Dr. Chaomei Chen is an Associate Professor in the College of Information Science and Technology at Drexel University. [illegible] China since 2008 [illegible] (2002-2008). He [illegible] master's degree in [illegible] from the Universi[illegible] analytics, knowledge domain visualization, mapping scientific frontiers, and theories of scientific discoveries and creativity. Dr. Chen is the author of *Turning Points: The Nature of Creativity* (Springer, 2011), *Information Visualization: Beyond the Horizon* (Springer 2004, 2006) [illegible] 2003). He is the founder and the [illegible] *Journal of Informetrics*. Dr. [illegible]

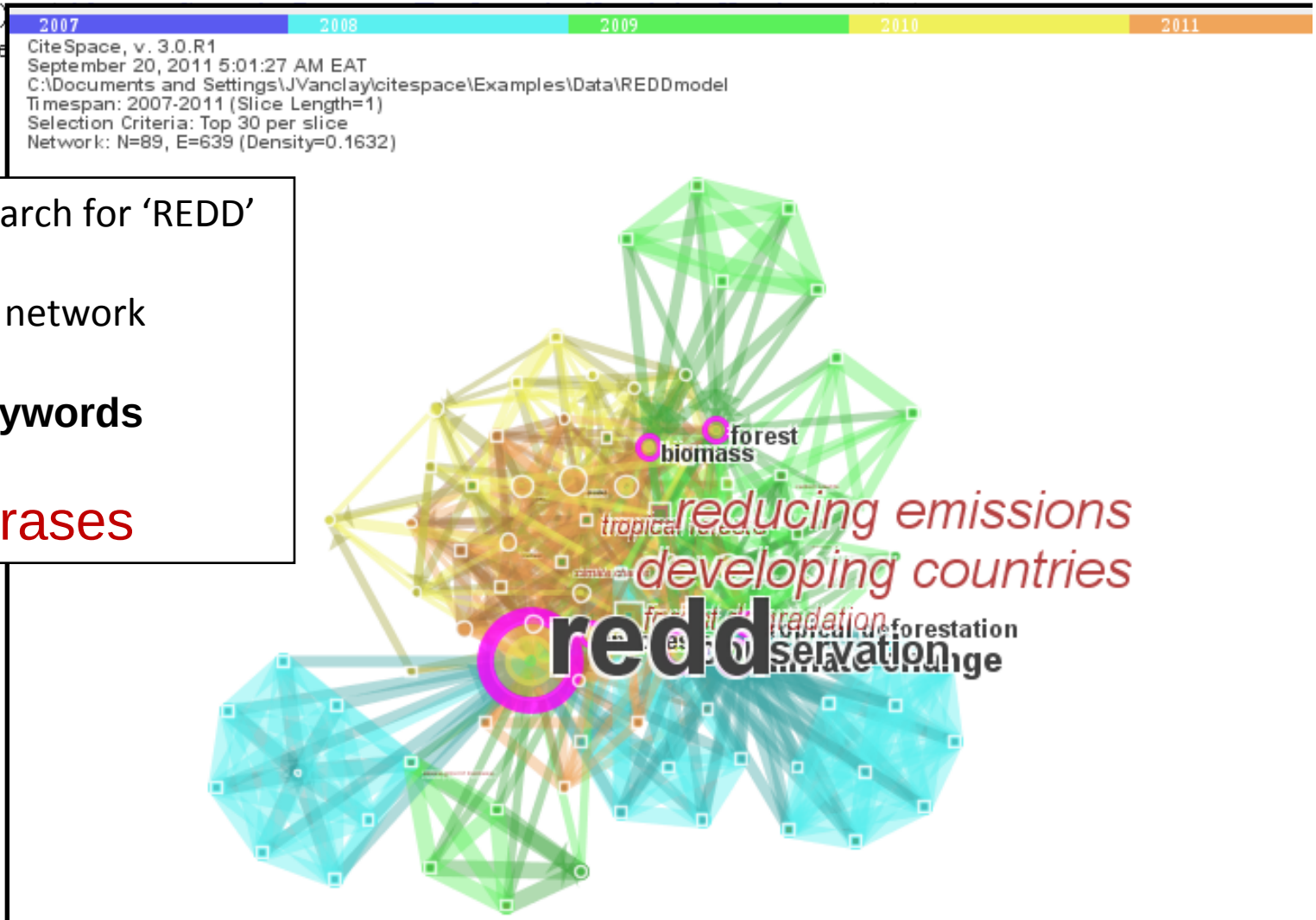
CiteSpaceII

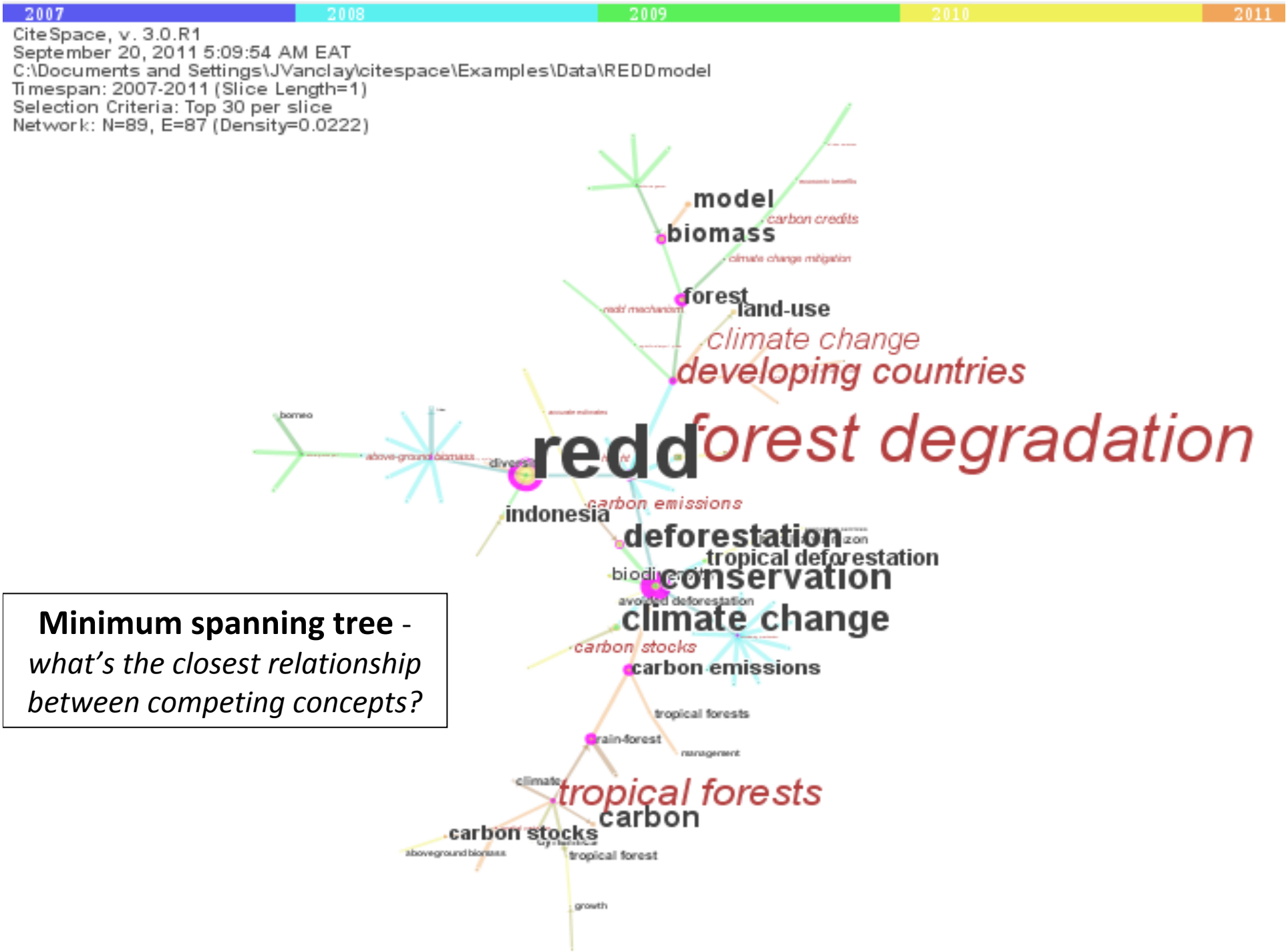
Web of Science search for 'REDD'

