



Analysis

Risk, Reciprocity and Retribution: Choosing to Extract Resources From a Protected Area



Catrina A. MacKenzie

*Department of Geography, McGill University, 805 Rue Sherbrooke Ouest, Montreal, Quebec H3A 2K6, Canada**Department of Geography, The University of Vermont, 200 The Old Mill Building, 94 University Place, Burlington, VT 05405-0114, USA*

ARTICLE INFO

Keywords:

Conservation incentives
Crop-raiding
Predation
Benefit-loss perception
Resource poaching

ABSTRACT

Benefits for residents local to protected areas are often proposed to improve conservation attitudes and to reduce illegal resource extraction. In this paper I investigate the relationship between protected area-based benefits and losses and the admission of illegal resource extraction in households neighbouring Kibale National Park, in Uganda. Using focus groups, a household survey, and member-checking interviews with local council chairpersons, binary logistic models were created for the admission of illegal resource extraction from the park. The desire for park resources and proximity to the park were the strongest factors predicting admitted extraction. Reciprocity and retribution in response to park-based benefits and losses were small or non-existent with only loss due to personal injury or livestock predation by wild animals increasing the likelihood of extraction. Lower wealth households were more likely to admit extraction, supporting the conservation narrative that poverty constrains conservation. Also, the inability of park-based benefits to reduce the probability of resource extraction implies that benefits need to be more targeted to livelihood needs. Compensation for losses should only be considered for personal injury, and to a lesser extent livestock predation, because only these losses demonstrated potential retaliation through resource extraction.

1. Introduction

Benefit provision as a means to improve conservation behaviours of residents neighbouring protected areas (PAs) has been proposed as a component of numerous conservation narratives. The argument has been made that poverty is a constraint on conservation because poor people are more dependent upon natural resources and their use of these resources may lead to biodiversity loss (Adams et al., 2004). Following the World Parks Conference in 2003, conservation organizations were urged to ensure that conservation initiatives did not contribute to further impoverishment of people living near PAs (Adams et al., 2004). Since conservation can protect habitat for animals that raid crops and livestock of neighbouring communities, benefits can be used to offset losses incurred in the hopes that local people will support continued conservation of PAs (McNeely, 1988; Allendorf, 2007; Dickman et al., 2011). Others espouse a more explicit linkage between economic benefits and conservation by providing direct payments to local residents in return for demonstrated conservation behaviours (Ferraro and Kiss, 2002). No matter the reason for implementing benefits to encourage conservation, these narratives aim to reduce illegal resource extraction from PAs as their ultimate conservation goal.

Some believe that benefits have a positive influence on

conservation. The Uganda Wildlife Authority (UWA) provides 20% of PA gate revenues to local communities to build development projects and believes that the program has resulted in less illegal activity inside PAs and better conservation attitudes (MacKenzie, 2012a). Residents near Kalakad-Mundanthurai Tiger Reserve in India were more likely to support tiger conservation if they received benefits from a World Bank eco-development project (Arjunan et al., 2006). Others argue that the benefits provided are outweighed by the losses incurred by local residents (Dickman, et al., 2011; MacKenzie, 2012b) and are insufficient to reduce illegal resource extraction or to counter the profit that can be made from illegally extracted resources (Mancini et al., 2011). In this paper I investigate the relationship between PA-based benefits and losses and the admission of illegal resource extraction, by answering the following research question: Do perceived benefits and losses, attributable to the existence of Kibale National Park, in Uganda, influence the admitted extraction of resources from the park?

I position this study within the theory of reasoned action (Ajzen and Fishbein, 1980), assuming that people use information that is readily available to them to make rational choices about what they will and will not do. Therefore, to determine if a person will extract resources from the park, that person must first have a desire to have that resource and must weigh the cost and risk of getting it (Tisdell, 2005). However,

E-mail address: catrina.mackenzie@mail.mcgill.ca.

<http://dx.doi.org/10.1016/j.ecolecon.2017.10.009>

Received 2 May 2016; Received in revised form 20 July 2017; Accepted 4 October 2017
0921-8009/© 2017 Elsevier B.V. All rights reserved.

external factors may or may not influence a person's decisions (Ajzan and Fishbein, 1980). For instance the person's socio-economic and educational status may influence their beliefs, both for and against, the extraction of resources from a PA (Holmes, 2003; Fisher and Shively, 2005).

Classical economic theory dictates that rational humans base their behavioural choices on maximizing gains and minimizing costs (Shogren, et al., 1999; Tisdell, 2005); therefore, if a person benefits from a PA, they should support PA conservation. The introduction of conservation incentives in the form of financial or service benefits relies on exchange theory (Ekeh, 1974) where economic actors positively reciprocate only when they can expect benefit. Therefore, conservation incentives are introduced to “alter people's perceptions of what behavior is in their self-interest” (McNeely, 1988, p. 125), with the belief that conservation behaviour will be commensurate with the benefits received (Sobel, 2005). Conversely, exchange theory also dictates that if people lose as a result of the PA they may seek retribution from the park commensurate with the losses incurred. However, numerous studies have found that humans often make choices with bounded rationality (Conlisk, 1996; Camerer, 1998; Venkatachalam, 2008), behaviour that is anomalous with rational choice (Thaler et al., 1992). Specifically, the concepts of fairness and adherence to social norms or customs often enter into decisions (Camerer and Loewenstein, 2004). Numerous economic experiments using gaming methods (e.g. ultimatum, dictator, and public goods games) have demonstrated that economic actors can act with both positive and negative reciprocity (40–66% of participants), while others do not reciprocate (20–30% of participants; Fehr and Gächter, 2000). These bounded rationality experiments find that positive reciprocity can exceed the value of the benefit received, and that negative reciprocity can lead to more hostile retaliation than economically warranted, even if it is costly to the retaliating individual. Therefore, the extraction of resources from the park may be disproportional to the benefits and losses incurred.

