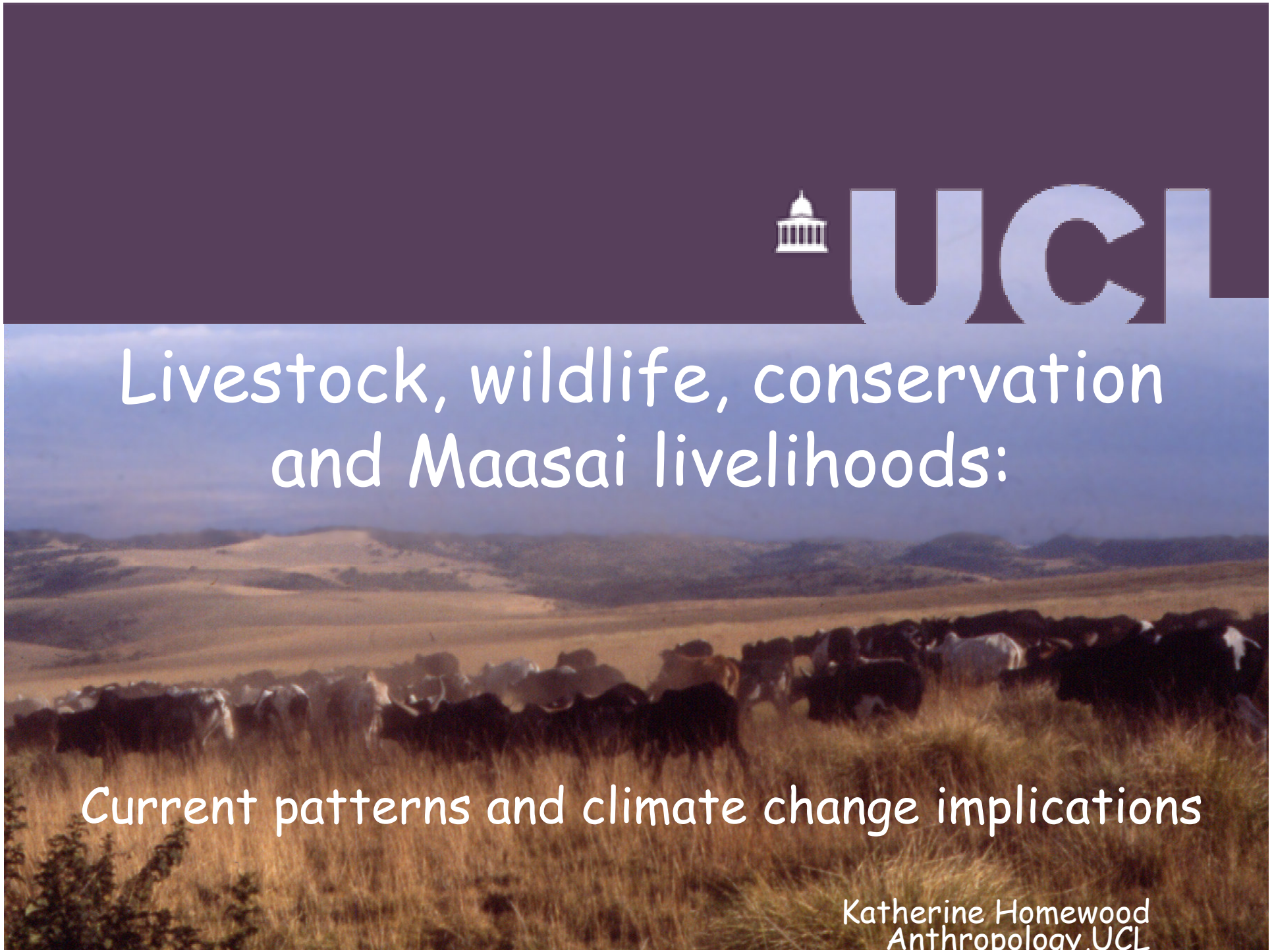

Livestock, wildlife, conservation and Maasai livelihoods:

