

Understanding drivers of illegal grazing in Kenya's Maasai Mara

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East African Drylands

- Complex social-ecological systems
- Pastoralism; wildlife
- Changes in policy, institutional and economic environment
 - ...favouring privatisation
 - ...and/or devolution of resource management
- Concerns
 - Enclosure, loss of mobility
 - Degradation, wildlife decline
 - Poverty, inequality and exclusion

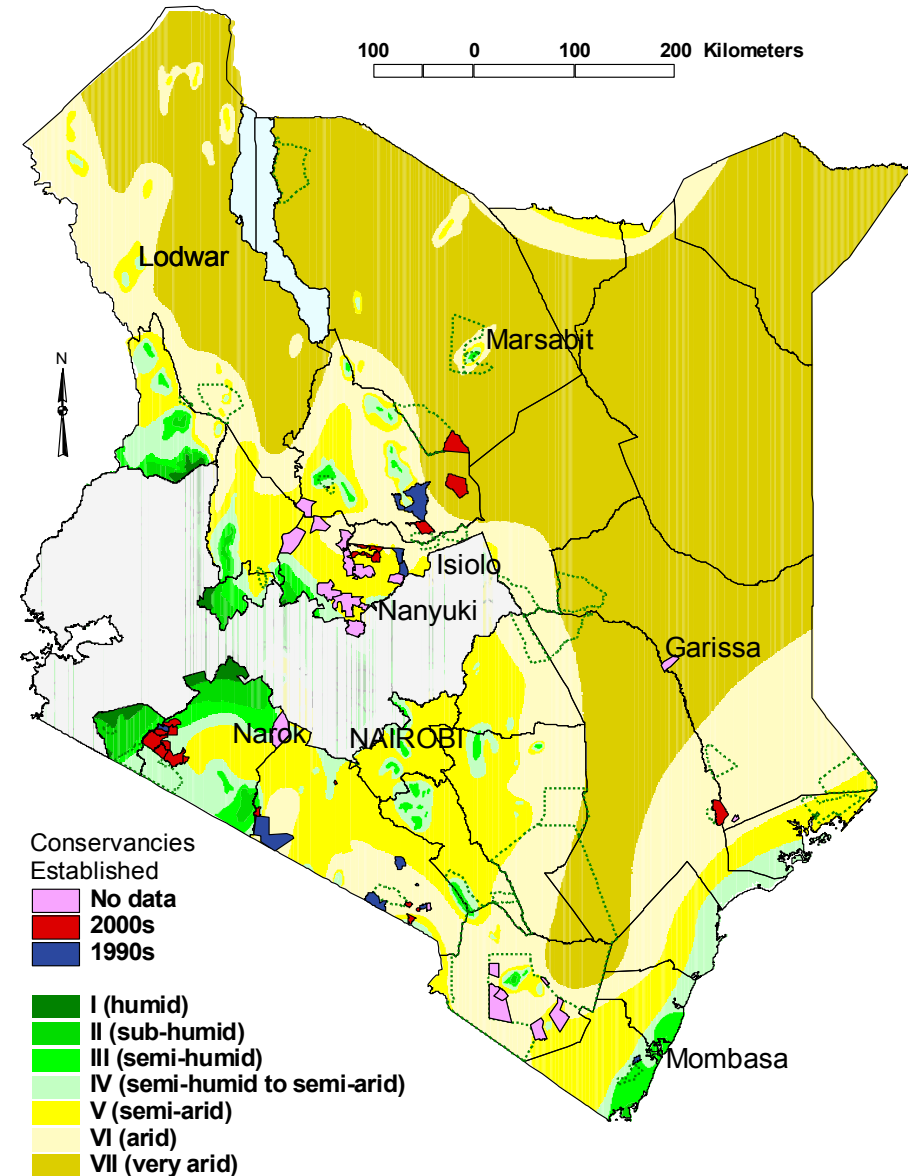


Background

Conservancies in Kenya

- Institutions enabling communities to benefit from wildlife-based revenues
- Forgoing grazing opportunities
- Approx. 43 in existence
- Communal/private tenure; market/public funding

Optimism, but potential for unintended consequences?




