

Evaluating the impacts of Tanzania's Wildlife Management Areas

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Tanzania

Background to the study

Tanzania's natural resources

- High biodiversity, iconic wildlife populations
- Widespread poverty, esp. rural areas
- ~30% of GDP, esp. agriculture and tourism
- ...but GDP misses most pastoral production
- 75% of population dependent
- High tourism potential

Challenges

- Poor governance
- Low resource management capacity
- Inequitable access and income sharing
- High levels of poaching

Tanzania

Conservation policy

Conservation in Tanzania

- Currently 16 National Parks
- ~35-40% of country under some form of protection
- Land seizure and forced resettlement
- 1974 Wildlife Conservation Act: State control
- 1998 Wildlife Policy of Tanzania (rev. 2007): Local community participation
- 2002 WMA regulations developed
- 2003 Implementation started
- 2006-7 First pilot WMAs registered

Wildlife Management Areas

Process and current status



WMA process:

- Villages set aside land for wildlife
- Elect community management organisation
- Land use plans; Bylaws & regulations; Resource Zone Management Plan
- Director of Wildlife approval and granting user rights

Status:

- 19 WMAs in operation
- 148 villages
- >450,000 people
- 38 planned in total
- Will cover 7% of land area

The PIMA Project

Evaluating Tanzania's WMAs

WMA objectives:

"increase participation of local communities in management of wildlife resources; enable local communities to derive benefits from wildlife resources; and enhance conservation of wildlife resources"

PIMA research question:

What are the social and ecological outcomes of WMAs?

Impact Evaluation

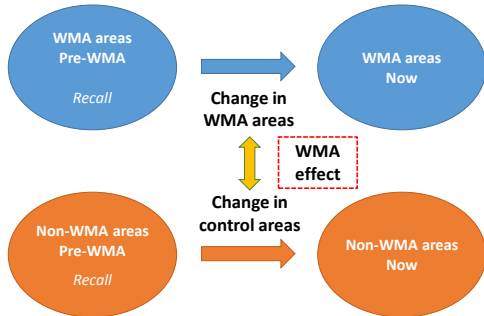
Common challenges for conservation

Why is it hard to evaluate conservation?

- Experiments are rarely possible
- Interventions cannot always be replicated
- Many interventions occurring together
- Complex histories
- Lack of "controls"...
- Lack of baselines
- Multiple outcomes of interest
- Some outcomes multidimensional (e.g. wellbeing)



Impact Evaluation BACI comparison



Study areas



- 6 WMAs selected:**
- North vs. South
 - Existing data
 - (+ Familiarity)
- 8 villages per WMA:**
- Sampling frame: EAs from 2002 census
 - 4 inside
 - 4 outside
 - Matched controls

Control village selection Non-parametric matching



WMA units



"Control" units?

Control village selection Non-parametric matching



WMA units



Pool of potential control units

Control village selection Non-parametric matching



WMA units



Pool of potential control units

Control village selection Non-parametric matching

Matching on:

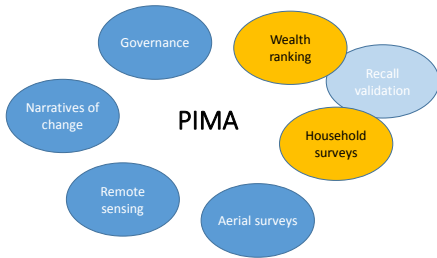
- Demographics (population density)
- Market access (distance to roads; distance to towns)
- Wildlife & conservation (wildlife corridors; presence of key species, distance to PA)
- Biophysical characteristics (slope, elevation, precipitation, land cover)

Excluding:

- Protected areas

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)

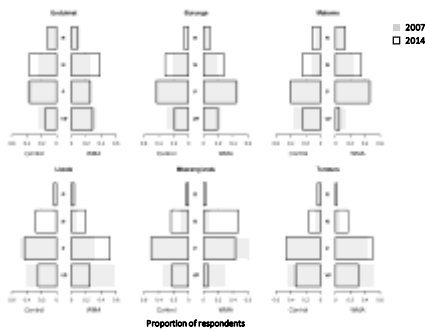
Analysis:

