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Escaping the pastoralist paradox in the face of climate change:

A comparative analysis of different tenure systems and their implications for climate vulnerability in semi-arid Sub-Saharan African



**UNIVERSITY OF
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University of Nairobi



About the project

- The funding agency: Vetenskapsrådet (the Swedish Research Council)
- What we applied for:
 - A four year project
 - Funding for a graduate student
- What we got:
 - 60 % of the funding we applied for
 - A three year project



The applicants

- Göran Bostedt, Dept. of forest economics, SLU, and Umeå School of Business and Economics (project leader)
- Gert Nyberg, Dept. of forest ecology and management, SLU
- Ewa Wredle, Dept. of animal nutrition and management, SLU
- Per Knutsson, Dept. of global studies, Gothenburg University
- Stephen Mureithi, Department of land resource management and agricultural technology, University of Nairobi

The underlying hypothesis

- The long-term resilience of the transition from traditional pastoralist livelihood strategies to more sedentary and market-oriented livelihoods rests on the capacity to provide **secure** but still **flexible** access to land.
- This is sometimes referred to as the **paradox of pastoralist land tenure**.
- So far, innovative solutions to the paradox in the face of climate change have been rare due to two main obstacles.

The obstacles

- Firstly, most of the existing research on pastoralist land tenure is situated within a polarized debate on the sustainability outcomes of private versus collective tenure systems.
- Secondly, even though references to land tenure as an important factor in relation to climate vulnerability and adaptation are frequent, there are hardly any empirical studies on the relationship between differentiated land tenure systems and climate vulnerability.

The purpose

- To address these obstacles through a comparative study of the relationship between land tenure and capacity for climate adaption in four semi-arid, pastoralist regions in Kenya.
- The research design will be interdisciplinary and sequential and guided by theoretical developments in relation to climate vulnerability and institutional dynamics of land tenure.
- The **aim** of the project is to contribute with new insights on how pastoralist land tenure can be designed in order to enable effective climate adaptation strategies.

