carbon market sales developed

During the project period WCS submitted several application for funding to continue and build on the actions implemented during the CEPF project period. Further details are provided in the section "Additional Funding" below.

WCS submitted two separate funding applications to the Save Our Species Fund, one in collaboration with the Saola Working Group. The application partnering with the SWG was not successful although the independent submission by WCS was funded and will

contribute to reducing threats to Saola, securing habitat in PST ESCA, and further building awareness of Saola conservation issues at the local community level.

WCS also partnered with the SWG to submit a funding application to the Macarthur Foundation, which was funded, and we are currently implementing this project. One component of the project is an intensive test of a novel survey method involving the analysis of DNA contained in the blood meal of leeches. One of the sites selected for these tests is PST ESCA and the results may further independently confirm the presence of Saola in the area. Under this Macarthur grant WCS and government counterparts will also trial community based incentive mechanisms targeting the collection of snares from PST ESCA and surrounding areas. WCS prepared and independent submission to the Macarthur Foundation but this was not funded.

WCS successfully applied for funding from the Margaret A. Cargill Foundation and this project is also currently being implemented with PST ESCA as one of the target areas for activities. This project will provide several outcomes including improved conservation planning, participatory land use planning, develop agreements for sustainable use of wildlife, timber and NTFP's, improve and support the enforcement of national laws and regulations, develop capacity of local protected area management agencies, and provide development assistance to communities.

WCS has also successfully negotiated with the Theun Hinboun Hydropower Company to contribute finances to the ongoing management of the PST ESCA until the end of 2015. This funding is not restricted and as such can be used to fill gaps or invest in new interventions as determined by WCS and government of Lao PDR partners.

The SWG coordinator received funds from this CEPF project to further the conservation needs of Saola both within Lao PDR and internationally by building relationships with potential donors and conservation partners as well as raising funds. This resulted in several achievements including:

- Introduced Saola to the US Association of Zoos and Aquaria, at their mid-year meeting. This resulted in expressions of interest in deeper collaboration on Saola conservation from the Los Angeles and San Diego zoos.

- Introduced Saola to the mid-year meeting of the European Association of Zoos and Aquaria (EAZA). This resulted in an invitation to speak on Saola at EAZA's larger, annual meeting in September 2012, and invitations from two member zoos (Beauval, France and Copenhagen) to submit Saola grant proposals (which was done).

- Wrote and submitted a Saola grant proposal (after a successful LoI) to the MacArthur Foundation. We are currently waiting for MacArthur's answer.

- Wrote and submitted successful saola grant proposals to the Liz Claiborne Art Ortenberg Foundation ($54,000, to strengthen protection in Nakai-Nam Theun NPA), the University of Copenhagen ($3,000, for research collaboration) and the Los Angeles Zoo ($12,450, to ship the saola tissue to the US, and support for the MSc of Chanthasone Phommachan).

- Nominated and helped prepare the application for a young Lao professional to be a Zoological Society of London (ZSL) EDGE Fellow. We are currently waiting for ZSL's answer.

- Helped Vinh University and the Lao Wildlfe Conservation Association prepare small grant proposals for Saola to CEPF.

- Wrote and submitted a CEPF small grant proposal on behalf of the SWG.

4.4 Trip report from the exchange visit with another CEPF recipient

Extensive planning and negotiation around a study tour to the Vietnamese Saola Protected Areas were conducted between the relevant authorities in both countries.

The first attempt in October 2012 failed due to GoL protocol issues around a visit to the Saola areas which are both located in a sensitive border area.

A second attempt in June 2013, based on a revised and scaled down version of the initial proposal also failed due to governmental protocols and permission was not granted.

