

Natural Capital Accounting: Scenario Analysis to Achieve Land Degradation Neutrality

UNCCD COP 14, New Delhi, India

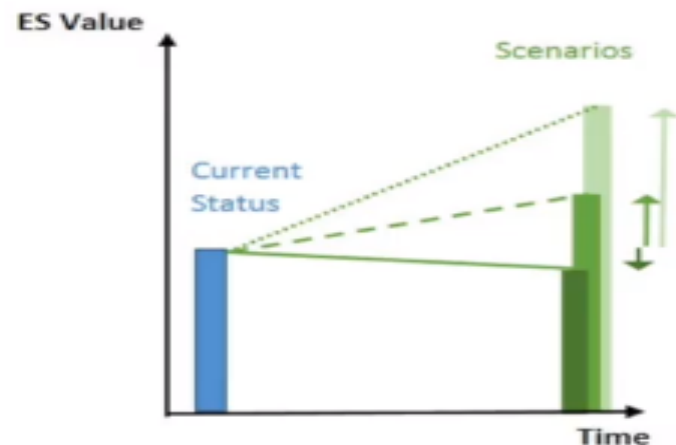
Side Event: Natural Capital Accounting in Support of LDN

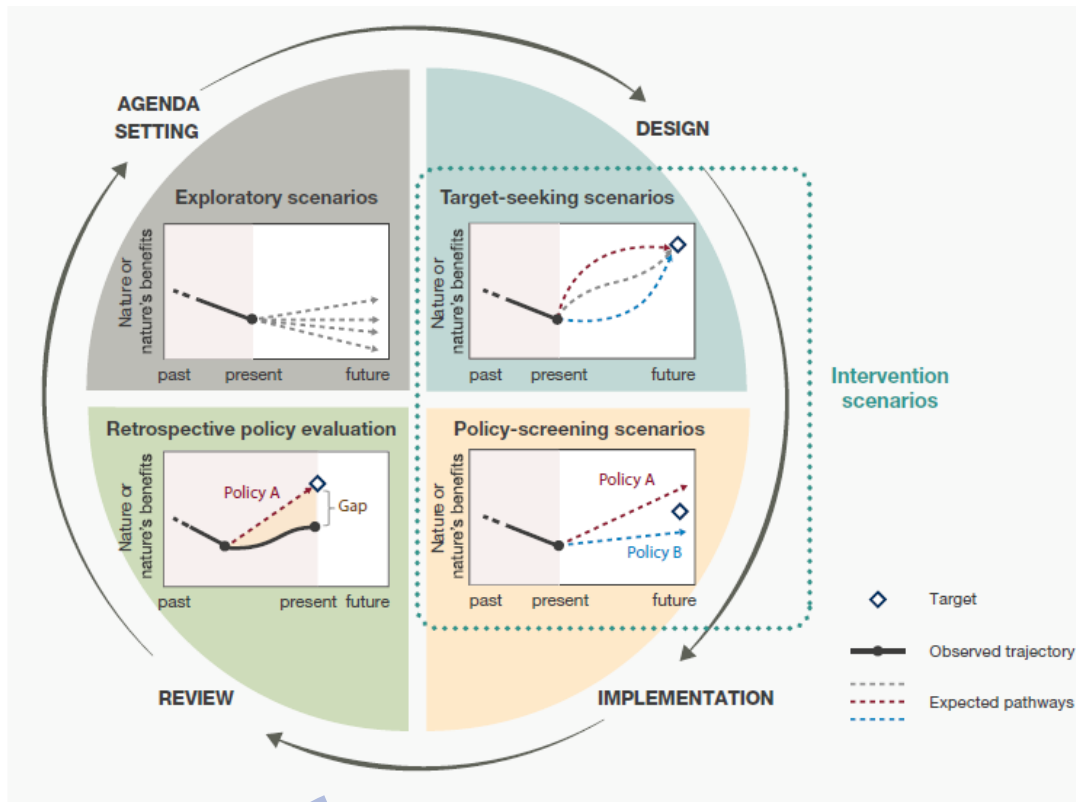
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NCAVES Project Workstreams

- Piloting ecosystem accounts in physical and monetary terms
- Developing guidelines and methodology
- Indicators
- Business accounting
- Communication and outreach
- Training and capacity development
- **Scenario analysis for policy options**

