

An Interim Report on

PACCT for Tiger Conservation: Reducing Resource Competition Between People and Tigers



Submitted to WildCats Conservation Alliance
Zoological Society of London Nepal Office
Kathmandu





Figure 1: Tiger cubs captured during hotspot monitoring in an extension area of PNP

Cover Photo: (Mother of these cubs)

Tiger photo credits: DNPWC/ZSL

Progress Summary

Focussing on Parsa National Park extension area three meetings have been conducted with stakeholders and communities to identify HTC vulnerable households and introduce PACCT and HTC relief. 30 targeted households within the buffer zone are now being supported to construct and maintain predator-proof corrals. Of four planned habitat management and HTC workshops, three workshops have been completed till date and more than 200 leaflets containing information on tiger conservation needs and issues were distributed through the workshops. 22 ha of grassland have been managed to create a more suitable habitat for tiger prey species. Initial household surveys show a background positive local attitude to tiger conservation, tempered with concerns about increasing tiger numbers and the risks this poses to life and livelihood. Throughout the project regular coordination with the Park and community forest user's group has been maintained ensuring effective and consultative project implementation.

Contents

Progress Summary	
Project Summary	1
Project Background	2
Project Objectives	4
Project Activities Progress	4
Activity 1.1 Conduct three meetings with stakeholders and community to identify 30 HTC vulnerable households and introduce PACCT and HTC relief.	4
Activity 1.2 Support 30 vulnerable households to build predator-proof corrals	9
Activity 2.1 Hold four participatory habitat management workshops (April 2019)	9
Activity 2.2 Management of Halkhoriya lake	12
Activity 2.3 Grassland management in PNP	12
Monitoring	15
i. Attitude and Knowledge survey	15
ii. Data on HTC Incidences from supported communities	16
Annexes	17
<i>Figure 1: Tiger cubs captured in an extension area of PNP</i>	i
<i>Figure 2 a & b: ZSL Nepal and PNP Staff having interactive dialogue with community members</i>	6
<i>Figure 3 a & b: Chairman giving concluding remarks of the programme and group photo</i>	6
<i>Figure 4 a,b,c & d: Interaction held at Ratanpuri among Parsa NP ranger, AFO Bara Forest and community members</i>	7
<i>Figure 5: Group photo with Tapobhumi CFUG members.</i>	7
<i>Figure 6: Ranger presenting on human tiger conflict and participants in the workshop</i>	8
<i>Figure 7: Group photo after interaction</i>	8
<i>Figure 8: ZSL Nepal staff delivering objectives of the workshop</i>	10
<i>Figure 9: Group Work during workshop</i>	10
<i>Figure 10: Tiger conservation workshop at Shiva Shaktishwari CFUG</i>	11
<i>Figure 11: Group photo after workshop</i>	11
<i>Figure 12: Photo before grassland management</i>	13
<i>Figure 13: Photo before grassland management</i>	14
<i>Figure 14: Photo after trees felling and shrubs uprooting</i>	14
<i>Figure 15: Photo after few months of management</i>	15
<i>Table 1: No. of participants</i>	6
<i>Table 2: No. of participants</i>	9
<i>Table 3: Result of attitude survey of the respondents:</i>	15
<i>Table 4: Mitigation measures to overcome tiger conflicts</i>	16
<i>Map 1: Map Showing protected areas including Parsa NP</i>	3
<i>Map 2: Map showing Parsa NP and extension area of Parsa NP</i>	3
<i>Map 3: Map showing grassland managed location</i>	13

Project Summary

ZSL has successfully supported a near three-fold increase in tiger population in Parsa National Park (PNP) since 2013, but for populations to grow further, and to secure these populations for the future, the threat of Human-Tiger Conflict (HTC) must be addressed, including in PNP's buffer zones. To achieve this, ZSL is now trialing Participatory Approaches to Corridor-Coexistence with Tigers (PACCT), a toolbox of options that can be applied to the priority human-tiger coexistence needs across the landscape.

