Report on the use of ecosystem accounts in policy scenario analysis
in the context of SEEA EA

**New developments in accounting and modelling
for green recovery and natural capital**

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Rationale for this guide

👉 **Ecosystem accounts are** by nature **backward-looking**: they describe the state of affairs at some point in the past.
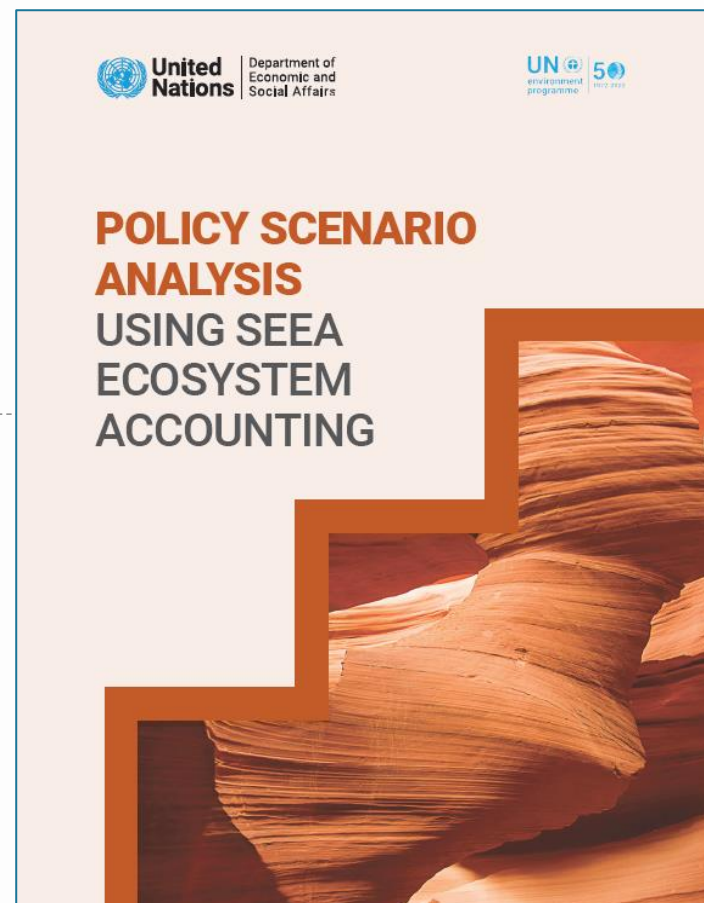
👉 **Policymaking** is, by contrast, **forward-looking**: it seeks to influence future states of affairs.

◎ **The challenge, then, is how to marry the two.**

The guide focuses on **the use of backward-looking data in forward-looking policy scenario analysis** that allows policymakers to assess the possible impacts of their choices.

◆ The utility of such an approach is demonstrated by the work carried out by **The Economics of Ecosystem and Biodiversity (TEEB)** in various countries and policy areas.

United Nations | Department of Economic and Social Affairs

UN environment programme 50

POLICY SCENARIO ANALYSIS
USING SEEA ECOSYSTEM ACCOUNTING

SEEA

Scope and coverage

- Section 1: setting the stage

- Section 2 :

  > Introduction to the SEEA EA and TEEB,

  > Overview of applicable scenario and forecasting methods

- Section 3:

  > Frequently used models for creation of projections on policy outcomes.

  > How SEEA EA can support improvement of model structure, creation of stronger outcomes and better interpretation of such outcomes,

  > How TEEB approach supports recognition and demonstration of value provided by nature, also through modelling exercises.

11 types of models, more than 30 examples

- Section 4:

  > Overview of main policy domains type of policy questions answered by scenario analysis

  > How SEEA EA and TEEB can improve policy effectiveness, using case studies.

  11 detailed case studies

- Section 5: summary and recommendations

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Key messages

The use of SEEA EA, providing a standardized set of accounts**, allows to bring more of a top-down approach to data collection** (in a way similar to the SNA). The economic valuation of ES requires instead **local customization** of the approach.

The same can be said about the **policy process**: unless the local context is taken into account, it will be difficult to gain traction with policy makers.

The joint use of SEEA EA and TEEB therefore **bridges several gaps**: **(i)** between top down and bottom up analysis; **(ii)** between the assessment of historical data and future projections; **(iii)** between science and policy.

