

# **Social-ecological resilience and the institutions in protected areas: A case study of three villages at Bardia National Park, Nepal**

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## **DPhil Abstract**

Resource exploitation by human communities living in close proximity to protected areas has motivated the imposition of strict rules and regulations for biodiversity conservation and management. However, these rules have often been shown to exacerbate illegal resource extraction and resource use conflicts. While the role of the park-people conflict in the degradation of protected areas has been discussed, such a relationship has rarely been explored empirically through a wider perspective of coupled human and natural systems and institutions as a mediator between them. Thus, this study investigates the role of institutions in providing social-ecological resilience in three villages near Nepal's Bardia National Park (BNP). A standardized household questionnaire, workshops, interviews, focus groups and vegetation surveys were conducted to generate data on the institutional arrangements in BNP and two key outcomes of the social-ecological systems, namely community livelihoods and the state of the park's vegetation. Narrative analysis, binomial regression, t-tests, non-parametric tests and descriptive statistics were used to analyse the data. The findings suggested that more than a third of the respondents met their livelihood needs by illegally and regularly extracting resources from the park, which had significant impact on the vegetation diversity and structure. Wildlife interference and strict rules restricting resource use were the main causes of conflict between communities and park management. As uniform rules were applied for all cases and all levels of social groups, incentives were found to be ineffective in meeting community needs. Lack of community involvement in the design of incentive structures, low level of local participation in decision making processes, and non-consideration of local people's needs while making management plans were responsible for these institutional failures. These findings suggest that site-specific management strategies, together with nested and overlapping institutions, are crucial for the design of robust institutions. A new paradigm that integrates adaptive co-learning and management techniques is essential for the co-existence of humans and wildlife at Bardia.

Key words: Institutions and biodiversity conservation, livelihoods and incentive programmes, park-people conflict, attitudes, illegal resource extraction, human disturbance and plant species richness, social-ecological system