

Evaluation of tiger conservation education activities in the Nam Et-Phou Louei National Protected Area



By: Santi Saypanya, Arlyne Johnson, and Malaykham
Duangdara
(April 2006)

Evaluation of tiger conservation education activities in the Nam Et-Phou Louei National Protected Area

Citation

Saypanya, S, A. Johnson, and M. Duangdala
May 2006. Wildlife Conservation Society

Reproduction of material from this document for education or other non-commercial purpose is authorized without prior permission of WCS, provided that the source is acknowledged.

Reproduction of material from this document for education or other non-commercial purpose is authorized without prior permission of WCS, provided that the source is acknowledged.

Cover Illustrations

Photos of survey members are doing random and interviewing. Photo: Santi Saypanya (WCS). Background is a photo of Phou Louei Mountain. Photo: Arlyne Johnson (WCS).

Copies available from

Wildlife Conservation Society - Lao PDR Program
Unit 17, Ban Sisavath, Chanthabuly District
Vientiane, Lao PDR
Tel/Fax 856 21 215400 & 243602
Email: wcslao@wcs.org

The findings, interpretations, conclusions and recommendations express in the report represent those of the authors and do not imply the endorsement of WCS or the donor. The designation of geographical entities and their presentation in this report do to imply an opinion on the part of WCS concerning the legal status of any country, territory or area, or its authorities, or the delimitation of its frontiers or boundaries.

Table of contents

1. Introduction	3
2. Study area	3
3. Methods.....	4
3.1. Education Training.....	4
3.2. Education Campaign	4
3.3. Impact Survey	4
3.4. Survey Team	5
3.5. Survey Structure.....	5
3.6. Survey Format	5
3.7. Survey Participant Selection	6
3.8. Survey Process	6
3.9. Analysis.....	6
4. Results	7
Responses related to tigers	8
Responses related to national laws and regulations for protected areas and wildlife	10
Responses related to the education campaign	13
Responses related to general questions.	15
References	20
Appendix 1: Target villages.....	21
Appendix 2: Map of target villages and military camps.....	22
Appendix 3: Questionnaires	23

1. Introduction

Wildlife is national property under Lao law. Legally, all people have the right to hunt for personal consumption, but not for commercial purposes. The law's aim is sustainable small-scale resource use. Unfortunately, this goal has not been realized. The Lao PDR has experienced large-scale habitat destruction and poaching for both domestic and international wildlife trade. This loss of species especially tiger and forest resources translates as a corresponding loss of opportunity for ethnic and rural people, who still rely on the forest for their daily livelihood needs (Saypanya 2006).

A key factor contributing to the unsustainable use of forest resources is misunderstanding and ignorance of the laws and regulations governing natural resource use. In particular, residents of the rural and remote areas where Laos' biodiversity is located, lack access to information from newspapers and legal documents. Furthermore, they do not always realize the importance of the natural resources on which they rely. As a result, resources are often used unsustainably. This jeopardizes the peoples' long term food security, local development and also depletes biodiversity (Saypanya et al. 2005).

Conservation education for local people outside a formal education setting is often neglected, but may have high potential for contributing to protected area management and species conservation. The conservation of all natural resources, whether it is small habitats or large landscape, requires local participation to ensure long-term success. Even though conservation education is often treated as the "poor stepchild" to other mandates of the protected area; the importance of increasing people's knowledge and favorable attitudes about the natural resources is critical (Jacobson et al. 1997). However increased awareness doesn't always result in changed behavior. Without a clear understanding and sense of purpose for the natural resources, local people will be reluctant to cooperate and participate in protected area management (Vannalath & Hansel 1999).

In July 2004 we met with government authorities to present our results and begin the next steps to secure the future of tiger and their prey in the NPA-the design and implementation of management interventions. Our findings indicated that the management interventions to reduce human-tiger conflict should include livestock depredation response and improvement in animal husbandry, patrolling and enforcement, education and outreach, and land use planning (Johnson et al. 2004). Raising public awareness of tiger conservation through education and outreach in villages and district centers bordering tiger populations in the NEPL NPA is one of top five objectives which is needed to be done to conserve tiger.

2. Study area

The study area was ten villages, two military camps of Viengkham district and ten villages, three military camps of Viengthong district (Appendix 1).

These places selected were chosen because WCS currently implements conservation project, especially conservation outreach of Tiger Conservation Project addressed conservation campaign. The villages were chosen because tiger depredation of livestock surveys in 2003-2004 showed that these villages had a history of tiger-human conflict (Johnson et al. 2004). The military camps were chosen because NPA staff said that guns and ammunition from military camps were used by poachers to hunt tigers and prey.

3. Methods

3.1. Education Training

In 2004 WCS conservation education specialists (Soulisak Vannalath and Santi Saypanya) and Mr. Venevongphet held a one week training for two conservation outreach teams, one each in Viengkham and Viengthong districts (Saypanya & Vannalath 2004). The teams were trained in the principles of tiger conservation, protected area management and regulations. They were taught how to plan and implement an interactive conservation education campaign that would be attractive and appealing to the rural public, which has a low literacy rate and speaks several different ethnic languages. They tested their methods in Huaytuen, a Mien ethnic village, in Viengthong district. Each team consisted of seven people, including six villagers a one-district officer.



Group photo of trainers and trainees after training

3.2. Education Campaign

On 15 November 2004 to 30 December 2004, the two teams penetrated the most remote villages that border the NPA Tiger Conservation Core Zone and conducted tiger conservation program in 28 villages in the two districts Viengkham (Luang Prabang province) and Vienthong (Huanphanh province)(Appendix 2)



3.3. Impact Survey

To estimate the change in public knowledge of the NPA and wildlife regulations as a result of the education campaign, we administered a survey to sites where the education campaign had been implemented (Appendix 2). In November 2005, WCS staff (Santi Saypanya and Malaykham Duangdara) conducted the systematic surveys sampling 15% of residents in villages, military camps, and district centers in and around the NPA.

3.4. Survey Team

The team was made up of Santi Saypanya and assistant Malaykham Duangdara, of the Wildlife Conservation Society Lao PDR Program (WCS). We worked with assistance from Chief of NEPL NPA and District Agriculture Extension and Forestry Office (DAEFO) (Table 1).

Table 1: Survey team			
Date	Venue	Team	Work station
21-28 Oct 2005	<i>Viengkham District, Luang Prabang Province</i>	Santi Saypanya	WCS
		Malaykham Duangdara	WCS
		Sivone Sonmany	Viengkham DAFO, Nam Et-Phou Louey NPA (coordinator)
1-10 Nov 2005	<i>Vienthong District, Huaphanh Province</i>	Malaykham Duangdara	WCS
		Khamphanh Souvanhphone	Chief of NEPL NPA, Deputy head of Vienthong DAFO
		Khamvanh	Vienthong DAFO

3.5. Survey Structure

Data were collected from ten villages, five military camps in both Viengkham and Vienthong districts where education activities were implemented.

- The team presented objectives to the Chief of NEPL NPA and district governor.
- The District Cabinets then completed permission letters for each site to be surveyed.
- The team took these permission letters to government officers, village headman, and military camp, as appropriate.
- The team then conducted random individual interviews from 20 villages and 5 military camps.

3.6. Survey Format

Individual surveys consisted of 43 question multiple-choice, semi-structured and open-ended questions on prepared interview sheet (appendix 3). The questions related to activities that were presented in the villages.

Interviewers were flexible and used informal techniques. Standardized wording on the survey form was employed as a guiding framework. When necessary, interviewers also provided additional information to their subjects.

3.7. Survey Participant Selection

A predetermined sample size was calculated using population census data from the baseline data. As previously noted, individual surveys were conducted from a sample of villagers and militaries from two districts. All names of members of each household were written in pieces of paper, after that one of those pieces of paper would be picked up and the person whose name was on the piece of paper was interviewed. This method was not implemented in five military camps because they are big camps and it was difficult to get everyone together in the same time, major of the army provided list of soldiers who were in the camp instead.

3.8. Survey Process

The survey team stayed 8-10 days in each district in order to acquire sufficient numbers of surveys. Individual surveys took 30-45 minutes to complete, depending on the interviewees' ability to understand language and question comprehension. Surveys were conducted in homes. They began with normal conversation. In particular, care was taken to create comfortable atmosphere throughout the interview process. If respondents expressed signs of discomfort during the survey, interviewers would deviate from the standard questions and engage in small talk about their daily activities until the respondents relaxed. All surveys were conducted in the Lao language or other ethnic languages by using translators when needed.

