

World Agroforestry Centre Science Meeting 2008

Market Dynamics for Agroforestry Investments as influenced by Property Rights and Incentives

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HEALTH WARNING

- These analyses are in progress and are by no means in final form.
- They are best used as illustrations of ideas rather than as completed analyses.
- If you ***really*** would like to use them in a publication then best to seek my advice first as to their status.
- Contact me on mng5939@gmail.com

Tenure

Private & Customary

Economic & Environmental aspects

Incentives

Endogenous, Social and Exogenous

Interactions

Create investment opportunities for
agroforestry goods and services

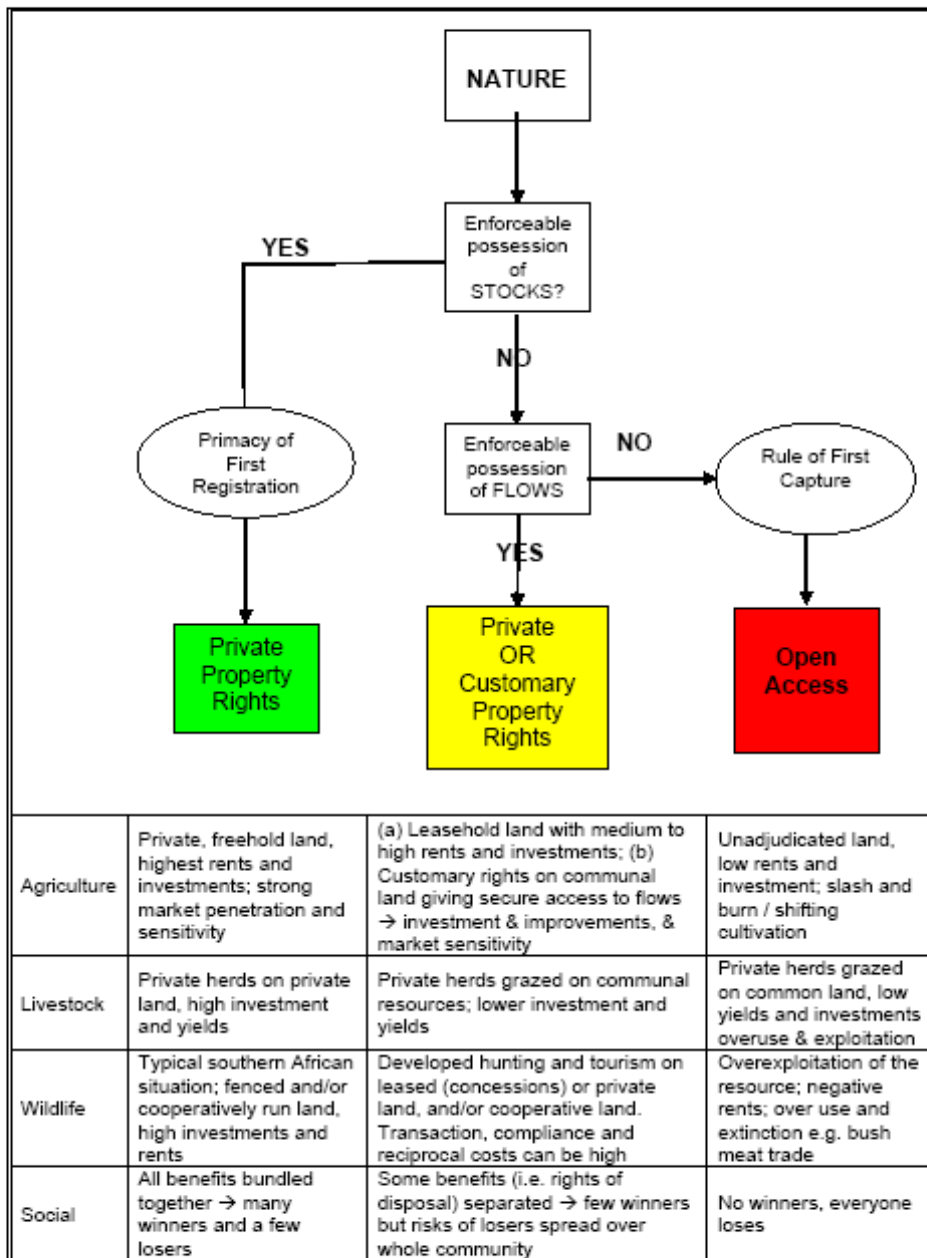
Differential impacts on flows v. stocks

Transformation of tenure from

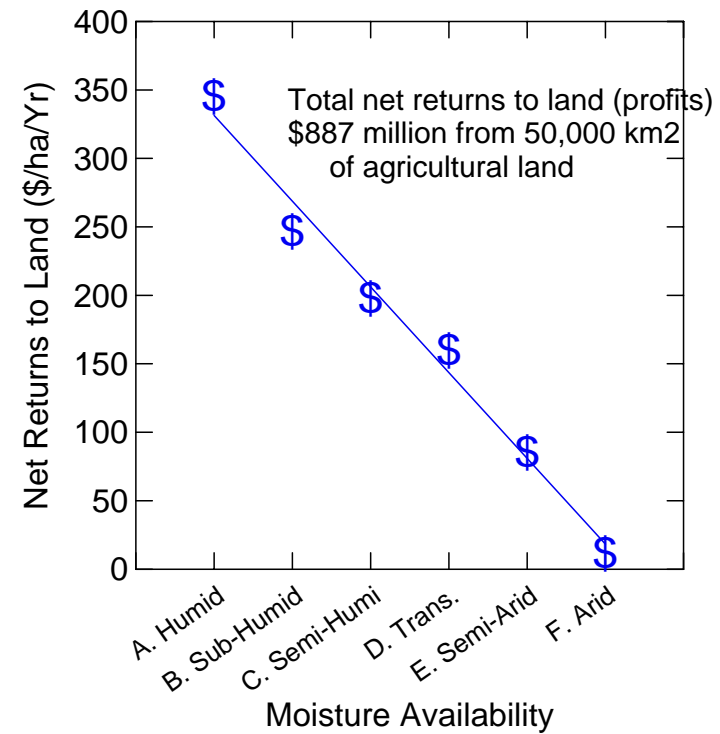
Customary → Private

Tenure Status Of Agricultural Land In Kenya				
Land Status	Km2	%	Population	%
Government and Trust Land	12,525	18%	409,568	5%
Commercial Leasehold	8,275	12%	671,930	9%
Private Tenure	21,350	30%	4,919,040	63%
Customary Tenure	29,275	41%	1,809,195	23%
Total	71,425	100%	7,809,733	100%

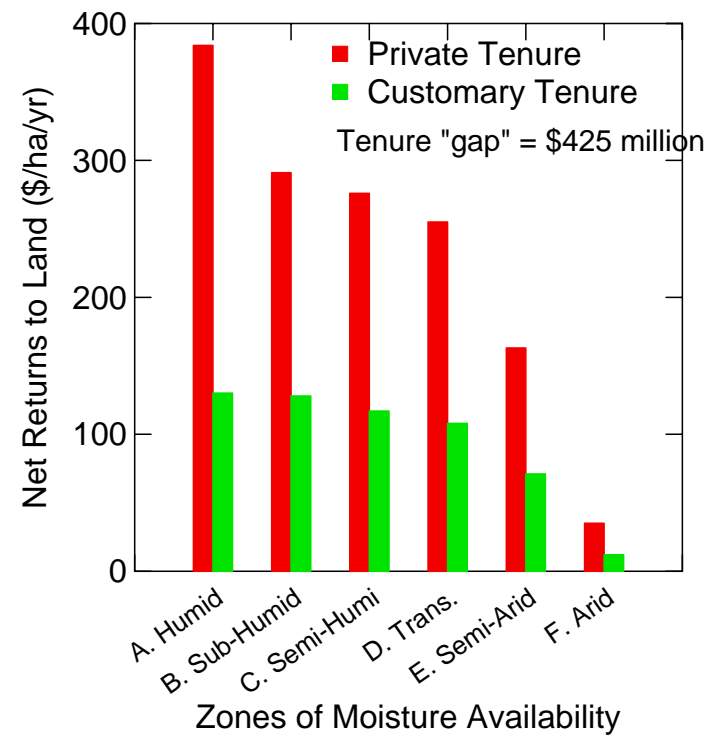
Evolution of Property Rights – after Lueck (1995)