Reasons to undertake scenario analysis

- Inform or influence the selection or adaptation of an environmental policy
- Demonstrate the usefulness of the SEEA-EEA accounts
- Demonstrate the applicability of different modelling techniques for policy scenario analysis, drawing on the accounts
- Contribute to the mainstreaming of the use of environmental and ecosystem accounts in local/provincial/national level policy-planning and implementation



Scenario analysis, SEEA-EEA and Land Degradation Neutrality

- Model drivers of business-as-usual to project “do nothing” land degradation
- Link changes in extent and condition of land use and land cover to changes in a full suite of ecosystem services, inc. provisioning, carbon sequestration, soil retention, hydrological services, cultural services etc.
- Evaluates trade-offs in the provision of ecosystem services under different land management practices or land use planning scenarios
 - **Policy screening scenario: What is the impact of Policy A vs. Policy B? E.g. how do alternative land use plans compare?**
 - **Target-seeking scenario: What policies help to achieve no net loss of healthy, productive land? What are the options to achieve LDN by 2030?**



SCIENTIFIC CONCEPTUAL FRAMEWORK FOR LAND DEGRADATION NEUTRALITY

A Report of the Science-Policy Interface

TABLE 3

Elements of preparation and Implementation of LDN showing requirements and outputs of each element

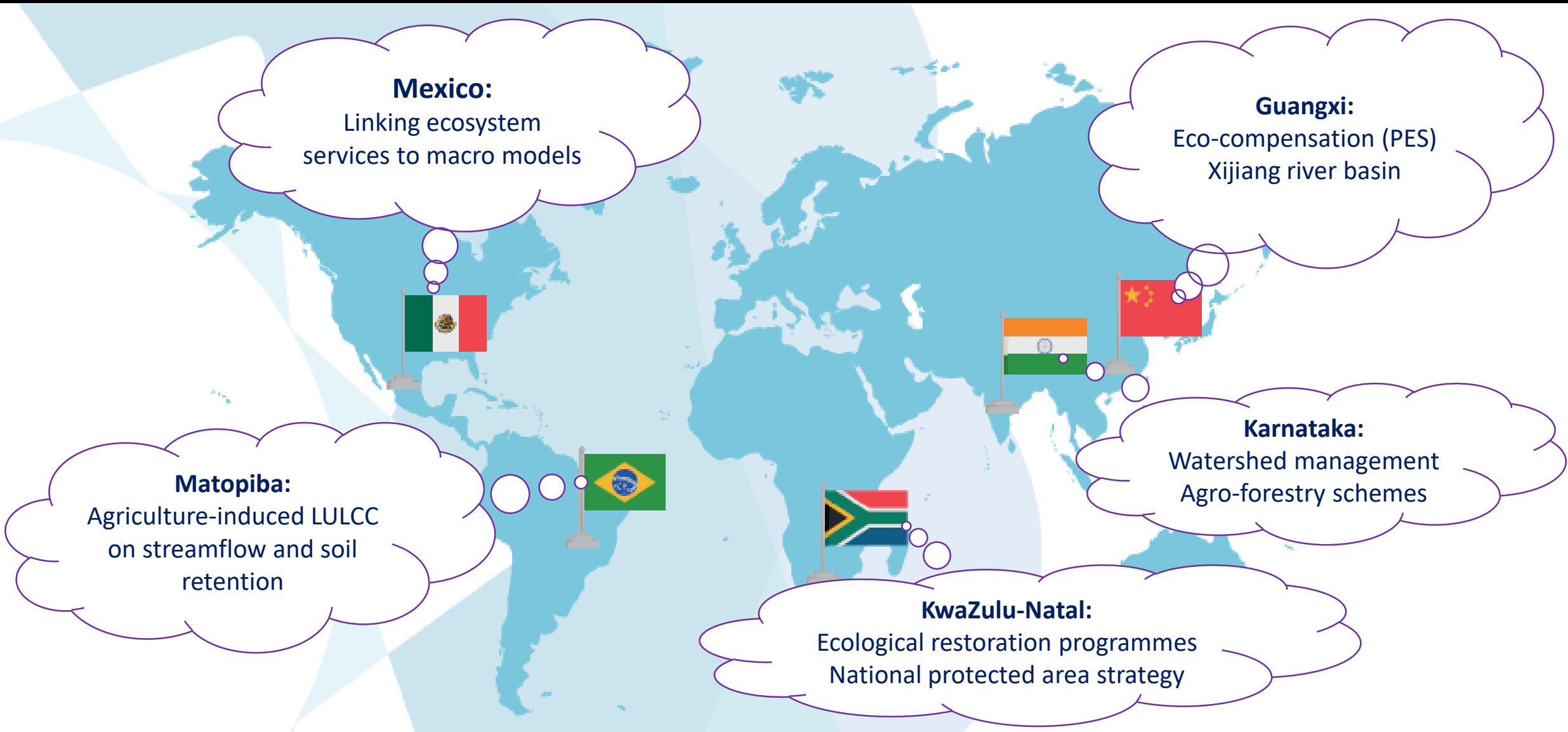
Element	Land potential assessment	Land type stratification	Land degradation assessment	Resilience assessment (Including need for adaptation or transformation)	Integrated land-use planning decisions	Monitoring Indicators of gains / losses in land-based natural capital	Interpretation of Indicator/ metric values	Neutrality assessment
Product	Map of potential of land to sustainably generate ecosystem services	Map of land types based on land potential, subdivided by vegetative cover	Map of land condition	Assessment of whether the system is heading in desired trajectory	Balance sheet of land use planning decisions	Map of land areas that have experienced significant change over monitoring period compared with the baseline	Verification of estimates of change and identification of negative land cover change	Neutrality assessment
Requires*	Maps of soil type, landform, climate, erosion hazard	Maps of land potential, vegetative cover, land use and management	National land degradation assessment including trend analysis of the LDN Indicators/ metrics; local verification of results	Land potential assessment; Tipping points; climate change projections; resilience tool; scenarios. Comprehensive and representative participation of stakeholders; Gender assessment	All previous plus economic and social assessment results; Local stakeholder input	Absolute numerical values of LDN Indicator/ metric data at t0 and t1 to identify significant pos./ neg. change	Estimate of uncertainty of metric values. Refinement of Indicator/ metric values for false positives; Resilience assessment; Local stakeholder input	Data comparison (t1 - t0); Aggregation of data on all areas of gains and losses, per land type