SEEA EA and TEEB can contribute to the development and refinement of various models and related policy assessments. This is a result of improved knowledge, expanded data availability and improved data quality, expanded model boundaries and creation of more systemic assessments that involve a broader group of local stakeholder.
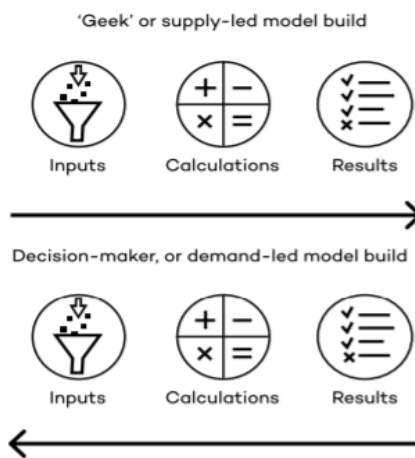
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Possible sequences of scenario and model building

The use of **SEEA EA and TEEB promote scenarios exercises that create innovative thinking** about possible future paths of the systems, improve multi-stakeholder and cross-sectoral risk management and support monitoring and evaluation.
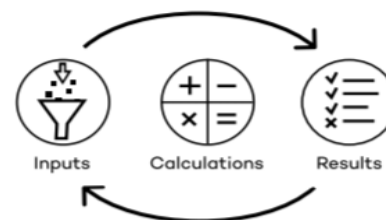
Two traditional approaches (supply-led and demand-led) can be considered along with a more innovative approach of scenario and model co-creation.

Three possible sequences of scenario and model building (IISD, 2019).

Traditional approach to scenarios analysis

'Geek' or supply-led model build

Inputs   Calculations   Results

Decision-maker, or demand-led model build

Inputs   Calculations   Results

Required approach to scenarios analysis for sustainable development

Inputs   Calculations   Results

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System-wide implications of low carbon development

The concept of "Low Carbon Development" includes two main topics: (i) low carbon and (ii) development.

"Low carbon" implies the reduction of emissions.

**"Development"** points to the need to achieve economic growth and social empowerment.

On the other hand, **"Low Carbon Development"** goes beyond the use of these two topics. It highlights how these are **interconnected** with one another.

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Scenario forecasting with simulation models (quantitative)

China – Policy context

- The local government has invested nearly 3 billion yuan to strengthen pollution control in the Nanliu River Basin in Guangxi.

- These investments have prevented land conversion but did not result in the gains expected.

- This study shows the need to strengthen the estimation of ecosystem service provisioning to design stronger and more effective payment schemes.