A key component within PACCT is addressing HTC to reduce buffer zone community's costs from living alongside tigers, in terms of livestock predation and the risk of attacks on people. This project will trial this component by addressing the underlying resource-competition drivers, through increasing prey availability for tigers within PNP (through participatory habitat management of 20ha of vital grassland and wetland), while protecting livestock from predation (through deploying predator proof corrals) as well as facilitating community access to existing HTC relief funds. ZSL expects the trial of PACCT to cultivate community support for tiger conservation around PNP extension area. WCCA's support for this project will enable a key element of PACCT to be trialed and refined before being expanded to produce large-scale and long-term impact across a priority tiger landscape.

ZSL, with WCCA support, has supported the Government of Nepal's ongoing investment in Parsa National Park (PNP), facilitating its extension of an additional 129 km² in 2015, and subsequently its upgrade to a National Park in 2017. Our work to secure significantly improved habitat, stringent law enforcement and annual biological monitoring has contributed to the recovery of tigers and other wildlife. This project is part of ZSL's larger trans-boundary tiger conservation programme and builds on the successes achieved by past projects implemented by ZSL and partners. Through 21st Century Tiger, WCCA has supported the tiger conservation project in Parsa National Park (PNP), particularly focusing on PNP extension area. The past project actions have focused on improving tiger security, habitat, biomonitoring and securing connectivity, which have enabled the populations of prey and tigers to increase. ZSL has implemented SMART patrolling in PNP since 2014, which contributed to the rapid recovery of tigers (Lamichhane et al. 2017).

To enable these growing populations of tigers to remain in the core areas and use buffer zones, the proposed project builds on these initiatives by addressing the potential for future escalation of Human Tiger Conflict (HTC). Improving the access to high-quality habitat resources within the core area of park, while reducing access to livestock, will lessen the relative attraction for wildlife to enter human settlements. This project replicates ZSL's achievements in setting up predator-proof corrals in the Western Terai Complex, which has successfully protected local communities' livestock from tiger depredation.

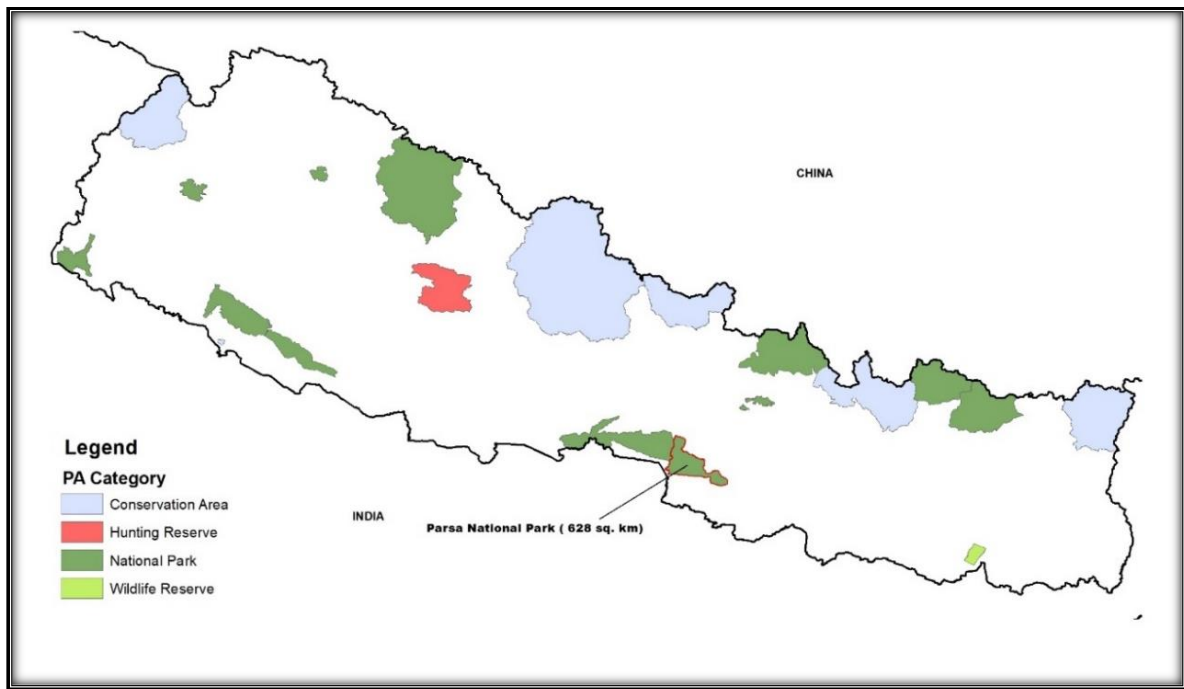
Thus, this project aims to build on past successes, including ongoing patrolling and monitoring, extending the focus from the core areas to engage local communities in long-term sustainable tiger conservation in the landscape. The project will utilise and build upon community engagement experience from ZSL's other projects, to implement the proposed activities in ways that ensure sustainability and ownership by local communities.