In order for PA-based benefits and losses to influence the behaviour of individuals, these benefits and losses, must be perceived as such. Perceptions are attitudes based on peoples' experiences (Ajzan and Fishbein, 1980). Therefore, I first needed to understand specifically which benefits and losses informed peoples' attitudes about the park, and if the beliefs people held sufficiently informed their attitudes to determine their intentions to extract resources from the park. Once the specific benefits and losses were identified, the admitted extraction of resources from the park was modelled based on a conceptual framework including the desire for and opportunity to access park resources, external factors, reciprocity for perceived benefits, and retribution for perceived losses (Fig. 1).

2. Methods

2.1. Study Site

Kibale National Park (KNP) is a 795 km² PA located in south-western Uganda (Fig. 2). The PA was managed first by colonial and subsequently Ugandan government institutions as a Forest Reserve and Game Corridor and was gazetted as a National Park in 1993 (Hartter et al., 2016). Evictions of people who had illegally settled in the park occurred prior to gazettement, although estimates vary greatly from 4000 to 170,000 people (Chapman and Lambert, 2000; Hartter et al., 2016). The park provides a mixed forest and savannah habitat for 13 species of primate, including chimpanzees (*Pan troglodytes*), as well as elephants (*Loxodonta africana*), and a high level of biodiversity in other taxa (Chapman and Lambert, 2000). The park is managed by UWA using a ‘Park and Neighbour’ strategy (Jones, 2006), including strict protection coupled with tourism revenue sharing, and negotiated access to non-threatened park resources. Even with a protectionist policy for biodiversity conservation, illegal extraction of resources from KNP persists (Solomon et al., 2007; MacKenzie et al., 2012).

The tourism revenue sharing program shares 20% of gate revenues with local government councils to fund projects in communities adjacent to the park. Between 1999 and 2009, US\$150,000 had been distributed around KNP, funding 55 projects, including crop raiding defences, school facilities, health clinics, and other infrastructure (MacKenzie, 2012a). In villages that benefitted from a revenue sharing project, the capital value of the project per household averaged \$1/year over the ten year period, although use value of these projects is unknown. Local residents can organize themselves into a resource access association and negotiate with UWA for access to resources inside the park. Active agreements permit the placement of beehives in the park to collect honey, the harvesting of exotic tree species, the collection of basket making materials, and fishing in two lakes inside the park (MacKenzie et al., 2012). Beekeepers estimated they made up to US \$250/year from honey production, while exotic tree and craft material harvesting resulted in additional household income of less than US\$20/year. Members of the Lake Kabaleka fishing association reported annual earnings that were on average US\$180 higher than non-association members (Solomon et al., 2012), while the second fishing association is new with no income as yet being reported.

Kibale National Park also attracts tourists and researchers, resulting in employment for over 300 people living near the park, and UWA seasonally hires over 400 local residents between their own operations and their partnership with FACE the Future Foundation, planting trees for carbon sequestration (MacKenzie, 2012b). Employees in these park-based jobs make between US\$213 and US\$5000 per year. Non-Governmental Organizations (NGOs) also provide benefits to local households, supporting primary schools, creating libraries and a health clinic, teaching people to build energy saving stoves, supporting development projects through community-based tourism, and providing scholarships, tree seedlings, and crop raiding defences. The average benefit per household for NGO activities has been estimated at US\$9/year (MacKenzie, 2012b).

The park also causes losses to local households. Average direct household losses to crop raiding around KNP have been valued at US \$148/year (MacKenzie and Ahabyona, 2012), and livestock predation losses at US\$16/year (MacKenzie, 2012b). However, crop raiding and predation also lead to other indirect losses, including the need to guard crops and livestock, food insecurity when crops are destroyed, contracting malaria from guarding at night, fear of being hurt by wild animals, and curtailing childhood education when children guard crops rather than attend school or if crop losses result in the inability to pay school fees (MacKenzie and Ahabyona, 2012; MacKenzie et al., 2015a). Also, if caught in the park without authorization, local residents can be arrested or fined between US\$5 to US\$100.

2.2. Data Collection

Twenty-five villages were purposely chosen to achieve an approximate spacing between villages of 5 km in the data collection zone (Fig. 2). Study villages were located next to the park with residents owning or cultivating land directly adjacent to the park boundary. Villages are not explicitly identified since admission of resource extraction might result in punishment from UWA (Robbins et al., 2006).

Data collection occurred from 2008 to 2012. In 2008, focus groups were held in 15 (60%) of the 25 villages to understand what benefits and losses the local residents perceived as a result of living next to KNP. These self-identified benefits and losses became the basis of assessing perceived benefit and loss, rather than assessing researcher defined, a priori themes (Allendorf, 2007). All research activities were approved by the village chairpersons, who also helped organize focus groups by inviting 20 village residents, both male and female, representing the age range of adults in the village. However, since the meetings were held outside in a central meeting area, the actual number of attendees ranged from 16 to 51, as people passing joined the meeting. Women represented up to 65% of participants. The meeting was held in the

Download English Version:

<https://daneshyari.com/en/article/5048583>

Download Persian Version:

<https://daneshyari.com/article/5048583>

[Daneshyari.com](https://daneshyari.com)