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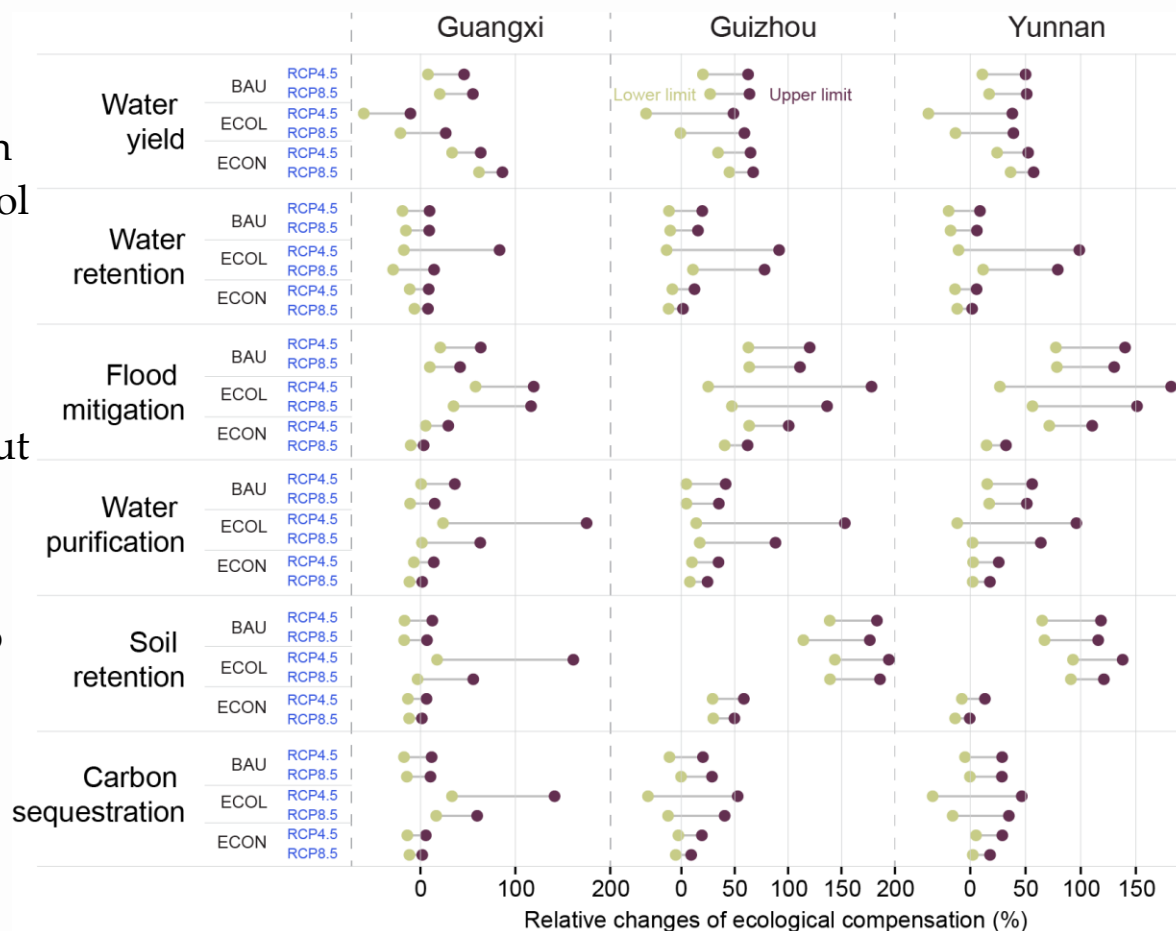
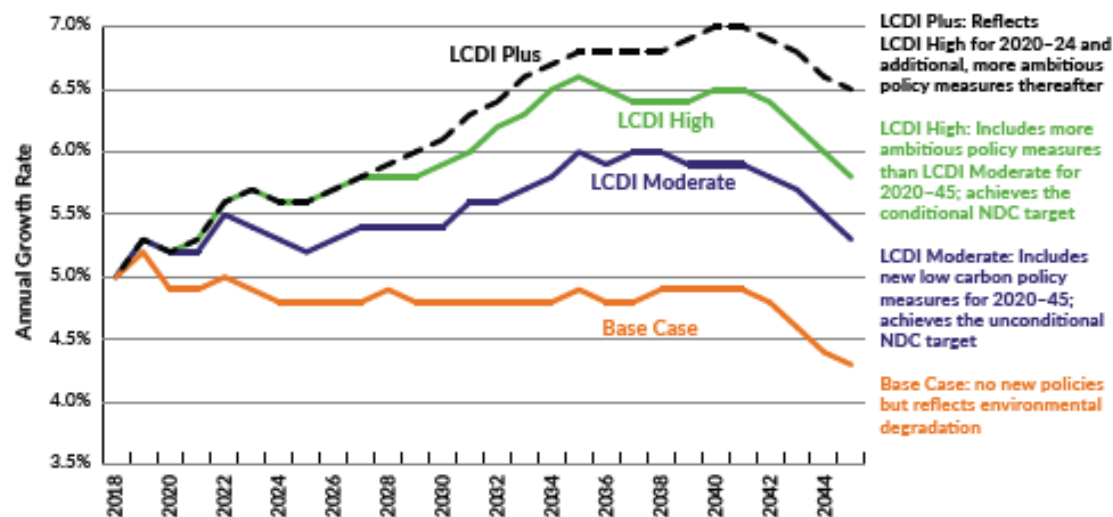# Scenario forecasting with simulation models (quantitative)

Medium term planning in Indonesia

- The Ministry of Planning, BAPPPENAS, in cooperation with several development partners has launched the Low Carbon Development Initiative for Indonesia (LCDi).

- The goal is to inform the country's five-year plan with new information, to deliver progress simultaneously for GDP growth, employment creation and emission reduction.

Modeling approach

- Integrated Socio-Economic-Environmental model, Indonesia Vision 2045 (IV2045)

- Spatial models (SpaDyn and GLOBIOM-Indonesia)

- Nonmarket environmental valuation methods.

- Integrated Cost-Benefit Analysis.

Scenario forecasting with simulation models (quantitative)

Thailand - Myanmar

The "Road to Dawei" project involves the construction of a road link from Bangkok (Thailand) to Dawei (Myanmar), across the highly biodiverse Dawna Tenasserim Landscape (DTL). The project combined used of spatial data and InVEST, Causal Loop Diagram and System Dynamics.

Combined used of spatial data and InVEST, Causal Loop Diagram and System Dynamics for the Road to Dawei study (Bassi, Lombardi, & Gallagher, 2014).

THANK YOU

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