

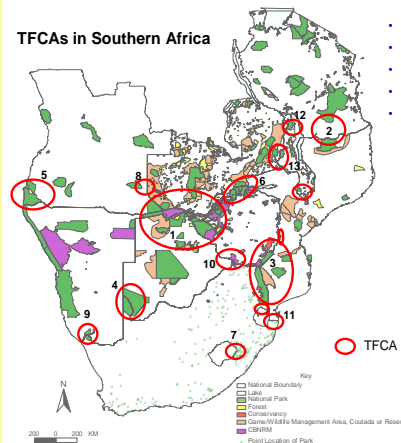
**Transfrontier conservation areas and animal diseases:
ecosystem health and sustainability**

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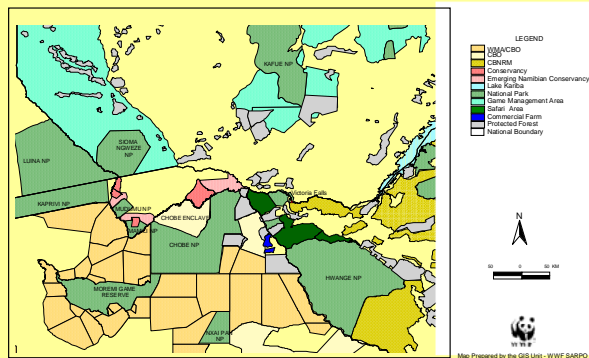
OIE Workshop,
Arusha, Tanzania
15-19 March 2010

TFCAs in Southern Africa



- High % on boundaries
- Several land uses
- Large mammal migration
- Tourist movement
- Disease and Fences

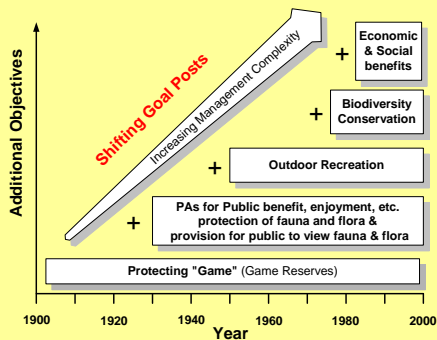
Complexity in land use and tenure within the KAZA TFCA



➔ Complex, linked **SOCIAL-ECOLOGICAL SYSTEMS**



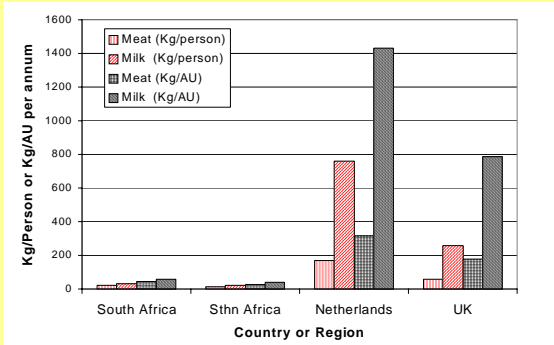
Engine for Rural Development?



Transfrontier Park (Great Limpopo) Objectives:

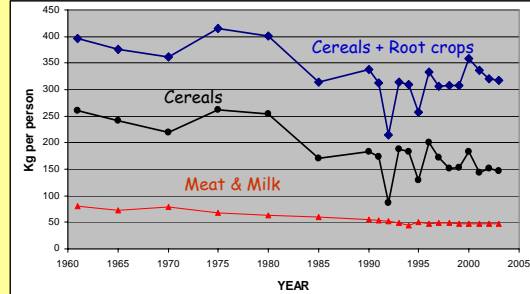
1. Promote alliances in the management of natural resources by encouraging socio-economic partnerships (e.g. local communities, private sector, NGOs and governments);
2. Foster transfrontier collaboration and cooperation to facilitate biodiversity conservation and effective ecosystem management;
3. Enhance ecosystem integrity and processes by harmonizing resource management processes;
4. Facilitate sub-regional economic growth;
5. Develop trans-border tourism, and,
6. Facilitate the exchange of technical, scientific and legal information.

