

SCALE PI's Meeting Notes: February 21-22, 2002
NREL, Colorado State University

General Planning Issues:

- 2 symposia are planned for the project – early to mid 2003 (potentially at the International Rangeland Congress – July 2003 – Durban, South Africa), end of project (2006)
- There is a small amount of money available for consultancy related to project.
- More socio-economic data is needed from Inner Mongolia (research money) – we'll need to talk to Chuluun about this.
- We may want to produce a glossy paper showing how this project leverages funds from other projects (Fig. 8). This may help to leverage more funds.
- We may also want to consider short policy briefs (short updates on project written for a lay audience) to help leverage more money. This will be a big job. We may want to use consulting money to write them, or someone like Future Harvest who can help with press releases.
- Changes from the original proposal – research objectives 6 and 10 are now out

Specific Discussions of Research Objectives (Fig. 9):

RO2: global level analyses

- Complexity framework and analysis – indices (spatial data)
- Between site comparisons – vegetation, elevation, NDVI (temporal variation)
- Pastoralist pathways – do pastoralists/animals move to more/less complex areas
- Cluster analyses – measure complexity
- Defining boundaries will be a challenge – we need to do this for every site
- Key question – where and when are herbivores not responding to complexity?

RO3: NE Queensland Ranches

- Infrared analysis of fecal matter
- Large landowner (Hightsburg – sp?) – alternative paddocks stratified by heterogeneity and scale
- Ask Jerry Stuth about NIRS database applicable to SCALE
- Heather Blackburn will do her PhD research related to this RO

RO4: herbivore movements

- Fragmentation (excision) in NCA
- Model analysis
- Data collection, data already available – model results
- Literature review
- Needs a lot more thought/planning for other sites (other than Kajiado)

RO5-7: land use/land tenure (generally)

- Movement of animals critical to RO5
- RO5 and RO7 - paired closely with RO8

- RO4 and RO5 paired, RO7 and RO8 paired – we should only do land use patterns for places where we have animal movement data
- For sites a table could be constructed which shows who owns resources, water points, etc. – land tenure doesn't quantify easily though
- Exclusivity is on a gradient, a sliding scale of individual control (Fig. 10)
- Time will be an important factor – changes happen in a particular order over time (Fig. 11)

RO5

- May need more data collection for this one
- May also need another meeting of people involved to hammer out guidelines

RO7: contemporary land use change (Fig. 12)

- Evaluate processes of change (large scale) or household land use decision-making?
- Survey used is the same as for RO8
- Group or individual interviews – cross-checking for both
- Land use decision-making – 3 levels with different constraints
 - Administrative group – inherit rules they need to implement
 - Local community – leaders of communities
 - Household
- Roy Behnke tasks
 - One page summary of sites
 - Protocol for case studies
 - Look for secondary sources

RO8: economic surveys and analysis

- Will feed RO9
- Data coming out of RO8 will help explain RO7
- Shauna Burnsilver will type and circulate economic data needed for PHEWS model: household typology, for each type (size, age-sex ratios, resources and land holdings), livestock herd sizes and age-sex ratios, expenditures, income, household diet, livestock prices, maize and other agricultural commodities prices
- General data needs: grazing (when, where), livestock supplements, agricultural production, livestock purchases, livestock sales, what happens to excess cash, what happens in a drought
- Problem for Central Asia – this type of information has not been collected (it is not what they are looking for)
- For different areas Philip Thornton will need to advise

RO11: spatial complexity, temporal variability, and population patterns

- Heterogeneity – selectivity may reduce effects of variability
- Tom Hobbs will circulate NCEAS database to use
- Livestock population data

RO12-13

- RO12 – extant populations
- RO13 – theoretical applications
- We have current applications for about 10 sites (NREL)
- other sites – SAVANNA applications, not SCALE sites
- other fragmentation analyses
- could we get at RO10 (trade-offs research objective that is now shelved) through RO13? Include economic analysis (PHEWS) to do this?

Specific Discussions of Research Sites (Table 1):

NCA

- Research objectives – RO2, 4-5, 7-9
- Shauna Burnsilver will send copies of NREL surveys (hers, Kathy's, Stacy's, Nicole's) to Roy Behnke.
- Survey needs/compatibility – Roy Behnke will send a write-up to Kathy Galvin by June 1, 2002. Kathy will send it out to Philip Thornton, Mark Stafford-Smith, and Stacy Lynn by June 24, 2002. The survey questions will be finalized by September 1, 2002.

Kajiado

- RO4 – needs more work
- RO5 – Shauna will collect more data on subdivision (late this year)

Tarangire

- Spatial databases
- RO5 and RO7 – Stacy Lynn
- RO4 – mostly done
- RO8 – not in the works now for this site

Meru

- May not get anything (maybe will have something by January '05)
- Thinking of fencing area
- Dependent on CRSP

Mara

- May not get anything (maybe will have something by January '05)
- Dependent on CRSP

LGCA (Loliondo – greater Serengeti area)

- RO5, RO7, RO8
- Intact ecosystem now
- Some info on RO4

STEP (South Turkana)

- No wildlife movement data
- RO5, RO7, RO8
- Demonstrate how climate dynamics influence spatial/temporal dynamics

Serengeti

- Not sure what we can do with fragmentation
- Mike Coughenour – ecosystem application

NWP – Australia

- Not much to be done here
- SAVANNA application, multiple-goals model
- RO8 and RO9

LV/SA

- Mike Peel may have data for this site

Balkash and Moykium – Kazakstan sites

- More important sites now than Turkmenistan sites
- Livestock production component
- Livestock enterprise economics
- Change in land tenure and livestock populations
- Need to expand RO4 for sites – livestock movement is more extensive (radio collars)
- Information on the informal economy will need to be collected (significance of livestock herd to family, and survival techniques if a family does not have enough TLU's to survive)
- May use of subset of interviewees to make a generic model (qualitative model)
- Roy will send the questionnaire already used at sites to Shauna, Kathy, and Philip.
- A new site was proposed in Kazakstan. We will not pursue this now.

Bayramali and Gokdepe – Turkmenistan sites

- Not included right now

Yellowstone National Park (YNP)

- Is park large enough to be a self-regulated ecosystem? Is it a complete ecosystem?
- Meet with Mike Coughenour to discuss with him how to get this done.
- Also meet with Mike to discuss Victoria River District (Australia) opportunities with John Ludwig.

Australia Sites (Northern Queensland, Victoria River District)

- We may need more funding for certain sites.
 - Desertknowledge.com (grants may be available, letter of support)
- RO8 and RO9

- RO11 – can probably do
- John Ludwig could probably run simplified model (SAVANNA application) for Australia.
- Steve Douglas (Davis?) – political history
- John Gross – population models

2003 Symposium/Book:

- Maybe we could have a joint SCALE-CRSP symposium.
- If we don't already have a cross-site synthesis at the symposium, we need to discuss it at the symposium.
- We will probably only have six case studies done. Some cross-comparisons should be done.
- Case studies can be organized around locations.
- The book will focus on RO1.
- A paper should be written first to distribute as a template to encourage similar papers for an edited volume. Diversity also needs to be accommodated.
- The synthesis could be done after the symposium when people have their case studies done.

