

Wildlife PES Schemes and Pastoral Livelihoods in Arid & Semi-Arid Lands (ASALs) in Kenya

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International Livestock Research Institute

**GLOBAL AGENDA OF ACTION IN SUPPORT OF SUSTAINABLE LIVESTOCK SECTOR
DEVELOPMENT**

CONSULTATION FOCUS AREA NUMBER 2: *RESTORING VALUE TO GRASSLANDS*

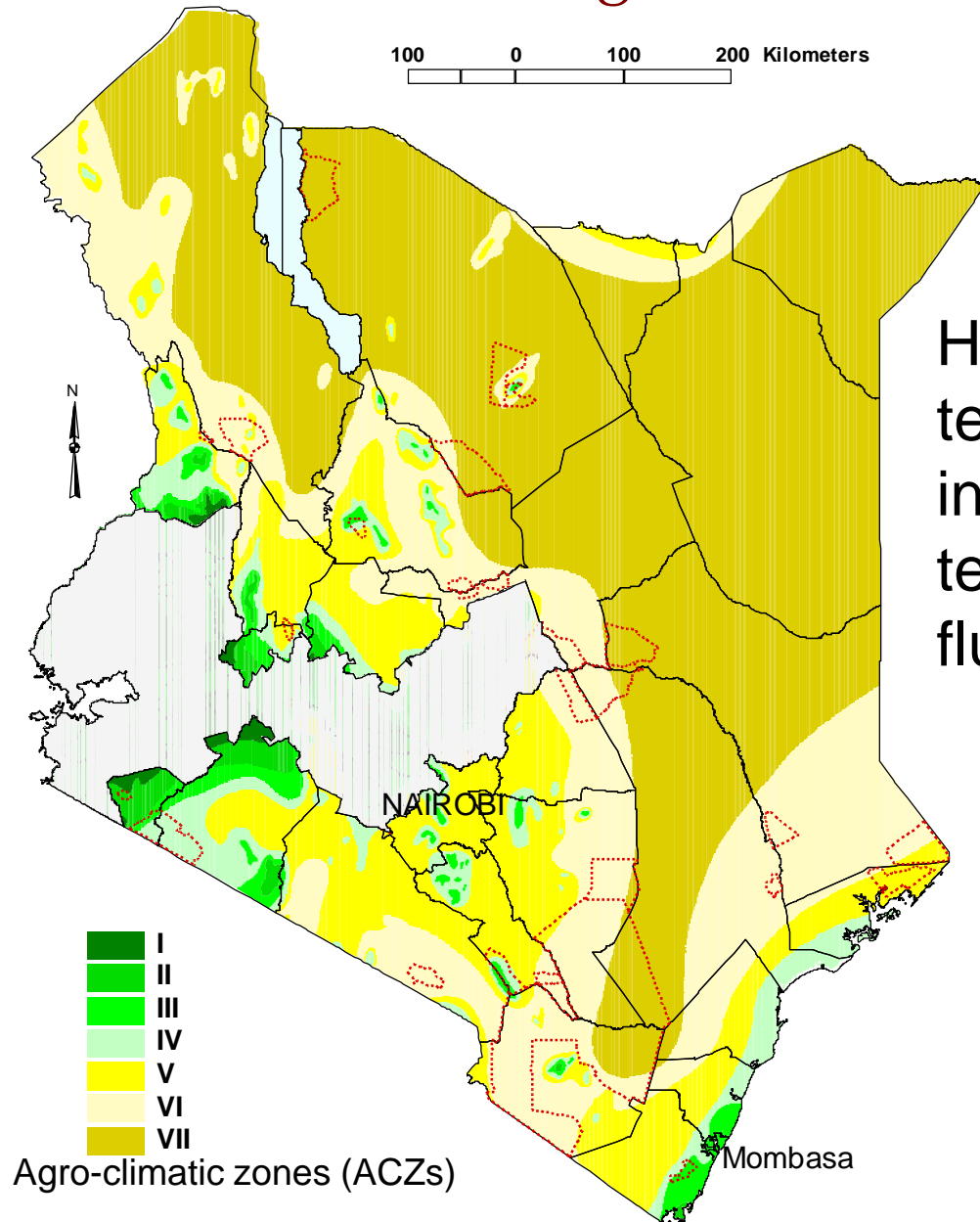
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Presentation Outline

1. Kenyan ASALS: Environmental Goods & Services
2. Issues and Challenges
3. Community Conservancies & Wildlife PES Schemes
4. Ecological Outcomes
5. Livelihood and Poverty Impacts
6. Lessons Learnt and Future Directions

1. Kenyan ASALs: Environmental Goods & Services

ASAL Cover Agro-climatic Zones IV-VII



High spatial and temporal variability in precipitation and temperature fluctuations

Livestock, Wildlife and Tourism



- Extensive livestock production through pastoralism
- 70% of national livestock population
- Supply of protein and food security



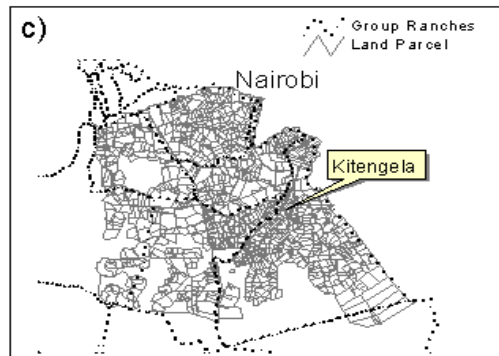
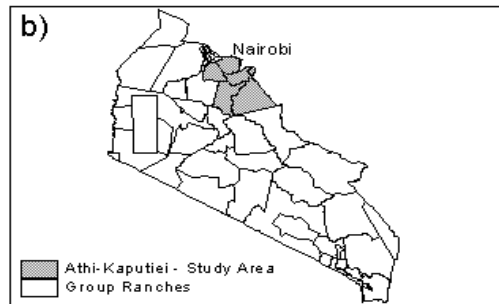
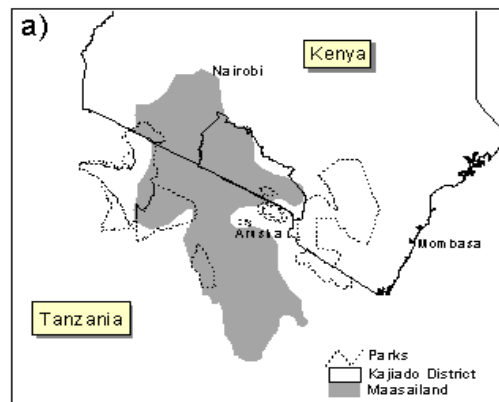
- 90% of wildlife and 88% of protected area in ASAL
- Majority of wildlife (large mammals) live permanently or seasonally outside protected areas



- Wildlife and pastoral landscape backbone of biodiversity conservation and tourism industry

2. Issues and Challenges in ASALs

Land privatisation & fragmentation



1600

Maasai speaking people arrived in Athi Kaputiei with their livestock

1895

Arrival of White Settlers

1911

In 1911, the northern reserve was closed to Maasai and a single extended southern reserve was created from south Kenya to northern Tanzania. The Maasai lost about 80% of their best land to white farmers.

1940s

Creation of Parks and Maasai cut from dry season range

1968

Land adjudication Act
Establishment of group ranches and the first group was the Athi-Kaputiei

19xx

Establishment of Export Processing Zone

1985

Ngong forest gazetted due to deforestation

1986

Sub division of group ranches began with Athi-Kapiti

2002

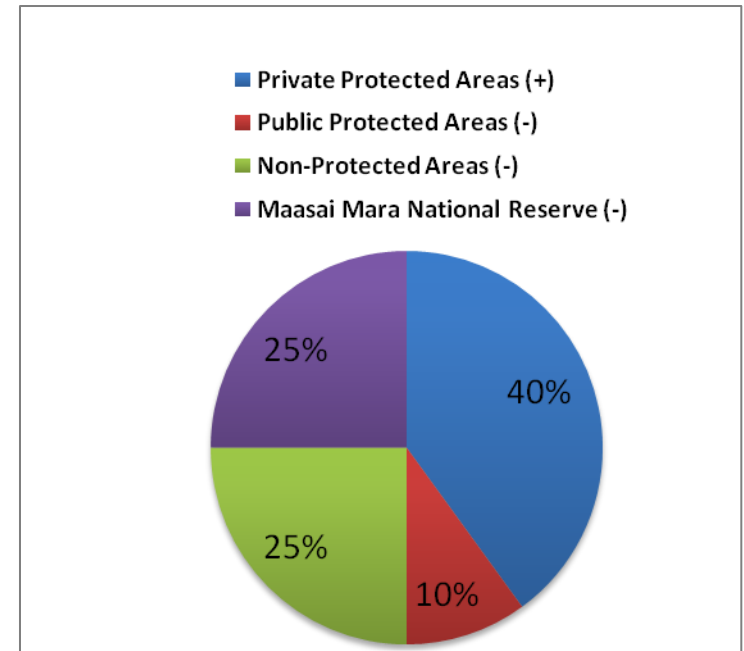
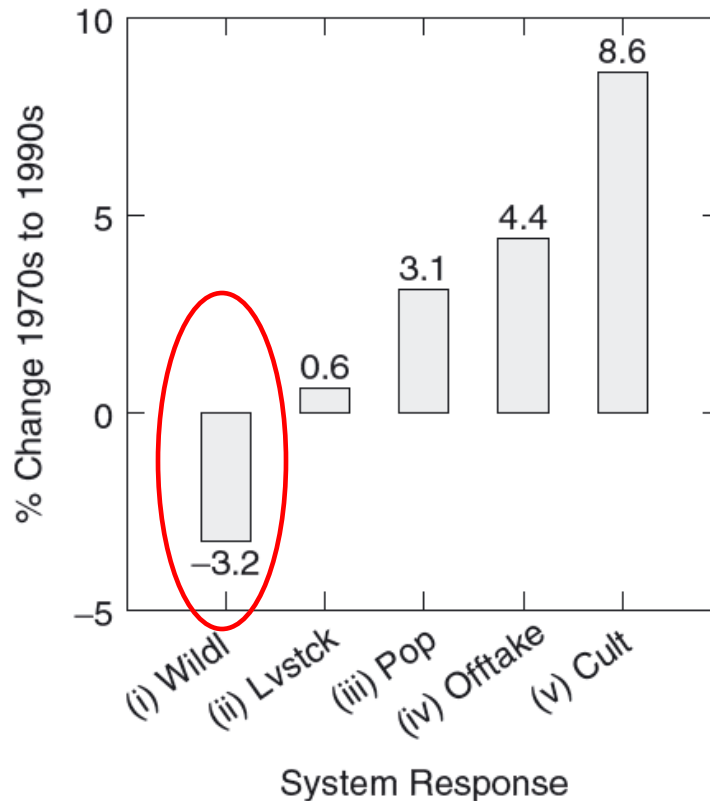
Land lease programme initiated by local community and FoNAPP not to fence the land