Co-concept network

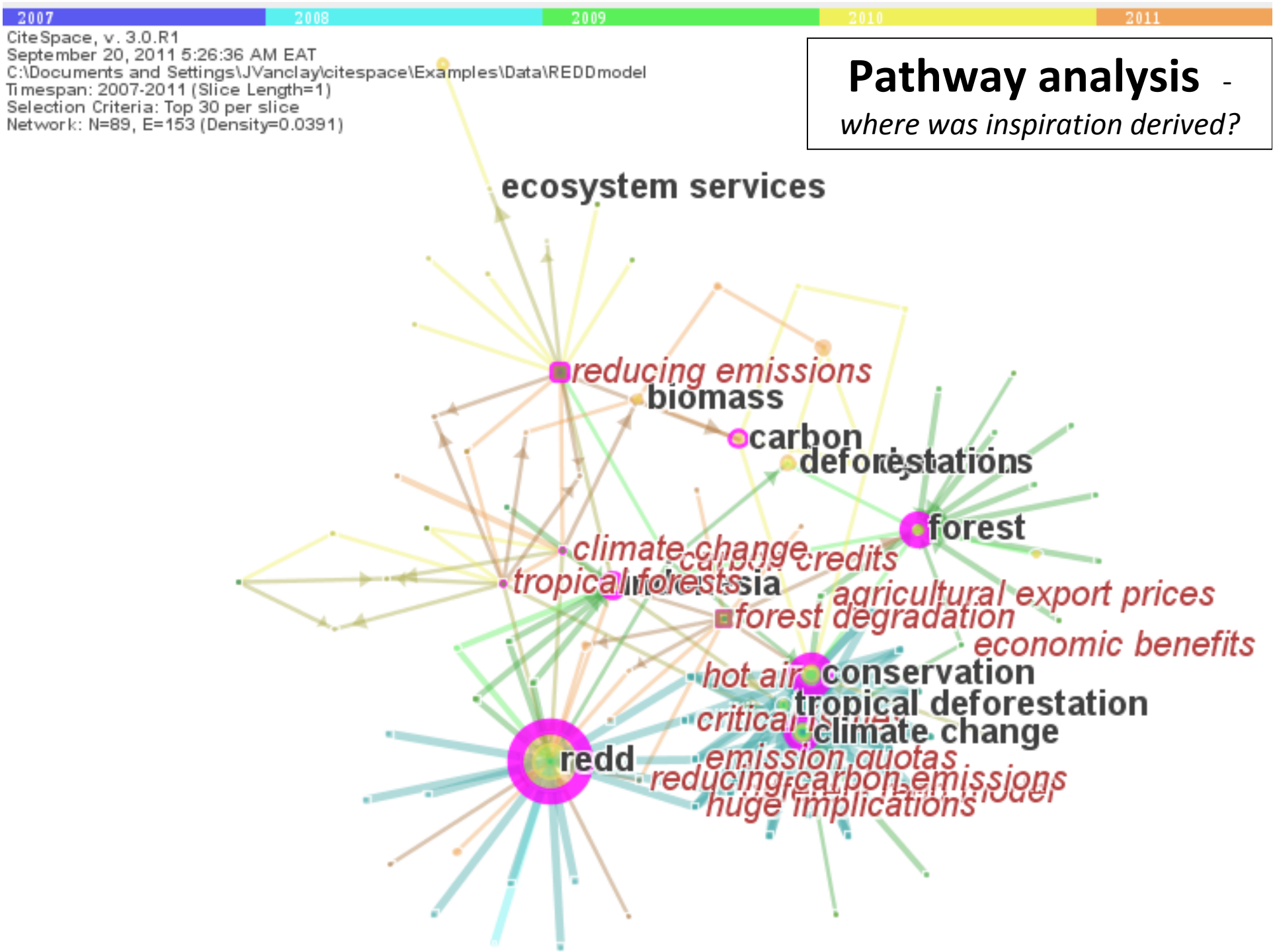
Author keywords

Text phrases

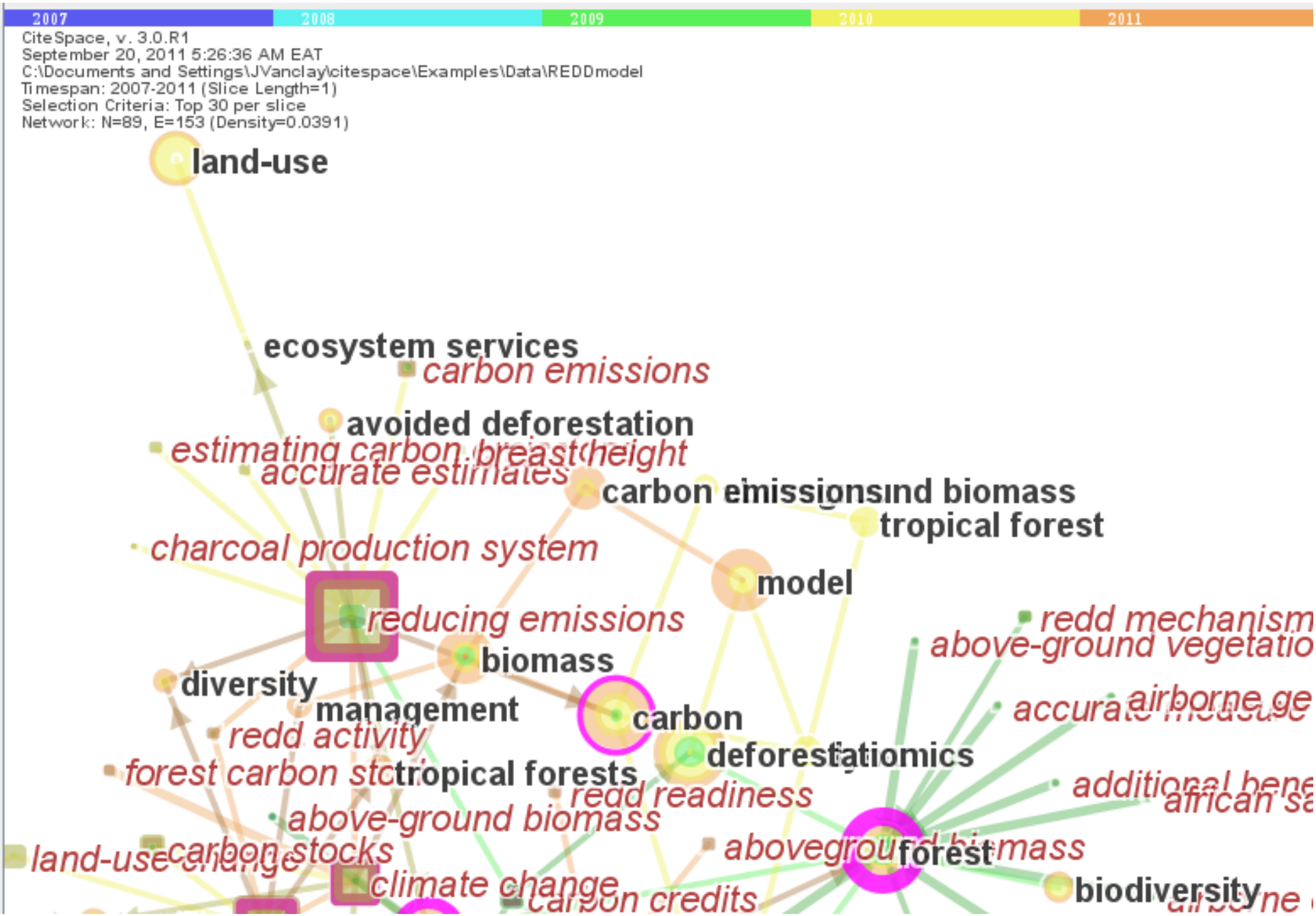




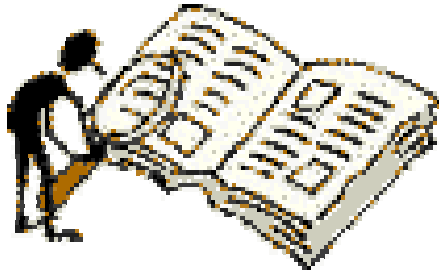
Minimum spanning tree - *what's the closest relationship between competing concepts?*


2007
2008
2009
2010
2011
CiteSpace, v. 3.0.R1
September 20, 2011 5:26:36 AM EAT
C:\Documents and Settings\JVanclay\citespace\Examples\Data\REDDmodel
Timespan: 2007-2011 (Slice Length=1)
Selection Criteria: Top 30 per slice
Network: N=89, E=153 (Density=0.0391)
Pathway analysis -
where was inspiration derived?
ecosystem services
reducing emissions
biomass
carbon
deforestations
forest
climate change
carbon credits
tropical forests
agricultural export prices
forest degradation
economic benefits
hot air
conservation
tropical deforestation
climate change
redd
emission quotas
reducing carbon emissions
huge implications

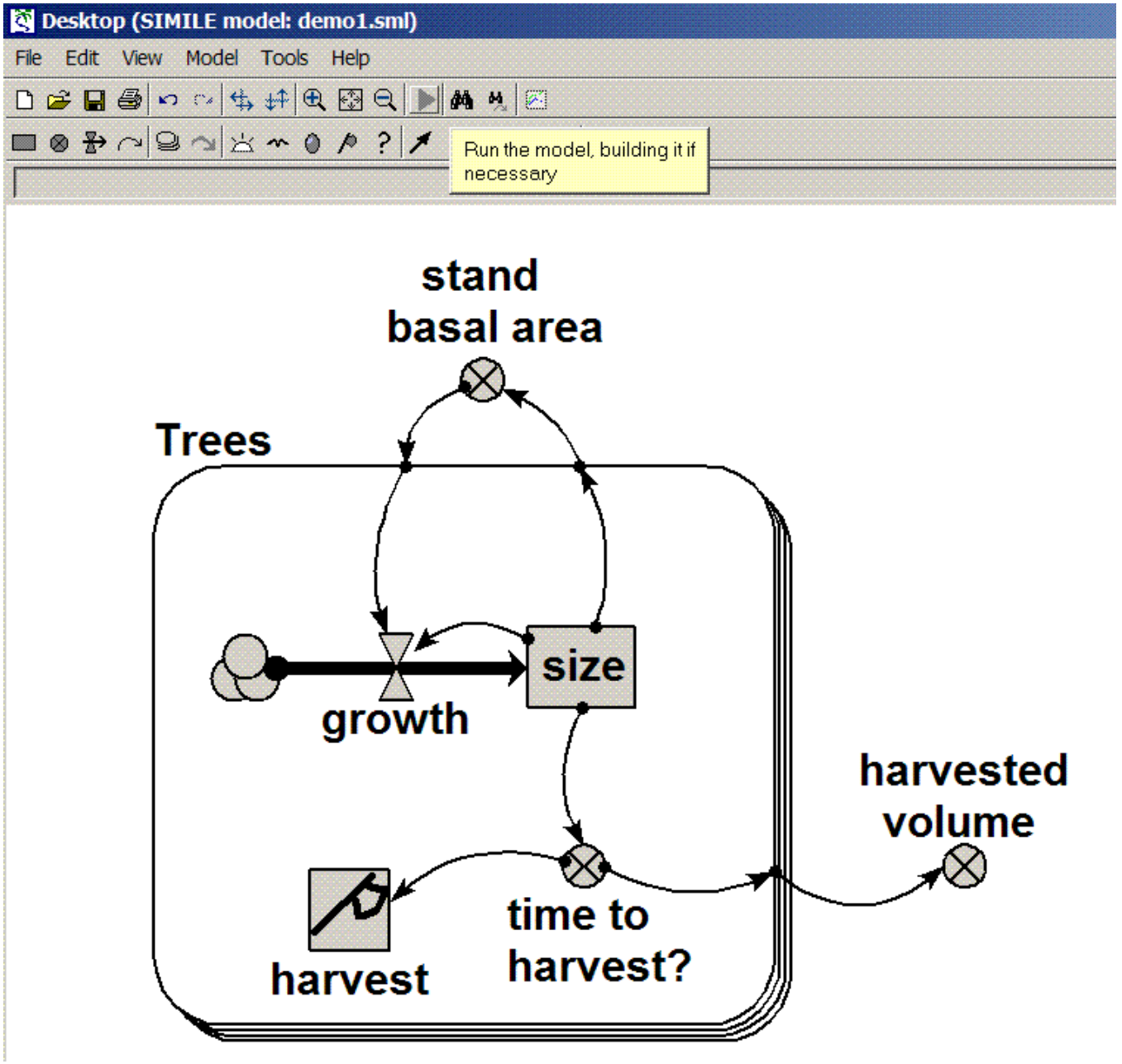
More detail from the recent ‘land use’ corner: where are the people?