“Scenario analyses could be used to evaluate options for achieving LDN by 2030 and investigate impacts beyond 2030...”

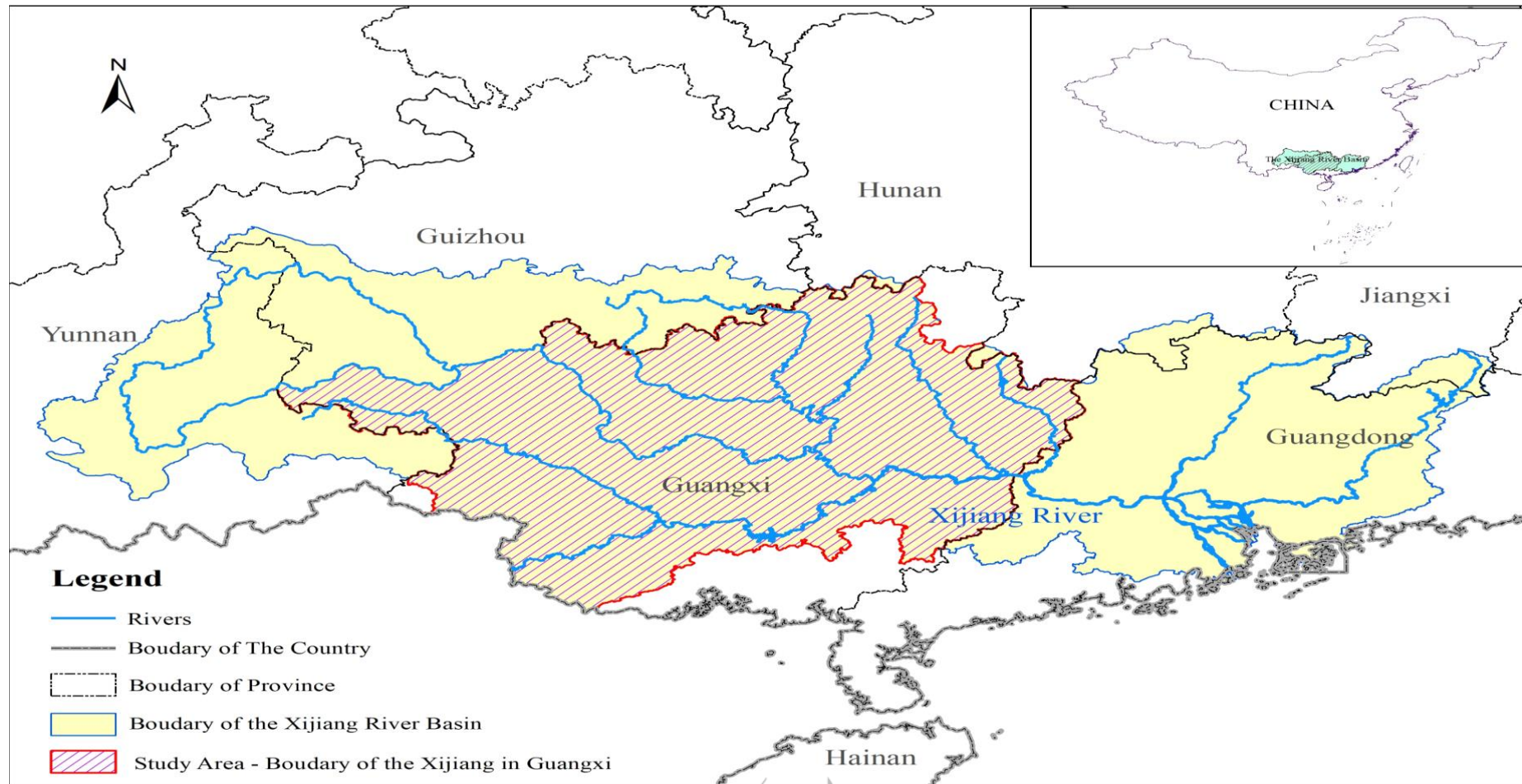
“...it is informative to estimate the economic value of the improvements to natural capital and ecosystem services arising from LDN activities so that the impact on local and national economies due to LDN investments may be quantified relative to business as usual.”

“Intervention options should be critically assessed for their impacts on all ecosystem services, considering trade-offs...”