Current patterns and climate change implications

Katherine Homewood
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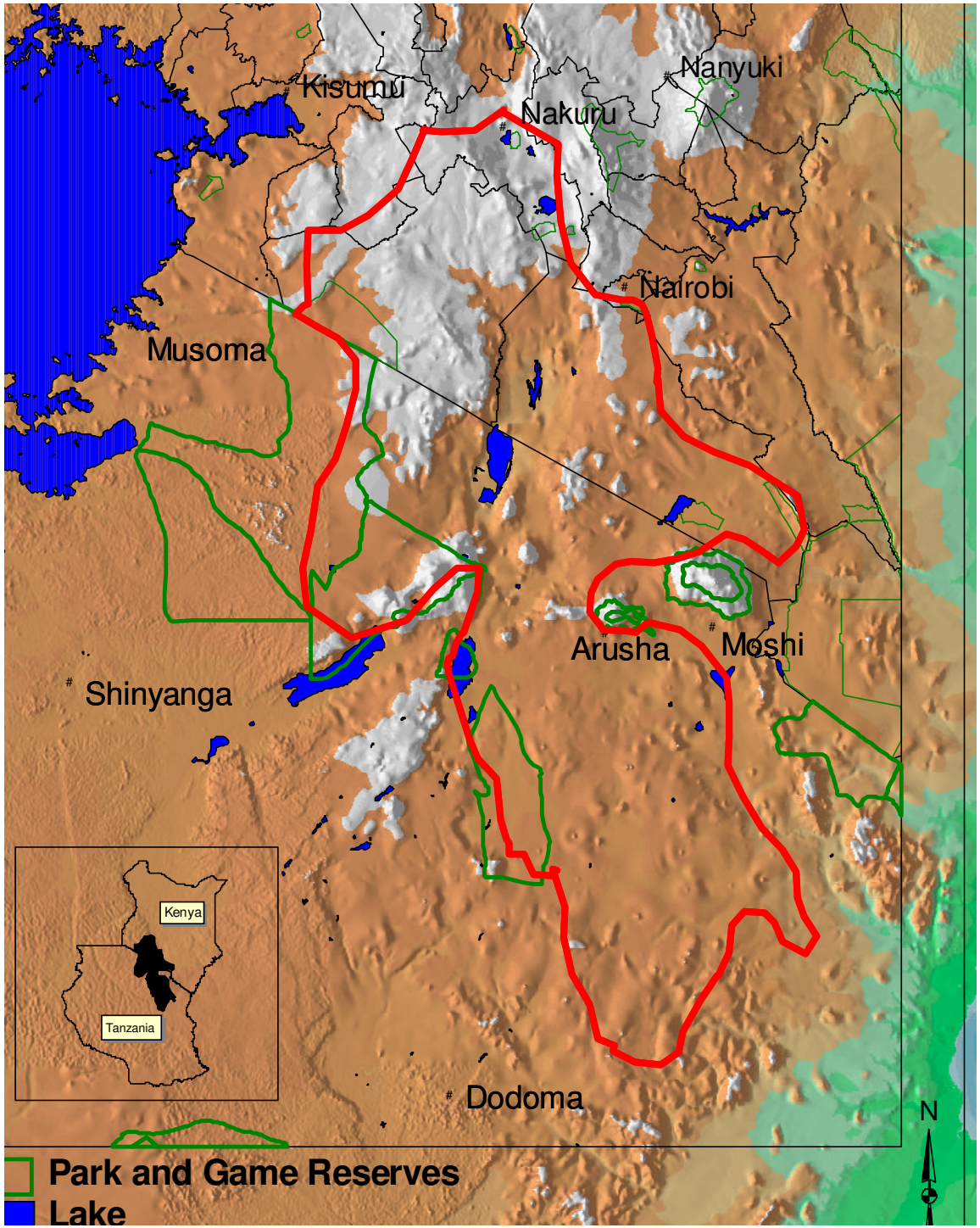
Livestock, wildlife, conservation and Maasai livelihoods:

Current patterns and climate change implications

- Maasailand:
  - what, where, why?
- Impacts of
  - land use change on wildlife conservation
  - natural resource management on livelihoods and welfare
- Implications of climate change
- Questions for policy



Maasailand in 21st century:

Continuities:

Ecological,
Ethnic
Micro-economic

Contrasts

Macro- economic
Political
Tenure
Hunting policy

Methods: Change through time

- Literature review/historical/archival
- Past research
  - » Serengeti-Mara ecosystem
  - » Land cover change 1975-2000 (remotely sensed)
  - » Wildlife population trends (aerial census)
- Family portraits/ life histories
- Household survey
  - » Mara: pre-/ post-land subdivision
  - » Longido: pre-/ post-WMA
- Changes in
  - » Livestock
  - » Cultivation
  - » Conservation