General Notes/Tasks:

- NSF likes nuggets. The program officer should be kept up-to-date.
- We will need to produce a list of suggested questions for new surveys (needed information). Data comparability will be an issue.
- Establish list of main contacts for each site.
- Refine and publish paper on conceptual model.
- We could contract with historians to write about China/Asia, Africa, and Northern Great Plains/Australia. It could be a synthesis of the three areas.
- Which sites are important from a fragmentation standpoint? We may not have SAVANNA for all of them.
 - We could make a simple model that fits specific objectives. Use an adaptation of Hobbs' Jackson model (population response needed).
 - Randy Boone will convene a meeting to discuss this. Also, send results of planning meeting to Philip Thornton and Mark Stafford-Smith.

Fig. 1

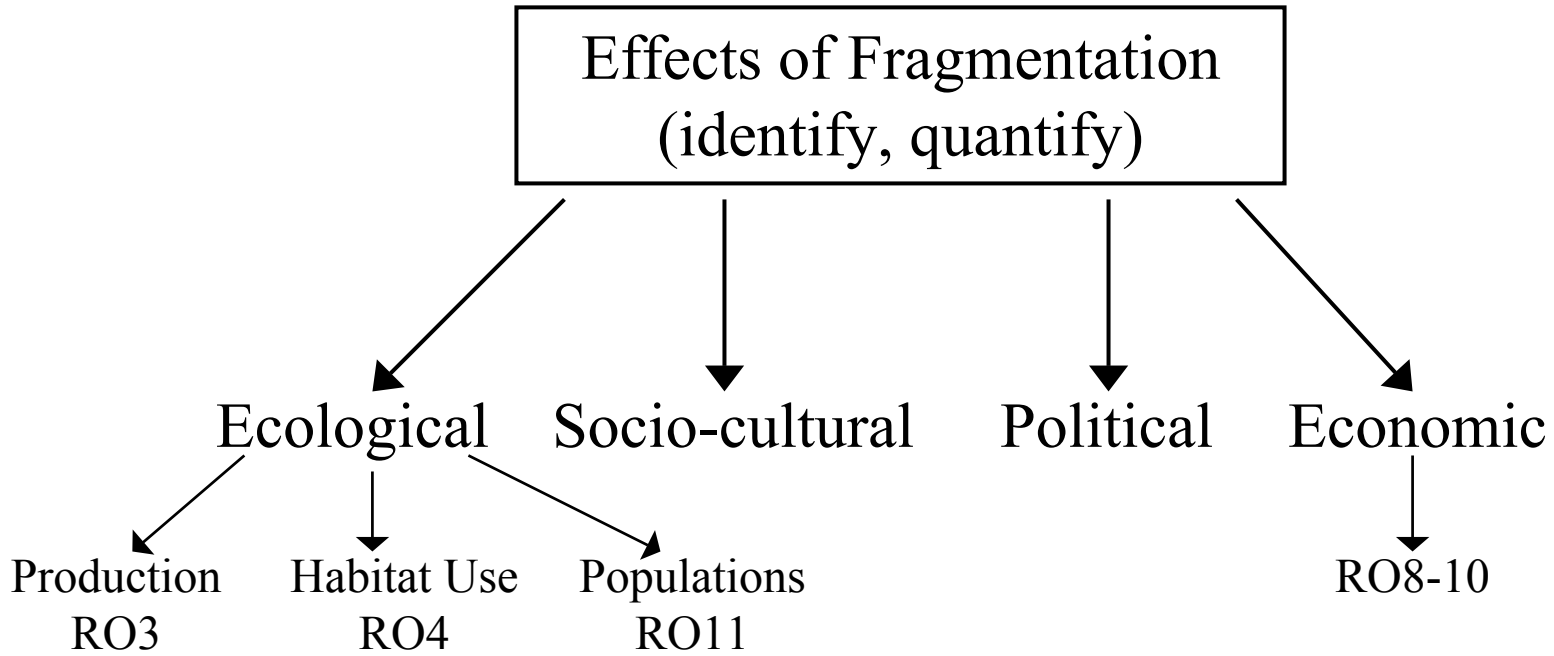
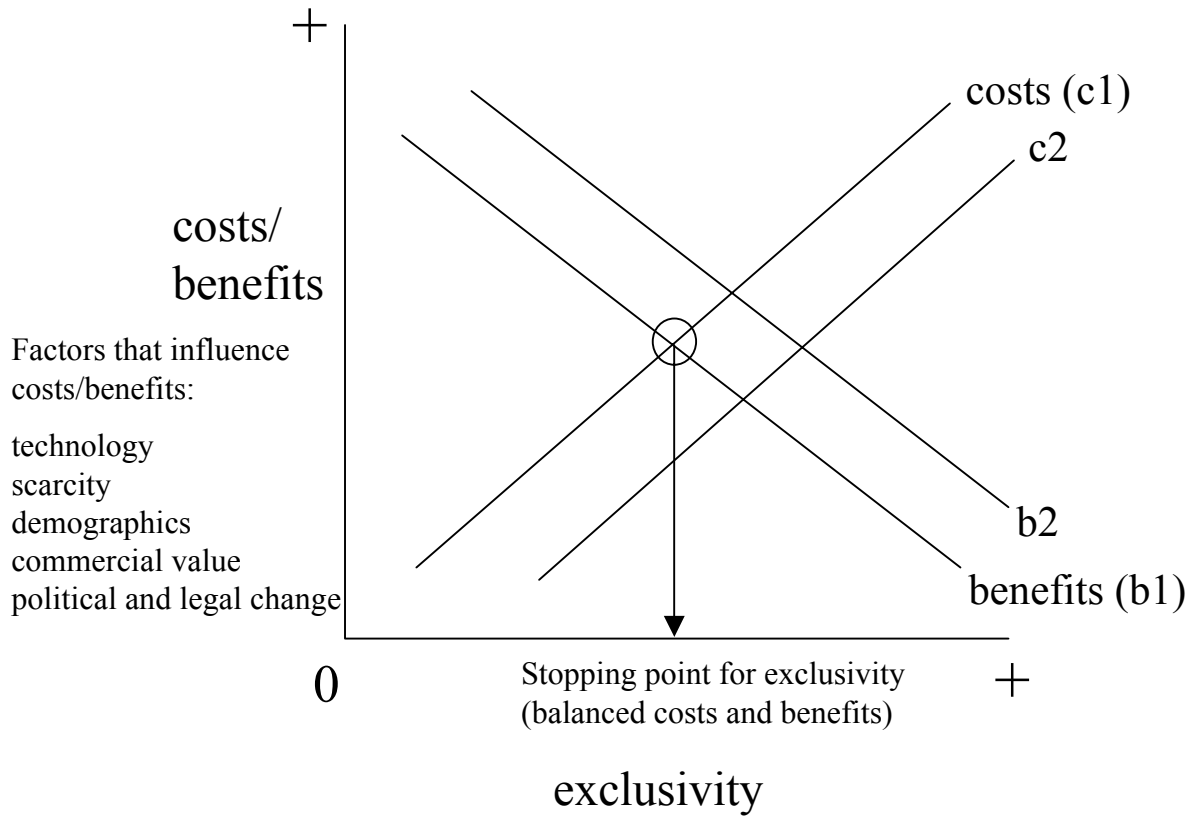


Fig. 2



The same goals are achieved by moving to b2 or c2.