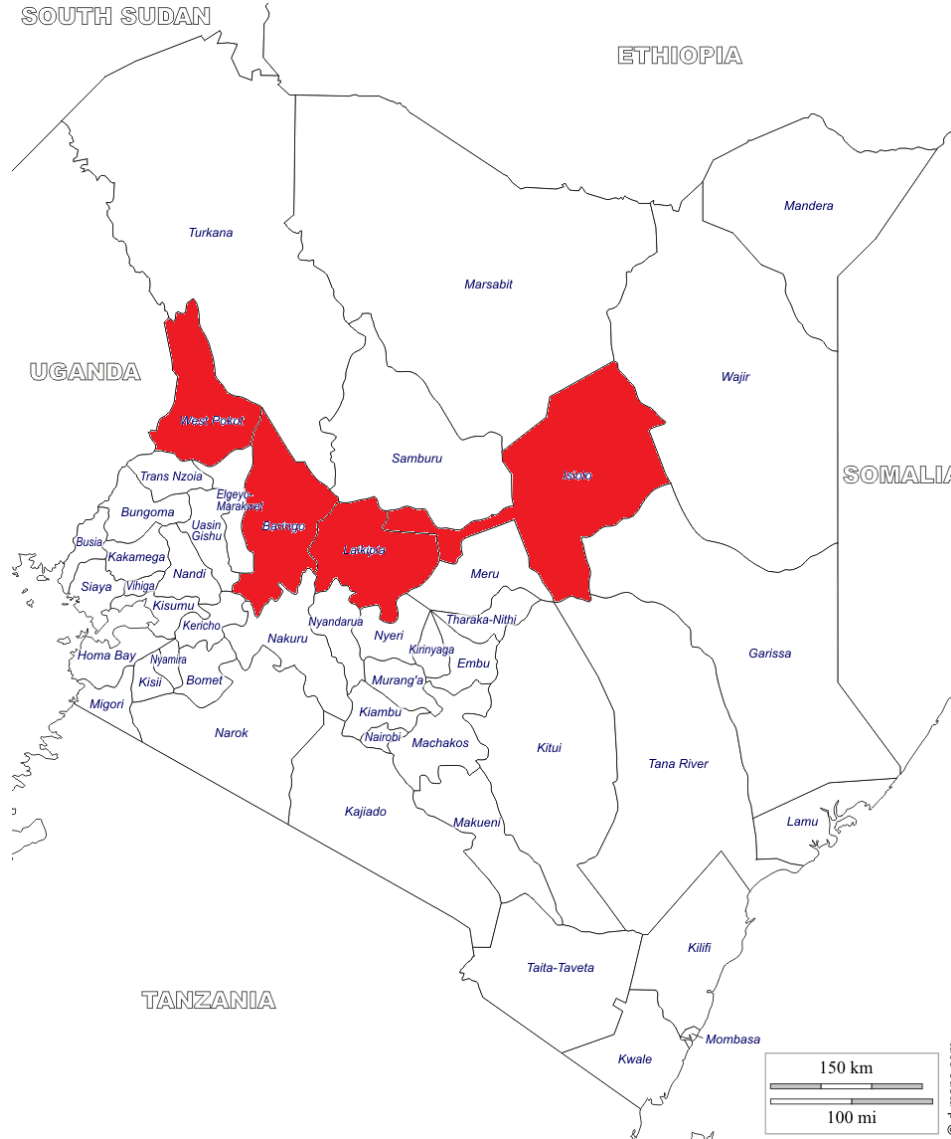
What we will do

1. **Identify** and **categorize** differentiated land tenure systems and their associated land use practices within and across four pastoralist areas in Kenya.
2. **Analyze** how incentives created by differentiated land tenure systems affect pastoralist land use practices, management of land and livestock, as well as broader livelihood strategies.
3. Through its influence on practices, management and strategies, **assess** the relationship between pastoralist land tenure and climate vulnerability.
4. **Synthesize** the results of 1 – 3 in order to close the policy gap in relation to the pastoralist paradox, and identify pathways towards climate resilient, pastoralist, land tenure systems.

The case study areas

- The four Kenyan counties chosen as case study areas are: **West Pokot, Baringo, Laikipia and Isiolo.**
- They are all dominated by semi-arid land where pastoralism is or has been the dominating livelihood.
- Within and in a comparison between the counties, the transition towards a more sedentary, privatized and commercialized agro-pastoralism land use practices are in different phases and has taken different forms.

The four counties



Characteristics

- **West Pokot:** part is dominated by enclosures individually managed for fodder and crop production, other parts of the County is dominated by pastoralism and open access grazing.
- **Baringo County:** in parts there is continually increasing number of both communal and individual enclosures managed for increased fodder production.
- **Laikipia County:** areas under permanent crop agriculture and both private and communal wildlife sanctuaries are expanding, restricting the possibilities for traditional pastoralism.
- **Isiolo County:** still dominated by more traditional pastoralist land-use, but is faced by changing conditions due to the development of a planned large scale infrastructure development programme.

Project plan

- The project plan suggested an introductory workshop that will assemble researchers from the project and relevant experts. This was planned for the Fall of 2018. Now we are here, and happy to arrange this in collaboration with FAO!
- The initial research tasks is to:
 - (1) identify and categorize differentiated land tenure systems and their associated land use practices within and across the four pastoralist areas in Kenya.
 - (2) analyze how incentives created by differentiated land tenure systems affect pastoralist land use practices, management of land and livestock, as well as broader livelihood strategies.

Categorization framework

Bundles of rights	Public Property	Private Property	Community Property	
Gendered access rights				
Gendered withdrawal rights				
Gendered rights to economic benefits				
Gendered management rights				
Gendered rights to exclude users				
Gendered rent out rights				
Gendered sell rights				
	State Land	Private Land	Trust land	Group ranch

Preliminary classification of land tenure in three counties

- West Pokot
 - Kacheliba
 - Ywalateke and Senetwo
 - Patei
- Baringo
 - Maoi
 - Ol-Kokwo Island
 - Salabani
 - Loruk
- Laikipia
 - Soi-Mosop Village
 - Naibo-Nanyuki-Ndikir-Ndipolei

West Pokot

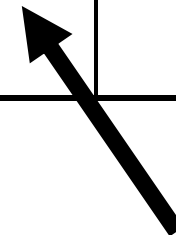
Land tenure	Access rights	Withdrawal rights	Economic benefits	Management rights	Exclusion rights	Right to rent/lease	Rights to sell & buy	Rights to inherit
Trust land (WP)	For community members; Grazing Cultivation	For community members; Pasture Dead firewood Wild fruits Sand Building soil Stones	Compensation to community members for: Road Tourism & wildlife conservation Mineral extraction	For community members; Plant trees Control soil erosion	Prohibition by non-community members to: Trespass Graze livestock	For community members; For cultivation & pasture	No	Yes
Private property with titles (WP)	For land owners Grazing Cultivation	For land owners & neighbors: Pasture Dead firewood wild fruits & vegetables sand stones Kitchen garden	For land owners: Compensation for power lines Leasing pasture Selling crop residues	For land owners: Plant trees Enclosures soil erosion measures	For non-landowners: Trespassing Crossing Access to salt Access to soil for houses	For cultivation & pasture	Yes	Yes
Group ranch with private enclosures (WP)	For non land owners: Grazing (fee) Cultivation (fee)	For non land owners: Pasture Dead firewood Stones Sand Thatching grass Fencing poles	For land owners: Road passing Minerals	For land owners: Enclosures Plant trees Soil erosion control	For land owners: Exclude members from accessing soil for houses Trespass (humans an livestock)	For cultivation & pasture	Yes	Yes