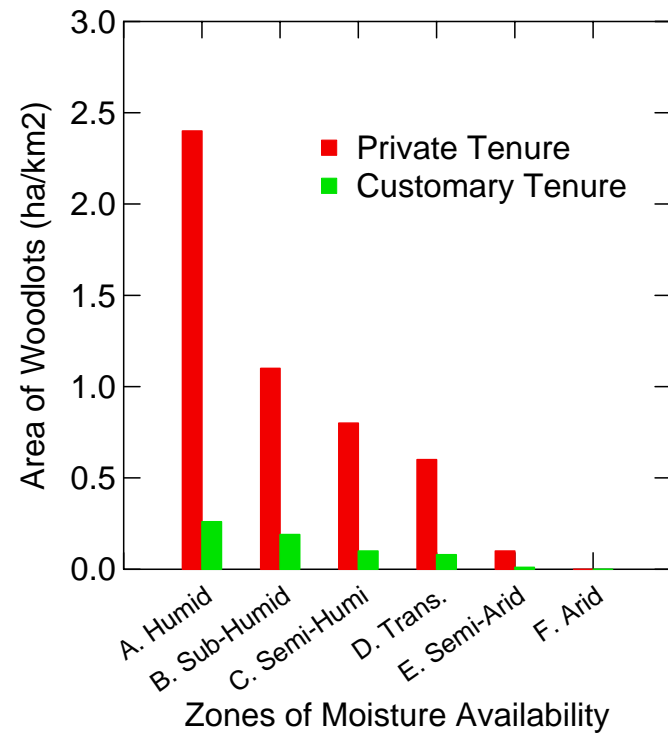
Net Returns to Land (\$/ha/yr) and Moisture Availability



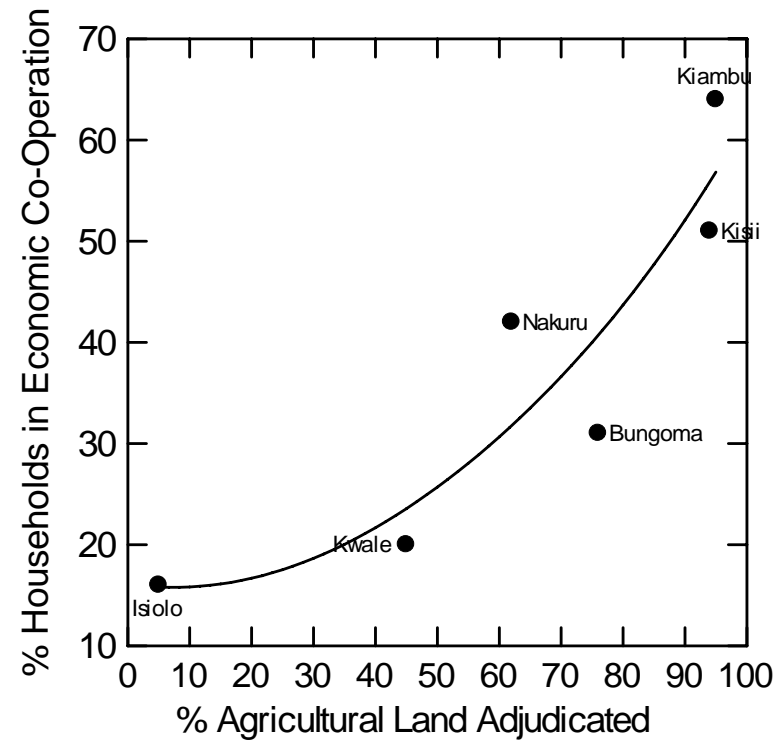
Influence of Land Tenure on Net Returns to Land



