

Possible Vulnerability Assessment Methodology for Prioritizing Ecosystem-based Adaptation Interventions

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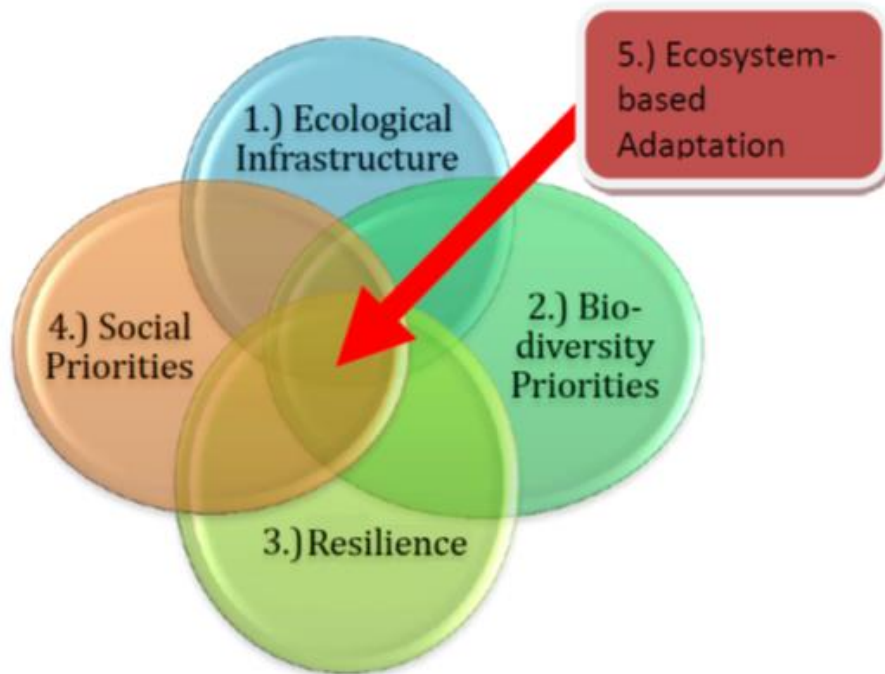
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Ecosystem and Socio-economic Resilience Analysis and Mapping

- ESRAM Process:
 - to inform the identification of ecosystem-based management options for strengthening resilience to the impacts of climate change and other environmental stressors by assessing vulnerabilities and opportunities.

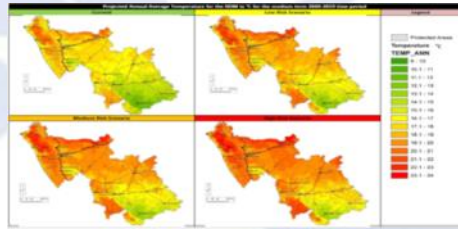
Ecosystem and Socio-economic Resilience Analysis and Mapping



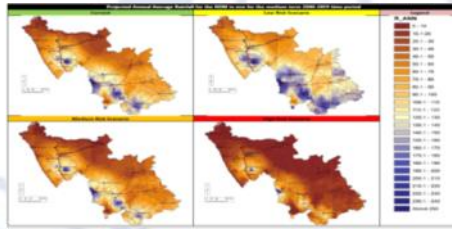
Habitat Stability to Climate Change

- Use various climate variables
 - What is available
 - What do you believe is important
- Can use a variety of proxys for habitat
 - Land Cover
 - Vegetation
 - Biome