* There is a point of diminishing return for increased exclusivity.

Fig. 3

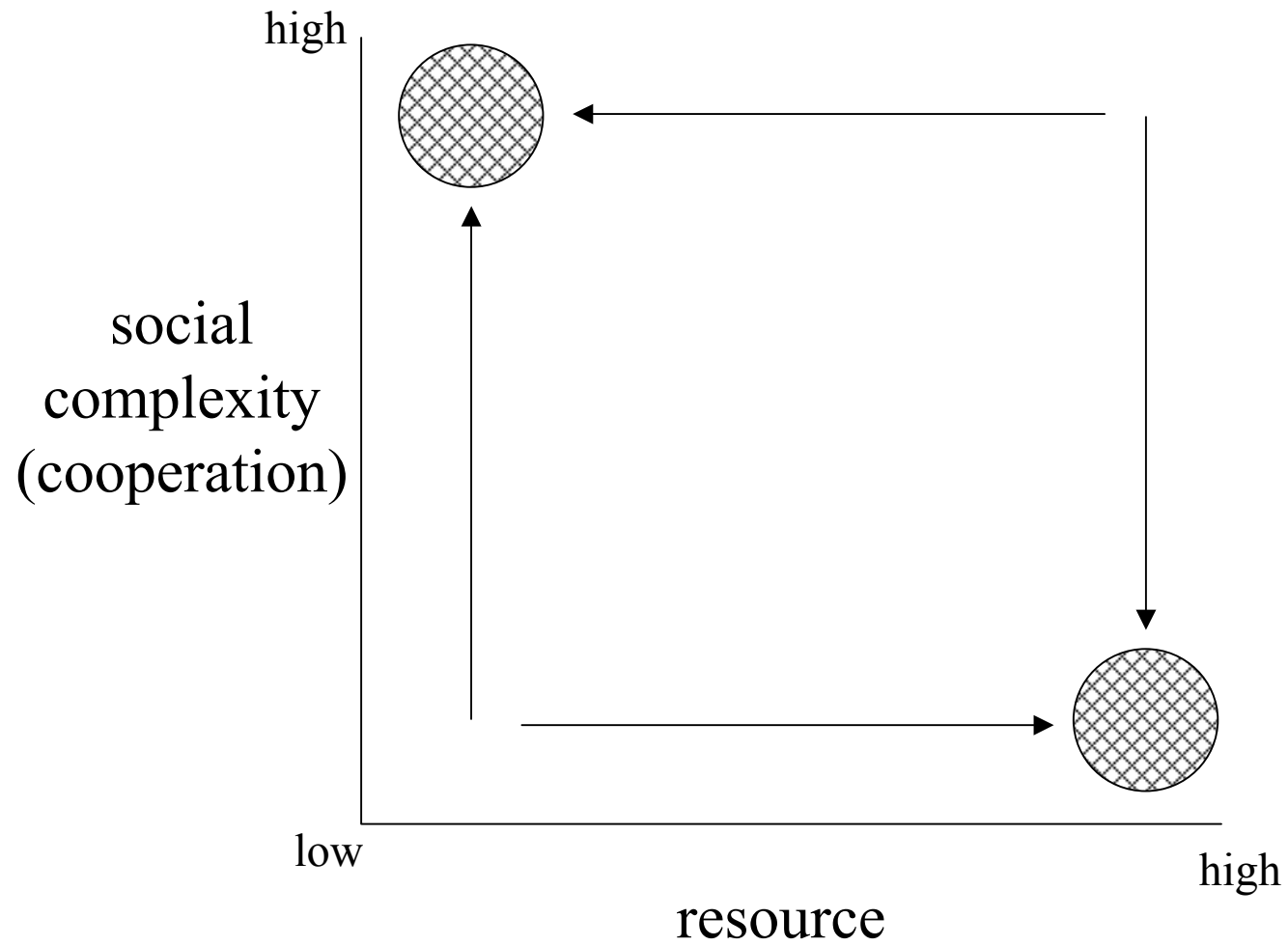


Fig. 4: Roy Behnke's water point example

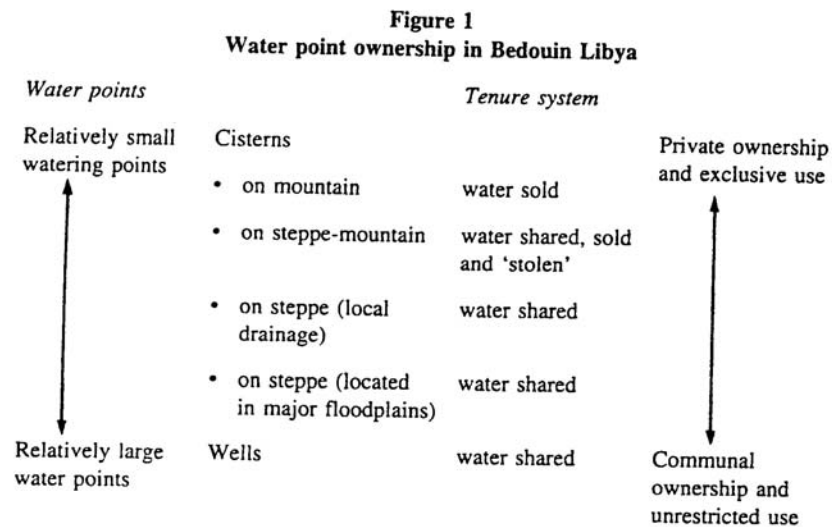


Figure 2
Pasture and arable land ownership in Bedouin Libya

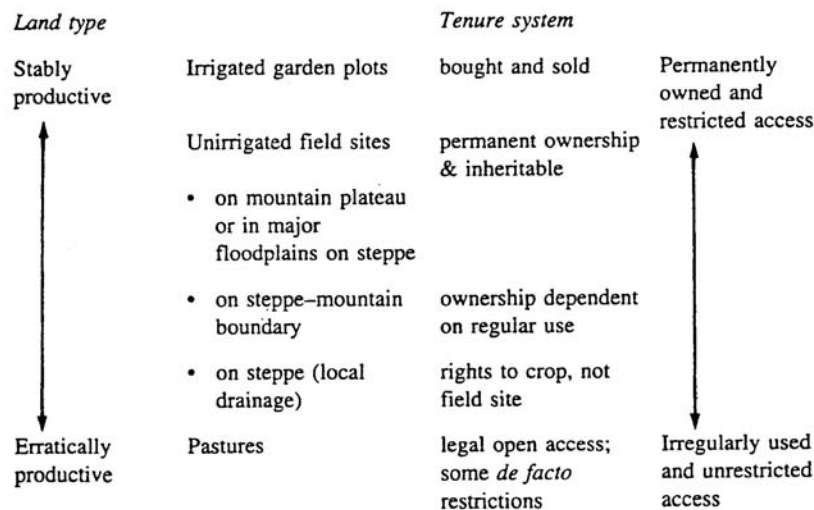
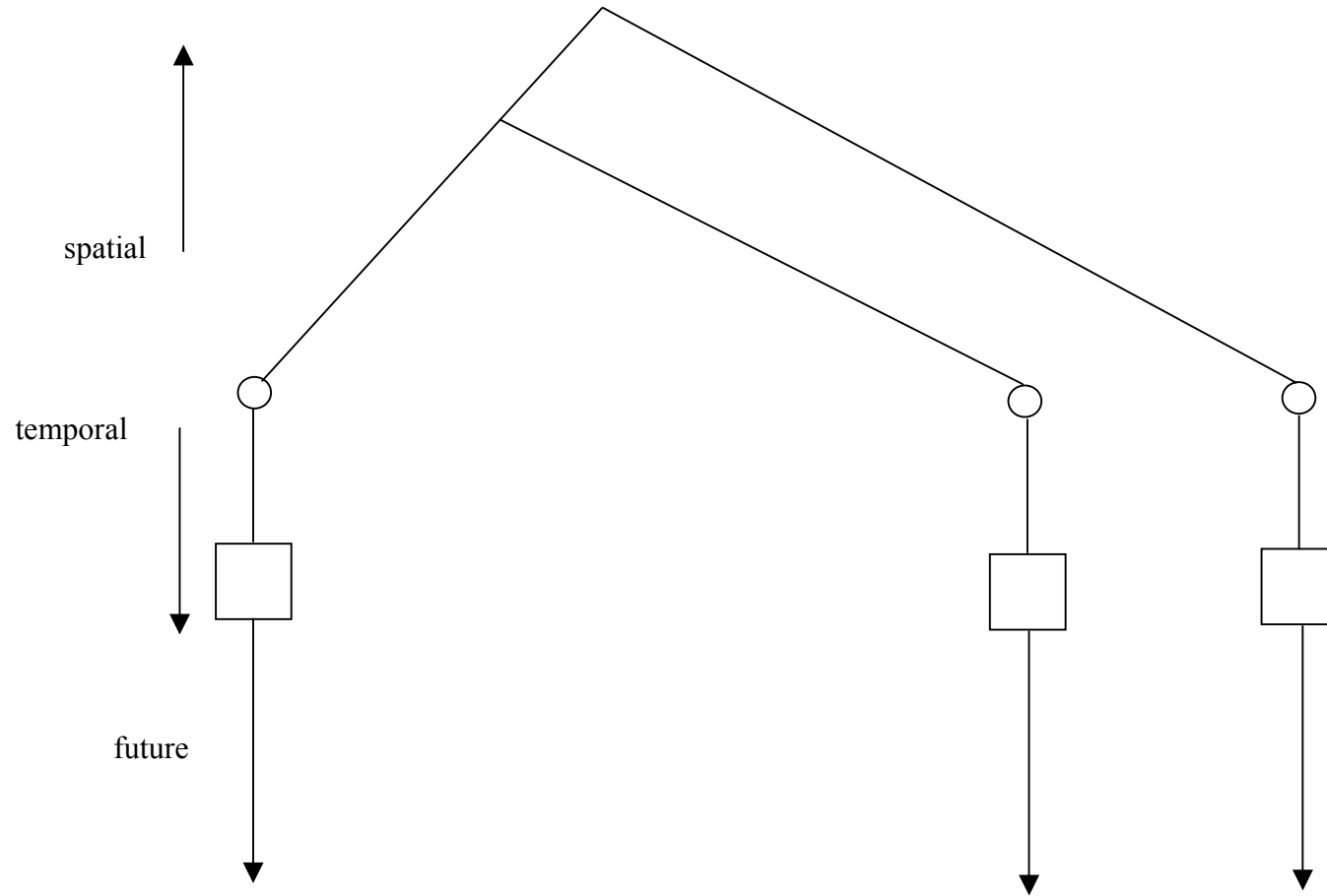