Livestock production in Southern Africa and Europe



Trends in food production

Per capita food production 1961-2003:
>25% decline since 1975



The Problem

TFCAs (and included parks) are expected to:

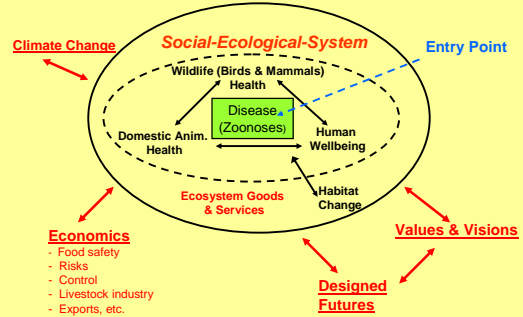
- Enhance conservation of biodiversity and reinstate large mammal migratory patterns
- Facilitate the movement of tourists across boundaries
- Function as 'engines' of rural development

BUT:

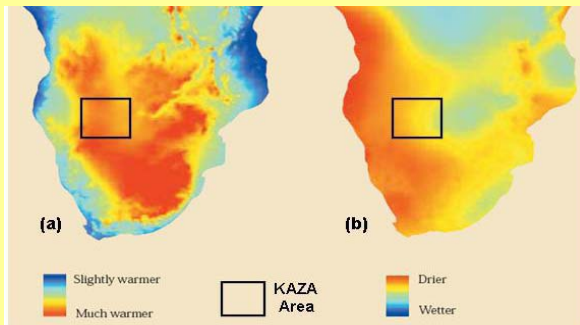
Diseases and disease control measures may pose serious obstacles to achieving both conservation and the rural development objectives of TFCAs

Can a more holistic, integrated approach help?

"System boundary"



Predicted changes in (a) temperature and (b) rainfall in southern Africa



Ecosystem processes

- Large scale drivers
 - Global scale
 - Regional scale
- Intermediate scale drivers
 - At level of TFCAs

Biodiversity & conservation area network

- Biological value
 - Size of area
 - Large scale habitat diversity
 - Type of wetland
 - Endemic and threatened plants
 - Endemic and threatened animals
 - Key ecosystem processes

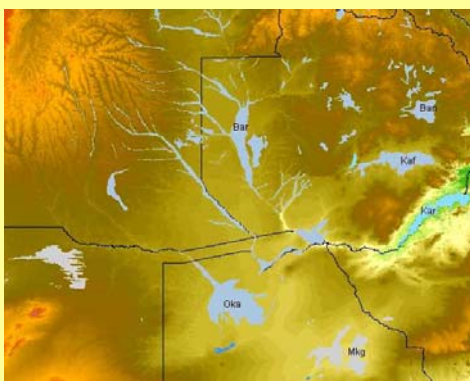
Conservation Effectiveness

- Legal status
- Historical and traditional status
- Resources for protection and conservation
- Level of development & implementation of protected area plans
- Threats
 - Land pressures
 - Land capability