Emerging themes for policy scenario analysis



Scenario Analysis in Guangxi - Xijiang River Basin



Eco-Compensation Standards in Xijiang River Basin, China

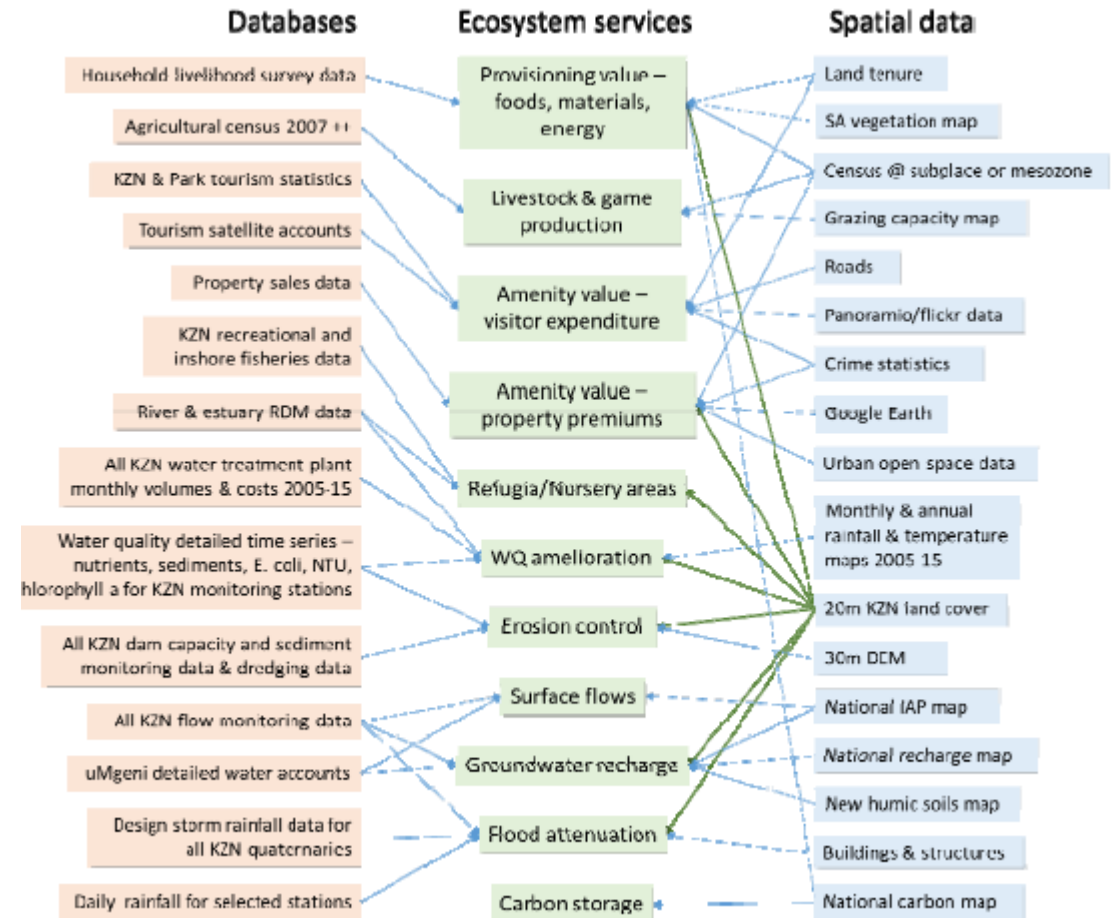
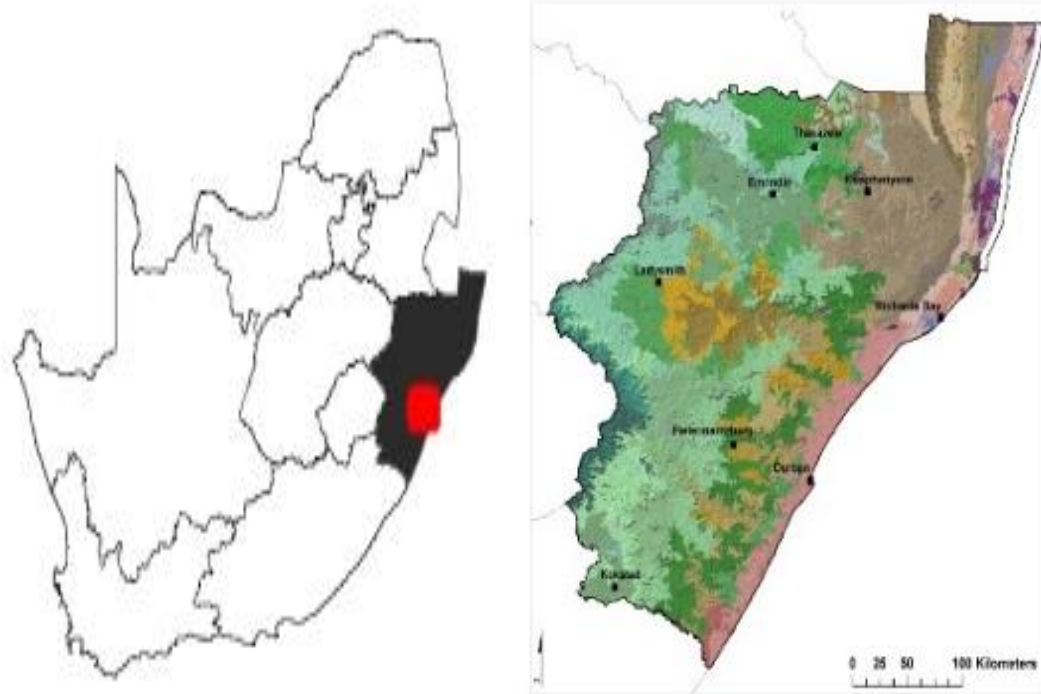
“We will improve systems for regeneration of croplands, grasslands, forests, rivers, and lakes, and set up diversified market-based mechanisms for ecological compensation.” – Xi Jinping, speech to 19th CPC congress

- Many pilot schemes but implementation constrained by the lack of data on (value of) ecosystem services to be compensated → challenges for agreement over calibration
- The Xi River is the western tributary of the Pearl River, formed in Guangxi and flowing east through Guangdong (population: 14 million)
- Proposed trans-provincial payments of ecosystem services scheme -- downstream ‘users’ compensate upstream ‘suppliers’ for maintenance of services, including: **water flow regulation, water purification, erosion control and soil retention, flood mitigation, biodiversity (several key species e.g. endemic or keystone), and carbon sequestration**



