

TITLE OF THE PROJECT: *Community based human elephant conflict management of Sarpang Division of Bhutan*

Report Type: Final Report

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Description of Acronyms and Bhutanese Terms

1. Nature Conservation Division: *One of the five functional divisions of the Department of Forests and Park Services, Ministry of Agriculture and Forests, Royal Government of Bhutan*
2. Divisional Forest Office, Sarpang: *One of the fourteen territorial field forest divisions of the Department of Forests and Park Services.*
3. QRT: *Quick Response Team (A team made up by village volunteers for managing human elephant conflict)*
4. HECx: *Human Elephant Co-existence Workshop*
5. Gewog Administration: *A sub-district administration headed by an elected official and other civil servants with a jurisdiction over two or many smaller villages.*

2. Overall and specific conservation needs this project addressed:

- 1. Garner community support in mitigation of human elephant conflict*
- 2. Build capacity of the farmers in dealing with human elephant conflict*
- 3. Piloting the use of drone technology to mitigate human elephant conflict*

3. Summary of goals and objectives

As a community-based conservation program, this project built capacity at the local level and provided citizen stakeholders to plan, implement and sustain activities. This will not only benefit them directly by reducing human-elephant conflicts and alleviating income loss due to crop loss and stored food loss to elephants, but will also gain community support and partnership for conservation of elephants.

This project is directly being implemented in close partnership with local affected communities through the project's Quick Response Team activity, training workshops on HECx, awareness meetings. The pilot use of drone technology is being led by the office of Nature Conservation Division and Sarpang Forest Division, which is engaged year-round in peaceful driving away of elephants during crop raids and other conflict situations. The use of drone is expected to reduce crop damages by driving elephants away from crop raid sites to forests. The sound of the multi-rotor drone propellers is similar to that of buzzing bees and is seen to agitate elephants.

This project has been successful in building very close ties with local communities and gaining their support for elephant conservation through effective response teams and co-existence mitigation methods of human elephant conflict management.

The pilot use of drone is also expected to bring other benefits such as getting the idea of herd size, habitat conditions, and location of elephants besides being used as a bee-buzzing sound to go near and drive away and guide the elephants back to the forests.

4. Description of specific actions taken to achieve objectives

1. Train and equip the Quick Response Teams with basic field gears

Rain gears, viz. coats, pants, boots and caps were issued to quick response team members from five communities of Senge, Gakiling, Shompangkha, Samtenling and Samtenthang groups. Each group had a membership of five to fifteen members. The members were mostly male members who were active and engaged previously in elephant conflict management. Interestingly there was also one lady member in Samtenthang group. When asked why she chose to become a member of the QRT, she said it is a noble cause of protecting the revered elephants and also contributing to protection of crops. She also mentioned that she need not necessarily go chasing elephants, but can coordinate the men in their village to come to one common point from where they can jointly chase away elephants. Through this question and answer session with her, we the trainers were more than satisfied that our training on the working modality of QRT was in fact successful.

Additionally, 13 sets of such field gears were also issued to Sarpang Forest Division for use by its staff involved in responding to conflict management during the rainy season.

2. Pilot the use of drone technology to mitigate human elephant conflict.

A DJI Phantom 4 Pro drone has been purchased for piloting its use in HEC mitigation. The use of drone has not been possible to be piloted as planned for driving away elephants from crop raiding fields due to the delay in finalization of the UAS Regulations by the Bhutan Civil Aviation Authority. Now that the regulations have been approved, the permission to fly the drone as planned in the project has been approved of and in the coming season, the drone will be used as planned. Since it is off season for cropping and no elephants visits crop fields this time, I have tried it on captive elephants and it is

observed to agitate elephants. We are pretty sure that this technology will be helpful in minimizing crop damages at least for the initial few years after which they may become used to this sound.

3. Community Trainings on human elephant coexistence:

In total three communities of Hiley, Dekiling, and Samtenling affected by human elephant conflict have been trained on the following areas of interest:

- a. Knowing about elephants (its conservation status, causes of HECs and mitigation measures undertaken so far)
- b. Basics of living with elephants
- c. Bringing in behavioral changes among farmers
- d. Ele-Dos and Don'ts.

A total of 100 farmers attended these trainings at three different locations. During the training, presentations on elephants behaviors, the basics of what to do when they come face to face with elephants and many other aspects of human elephant conflicts. Drama and awareness skit made by students further enhanced their knowledge about how their daily behavior and acts attracts elephants to their village.