Study tour proposal:
Planning around the exchange trip was developed jointly by both WCS in Laos and WWF in Vietnam, and consisted of the following:

The key objectives:

a) Improve knowledge and understanding of Saola conservation from a regional perspective, including threats and opportunities.
b) Share understanding of Saola status within each of our areas.
c) Improve knowledge and understanding through the sharing of our Saola Conservation Strategy for each area.
d) Work together to exchange ideas on areas of mutual concern and where we share common challenges within our strategies.
e) Improve or knowledge and understanding of Saola conservation through visiting the conservation areas and infrastructure within the region.

Study tour area:

As the distribution of Saola is limited to a small area of the Annamite mountain range in Laos and Vietnam, it is logical that Vietnam would be the place to carry out the study tour.
The specific areas selected for the study tour are the two key Saola Protected areas in Vietnam, The Saola Hue (1) and the Saola Quang Nam (2). Both areas are Provincial Protected areas, and while Soala Hue has been operational for many years, the Saola Quang Nam has only recently been established, and has been through an intensive planning and implementation process.

Both areas are currently implementing a very large project funded by a German development bank, and a key focus of the project is transboundry co-operation between Laos and Vietnam.
Based on the above, I feel that the opportunity to gain valuable insight and understanding with regards to on the ground enforcement and general conservation strategy in these two areas is excellent.

Participants:

The activity budget proved by this grant makes allowance for a total of 7 Participants. Participants should be selected based on the following:

a) Staff of IEWMP directly involved with the implementation of the CEPF grant.
b) Key partner (The person) directly involved with decision making with regards to the implementation of the grant.
c) District staff that will be directly involved in the implementation process.

As this is a "study tour" each participants will be tasked with specific objectives that will need to be met and reported on during and after the study tour. Objectives will be based on individual role within the project and their individual developmental needs. They will also provide input and presentations to the Vietnamese counterparts and investigation and reporting of specific and relevant aspects during and after the study tour.

Participant approved as follows:

NO	Name	Position	Organization
1	Mr Vilay Sisamout	Xaychampone District Deputy Head	Xaychampone District
	Mr Chandi Heuangvilai	Head of Xaychampone District Agriculture and Forestry Department	DAFO (District Agriculture and Forestry Office)
2	Mr Somxay Chaleunsak	Deputy Director of IEWMP	IEWPM (Integrated Environment and Wildlife Management Project)
3			
4	Mr Phougeune Vongphouthone	Law enforcement supervisor	IEWMP
5	Mr Xaysompheng Sengkhamyong	Project assistant	IEWMP
6	Mr Phoxay Outhai	Forest patrol team leader	IEWMP
7	Mr Ronald Ben Swanepoel	Site coordinator	WCS (Wildlife Conservation Society)

Proposed itinerary:

Below is a basic concept itinerary that could change as logistical arrangement and permissions progress

No	Day	From	To	Accomodation	Morning	Afternoon
1	Sunday	Paksan	Hue Vietnam	Hue Vietnam	Travel	Travel
2	Monday	Hue Vietnam	Saola Hue	Guest house in local town	1. Visit with Provincial conservation staff to make introductions and duscuss the Saola PPA and general challenges and sucesses regarding Saola conservation. 2. Visit WWF Hue office for introductions and overview regarding the Carbi project and general discussions.	1. Travel to Saola Hue office. 2. Introductions and exchange presentations and discussions regarding current situation on our respective PA's
3	Tuesday	Saola Hue	Saola Hue	Guest house in local town	Field visit - Saola Hue	Field visit - Saola Hue
4	Wednesday	Saola Hue	Saola Quang Nam	Guest house in local town	1. Hold discussion secions and share information on all aspects of the Enforcement srtatagy and general Saola conservation	1. Visit with Quang Nam Provincial conservation staff to make introductions and duscuss the Saola PPA and general challenges and sucesses regarding Saola conservation.
5	Thursday	Saola Quang Nam	Saola Quang Nam	Guest house in local town	1. Introductions and exchange presentations and discussions regarding current situation on our respective PA's 2. Field visit Saola Quang Nam	1. Field visit - Saola Quang Nam 2. Hold discussion sessions and share information on all aspects of the Enforcement srtatagy and general Saola conservation
6	Friday	Saola Quang Nam	Cua Lo Vietnam	Cua Lo Vietnam	1. Short visit to Bat Ma NPA. 2. Travel to Cua Lo	Travel to Cua Lo
7	Saturday	Cua Lo Vietnam	Paksan Laos	Home	Travel	Travel

Were any components unrealized? If so, how has this affected the overall impact of the project?

