The Economic Revolution On Kenya's Rangelands

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We observe ….

A transformation from traditional nomadic pastoralism (as described, for example, by Neville Dyson Hudson, David Western *et al*) to a more sedentary, agro-pastoralism with settled cultivation and livestock embedded within the emerging agro-pastoral matrix.

Specifically we see ….

– A significant increase in the areas under cultivation;

– The intensification of livestock production;

– The near total eradication of wildlife; and

– The rapid evolution of Property Rights from large parcels of land under Group or Communal ownership to small parcels of land under Private ownership.

Spatially and temporally this process of transformation is cascading down the rainfall gradient….

– Progresses faster, and is more complete, in areas of higher agricultural potential compared with areas of lower agricultural potential;

– BUT can "jump" down the rainfall gradient where agricultural potential is high, e.g. along rivers, and in swamps (Loitokitok basin).

The economic drivers for this process of transformation are ….

– Macro- (national) and micro- (local) economic changes;

– Population growth, especially in urban areas; and

– Marked differentials in the returns to agricultural, livestock and wildlife production

This analysis …..

Combines these observed parameters of change with the economic drivers to provide a model for the continuing transformation of rangeland production from a system based on traditional nomadic pastoralism to one based on economic and market forces.
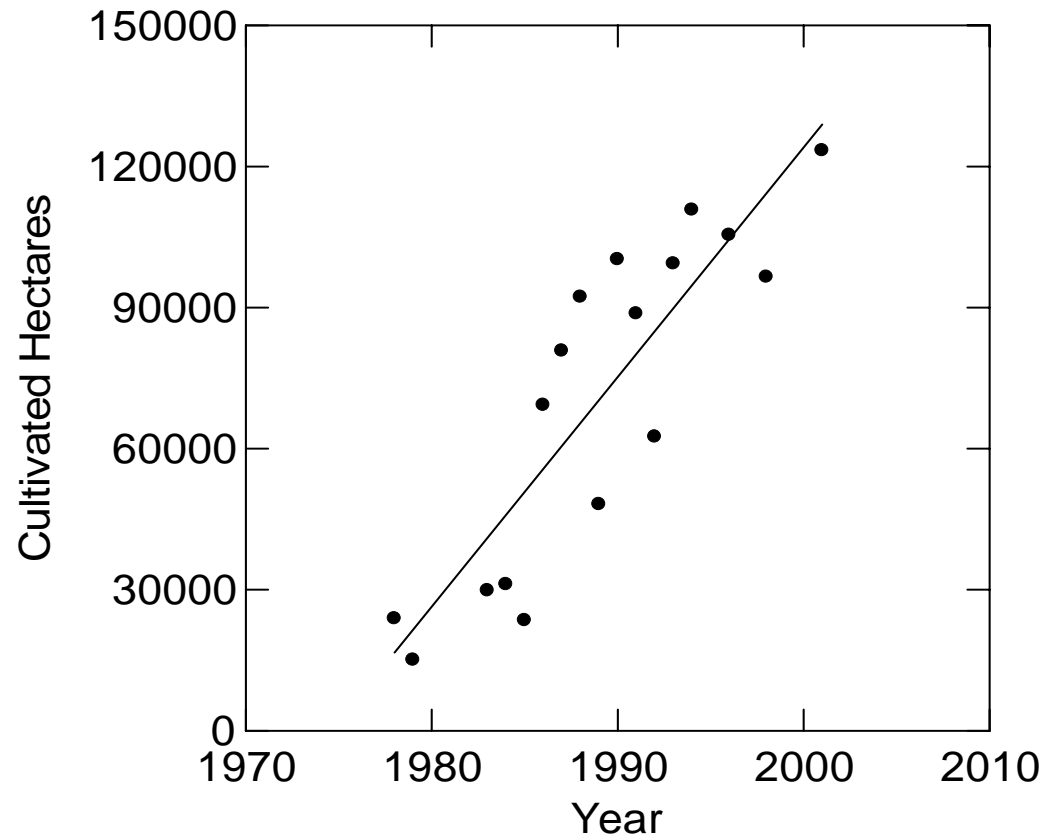
System response: mid '70s to mid '90s
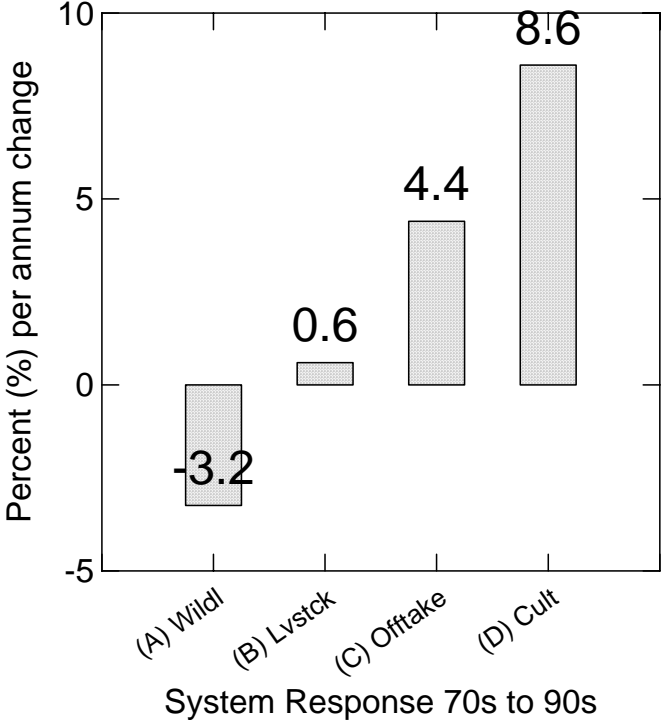
Spread of Cultivation -1