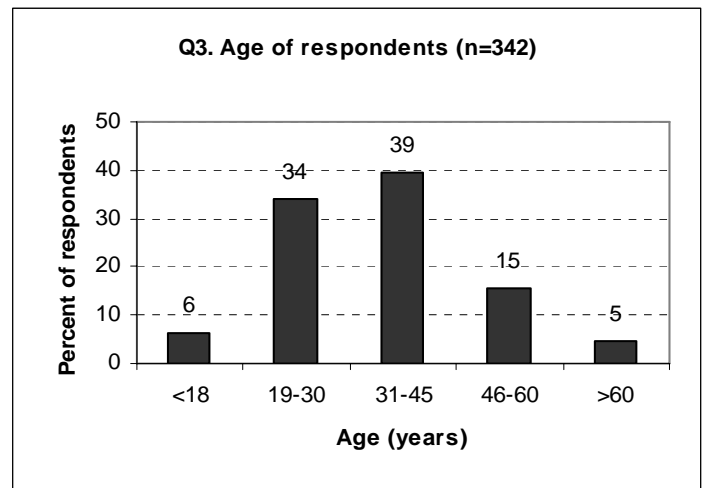
3.9. Analysis

Following the survey trips, Malaykham Duangdara did data entry; Santi Saypanya analyzed the questionnaires data. Questionnaires were categorized by each question.

4. Results

We asked 455 people if they would be willing to be interviewed (60% were male and 40% were female). Only 342 (75%) of the respondents agreed to be interviewed, while 25% did not agree to be interviewed. This was because some respondents were afraid and unsure that information that they report would cause an effect to them and or they thought people who were there to ask them were someone that was sent by the government or another organization to investigate them.

Of the respondents that agreed to be interviewed, the majority were 31-45 years old (39%) or 19-39 years old (34%) (Figure Q3). This is a good sample because almost people 19-45 year old have full responsibilities for their families so they need cash for their families, which may cause them to spend more time practicing over hunting. In addition, these people have more experiences in hunting. While teenagers learn and practice how to hunt from their fathers and or elders people in villages, they do not have a lot of experience with hunting.



Out of 342 people who were interviewed the majority were Lao Loum (40%) or Lao Thueng (41%), only 19% were Lao Soung. This is a good result. Based on general reports of villagers, Lao Soung is a key group involved in tiger and prey poaching. They know a lot about hunting and they are able to calculate with their traditional formula when to hunt and where to find wildlife. Lao Thueng was the majority group of our respondents (40%) which was only one sub-ethnic group Khamu, followed with Laoloum (20%) the group which included seven sub-ethnic group and Mongkhao (19%) was built of two sub-ethnic groups Mongkhao and Yao.

Most of the respondents who responded were farmers (74%). Others were military (24%), teachers (1%), or village militia (1%). All respondents lived in villages (77%) or a military camp (23%). The camp was a place for military officers to stay or a working place as well. This percentage resulted because we did a survey in five military camps.

Responses related to tigers

We asked 342 people if they would know what tiger looked like. 84% answered correctly and 16% incorrectly. The incorrect answers may have resulted if the question was not clear enough, respondents misunderstood what we asked them or because translators did not explain to respondents clearly.

Out of 297 who were interviewed, 73% described the appearance of tiger correctly, while 27% described incorrectly. 27% of incorrect descriptions may have been because people mixed up between many species of cats like golden cat, leopard or clouded leopard, or because they have never seen tiger, real or illustration.

We asked 296 people if they liked tiger. 84% answered they liked tiger and 16% answered they did not like.

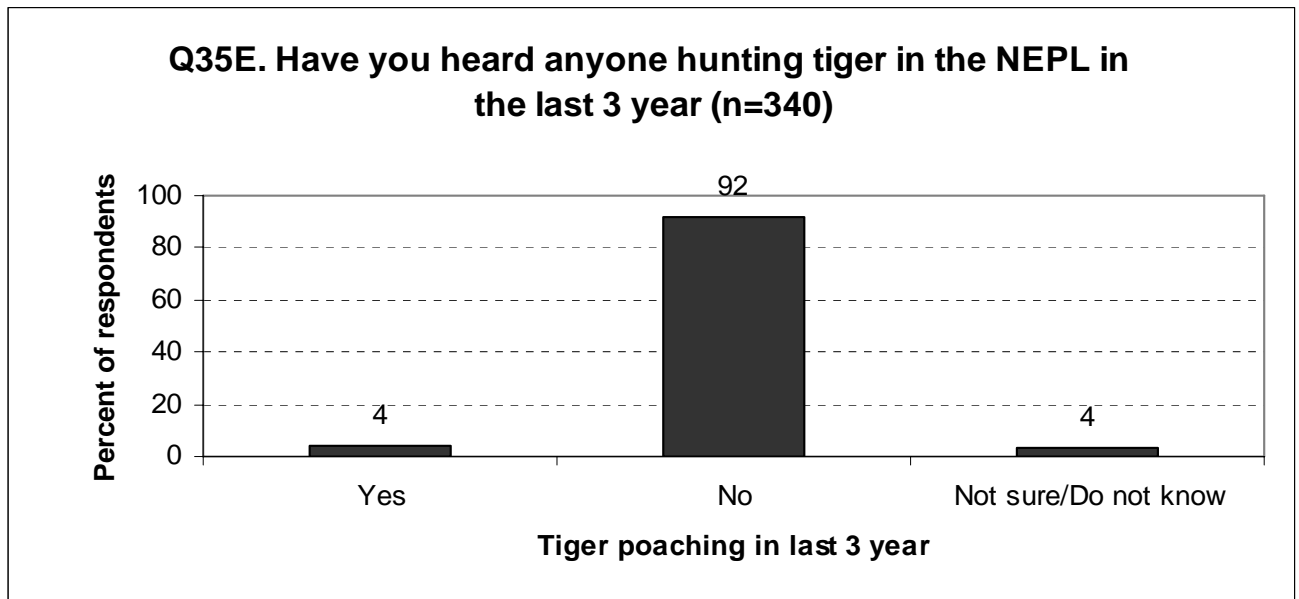
We asked 262 people why they liked/did not like tiger. They said they liked tiger because of tiger was valuable animal, prohibited, there was not many tiger left and endangered species, a beautiful animal (37%), animal that they believed in (4%), help to balance nature (3%) or a symbol of power.

Respondents that did not like tiger said they hated tiger eating their livestock (11%) or it was a dangerous animal (4%).

We asked 342 people if they knew if tigers were in danger of dying out or not. 50% answered “Yes” while 28% answered “No” and 22% answered that they did not know. The status of tiger was likely unknown to villagers, which is why their answers came up to 22%. However 28% of respondents said that tiger was not in danger of dying because they were aware that tiger was prohibited species, so they thought this saved the tiger. But in fact, tiger and prey poaching is the key threat to tiger.

We asked 336 people if it would be important for them or not to prevent fire from spreading into the core zone. 65% of the respondents responded it was very important and 32% answered that it was important. This indicated that people were aware of the importance of tiger as the responses represented 97% of the respondents. This showed that people may think tiger is quite important.

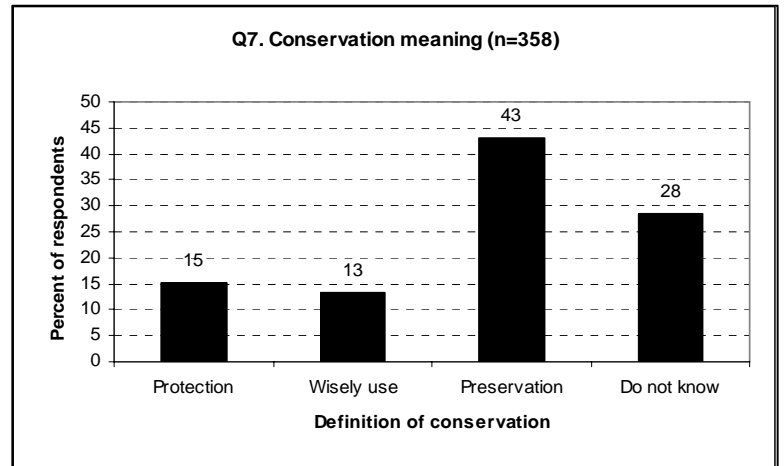
We asked 340 people if they would hear anyone hunting tiger in the NEPL in the last year. 92% responded “No” while there was only 4% responded “Yes”. And we kept asking 340 people if they had heard of anyone hunting tiger in the NEPL in the last year, 92% responded “No” while there was only 2% responded “Yes”. This was a sensitive question and there was not many people who knew information of tiger, because tiger was hunted and traded secretly by small amount of people. Many people did not know much about this. However some people likely knew, it was uncomfortable to report this information to us.



Again, we asked 339 people if they had seen anyone in their villages arrested for hunting tiger in the NEPL in the last 3 years, 94% responded “No” people reported that they had heard someone was arrested from a report from some person; however arrested person was not someone in their villages.