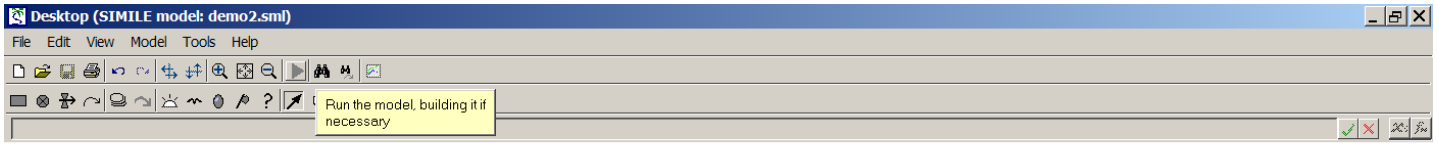
Detail / Scope	Process model (model the chemistry)	Empirical model (led by data)	'Rough n Ready' (best guess)
Field crops	☺☺☺☺☺	☺☺☺	😐
Trees	☺☺☺	☺☺☺☺☺	☺
Vegetation	☺	☺☺☺	😐
Biodiversity		☺	😐
Enviro-economics		😐	☹
Holistic socio-economics			☹

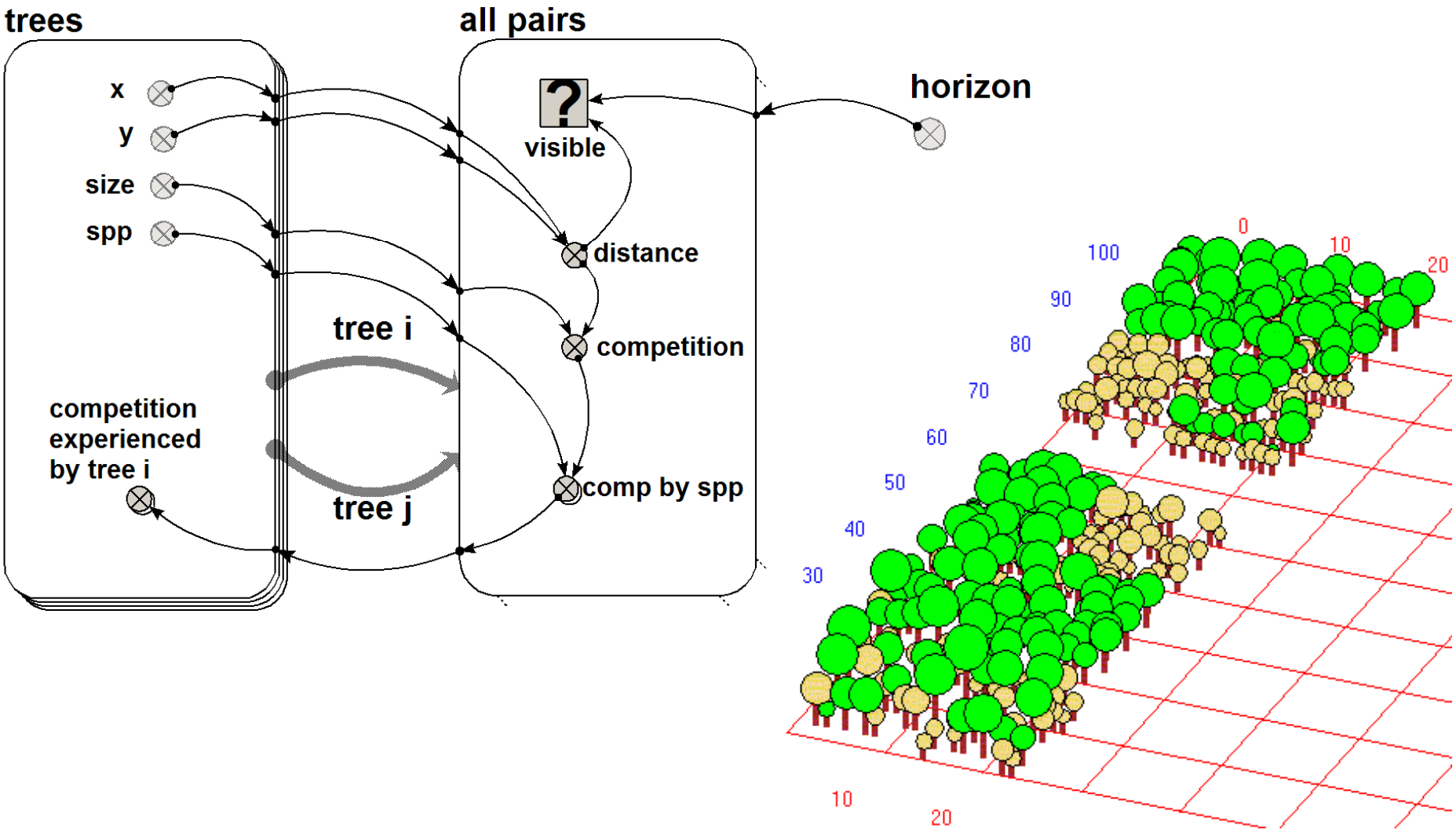


New tools: Simile from Simulistics.com

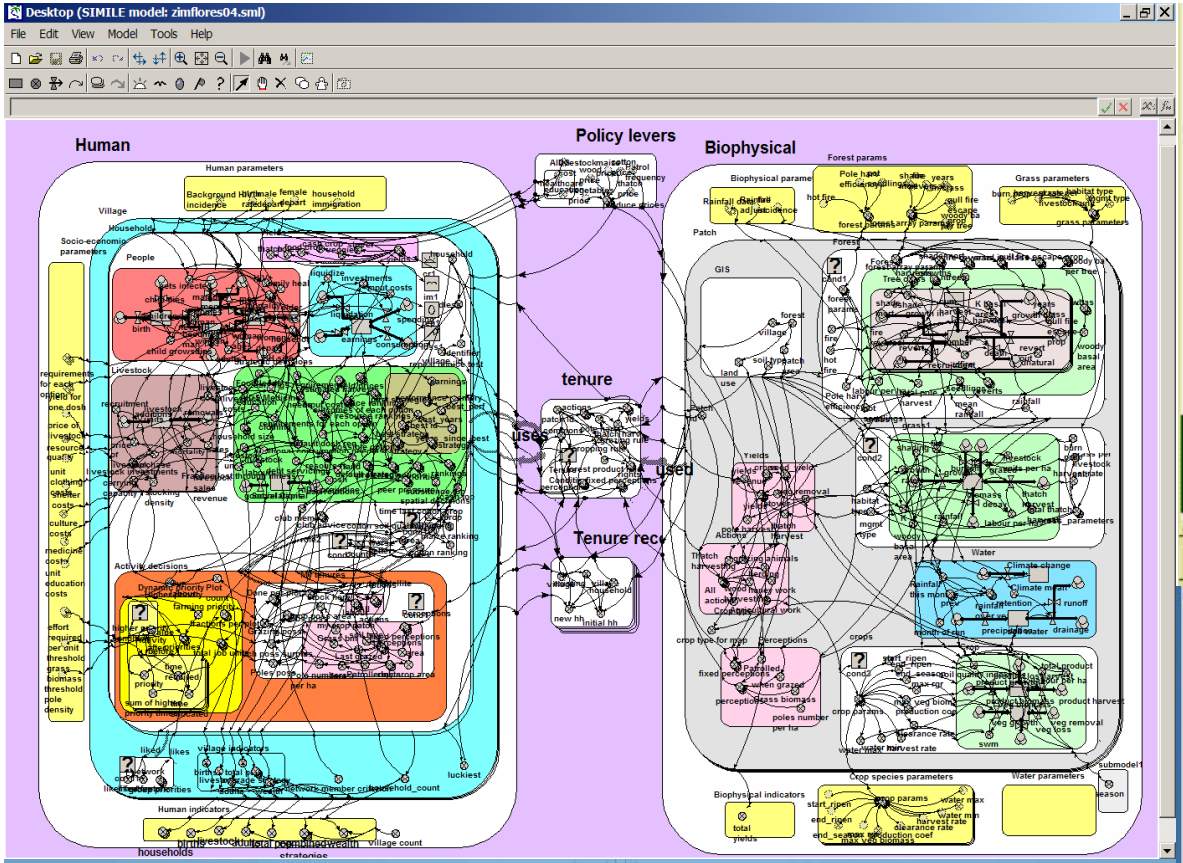


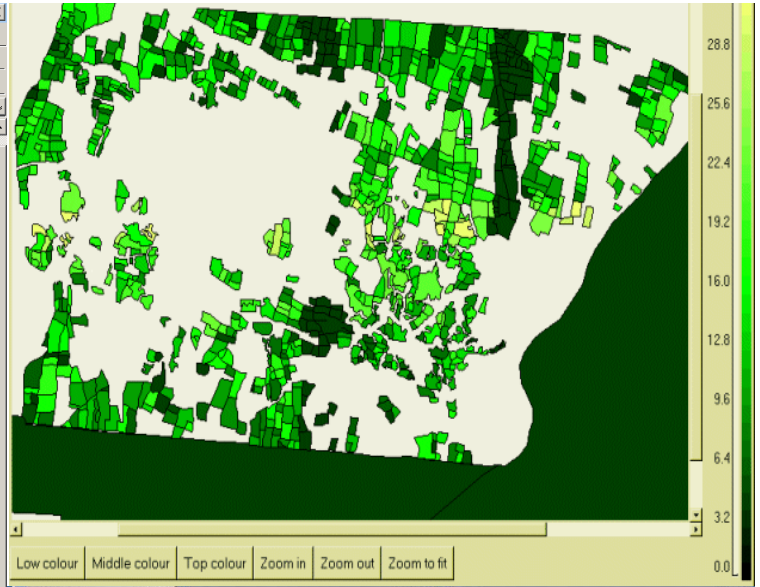
Simile: not a toy, a powerful tool

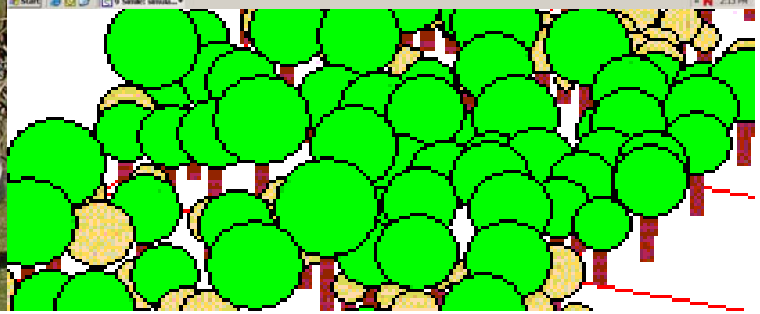




Two examples: (1) ZimFlores

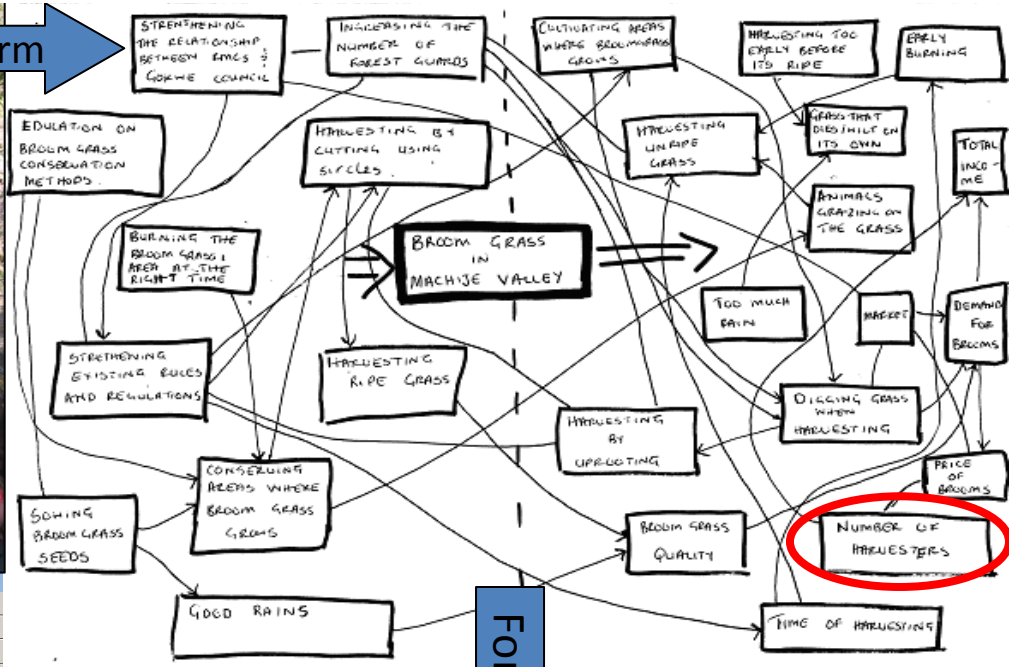

Desktop (SIMILE model: zimflores04.sml)
File Edit View Model Tools Help
Human
Policy levers
Biophysical
tenure
uses
used
Tenure rec


28.8
25.6
22.4
19.2
16.0
12.8
9.6
6.4
3.2
0.0
Low colour
Middle colour
Top colour
Zoom in
Zoom out
Zoom to fit

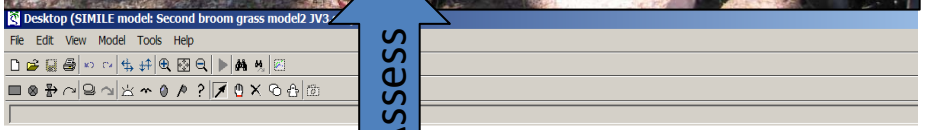


Sliders for inputs
Desktop:
Weekly rain:
inputs:
forest policy:
spare land
patrols
land alloc rule
Topical issues:
AIDS education
Livestock issues:
Willingness to sell stock
Load values
Save values
Run control
Run status and control
Run settings
Execute for
unit
Plotter
poles, run 1
poles, run 2
poles, run 3
Time
Plotter
thatch, run 1
poles, run 1
maize, run 1
thatch, run 2
poles, run 2
maize, run 2
thatch, run 3
poles, run 3
maize, run 3
Time
Plotter
pole harvest, run 1
pole harvest, run 2
pole harvest, run 3
Time
Plotter
wealth, run 1
wealth, run 2
wealth, run 3
Time
Plotter
basal area, run 1
basal area, run 2
Time
Plotter
this month, run 1
Time
1 = Status quo
2 = More guards
3 = Self-help
Pole harvest not so bad as pre-conception
Household income mainly from maize & thatch; increased by self-help
Self-help reduces pole harvest, but forest still important in drought
Self-help makes a big difference to household wealth in all 3 villages
Real rainfall data; drought year
Alternatives do not make big difference to basal area
Start
9 Simile: simula...
2:13 PM

