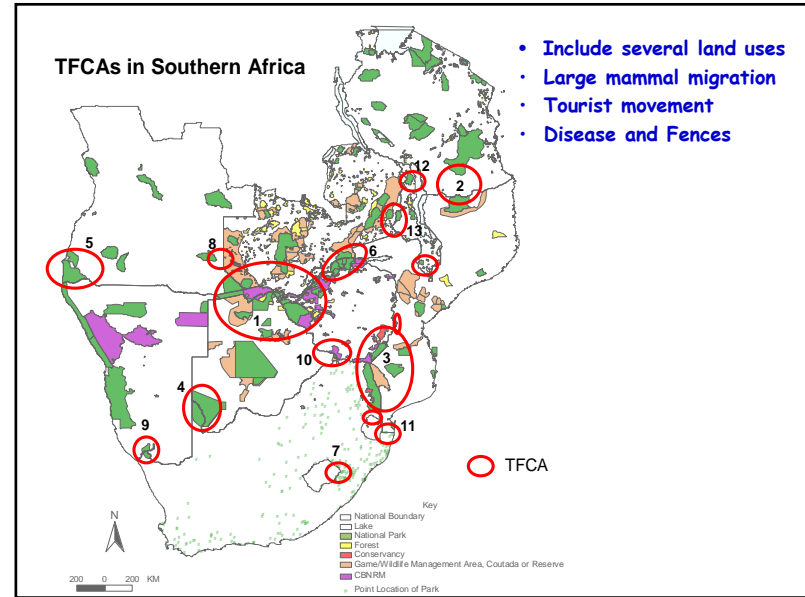


Scale Issues in the Design of Transfrontier National Parks and Conservation Areas in Southern Africa:

Implications for Conservation and for Natural Resource Management

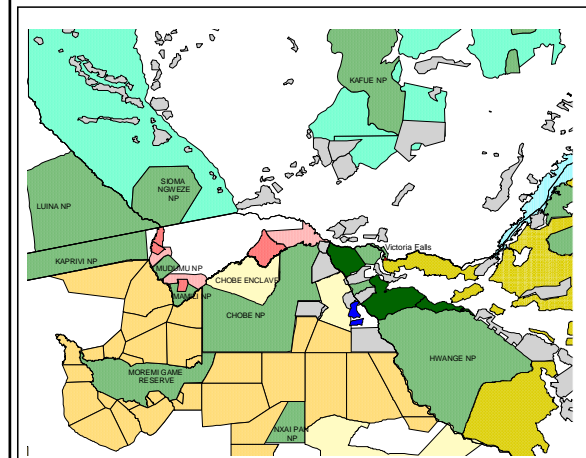
Harry Biggs, David Cumming, Edwin Muchapondwa



Transfrontier Park (Great Limpopo)
Objectives:

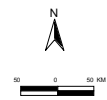
1. Promote alliances in the management of natural resources by encouraging socio-economic partnerships (e.g. local communities, private sector, NGOs and governments);
2. Foster transfrontier collaboration and cooperation to facilitate biodiversity conservation and effective ecosystem management;
3. Enhance 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.

Complexity in land-use and tenure within the KAZA TFCA



67 PAs
13 types PAs
Largest 38 K km²
Smallest 19km²

+ Range land tenure systems outside PAs

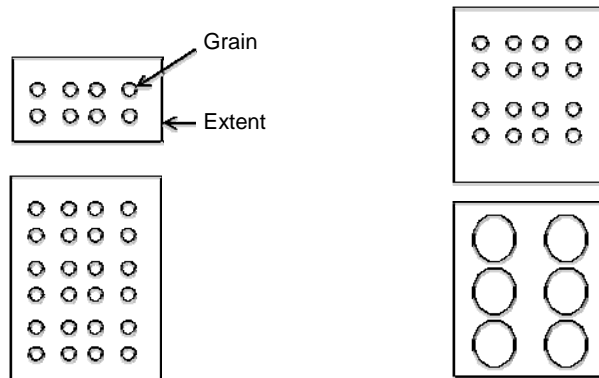


Map Prepared by the GIS Unit - WWF SARPO

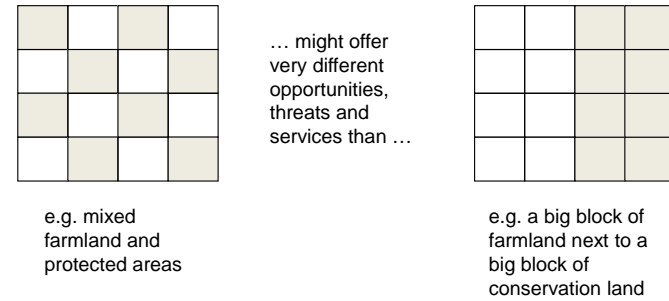
➔ **Complex, linked SOCIAL-ECOLOGICAL SYSTEMS**

What do we mean by scale?