Responses related to national laws and regulations for protected areas and wildlife

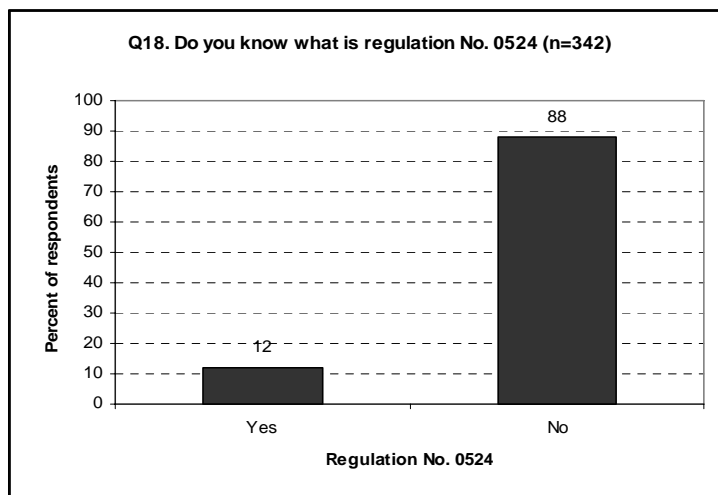
Out of 358 respondents, 43% responded that conservation was preservation, 28% did not know, 15% thought it was protection or wise use (13%) (see figure. Q7). These results tell us quite clear that majority of people still don't understand the real meaning of conservation. We need to work more on this point by developing our conservation education campaign and material to address this need in the following fiscal year.



We asked 313 people if they would know why wildlife are declining. 31% responded because of over hunting, that hunters still own some weapons or, 29% answered that it was because of there is no management. 24% said they did not know, however some people did not hunt any wildlife (female respondents or elders who were unable to practice hunting) or 10% responded because people compete for harvest for wildlife.

We asked 343 people if they knew what the biggest threat to tiger was. 41% said they did not know, 27% said was hunting for trade, 13% said cutting down of forest, and 9% said explosive traps. 61% of 343 respondents could not specify second biggest threat to tiger in the NEPL and 77% people of 343 respondents could not specify third biggest threat to tiger in the NEPL.

In cases where respondents did not know the key threats to tiger, this might be tiger was not a regular species which was poached by hunter or tiger was hunted discretely, and the information of tiger was sensitive to government authority due to tiger was valuable animal.

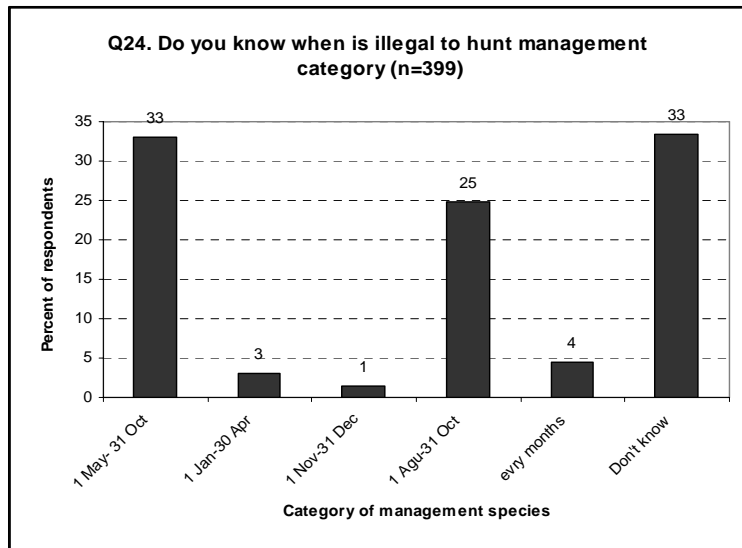


We asked 342 people if they would know what regulation No. 0524 was. 88% said that they did not know and 12% responded that they know (see Figure Q18). This was because of literacy level was low and communities have little access to printed copies of the law and regulations or the government organizations did not distribute handouts of regulation.

The 12% of respondents who knew about the regulations were military officers, village militias, and or villagers who listened to mass media especially radio.

344 people were asked if they would be able to determine the different categories of wildlife (protected and managed). 58% said they did not know, while 28% answered correctly. 344 people were asked if they would be able to identify species of wildlife. 58% said they did not know while 28% answered correctly.

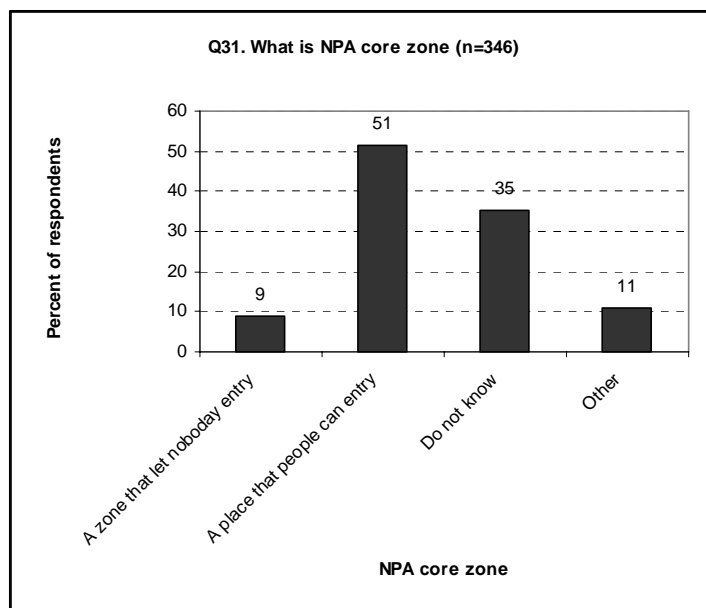
Generally speaking, explanation or information on regulations is hard for many people to understand, even some educated people. It also may have been that the question was too general, so people could not give specified answers.



We asked 340 people if they would know which category tiger was in in regulation No. 0524. 60% answered correctly (protected species), while 37% said they did not know and 2% said tiger was a managed species. Although respondents could not explain very clear about the regulations, most still knew what category tiger was in regulation. This is because government officers or the conservation campaign taught them directly. In addition, tiger is a high priority for conservation, so all levels of government authority are focused on the species as shown by creation their own local orders. Yet some people were not

aware because they did not know the status of tiger in the wild or possibly female villagers were not interested or involved in the meeting or announcements of village authority, which caused the percentage of respondents who did not know to be quite large.

We asked 399 people if they would know when was illegal to hunt management category (Figure



Q24). 33% responded it was between 1 May-31 October, 33% answered that they did not know and 25% of the respondents said it was between 1 August-31 October. The regulations 0524 says it is illegal to hunt from 1 May to 31 October. Villager said they knew animal breeding seasons. This result was guided by religious period “Khao Phan Sa”, however the duration was not fitted with the religious time. But if we add 33% and 25%, we would come up with 58% that would fit with the duration (6 months) addressed in the law and regulation. It was a good result that over 50% of respondents had some idea about when it is illegal to hunt wildlife.

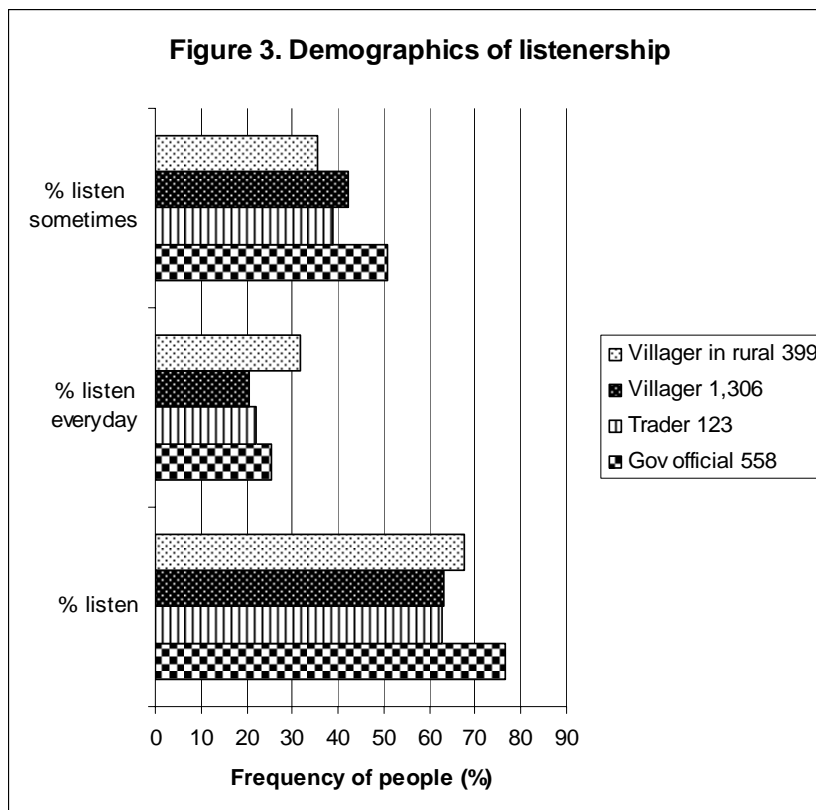
We asked 366 people if they would agree to fine a person who hunts wildlife illegally. 58% answered that they strongly agree and 38% answered agree. Thus, almost 96% agreed that a person who hunts wildlife illegally should be fined, however there were some people that did not agree with this. They may be traders or hunters who would lose benefits.