2005

Increase in land sales, expansion of rural and urban development

Policy change in property rights has led to rapid shift from large land parcels under communal tenure to small individuated land parcels under private tenure

Changes in human population, livestock, wildlife and cultivation in ASALs

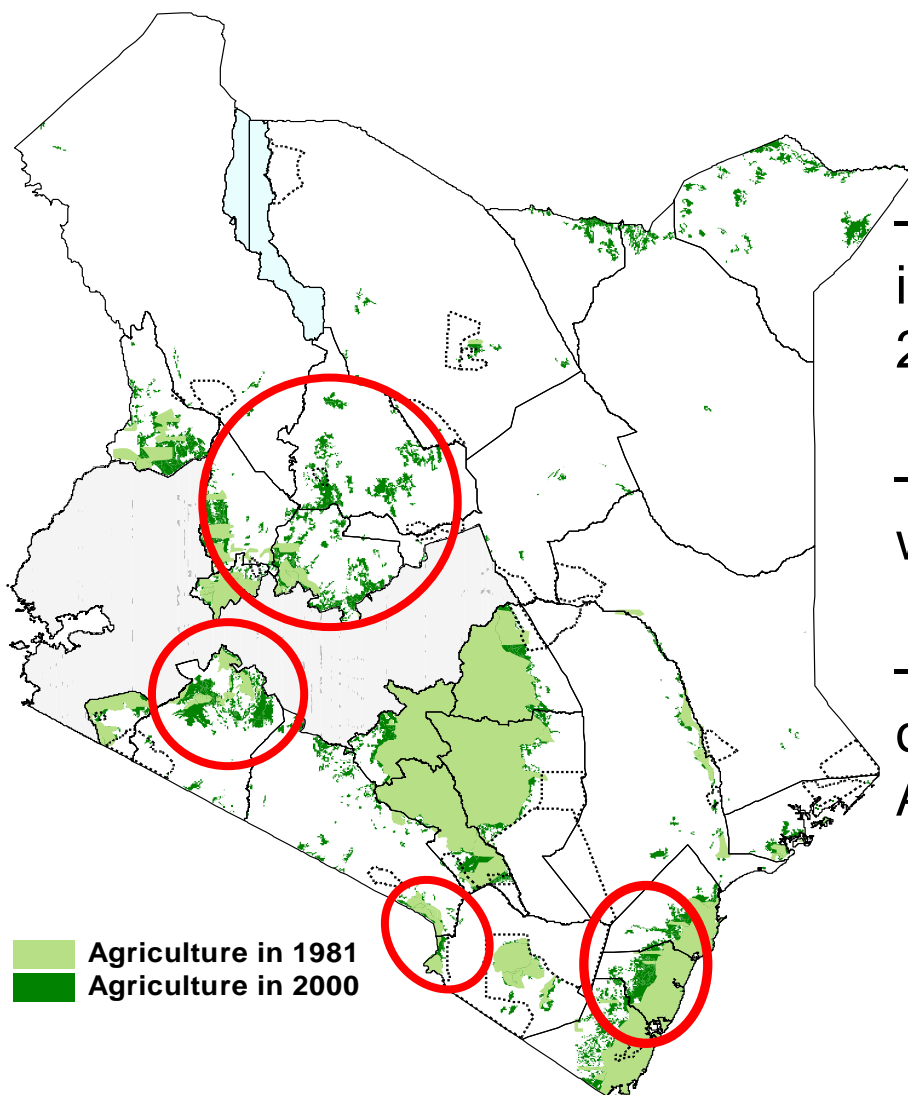


Distribution of wildlife in Kenya by land category

—Decline in wildlife numbers and increase livestock, human population, off-take and cultivated areas in ASALs

—Overall, majority of wildlife found in private PAs; the only land category exhibiting **positive trends** in wildlife populations

Agriculture expansion in ASALs (1981-2000)

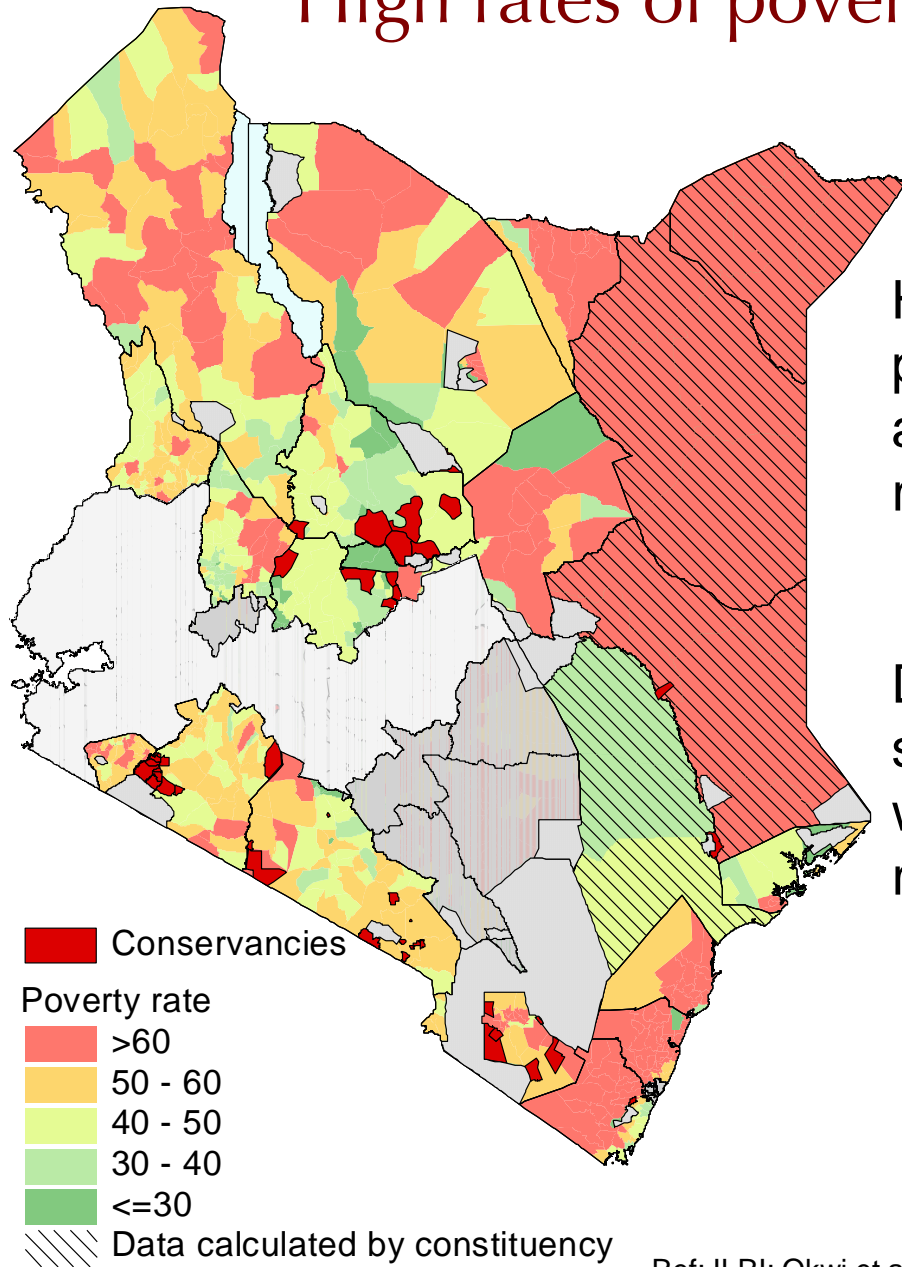


—Crop cultivation in ASALs increased by 34% in 1981-2000 period

—In 2000, ~ 11% of ASAL was under agriculture

—Increased intensification of livestock production in ASALs

High rates of poverty in ASALs



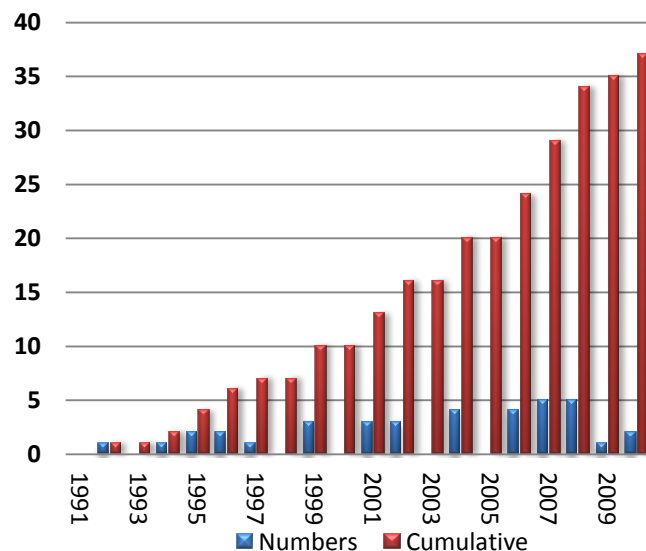
High poverty levels among pastoral communities also around wildlife parks and reserves

Diversification of income sources and payment for wildlife conservation could reduce poverty levels?

