



# Mining Impacts on Agricultural Land Use in Zambia: A Longitudinal Perspective

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## Abstract

Mining activities in Zambia have expanded significantly over recent decades, leading to concerns about their impact on agricultural land use. A longitudinal approach was employed using satellite imagery and census data from multiple years to track changes in agricultural land use adjacent to mining sites. Over a decade, there has been a reduction in arable land by approximately 15% near active mines, with significant variability across different regions. The study highlights the need for sustainable land management practices to mitigate adverse impacts on agricultural productivity. Policy makers should implement adaptive management strategies that balance mining development with agricultural conservation efforts. The empirical specification follows  $Y = \beta_{0+\beta} p X + \text{varepsilon}$ , and inference is reported with uncertainty-aware statistical criteria.

**Keywords:** *Geographic, Sub-Saharan, Agricultural, Ecosystem, Sustainability, GIS, Monitoring*

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