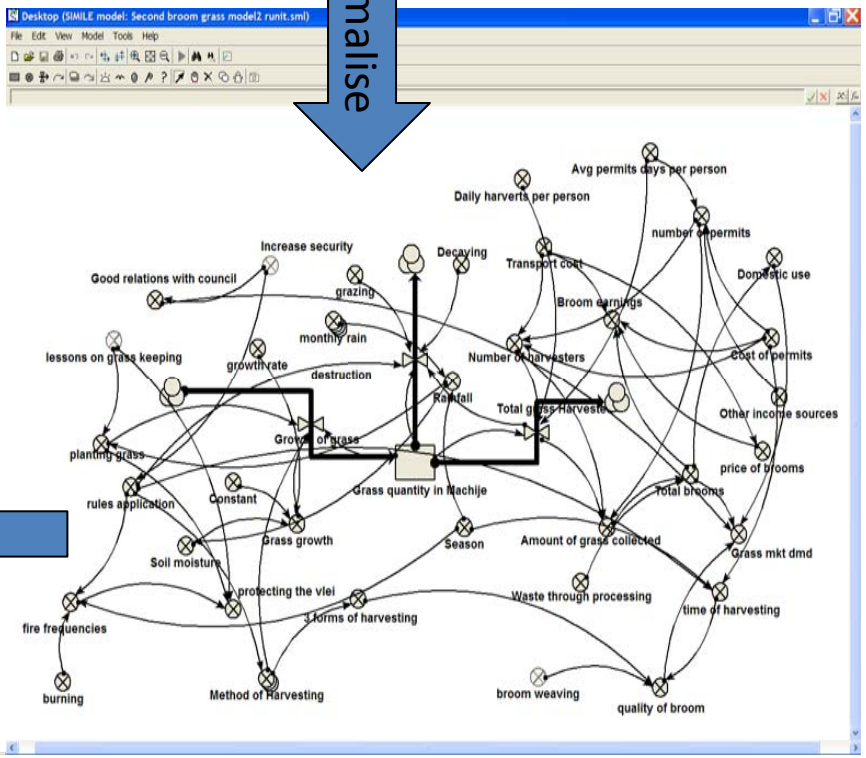
Brainstorm

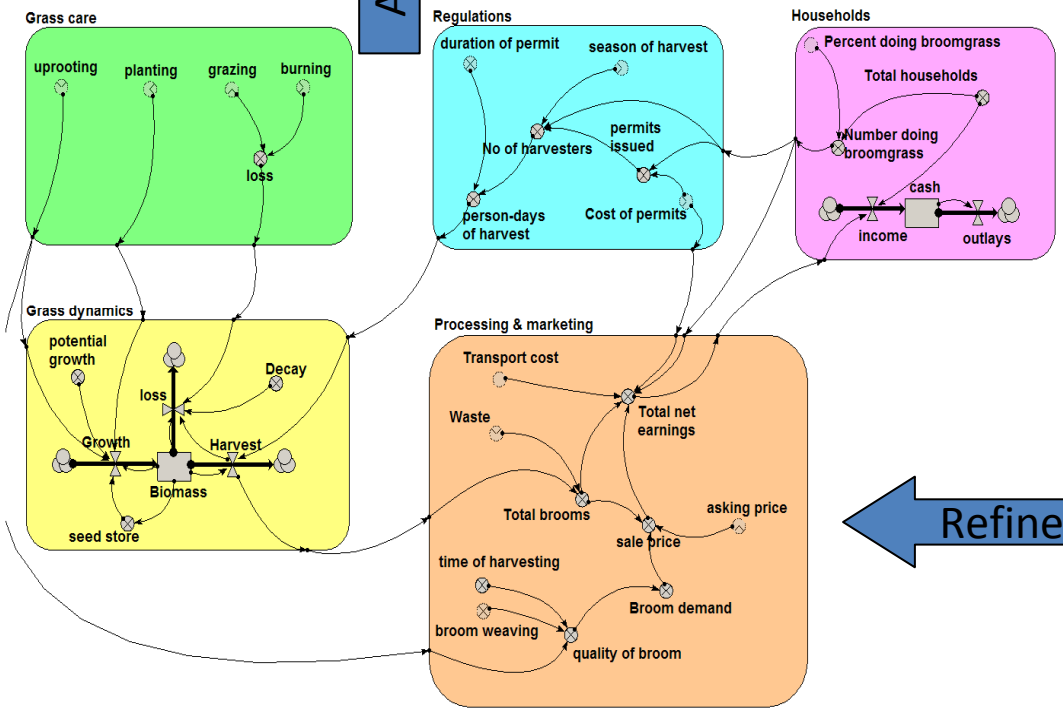


Assess



Formalise





Refine

The Bridge - untitled.brg

File Vision Help

New Open Save Print Context Present Strategy Future Transform Revision Action Game Setup

Transform

Will the strategy seek to increase or decrease the **Forest**?

(•) increase ( ) decrease ( ) stay the same

[x] Show Story [x] Show Graph

Story So Far

Forest is the first compartment in the model.
The strategy will aim to increase the Forest by influencing the flows into and out of Forest

Graph

< Back | Next > | Simile | Vensim | Refresh | Close | Help

Lessons from ZimFlores

Model the suspected solution, not the familiar problem

Invest in your ‘best best’: story, simulate, evaluate, iterate

Risk-free experiments – so experiment! What are implications?

Don’t need the ‘best’, just ‘best for now’ (which may be a guess)

Technical Report

Social learning study of Plantation Forestry in the Upper Clarence catchment of north-eastern NSW

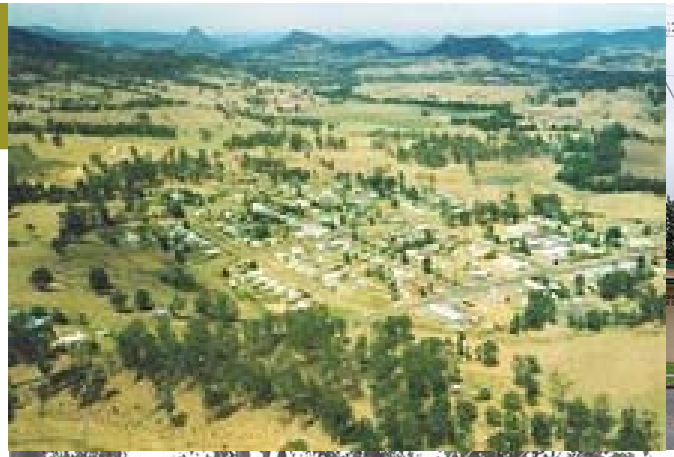
Authors:

Andrea Leys & Jerry Vanclay

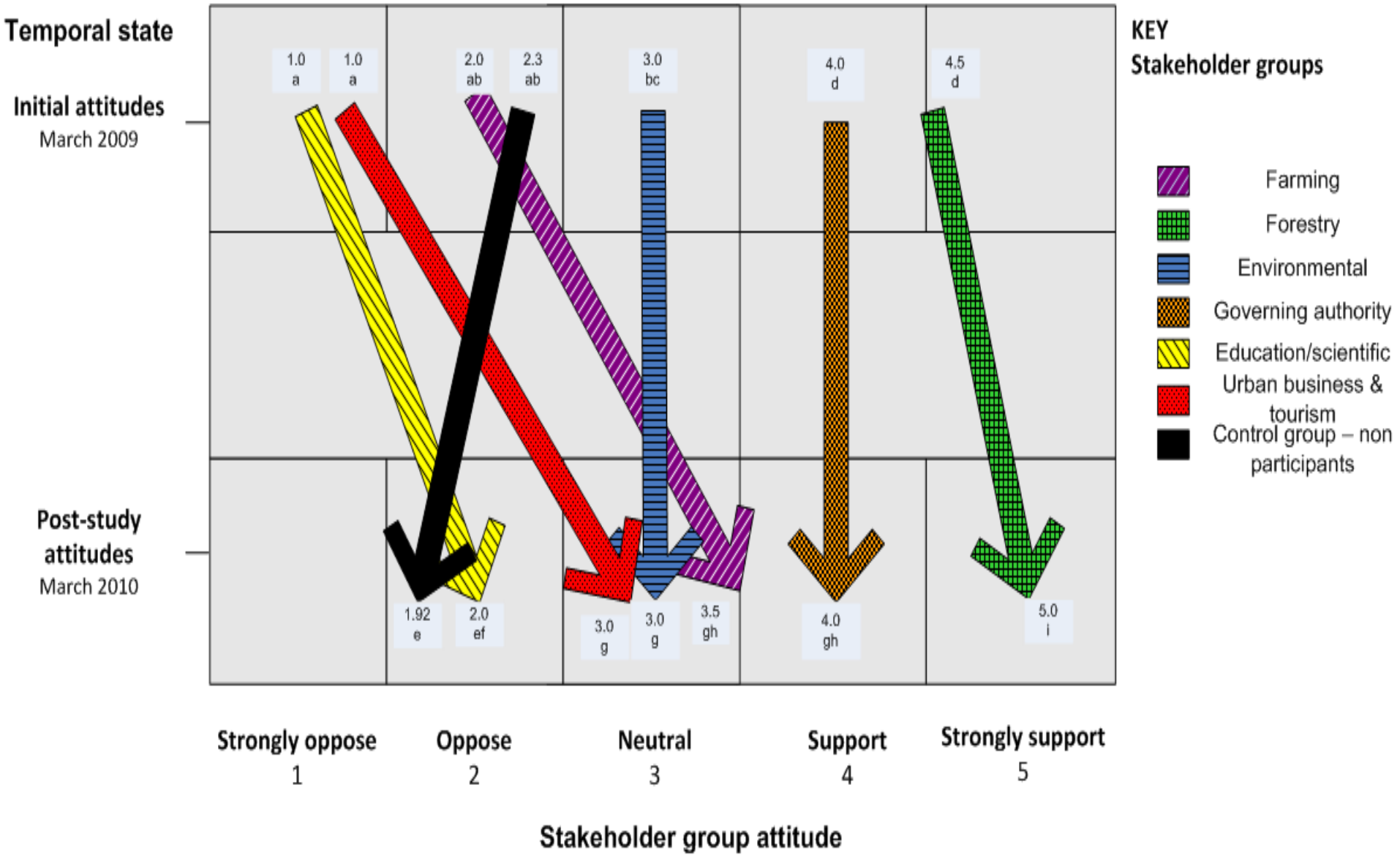
School of Environmental Science and Management

Southern Cross University

Lismore



Example 2: Social learning about industrial plantations



A.J. Leys & J.K. Vanclay, Practitioner's toolbox for mobilising social capital in adaptive landscape governance of natural resources. *Land Use Policy* **28**(3):574-584.