Baringo

Land tenure	Access rights	Withdrawal rights	Economic benefits	Management rights	Exclusion rights	Right to rent/lease	Rights to sell & buy	Rights to inherit
Recently subdivided trust land (BR)	For all: grazing Trespassing Crossing	For community members: Grazing Crop cultivation Wild fruits, Firewood, Burn charcoal	For land owners: Compensation for land repossessed by the government	For land owners: Fences, Own enclosures Terraces	For land owners: Right to exclude anyone from the land	For cultivation & pasture	Yes	Yes
Group ranch/conservancy (BR)	For Njembs and refugee Pokots: Grazing	For Njembs and refugee Pokots: Grazing Cultivation Wild fruits Firewood Burn charcoal Building poles	For Njembs: share of landing fee from tourists in form of school fees	For Njembs: Fences For Njembs and refugee Pokots: Land rehabilitation	Land committee and village headman can: Exclude non-natives to access land Exclude people from burning charcoal	Land committee can give this right	NO	Yes
Trust land under private enclosures (BR)	For all: grazing Trespassing Crossing	For enclosure owners: Grazing Cultivation Wild fruits Firewood Burn charcoal Grow and harvest grass	For enclosure owners: Compensation	For enclosure owners: Fences Terraces	For enclosure owners: exclude other members and livestock to access land	For enclosure owners: Yes	Legally: No Informally: Yes	Yes
Trust land under group enclosures	For group members: Grazing Bee keeping Timber production Charcoal burning	For group members: Grass seeds Grazing Poles Firewood, Beekeeping Grass for thatching	For group members: Compensation for labour Share of profit at the end of the year.	For group members: Fences Controlling floods Terraces	For group members: Right to exclude people from trespassing Exclude livestock from grazing	For group members: Leasing for pasture only	No	No

Laikipia

Land tenure	Access rights	Withdrawal rights	Economic benefits	Management rights	Exclusion rights	Right to rent/lease	Rights to sell & buy	Rights to inherit
Private property under absentee land owners 1 (LK)	For all (for a fee): Grazing Cultivation	For all (against a fee): Dead wood Grazing Herbs Stones Sand Honey Limestone	For land owners & guardians: Compensation for electricity cables across land	For land owners & guardians: Plant trees Drill boreholes, Divert runoff Irrigation Burying the dead	For land owners & guardians: Right to exclude both people and livestock from accessing the land	For cultivation & pasture	Yes	Yes
Private property under absentee land owners 2 (LK)	For all on non-demarcated areas Grazing Cultivation	For all on non-demarcated areas: Grazing Dead wood Cultivation along the rivers	For land owners & guardians of demarcated land: Compensation for electricity cables across land	For all land users and residents: soil control measures diversion of floods planting of trees	For land owners & guardians of demarcated land: Disputed right to exclude both people and livestock from accessing the land	For cultivation & pasture	Disputed right for land owners who are present only	Yes but disputed



Very preliminary reflection:

Public
Property

Community
Property

Private
Property

Rights to sell/buy

Trust land

Group
ranch/conservancy

Access rights

Private
property under
absentee
landowners

Management rights

Subdivided
trust land

Private
property with
title

Rights to economic benefits

Trust land under
group enclosures

Withdrawal rights

Group ranch
under private
enclosures

Rights to rent out/lease

Trust land under
private enclosures

Rights to exclude others

Gendered property

The survey

- Will be made in the form of personal interviews in all four counties.
- Sample size: about 100-120 respondents per county, i.e. 400-500 respondents.
- Focus group meetings will be held now in November. Pretest in January.
- Implementation of revised survey in June (hopefully).

Sections of the draft survey

- Questions about land ownership and how tenure rights have changed.
- Questions about the importance of attributes of the choice experiment section.
- The choice experiment section.
- Questions about livestock and livestock health.
- Questions about rangeland conditions and climate change.
- Demographic questions

What is a choice experiment?

- In a survey setting people choose their preferred alternative from a choice set.
- It is based on repeated choices! So each individual answers more than one question (i.e. faces more than one choice set).
- The alternatives (usually three) are described by a number of attributes, including a monetary attribute.

Example of choice set in a choice experiment survey

	Contract A	Contract B	No change
Property rights	You have access to public land	You have a community title deed	I prefer my current situation to both A and B
Distance to alternative grazing grounds	130 km	40 km	
Livestock insurance	Mandatory	Voluntary	
Cost of title deed and surveying	0 KSh	6 000 KSh	
	<input type="checkbox"/>	<input type="checkbox"/>	

Problems you can encounter when working with choice experiment surveys

- One attribute is ignored.
- The choices for all respondents are guided by just one attribute and all the other attributes are ignored – this is called lexicographic preferences.
- All respondents always choose the status quo alternative for all choice sets (i.e. “I know what I have and I don’t want any changes”).