Habitat Stability to Climate Change



Annual Average Temperature

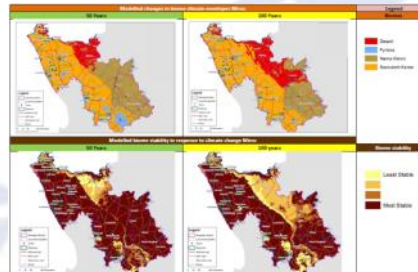


Annual Average Rainfall

Biome/Habitat/Vegetation

Model Predicted changes
in habitats based on
predicted climate
envelopes

Habitat Change Prediction

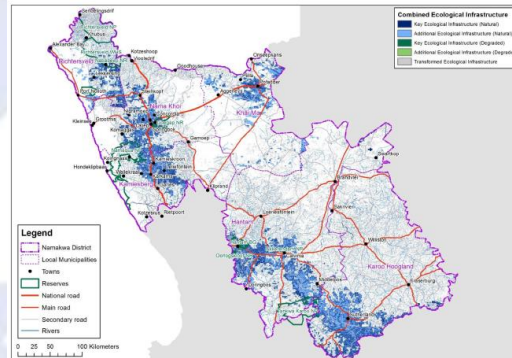
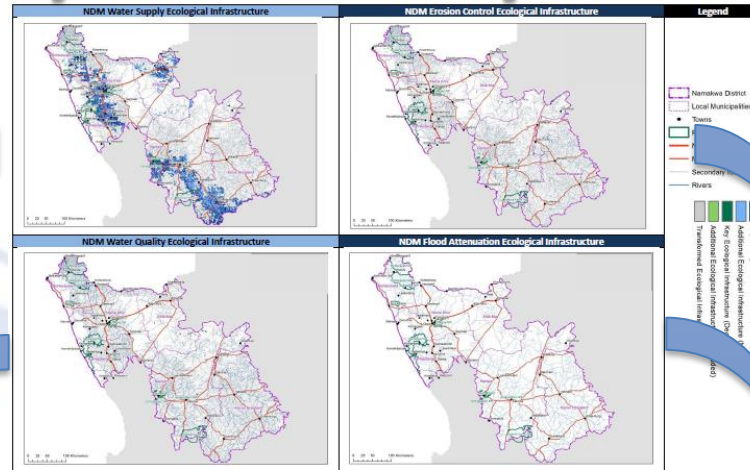


habitat
stability

Priority Water Ecosystem Services

- Flood Attenuation
- Stream flow Augmentation
- Erosion Control
- Sediment trapping
- Etc.

Priority Water Ecosystem Services



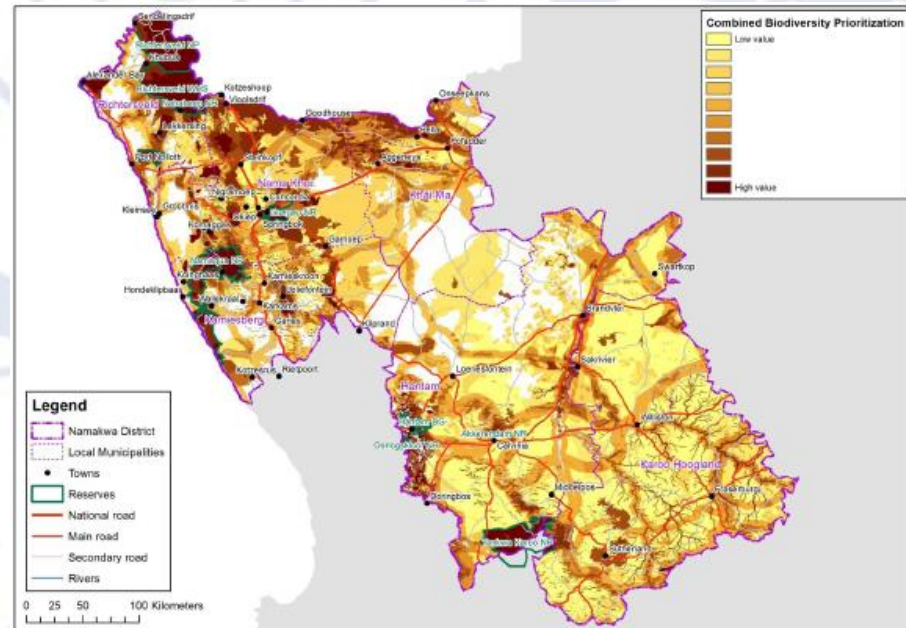
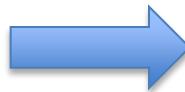
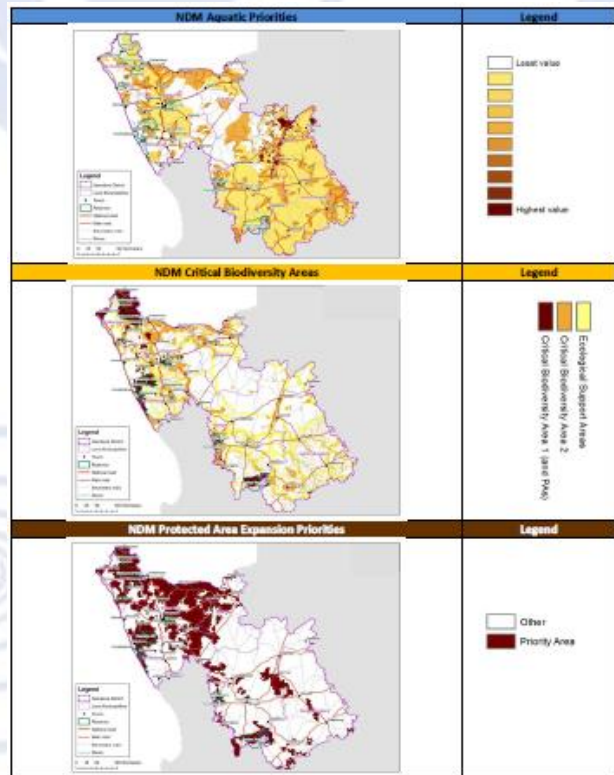
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Priority Biodiversity Infrastructure