Modelling is useful, easy, influential …

Participatory – behavioural change

KISS, don't love models, disposable …

Internalize externalities

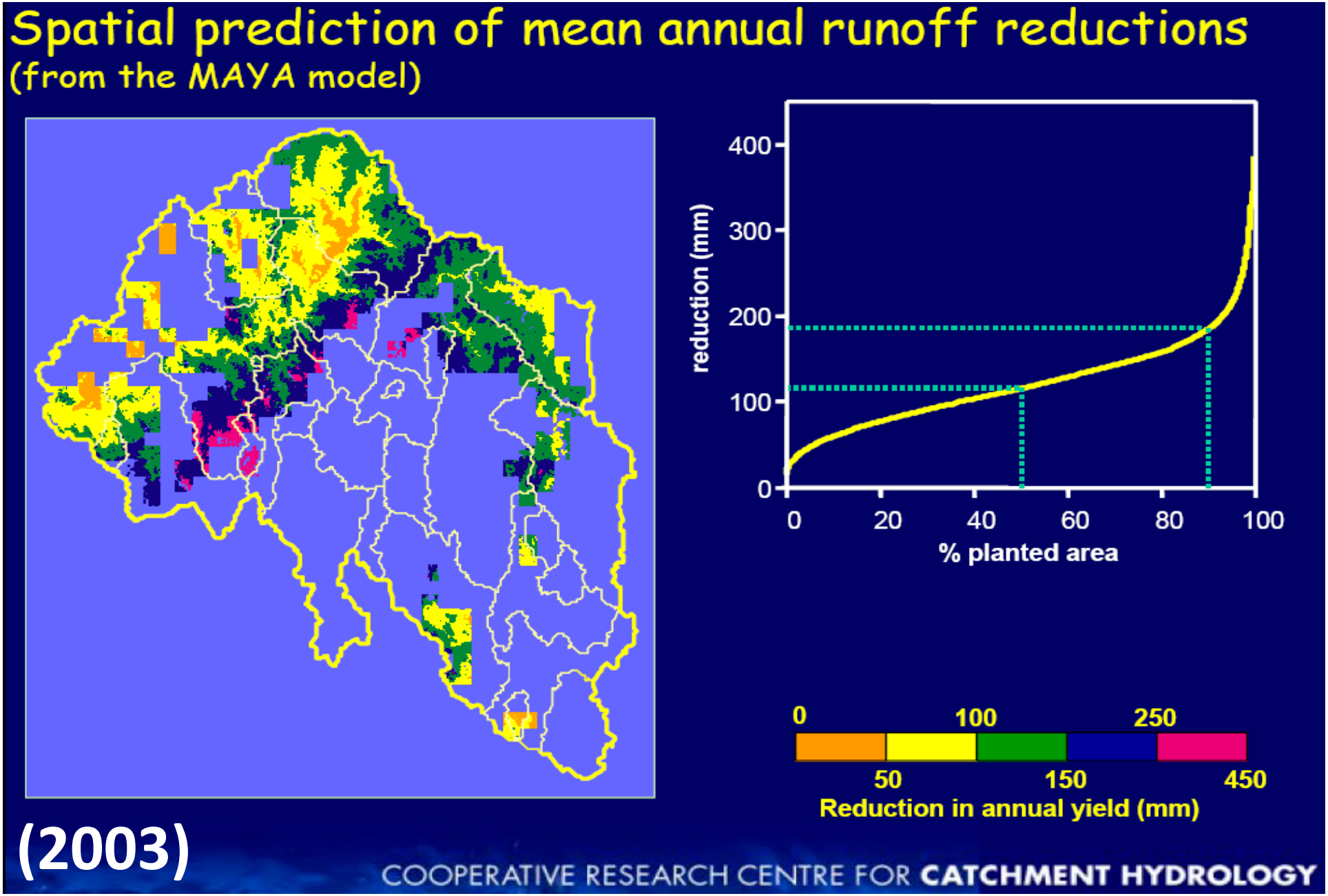
Quantify ecosystem services & values

… not to fit data, but to sharpen questions…

… 'practice-led' or action research …

… tackle 'wicked issues' but be transparent …

Some general lessons: Bounding the problem is critical…



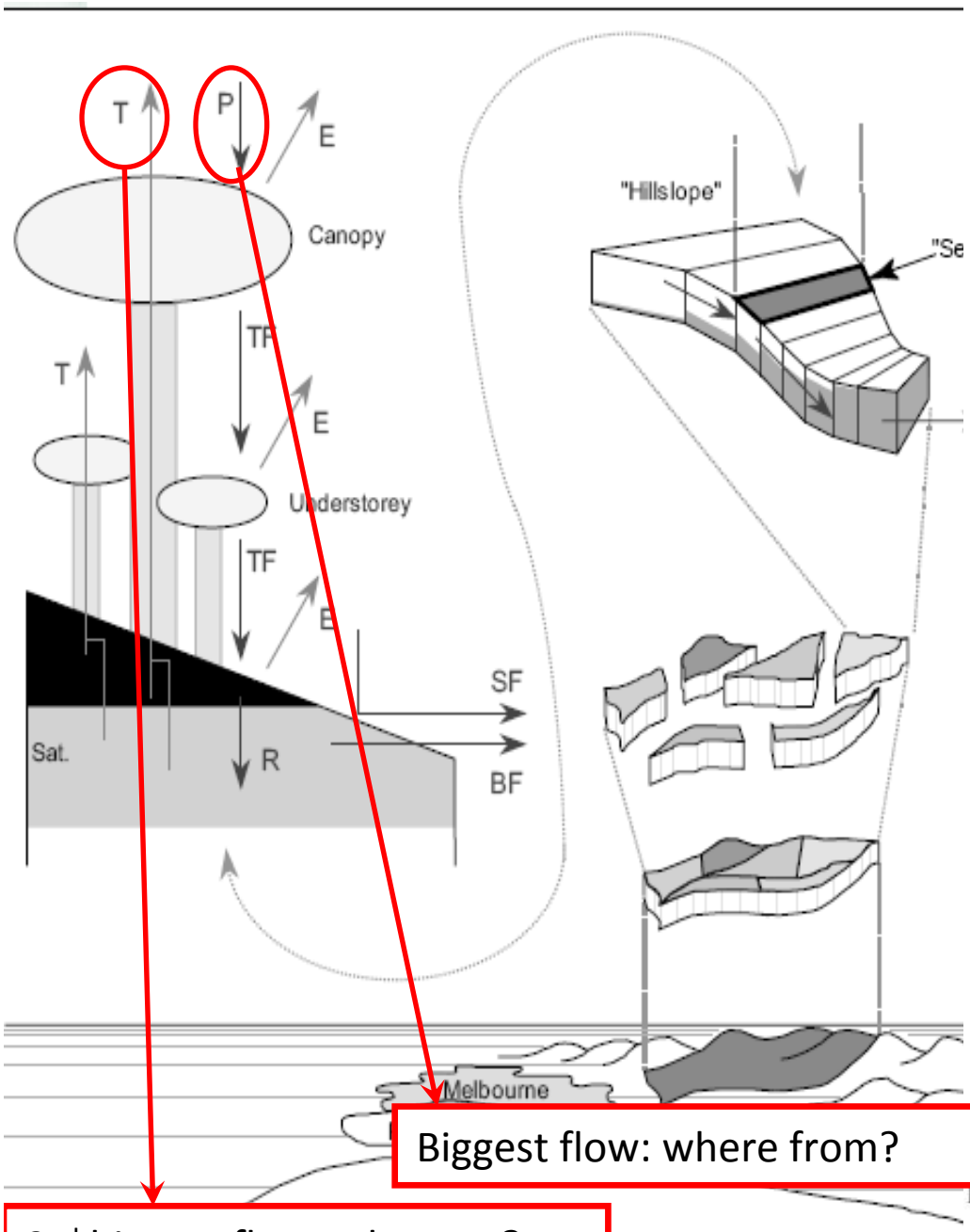


Figure 36: Schematic representation of the structure of Macaque. P = precipitation, TF = throughfa
T = plant transpiration, E = evaporation, R = recharge, SF = stormflow, BF = baseflow.

Biggest flow: where from?

2nd biggest flow: where to?

