The costs of big cat conservation for farming communities adjacent to tiger reserves

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Introduction

Conflict: Interaction between humans and Wildlife for resource sharing cause harm to each other

Killing livestock, human attack, crop and property damage etc.

Harassment to wildlife or revenge killing of wildlife (including poaching wildlife for trade)

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Study area

Bardia and Chitwan NP : Low land protected areas

Home to several predators
tigers, leopards, dhole, jackals, fishing cats and bears etc.
and prey
Deer (chital, sambar, swamp, barking, hog) wild boar, gaur, and primates (langur, rhesus)

Dense human population- 0.35 m
diverse ethnic Communities-*Tharus* are indigenous

Depend on park resources for livelihoods

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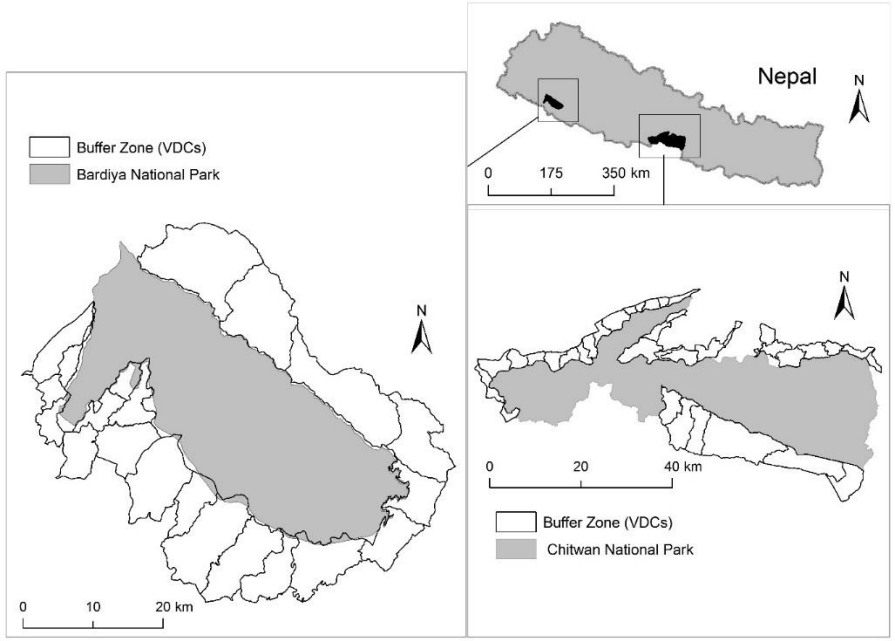

Methods

3 communities from BNP and 4 from CNP

(based on previous conflict reports and resources available)

Interviewed 422 households >55 settlements of 7 BZ communities (sampling size: 4.8%)

Face to face interviews in April to November 2017

Structured questionnaire (closed ended)

Data analysis: SPSS and Excel

(X^2 test, t test and ANOVA)

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Results

<u>Demographic features</u>

Average age: 44.4 yrs

Male v Female: 59.1% v 40.9%

Livestock: 5.02/hh

Land: 0.57 ha/hh

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Income from sales of surplus product: US $175/hh/yr

Ethnic composition (%): *Tharu* 37.5, *Brahmin-Chhetri* 36.5, *Janajati* 14.6, *Dalit* 10.6 and others 0.7

Results - Reported Livestock Loss

Total loss 158, in 5 years, 0.32 animals/hh/yr, (N=98)