Background

BEST project

- Biodiversity, Ecosystem Services, Social Sustainability and Tipping Points in East African Drylands
- www.ucl.ac.uk/best

Research questions


- How can policy and economic incentives improve the management of East African rangelands?
- What effect will conservancies have on illegal grazing?



BEST
Biodiversity, Ecosystem Services, Social Sustainability and Tipping Points in East African Drylands


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The BEST project is a two-year research project funded by ESPA: the Ecosystem Services for Poverty Alleviation research programme. ESPA is a joint undertaking of the UK government's Department for International Development (DFID), the Natural Environment Research Council (NERC) and the Economic and Social Research Council (ESRC).



The project is an international collaboration involving University College London (UCL), the Zoological Society of London (ZSL), the International Livestock Research Institute and the Africa Technology Policy Studies Network (ATPS).

This website will act as a record of the projects activities and a repository of information generated.



espa
ecosystem services
for poverty alleviation
A research programme co-funded by DFID, ESRC & NERC and accredited by LWEC

DFID Department for International Development
ESRC ECONOMIC & SOCIAL RESEARCH COUNCIL
NERC NATURAL ENVIRONMENT RESEARCH COUNCIL

UCL ZSL ILRI
INTERNATIONAL LIVESTOCK RESEARCH INSTITUTE

Background

Research approach

- Focus on livelihood decision-making
- Building on foundation of detailed anthropological studies
- Multiple methods
 - Optimization: long-term strategies under uncertainty
 - Simulation-based projection: interactions; equity
 - Discrete choice experiments: stated preferences; wellbeing
 - **Experimental games**



Methods

Games as experiments

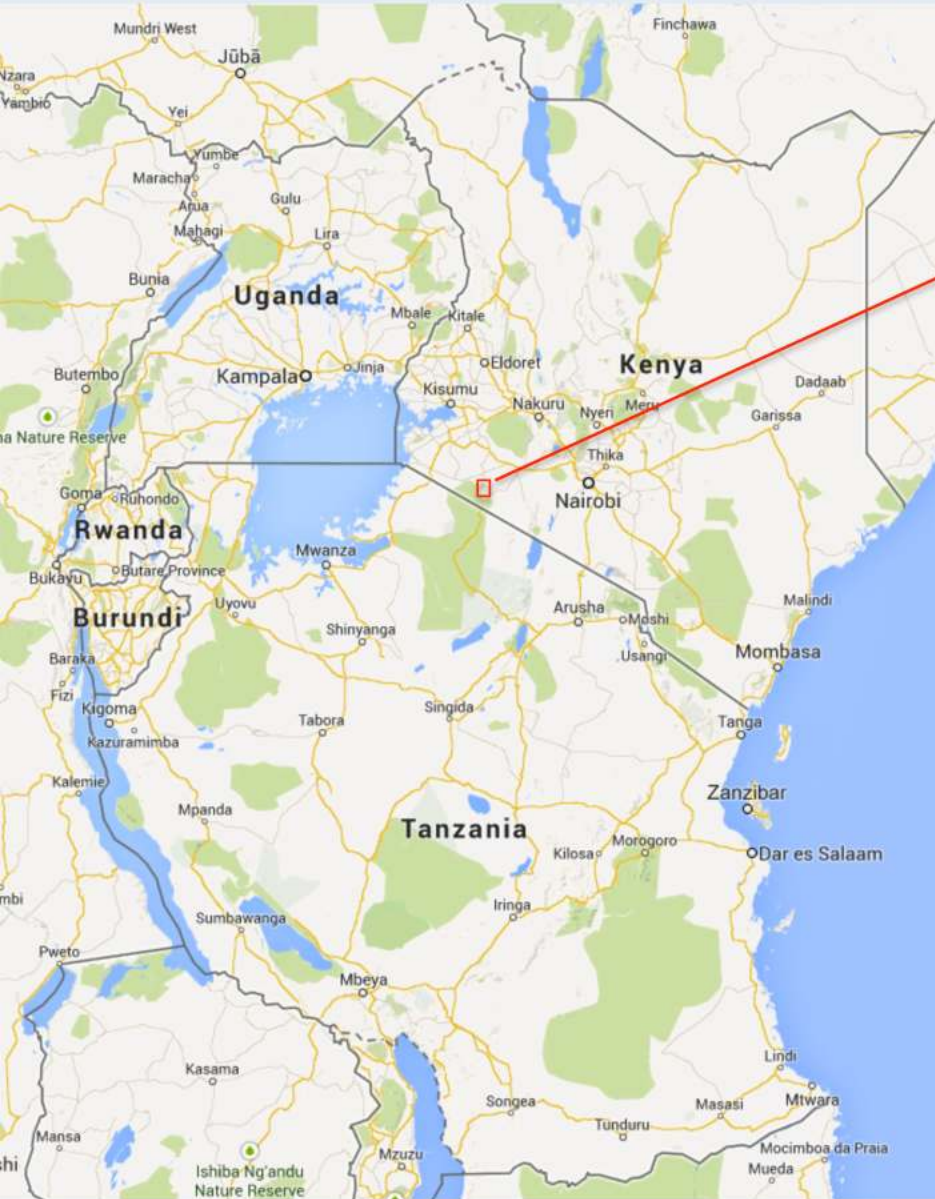
- Behavioural economics; game theory
- Controlled settings
- e.g. co-operation, common-pool resources, public goods
- Mostly lab-based, undergraduate populations in USA/Europe
- Highly abstract; framing effects