Influence of Land Tenure on Investment in Woodlots



Economic Impact of Secure Tenure



Tenure Effects: Economic and Environmental Indicators

Land Use	Private Tenure	Customary Tenure	Tenure Effect
Economic Indicators:			
Net returns to land (\$/ha/yr)	\$301.80	\$ 83.00	3.6
Cash crops (ha/km ²)	12.90	2.33	5.5
Livestock returns (\$/ha/yr)	\$25.20	\$8.62	2.9
Managed pastures (ha/km ²)	5.17	0.13	39.8
Environmental indicators:			
Total woody vegetation	24.33	22.32	1.1
Privately managed woody veg	11.45	3.01	3.8
Woody crops	4.31	0.24	18.0
Hedgerows (km/km ²)	23.55	5.14	4.6
Woodlots	1.27	0.06	21.2

INCENTIVES: to develop and improve land management

Endogenous (internal market)	<ul style="list-style-type: none">•Population growth•In-migration
Social (internal market)	<ul style="list-style-type: none">•Family health•Property / field boundary markers•Other on-farm investment
Exogenous (external markets)	<ul style="list-style-type: none">•Burgeoning markets, both domestic (rural and urban) and international

Machakos – Kilima Hill -- 1937



Machakos -- Kilima Hill -- 1989

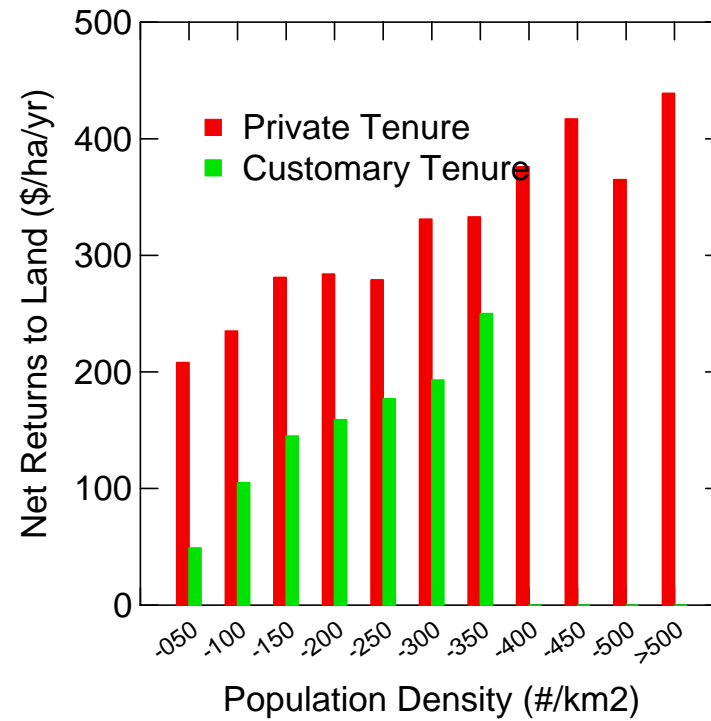




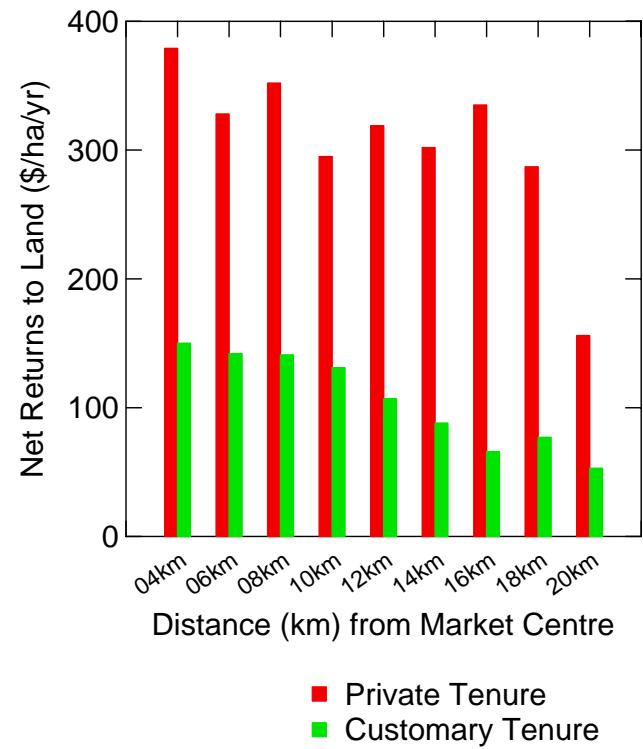
Lake Basin, Kenya. Mixed agriculture with fruit trees and smallholder tea

Source: Ecosystems Ltd

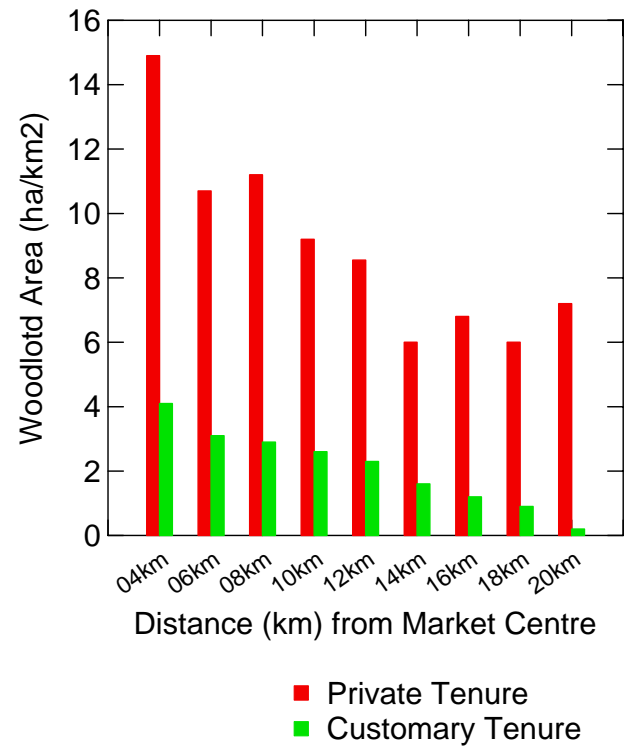
Net Returns to Land as a function of Population Density and Property Rights



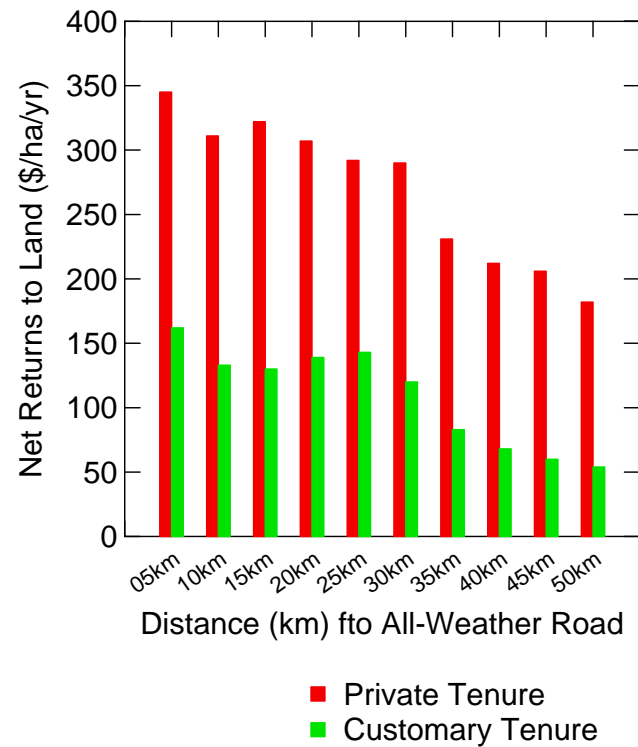
Influence of Distance to Market Centre and Tenure on Net Returns to Land