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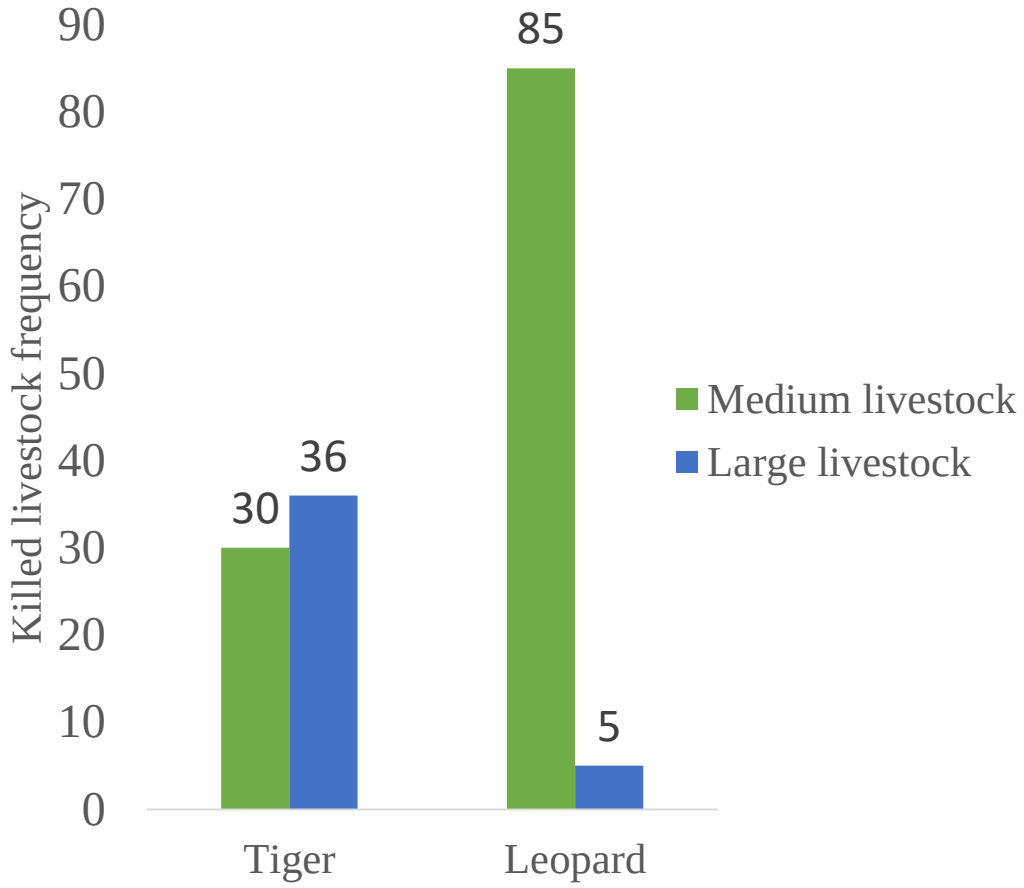