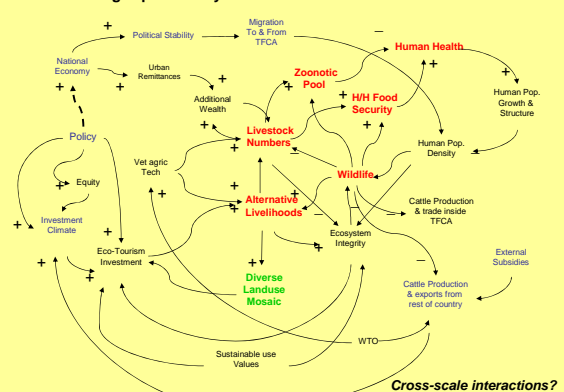
Linkages and wildlife corridors

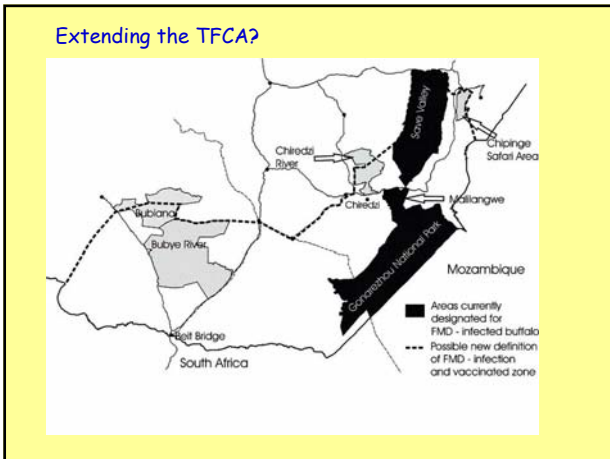
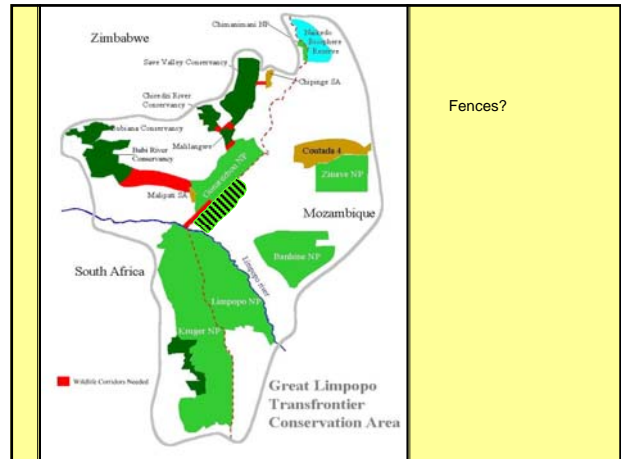
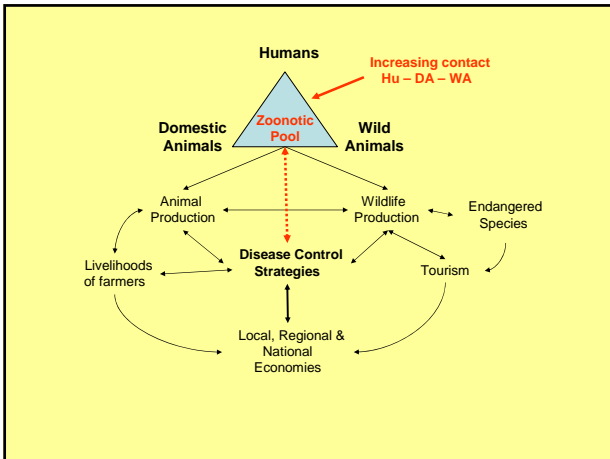
- Migration
- Dispersal corridors
- Adaptive response corridors – ecological change / climate change

Linkages and wildlife corridors



TFCF agro-pastoral system





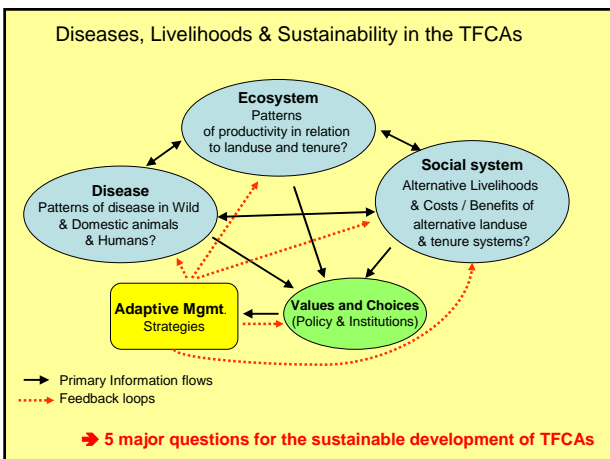
GLTFCA - Overall Objectives & Themes

Objective: *Contribute, through innovative and integrated inter-disciplinary research to improving animal and ecosystem health, and human wellbeing in the GLTFCA. (AHEAD -GLTFCA)*

Program Themes:

1. Overarching conceptual framework
2. Animal health and diseases
3. Land use, ecosystem goods and services, and animal health
4. Human livelihoods, animal health and ecosystem integrity and processes (Ecosystem health?)
5. Communications and outreach

*Concerns about "ecosystem health" ?
Restoration? (endemic vs introduced diseases)*



Diseases, Livelihoods & Sustainability of TFCAs - major questions

1. What types and pattern of landuse and tenure will enhance ecosystem health, productivity and resilience (sustainability) of TFCAs Social-Ecological Systems?
2. What is the state and trend of Natural, Human, Social, Financial & Physical capital in each landuse/land tenure component of a TFCAs, how might these change and influence ecosystem health, under differing scenarios?
3. How will the biodiversity, environmental, social and economic trade offs/opportunity costs of alternative patterns of landuse/tenure influence adaptability and resilience of the SES?

Diseases, Livelihoods & Sustainability of TFCAs - major questions

4. What types and pattern of land-use and tenure will enhance the sustainability of the ecosystem?
5. What cross subsidies exist within the ecosystem and how vulnerable are they to disturbance and shocks?
6. What is the level of external subsidy to the TFCA system and how dependent is the system on, or vulnerable to, external subsidies?

Concluding comment:

- We do not have answers to these important questions.
- The result is that current development is mostly ill-informed and inconsistent.
- A more encompassing approach to R&D is needed to provide a much sounder basis for biological conservation and enhanced rural development in the southern African TFCAs.