Project Background

Parsa-Chitwan Complex (PCC) supports Nepal's largest population of threatened megafauna, including tigers, and itself lies in one of the world's most productive tiger habitats, the transboundary Terai Arc Landscape. Chitwan National Park that shares boundary with PNP has the largest tiger population of all the protected areas in Nepal. But if the needs and threats of the tiger can be addressed, then PNP has the potential to support further increases in the tiger population – even beyond a dramatic, near-three-fold increase in PNP's tiger numbers since 2013 and the increased use by tigers of the newly added 'extension area' to PNP; as revealed in 2016/17 by ZSL's annual camera trapping survey.

ZSL's successful tiger recovery model has highlighted that no matter how well protected core sites become, tiger populations will always remain fragile if they are not supported by the local communities sharing the landscape. In the Parsa-Chitwan Complex, these communities are growing, and in effect, compete for resources with tigers and tiger prey, in terms of the need for land, forest resources (such as cattle fodder) and livestock. An HTC incident in 2017 sadly proved fatal to both people and tiger, and such risks are expected to increase as tiger populations grow. Unprotected livestock coupled with low prey numbers inside the protected area lure the tigers into proximity with people, increasing the risk for HTC. Livestock predation, human fatalities and other forms of HTC create an incentive for retaliatory killings. Negative perceptions of conservation are furthermore exacerbated by low awareness in the communities.

The project aims to contribute to increasing the secure core area within PCC, enabling tiger population increases to be sustained. Resource competition and human-tiger conflict will reduce within and around four communities of the PNP extension area, with at least 2,200 individuals reached through awareness raising, and 30 vulnerable households receiving predator-proof corrals. 20 ha of grassland and wetland will be managed for improved habitat quality. This will provide a participatory model for reducing resource competition between people and tigers, and contribute to ZSL's ongoing work designing, trialing and agreeing PACCT, and extending implementation across the Terai Arc Landscape to enable long-term human-tiger coexistence.



Map 1: Map Showing protected areas including Parsa NP



Map 2: Map showing Parsa NP and extension area of Parsa NP

Project Objectives

This project contributes to two of ZSL's long-term tiger conservation goals:

1. Securing the Chitwan-Parsa Complex's (PCC) role as a globally vital tiger stronghold, which can continue to support an increased tiger population in a rapidly changing world; with high-quality habitat, local communities committed to its conservation, and connectivity to the wider landscape.
2. Securing vital connectivity between all tiger-bearing protected areas in the Terai Arc Landscape through the effective implementation of PACCT.

Project Activities Progress

Before implementing project activities, a Project Management Unit (PMU) meeting was conducted in coordination with the Chief Conservation Officer of Parsa National Park. PMU is an established body between national parks and ZSL at field level, that when required can hold a meeting and decide to implement project activities at the site. Chief Conservation Officer of national park is the coordinator of the PMU and ZSL field in charge and NTNC-BCC in charge are its members. The project activities were initiated after prior consultation with the national park, forest offices and members of the community.