Natural resource management - land use/livelihoods impacts

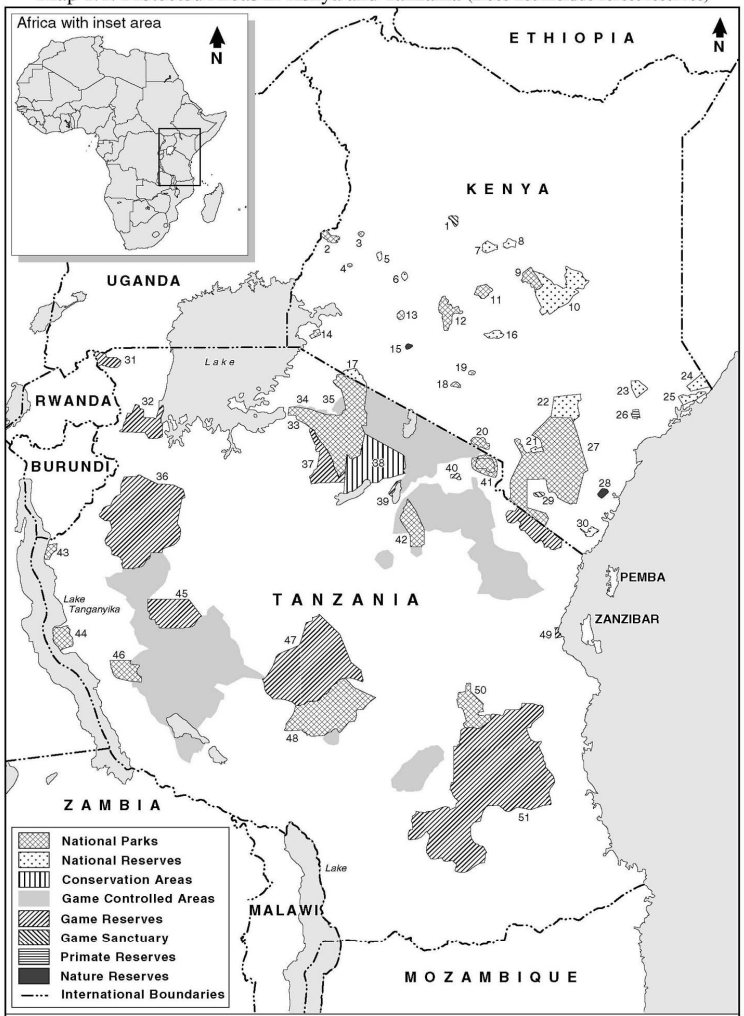
Over the last century:

- Much of Maasai land set aside
  - -> conservation
  - -> commercial cultivation

- Land alienation
  - = major political issue
  - = major issue of trust

- Livestock/agriculture policies
  - fail to support pastoralism
  - encourage large-scale farming

Map 1.1: Protected Areas in Kenya and Tanzania (Does not include forest reserves)



Key to areas

1 Maralai
2 Mt. Elgon
3 Saiwa Swamp
4 Kakamega Forest
5 Kerio Valley
6 Lake Bogoria
7 Samburu/Buffalo Springs
8 Shaba
9 Meru
10 Kora/Rahole/N.Kitui/Bisanadi
11 Mt. Kenya
12 Aberdare
13 L. Nakuru
14 Lambwe Valley (Ruma)
15 Hell's Gate
16 Mwea
17 Maasai Mara
18 Nairobi
19 Ol Doinyo Sabuk
20 Amboseli
21 Ngai Ndethya
22 S. Kitui
23 Arawale
24 Boni
25 Dodori
26 Tana River
27 Tsavo
28 Arabuko-Sokoke
29 Taita Hills
30 Shimba Hills
31 Ibanda/Rumanyika
32 Burigi/Biharamulo
33 Serengeti
34 Ikorongo
35 Grumeti
36 Kigosi/Moyowosi
37 Maswa
38 Ngorongoro
39 Lake Manyara
40 Arusha
41 Kilimanjaro
42 Tarangire
43 Gombe
44 Mahale
45 Ugalla
46 Katavi
47 Muhesi/Kizigo/Rungwa
48 Ruaha
49 Sadani
50 Mikumi
51 Selous

Note: Marine Parks and Forest Reserves are not shown. Newly gazetted areas around Katari also omitted. Together with the protected areas shown, these add up to >25% of Tanzania's land surface area.