We asked 346 people if they would know what the NPA core zone is (Figure Q31). 51% responded it was a place that people can enter, 35% responded they did not know, 11% answered in general views and 9% responded it was a zone that let nobody enter. These responses indicate that people did not know what the NPA core zone is. It might be because of they did not get any information about the NPA core zone. We need to work on this case to make sure that people aware what is NPA core zone so they would not practice any activities inside the core zone.

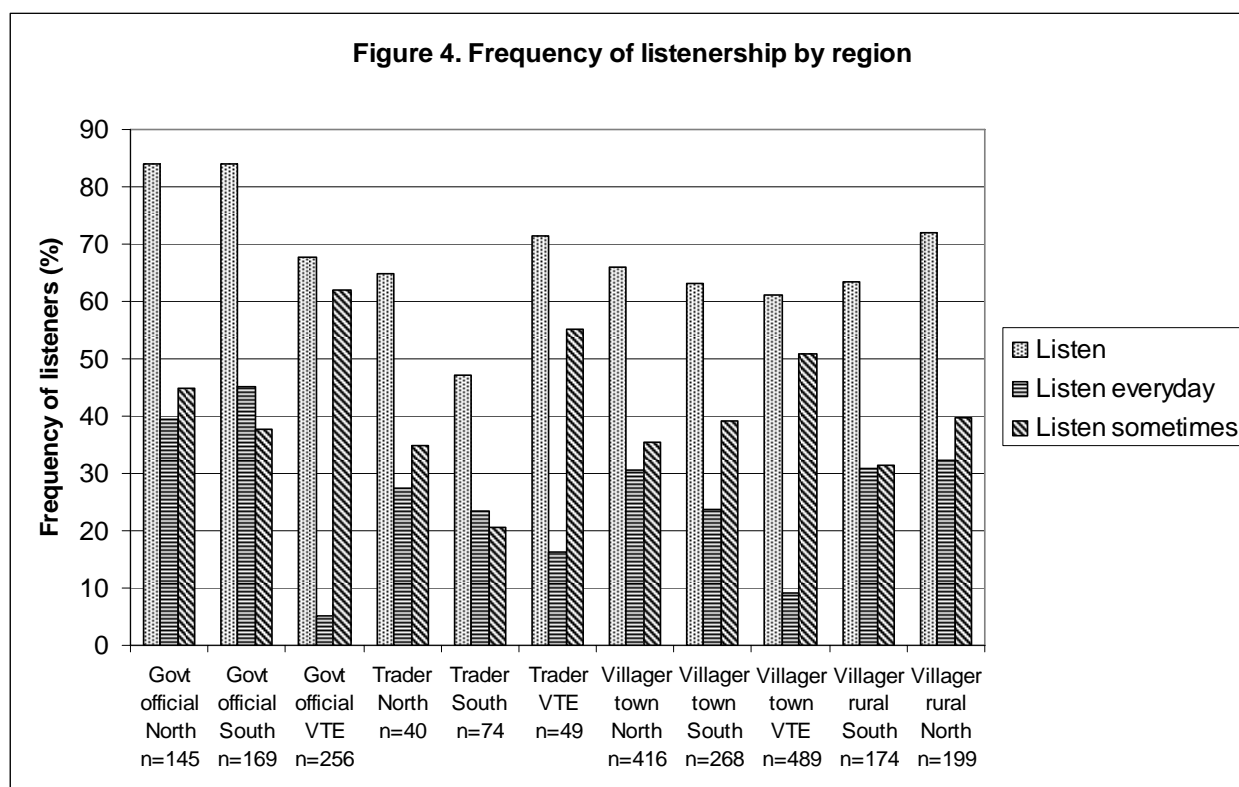
We asked 342 people if they would know why GoL established core zone in NPA. 40% of 432 responses responded that core zone was a place for wildlife to distribute, 31% answered that they did not know and 19% responded it was a place for plants and trees to grow.

Responses related to the education campaign

339 people of respondents who were asked if they had seen a billboard about the use of the bush meat, 51% responded 'No', and 46% answered "Yes". We asked 336 people if they had seen a poster about the use of bush meat. 85% of respondents said "Yes" and 13% said "No". This showed that what people had seen was actually not a billboard. In fact, they had seen wooden signs that were nailed on trees with messages about the use of the bush meat and forest destruction in their villages. These signs were made by government officials when they were conducting activities in each village. Since there was not a poster on the use of bush meat previously, respondents were confused on the questionnaires or villagers thought this question referred to the endangered species posters that were distributed to their villages long ago. Following up with two questions above we asked 336 people if



they had heard a bush meat announcement,. 81% answered "Yes" and 17% of the respondents answered "No". We asked 315 people if they had heard short tiger conservation announcements on the radio. 77% said "Yes" and 21% said "No". It was clear that villagers heard announcement broadcast on the radio. Across all categories of respondents, more government officials listened to radio than any other group, but rural villagers listened to radio more frequently (Figure 3). The northern two districts Viengthong and Viengkham have more radio listeners, listening to the radio more frequently (Figure 4) (Saypanya et al. 2005).

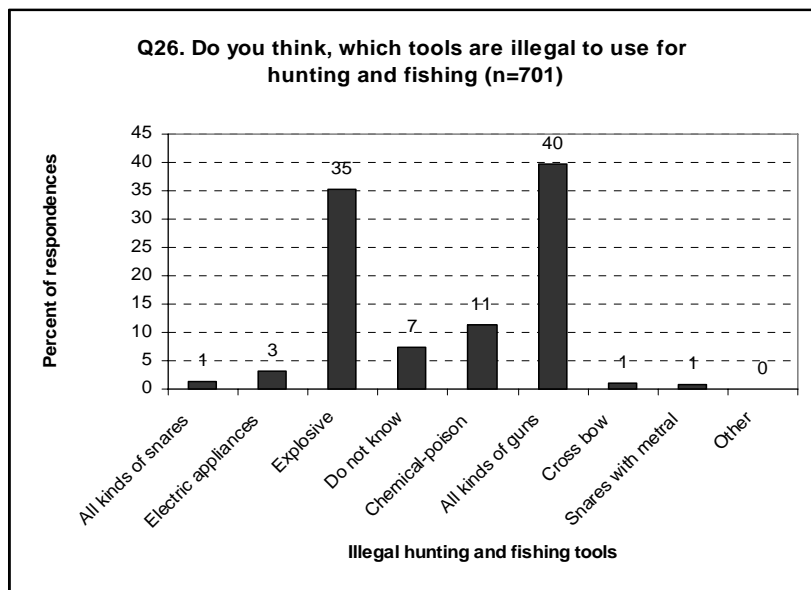


Out of 337 who were asked about seeing a role play in their village, 70% answered that they had seen role play in their villages while 28% answered that they had not seen it. This indicated that villagers were involved in the conservation education and follow up activities that had been conducted in their villages. 344 people were asked if they participated in the conservation campaign in their villages. 75% said they participated, while 25% did not participate. We asked 339 people if they had seen any conservation outreach materials. 66% answered they had seen and 32% answered they had not seen. People's response that they had seen conservation materials was in response to the conservation education team coming to their villages and doing activities. The team gave them some story books as the prizes, which is why they said they had seen some materials.

We asked 340 people if they had seen a billboard of a tiger. 57% of respondents said "No" and 40% said "Yes". 315 people were asked if they had see a tiger poster. 76% said "Yes" and 21 said "No". In reality, people had not seen a specific tiger billboard or poster. However what they had seen were endangered species posters and some tiger posters that were made in China for commercial purposes, which were available at some Chinese shops along the road or in towns.

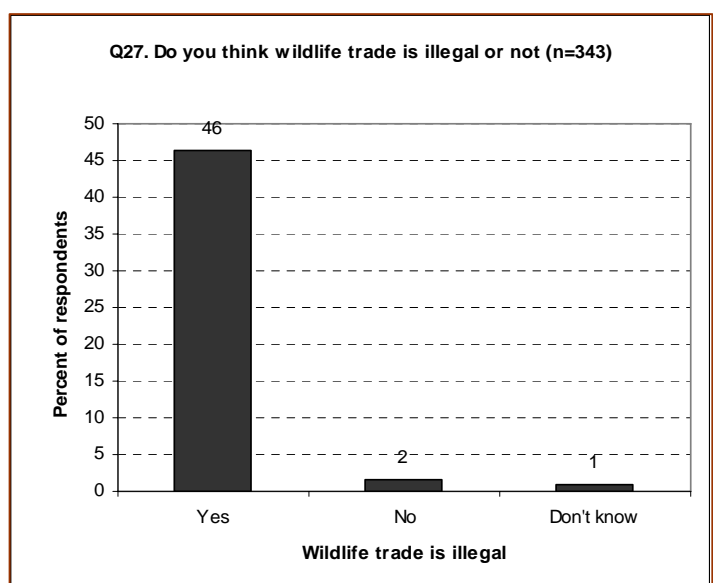
Responses related to general questions.