Activity 1.1 Conduct three meetings with stakeholders and community to identify 30 HTC vulnerable households and introduce PACCT and HTC relief.

For this, the communities residing alongside the extension area of PNP were selected. In three meetings, four forest dependent communities were selected based on their greater vulnerability to Human-Tiger Conflict (HTC) compared to other communities. Interaction meeting and community consultations were conducted to inform the community members about the increasing tiger numbers in PNP and its associated risk in terms of HTC. During the meeting, project objectives and its activities were shared with the community members. Altogether, 108 community members took part in three interaction programs.

We have been supporting tiger conservation in PNP from 2014. The recent national tiger census has indicated a near threefold increase in tiger population in PNP since 2013. Our motive is to further increase the tiger population, and to secure these populations for the future. As human population continues to increase and tiger populations recover in these areas, conflicts are expected to occur more frequently. Such conflicts can undermine conservation efforts. So, the threat of HTC must be addressed. To achieve this, we have designed a Participatory Approach to Corridor-Coexistence with Tigers (PACCT) for tiger conservation to reduce resource-competition between people and tigers. PACCT is aimed at addressing HTC to reduce community's costs from living alongside tigers, in terms of livestock predation and the risk of attacks on people.

To address HTC, introduce PACCT and HTC relief, we conducted two interaction programs on tiger conservation with relevant stakeholders and identified communities on 30th May and 31st May 2019, while a third interaction programme was organised on 21st July 2019. Two

communities were selected from Tapobhumi CFUG, Ratanpuri while the third was selected from Shree Shiva Shaktishwari CFUG, Dambarpur (See annex 1, 2 and 3 for minute details and list of participants). Both CFUGs are situated near the extension area of the park.

Mr. Sun Bahadur Thing, the chairman of Shree Shiva Shaktishwari CFUG chaired the first program, while Mr. Shashikanta Tiwari (AFO, Bara) and Mr. Bibash Koloni (Ranger, PNP) acted as the chief and special guests. Mr. Dil Bahadur Thapa, chairman of Tapobhumi CFUG in Ratanpuri chaired the second interaction programme, while Mr Shashikanta Tiwari (AFO, Bara), Mr. Dil Bahadur Rumba (Chairman of Ward No 11, Nijgadh Municipality) and Mr. Bibash Koloni (Ranger, PNP) acted as the chief and special guests. Similarly, Mr. Dil Bahadur Thapa, chairman of Tapobhumi CFUG chaired the third interaction program, while Mr. Bibash Koloni (Ranger, PNP) and Mr. Ram Krishna Thing (head of the tole development committee) acted as the chief and the special guests.

All three programmes had similar modality and covered topics on tiger conservation and habitat management through participatory approach, introduction to HTC relief mechanism and ways of mitigating HTC in the respective areas. Most of the participants in the three programmes were members of the CFUGs who were greatly reliant on the forest and as such, prone to greater risk of conflict.

Mr. Bibash Koloni (Ranger, PNP) had an interactive discussion, focusing on the importance of tiger conservation, rules and regulation of the park and their activities for sustainable development of communities around the park. He emphasised the economic benefits of conserving tiger and its habitat for the local people in the program. Mr Koloni also reiterated the importance of community support in conservation effort.

Mr. Shashikanta Tiwari, Assistant Forest Officer made a presentation in which he noted that "conservation is a very difficult but important task", which the government alone can't achieve. Conservation efforts require coordination among various agencies, with the communities who reside around the protected areas being the most important. He had an interactive dialogue with the participants, mostly focused on tiger conservation and its habitat management and ways to mitigate human wildlife conflict.

During the closing remark, the chairman for each programme conveyed their gratitude to all participants, guests and presenters. They thanked ZSL Nepal for supporting and facilitating the program and for deciding to assist vulnerable households to build predator-proof corrals in the area, while expressing their satisfaction with the interactive nature of the discussion.