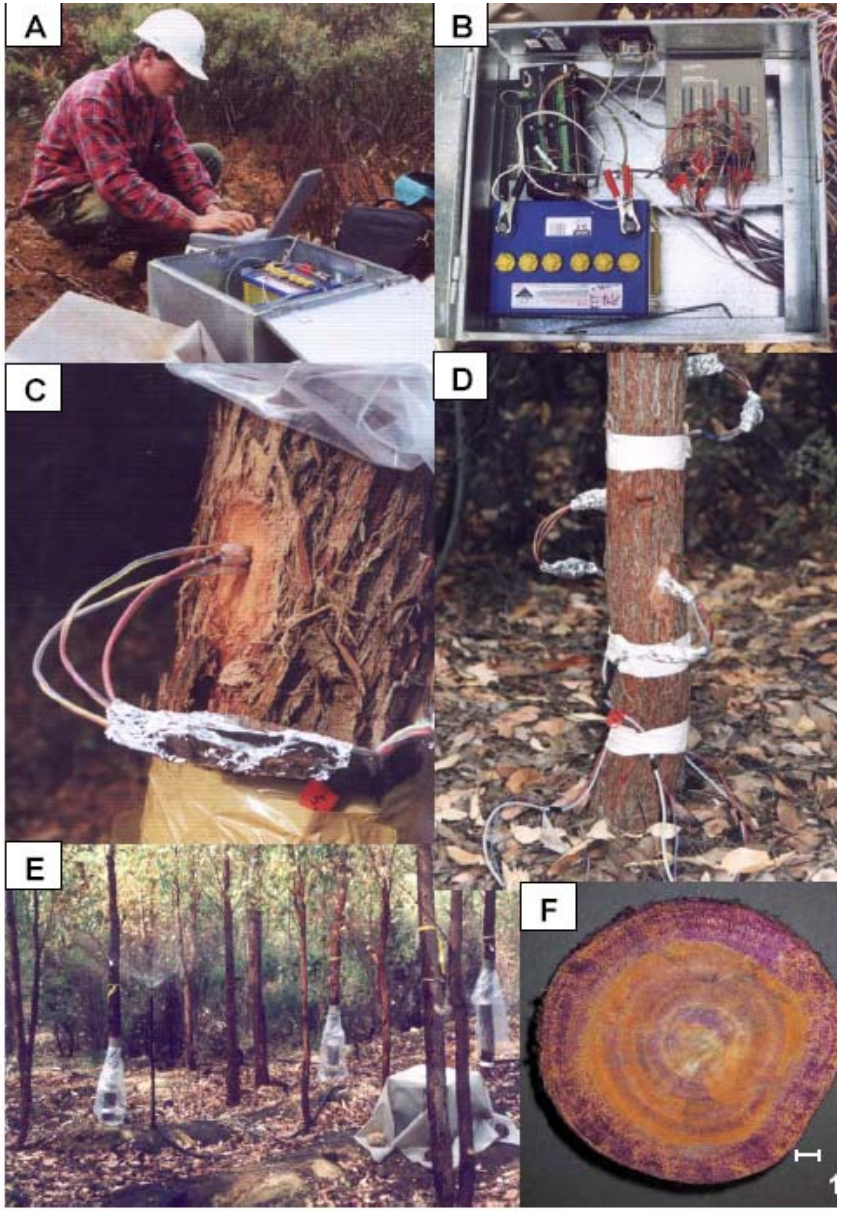
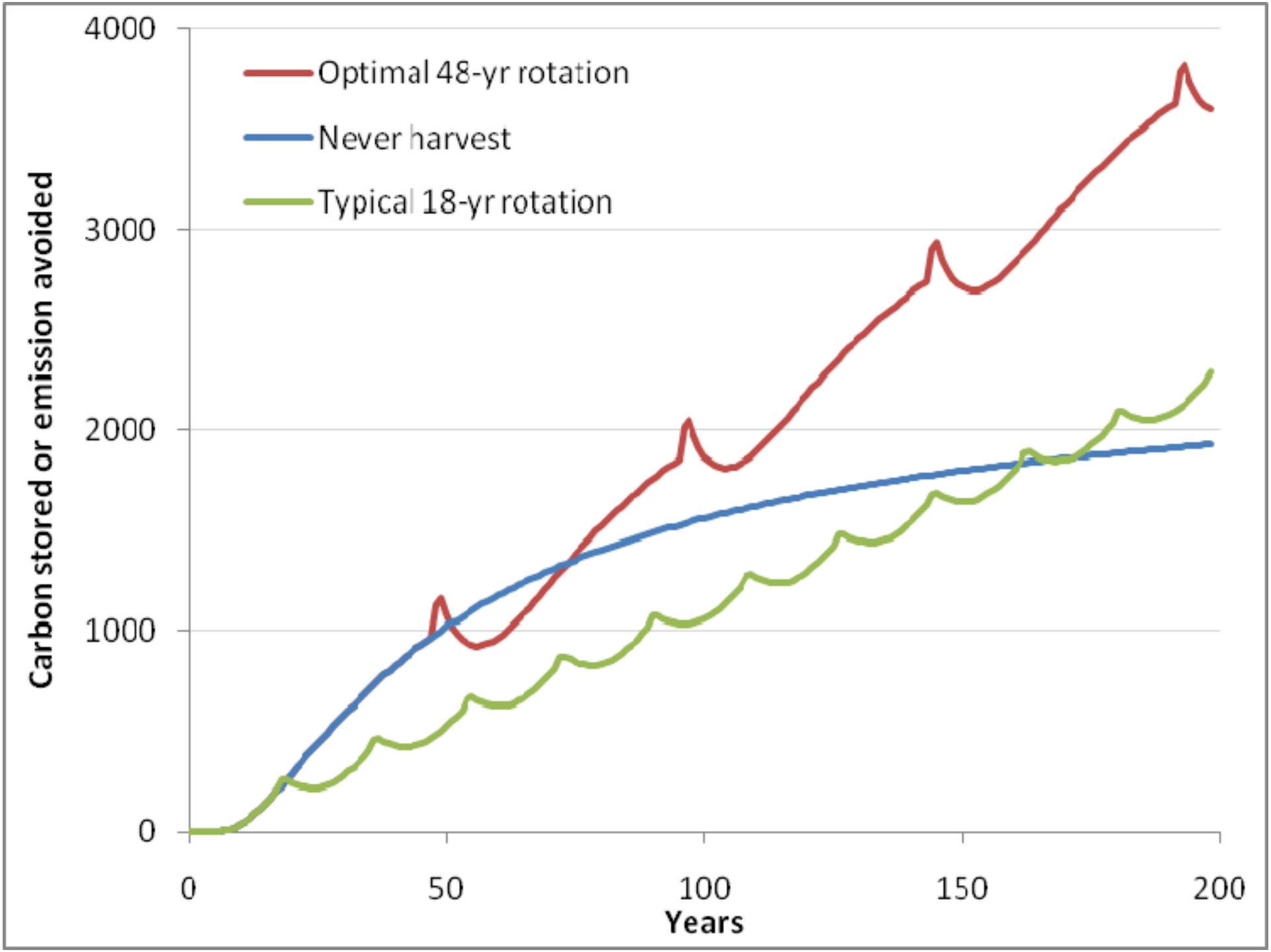


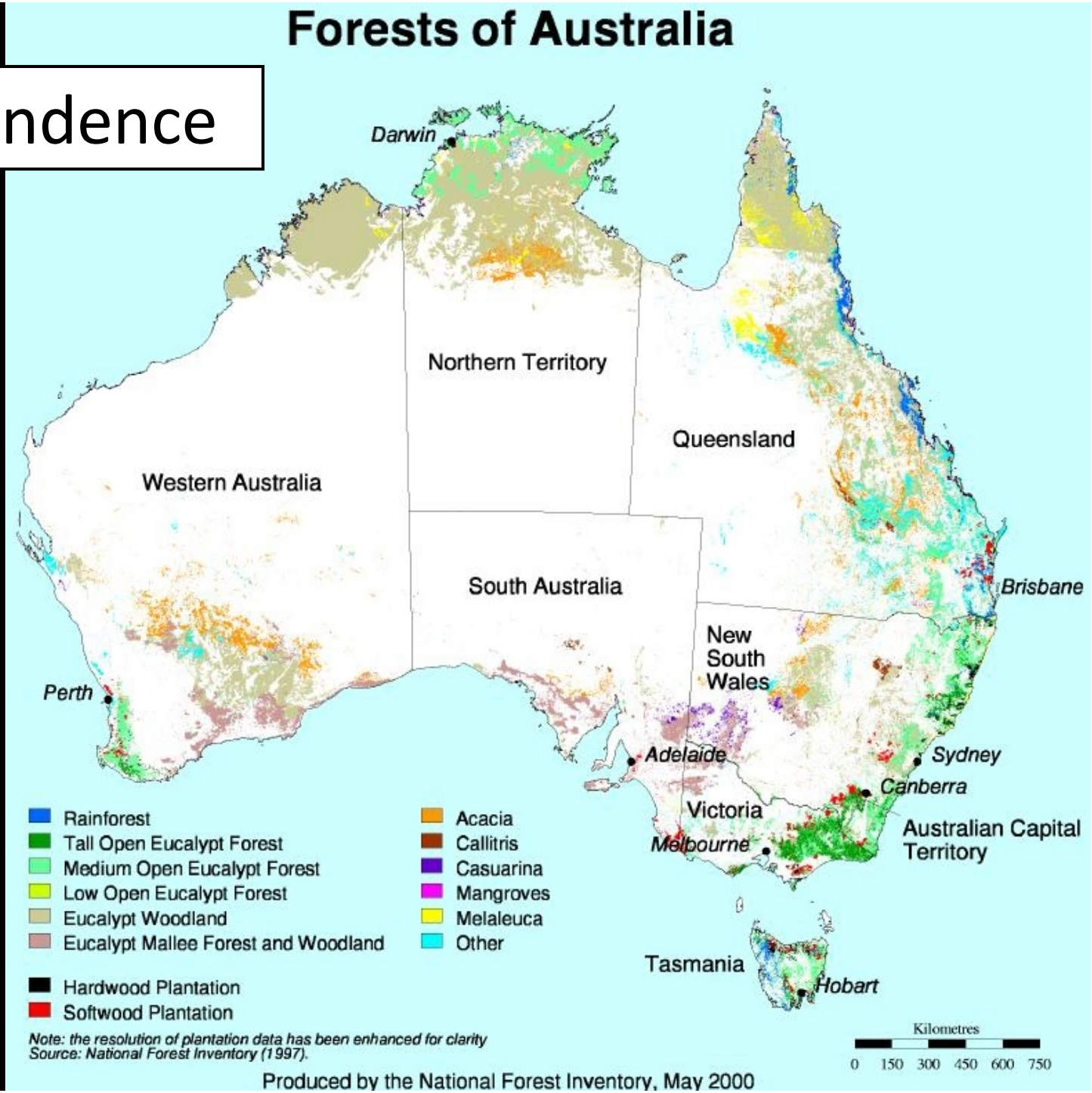
Plate 2.3

Heat pulse methodology, including: data retrieval (A), datalogger equipmen
single 'heat pulse probe' set (C), replicate probe sets in a jarrah sapli
measurements from replicate jarrah saplings (E), and a dye-stained wood disc s
the outer annulus of sapwood (F).