Fig. 5: Philip Thornton's 'tree' idea for looking at commonalities among sites



Philip Thornton's 'tree' idea for looking at commonalities among sites

Fig. 6

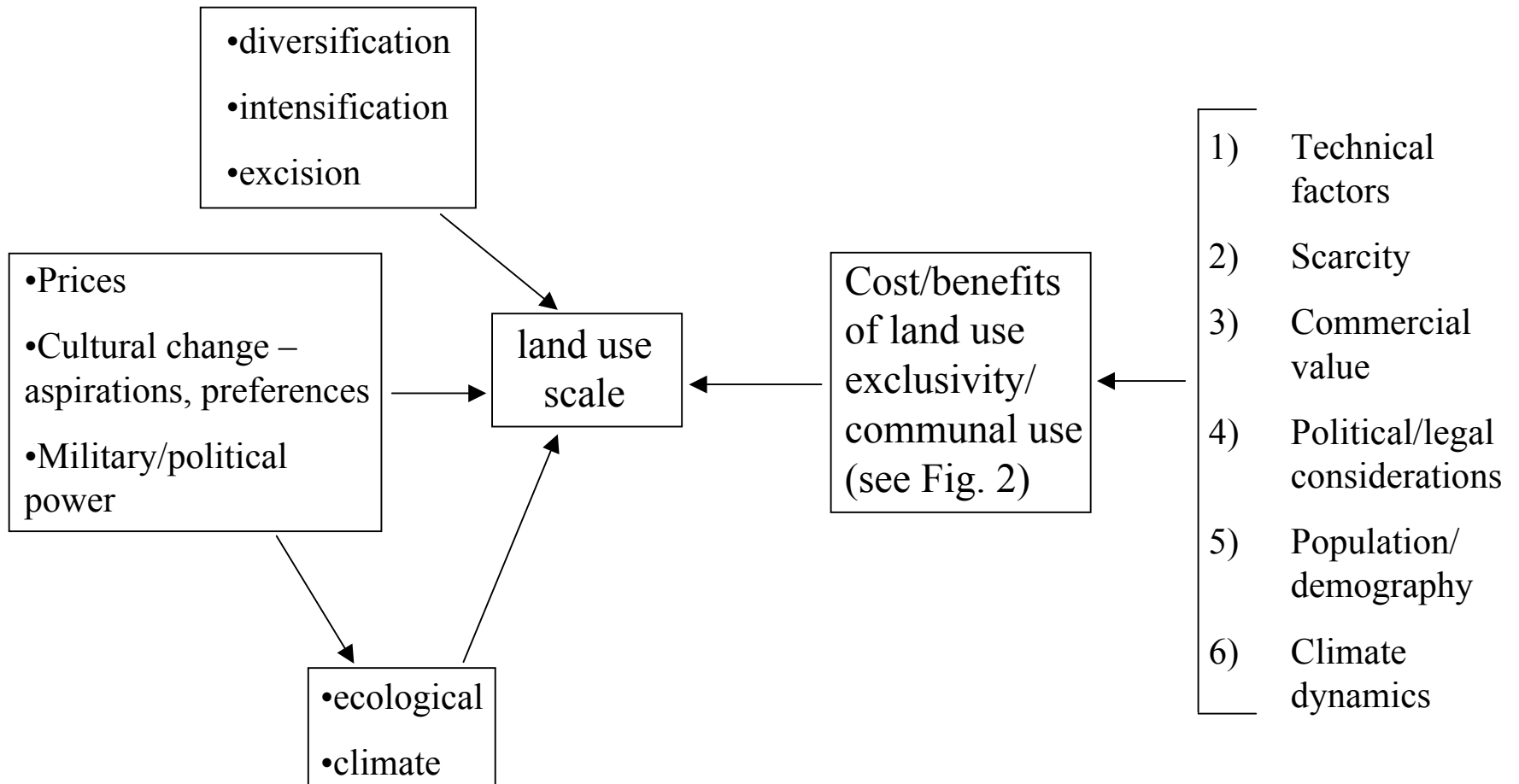


Fig. 7