The table below shows the number of participants in three interaction meetings:

Table 1: No. of participants

SN.	Interaction Program	Participants	Male	Female
1	Shree Shiva Shaktishwari CFUG (Interaction Programme 1)	44	28	16
2	Tapobhumi CFUG (Interaction programme 2)	30	20	10
3	Tapobhumi CFUG (Interaction programme 3)	34	10	24



Figure 2 a & b: ZSL Nepal and PNP Staff having interactive dialogue with community members



Figure 3 a & b: Chairman giving concluding remarks of the programme and group photo

Below are some photos taken from the program held at Tapobhumi Community Forest User's Group:



Figure 4 a,b,c & d: Interaction held at Ratanpuri among Parsa NP ranger, AFO Bara Forest and community members



Figure 5: Group photo with Tapobhumi CFUG members.



Figure 6: Ranger presenting on human tiger conflict and participants in the workshop



Figure 7: Group photo after interaction

Activity 1.2 Support 30 vulnerable households to build predator-proof corrals

To build the required number of predator proof corrals, an agreement has been signed with both CFUGs. Both CFUGs have already identified vulnerable community members who will be supported to construct and maintain predator proof corrals.

Activity 2.1 Hold four participatory habitat management workshops (April 2019)

Out of four targeted participatory habitat management workshops, three workshops have been completed till date. All three workshops focused on vulnerable communities that were identified through previous community consultation meetings. Altogether, 129 community members participated in these workshops.

On September 17, ZSL conducted two participatory habitat management workshops at Tapobhumi CFUG, Nijghad-11, Ratapuri, Bara. The communities were divided into two groups. One group consisted of participants from Uttar Tole, Dukan tole and Bich Tole of the CFUG, while the other consisted of participants from different community of same CFUG's. There were 39 and 40 participants in the workshop respectively. (See annex 4 and 5 for minute details and participant list). The program was chaired by Mr. Dil Bahadur Thapa, chairman of Tapobhumi CFUG, while Mr. Manjur Ahmad, Division Forest Officer, Divisional Forest Office, Bara was the chief guest. Similarly, on 18th September, another participatory habitat management workshop was organised at Shree Shiva Shaktishwari CFUG, Nijghad-13, Dambarpur, Bara. The workshop was chaired by Mr. Sun Bahadur Lama, chairperson of Shree Shiva Shaktishwari CFUG. A total of 50 participants attended the program. (See annex 6 for minute details and participant list).

During the two workshops, the participants were provided general awareness on tiger conservation and its long-term benefits, HTC including existing HTC relief mechanisms, and how habitat management can help reduce HTC. Participants seemed excited to take part in the workshops. The participants also put forward their concerns that stemmed from living alongside protected areas. Most of the participants had poor understanding of the HTC relief mechanism at the start of the workshop.

The table below shows the number of participants in three workshops:

Table 2: No. of participants

SN.	Workshop	Participants	Male	Female
1	Tapobhumi CFUG (Workshop 1)	39	17	22
2	Tapobhumi CFUG (Workshop 2)	40	19	21
3	Shree Shiva Shaktishwari CFUG (Workshop 3)	50	18	32

More than 200 leaflets elucidating information on tiger and its habitat conservation, conservation laws regarding tiger, tiger conservation issues and ways to minimize human-tiger conflict were distributed during the workshops. 800 more leaflets will be distributed to the wider public of the buffer zone during the next workshop and other community consultation meetings.

Below are some photographs captured during workshops.