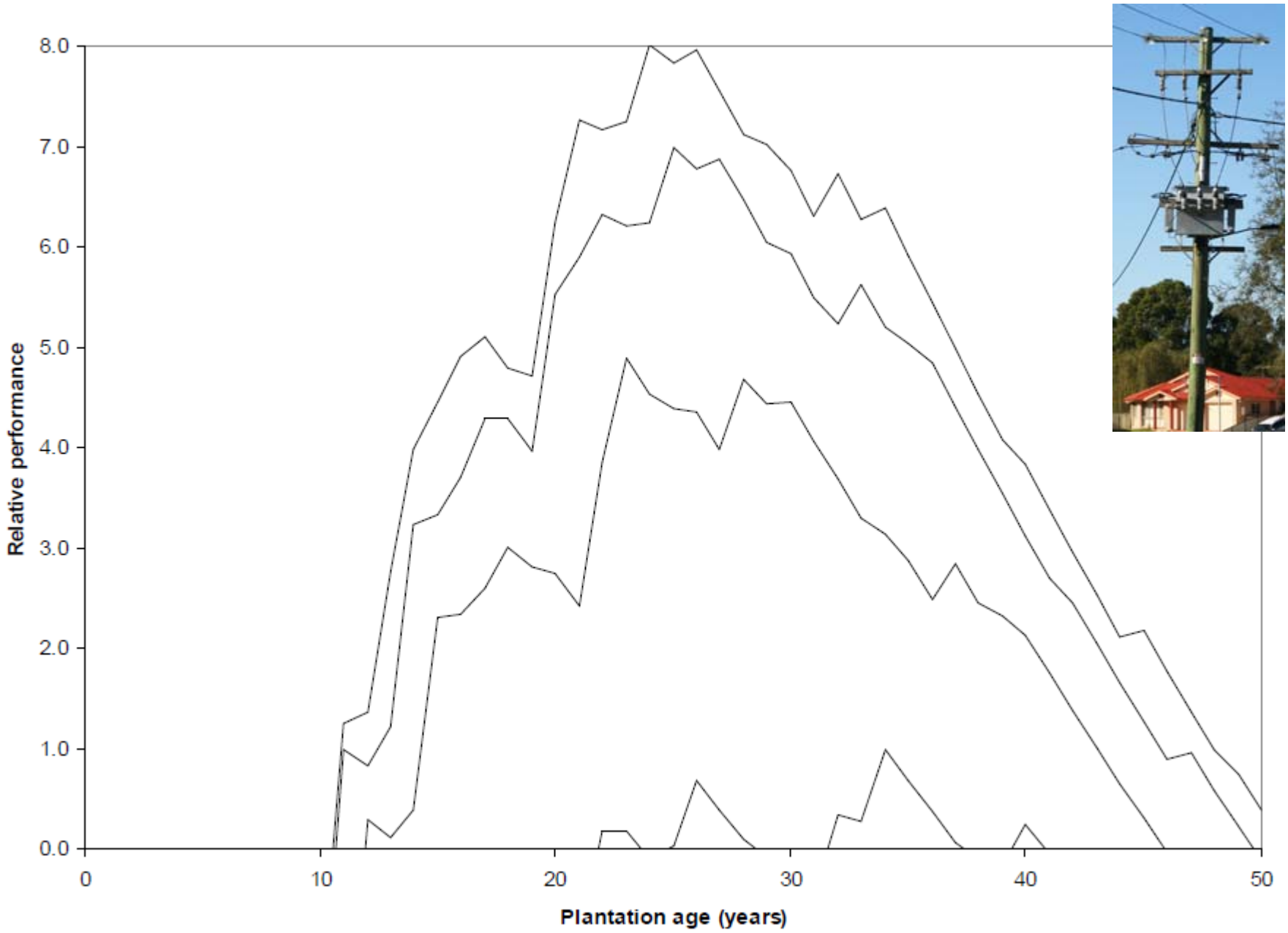

4000
3000
2000
1000
0
Optimal 48-yr rotation
Never harvest
Typical 18-yr rotation
Carbon stored or emission avoided
0
50
100
150
200
Years

ed stakeholders to confront the evidence

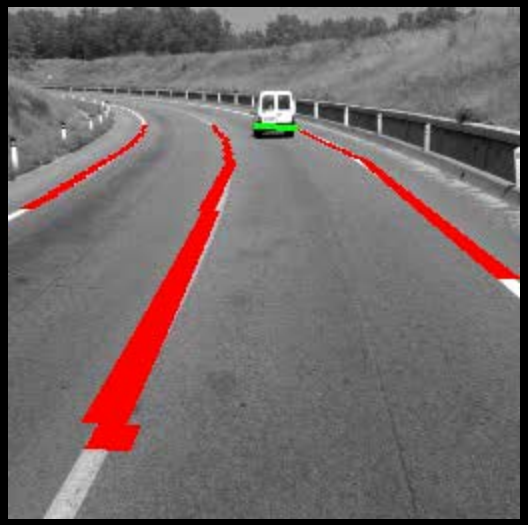
Scale dependence



The optimum in a rugged landscape: Keep several good options open for now…



Importance of feedback



A simple model with fast
feedback may be a good solution
for a complex problem

Names: getting a handle on scenarios and storylines

Click a Climatedog below to view animation:

Enso rounds up tropical moist air in the Equatorial Pacific Ocean

Indy delivers moisture from the Indian Ocean

Sam influences the strength and frequency of cold fronts over Victoria

Ridgy and high pressure systems can block rainfall in Victoria

Where to go for more information

DPI has more information about climate variability, climate change and emissions. click on the links below to find out more;

- The latest DPI monthly climate update
- The Break – seasonal climate newsletter for broadacre industries
- The Fast Break – a round up of climate model predictions for coming months

To conclude….

Getting a ‘handle’ on the issues…

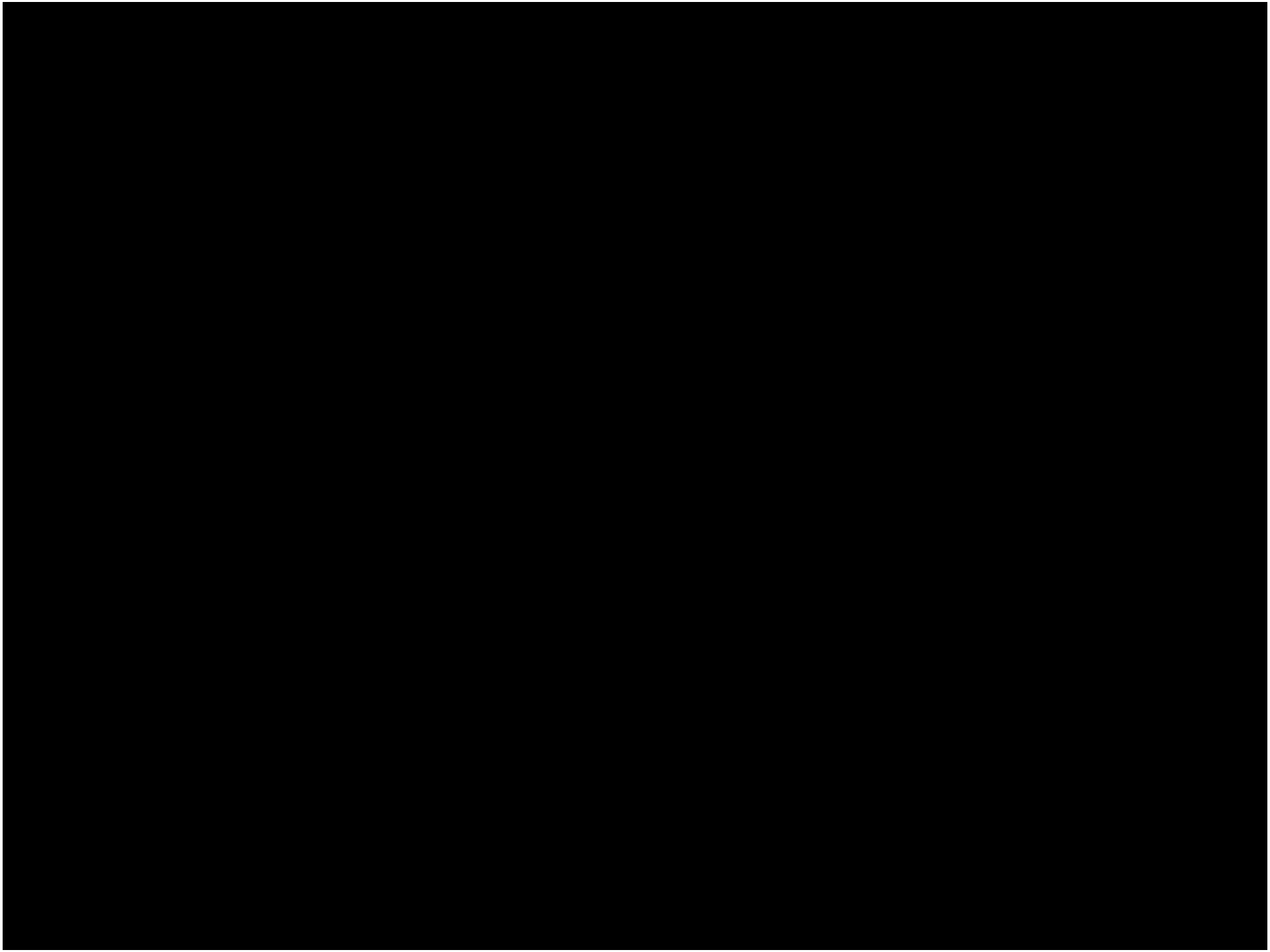
Be prepared to leave ‘comfort corner’

KISS - Keep it simple

There is a time: model and scenario may be disposable

Hazards: bounding, scale-dependence, feedback

‘Options open’ often more important than optimum



Scenarios workshop - Forest & ecosystem modelling

How scenarios can support the progress of REDD+

contribute to delivering multiple benefits (… help leverage new investments)

How scenarios can help stakeholders plan

qualitative scenarios to envision institutional steps for planning and implementing

How scenarios can help visualize impacts in-country

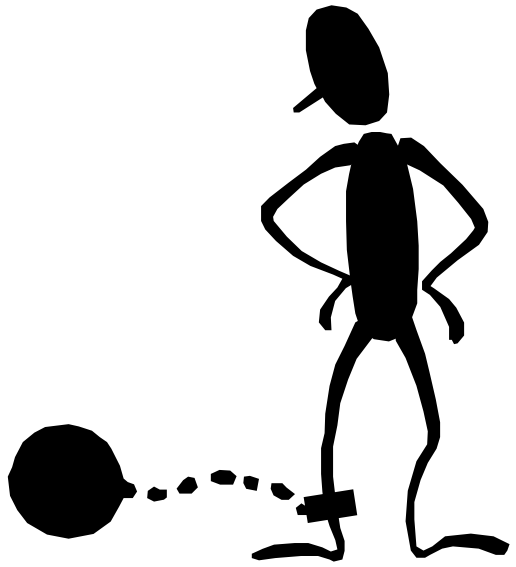
Develop scenarios of possible futures resulting from REDD (Storylines + analysis)

Change from …

Prescriptive

Punitive

Passive



To …

Outcome-oriented

Incentive-based

Reflect dynamics