The training proved to be very useful as expressed by most participants. They expressed that they learnt many new knowledge on co-existing with elephants. They were of the opinion that, many things they did in the daily lives unknowingly invited elephants to their farms and settlements. For example, brewing of local drinks from fermented grains and not caring about the refuse from this drink may have invited lots of HEC incidences in the past.

During this one-day training, farmers were provided a working lunch and refreshments and a per diem to cover their travel expenses.

5. Describe any activities that differ from the original proposed actions and explain the reason for the change.

Piloting the use of drone technology could not be undertaken due to many restrictions put in place by Bhutan government on flying of drones. But with the finalization of UAS Regulations of Bhutan, it will be put to use in the coming cropping season in the month of May to July.

6. Describe the conservation outcomes for elephants, other wildlife, habitat and human communities, and list major findings and accomplishments to date.

Through the formation and institutionalization of such groups as QRT, communities are now being sensitized about the importance of elephants for a healthy ecosystem. Prior to formation of such community based groups, people would try to harm elephants out of anger due to the damages done to their crops and property. But now when we bring the community members on board for conservation of elephants, even though elephants would continue raiding crops and property, we see the level of tolerance being raised among these community members.

Since Sarpang Division lies along the international boundary between Bhutan and India, it is prone to illegal loggers and poachers from both across and inside the border. Since these QRT members are directly in touch with forest department staff for reporting HEC incidences, they also act as partners of forest department and they do report other forest offences to the local forest offices thereby indirectly protecting wildlife habitat.

7. Approximately how many humans are impacted by your project? Approximately how many elephants are impacted by your project?

The QRT members are volunteers from the existing community elephant conservation committee within four sub-districts in Sarpang District. In total there are 1491 households within these four committees

registered as members of the community elephant conservation committee. Following are the villages and its households benefitted by the formation of these QRT groups:

1. Senge (282 households)
2. Gakidling (532 households)
3. Samtenling (357 households)
4. Shompangkha (320 households)

As per the visual sighting of elephants by communities and Sarpang Division staff, they have identified 3 elephant herds in Sarpang area. Two herds have been collared with GPS collars and each herd consists of 35 elephant and 25 elephants from my personal experience in collaring elephants. The third herd was sighted on the day we were returning from one of the QRT trainings and had 31 elephants in the herd consisting mostly of sub adults. So in total about 90-100 elephants are impacted by this project.

8. Describe any problems discovered or occurring during this grant period

The only problem faced during the implementation of this grant was that of getting the approval of the Civil Aviation Authority on flying of drone as proposed in the original proposal.

9. Success of the Project. (short and long term goals used to evaluate accomplishments).

This project has been successful as far as objectives are concerned as we could carry out all the planned and targeted activities on time except for the piloting of drone technology to drive away elephants during crop raid.

The short term goal of building community capacity for conflict management readiness and equipping them with right field gears could be achieved. The long term goal of building partnership with communities and gaining their confidence on elephant conservation is also evident from the statements provided by community members during their interviews. Farmers and anyone in the community always like to see tangible benefits out of living in close proximity and tolerating the presence of elephants in their vicinity. Providing them with trainings and equipping them with field gears is one such tangible benefit and even such small benefits to those needy farmers mean a lot. Out of such small benefits they receive, they are actually able to see some meaning to co-existing with elephants. Otherwise, lecturing farmers about the ecosystem role of elephants would prove to be a waste of time and resources.

On a longer term perspective of achievement of this project, I feel I have been successful in building a knowledge base of the farmers in better understanding of elephants and its behavior. The project has also been successful in bringing a behavioral change among communities for peaceful coexistence and living with elephants. Years down the line, we would be able to see visible reduction in conflict and also an increased tolerance towards conflict due to their improved understanding of elephant behavior and also due to the change in behavior of farmers.

10. Based on this Project, what is the “next step” for this project and does it have implications for future conservation actions?