Goal of diagram: divide drivers into ultimate and proximate

(will be different at different scales) – need 3 diagrams for 3 scales

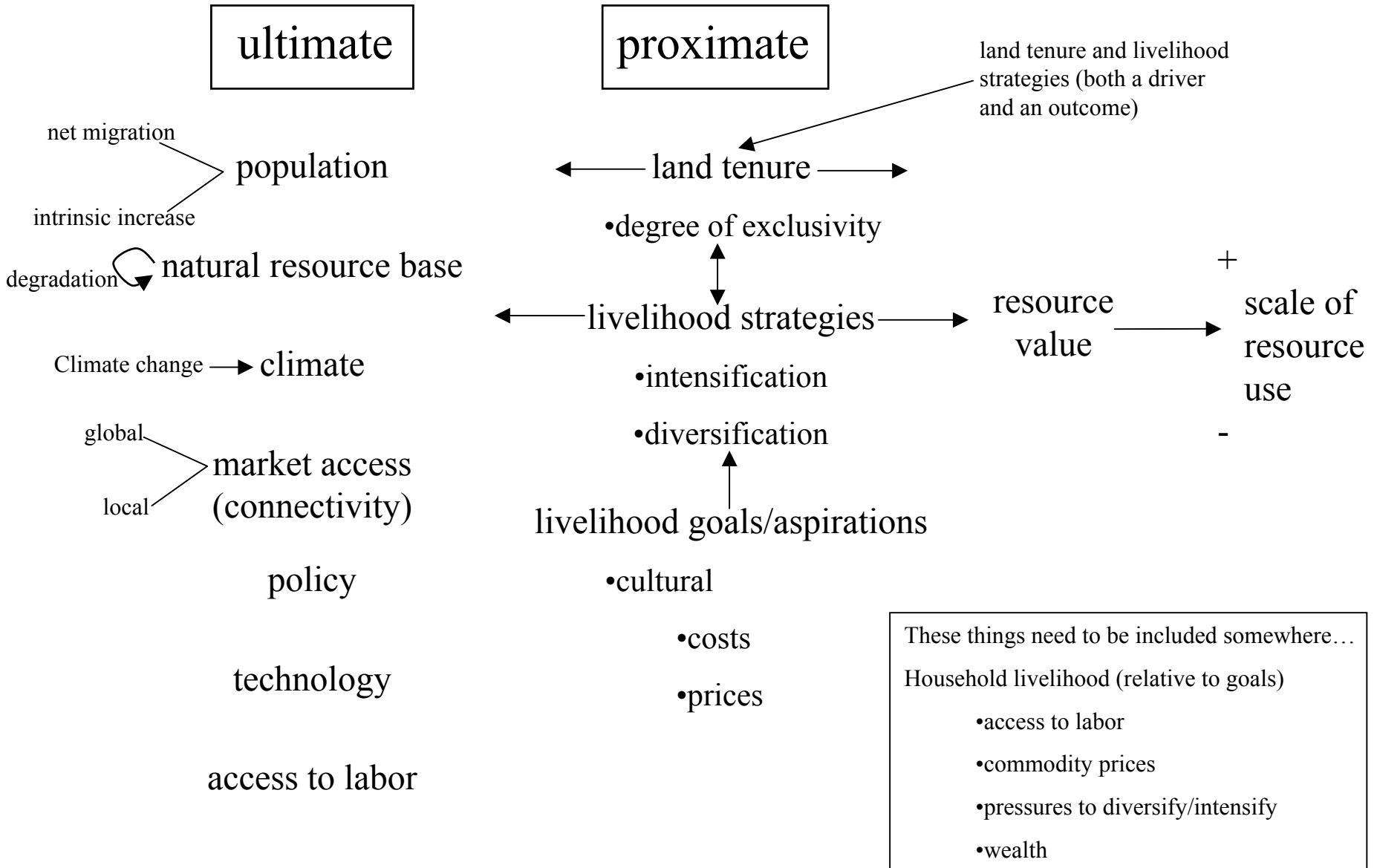


Fig. 8

SCALE Leveraging

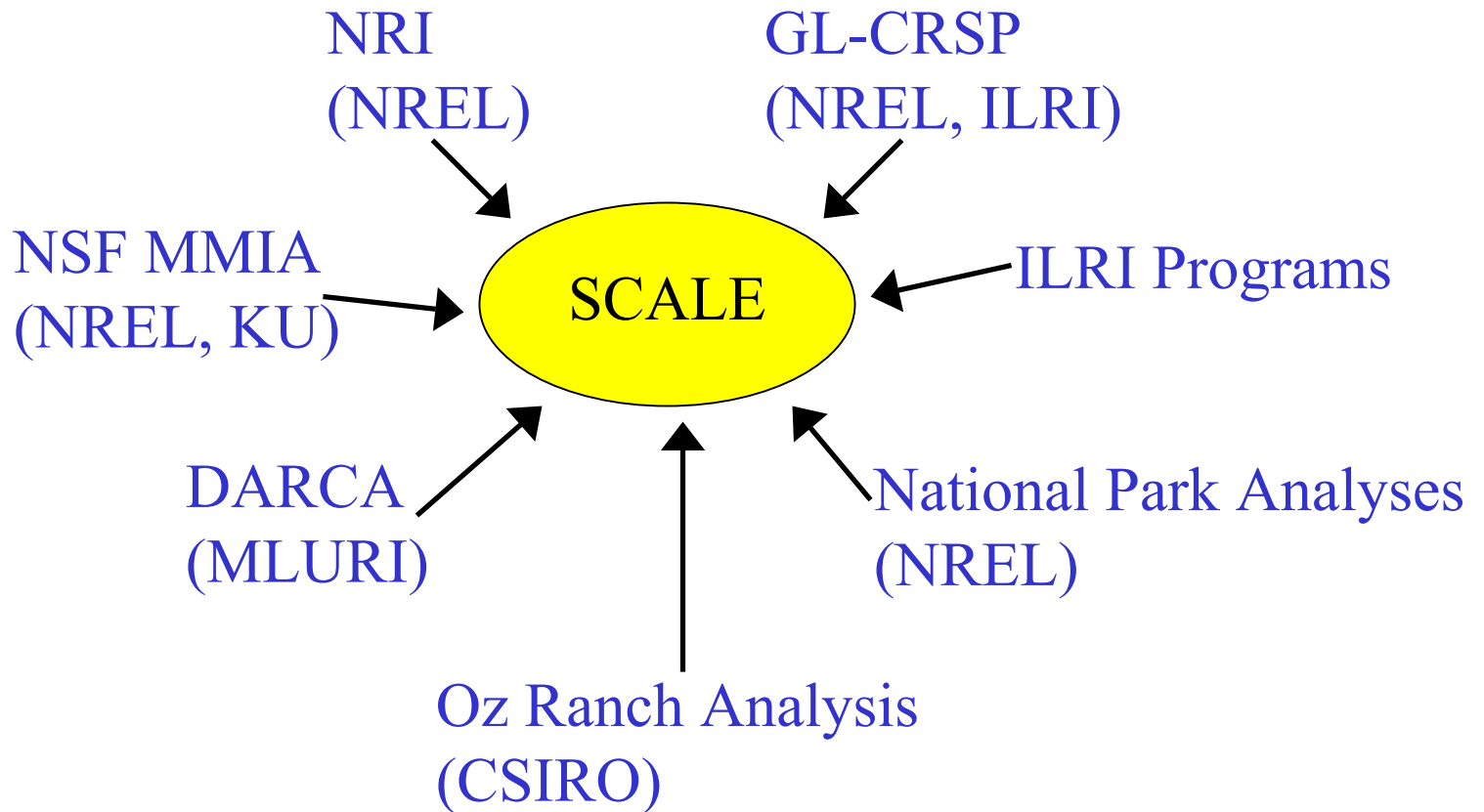