- Overall rate of increase of +8.6% per annum

- From District reports mid '70s to mid '90s

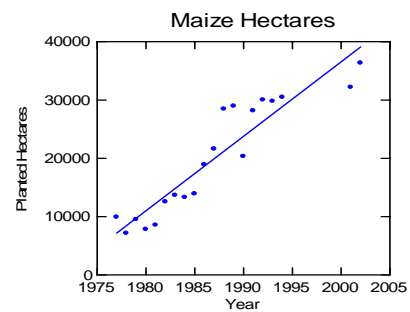- All ASAL Districts show same pattern of increase
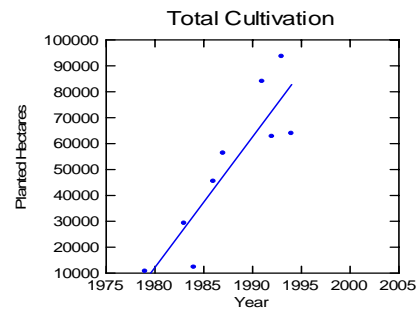
Spread of Cultivation – 2
Narok District
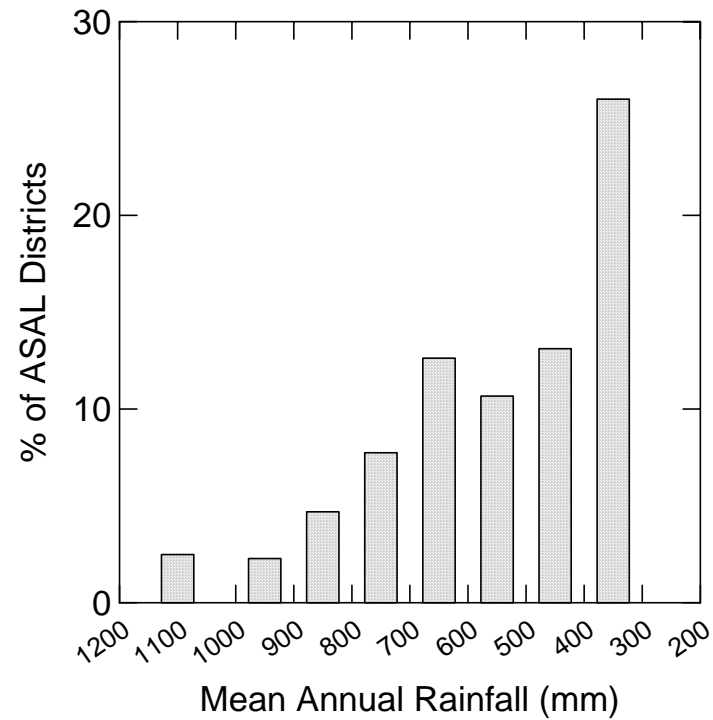
Spread of Cultivation – 3

Cultivation in Kajiado District

Total Cultivation

Maize Hectares

Spread of Cultivation – 4
% ASAL Districts receiving different rainfalls

Spread of Cultivation – 5
% cultivated by rainfall
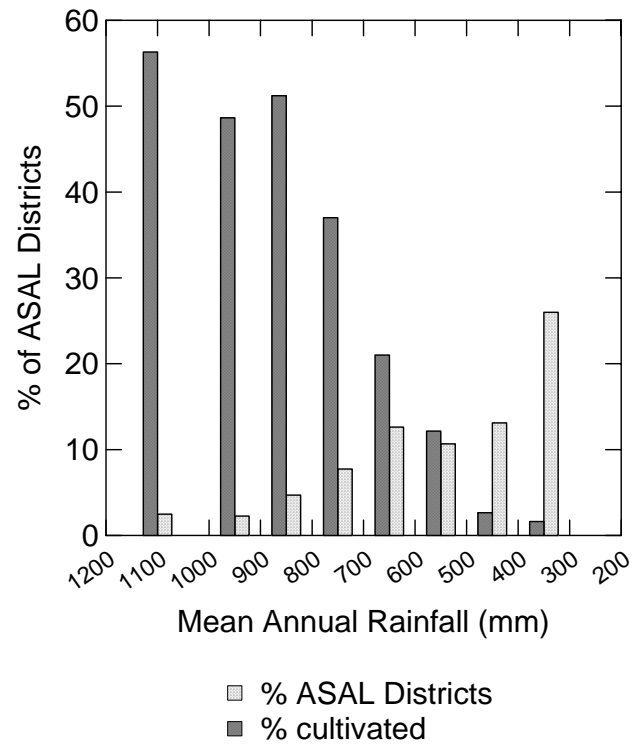
Livestock Dynamics - 1

- Overall Trend 70s to 90s of +0.6% per annum (not statistically significant, i.e. marked annual variation but no overall trend)

- Offtake: of cattle, growing at +4.4% per annum

- Offtake: of small stock, falling fast

- Seen in all ASAL Districts

Livestock Dynamics – 2
sales of cattle and small stock in Narok District
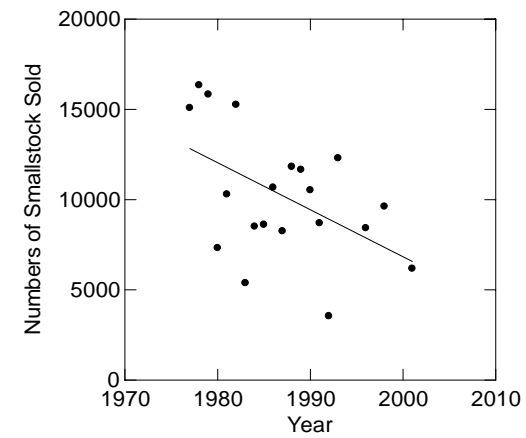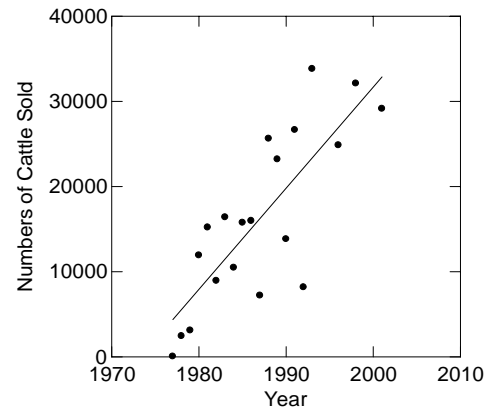
Livestock Dynamics – 3
sales of cattle and small stock Kajiado District

Kajiado District, Livestock Offtake
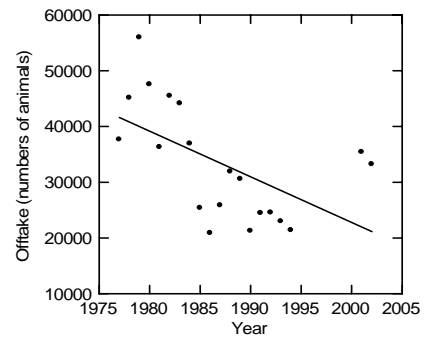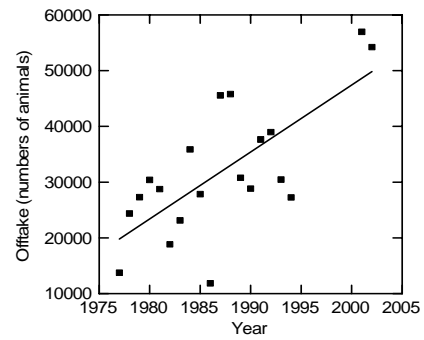
Livestock Dynamics - 4

- Suggests a switch from extensive to more intensive methods of production, with greater involvement in the cash economy

- ?? BUT -- How much of the increase in cattle sales is due to stock coming in from Tanzania, Sudan, Ethiopia and Somalia??