This study:

- Game tailored to real situation
- Played with local people, familiar with decision-making context
- Dynamic resource; droughts



Study location



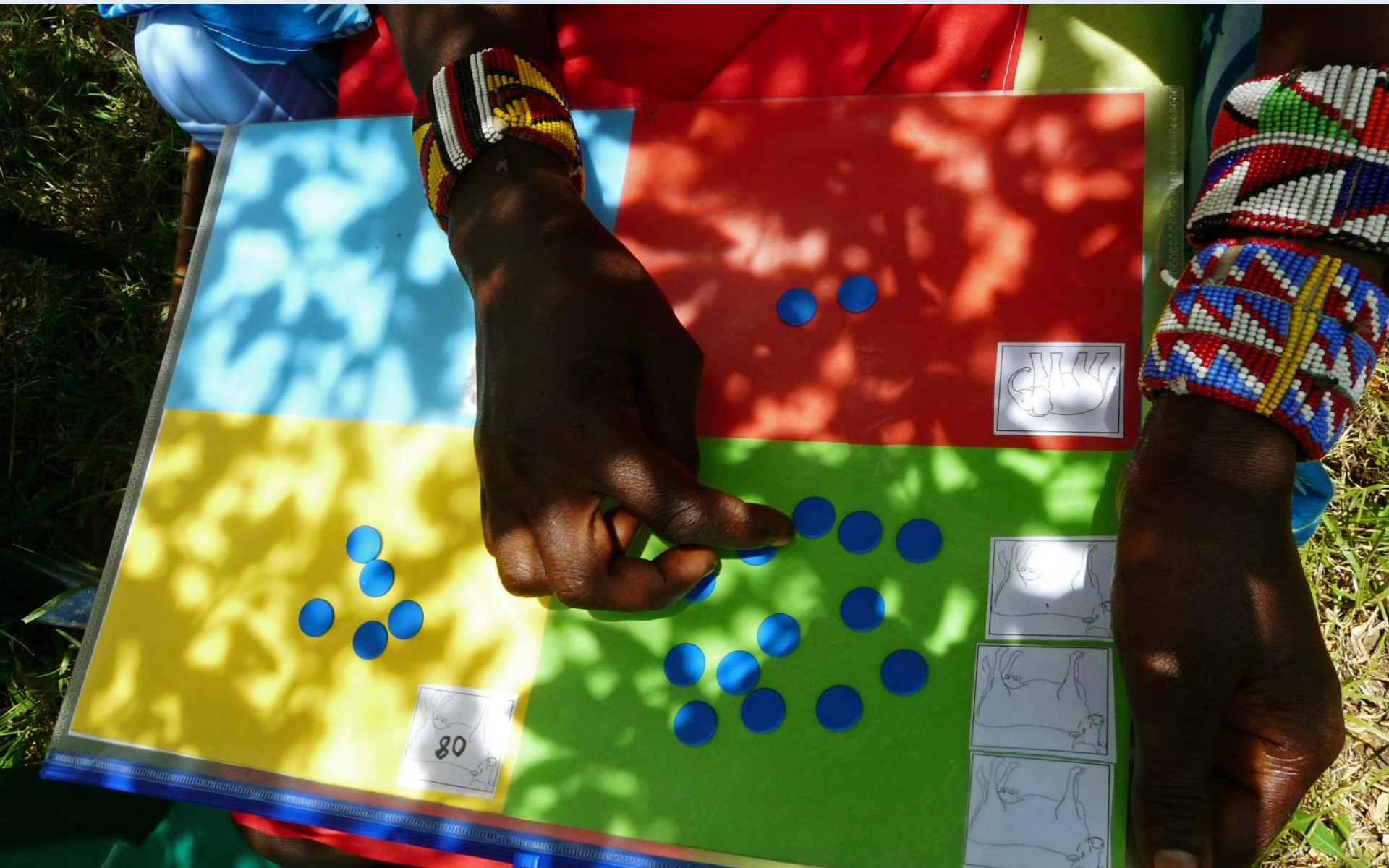
Methods

The Mara Game

- Initially given 20 units of ‘wealth’
- Choice between livestock and ‘cash’
- Livestock
 - grows rapidly, but drought risk
 - growth rate depends on density
 - grazed on communal/private land or in park
- Three treatment conditions
 - Communal
 - Privatised
 - Privatised + Conservancy
- Rewards for success over 6 rounds



Methods



Methods

Participants

- Groups of 8-10 individuals
- 191 participants in total
- ~50:50 conservancy members/
non-members

Statistical analysis

- GLMM with binomial responses:
 - cattle vs. cash
 - legal vs. illegal grazing
- Predictor variable types:
 - treatment
 - situation in game (e.g. wealth)
 - participant characteristics



Preliminary results

Mean wealth outcomes

- Communal: 21.8 units/individual
- Private: 20.1 units/individual
- Conservancy: 23.2 units/individual

Mean change in wealth per round (non-drought / drought)

- Communal: + 11.0% / - 34.1%
- Private: + 8.2% / - 38.2%
- Conservancy: + 11.3% / - 31.0%



