TOWARDS A NATIONAL ECOLOGICAL INFRASTRUCTURE MAP:
WHAT SHOULD WE DO IN THE NBA?

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INTRODUCTION:

- We have maps of Ecological Infrastructure:
  - Specific districts, catchments and provinces
  - Focus on specific aspects of EI (e.g. water related EI)
- Some national maps of areas potentially important for selected ecosystem services
- However, we have not yet attempted an integrated national EI map
  - National Biodiversity Assessment is opportunity for this
INTRODUCTION:

- Explore:
  - Purpose in the NBA
  - Process for mapping
  - Types of EI
  - Potential EI features which could realistically be mapped nationally
  - How we could do this

- Issues:
  - Prioritization & demand side
  - “Status” of EI
  - Can we examining trends over time
  - A first cut “national EI” account
ECOLOGICAL INFRASTRUCTURE

- Naturally functioning ecosystems that generate or deliver valuable services to people
  - e.g. fresh water, climate regulation, soil formation and disaster risk reduction

- Ecological infrastructure includes
  - healthy mountain catchments, rivers, wetlands, coastal dunes, nodes & corridors of natural habitat, which form a network of interconnected structural elements in the landscape
WHAT ARE WE TRYING TO DO IN THE NBA?

- Illustration?
- Making the case?
- High level national map of EI supply?
- Specific mapping / assessment of EI supply???
- High level prioritization of Critical EI??
- Specific prioritization of Critical EI??
- Status of EI??
- EI trend over time??
- Experimental EI account????
PROCESS

<table>
<thead>
<tr>
<th>EI features register</th>
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<tbody>
<tr>
<td>EI for water security</td>
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<tr>
<td>EI for food security</td>
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<tr>
<td>EI for disaster risk protection</td>
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<td>EI for carbon security</td>
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<td>EI for ecotourism</td>
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<table>
<thead>
<tr>
<th>EI supply map</th>
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<tbody>
<tr>
<td>Full basket of EI assets</td>
<td>Some areas will deliver multiple services</td>
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<tr>
<td>Some areas will supply more services</td>
<td>Condition</td>
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</tbody>
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<table>
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<tr>
<th>Critical EI map</th>
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<td>Prioritize in terms of demand</td>
<td>High demand</td>
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WHAT ELEMENTS COULD/SHOULD WE MAP?

**Areas important for water security**
- Strategic Water Source Areas
- Specific rivers & wetlands

**Areas supporting food production**
- Fisheries
- Grazing of natural veld

**Climate Change & Disaster risk mitigation**
- Dunes and coastal setbacks
- Areas for Ecosystem-based Adaptation to Climate Change

**Areas supporting other industries**
- Nature based tourism?
- Recreation??

How do we avoid this becoming too big and diffuse?
How do we avoid it becoming the benefits chapter of the NBA?
EXAMPLE: WATER SERVICES RELATED ECOLOGICAL INFRASTRUCTURE

Rule based mapping of water services related EI

• ID which specific features are most important for delivering that service
• Mapping at quite a fine scale
• Uses nationally available datasets
• Proven method already applied at a provincial scale

Similar method applied to:

• Umgeni/ Alfred Nzo / Olifants / Mpumalanga / Here
Ecological Infrastructure for Water Production
DISCUSSION ISSUES:

- Prioritization & demand side
- “Status” of EI
- Trends over time
- A first cut “national EI” account
Transfer of services

Rural poor vs urban economic requirements

Extreme social vulnerability

High disaster risk

Strong direct environmental dependencies

High demand vs high dependence

Critical EI
DEMAND: WHAT HAVE WE DONE SO FAR?

- Some projects have had a clear user or demand
  - Umgeni water supply related work
- Other projects have had a clear mandate
  - Strong links to services important for poor & resource dependent rural communities
  - Projects with NGOs wanting tighter link to social issues
Wood for heating

Lack of access to piped water

Building materials for traditional dwellings
Overall Social Demand (Natural and Degraded Habitats)
STATUS OF EI

- So far we have linked our EI mapping processes to ecological condition of places with important EI features
  - Natural – avoid loss & protect
  - Degraded – rehabilitation
  - Lost – manage impacts
- It is a small leap to EI threat status & even protection levels
  - Set a target & evaluate against this
- But should we??

Also protection levels????
TRENDS

- If we assume a link between landcover change and the ability for an area to deliver services
- We can use the DEA repeat landcovers to evaluate change in EI between 1990 and 2013-14
- Get some idea of the types of activity where we have the biggest issue in terms of EI
**NATIONAL EI ACCOUNT**

- EI refers to the underlying natural asset that delivers a service
- It is generally easier to measure the available “capital” rather than the flow of benefits (i.e. the actual services)
- An EI account could equate to Ecosystem Services Generation Account
- Should we use the NBA to do a very experimental first cut of a national EI account?
CONCLUDING COMMENTS

- Why are we wanting to include EI in the NBA?
  - What is the purpose?

- I feel we should use the NBA to produce an integrated national EI map
  - Carefully consider what we map
  - Serious issues tied to moving to a Critical Ecological Infrastructure map (i.e. including demand side) at a national level

- Explore:
  - “Status” of EI
  - Trends over time
  - A first cut “national EI” account
THANK YOU

- Questions?