We asked 335 people if they knew what the status of wildlife was in last 10 years. Respondents said wildlife was decreasing (51%), increasing (43%), did not know (4%) or was stable (2%). Actually many species of wildlife in Lao PDR and around NEPL NPA seem to be decreasing (Duckworth et al. 1999; Johnson et al. 2006). However, 43% of respondents reported that wildlife is increasing. This may be because of government regulations forbidding hunting of wildlife for sale or people are not allowed to hunt prohibited species for any purpose. Thus, people have seen Sambar Deer nearby their rice fields and felt this is an indicator of wildlife is increasing. However when we asked them about the status of pangolins in last ten years, most people said there used to be many pangolins, but that now it was difficult to find even only one.

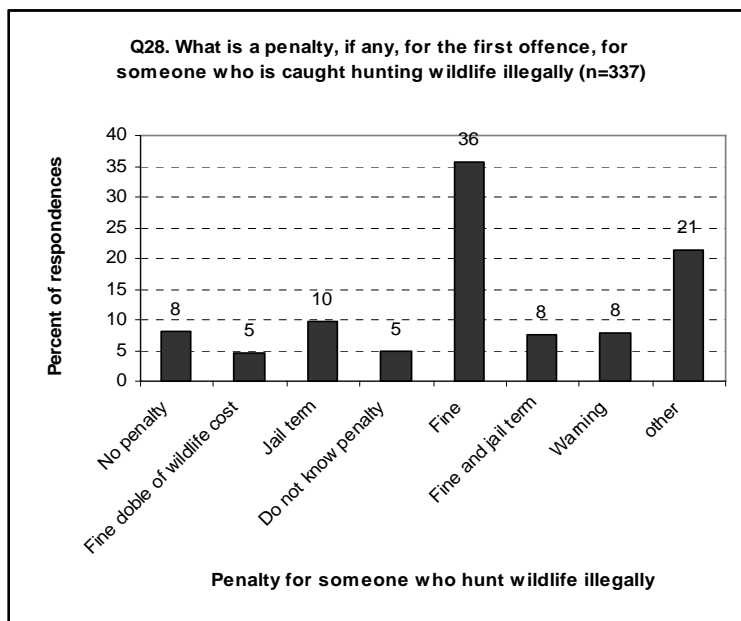


We asked 343 people if they know which tools were illegal to use for hunting and fishing (Figure Q26). Out of 701 responses, 40% answered all kinds of guns, 35% said explosive traps, and 11% answered chemical poison. This indicated that it was clear that villagers knew what tools were illegal for hunting, however there were some small percentage of respondents that also said all kinds of snares, cross bow or they did not know. This was likely because these villagers did not hunt wildlife, so in their opinion, all kinds of hunting tools were illegal.

We asked 343 people if they would know wildlife trade was illegal (Figure Q27), 95% answered “Yes”. This clarified what villagers knew about wildlife trade, however a few people did say “No”. They thought that trade of small animal, like rats, squirrels and small birds were not illegal. This was because they knew of the law and regulations, but they did not understand these deeply.

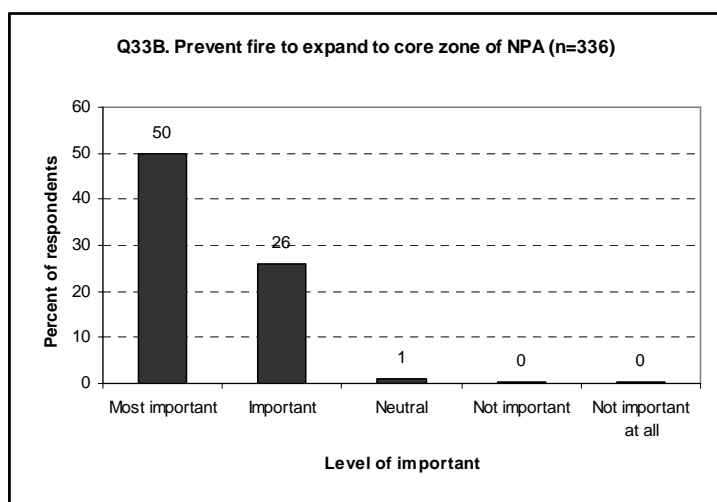


We asked 337 people if they knew what the penalty was for someone who hunted wildlife illegally (Figure Q28). 36% answered a fine, 21% said other penalties, which they likely based on the laws and regulation. Again, villagers knew there were penalties for illegal trade, however they did not exactly what they were. But the fact that most people indicated a fine suggest that people understood the penalties relatively well. Although, there were some percentage of responses for “No penalties”, this may have come from traders.



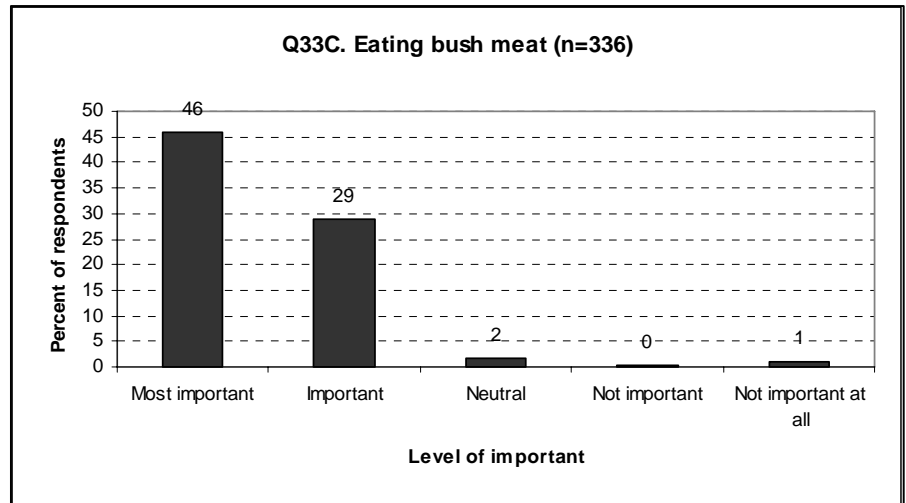
We asked 325 people if they would know what was the negative impacts of wildlife trade was. 61% gave one correct answer, 7% responded with 2 correct answers, and 32% said they did not know. This result suggests that people know the negative impact of wildlife trade. For the 32% of respondents that said that they did not know the negative impacts of wildlife trade, this may be because of these people are not involved in practices such as hunting, wildlife trade and or any use of wildlife.

50% of 335 people who were asked if buying bush meat was wrong responded that they strongly agreed and 34% agreed. This suggests that people knew the regulations and laws, however 10% of the respondents did not agree because they thought some small animals like squirrels, rats, small birds, etc could be traded. Over 99% of the respondents agreed that it should be illegal to trade wildlife.

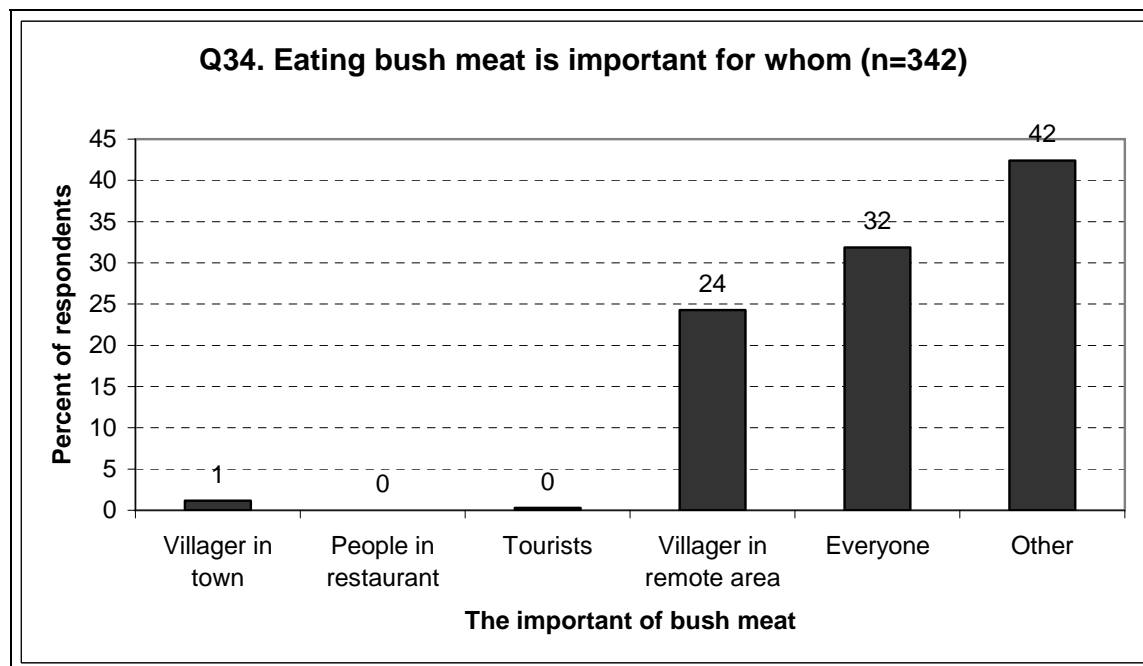


We asked 336 people if preventing fire from expanding into the core zone was important for them or not (Figure Q33B). 50% of the respondents responded it was very important and 26% answered that it was important. This might be because people were thinking of a “Vang Sa Ngeuane” which was a place where they established a core zone in a river near by their villages, so they did not need to go far away for fishing. Possibly, they were thinking that a core zone in the forest would give them some benefit like Vang Sa Ngeuane.