- Aquatic Priorities
- Critical Biodiversity Areas
- Protected Area Expansion Priorities

Priority Biodiversity Infrastructure



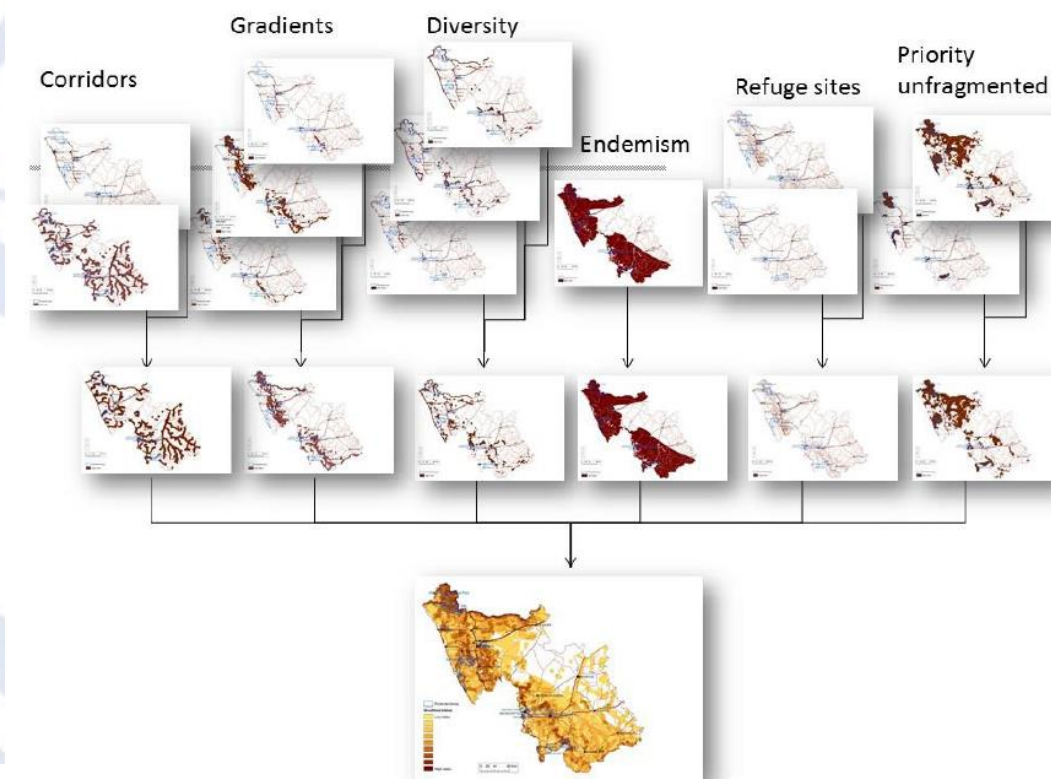
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Priority Areas Supporting Resilience

- Refugia
- Areas of endemism
- Corridors
- Dispersal Areas
- Gradients / heterogeneous areas

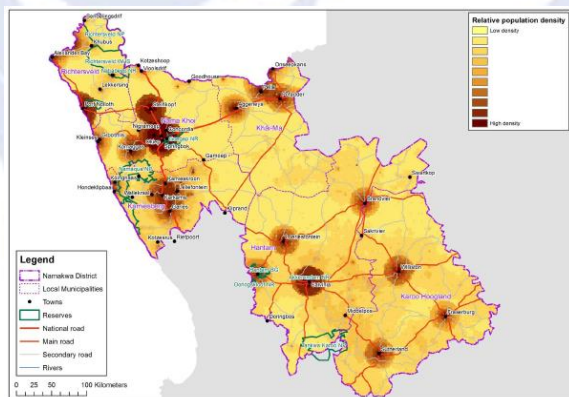
Priority Areas Supporting Resilience



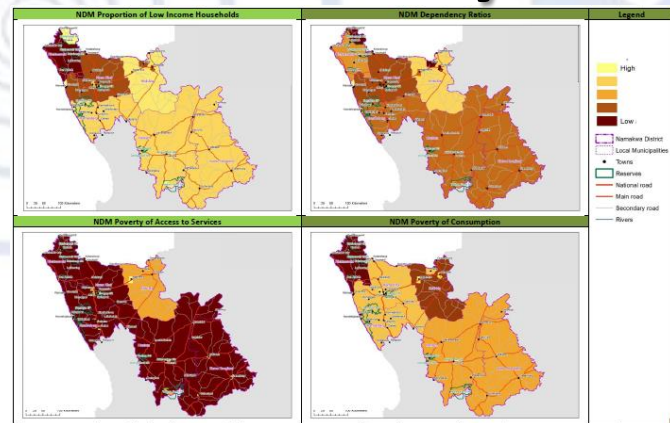
Priority Socio-Economic Vulnerability

- Population density and location
- Poverty Index
- Consumption
- Dependency ratio
- Access to services
- etc