Wildlife Dynamics - 1

- Overall trend mid 70s to mid 90s: -3.2% pa

- Western & Agatsiva recent analysis suggests trend has continued unchecked

Wildlife Dynamics – 2
Western, Agatsiva & Russell 2007
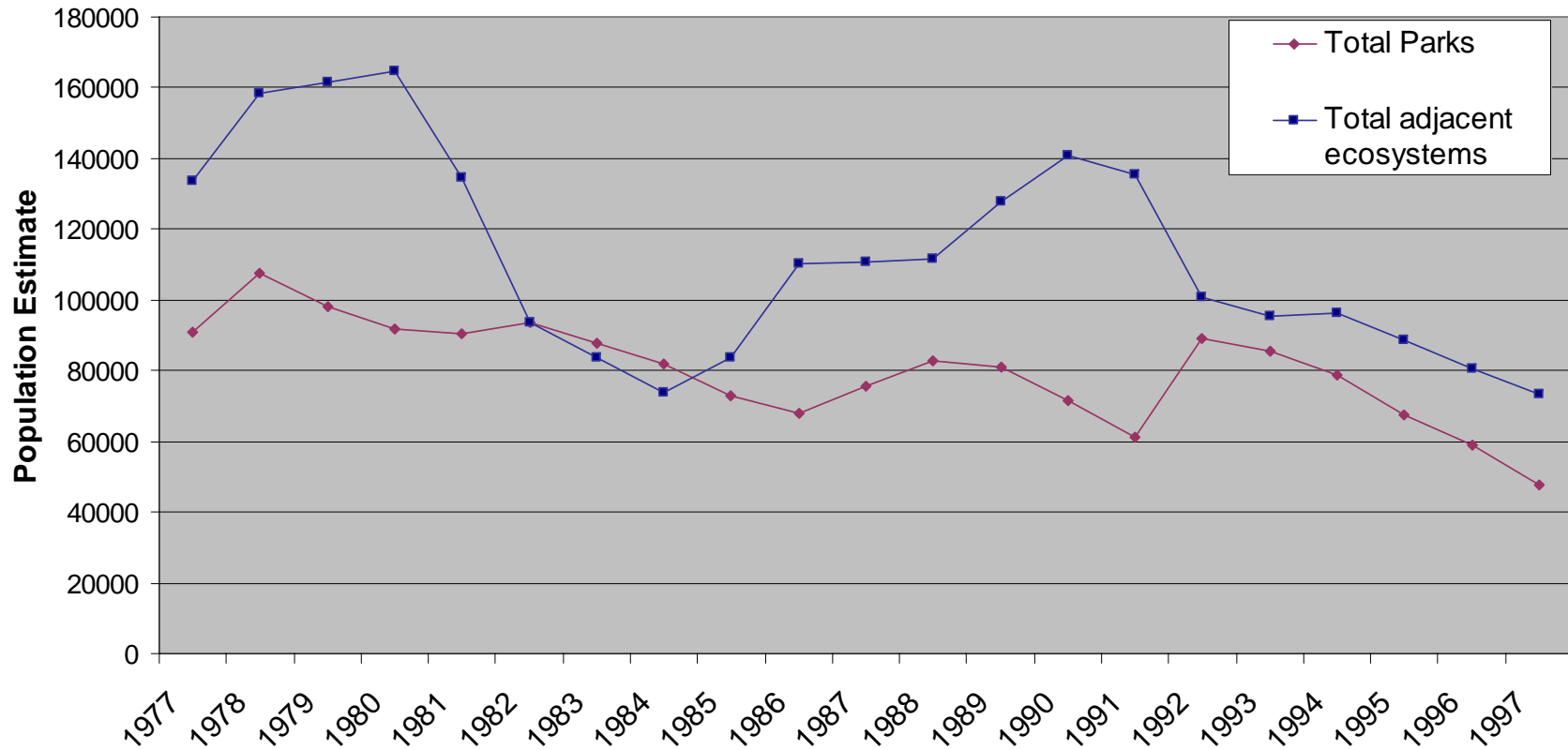
System response: mid '70s to mid '90s
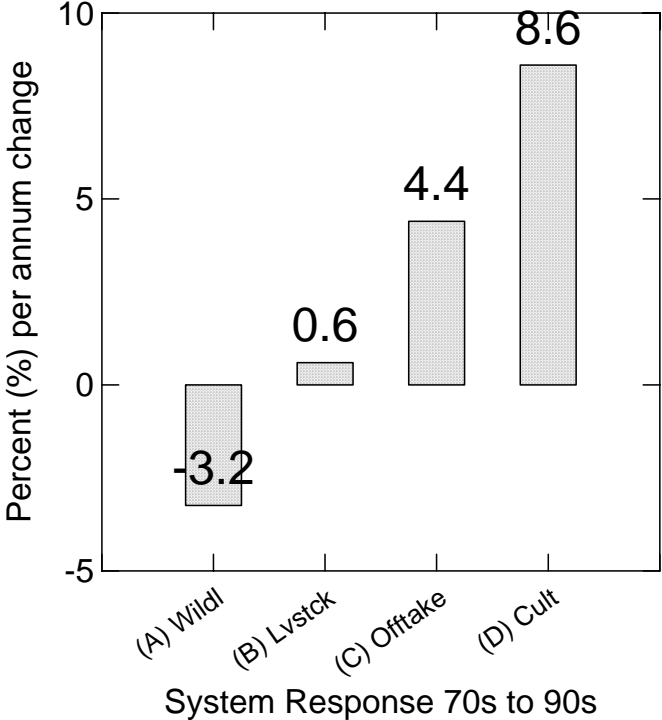
Interactions – 1
% change in livestock with cultivated area
(mid 70s to mid 90s)
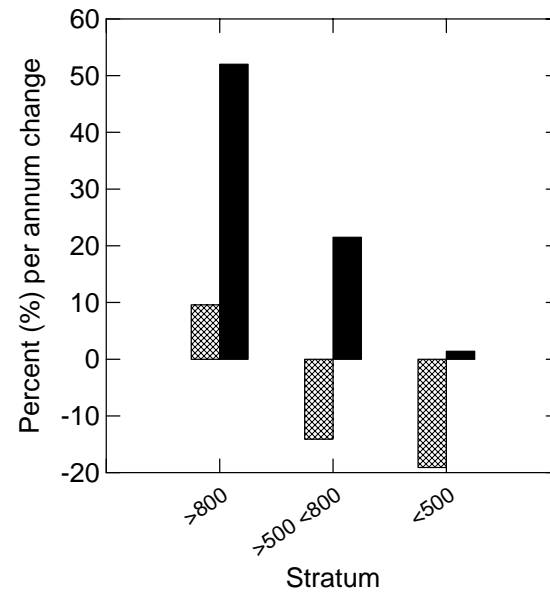
Interactions – 2
% change in livestock and wildlife with cultivation
(mid 70s to mid 90s)
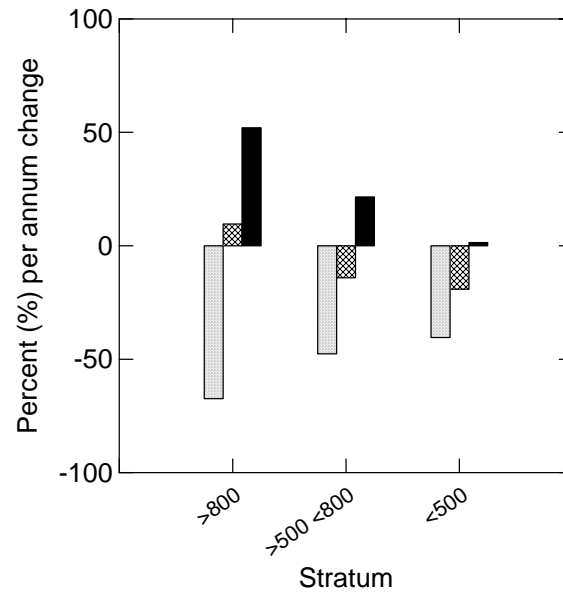
Interactions – 3
Interactions between cultivation, wildlife and livestock – Mara Area
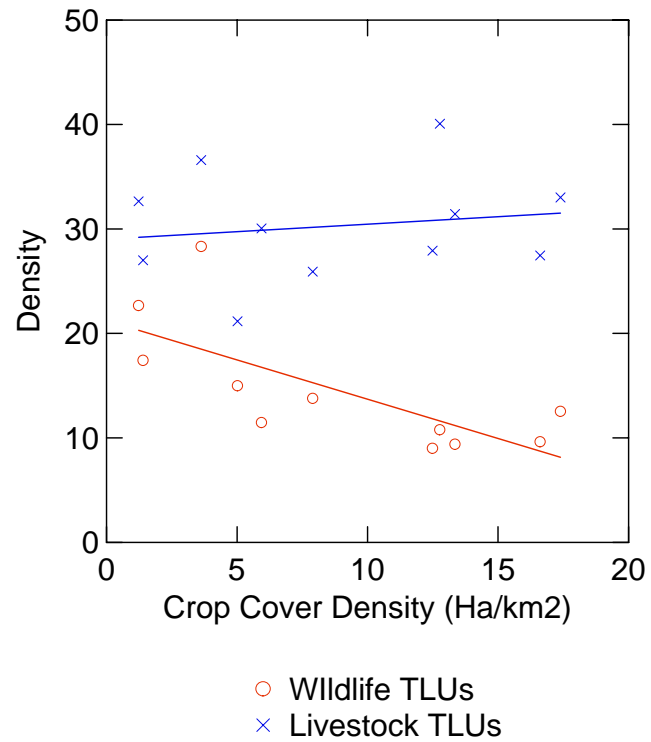
Property Rights - 1