We asked 336 people if eating bush meat was important for them or not (Figure Q33C). 46% of the respondents responded it was the very important, and 29% responded it was important. This indicates that 75% of people are aware of the importance of bush meat for them as they that they rely on forest product for protein.



We asked 331 people if was important for them or not to conserve wildlife for sustainable traditional use by villagers in remote areas (Figure Q33D). 25% responded very important, 25% important and 18% answered it was not important. The 18% of the respondents may be people that do not use wildlife for food or any purpose or they did not want others to use wildlife because were not aware of the need of many people.

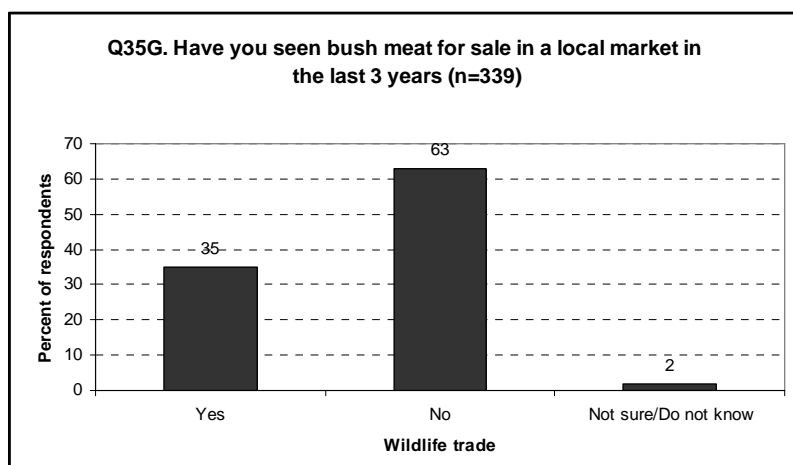


We asked 342 people if they knew for whom eating wildlife was important (Figure Q34). 42% of the respondents answered generally including important for everyone, not important to anyone, did not know or important for someone. People may have said important for everyone because they saw almost everyone buy bush meat or they said important for someone because they used wildlife for medicine so they thought it was important for someone. 32% answered it was important for everyone and 24% said it was important for villagers in remote area.

We asked 340 people if it was easy or difficult for them to report a person from their village that they know had illegally hunted wildlife in the NPA to the law enforcement authority. 70% of the respondents answered “Easy” while 26% answered “Difficult”. These were sensitive questions to answer. It appeared to be easy to report based on Lao Loum and Khamu ethnic group, however it seemed difficult for Hmong ethnic group to do this. Hmong said they would not report someone in their villages. General speaking it was difficult for everyone to report someone from their own family.

We asked 340 people if it was easy or difficult for them to stop buying bush meat in a local market for their family. 58% of the respondents answered “Easy” and 38% answered “it was difficult”. The respondents who answered it was easy differed from people who said it was difficult. People who had better living conditions said it was difficult for them to stop buying wildlife because they had sufficient cash for buying and wildlife consumption was their nature, because they had been taught to eat wildlife by previous generations.

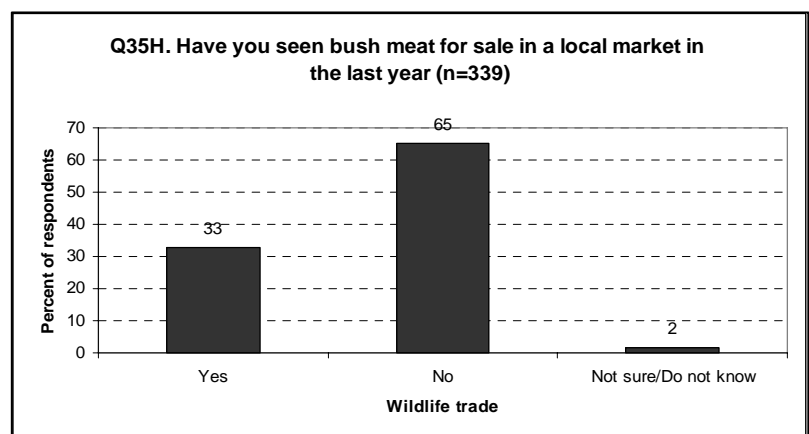
We asked 339 people if it was easy or difficult for them to stop practice shifting cultivation. 61% of the respondents answered “Difficult” while 32% answered “Easy”. The difference in response was because some villagers had limited land for permanent cultivation due to topography, which influenced the answers.



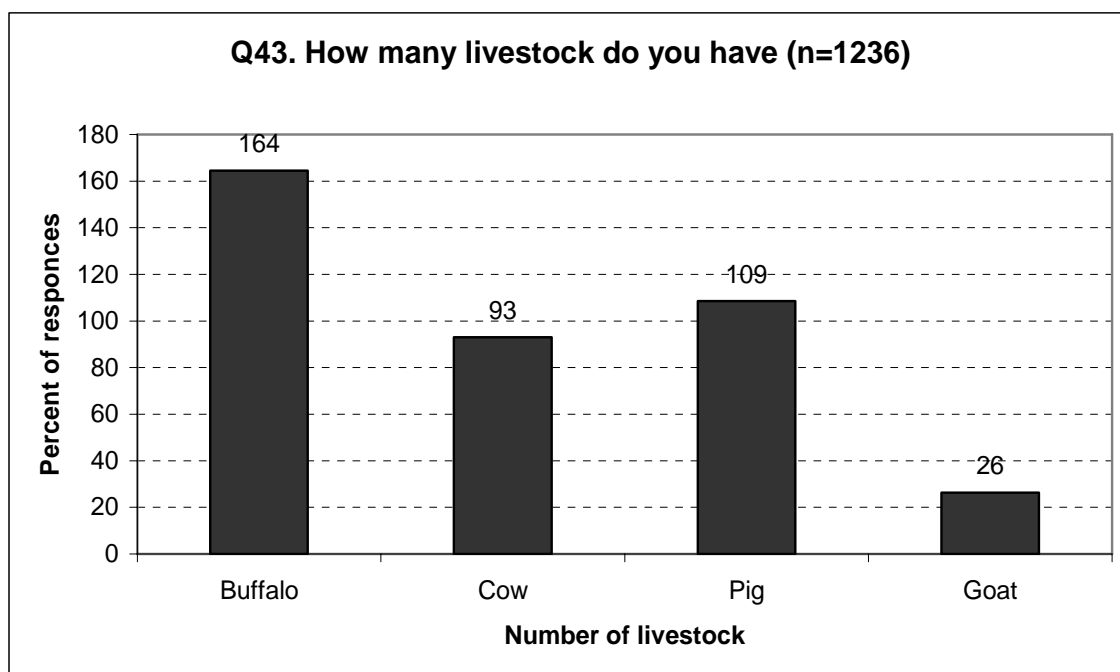
We asked 339 people if they had seen bush meat for sale in a local market in the last three years (Figure Q35G). 63% of the respondents answered “No” while 35% answered “Yes”. We then asked 339 people if they would see bush meat for sale in a local market in the last year, 65% of the respondents answered “No” while 33% answered “Yes” (Figure Q35H). Comparing these two charts wildlife trade had changed very little, despite conservation education.

We asked 336 people if they had started fires to clear agricultural land in the last 3 years, 71% responded “Yes” and 28% “No”. We also asked 338 people if they had started fires to clear agricultural land in the last year, 69% responded “Yes” and 29% “No”. Clearly, villagers in the area rely on shifting cultivation.

We asked 251 people if they would know what benefits they derived from the NEPL NPA. The majority gave one correct answer (75%) and the remaining gave two correct answers (24%).