Preliminary results

Resource allocation

- Communal: 62.9% cattle
- Private: 71.0% cattle
- Conservancy: 64.9% cattle

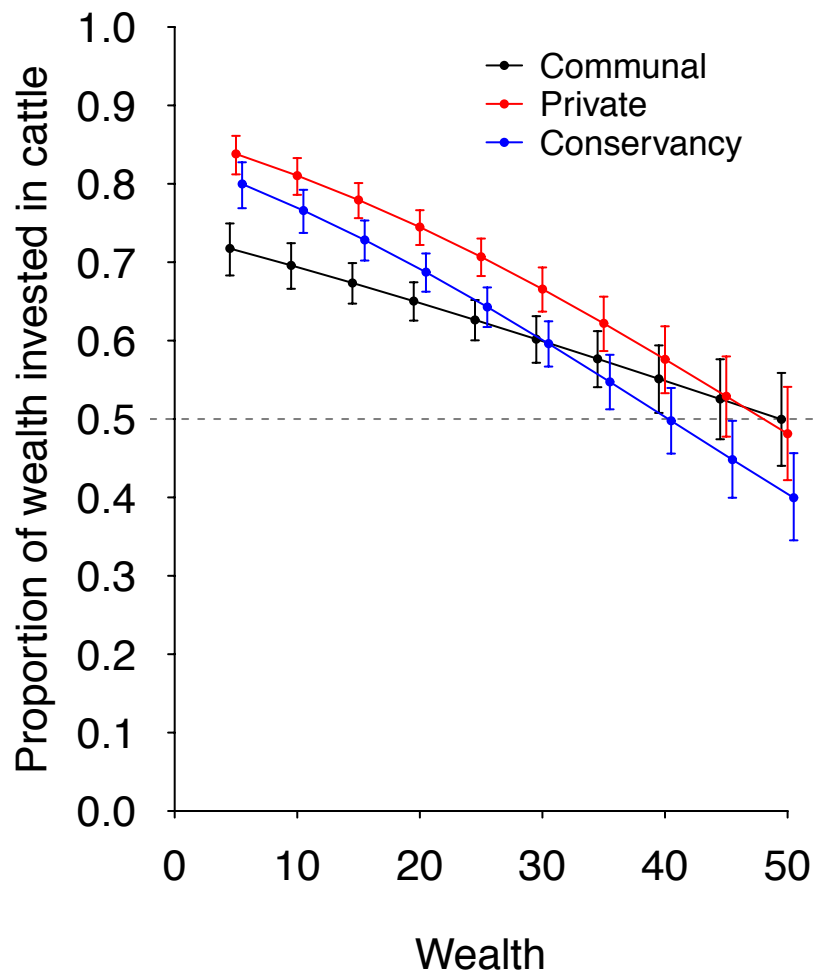
Illegal grazing

- Communal: 44.7% illegal
- Private: 35.0% illegal
- Conservancy: 51.5% illegal

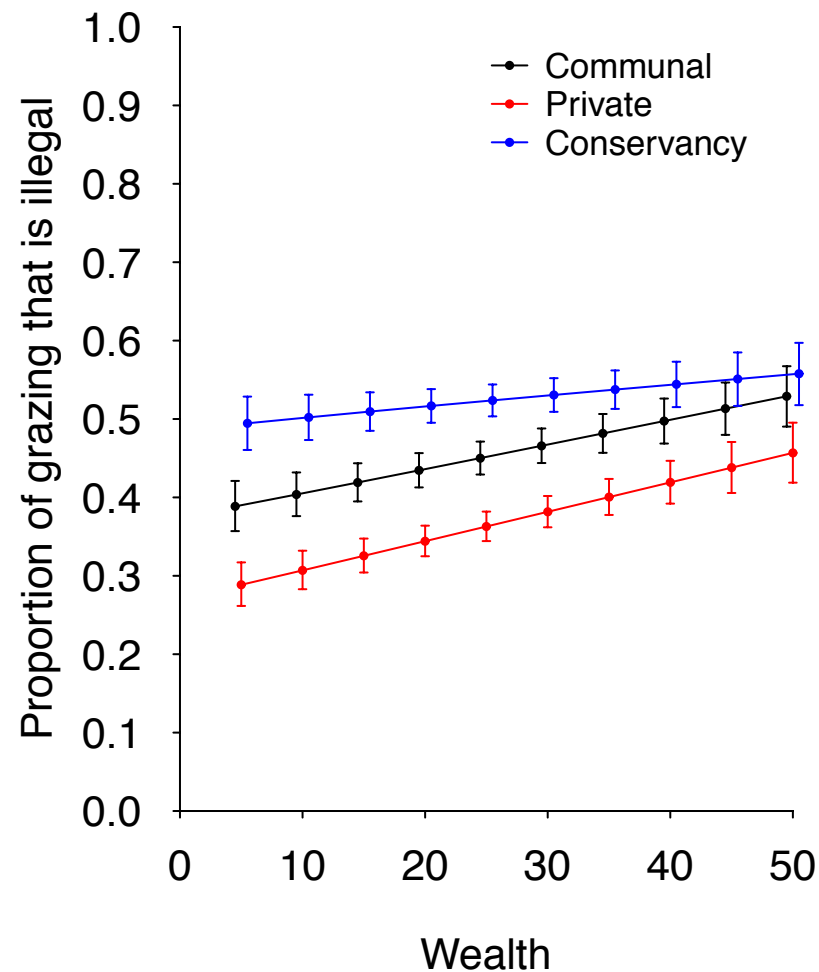


Preliminary results

% Cattle



% Illegal



Games as experiments

- Allows ethical experimentation with human decision-making
- Potential “test-bed” to investigate responses to interventions
- BUT (context-free) games are not good predictors of real behaviour
- Validity:
 - Internal & External
 - Participants expressed positive opinions of relevance
 - Details of design important
 - Limits on complexity



Implications for management

- Need to understand how decisions affect – and are affected by – interventions
- Conservancies may risk increasing illegal grazing overall

Next steps

- Profiling individual characteristics correlated with decision-making
- Integrating findings from different strands of project
- Stakeholder reality-check





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