- Rapid transformation of property rights from large parcels of land under Group or Communal ownership to small parcels of land under private ownership

Property Rights – 2
Map of the Mara Area

Mara Reserve

Serengeti National Park

Tanzania

40   0   40   80 **Kilometers**
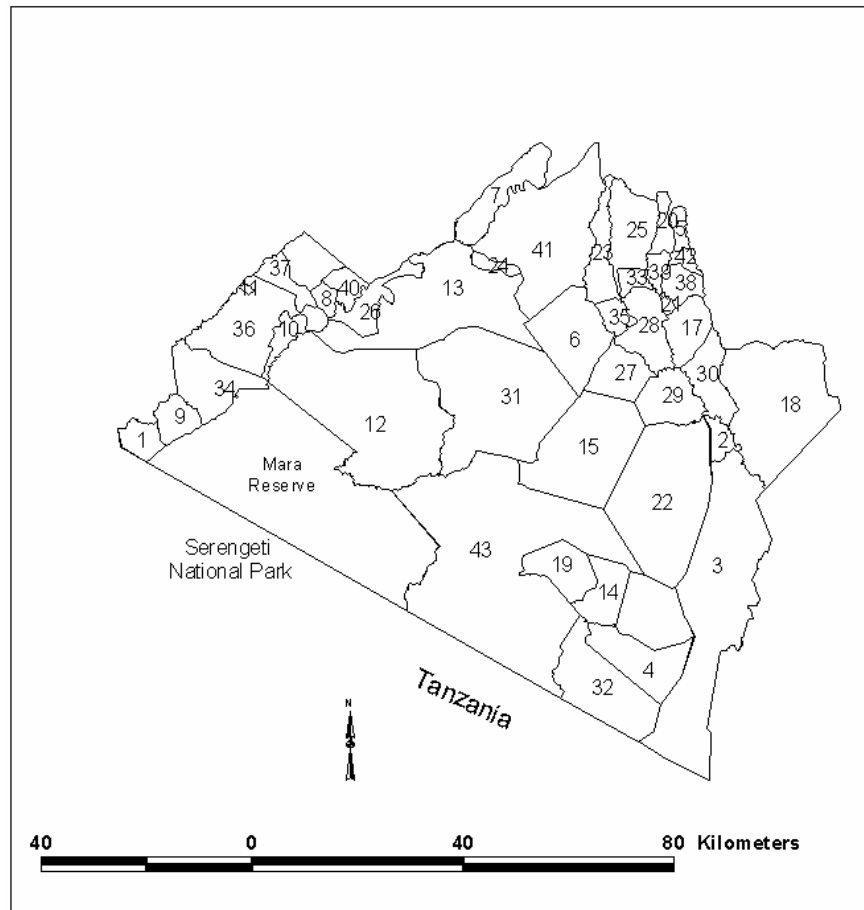
Code	Group Ranch
1	Ang'ata Barrekoi
2	Enatamatishoreki
3	Enkutoto Elang'at' enterit
4	Entakesera
5	Eorr Enkitok
6	Ewaso Ngiro
7	Ilmotiok
8	Intulele
9	Kerinkani
10	Kimintet
11	Kimintet-a
12	Koyaki
13	Lemek
14	Leshota
15	Maji Moto
16	Morijo Loita
17	Morijo Narok
18	Mosiro
19	Naikara
20	Naisoya
21	Narok Township
22	Narosura
23	Nkoben
24	Nkorrkorri
25	Nkareta
26	OlChoro-Oirowua
27	Oldonyo Orasha
28	Oleleishwa
29	Olenkuluo
30	Oletukat
31	Olkinyei
32	Olmesutye
33	Olaimutiai
34	Oloirien
35	Iloisiusiu
36	Oloonkoliin
37	Oloonkoliin
38	Olorroito
39	Oloroito
40	Olosakwana
41	Osupuko-Ololunga
42	Rotian
43	Siana