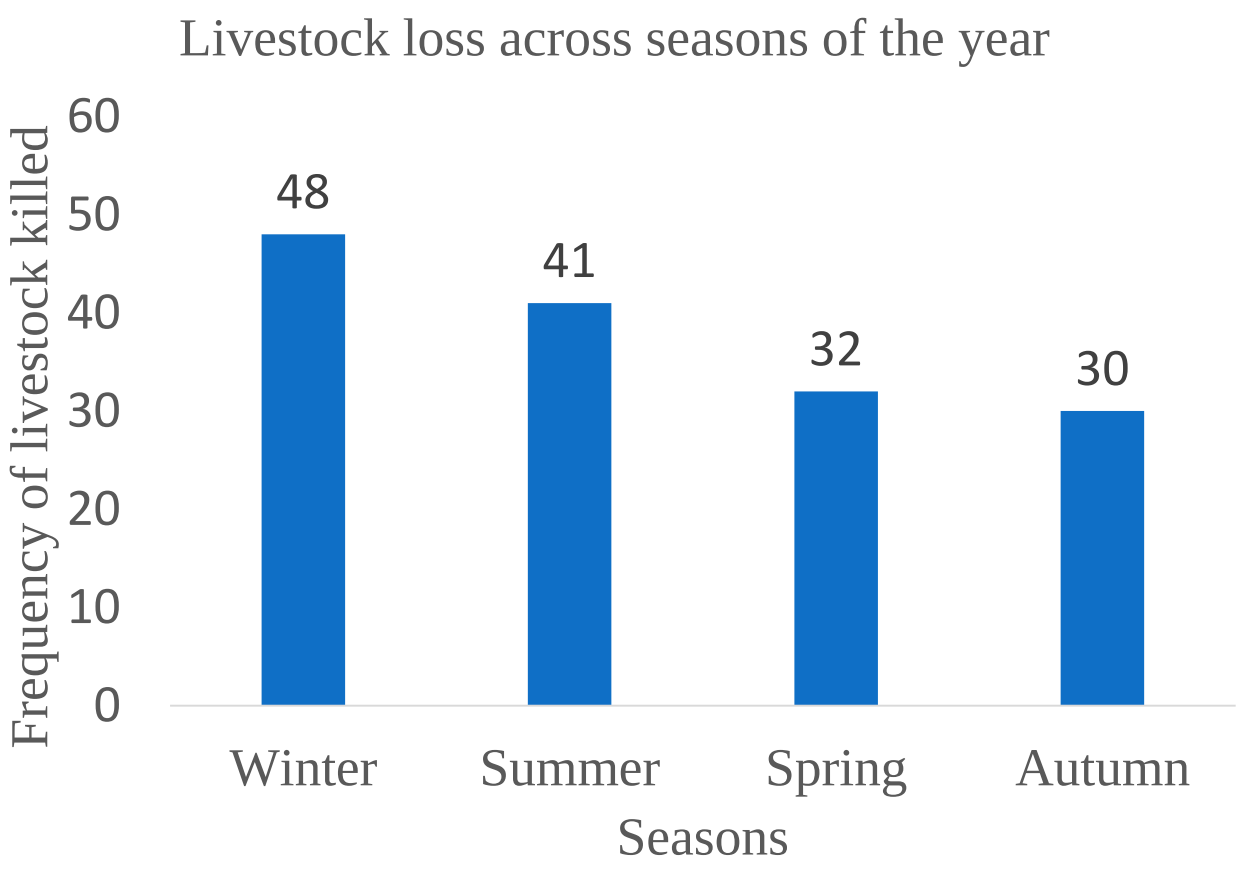
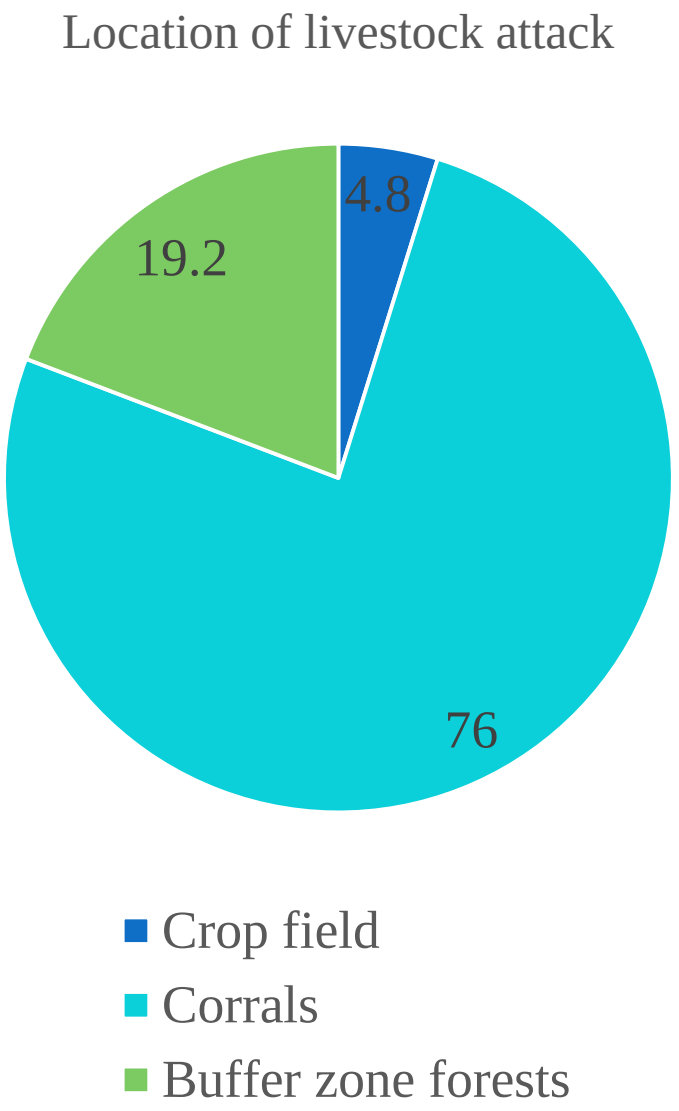


