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Human Wildlife Conflict and Likelihood to report the loss: A Case Study of Nepal

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Introduction

- Globally, approx. 6 million sq. miles of land are allocated for national parks (Gray et al., 2016; Melillo et al., 2016)
- 300-350 million people living within or nearby parks (World Wildlife Fund, 2018)
- Proximity causes heightened human-wildlife conflict (Peterson et al., 2010)

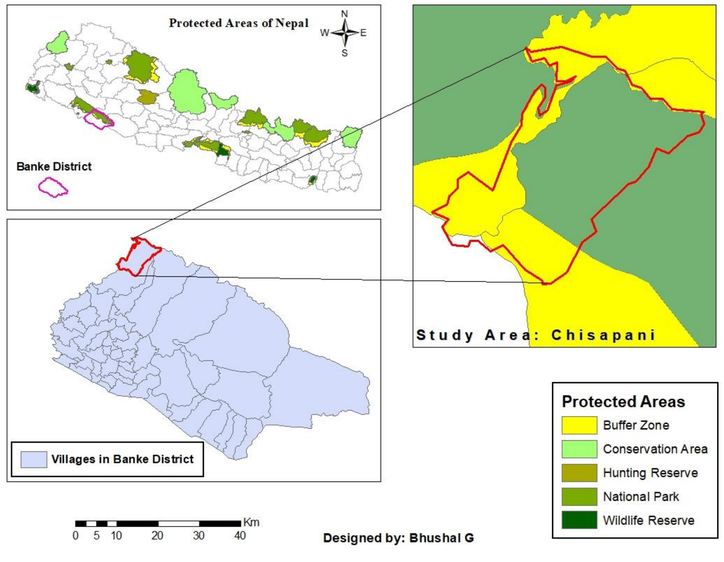
Rationale

- Compensation schemes: ex-ante or ex-post (Boitani and Raganella, 2010)
- Schemes have been largely ineffective (Madhusan 2003)
- People choose not to, or are unable to, report their loss

Objective

- To explore the factors influencing the likelihood to report the loss from wildlife

Study Area



Methods

- In-person survey included:
  - Part I: Socio-demographic background of respondents
  - Part II: Experience of human wildlife conflict
- 197 households were randomly surveyed
- IRB Approval # IRB-FY16-17-649
- Survey date: July, 2017

Theoretical Framework

- Dependent variable (Y): "whether the respondent has reported a loss after experiencing human-wildlife conflict"
- The probability of a "yes" response was estimated given the independent (X) variables as:

$$\pi(x) = Probability\,(Y = 1|X = x) = \frac{e^{\alpha+\beta_1 x_1+\beta_2 x_2+\cdots+\beta_n x_n}}{1 + e^{\alpha+\beta_1 x_1+\beta_2 x_2+\cdots+\beta_n x_n}}$$

Results

- All respondents reported crop loss, and about 60% reported livestock death

Table1: Logistic Regression showing only significant variables

Variables	Coefficient (β)	Standard Error (SE)	Level comparisons
Age	**1.63****	**0.65**	**30-39 vs 20-29**
	-0.99	0.54	40-49 vs 30-39
	0.56	0.68	50-59 vs 40-49
	-1.45	0.79	≥60 vs 50-59
Gender	**-0.53****	**0.26**	**Male vs Female**
Family size	0.65	0.71	4-6 persons vs 1-3 persons
	1.14***	**0.43**	**≥7 persons vs 4-6 persons**
Common Leopard	**0.83****	**0.34**	**Yes vs No**
Bengal Tiger	**0.63*****	**0.22**	**Yes vs No**
Asian Elephant	**0.58****	**0.27**	**Yes vs No**

*Note: ***and ** indicates significance at α=0.01 and α=0.05 respectively*

Conclusions and Policy Recommendations

- Statistically significant variables from Table 1 were likely to influence the likelihood to report the loss
- Age 20-29 population and males in the community should be targeted while disseminating the information about compensation scheme
- The compensation scheme should also consider deer, monkey, porcupine, black buck, and wild birds rather than being limited to the current eligible species

Future Work

- This research could be expanded to include other parts of the country, and other developing countries that experience challenges with conservation areas

Acknowledgements

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