Property Rights - 3

Koiyaki and Olkinyei Group Ranches
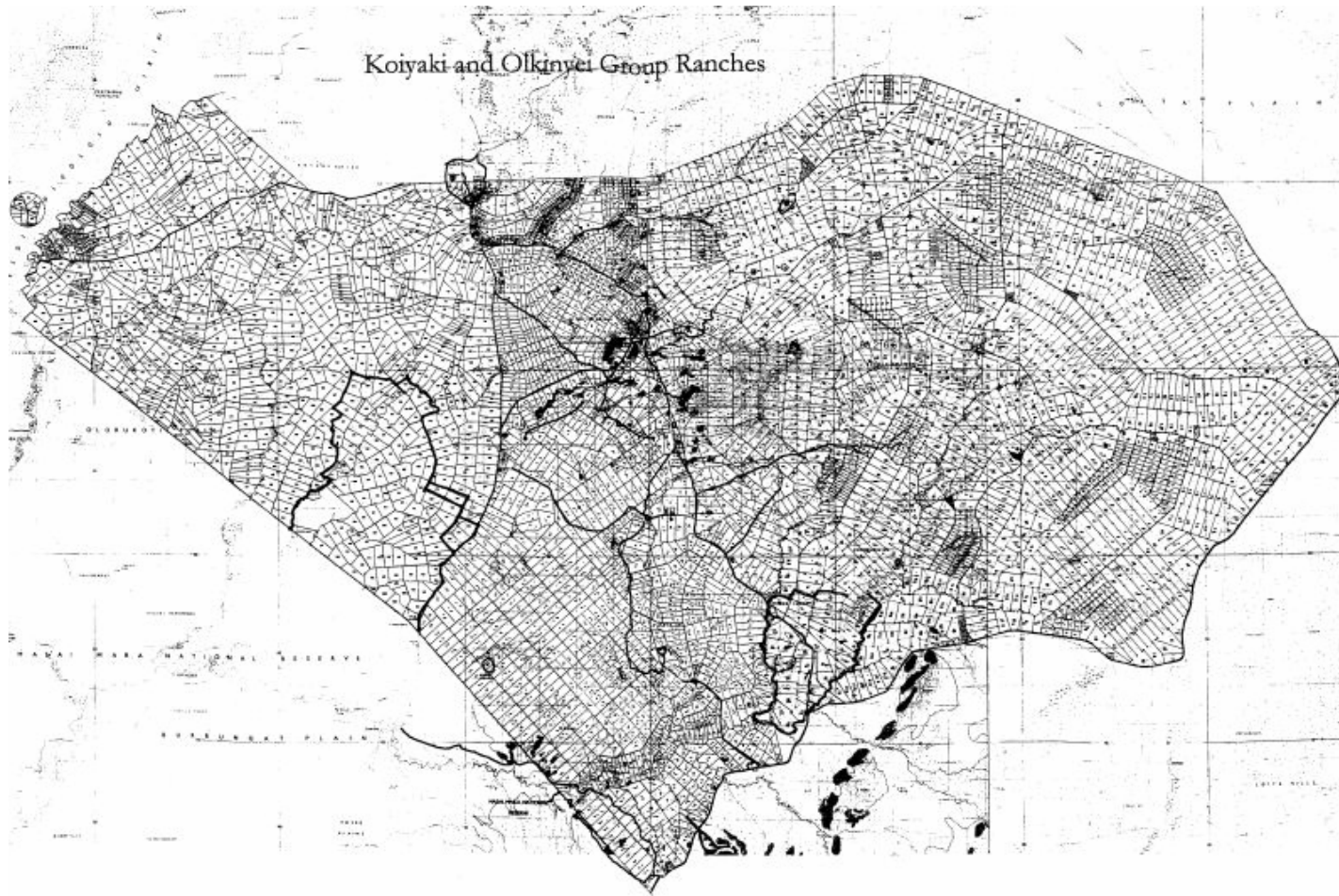
Specific changes of policy – case example Kitengela

a)

Kenya
Nairobi
Tanzania
Arusha
Mombasa

Parks
Kajiado District
Maasailand
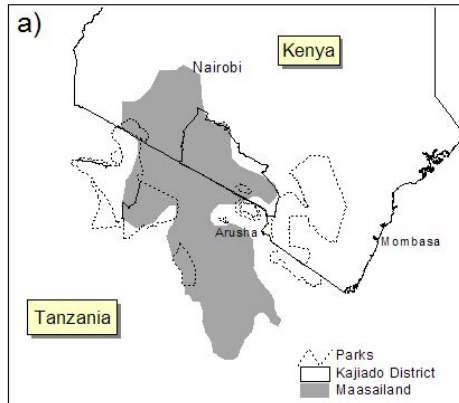
Historical land use change.....

In 1911, the northern reserve was closed to Maasai and a single extended southern reserve was created. It extended from south Kenya to northern Tanzania. The Maasai lost about 60% of their best land to white farmers.