Source: Homewood, 1995; Wildlife Section Review, Task Force 1995.

Changing environment and wildlife

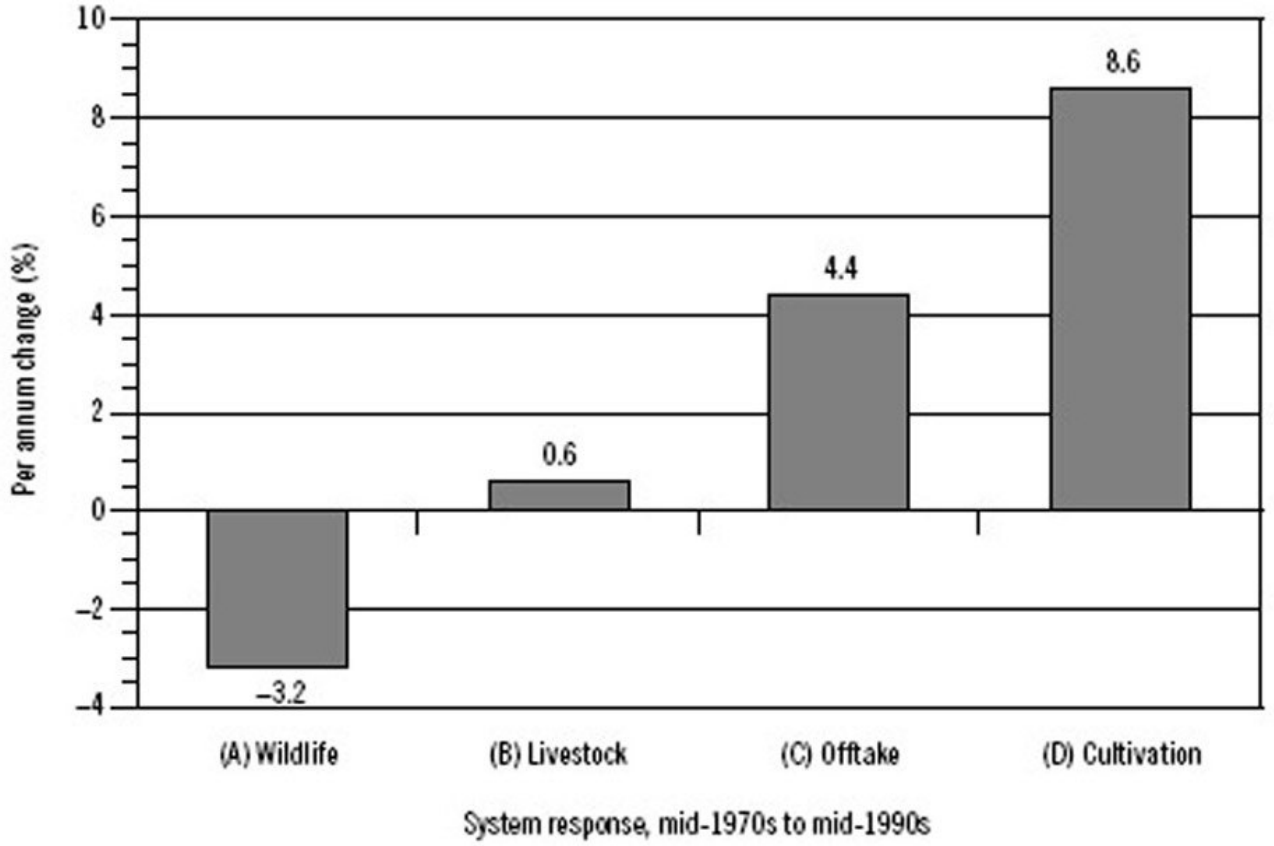
Serengeti - Mara Ecosystem (SME)