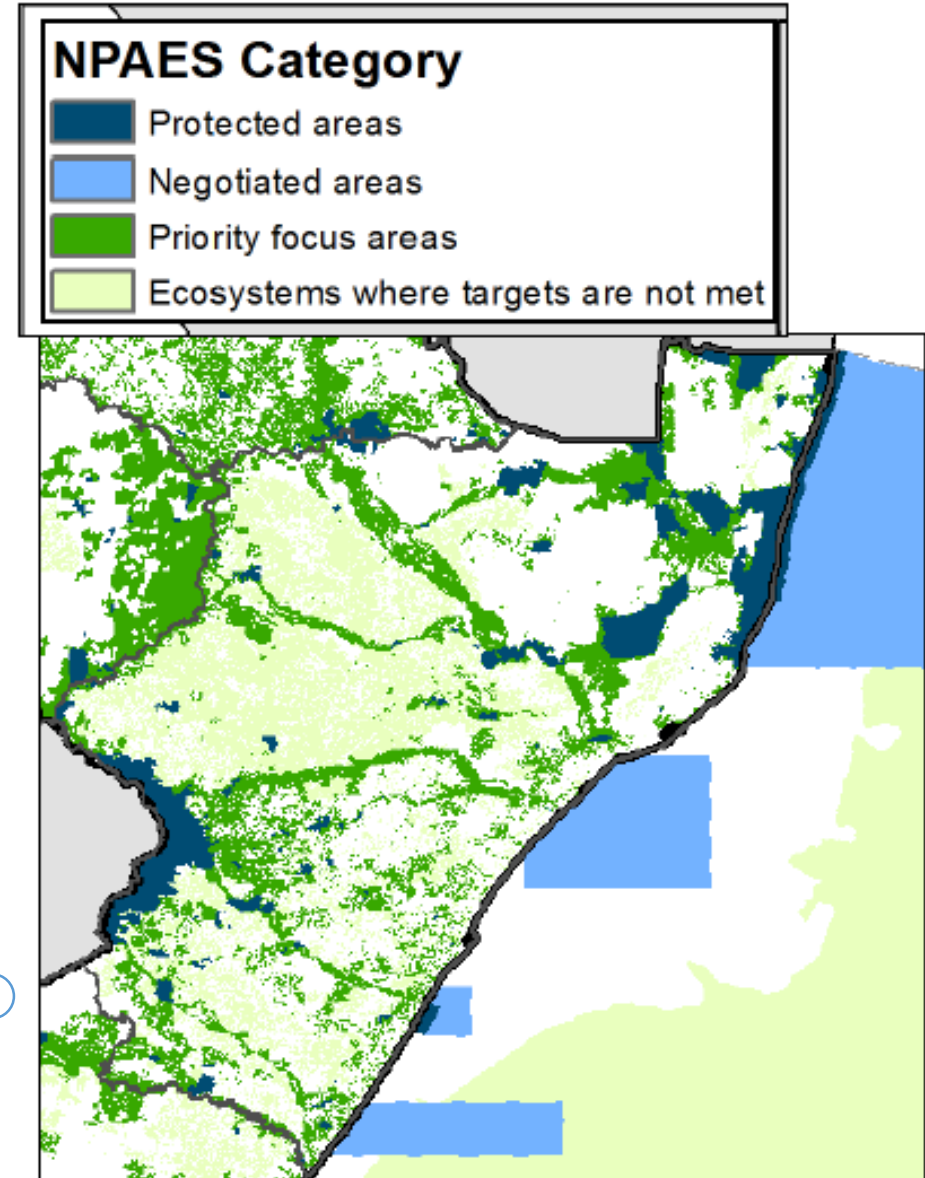
Preliminary policy scenario ideas in South Africa

KwaZulu-Natal: Full suite of **ecosystem asset** and **ecosystem service** accounts



Preliminary policy scenario ideas in South Africa

- Impact on ecosystem services of ecological restoration programmes vs. implementation cost
- Full implementation of protected area expansion plan
 - Rangeland extension plan



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Thank you!