We asked 233 people if they would be able to list any threats to wildlife in the NEPL NPA. The majority of respondents gave one correct answer (75%) and others gave two correct answers 24%. We asked 233 people if they would be able to list any threats to wildlife in the NEPL NPA. The majority gave one correct answer (77%) and 21% gave two correct answers. We asked 233 people if they would be able to list any activities that would help to protect forest in the NEPL NPA. The majority gave one correct answer (78%) and 21% gave two correct answers. We also asked 233 people if they would be able to list any activities that would help to protect wildlife in the NEPL NPA. The majority gave only one correct answer (93%). The reason that only one correct answer was give may be because villagers are not aware of what they get from the forest and the fact they have been using forest products for their daily livelihoods for generations. Overall, it was hard for local villagers to explain the benefits that they got from forest. An activity needs to be done to make sure that villagers understand clearly that their lives depend on natural resources.



We asked 223 people (n=1236) how many livestock they had. Out of **1,236** responses there were 164 buffalos, 109 pigs, 93 cows, and 26 goats. This result indicates why tiger-human conflict is occurring in this area as the amount of domestic animals that people have that they release their animals into the forest presents easy opportunities for tigers, leopard and dholes to attack their animals.

References

- Duckworth, J. W., R. E. Salter, and K. Khounboline 1999. Wildlife in Lao PDR: 1999 Status Report. The World Conservation Union (IUCN), Wildlife Conservation Society (WCS) and Centre for Protected Areas and Watershed Management (CPAWM), Vientiane.
- Jacobson, H. A., J. C. Kroll, R. W. Browning, B. H. Koerth, and M. H. Comcay. 1997. Infrared-triggered Cameras for Censusing White-tailed Deer. Pages 547-556. Wildlife Foc Bull.
- Johnson, A., C. Vongkhamheng, M. Hedemark, and T. Saithongdam. 2006. Effects of human-carnivore conflict on tiger (*Panthera tigris*) and prey populations in Lao PDR. *Animal Conservation* 9:421-430.
- Johnson, A., C. Vongkhamheng, M. Hedemark, and T. Saythongdum. 2004. The status of tiger, prey and human-tiger conflict in the Nam Et - Phou Louey National Protected Area. Wildlife Conservation Society, Vientiane.
- Saypanya, S. 2006. Field trip report on signboard establishment in the Nam Et-Phou louei National Protected Area Viengkham District, Luang Prabang Province and Viengthong District, Huaphanh Province. Report.
- Saypanya, S., T. Hansel, and S. Duangsavanh. 2005. Mass media conservation outreach in Lao PDR.
- Vannalath, S., and T. Hansel. 1999. Basic Training in Biodiversity Conservation, Extension and Protected Area Demarcation Nam Ha NBCA Luang Namtha Province. Pages 1-22. WCS, Vientiane.

Appendix 1: Target villages

Survey villages (Viengthong district)

No	ເມືອງວຽງທອງ	Viengthong District	# household		# sample site
1	ລ້ອງງົວປ່າ	LongNguaPah	56	3.24	17
2	ບວມຟາດ	BouamFart	46	2.84	16
3	ນ້ຳເນີນ	NamNern	41	2.64	16
4	ໂພນຊອງ	Ponsong	58	3.32	17
5	ນ້ຳປຸ່ງ	NamPhung	59	3.36	18
6	ສັນອົງ	SunOng	42	2.68	16
7	ຫ້ວຍສະງອນ	HuaySaNgon	34	2.36	14
8	ນ້ຳງາວ	NamNgao	45	2.8	16
9	ສາກົກ	SaGok	42	2.68	16
10	ທາດ	Tart	50	3	17
					163

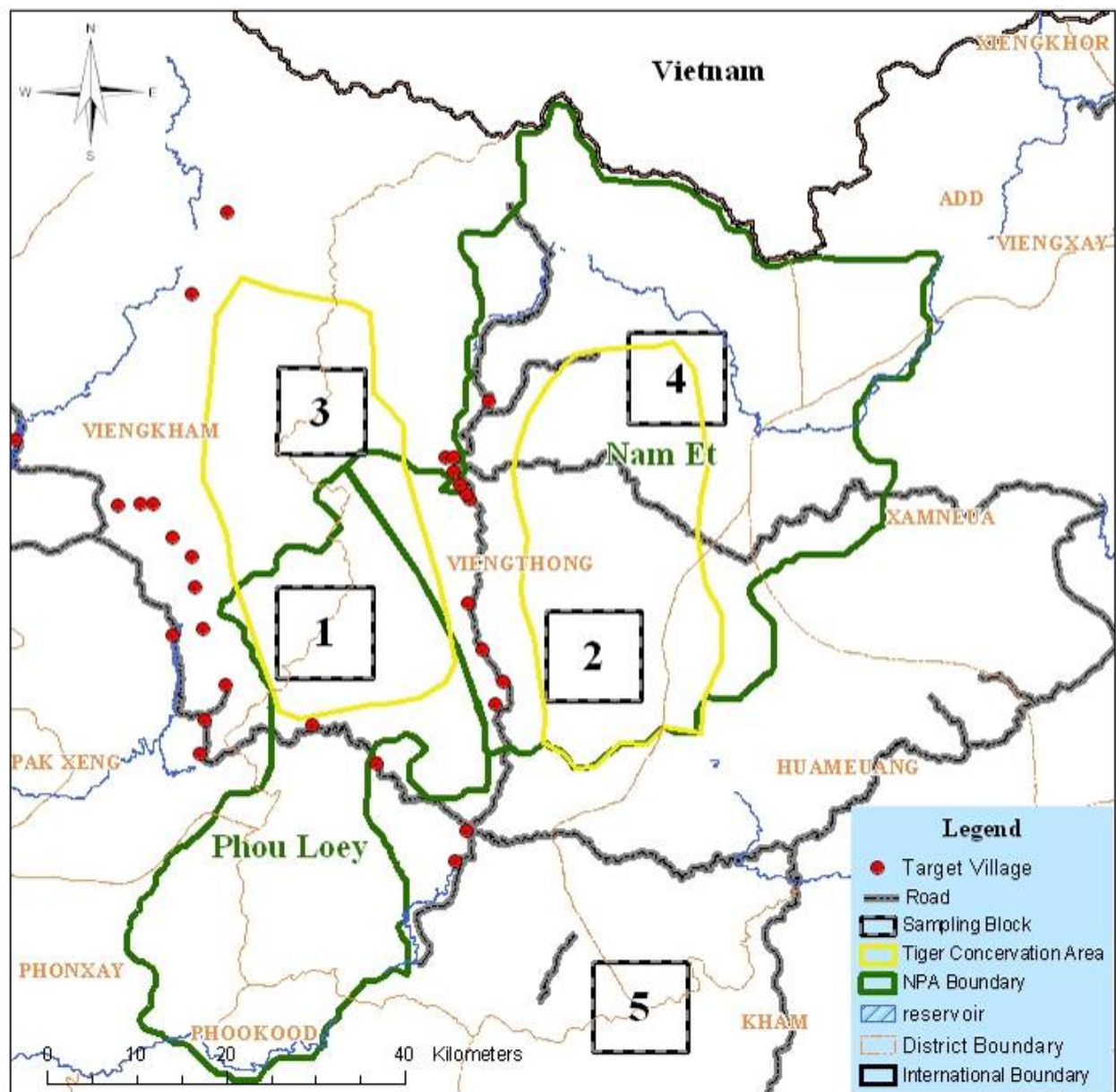
Survey villages (Viengkham district)

No	ເມືອງວຽງຄຳ	Viengkham District	# household		# sample site
1	ນາເບີງ	NaBeung	104	5.16	20
2	ຜາແດງ	PhaDaeng	58	3.32	17
3	ປຸງທ້າວ	PhungTao	21	1.84	11
4	ປາກລາວ	PakLao	59	3.36	18
5	ຫ້ວຍໂກນ	HuayGorn	50	3	17
6	ນາແວນ	Naven	58	3.32	17
7	ພູຄ້ອງ	PhuKong	59	3.36	18
8	ບວມມີ້	BouamMi	67	3.68	18
9	ດອນເງິນ	DonNgern	67	3.68	18
10	ນານ້ອຍ	NaNoi	67	3.68	18
					173

Military camps

No	ຄ້າຍ	Viengthong District	# household		# sample site
1	ກອງພັນ 585	Military camp 585	70	3.8	18
2	ກບ ທະຫານເມືອງ	District Military Office	60	3.4	18
3	ກອງ 15	Military camp 15	53	3.12	17
No	ຄ້າຍ	Viengkham District	# household		# sample site
1	ກບ ທະເມືອງ	District Military Office	50	3	17
2	ກອງ 27	Military camp 27	40	2.6	15
					85

Appendix 2: Map of target villages and military camps.