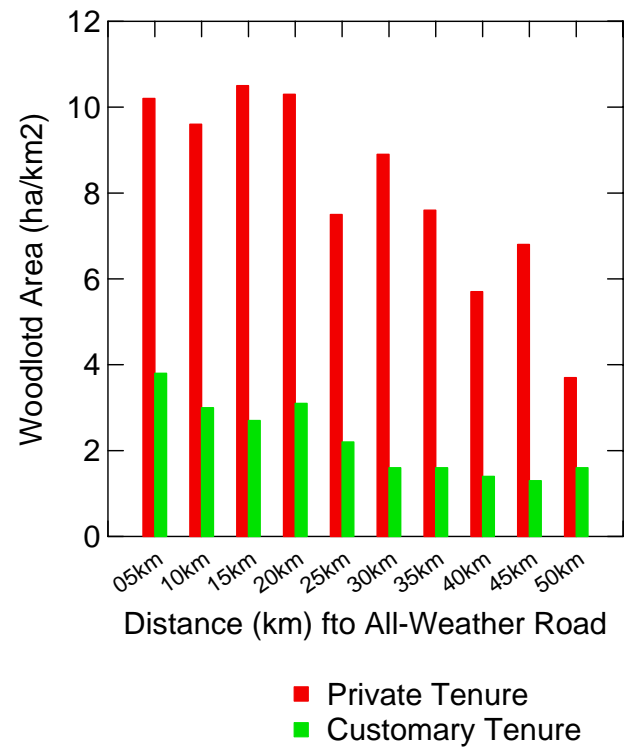
Influence of Distance to Market Centre and Tenure on Investment in Woodlots



Influence of Distance to All Weather Roads and Tenure on Net Returns to Land



Influence of Distance to All Weather Roads and Tenure on Investment in Woodlots



Other Interactions between Tenure and Incentives

General		Incentives	
		Stronger	Weaker
Property Rights	Stronger	Greater land improvement & investment; greater market involvement; longer time perspectives	
	Weaker		Less land improvement & investment; less market involvement; shorter time perspectives

Investment in Wildlife, and in Public Environment

Wildlife Change over 30 years		Incentives	
		Stronger	Weaker
Property Rights	Stronger	+5% where landowners impose property rights and capture benefits	-100% eradication in agricultural areas
	Weaker	- 40% where landusers capture some benefits	- 70% where landowners can capture no benefits

Private Investment in the Public Environment		Incentives	
		Stronger	Weaker
Property Rights	Stronger	0.5% investment from domestic budget	
	Weaker		KIBERA – 0% investment (\$2bn annual turnover)

Market Forces, Urbanisation, Land Values and Tenure

- **Market Forces (on flows)**
 - increase the quantity and quality (and value) of production
 - increases the value of land
 - Increased willingness to invest in land management
- **Urbanisation (on stocks)**
 - rising demand for land for domestic and commercial use
 - sharp increase in land values
 - value of land becomes dislinked from any agro-ecological potential
- **Both Processes force the transformation from Customary → Private tenure regimes**

Policy Implications

- **Tenure**

- Private: wealth creation → economic & environmental gains, but potential for social losses
- Customary: wealth dissipation → economic & environmental losses but potential social gains

- **Incentives**

- Population growth → more intensive land use
- Market growth → increased flows → land values & investment
- Urbanisation → severs land values from agro-ecological potential
- [[Incentives v. Regulations]]

- **Interactions**

- Transform patterns of land use & land management
- Creates a variety of investment opportunities for agroforestry
- Transform tenure regimes from Customary → Private