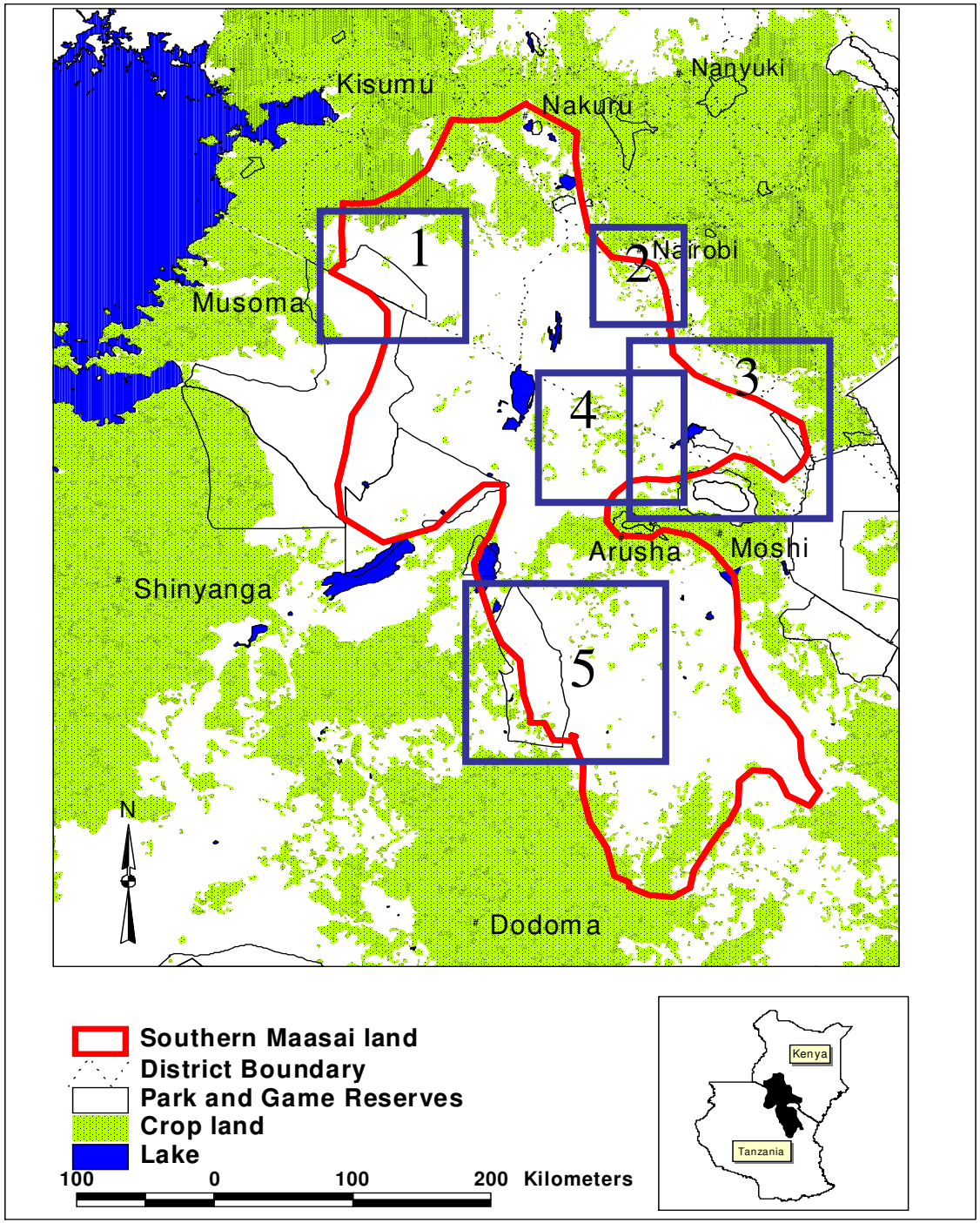
- Land conversion
  - »18% Mara inner group ranches in 20 years (cf Tanzania - negligible)
  - »Large-scale farming: Homewood et al 2001
- Wildlife decline
  - »Mara: 50-80% loss in 20 years in 42/45 spp (cf.Tanzania-negligible)
  - »Ottichilo 2001, Homewood et al 2001
- Who is driving change?
  - »Land conversion 1º associated with leaders/ elites
  - »Households earning from conservation re-invest in cultivation

Scale: SME? Kenya? Kenya+Tanzania?

Serengeti-Mara, or Kenya-wide?