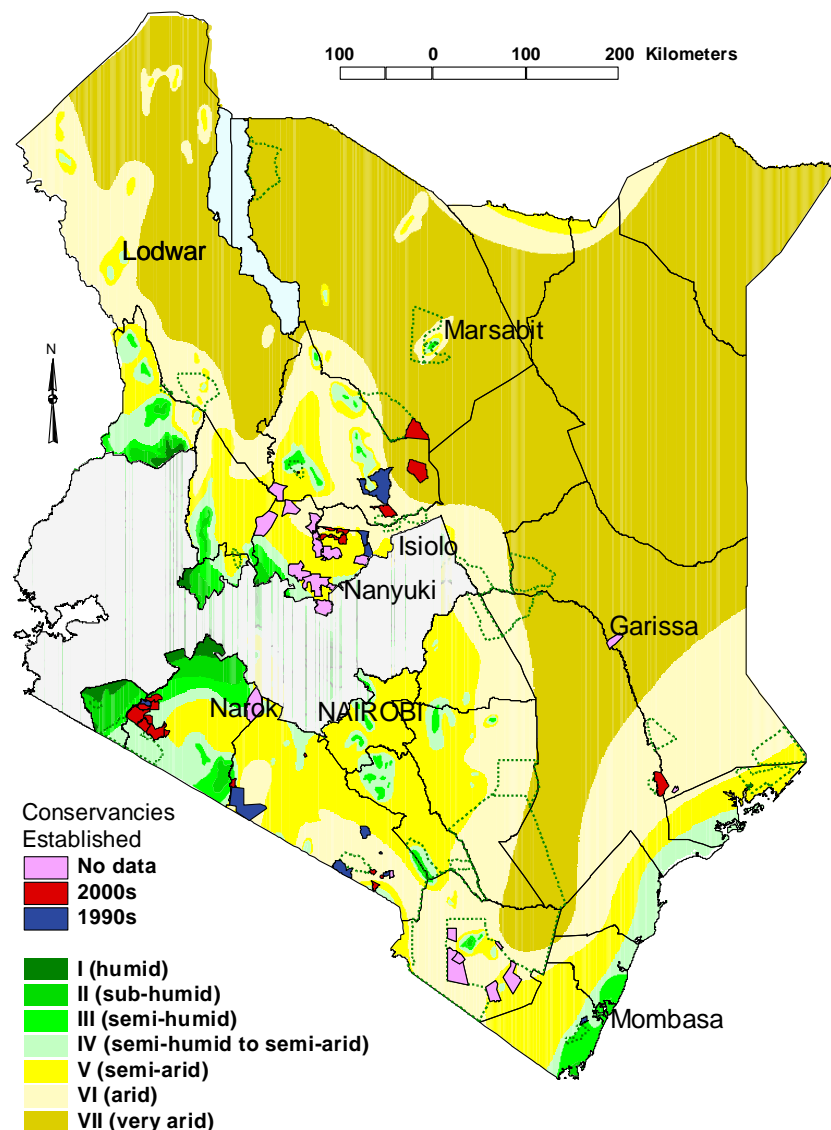
3. Community Conservancies & Wildlife PES Schemes in ASALs

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Evolution of Community Conservancies

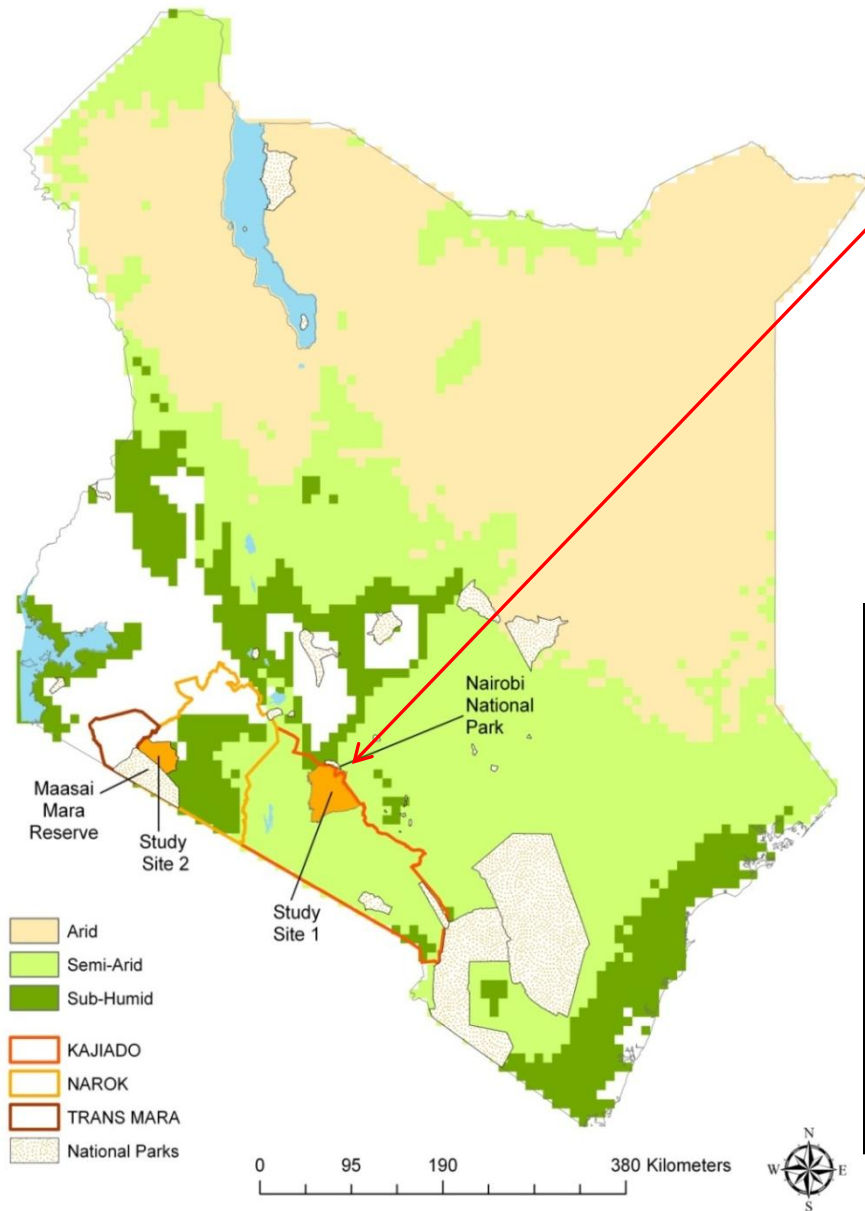


Land Tenure	Funding Source	Conservancies & PES Schemes	
		2000	2010
Communal Tenure (Group Ranches and Trust Land)	Market	2	7
	Public	3	14
Private Tenure	Market	1	9
	Public	1	6
Total		7	36



Source: ILRI (International Livestock Research Institute)

PES Case 1: Wildlife Lease Program

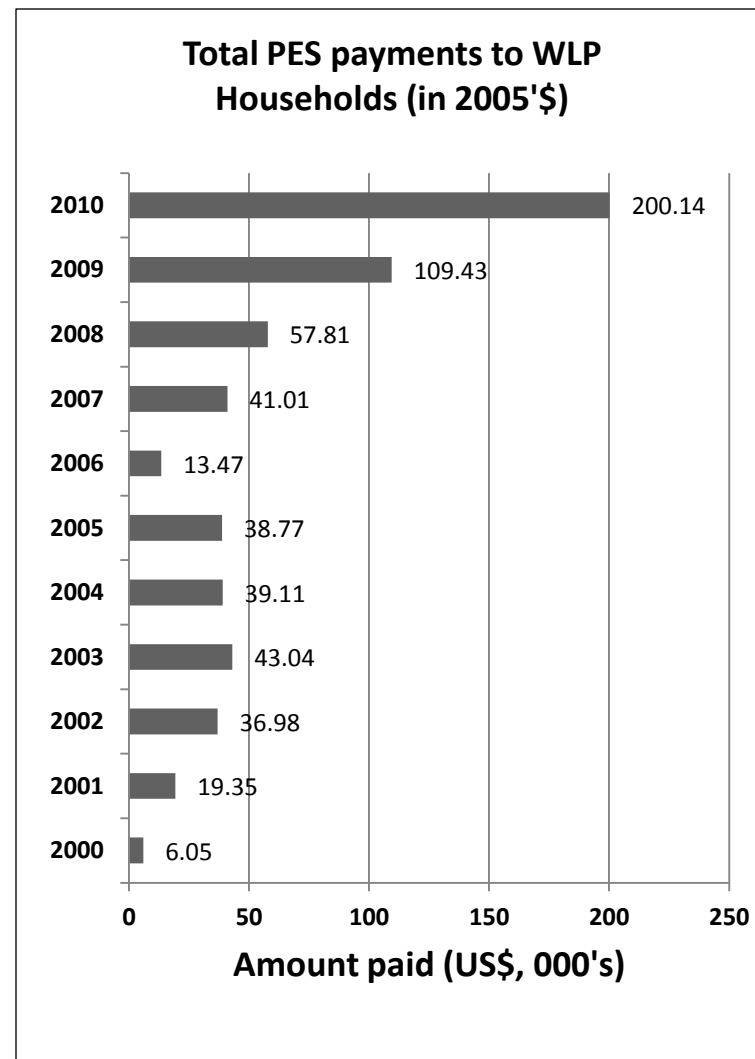
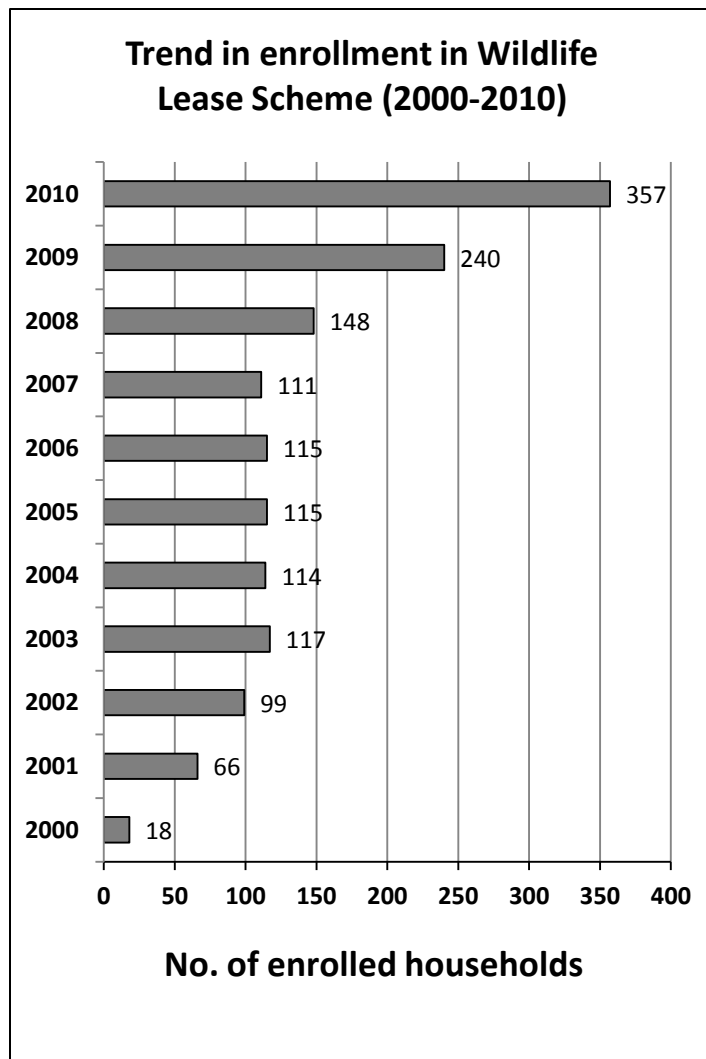