During the first phase of this project, we could train and equip the members of quick response teams on their functioning modality. This has already started to show results in some places. Previously this season used to be the busiest season for both forestry staff and farmers. The forestry staff always had to be on their toes and ready to move any time, mostly during night to respond to calls regarding elephant crop raids. Farmers remained busy guarding their crops at night with the expectation of crop raiding elephants coming into their fields. But now with formation of QRTs, farmers and forestry staff both get sound sleep as any elephant sightings get reported immediately to the leader of the QRT and they coordinate public support for driving away elephants. So this system of information reporting and coordinating public support is worth replicating in other areas with similar situation. When lots of farmers gather together to drive away crop raiding elephants, we have observed that they do so without much knowledge of what would be effective and peaceful for both elephants and farmers. We have also noticed that most damages in the villages happen to those houses which has some attractant in the store.

Through the second phase of this project, the co-existence training has helped the farmers to better understand the elephant behavior which is expected to help farmers in avoiding elephant conflicts and know how to handle elephant crop raid situation and also when they come across face to face with elephants.

11. Human interest story

Could not find any human interest story.

12. 500 words summary of the progress and results achieved

Gelephu in Sarpang District used to be as Hatisar in Nepali in the olden days, that roughly translates to “elephant shed”. Going by its old name, this area focused by the project is historically known to have wild elephants in huge numbers and locals narrate stories of Rajas (local kings) from neighboring Assam to have frequented this place for elephant shikari (wild elephant capture). For this reason, from history to date, Sarpang is known to record the highest incidences of elephant conflict with farmers and also the highest elephant sightings near human settlements.

Except for few management strategies such as erecting electric fences and other simpler knee-jerk reaction to the problem, there has not been much of holistic HEC management strategies put in place in Sarpang District of Bhutan.

With the help of few donors assisted projects in the past and recently with the grant support of International Elephant Foundation, we have been able to try out more holistically planned HEC management and co-existence methods. The formation of quick response teams (QRT) and building their capacity and also equipping them with field gears is one of the best community-based solution of management of human elephant conflict. The trained members of these QRT groups will now take a lead role in managing HEC situations in their area by coordinating public groups as elephant drive away teams using techniques taught in the human elephant co-existence workshops and QRT trainings. The functioning modality of the QRT is that, any farmer who sees an elephants and hear about an elephant in their village will inform the QRT leader about the location of elephants. The QRT leader will then coordinate with the rest of the member and gather at a specified location along with other community members. They will then coordinate to drive away crop raiding elephants from the agriculture fields. They will use the most peaceful method for elephants when driving away, which could be either fire crackers or banging tins and shouting. Some traditional methods of producing sound using bamboo will also be used.

During the second phase of the project, farmers were trained on human-elephant co-existence where they were made aware of what to and what not to do during an elephant attack, and also what are the various behavioral changes one need to bring to keep away elephants. Besides these presentations to the farmers, farmers were also shown skits by students to make them aware of the importance of elephant conservation and also what causes and increases human elephant conflict.

Through such management approaches, we hope to tackle the conflict at its root cause by gaining community support for elephant conservation while at the same time encouraging them to change their cropping and grain storage habits.

13. 50 words summary of the progress and results achieved

Sarpang Forest Division along with Nature Conservation Division of the Department of Forests and Park Services of Bhutan has formed five quick response teams (QRT) for management of human elephant conflict in the southern district of Sarpang Bhutan. These community QRTs will now take the lead role in managing HEC situations in their area by coordinating public groups as elephant drive away teams using techniques taught in the human elephant co-existence training. Through the second phase of this fund, we have been able to train famers and QRTs on conflict management techniques and also give on the general importance of conserving elephants and making them understand about the causes of human elephant conflict.

14. Organizations associated with this project and their roles in the project

1. Nature Conservation Division, Department of Forests and Park Services, Royal Government of Bhutan
2. Divisional Forest Office, Sarpang Division, Department of Forests and Park Services, Royal Government of Bhutan
3. Gewog Administration, Senge Gewog, Gakiling Gewog, Shompangkha Gewog, Samtenling Gewog, Sarpang Dzongkhag.

15. Financial report of International Elephant Foundation funds spent

SN	Budget Head/Particulars	Amount in USD
1	QRT Meeting Expenses (Lunch and refreshment for public)	1000.00
2	Procurement of Rain Gears (Caps, Coats, Pants and Boots)	2100.00
3	Procurement of DJI Phantom Drone	2500.00
4	Field visit and monitoring expenses	400.00
5	Community training working lunch cost	3000.00
6	Community training per diem	1800.0
7	Training material cost	1200.00
	Total	12000.00