All components of the grant were realised, although in some cases individual activities were either unrealised or found no longer to be relevant within the actual context as the project unfolded. In all cases, these changes or omissions had very little negative impact on the overall goals and components of the project.

1. Reducing the number of substations from four to two was a sensible decision based on the actual results of the patrol teams, field conditions, operational realities and funding sustainability. The recommendation of constructing two access check points in the future will be far more beneficial to the protection of the area that an additional two substations.

2. During the implementation of both the FRIC and the PFIR process, it became evident that the nutritional training did not fit into the timescale of the grant proposal, as the focus of implementation was on the collection of village livelihoods and relevant baseline data through the PRA activity. It is only during the analysis and development of a mitigation strategy for communities around the PST ESCA that nutritional training will become relevant, and this will be occurring beyond the timescale of this grant period.

3. The fact that the authorities were not able to approve the study tour to other Saola conservation areas was disappointing to the members of the Saola conservation team but has not had a negative impact on the implementation of activities or on the overall goals of the grant. A number of additional capacity building activities were provided to key staff working on the PST ESCA that easily compensated for the loss of the study tour.

Please describe and submit (electronically if possible) any tools, products, or methodologies that resulted from this project or contributed to the results.

The following is a list of appendix relevant to the activities of this grant:

1. Community mapping protocol
2. Saola record form
3. Post Mortem of a Saola
4. Forestry and Wildlife Enforcement Training Curriculum
5. IEWMP report - Saola outreach campaign
6. IEWMP report – PST ESCA outreach campaign evaluation results
7. PST ESCA regulations (Lao language)
8. IEWMP report - PST ESCA zonation and regulation proposal
9. PST FPIC village information poster
10. IEWMP report - RRA methods manual
11. IEWMP report - PST ESCA PRA

Lessons Learned

Describe any lessons learned during the design and implementation of the project, as well as any related to organizational development and capacity building. Consider lessons that would inform projects designed or implemented by your organization or others, as well as lessons that might be considered by the global conservation community.

Project Design Process: (aspects of the project design that contributed to its success/shortcomings)

The project design process was adequate. Contributing to its success was the logical process to initially locate areas with the highest likelihood of containing Saola and then moving to protect those areas through establishing enforcement. Unfortunately the process of establishing enforcement in these areas ultimately targeted by the project was underestimated. The project team completed the FPIC and PFR processes which were required by CEPF policies but the significant costs of implementing these was not included in the project budget. Further to this the process of establishing enforcement for a protected area in Lao PDR was underrepresented in the project design. It is not a simple matter of forming enforcement team, training them, and deploying them in forest areas. There are several other actions that need to be completed to adequately establish law enforcement in forest areas of Lao PDR, all of which are presented in earlier sections of this report. This includes establishing local management regulations developed in collaboration with local communities and government, demarcating protected area boundaries, and developing local informant networks.

Project Implementation: (aspects of the project execution that contributed to its success/shortcomings)

Contributing factors towards success:

Two of the main factors contributing to the successes of the project are:

The willingness and enthusiasm of district authorities to protect Saola through the development of management activities within the PST ESCA, in particular, the Xaychamphone District Governor and his deputies. This very much set the tone for the level of engagement by district officials, village authorities and villages during the consultation activities as well as the level of cooperation during the implementation of activities.