Secure the wildlife dispersal area and migratory corridor for Nairobi National Park by paying pastoralists US\$10/ha/yr

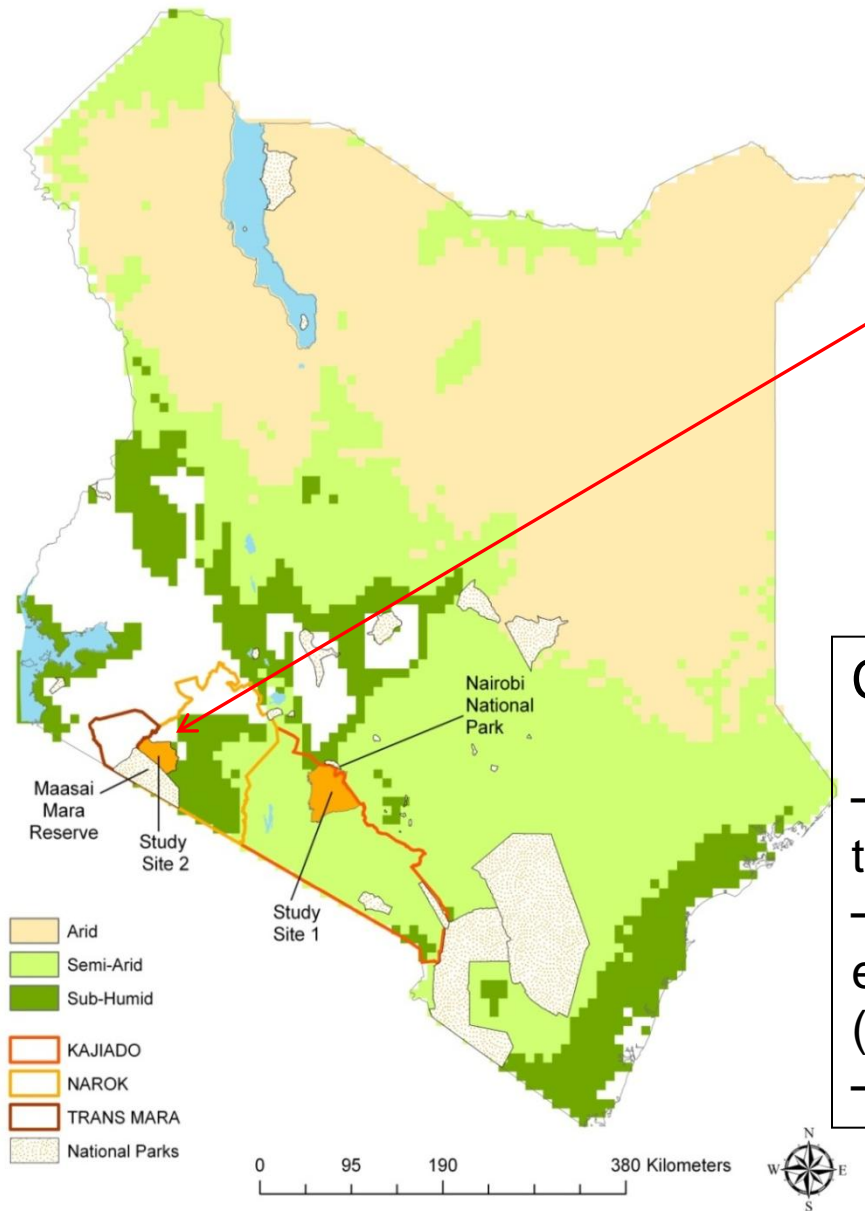
Conditionalities in WLP

- No selling of land enrolled in PES scheme
- No-sub dividing land in lease
- No fencing of land in lease
- Landowners to refrain from and report poaching
- Protect natural vegetation

Enrolment & Payments in the WLP



PES Case 2: Olare Orok Conservancy (OOC)



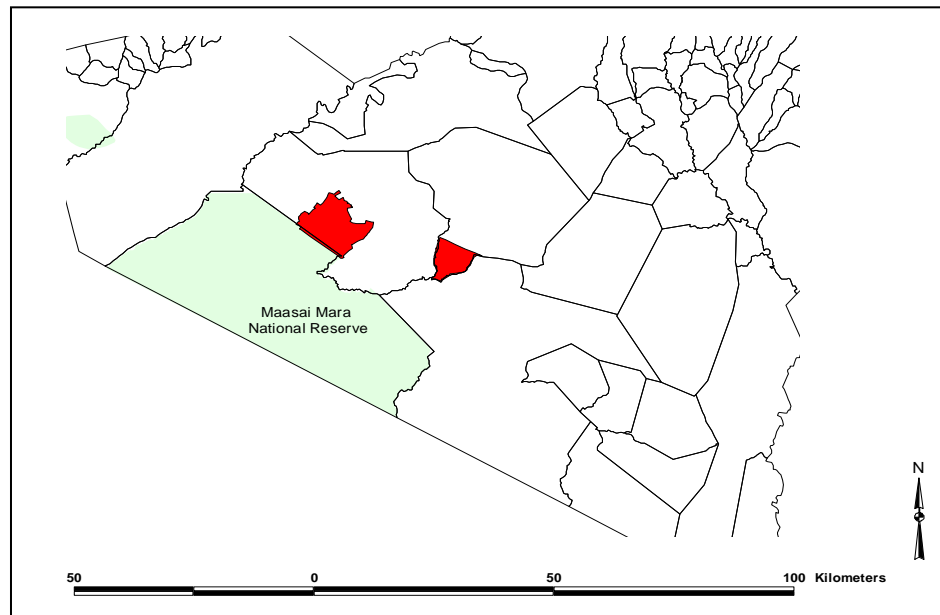
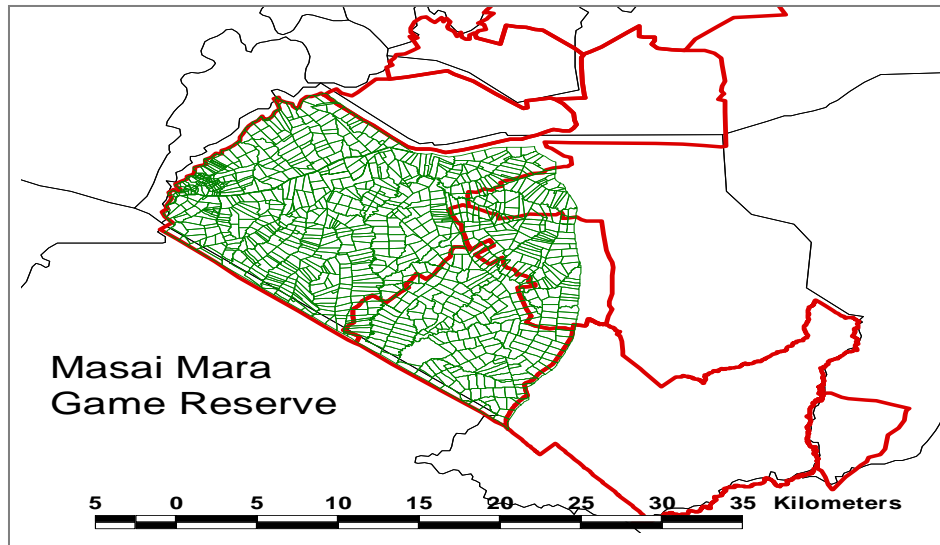
Pastoral land owners paid btwn US\$ 30-40/ha/yr to consolidate and lease individual land parcels to private investors for high end wildlife tourism and conservation in the dispersal area of Maasai Mara National Reserve

Conditionalities in OOC

- Exclusion of settlements in the conservancy
- Restriction on cattle grazing except in drought periods (controlled)
- Restrictions on land sales