Further, in 1940s more land was curved to set up Nairobi NP, part of Tsavo East and Amboseli was created in Kenya and Serengeti NP and Ngorongoro Conservation Area in Tanzania

b)

Nairobi

Athi-Kaputiei - Study Area
Group Ranches
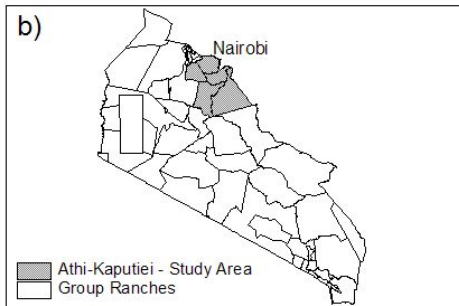
Group Ranches .....

In the late 1960s the Group ranches were set up . In Kajiado there were more than 50 group ranches.

By 1986 individual ownership of land began with Athi Kaputiei Maasai (grey shaded areas on the map). The allocation of land was between 51 to 298 hectares of land per family.

c)

Group Ranches
Land Parcel
Nairobi
Kitengela

Changes in Land tenure .....

Land Privatisation continued in 1990s The recent 2004 land parcel map indicates the mean parcel size is about 68 hectares. The largest parcels are more than 1200 and smalllest about 2 hectares

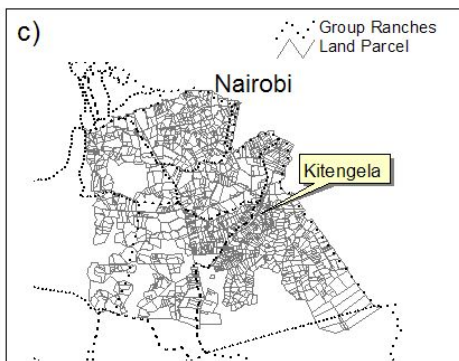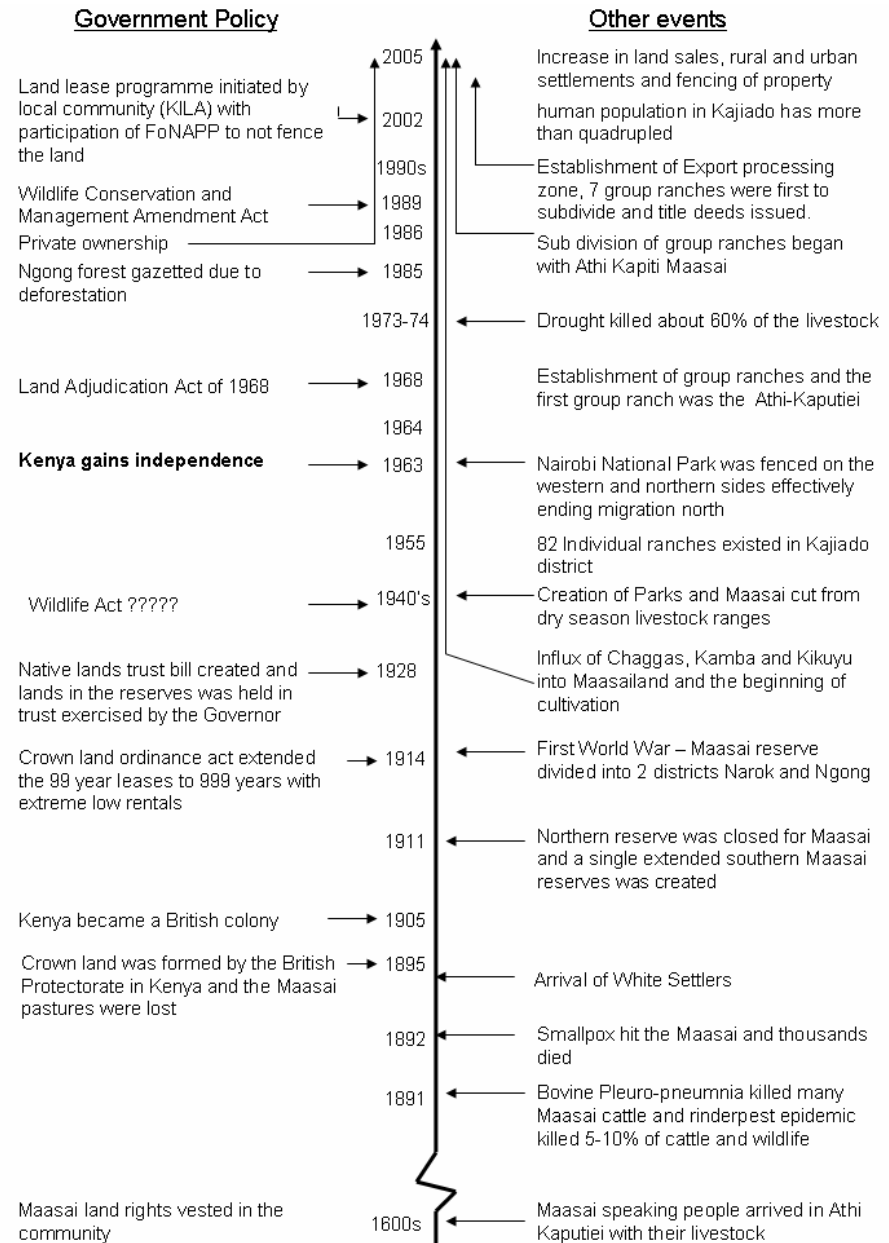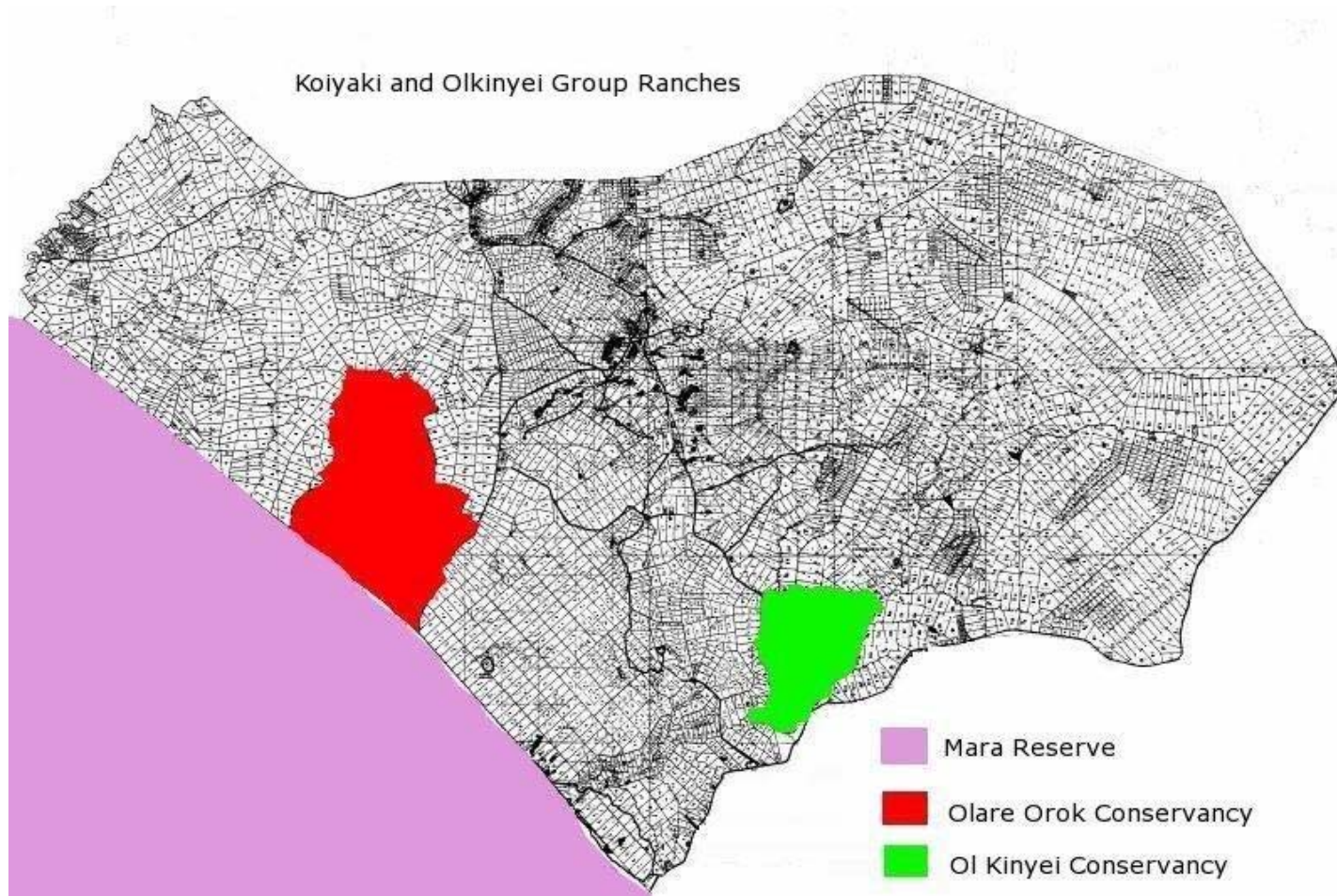By 2004, many of these parcels were fenced, especially in urban and rural centres and along the highway. Most of the properties south of the park are not fenced purposely to have wildlife free to move. These land are under lease programme.