Figure 2: Changes in production on Kenya's rangelands: mid-1970s to mid-1990s





Livelihoods methods: Household survey

1. Mara
2. Kitengela
3. Amboseli
4. Longido
5. Tarangire

Specific research questions

Maasai livelihoods:

- What do people do?
- What factors influence livelihood choices?
- What factors influence how well people do?
- Change through time?

Findings: Across 5 sites

- Livestock: Lasting, central importance
  - »91-100% households have stock
  - »>50% mean hh income, all sites, ~ all clusters
  - »Livestock holdings main predictor of income
- Cultivation: widespread but low returns
  - »Over 50% hh farm, all sites (except Mara)
  - »0-50% income (but Mara, Kitengela: max cluster means ~10%)
  - »Conserve livestock/ improve food security/ tenure strategy/invest!
- Off-farm/remittance:
  - »50-85%hh, all sites
  - »2-93% hh income
  - »From casual unskilled to ~high-earning, secure jobs
- Wildlife:
  - »Mara: 50% hh benefit; other sites: 3-14%
  - »Community/ Wildlife association-level income vs household-level
  - »Overall <5% mean annual income
  - »Exceptionally: 15-20% Mara, Amboseli

Implications of climate change

Biophysical

- Increased frequency of extreme events
  - » drought,
  - » torrential rains,
  - » vector-borne epidemics
- Much of sub-Saharan Africa predicted hotter/drier
- Key wetlands/highlands already under intense pressure

