The Impact Of Wildlife Conservation Policies On Rural Welfare In Zambia

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Robert B. Richardson
Michigan State University (USA)
Food Security Research Project (FSRP-Zambia)
OUTLINE

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Zambia National Parks &
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Game Management Areas

- Zambia Wildlife Authority (ZAWA)
- Shares hunting license revenues and wildlife management responsibilities with communities
  - Community Resource Boards (CRBs)
  - Village Action Groups (VAGs)
- CBNRM: dual objectives of wildlife conservation and rural development
  - Employment of village scouts
  - Development projects
Impact of Game Management Areas

- **Benefits**
  - Rural employment
  - Revenue sharing
  - Meat distributed after hunting
  - Development projects

- **Crop damage**

- **Opportunity cost of alternative land uses**
Three Research Questions

1. What is the effect of GMAs on household income?
2. What are the sources of income that generate the GMA effect?
3. What are the effects of GMAs on crop losses from wildlife damage?
Data and Methods

- Rural household survey
- 139 statistical enumeration areas (SEAs) adjacent to four national park systems
- 2,800 households selected
  - About half GMA and non-GMA (control)
  - Only about 32 non-response (1.1%)
- Two statistical methods
  1. Ordinary least squares (OLS) regression (determinants of household income)
  2. Double-hurdle regression (probability and value of employment, crop losses)
1. GMA Effect on Income

- What is the effect of GMAs on household income?
- Ordinary least squares regression to estimate the determinants of household income
  - Function of household and community characteristics (such as education, size of household, assets, infrastructure)
  - Included a variable representing whether the household lives in a GMA
1. GMA Effect on Income

(continued)

- GMA households have lower average income
  - Also more remote, less education, fewer assets
- Households in prime GMAs have 17% higher income than households in other rural areas, controlling for other factors
  - The presence of a tourist lodge in the SEA contributes another 18% of household income
- Gains from living in a prime GMA accrue to wealthiest 40% of the population
2. Sources of Income

- What are the sources of income that generate the GMA effect?
- Double-hurdle regression to estimate
  1. the probability of earning income from wage employment
  2. the determinants of wage income
- Same approach for self-employment income
2. Sources of Income

(continued)

- Households in prime GMAs are 7.8% more likely to be employed
  - Households in secondary or specialized GMAs are 7.4% more likely to report wage income
  - Households in communities where there is a tourist lodge are 6.6% more likely

- Households in prime GMAs can be expected to earn 116% more on average from wage employment
2. Sources of Income

(continued)

- Households in prime GMAs are 6.9% more likely to report income from self-employment
  - Effect is less than for wage income
  - Household size (number of children and adults) and infrastructure also contribute to self-employment income
3. GMA Effect on Crop Losses

- What are the effects of GMAs on crop losses from wildlife damage?
- Double-hurdle regression to estimate
  1. the probability of incurring crop losses from wildlife damages
  2. the determinants of the value of crop losses
3. GMA Effect on Crop Losses (continued)

- Households in prime GMAs are 16.1% more likely to experience crop damages
  - Households in secondary or specialized GMAs are 12.2% more likely to report crop damages
- Households in GMAs are expected to incur greater losses from crop damage (average = Kw 30,079)
  - Effect is greater in prime GMAs
Conclusions

- Prime GMAs and tourist lodges contribute positively to rural household income
  - Gains accrue primarily to non-poor households
  - GMA effect is positively associated with income from wage and self employment
  - Policies to build capacity for participation by poor households?

- Households in prime GMAs are positively associated with both probability and value of crop damage losses
  - Suggests broader role for village scouts to curb crop damage
  - Mechanism for compensating farmers for losses?
Next Steps

- From ADMADE lessons-learned paper “CBNRM Institutions in Zambia: Building on a Decade of Experience (2000)”...lack of evidence of success of CBNRM programs because:
  - Policies constrain resource benefits and use rights for local land owners
  - Poverty and food security not adequately addressed
  - Institutional organizations limit household participation

(African College for CBNRM, 2000)