Fig 9: non-linear connections among research objectives

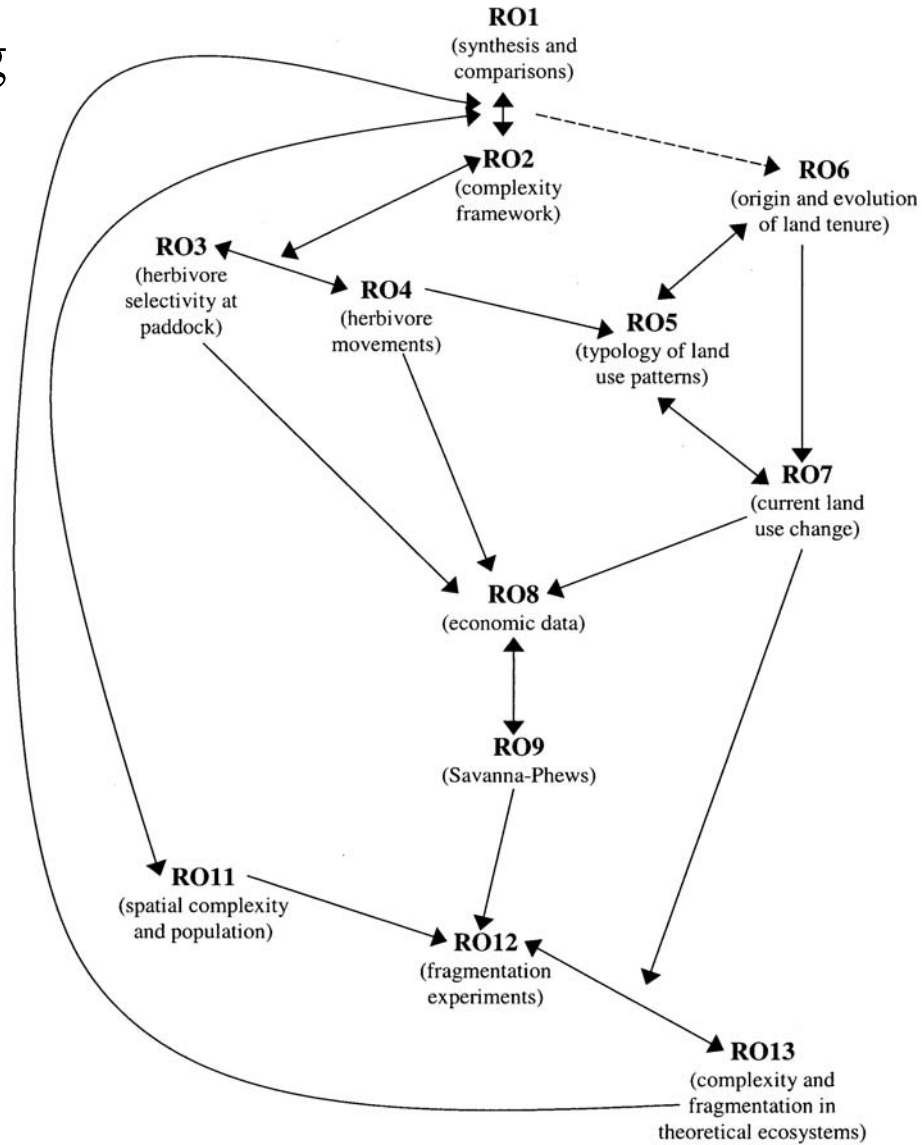
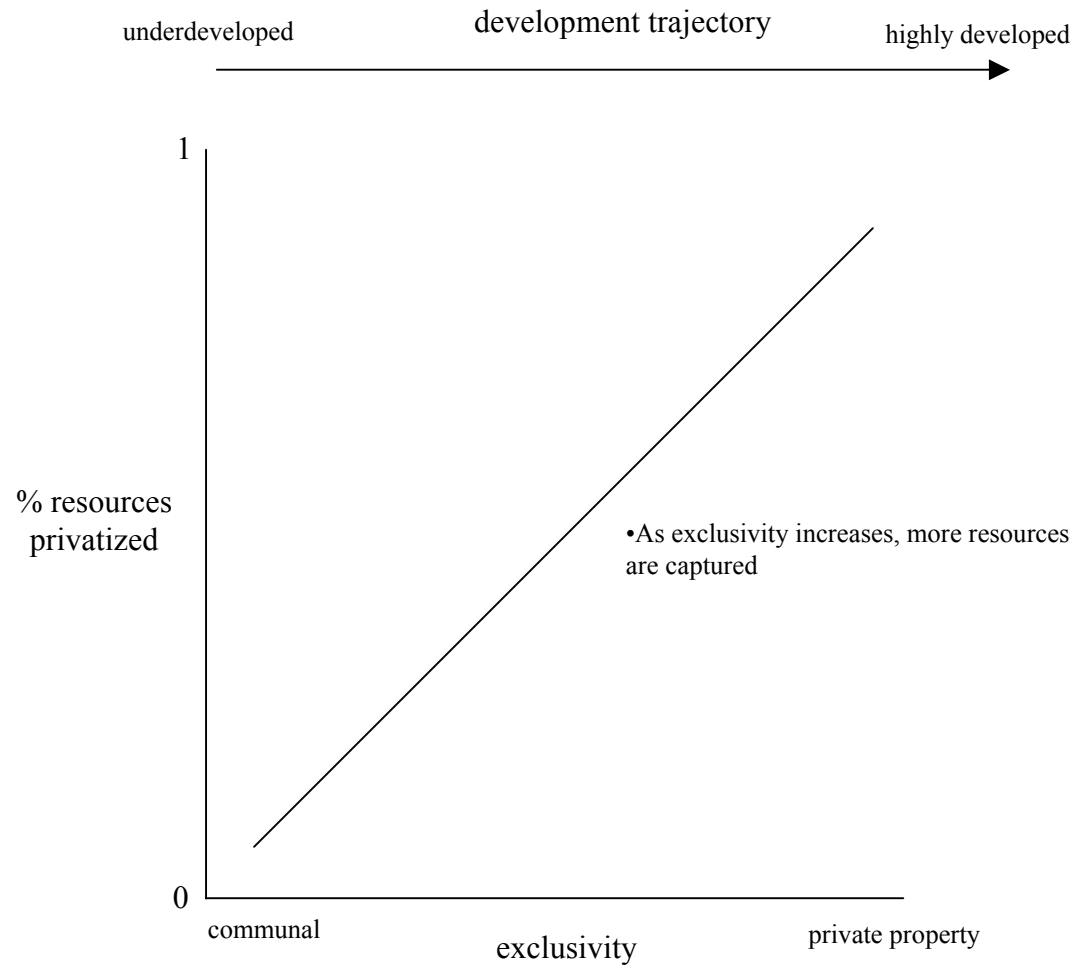


Fig. 10



Question: How does the distribution of resource use in time and space influence processes?