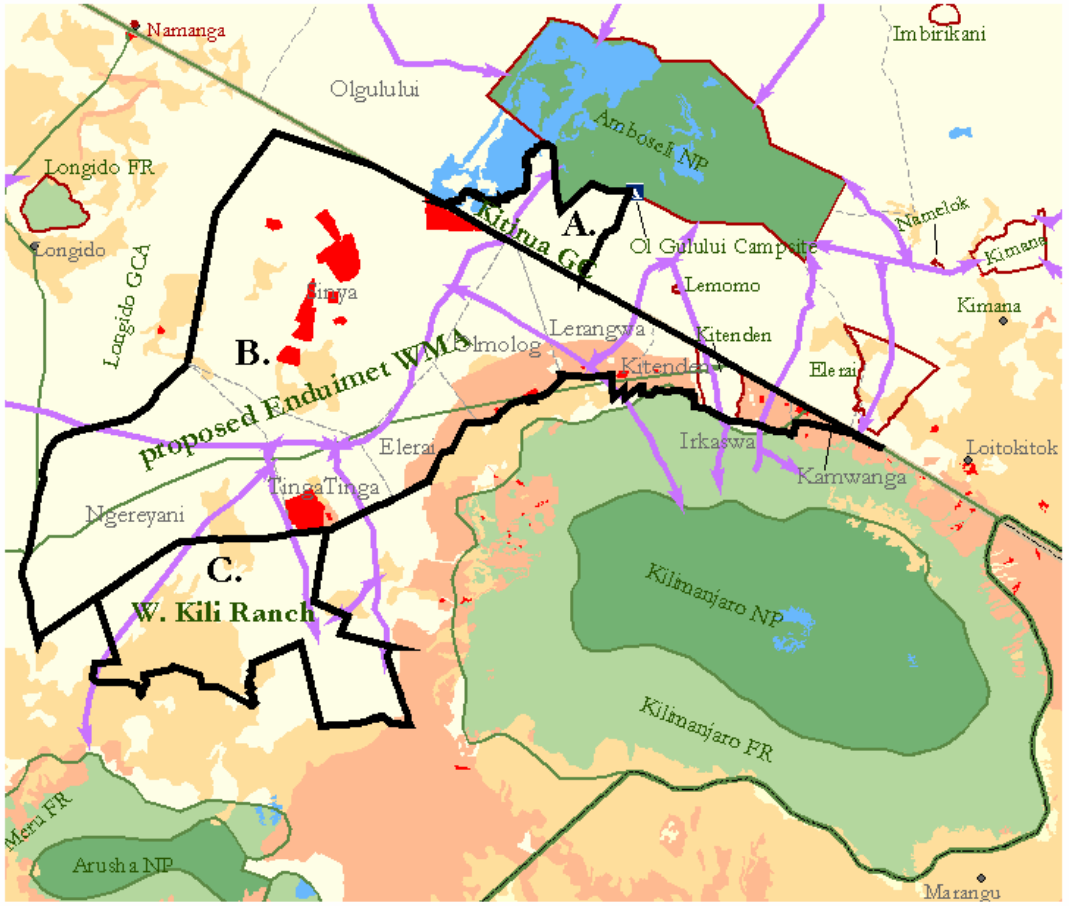
Political/institutional

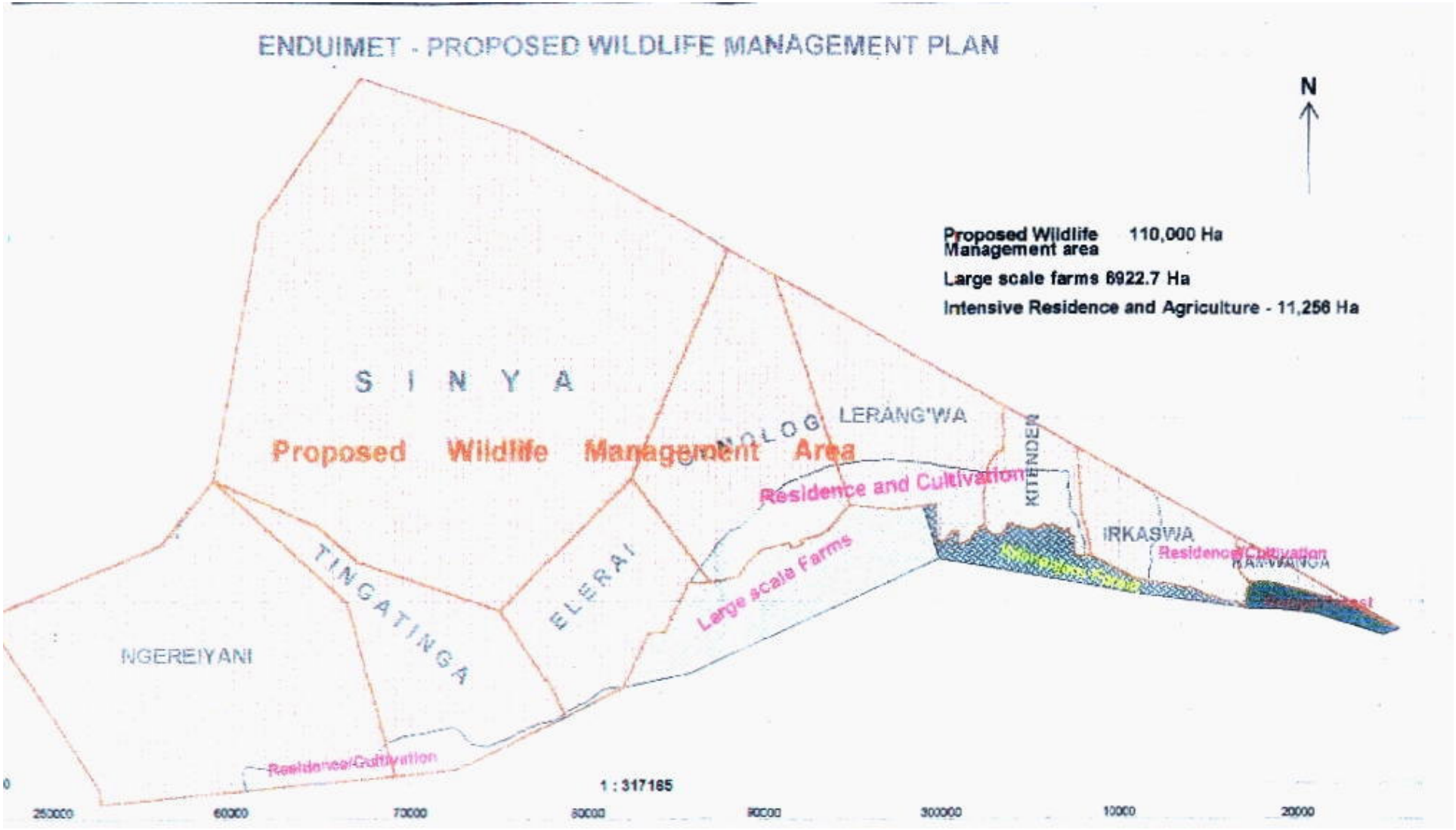
- Conservation policies - extend PAs, establish corridors
- Agricultural policies - Biofuels? carbon storage?
- Livestock policies?