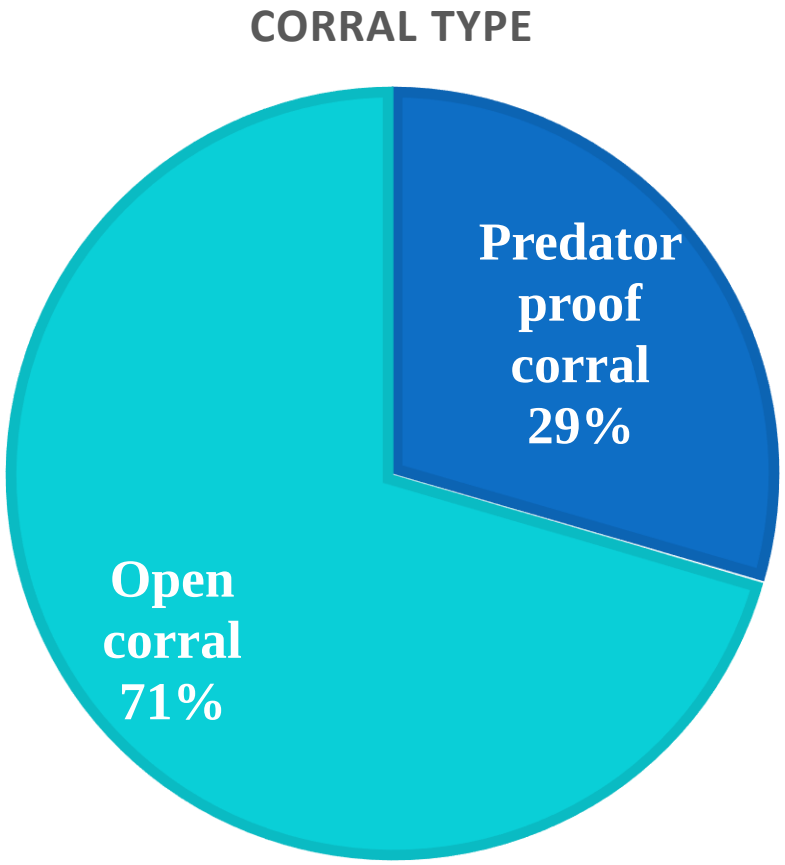
$X^2 = 45.13$, df = 1, $p < 0.001$

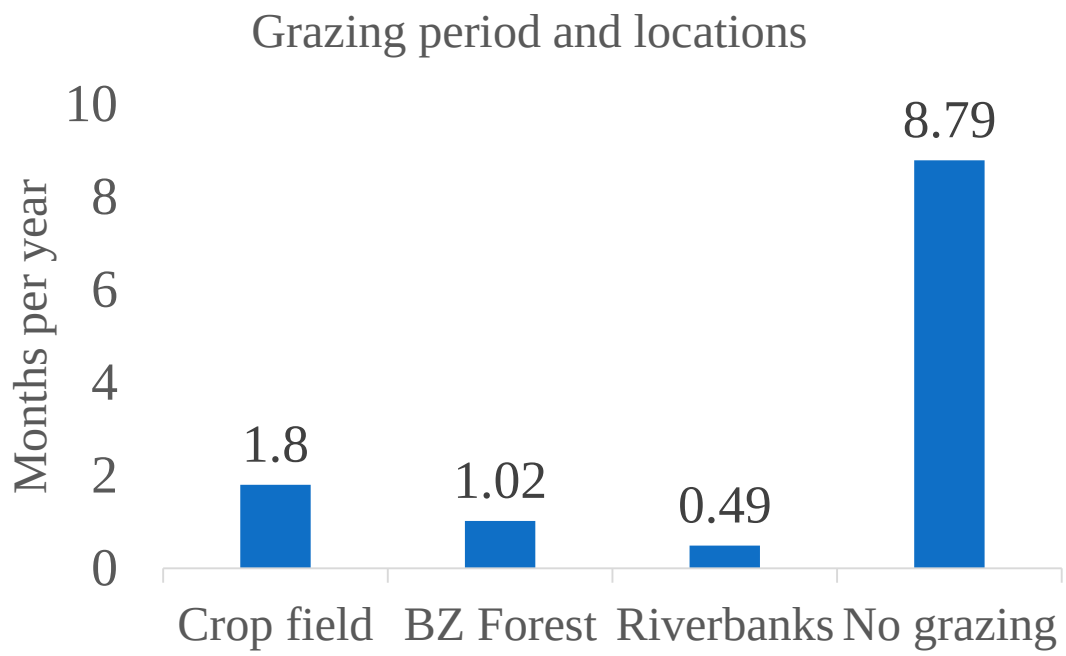
Reported Livestock loss contd..