In Ecology – GRAIN and EXTENT



In a multi-element landscape, the particular spatial arrangement can make a big difference to particular functions, for instance -

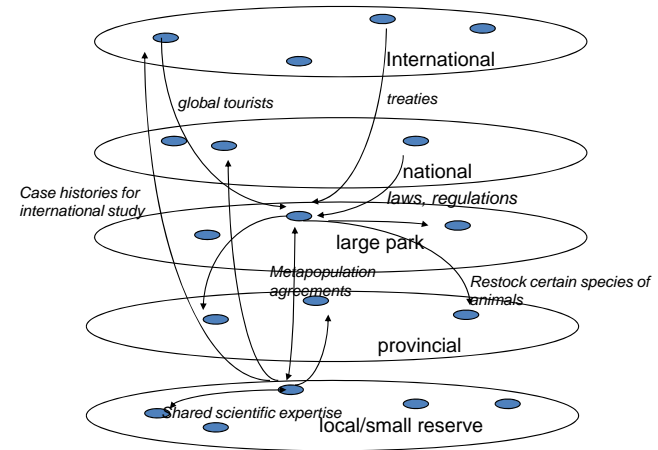


In particular, functional corridors (linear pathways across other landscapes) are a big issue in conservation planning

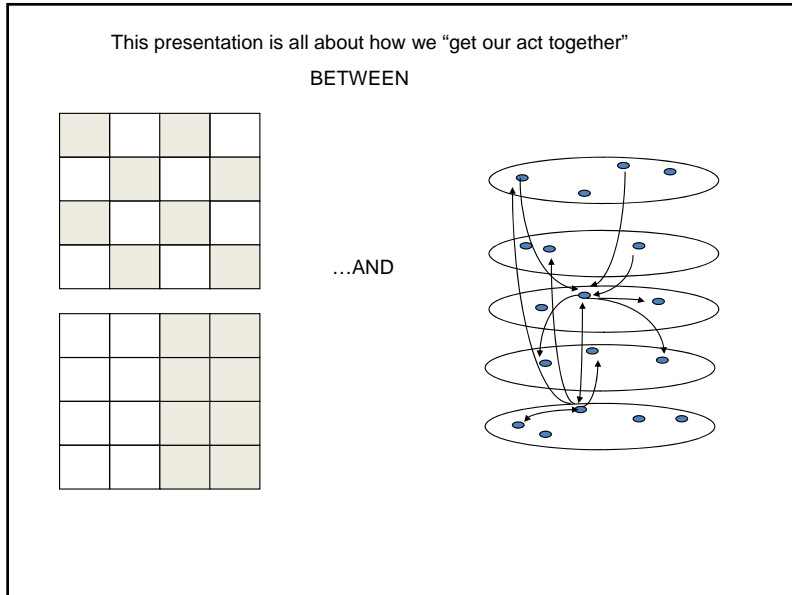
In Social systems – changes in LEVELS

- Representative nature of social structures extends from individuals to organisations
- Social Institutions – rules, laws, norms that govern resource access rights and tenure

May seem fuzzy and overwhelming (compared to the relative solidity of the biophysical) but this plasticity could be a big advantage in design



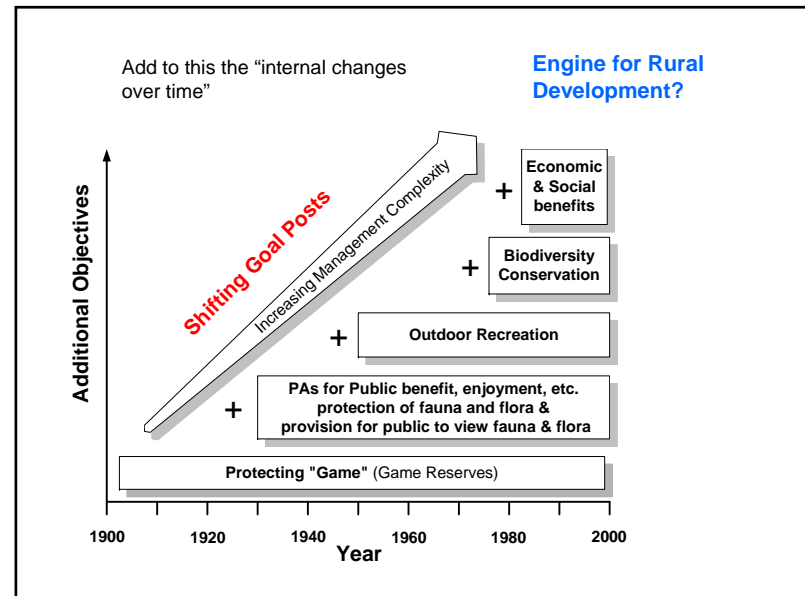
There is a related concept LEVELS (which some people also call "scales" but this can be confusing)