3. Community Conservancies & Wildlife PES Schemes in ASALs

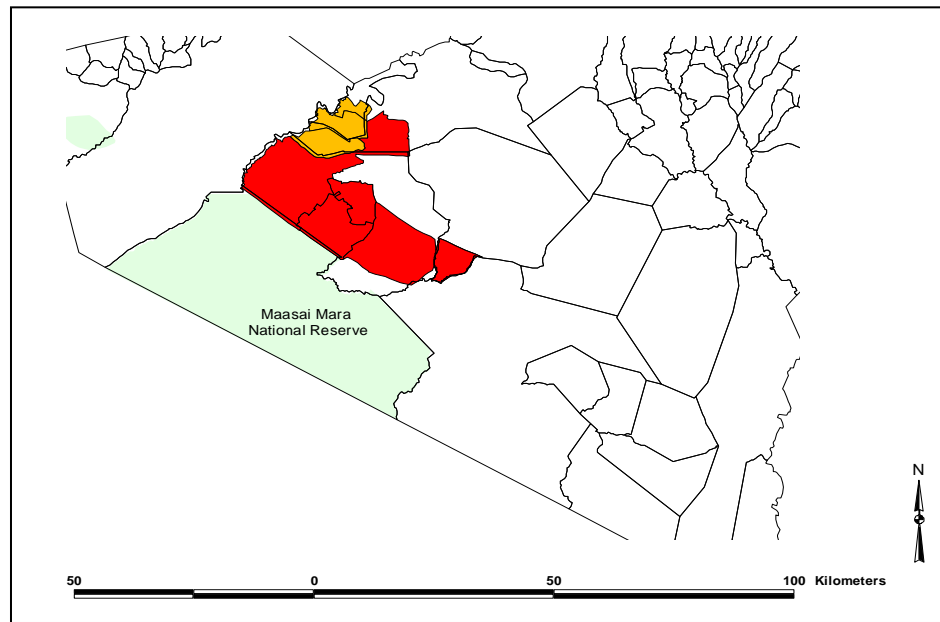
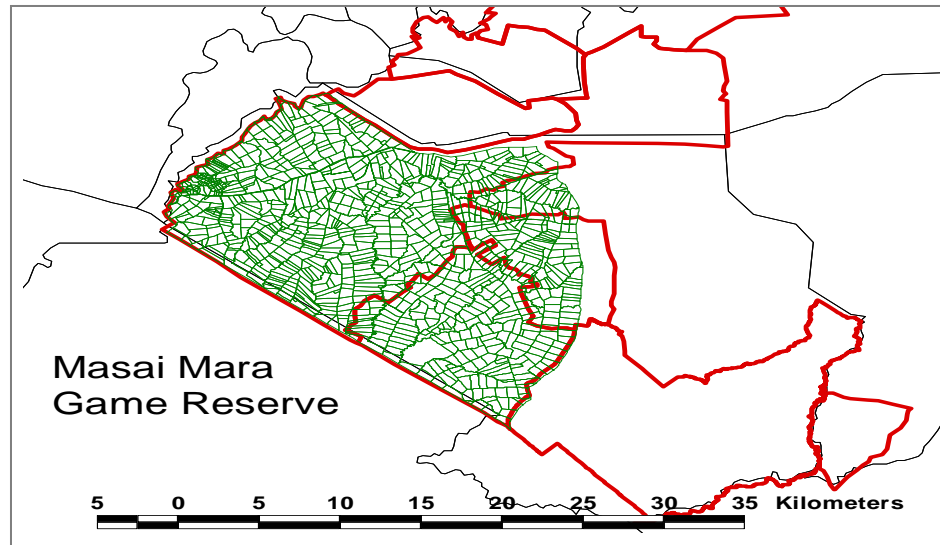
Replication of OOC PES Model (2006)



Conservancy & Area (Ha)

1. Olare Orok (9,720)
2. Olkinyei (4,856)

Replication of OOC PES Model (2006-2012)



- **Total area under conservancy quickly expanded**

Conservancy & Area (Ha)

1. Olare Orok (9,720)
2. Olkinyei (4,856)
3. Motorogi (5,466)
4. Mara North (30,955)
5. Naboisho (20,946)
6. Enoonkishu (6,566)
7. Lemek (6,860)
8. Ol-Chorro (6,879)

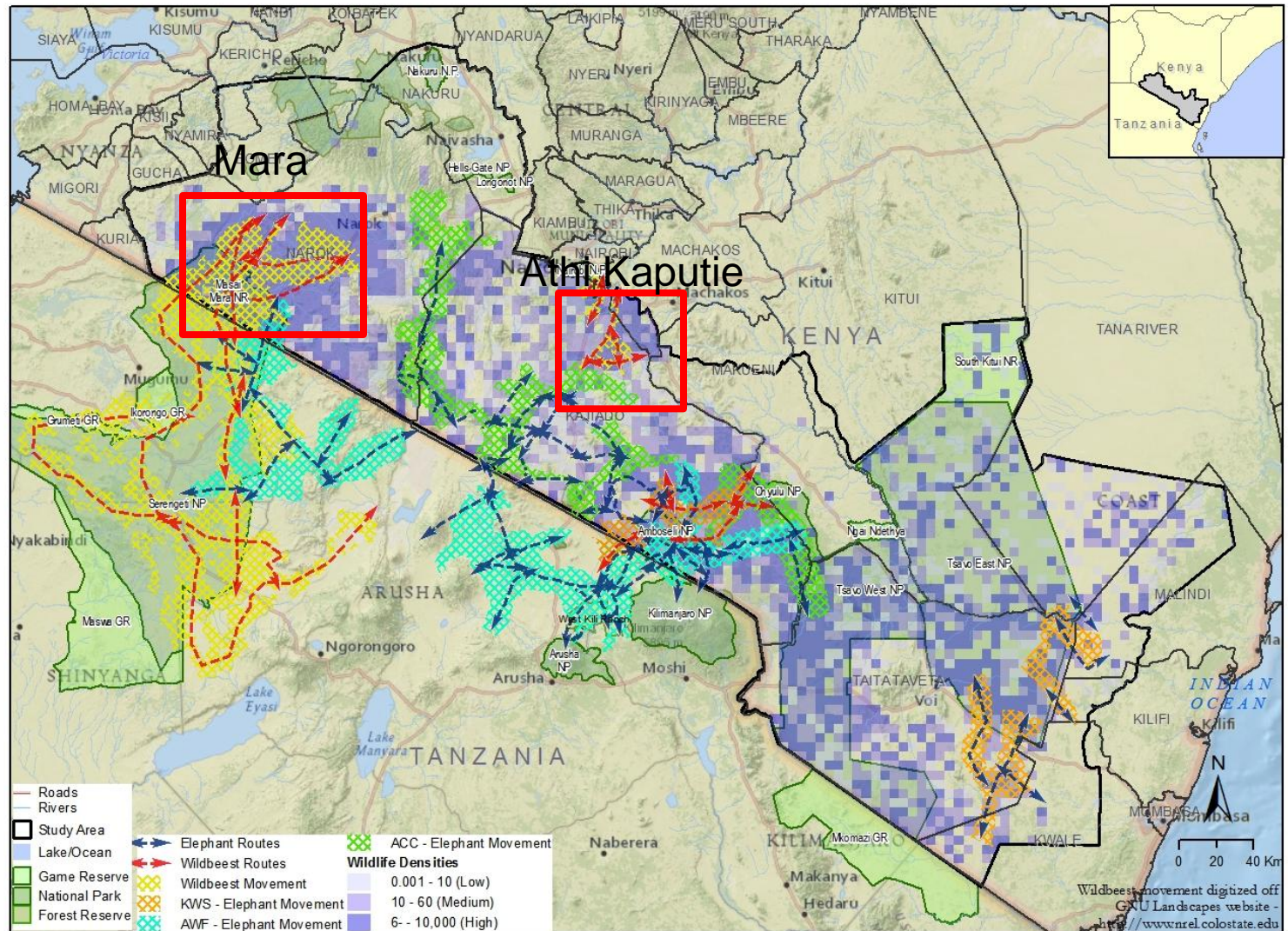
Comparison between PES Case 1 & 2

	Case 1: Wildlife Lease Program	Case 2: Olare Orok Conservancy (OOC)
Year started/period	2000 (12 years)	2006 (5 years)
No. of landholders	357 (2010)	157 (2010)
Land Tenure	Private, individuated	Private , individuated
Area of land	16,700ha (2010)	10,000ha
Funding source	Public funding (Government and World Bank/GEF)	Market funding (Private tourism enterprises and investors)
Contract arrangement (period)	Individual contract (1 year)	Group contract (5 & 10 years)
Governance	Intermediary: NGO (The Wildlife Foundation)	Intermediary: Private company (OI Purkel Ltd)