Government Policy

Year	Government Policy	Other events
2005		Increase in land sales, rural and urban settlements and fencing of property
2002	Land lease programme initiated by local community (KILA) with participation of FoNAPP to not fence the land	human population in Kajiado has more than quadrupled
1990s		Establishment of Export processing zone, 7 group ranches were first to subdivide and title deeds issued.
1989	Wildlife Conservation and Management Amendment Act	
1986	Private ownership	Sub division of group ranches began with Athi Kapiti Maasai
1985	Ngong forest gazetted due to deforestation	
1973-74		Drought killed about 60% of the livestock
1968	Land Adjudication Act of 1968	Establishment of group ranches and the first group ranch was the Athi-Kaputiei
1964		
1963	Kenya gains independence	Nairobi National Park was fenced on the western and northern sides effectively ending migration north
1955		82 Individual ranches existed in Kajiado district
1940's	Wildlife Act ?????	Creation of Parks and Maasai cut from dry season livestock ranges
1928	Native lands trust bill created and lands in the reserves was held in trust exercised by the Governor	Influx of Chaggas, Kamba and Kikuyu into Maasailand and the beginning of cultivation
1914	Crown land ordinance act extended the 99 year leases to 999 years with extreme low rentals	First World War – Maasai reserve divided into 2 districts Narok and Ngong
1911		Northern reserve was closed for Maasai and a single extended southern Maasai reserves was created
1905	Kenya became a British colony	
1895	Crown land was formed by the British Protectorate in Kenya and the Maasai pastures were lost	Arrival of White Settlers
1892		Smallpox hit the Maasai and thousands died
1891		Bovine Pleuro-pneumnia killed many Maasai cattle and rinderpest epidemic killed 5-10% of cattle and wildlife
1600s	Maasai land rights vested in the community	Maasai speaking people arrived in Athi Kaputiei with their livestock

Property Rights - 5

Koiyaki and Olkinyei Group Ranches

Mara Reserve

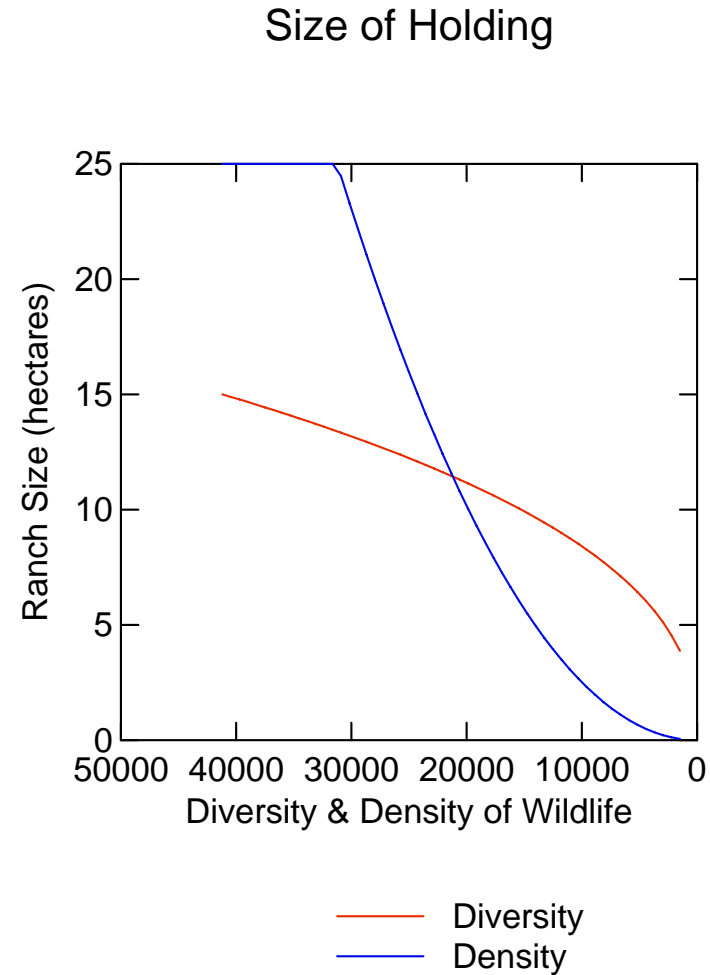Olare Orok Conservancy

Ol Kinyei Conservancy

IMPACTS: Sub-Division
Influences on Wildlife Losses Size of Landholding

Size of Holding

- For every % decrease in size of landholding:-

- 0.4% LOSS of diversity
- 2%   LOSS of density

Property Rights - 7

- Main drivers to sub-division are

  - Security of tenure: from political and/or economic elites; from conservation NGOs wishing to expand extent of protected areas; and from in-migration