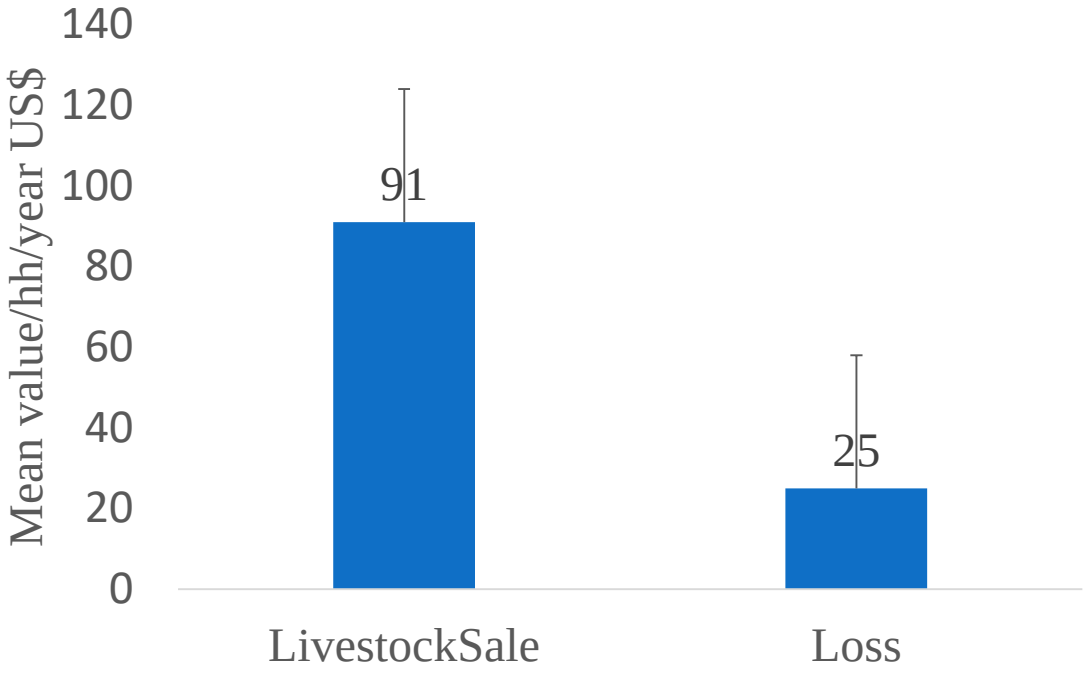


Results-Livestock Husbandry





Results-Reported economic loss



Mean loss reported per household per year in communities of two national parks	
Chitwan National Park	**Bardia National Park**
US$33	US$19
$t_{(93)} = -3.5, p = 0.001$	