4. Ecological Outcomes of Wildlife PES Schemes

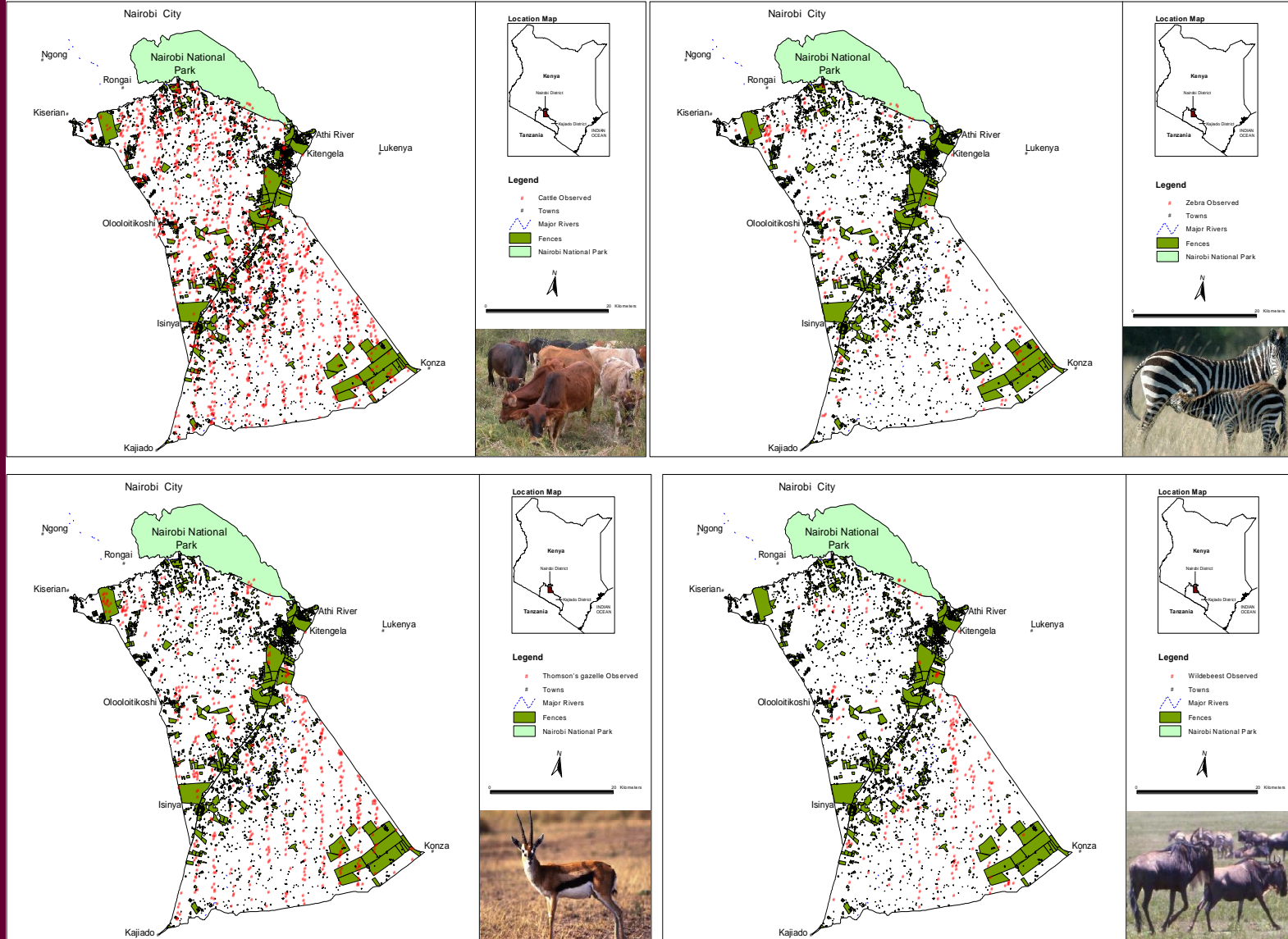
4. Ecological Outcomes of Wildlife PES Schemes

PES & wildlife dispersal/migration corridor in ASALs in Southern Kenya

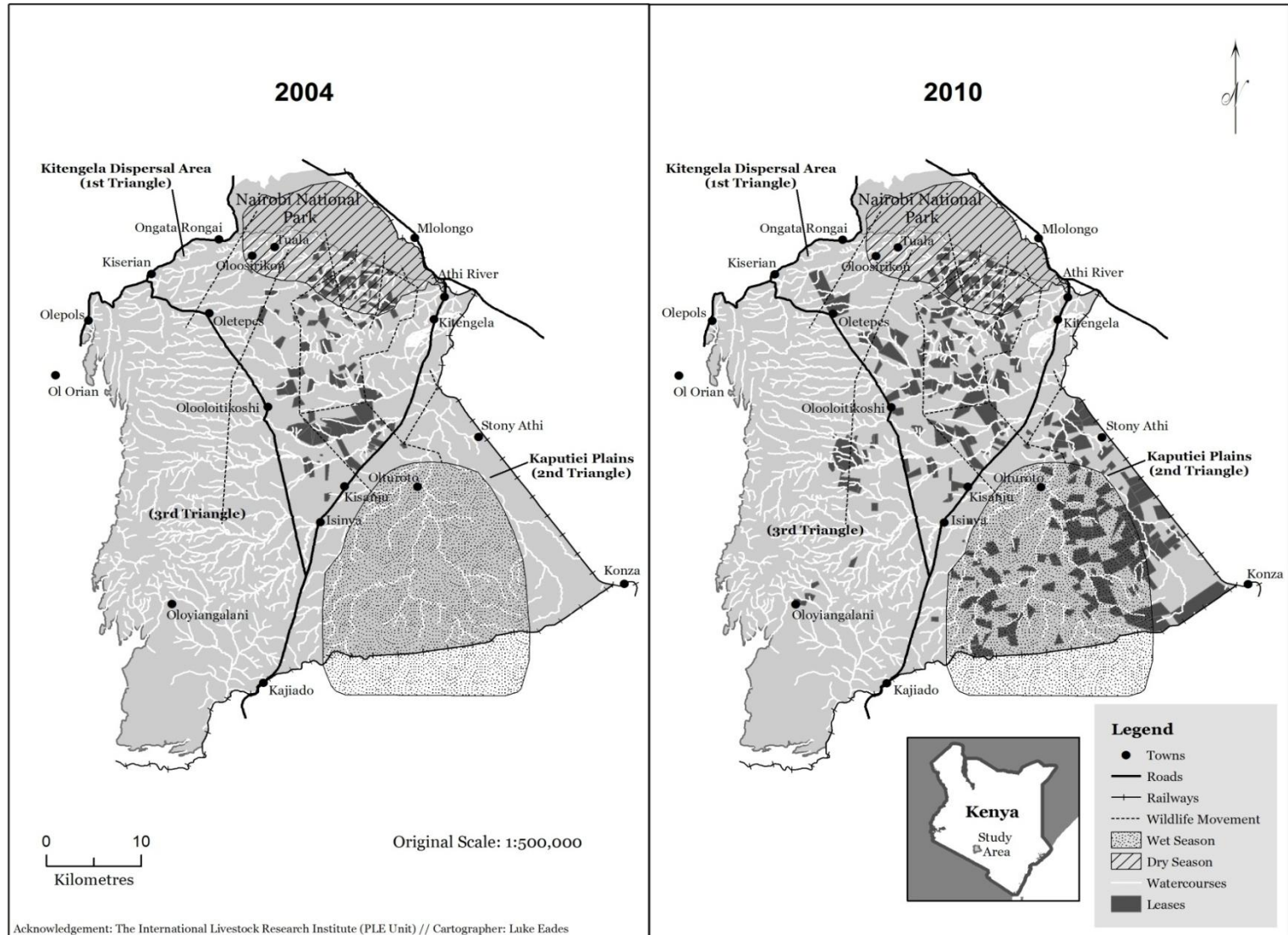


Source: DRSRS (Department of Resource Surveys & Remote Sensing) et al. (in prep)

Distribution of selected species in Athi Kaputie Plains

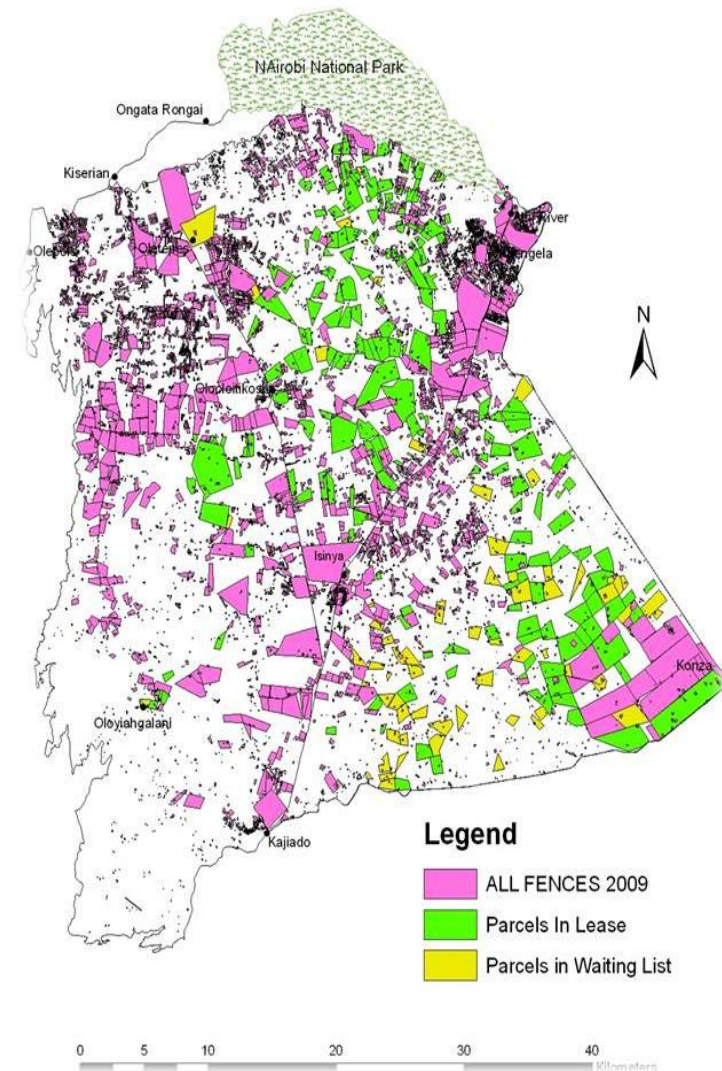
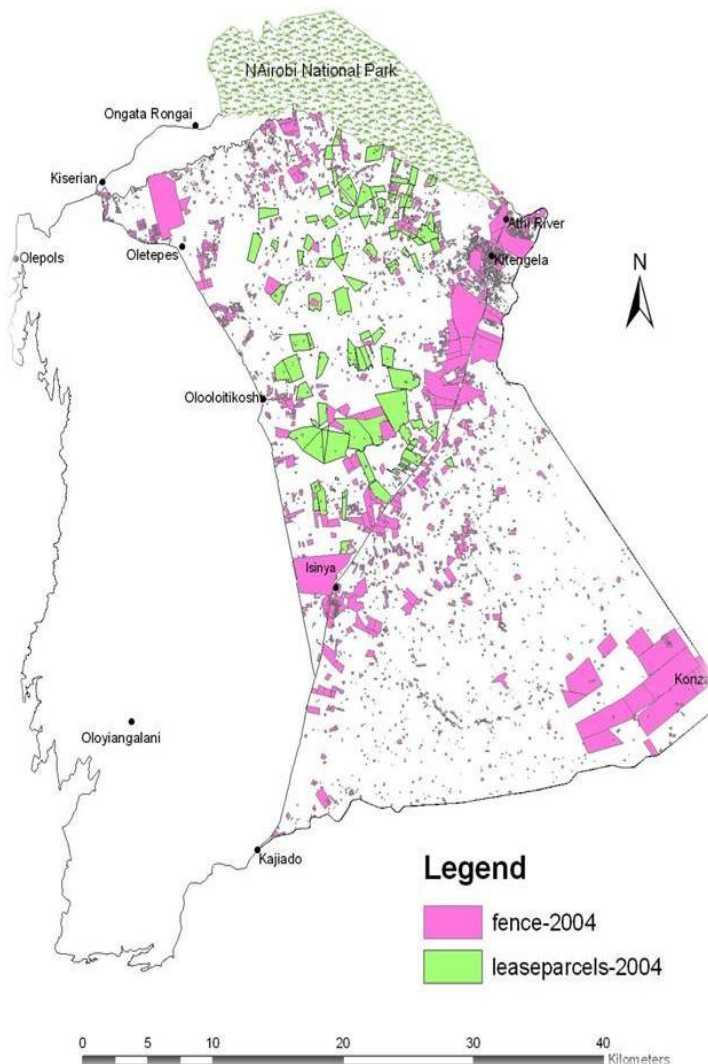