So now, looking at differing scales in TFCA attributes

| TFCA | AREA(K) | No. PAs | % State PA | Countries | NB Diseases |
|-----------|---------|---------|------------|-----------|-------------|
| KAZA | 400 | 67 | 22 | 5 | 6 |
| GL | 100 | 15 | 45 | 3 | 4 |
| Kgalagadi | 37 | 3 | 100 | 2 | 0 |
| Ais-Ais | 5 | 3 | 80 | 2 | 0 |

| <u>Traditional perception of the "lone-standing" park</u> | <u>Apparent complexity of a TFCA</u> |
|---|---|
| Inputs, outputs, processes relatively simple | Inputs, outputs, processes more complex |
| Extent usually smaller | Extent usually larger |
| Lines of accountability clear | Lines of accountability blurred |
| Contestation minimal | Potential for contestation large |



TFCAs have evolved (are evolving) around existing patterns of landuse i.e. patterns (and process) governed by history and contingency rather than by design.

This may in some cases have resulted in a near sustainable landscape, on other occasions seems to be on a worrying trajectory
We like to think we can design a sustainable landscape, or modify one of these emergent ones to reach a sustainable design

This raises key questions. There may be more stakeholders "involved" now but -

What about asymmetry in economic potential/realisation of adjacent zones or countries?

What about asymmetries in capacity and wealth of different individuals and different communities?

How do we deal with multiple landuses, configuration of these and trade-offs between them?

Examples

The first one deals with a multi-level interaction and response system concerning river issues in and around Kruger Park/TFCA.

took decades before the obvious "holistic" planning unit became the catchment. We are still having difficulty internalising this and operationalising it in practice e.g. disjointed jurisdictions are major problem

- As a consequence (of subcatchments within catchments) river governance represents one of the few natural resource management systems where scaled responses have become the accepted norm (except that responses seem weaker trans-nationally).

- Environmental Flows are law in SA and Mocambique, yet in very early stages of realisation.

- Little systematic conservation planning except in Mpumalanga (terr & rivers)

-A lot of formal bi-national talk and agreements (esp InKomati - outside TFCA) but serious attention needed to form broader networks across national boundaries
Some welcome developments in CESVI T/F NRM project re levels of participation

Example: Cross-scale interactions and subsidies e.g. FMD fencing across southern Africa

Debate around how land-use is driven by subsidies from (often) distant countries with different sets of "hygiene ethics" e.g. FMD fencing. Driving values.

Winners and losers under such a dispensation

These financially powerful international interests intervene influentially on a regional scale.

- Does the scale "mismatch" jeopardise local interests or sustainability?
- How do feedbacks take place, are they successful?

Commodity-based trading could break the "geographical block" effect and facilitate mosaiced landscapes.

Such "checkerboard landscapes" were usually seen as undesirable ("messy, inefficient") just 20 years ago yet may be more resilient.

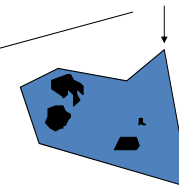


Example Fire: touch on just one point

Is "anthropogenic re-scaling" (sensu Urban et al) feasible or desirable?

If this pattern burns in a big natural area

Are managers meant to try to mimic it at a smaller scale in this area?



What are the implications of transferring patterns or practices across scales?

Some key questions or pointers to way forward

Whatever happened to the so-called re-instated migrations? No evidence in Southern Africa. This was (is still) part of the original dogma!

Harmonising legislation, policy and governance / institutions at several scales (e.g. polycentric governance) requires a major mindset shift that we are only getting used to in some situations, maybe. (e.g. water)

How do we balance the rewards of a 'complete' ecosystem with appropriate governance, at expanded levels for wider extents? Is this sensible bioregionalism?

How do we make feedback loops work? This is enough of a problem normally, complicated by the reality of even poorer cross-scale feedbacks

How do we set up an equitable distribution of responsibilities and benefits in such heterogeneous landscapes? Scaling governance processes according to resource scales helps → overlapping resource access rights

Sufficient appropriate nodes in the social networks need to be linked (but not too many as to be unworkable)

Social capital (trust) is the lubricant which facilitates the real eventual flow of responsibility and benefit-sharing across the node links

Thank you