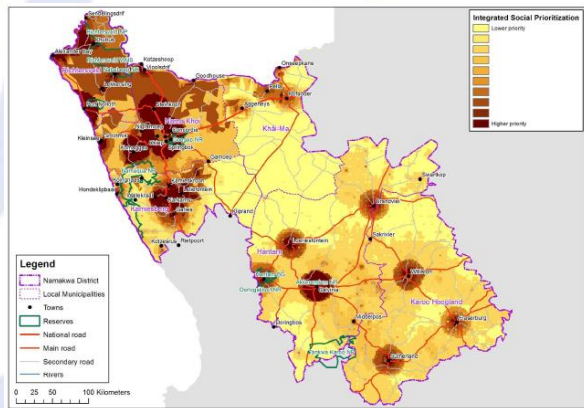
Prioritise Socio-Economic Vulnerability



Population



Other Socio Economic Variables



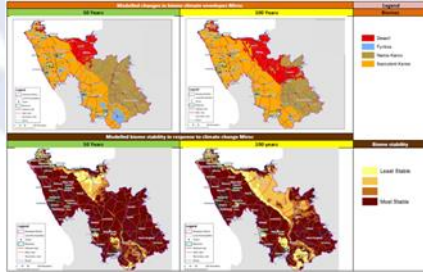
Integrated Socio-Economic Map



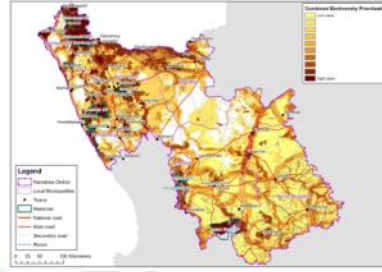
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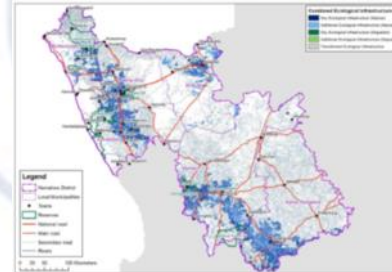
Prioritised Vulnerability



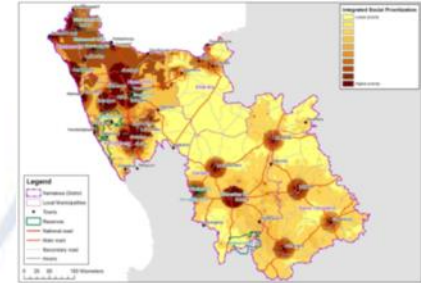
Habitat Stability



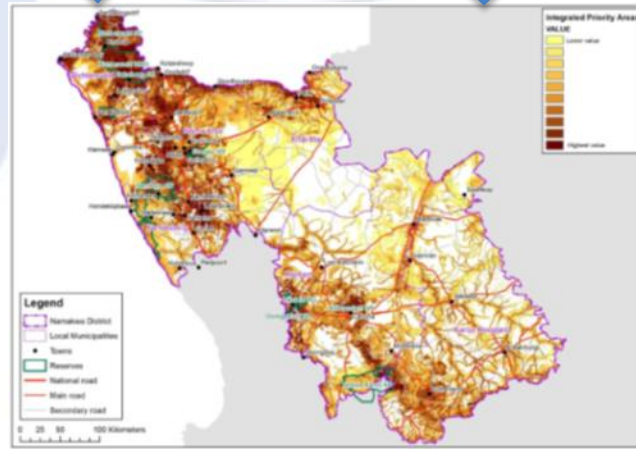
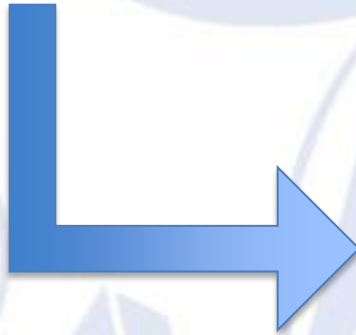
Prioritised Biodiversity Infrastructure



Prioritised Water Ecosystem Services



Prioritised Socio-Economic Services



Vulnerability



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Approach

- This study was done in a data rich area
- Use proxys where possible
- Don't limit one's self to the categories used
 - Water may not be the most important ecosystem service
- If you can show one variable is more important than another, weight it accordingly
- There are other tools to model habitat change/stability