PES & wildlife dispersal/migration corridor in Athi Kaputie Plains

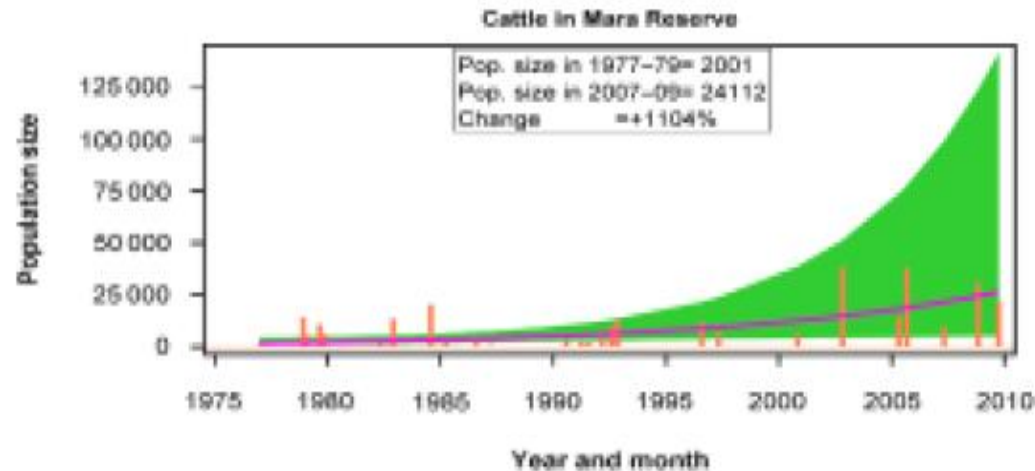


4. Ecological Outcomes of Wildlife PES Schemes

Impact on fencing and blockade of wildlife & livestock mobility in Athi Kaputie Plains



Potential Leakages and Knock-off effects on Park and Communal Lands



5. Pastoral Livelihood and Poverty Impacts

5. Pastoral Livelihood and Poverty Impacts of Wildlife PES Schemes

‘Safety-net’: Contribution of PES to Household Income in the WLP & OOC in 2008-2009

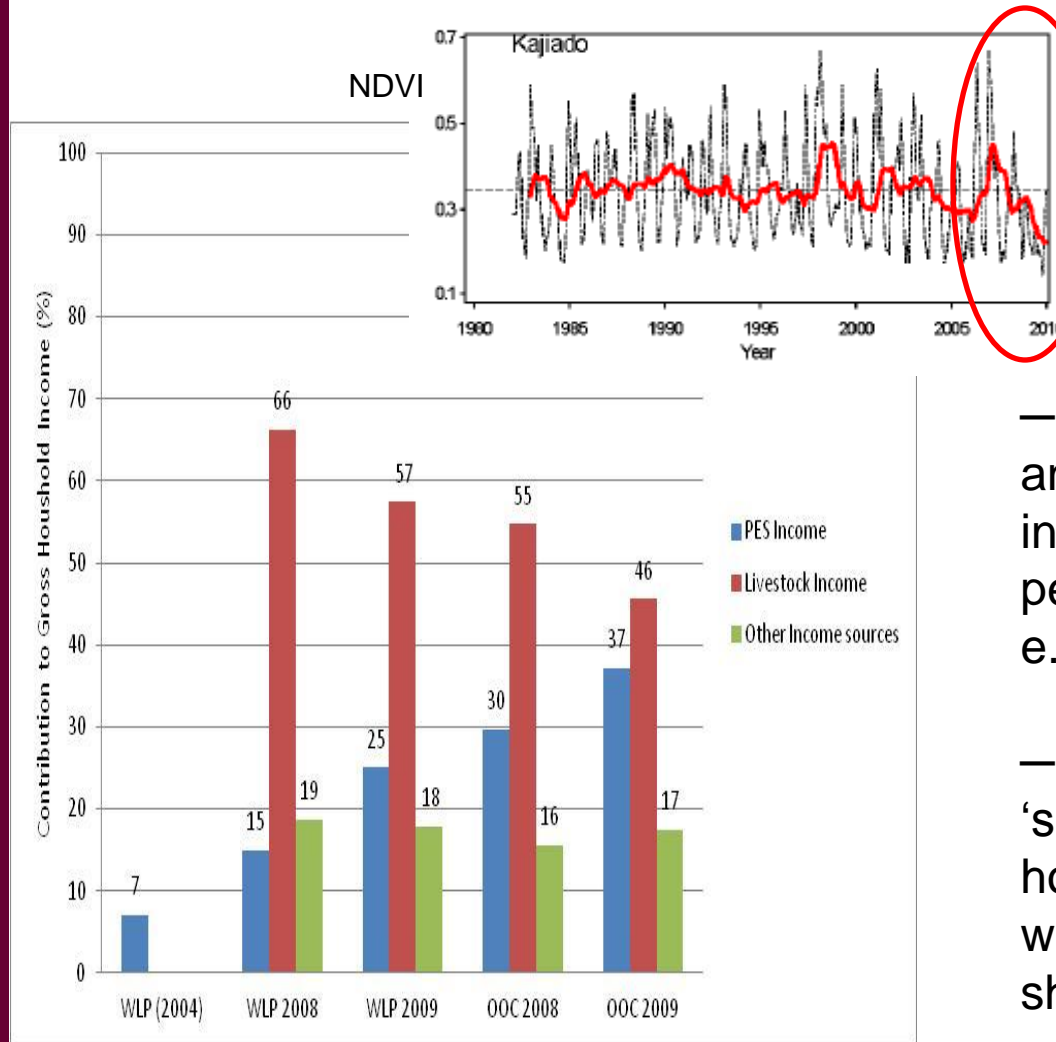


Photo credit: Brendan Cox/Flick

—PES income represents an invaluable source of income diversification in periods of severe drought e.g. 2008-2009

—PES can provide a ‘safety net’ for pastoral households in dealing with environmental shocks

Determinants of Participation and Poverty in the WLP PES Scheme

Explanatory Variable	Co-efficient	z-value	P> z
Size of Farm (ha)	0.005	2.51	0.012
Wildlife predation	0.864	2.05	0.041
Adult labour	0.163	2.04	0.042
NDVI_lag3 (2004-2009)	-9.769	-2.33	0.020
Composite Asset Index (CAI)	0.622	1.82	0.069
Constant	-0.747		
Pseudo R2	0.172		
N	158		

—Richer households with greater asset endowments, including larger farms, and occupying areas with higher grazing potential are the most likely to participate in the WLP

Per capita poverty impact of PES in OOC

	N	Mean income (US\$/person/day)	CV	% Contribution to household income	
				Agriculture	Wildlife Conservation
Mara Group Ranches (1998-2004)	210	0.84	116	70	21
OOC – PES 2009	58	1.51	157	79	
OOC + PES 2009	73	2.45	93	42	40

Individuals: Higher income for those benefitting from PES in Olare Orok Conservancy (OOC)

Households: Significant (40%) household income derived from PES payments in 2009

Equity income among households increased because families received more or less same area of land

6. Lessons Learnt and Future Directions

Lesson 1: Land tenure system can be a constraint or enabling factor in PES

- Privatisation of pastoral lands in ASALs led to expansion of landuses that are incompatible with pastoralism (extensive livestock production) and wildlife conservation; cropping, fencing etc;
- Privatisation of pastoral lands in ASALs provided individual landowners security of tenure hitherto not guaranteed in communal land tenure system, and enabled landowners to capture benefits of PES payments at the household level
- Self organised private PES schemes tapping into market funding are more common under private, individuated land tenure regimes while public funded PES schemes tapping into government and NGOs funding are more common under public and communal (private) land tenure regimes

Lesson 2: PES involves synergies and trade-offs among pastoralism, income and wildlife conservation

- Higher payments to pastoral landowners are necessary for PES with conditionalities that do not support pastoral livelihoods (e.g. US\$ 43/ha/year in OOC for restriction to settlements and livestock grazing) compared to PES conditionalities that support traditional pastoral livelihoods (e.g. US\$ 10/ha/year in the WLP)
- PES is a critical source of income diversification for pastoral households, during periods of shock such as drought when PES income can buffer households from fluctuating livestock income
- Wildlife PES schemes tapping into funds from the tourist sector may promote the conservation of only species of tourist value such as charismatic carnivores overlooking knock-off effect on the larger ecosystem such as displacement of grazing pressure

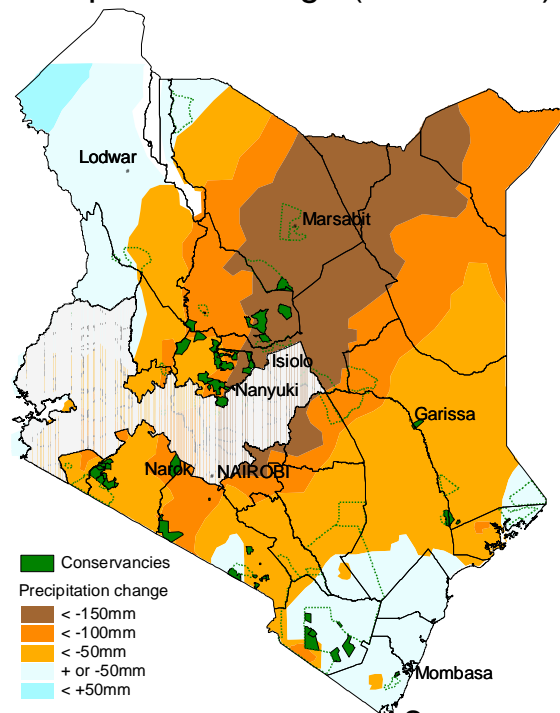
Lesson 3: Pay attention to poverty and equity implications