Figure 8: ZSL Nepal staff delivering objectives of the workshop



Figure 9: Group Work during workshop



Figure 10: Tiger conservation workshop at Shiva Shaktishwari CFUG



Figure 11: Group photo after workshop

Activity 2.2 Management of Halkhoriya lake

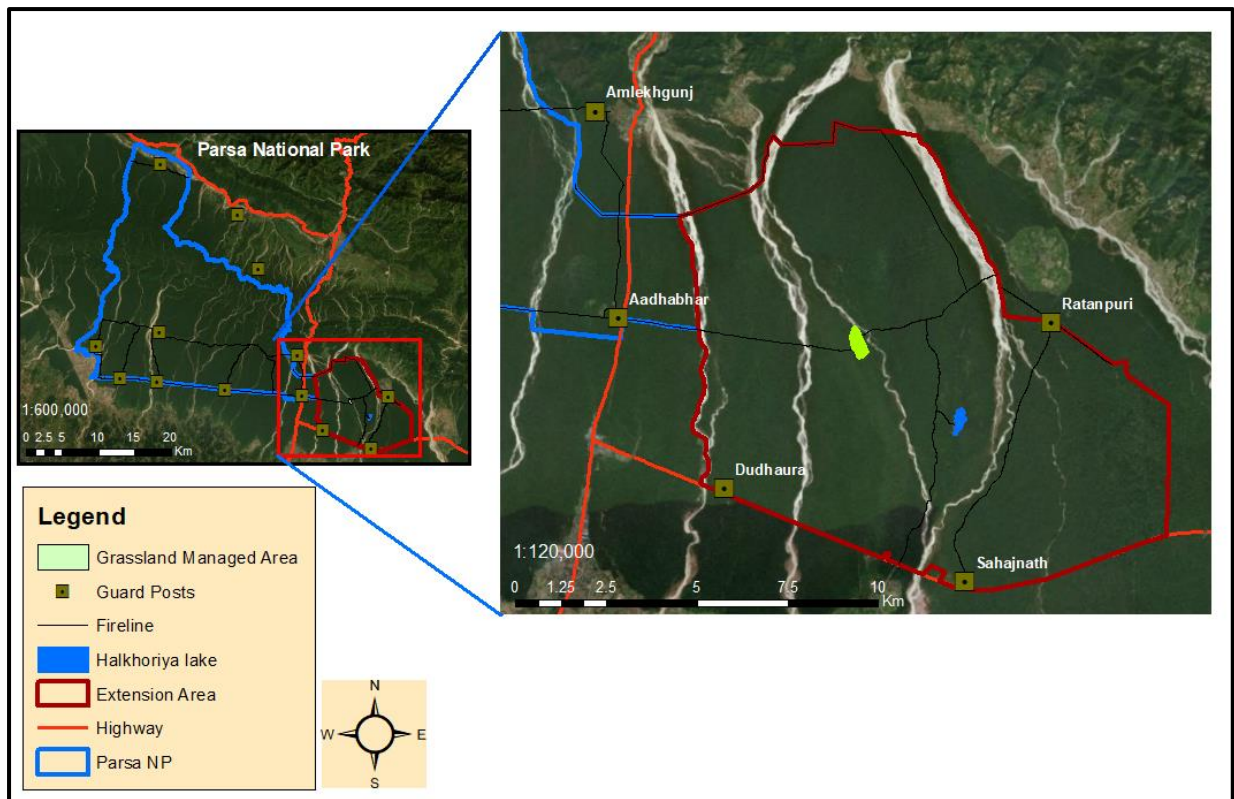
As mentioned in the project timeline, this activity was though planned to conduct in June, it has now been changed. Heavy rainfall that occurs at the early monsoon season had damaged most of the road networks inside the park which makes difficulties to conduct the activity in projected timeline. Therefore, during the consultation with the Chief Conservation Officer, for effective implementation we have adjusted the implementation timeframe. This project will now occur in the second half of the project period.

Activity 2.3 Grassland management in PNP

Grassland management in the extension area of PNP was started on 7th March 2019 and successfully completed on 5th April 2019. A local construction company was awarded the work, based on the review of the quotations received. ZSL monitored the intervention site regularly, to see to it that the activity was completed within the timeframe, cost and quality assurance mentioned in the quotation.