27% of earning from livestock sale was lost in predation

Compensation against damage

Only 72.5% (87) affected households claimed compensation

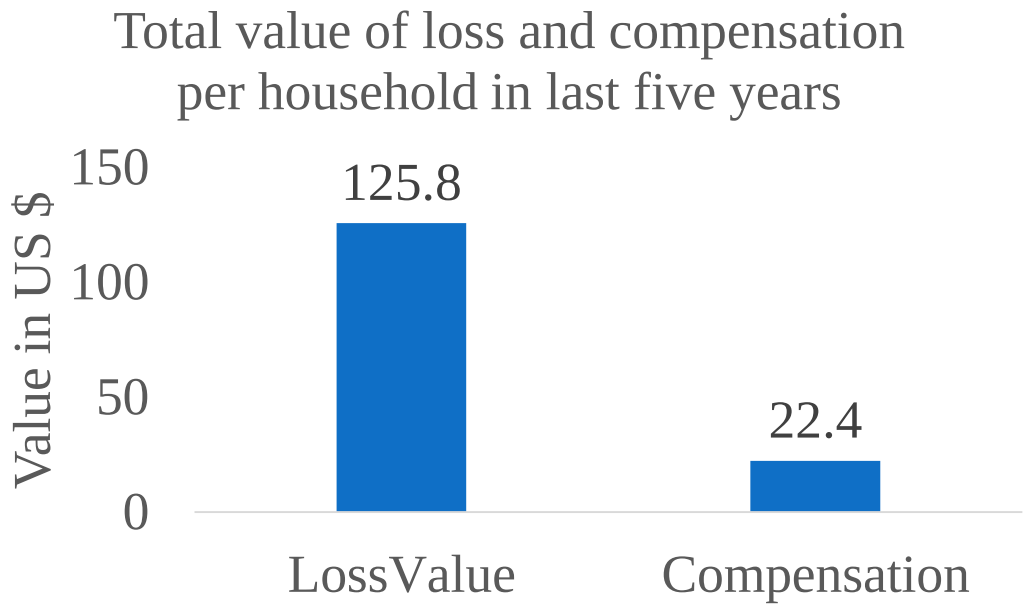
(Because of complex process, long processing time and several documents required)

Of those

-Successful application 72% (59)

-Satisfied = 38.2% (25)

(compensation process and amount).



Attitudes

Grand mean score of all statements = 4.02 (3.86-4.17)

Attitude statements	Gender		National Park		Livestock loss experience	
	Male	Female	BNP	CNP	Yes	No
	X (SD)	X (SD)	X (SD)	X (SD)	X (SD)	X (SD)
Tigers should be protected though my stock are killed	3.8 (1.1)	3.9 (0.9)	3.8 (0.7)	3.9 (1.2)	4.0 (0.8)	3.8 (1.1)
The world would be a sadder place without tigers	4.0 (0.9)	3.8 (1.0)	3.9 (0.8)	3.9 (1.0)	4.1 (0.8)	3.8 (0.9)
Knowing tigers are protected makes me happy	4.2 (0.8)	4.0 (0.8)	3.9 (0.7)	4.2 (0.9)	4.2 (0.8)	4.1 (0.9)
Government should prioritise tiger conservation	4.2 (0.9)	4.1 (0.8)	4.0 (0.7)	4.2 (0.9)	4.2 (0.8)	4.1 (0.8)
Grand mean (SD)	4.0 (0.9)	3.9 (0.8)	3.9 (0.7)	4.0 (1.0)	4.1 (0.8)	3.9 (0.9)

Discussion

Comparing with similar studies

- medium level of livestock depredation
- (Madhusudan, 2003;Tamang & Baral 2008)

Leopards are causing many losses

- displaced by tigers to the edge
- adapt in disturbed habitat

In spite of huge economic burden – positive attitude

- indirect benefit from the park,
- development activities and awareness programmes

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Actual measurement (real time data) - actual livestock depredation

Conclusions and Recommendations

More than 75% livestock are taken from corrals

- Recommend support for building strong corrals

Continue conservation awareness programme

Prompt compensation for wildlife damage

Buffer zone programmes should focus on individual victims

- not to the entire community

Acknowledgements

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Key References

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Thank you