

Evaluating the impact of Tanzania's Wildlife Management Areas on household wealth trajectories

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Project team

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Tanzania Background to the study

Tanzania's natural resources

- High biodiversity, iconic wildlife populations
- Tourism >\$700 million; 5-10% of GDP
- ~30% of GDP, esp. agriculture and tourism
- ...but GDP misses most pastoral production
- 75% of population dependent
- Widespread poverty, esp. rural areas

Conservation in Tanzania

- CBNRM key poverty reduction strategy
- 1998 Wildlife Policy of Tanzania
- 2002 WMA regulations developed
- 2003 Implementation started
- 2006-7 First pilot WMAs registered

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Wildlife Management Areas Process and current status



Status:

- 19 WMAs in operation
- 148 villages
- >450,000 people
- Restrictions on land use in return for wildlife-based revenue
- 38 planned in total
- Will cover 7% of land area

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The PIMA Project Evaluating Tanzania's WMAs

What are the social and ecological outcomes of WMAs?

Impact evaluation is challenging, so:

- Multi-site comparison
- Quasi-experimental BACI design
- Matched "control" sites
- Mixed methods

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Study areas



6 WMAs selected:

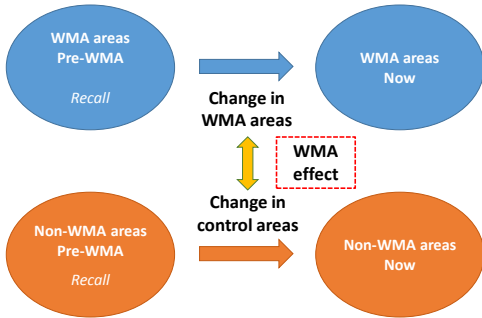
- North vs. South

8 villages per WMA:

- Sampling frame: EAs from 2002 census
- 4 inside
- 4 outside

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BACI comparison



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Control village selection Non-parametric matching



WMA units



"Control" units?

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Control village selection Non-parametric matching



WMA units



Pool of potential control units

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WMA units



Pool of potential control units

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Control village selection Non-parametric matching

Matching on:

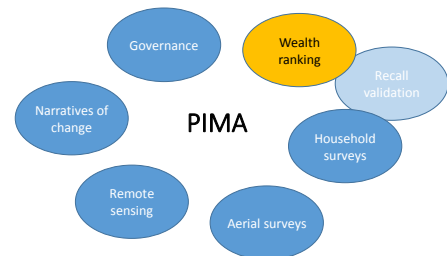
- Demographics (population density)
- Market access (distance to roads; distance to towns)
- Wildlife & conservation (wildlife corridors; presence of key species, distance to PA)
- Biophysical characteristics (slope, elevation, precipitation, land cover)

Excluding:

- Protected areas

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Data collection approaches Mixed methods



Wealth data and analysis

Wealth ranking dataset

- 13,573 households, 42 villages
- Participatory wealth ranking
- Recall relative to anchor events (e.g. OI Doinyo Lengai)

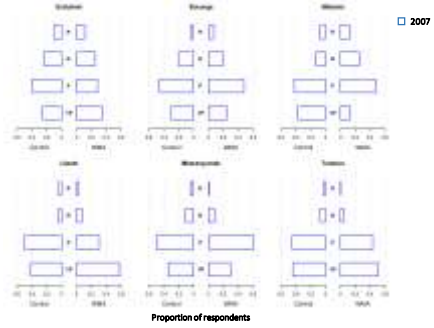
Analysis:

- Bayesian hierarchical cumulative logit
- Response = wealth category (ordered: Very poor < Poor < Normal < Rich)
- Village-varying coefficients



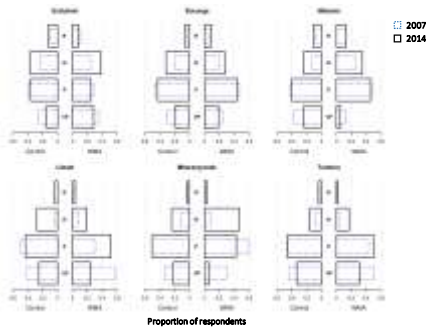
Wealth change

Raw wealth ranking data



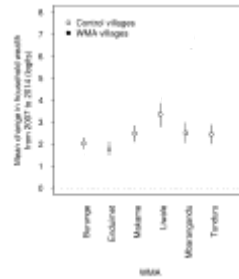
Wealth change

Raw wealth ranking data



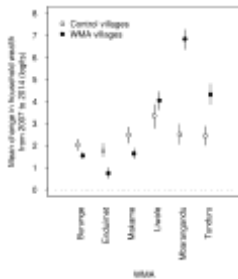
Wealth change

Comparison between WMAs and controls



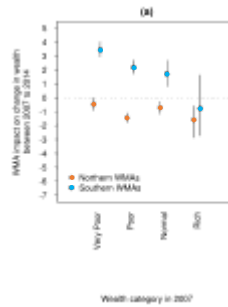
Wealth change

Comparison between WMAs and controls



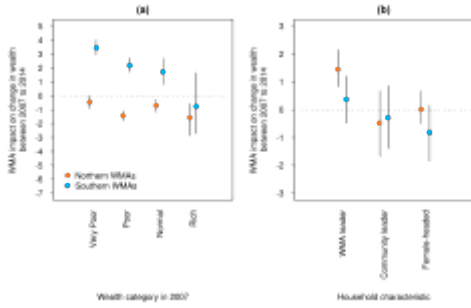
Wealth change

Household-level WMA effects



Wealth change

Household-level WMA effects



Discussion

Have WMAs helped people?

- Mixed: 3 Worse, 1 No change, 2 Better
- Also village-by-village variation
- Differences btw. revenue/not and age

Northern WMAs

- Generally worse-off: loss of opportunities not fully compensated
- WMA leadership have benefitted
- Elite capture?

Southern WMAs

- Generally better-off
- Philanthropy?
- Sustainability?

Discussion

How could WMAs be improved?

- Sustainable net benefits to communities are key to WMA success
- Review benefit sharing arrangements?
- Prioritise *security of tenure* and *access to natural resources* for communities
- Enable communities to revisit agreements