Appendix 3: Questionnaires

Interview Form			
Village: _____			
District: _____			
1	Gender of respondent	<input type="checkbox"/> Male	<input type="checkbox"/> Female
2	Respondent agree to be interviewed	<input type="checkbox"/> Yes	<input type="checkbox"/> No
3	How old are you?	<input type="checkbox"/> 14-18 <input type="checkbox"/> 46-60	<input type="checkbox"/> 19-30 <input type="checkbox"/> >60 <input type="checkbox"/> 31-45
4	What is your ethnic group?	<input type="checkbox"/> Lao Loum	<input type="checkbox"/> Lao Thueng <input type="checkbox"/> Lao Sung
Ethnic _____			
5	What is your main occupation?	<input type="checkbox"/> Farmer <input type="checkbox"/> Police	<input type="checkbox"/> Teacher <input type="checkbox"/> Student <input type="checkbox"/> Soldier
Other _____			
6	Where do you live	<input type="checkbox"/> Town <input type="checkbox"/> Village	<input type="checkbox"/> Camp <input type="checkbox"/> Sanam
7	What is the conservation meaning?	<input type="checkbox"/> Prohibition	<input type="checkbox"/> Wisely use <input type="checkbox"/> Do not know
8	How is the status of wildlife in last 10 years?	<input type="checkbox"/> Increase	<input type="checkbox"/> Decrease <input type="checkbox"/> Stable
9	Why wildlife is declining?	<input type="checkbox"/> Human think they will never finish <input type="checkbox"/> Human complete for harvesting <input type="checkbox"/> Do not know <input type="checkbox"/> Human think they are not belong to whom <input type="checkbox"/> Do not follow the regulation	
10	Have you ever heard of an animal called tiger?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
11	Can you describe what is tiger look like?	<input type="checkbox"/> Correct	<input type="checkbox"/> Incorrect
12	Do you like tiger?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
13	Why?	<input type="checkbox"/> It is dangerous as it kill ours livestock <input type="checkbox"/> It help to balance nature <input type="checkbox"/> It is an animal we believe in <input type="checkbox"/> It is a beautiful animal <input type="checkbox"/> It is a symbol of power	
Other _____			
14	Do you think that tigers are in not in danger of dying out or do you think they are in danger of dying	<input type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> Do not know
Other _____			
15	What do you think is the most important threat to tiger in NEPL?	<input type="checkbox"/> Cutting down forest <input type="checkbox"/> Hunt for trade <input type="checkbox"/> Do not know <input type="checkbox"/> Over hunting for bush meat	
		<input type="checkbox"/> Natural competitors	<input type="checkbox"/> Explosive trap

- 16 What do you think is the second important threat to tiger in NEPL?
- ☐ Cutting down forest Do not know ☐ Natural competitors
- ☐ Hunt for trade ☐ Explosive trap
- ☐ Over hunting for bush meat
- 17 What do you think is the third important threat to tiger in NEPL?
- ☐ Cutting down forest Do not know ☐ Natural competitors
- ☐ Hunt for trade ☐ Explosive trap
- ☐ Over hunting for bush meat
- 18 Do you know regulation No. 0524? ☐ Yes ☐ No
- 19 What the regulation mentions on?
- ☐ Category of animal ☐ Prohibited species
- ☐ Managed species ☐ Species of animal
- ☐ Seasonal hunted managed species
- ☐ Wildlife trade is illegal
- 20 What is category?
- ☐ Group of animal ☐ Do not know
- ☐ A species of animal
- 21 What is species?
- ☐ Group of animal ☐ Do not know
- ☐ A species of animal
- 22 What category do you think tiger is in regulation No. 0524?
- ☐ Prohibited ☐ Managed ☐ Do not know
- Other _____
- 23 Do you know, which wildlife category is illegal to hunt all seasons?
- ☐ Prohibited ☐ Managed ☐ Do not know
- ☐ All category
- 24 Do you know when is illegal to hunt managed species?
- ☐ 1/5-31/10 ☐ 1/1-30/4 ☐ 1/11-31/12
- ☐ 1/8-31/10 ☐ Do not know
- 25 How many months?
- ☐ 2 months ☐ 3 months ☐ 4 months
- ☐ 5 months ☐ 6 months ☐ 12 months
- ☐ Do not know
- 26 Do you know, which tools are illegal to use for hunting and fishing?
- ☐ All kind of snares ☐ Explosive
- ☐ Do not know ☐ All kind of guns
- ☐ Electric appliances ☐ Snares with metal
- ☐ Chemical-poison ☐ Cross bow
- Other _____
- 27 Do you think wildlife trade is illegal? ☐ Yes ☐ No
- 28 What is a penalty, if any, for the first offence, for someone who is caught hunting wildlife illegally?
- ☐ No penalty ☐ Fine double ☐ Jail term
- ☐ Do not know ☐ Fine ☐ Fine and jail term
- ☐ Warning
- Other _____
- 29 Can you tell me what are negative impacts of wildlife trade?
- ☐ 1 correct answer ☐ 3 correct answer
- ☐ 2 correct answer ☐ >3 correct answer

30 I am going to read a series of statement for you, and I would like you to tell me weather you strong

	Strong agree	Agree	Nautral	Disagree	Strong disagree
A People who hunt wildlife illegally should be fined	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B Buying wildlife bush meat in the market is wrong	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C You agree that make it is illegal to trade wildlife	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

31 What is a NPA core zone?

- ☐ A zone that let nobody entry
☐ A place that people can entry whenever they want
☐ Do not know

Other _____

32 Do you know why GoL estiblishes core zone in NPA?

- ☐ Be a place for wildlife to distribute
☐ Be a place for plants and trees to distribute
☐ To notice people that a place they cannot entry
☐ Do not know
☐ Tourism

☐ Be a place for study

33 I will read you these activities, and I want you to tell me if these activities are important to you or

	Most imp	Important	Nautral	Not imp	Not imp at all
A To conserve tiger from dying out of the NEPL NPA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B Prevent fire to expand to core zone of NPA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C Eating bush meat	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D To conserve wildlife for sustainable traditional use by villagers in remote area	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Why _____

34 Eating bush meat is important for whom?

- ☐ City people
☐ Everyone
☐ Tourism

- ☐ People in remote area
☐ Customer in a restaurant

Other _____

35 I am going to read you a list of statement of activities and each of activities, I would like you to tell

	Easy	Difficult	Do not know
A Preport a person from your village that you know has illegally hunted wildlife in the NPA to the law enforcement authority	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B Stop buying bush meat in a local market for your family	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C Report a person from your village that you know has illegally cut down trees in the NPA to the law enforcement authority	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D Stop shifting cultivation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Yes	No	Do not
E Have you heard anyone hunting tiger in the NEPL in the last 3 years?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
F Have you heard anyone hunting tiger in the NEPL in the last years?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G Have you seen bush meat for sale in a local market in the last 3 years?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
H Have you seen bush meat for sale in a local market in the last years?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I Has anyone in your village been arrested for hunting tiger in the NEPL in the last 3 year?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
J Has anyone in your village been arrested for hunting tiger in the NEPL in the last year?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
K Have you ever started shifting cultivation in the last 3 year	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
L Have you ever started shifting cultivation in the last year	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

House of respondent

<input type="checkbox"/> Tile roof	<input type="checkbox"/> Metal roof	<input type="checkbox"/> Wooden roof
<input type="checkbox"/> Brick wall	<input type="checkbox"/> Wooden wall	<input type="checkbox"/> Bamboo roof
<input type="checkbox"/> Bamboo wall		
Electricity	-----	
Machine	-----	

36 I am going to ask you about number of ways in which you may not have heard about the use of

	Yes	No	Do not
A Seen a billboard about the use of bush meat	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B Seen a poster about the use of bush meat	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C Heard an advertising (Spot) about the use of bush meat	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D Seen role play in village	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E Seen other materials: Story book, stickers...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Yes	No	Do not
A Seen a billboard about the use of tiger	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B Seen a poster about the use of tiger	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C Heard an advertising (Spot) about the use of tiger	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D Seen role play in village	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E Seen other materials: Story book, stickers...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

37 Can you tell me what benefits you derive from the NELP?

- | | |
|---|--|
| <input type="checkbox"/> 1 correct answer | <input type="checkbox"/> 3 correct answer |
| <input type="checkbox"/> 2 correct answer | <input type="checkbox"/> >3 correct answer |

38 Can you name threats to the forest in the NEPL NPA?

- | | |
|---|--|
| <input type="checkbox"/> 1 correct answer | <input type="checkbox"/> 3 correct answer |
| <input type="checkbox"/> 2 correct answer | <input type="checkbox"/> >3 correct answer |

39 Can you name threats to wildlife in the NEPL NPA?

☐ 1 correct answer

☐ 2 correct answer

☐ 3 correct answer

☐ >3 correct answer

40 Can you name activities that help to protect forest in the NEPL NPA?

☐ 1 correct answer

☐ 2 correct answer

☐ 3 correct answer

☐ >3 correct answer

41 Can you name activities that help to protect wildlife in the NEPL NPA?

☐ 1 correct answer

☐ 2 correct answer

☐ 3 correct answer

☐ >3 correct answer

42 Did you participate the NPA?WCS conservation campaign?

☐ Yes

☐ No

43 How many buffalos do you have?

44 How many cows do you have?

45 How many pig do you have?

46 How many goats do you have?