The second factor was the presence of a well-trained and experienced core team of Lao staff within the IEWMP project assigned to the implementation of activities within PST ESCA. This team had the opportunity to build good relationships and secure the cooperation of the stakeholders involved with the implementation activities. Using the same team for all implementation activities provided the continuity needed to develop a relationship of trust among the stakeholders and this dramatically improved the level of honest engagement during the consultation process.

Challenging factors to implementation

Two of the main challenges facing implementation were:

Logistical challenges working within the PST ESCA.

In particular, access to and from the district capital as well as moving from village to village. Road access is poor, especially during the rainy season when most of the roads become unusable. Access by river is good, but conditions are difficult and special river boats with skilled operators are needed. The area is isolated from main supply routes, so access to food and provisions is severely restricted. In many instances, villages do not have sufficient basic food items to meet their own needs, so provisions for activates need to be brought in from other districts. All these logistical challenges dramatically pushed up the costs of activities, as well as the time needed for implementation.


Restrictions of access within the PST ESCA and surrounds.

The PST ESCA falls within a special security zone within the province and this holds implications with regards to access permission for foreign experts. The main challenges as a result of this situation are:

- Providing onsite technical support to enforcement teams, and other activities.
- Providing immediate support in the event of a Saola capture / confiscation incident.
- Monitoring the use and maintenance of key infrastructure and equipment.
- Monitoring and verification of enforcement or biodiversity data and results.
- Conducting field reconnaissance activities in order to experience firsthand the conditions related to the implementation of activities.

WCS has continuously strived to build positive relationships with the government agencies at the national, provincial and district levels. In February 2012 WCS facilitated a meeting with provincial authorities to address the 'access issues' and wide agreement was reached at the meeting regarding the need for foreign technical advisors to access forest areas of PST ESCA to assist with the capacity development of government staff. Just recently WCS successfully negotiated the first ever access for a foreign biodiversity specialist to enter the PST ESCA since the mid 1990's, a significant achievement and a testament to the ongoing positive relationship between WCS and government counterparts.

Additional Funding

Provide details of any additional funding that supported this project and any funding secured for the project, organization, or the region, as a result of the CEPF investment in this project.

Donor	Type of Funding*	Amount	Notes
Save Our Species fund	Grantee and Partner leveraging	USD 127,611	
Macarthur Foundation	Grantee and Partner leveraging	USD 70,000	Awarded to GWC/SWG with WCS as a implementing partner
Margaret A. Cargil Foundation	Regional/Portfolio leveraging	USD 1,200,000	Regional grant award targeting several key biodiversity areas in the region, one of which is PST ESCA
Theun Hinboun Hydropower Company	Grantee and Partner leveraging	USD 168, 315	

Additional funding should be reported using the following categories:

A *Project co-financing (Other donors or your organization contribute to the direct costs of this project)*

B *Grantee and Partner leveraging (Other donors contribute to your organization or a partner organization as a direct result of successes with this CEPF funded project.)*

C *Regional/Portfolio leveraging (Other donors make large investments in a region because of CEPF investment or successes related to this project.)*

Sustainability/Replicability

Summarize the success or challenge in achieving planned sustainability or replicability of project components or results.

Despite the additional funding raised by WCS, and the SWG, for continued Saola conservation related activities the sustainability of project components remains questionable. Though Lao PDR continues on a path of rapid economic growth that growth has not translated into increasing investment in protected area management or species targeted conservation interventions. Thus the management of key biodiversity areas, such as PST ESCA, in Lao PDR continue to be solely funded by external donors. This presents a significant challenge in the long term. WCS has successfully established a relationship and funding arrangement with a local extractive industry partner, the Theun Hinboun Hydropower Company, providing funds to the management of PST ESCA until the end of 2015. The company will continue to provide funds directly to the government after 2015 but whether this results in continued investment in PST ESCA will depend on the government allocation of those funds. WCS continues to

encourage and support our government partners to seek other future sources of funding for conservation management in key biodiversity areas of the province.