The extension area has become an important habitat for the threatened rhino, tiger, elephant and other wildlife. PNP has limited patches of grasslands, with very few in the extension area. These few grasslands are also under the threat of succession. While the grassland ecosystem plays an important role in maintaining biodiversity, it is also one of the most threatened ecosystems in South Asia. Realizing its importance in sustaining the increasing tiger population in the area, this activity was conducted to properly manage the grassland so that more prey species are supported. For this, prior monitoring was conducted to select appropriate site for grassland management by PNP and ZSL staff. Established guidelines and successful methods were adopted for the management.

Out of the 20-ha mentioned in the project activity, altogether 22ha of area was managed. For its management, selective cutting of trees (10 – 50 cm DBH) and removal of seedlings and saplings were done in order to avoid risk of conversion of area into woodlands in near future. Also, uprooting of invasive species like *Lantana camara* and *Mikania micrantha*, that severely affect the growth of grass species was done. Following this, controlled burning was done to help the sprouting of new grasses and plants which are palatable and attracts number of prey species.



Map 3: Map showing grassland managed location



Figure 12: Photo before grassland management



Figure 13: Photo before grassland management



Figure 14: Photo after trees felling and shrubs uprooting



Figure 15: Photo after few months of management

Monitoring

i. Attitude and Knowledge survey

The household survey was conducted from two different sites; Ratanpuri and Dambarpur. Both of these communities are close to the extension area of PNP. The survey was conducted to the members of both CFUG's (Tapobhumi and Shree Shiva Shaktishwari). Altogether 48 members were surveyed regarding tiger conservation issues and their attitude towards tiger conservation. Out of 48 members 30 respondents were female and 18 were male.

The table below shows the result of respondent's attitude towards tiger conservation.

Table 3: Result of attitude survey of the respondents:

S.N.	Contents	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Total
1	Tiger should be protected	17	24	5	2	0	48
2	Tiger should be protected inside PAs only.	15	20	6	7	0	48

3	Tiger should be protected inside and outside the PAs	9	18	16	5		48
4	Tigers kill livestock	19	18	3	8	0	48
5	Tigers attack human	16	16	4	12	0	48
6	Support tiger conservation even family member will be killed/injured	8	22	17	1	0	48

From the above table, we can see that majority of the respondents were positive towards tiger conservation. However, they are concerned with increasing numbers of tigers and the associated risks of conflict with tigers.

Also, our survey shows the highest weighted mean (3.78) on necessity of predation proof livestock shed which means the most preferred way to minimize human – tiger conflict is building predator proof corrals to avoid livestock loss and its associated conflicts followed by awareness and conservation education as adaptive measure to create harmony between human and tiger.

The table below shows the preferred mitigation measures of the respondents to overcome tiger conflicts.

Table 4: Mitigation measures to overcome tiger conflicts

Weight	Preference Order	Electric Wire Fencing	Wooden Livestock Shed House	Predation Proof Livestock Shed	Awareness/Conservation Education	Timely Response and Rescue Mechanism	Total
5	1st Choice	5	2	20	17	4	48
4	2nd Choice	6	9	12	10	11	48
3	3rd Choice	12	15	7	8	6	48
2	4th Choice	8	14	6	6	14	48
1	5th Choice	16	8	4	6	14	48
Weighted Mean		2.49	2.65	3.78	3.55	2.53	
Rank		IV	III	I	II	V	

This survey provides us the baseline on attitude of community people towards tiger conservation. The change of people's perception and impact of the project will be compared and presented at the end of this project by doing similar kind of survey.

ii. Data on HTC Incidences from supported communities

From last two years no HTC incidences have been recorded from the extension area of PNP. Likewise, our household surveys have also not indicated any such incidences. Despite the absence of HTC, a member of the community was killed by an elephant six months ago. Most of the community people are using traditional wooden sheds to safeguard their livestock but still some people are keeping their livestock in an open shed that risks livestock loss.