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



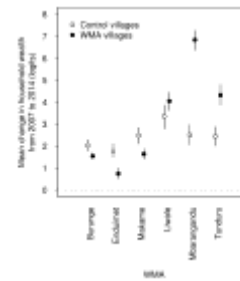
Wealth change

Raw wealth ranking data



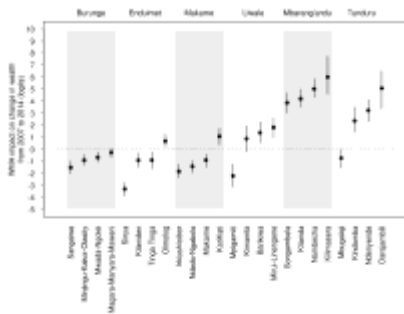
Wealth change

Comparison between WMAs and controls



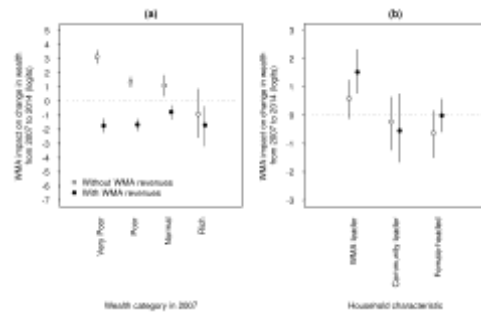
Wealth change

Village-level WMA effects

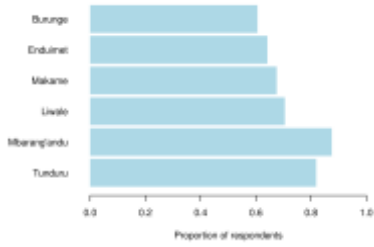


Wealth change

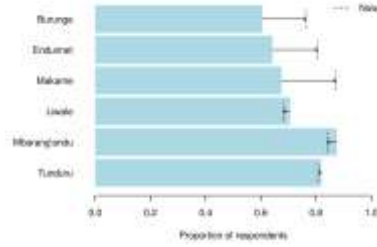
Household-level WMA effects



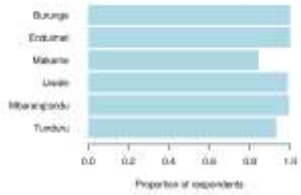
Acceptance of WMAs Initially...



Acceptance of WMAs ...and Now

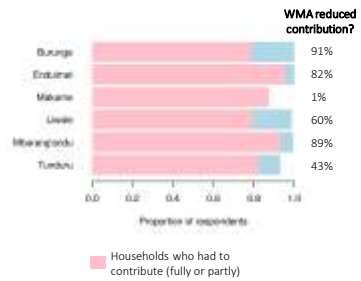


Community benefits Public development projects

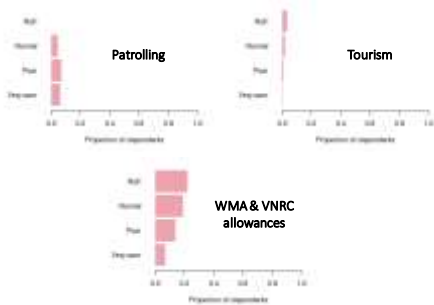


Primary or secondary school built or repaired since 2007?

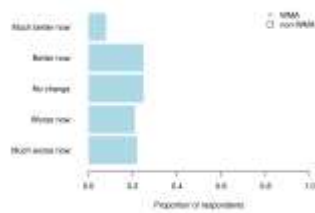
Community benefits Public development projects



Direct household income Frequency and distribution by wealth

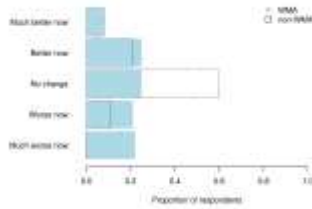


Costs: Burunge Change in crop damage



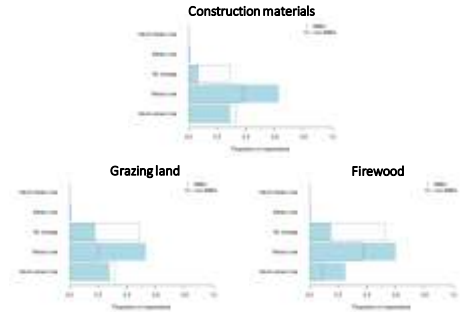
Costs: Burunge

Change in crop damage



Costs: Burunge

Change in access to natural resources



Discussion

What does this all mean?

WMA objectives:

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Discussion

What does this all mean?

Have WMAs helped people?

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

With tourism revenue

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

Without tourism revenue

- Generally better-off
- Philanthropy?
- Unlikely to be sustainable

Discussion

What does this all mean?

Benefits of WMAs?

- Community-level projects
- Secure dry-season grazing
- Regulate access/use of resources
- Secure land tenure

Room for improvement

- High costs
- Excessively technical process
- Lack of proper participation: really CBNRM?
- Favours government and investors over local communities

Next steps

Continuing analysis

- Qualitative narratives
- Linking wealth analysis to household-level samples
- ...and exploring governance further
- Exploring gender differences
- Linking to social to ecological outcomes