The activities conducted during this CEPF Project are completely replicable at other key biodiversity areas in Lao PDR. The CEPF funded project has developed capacity in government staff and also resulted in the production of extensive training materials related to survey methods, law enforcement training and operations, community outreach, and community based natural resource use assessment. The challenge to replicate these activities at other sites is two fold. Firstly the capacity of government agencies responsible for conservation and species management at other sites, and secondly the lack of funding available at other sites.

Summarize any unplanned sustainability or replicability achieved.

No unplanned sustainability or replicability achieved.

Safeguard Policy Assessment

Provide a summary of the implementation of any required action toward the environmental and social safeguard policies within the project.

The project did not involve any activities that had adverse impacts on the environment or that triggered social safeguards.

Additional Comments/Recommendations

No additional comments or reccomendations.

Information Sharing and CEPF Policy

CEPF is committed to transparent operations and to helping civil society groups share experiences, lessons learned, and results. Final project completion reports are made available on our Web site, www.cepf.net, and publicized in our newsletter and other communications.

Please include your full contact details below:

Name: Mr. Alex McWilliam
Organization name: Wildlife Conservation Society
Mailing address: PO Box 6712, Vientiane, Lao PDR
Tel: +856 21 215400
Fax: +856 21 215400
E-mail: amcwilliam@wcw.org

*****If your grant has an end date other than JUNE 30, please complete the tables on the following pages*****

Performance Tracking Report Addendum

CEPF Global Targets

(Enter Grant Term)

Provide a numerical amount and brief description of the results achieved by your grant.
Please respond to only those questions that are relevant to your project.

Project Results	Is this question relevant?	If yes, provide your numerical response for results achieved during the annual period.	Provide your numerical response for project from inception of CEPF support to date.	Describe the principal results achieved from July 1, 2012 to May 30, 2013. (Attach annexes if necessary)
1. Did your project strengthen management of a protected area guided by a sustainable management plan? Please indicate number of hectares improved.				Please also include name of the protected area(s). If more than one, please include the number of hectares strengthened for each one.
2. How many hectares of new and/or expanded protected areas did your project help establish through a legal declaration or community agreement?				Please also include name of the protected area. If more than one, please include the number of hectares strengthened for each one.
3. Did your project strengthen biodiversity conservation and/or natural resources management inside a key biodiversity area identified in the CEPF ecosystem profile? If so, please indicate how many hectares.				
4. Did your project effectively introduce or strengthen biodiversity conservation in management practices outside protected areas? If so, please indicate how many hectares.				
5. If your project promotes the sustainable use of natural resources, how many local communities accrued tangible socioeconomic benefits? Please complete Table 1below.				

If you answered yes to question 5, please complete the following table

Table 1. Socioeconomic Benefits to Target Communities

Please complete this table if your project provided concrete socioeconomic benefits to local communities. List the name of each community in column one. In the subsequent columns under Community Characteristics and Nature of Socioeconomic Benefit, place an X in all relevant boxes. In the bottom row, provide the totals of the Xs for each column.

Name of Community	Community Characteristics								Nature of Socioeconomic Benefit													
									Increased Income due to:													
	Small landowners	Subsistence economy	Indigenous/ ethnic peoples	Pastoralists/nomadic peoples	Recent migrants	Urban communities	Communities falling below the poverty rate	Other	Adoption of sustainable natural resources management practices	Ecotourism revenues	Park management activities	Payment for environmental services	Increased food security due to the adoption of sustainable fishing, hunting, or agricultural practices	More secure access to water resources	Improved tenure in land or other natural resource due to titling, reduction of colonization, etc.	Reduced risk of natural disasters (fires, landslides, flooding, etc)	More secure sources of energy	Increased access to public services, such as education, health, or credit	Improved use of traditional knowledge for environmental management	More participatory decision-making due to strengthened civil society and governance.	Other
Total																						

If you marked "Other", please provide detail on the nature of the Community Characteristic and Socioeconomic Benefit: