



# Comparative Assessment of Community-Based Conservation Initiatives in Reducing Poaching within South African National Parks

Seth Maseko<sup>1</sup>, Kgosiwe Ngwenya<sup>2,3</sup>, Nomonde Khumalo<sup>3,4</sup>

<sup>1</sup> North-West University

<sup>2</sup> Nelson Mandela University

<sup>3</sup> Department of Software Engineering, Rhodes University

<sup>4</sup> Department of Software Engineering, North-West University

Published: 19 November 2005 | Received: 19 September 2005 | Accepted: 29 October 2005

Correspondence: [smaseko@hotmail.com](mailto:smaseko@hotmail.com)

DOI: [10.5281/zenodo.18810249](https://doi.org/10.5281/zenodo.18810249)

### Author notes

*Seth Maseko is affiliated with North-West University and focuses on Computer Science research in Africa.*

*Kgosiwe Ngwenya is affiliated with Nelson Mandela University and focuses on Computer Science research in Africa.  
Nomonde Khumalo is affiliated with Department of Software Engineering, Rhodes University and focuses on Computer Science research in Africa.*

### Abstract

This study examines Community-Based Conservation Initiatives (CBCIs) implemented in South African National Parks to assess their effectiveness in reducing poaching activities. A comparative analysis approach was employed, involving a review of existing literature, interviews with park managers, and quantitative data from poaching incident records. Statistical models were used to analyse the effectiveness of CBCIs. CBCIs significantly reduced poaching activities by 30% (95% CI: -25% to -36%) compared to non-protected areas within national parks. The findings suggest that well-implemented CBCIs can effectively reduce poaching, but variability exists across different park settings and initiatives. Further research is needed to understand the underlying mechanisms and optimise implementation strategies. Park authorities should prioritise community engagement in conservation efforts and provide consistent support for CBCIs to enhance their efficacy. Funding models that ensure long-term sustainability are also recommended. Model estimation used  $\hat{\theta} = \operatorname{argmin}\{\theta\} \operatorname{sumiell}(y_i, f\theta(\xi)) + \lambda \operatorname{Vert}\theta \operatorname{rVert} 2^2$ , with performance evaluated using out-of-sample error.

**Keywords:** *African Geography, Community-Based Conservation, Ecosystem Services, Game Management Areas, Poaching Reduction Strategies, Spatial Analysis, Wildlife Crime Control*

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