Enduimet/W. Kilimanjaro

AWF Stated Aims:

- Ecological: secure habitat zones and connectivity
- Economic: enable communities to benefit from wildlife resources
- Social: sharing of wildlife benefits and avoidance of wildlife costs is fair and transparent




ENDUIMET - PROPOSED WILDLIFE MANAGEMENT PLAN
N
Proposed Wildlife Management area 110,000 Ha
Large scale farms 6922.7 Ha
Intensive Residence and Agriculture - 11,256 Ha
S I N Y A
Proposed Wildlife Management Area
OLOLOG
LERANG'WA
KITENDEN
Residence and Cultivation
IRKASWA
Residence/Cultivation
TINGATINGA
ELERAI
Large scale Farms
NGEREIYANI
Residence/Cultivation
1 : 317185
250000
60000
70000
80000
90000
300000
10000
20000

Climate change, conservation and poverty reduction?

- Wildlife returns:
  - » at best small,
  - » at worst far outweighed by livelihoods losses
  - » concentration in fewer hands through time
  - » Tenure differences -> outcome differences?
  - » State/ Elite capture and cross investment in alternatives
- Conservation:
  - » failing to work for poverty reduction
  - » Losing key resources contest with cultivation
- Can conservation recapture synergies with pastoralism?

Economics of wildlife, livestock and cultivation in Kenya

Norton Griffiths 2007

Figure 3: Differential net returns to landowners ($ ha^{-1}y^{-1}) from agricultural, livestock and wildlife production

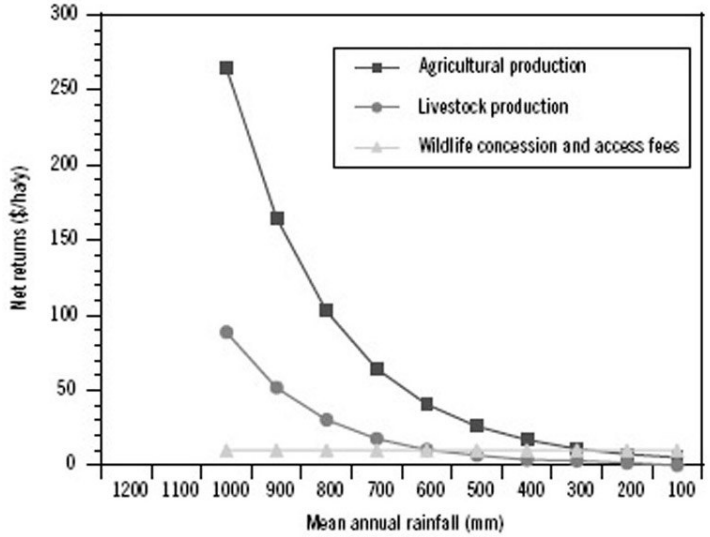
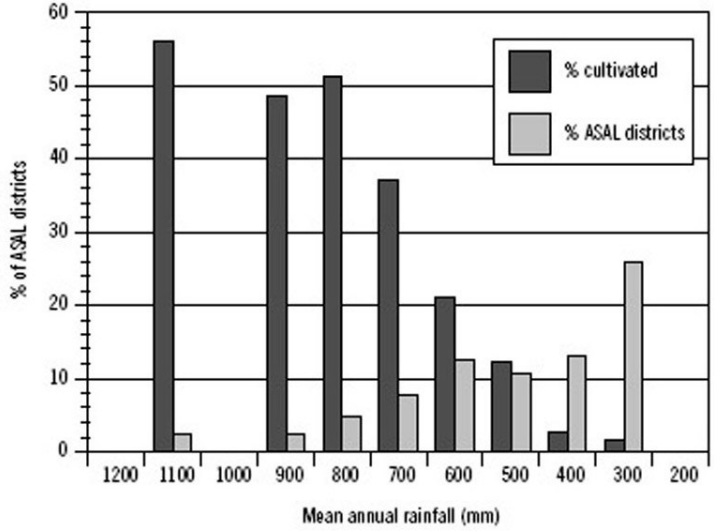


Figure 4: Spread of cultivation in Kenya's arid and semi-arid rangelands (the ASAL districts)



Policy questions: Mitigating climate change in arid and semi arid lands means

- Recognising ecological and economic rationality of mobile pastoralism in ASAL
- Radical change in government/conservation policies towards pastoralism