  - From dilution of the value of communal resources following population growth and in-migration

  - To capture benefits of agricultural, livestock or wildlife production at the household level rather than through local institutions (e.g. group ranch committees, ranch management committees)

Property Rights – 8
Socio-economic impacts of sub-division

- Value of land increases
- Easier to raise capital for development
- Switch from extensive to intensive methods of production

- Easier to alienate land

Economic Drivers of Change - 1

- Macro- (national) and micro- (more local) economic developments

- Population growth

- Differential returns to agricultural, livestock and wildlife production
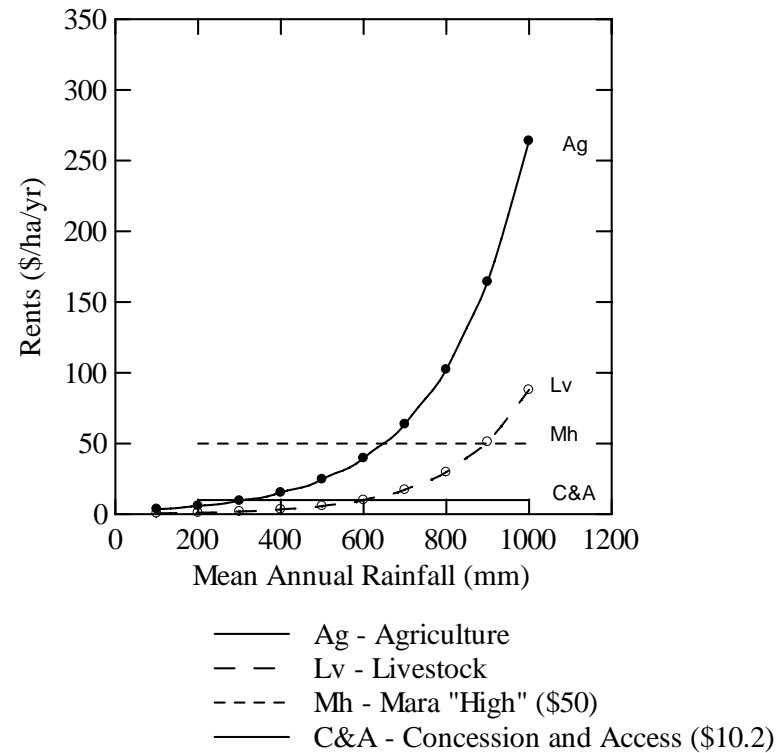
Economic Drivers of Change - 2

- Macro- (international →national) and micro- (national → local) economic developments which scarcely existed 25 years ago create incentives to develop land and increase productivity

- Macro-economic changes:
  - Expansion of both international and domestic (primarily urban) markets, real gains in producer prices, ever increasing opportunities for off-farm jobs and investment, wider availability and choice of goods and services.

- Micro-economic changes:
  - improved market and transport networks, improved information networks on market conditions (e.g. mobile phones) transforms price taking, improved access to financial services, improved and wider availability of technology.

Economic Drivers of Change - 3

- Population growth

  - Mid 70s to mid 90s: population growth in the ASAL Districts was +3.1% pa

  - More up-to-date data clearly required

  - Population growth in the rest of the country, especially in urban areas, creates burgeoning markets for agricultural and livestock products of every higher quality

Economic Drivers of Change – 4
Differential returns to agricultural, livestock and wildlife production

Economic Drivers of Change - 5
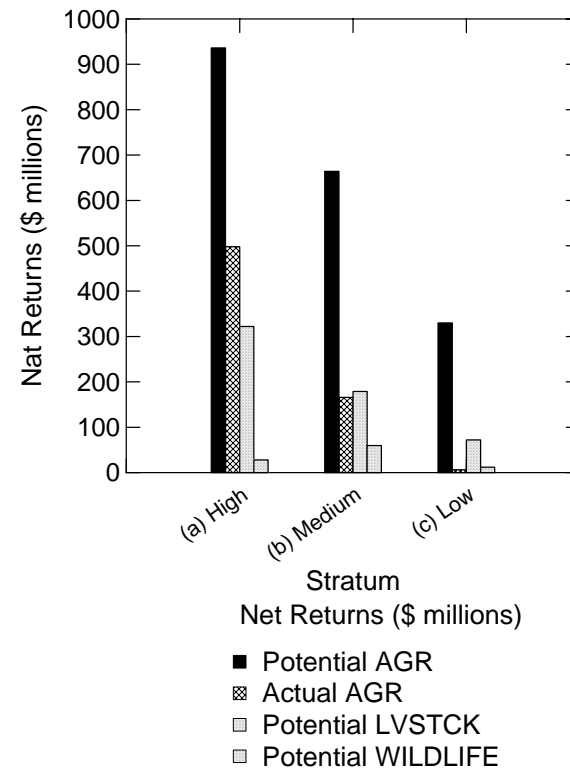
And to summarise …….

- **We observe ….**
  - A transformation from traditional nomadic pastoralism (as described, for example, by Neville Dyson Hudson, David Western *et al*) to a more sedentary, agro-pastoralism with settled cultivation and livestock embedded within the emerging agro-pastoral matrix.

- **Specifically we see ….**
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  - The intensification of livestock production;
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- **The economic drivers for this process of transformation are ….**
  - Macro- (national) and micro- (local) economic changes;
  - Population growth, especially in urban areas; and
  - Marked differentials in the returns to agricultural, livestock and wildlife production

It's really very simple ……

Population growth
Markets
Technology
Finance

INCREASE
PRODUCTIVITY

Intensify Production
Cultivate
Sub-divide