- Land based PES schemes among pastoral households exclude the landless poor and women from direct benefits
- High inequality exists in terms of cash income, livestock assets, land holdings and other assets among potential environmental service providers, which is likely to favor non-poor households in terms of PES participation
- Over 40 community based conservancies in Kenya (1 million ha); Payments from \$1 to \$40/ha – sufficient to impact poverty levels
- Review of different sources of income shows that in both OOC and WLP PES Schemes, PES payments is the most equitable of all the income sources irrespective of existing inequalities in land ownership (high inequality for WLP and low inequality for OOC)

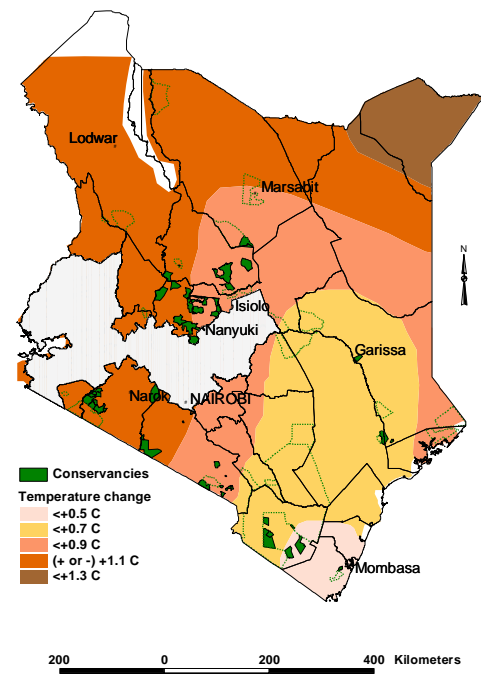
Lesson 4: Plan for “Climate-smart” PES

- Evidence shows that drought effects and grassland vegetation conditions is a significant determinant of participation of pastoral households in wildlife PES schemes
- In the short-term, variability in climate will impact conservancies and PES schemes differently

Precipitation change (1970-2025)

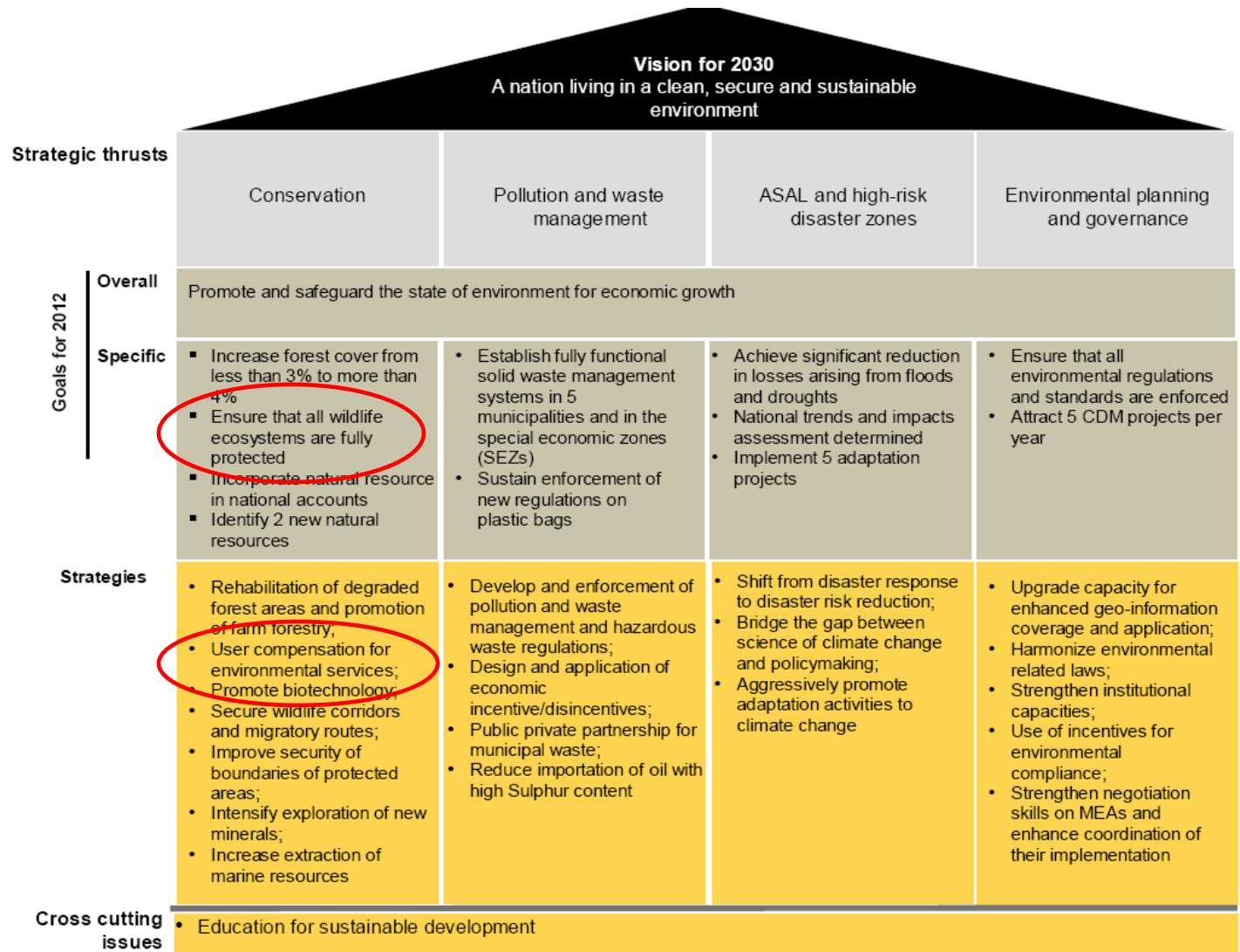


Temperature change (1970-2025)



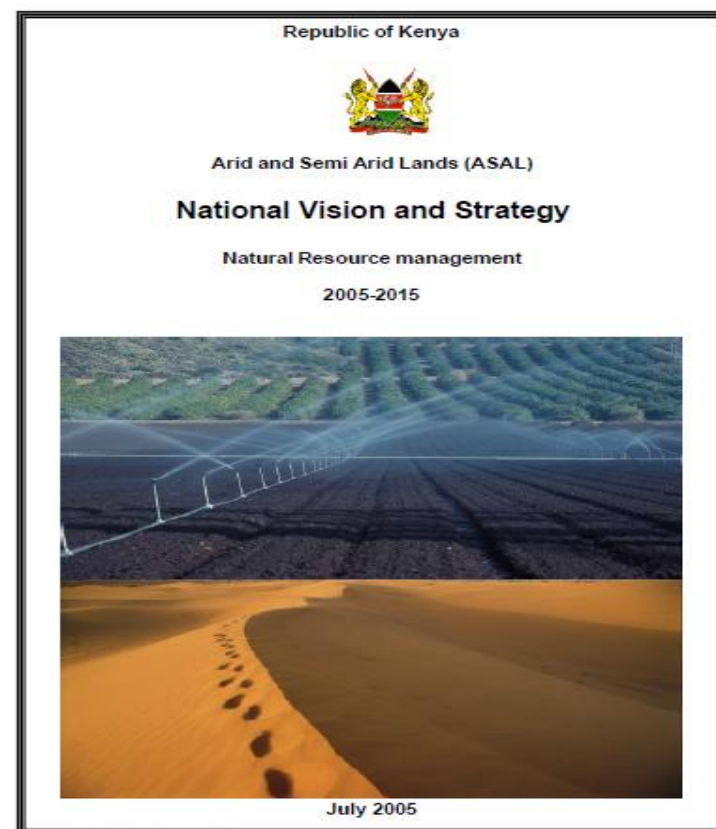
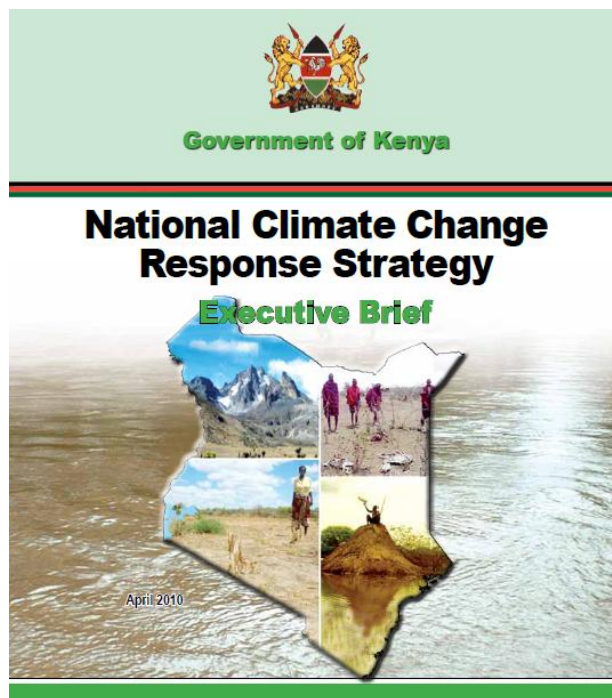
Source: modified from FEWSNET 2010

Lesson 5: Multiple policy goals (Kenya Vision 2030)



Lesson 5: Multiple policy goals and strategies

- 1 National ASAL Vision and Strategy
- 2 National Climate Change Response Strategy
- 3 Sectoral Strategies (Tourism, Wildlife, Livestock, Land etc)



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