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RESEARCH BRIEF

Carrot or Stick: What Works for CAMPFIRE Communities in Zimbabwe?

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NOVEMBER, 2019, RB 19-15

Local communities in Africa benefit from protected areas through a number of activities such as grazing their livestock and revenues gained from touristic activities such as trophy hunting. These two activities are not independent because the feeding habits of large herbivores such as elephants prevent bush encroachment, thus maintaining healthy grasslands or pastures for livestock. In addition, the way the local community manages the elephants can substantially influence the productivity of not only livestock, but other species as well, thereby maintaining the ecological system in good condition. Both the grasslands, which provide pastures for livestock, and the elephant population could substantially and drastically deteriorate due to poor management.

On one hand, if the elephants are too many, the situation will result in environmental degradation and total collapse of the ecological system. Under this scenario, both the elephants and livestock will suffer and the opportunities of local communities to make a livelihood from both activities are severely compromised. If the elephant population drops too low, it would become harder for them to reproduce. Too few elephants would then result in bush encroachment, thereby preventing domestic animals from having enough grazing pastures. This development can result in permanent changes from an elephant-rich grassland to an elephant-poor bushy area, which provides much less “ecosystem services” (a service provided by nature, such as pasture land) for the local community. There is therefore a need to strike a balance between the population of elephants and pastures in order to achieve equilibrium in the ecosystem.

Given this background, important policy concerns arise as a result of managing two competing resources. For instance, without any outside intervention, can the community succeed in maintaining the elephant stock and grassland quality at a satisfactory level? What kind of policy intervention would help reach the desired outcome? Should the authorities inform the community about these dynamics? Should they instead introduce a ‘sanctioned quota’, a lower limit for the elephant stock that if trespassed would be sanctioned with punishment in the form of a fine?

Led by Dr H. Ntuli, a team of researchers from the University of Cape Town and researchers from the Beijer Institute of Ecological Economics in Stockholm investigated the behaviour of resource users in response to policy interventions like sanctioned quotas versus providing information. The research team performed an experimental study among communities in the Malipati communal area of the Chiredzi district that are managing a common pool of wildlife under the banner of Zimbabwe's Communal Areas Management Programme for Indigenous Resources (CAMPFIRE), while at the same time grazing their livestock on a piece of land that is located adjacent to Gonarezhou National Park. The area between the community and the national park is commonly referred to as the buffer zone. This is where livestock and wildlife interact since they compete for grazing land inside the buffer zone.

They found that user groups manage these resource systems more efficiently when faced with either a sanctioned quota or information about the possibility of a drastic drop in the regeneration rate of the resources or a combination of both, compared to a situation when there are no policy interventions. In general, the results demonstrated that a sanctioned quota is superior to providing information. Although a sanctioned quota performs better than information, information can be a good substitute for sanctions, especially under circumstances where the use of sanctions is more expensive compared to sharing information about the relationship between the elephant population and the ecosystem. Previous studies revealed that it is more expensive to employ a sanctioned quota in developing countries due to costs associated with monitoring behaviour and enforcing quotas. However, the combination of both interventions is better than either one alone in managing resources that are linked to each other, such as elephants and grazing pastures.

Key Points

- Elephant management and pasture land are connected in rural Zimbabwe. Grazing by elephants clears brush from pasture land so that livestock can graze. However, too many elephants will throw the ecosystem out of balance.
- One way to get the right balance is a 'sanctioned quota', where a community will be fined if too many elephants are killed. Another is to provide information about the relationship between the elephant population and the ecosystem.
- An experimental study showed that either approach will help the community manage the resources. A quota would be more effective, but it can be difficult to enforce. Both approaches working together would get the best results.

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Conclusion: Dual Interventions to Achieve Management Goals

This study provides pragmatic evidence to policymakers and development practitioners of the role of carrot and stick institutions versus information in governing common-pool wildlife in Southern Africa. The two interventions can assist in achieving certain management goals depending on whether the motive is to avoid depletion of the resource or to avoid crossing a threshold at which the population is too low to recover. Compared to providing information, a sanctioned quota can be used more effectively to avoid resource depletion. If the aim is just to avoid a drastic drop in the regeneration rate in linked resources, authorities can either use a policy intervention with sanctioned quota or information. The combination of both types of interventions might be most appropriate for users to manage their resources well and increase their welfare.

ABOUT THIS BRIEF

This brief is based on “Carrot or Stick: What works for CAMPFIRE Communities in Zimbabwe?” EfD Discussion Paper Series 19-15, by Herbert Ntuli, Anne-Sophie Crépin, Edwin Muchapondwa, and Caroline Schill (2019).

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