Fig. 11

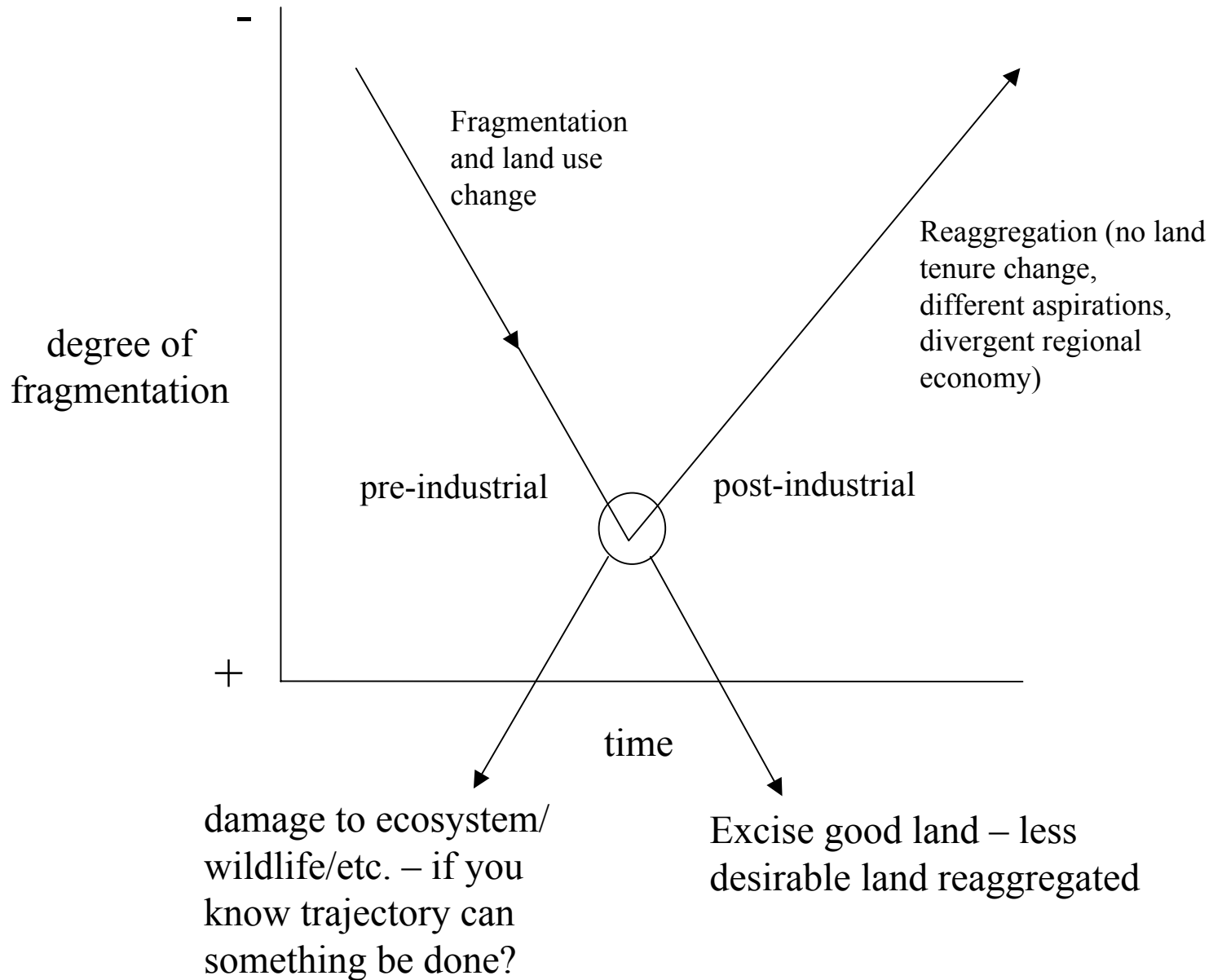
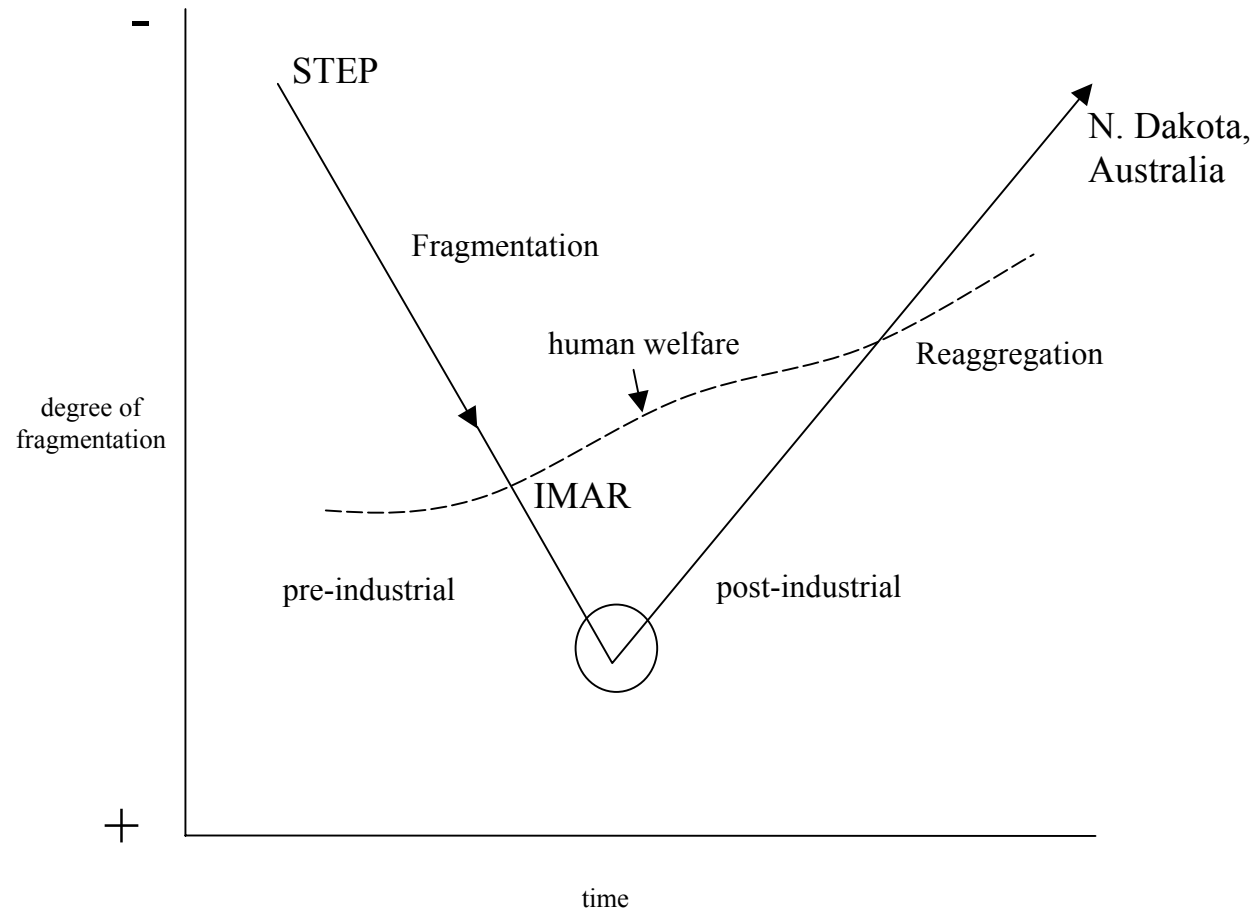
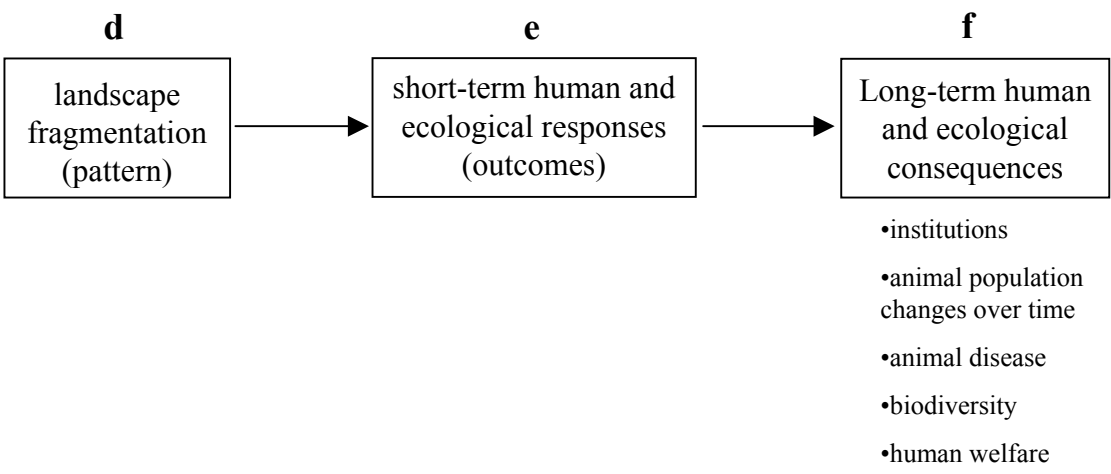
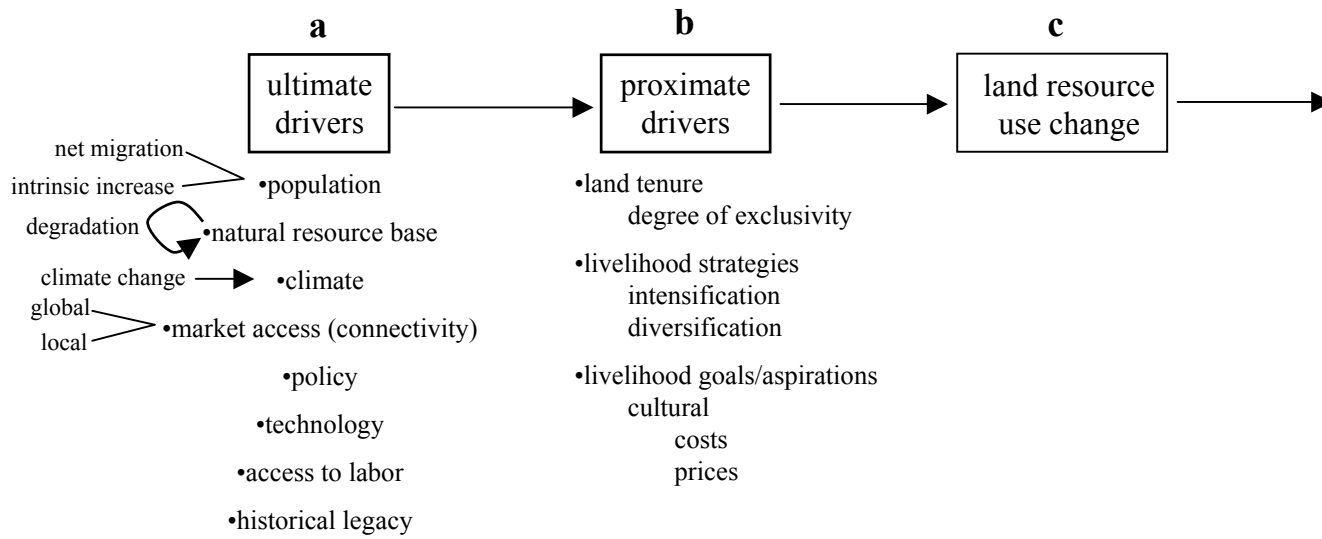
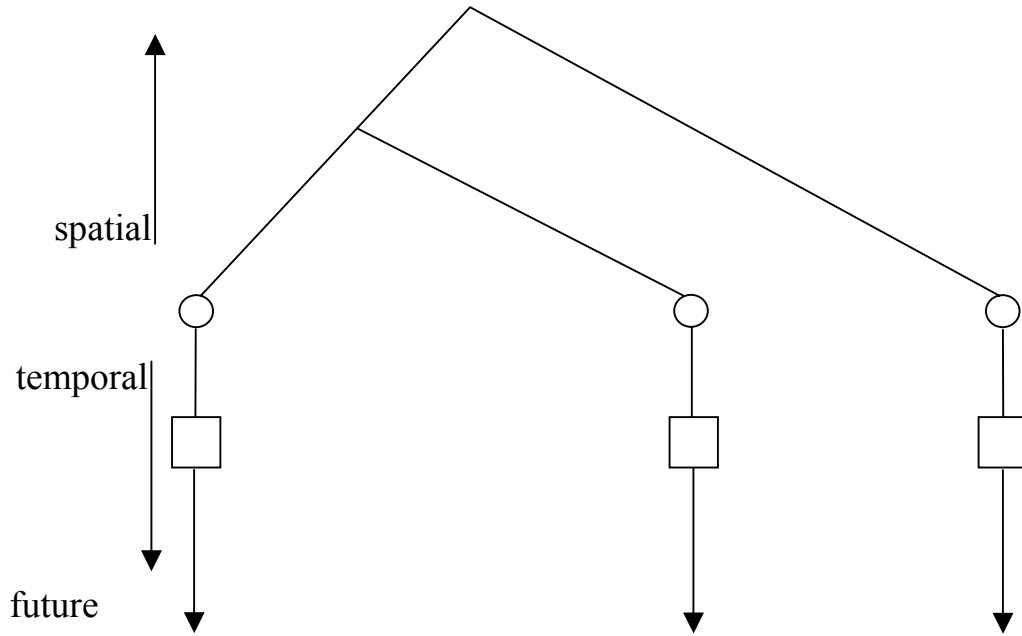


Fig. 12



- Research sites will fall in different areas of this diagram
- Human welfare (food security) could also be plotted on this diagram (should be on an upslope).





Philip Thornton's 'tree' idea for looking at commonalities among sites