

MAINSTREAMING BIODIVERSITY

INCLUDING NATURE INTO ECONOMIC PLANNING

Biodiversity represents a key element of any country's natural capital stock. It underpins the provision of ecosystem services like clean water, fertile soils and flood protection. Degraded ecosystems translate into significant risks and damages for people and the economy.

According to the recent IPBES Global Assessment on Biodiversity and Ecosystem Services, nature is declining worldwide at unprecedented rates. However, most policy decisions do not fully recognize biodiversity's vital role in the economy.

The 'undervaluation' of biodiversity means that we still bare witness to its continual destruction and loss, where a range of indirect and direct drivers are mainly underpinned by unsustainable economic activities.

If we are to ensure our future wellbeing, decision makers need to understand the interlinkages between the environment and economy. Asking the right questions will lead to informed policy decisions that tackle both the drivers and impacts of biodiversity loss and inform the appropriate responses.



Understanding drivers of biodiversity loss



Knowing the consequences for ecosystem health



Preventing threats to ecosystem resilience



Ensuring future flows of ecosystem services

PROVIDING INFORMATION FOR BIODIVERSITY POLICY – HOW TO MEASURE BIODIVERSITY

The SEEA is an integrated statistical framework that provides a wide range of information, including data on ecosystems and species. Users can rely on a single system to understand drivers, impacts, responses and the effectiveness of policy responses.



The SEEA-Central Framework starts from the viewpoint of the economy and natural resources. It accounts for how individual natural resources (e.g. water, energy) are used in production and consumption and how this use impacts the environment (e.g. emissions). Transactions undertaken to preserve and protect the environment are also recorded.



The SEEA-Experimental Ecosystem Accounting considers how individual environmental assets interact as part of natural processes within a given spatial area (i.e. ecosystems). The extent of ecosystems, their condition and the services they provide can be mapped over time in both biophysical and monetary terms.

1

ECOSYSTEM EXTENT ACCOUNTS

measure and map the size and occurrence of different ecosystems. They can be applied at a range of scales—from water catchment areas to countries or even continents.

RELEVANCE: Understand changes in the extent and location of different ecosystems in terms of land-use, management and ownership

2

ECOSYSTEM CONDITION ACCOUNTS

measure and map the health of ecosystems. Whether these ecosystems are natural, semi-natural, artificial or managed, condition accounts provide a means for understanding how resilient or degraded these ecosystems are.

RELEVANCE: Show the damage caused by human activity and the results of restoration efforts

3

ECOSYSTEM SERVICES ACCOUNTS

measure and map the contributions of ecosystems to economic and human wellbeing. They monitor changes in the delivery of essential ecosystem services which humans depend upon.

RELEVANCE: Understand which ecosystem services are in decline, how they contribute to the economy and which portions of the population are being impacted

UNDERSTANDING THE CYCLE OF BIODIVERSITY LOSS

For biodiversity policy making, it is important to look at the underlying drivers of biodiversity loss. Since it sits at the environment-economy nexus, the SEEA can provide the data needed to address these underlying drivers and formulate effective policy responses.



Ecosystem extent

Land-use changes such as expanding agricultural areas by cutting forests may come at a cost to regulating services such as flood protection or soil retention – and cultural services like providing areas to hike in.

What are the hidden tradeoffs involved when forests are converted into agricultural land?



Asset accounts

(Over)exploitation leads to declining ecosystem health and can reach a tipping point when activities become unsustainable and future provision of important ecosystem services are no longer guaranteed.

How does exploitation of one natural resource impact the rest of the ecosystem and the services it provides?



Carbon accounts

Climate change is threatening biodiversity by negatively impacting ecosystem functioning and health. The conservation and restoration of ecosystems however is key to reducing the negative impacts of a changing climate.

How can ecosystem conservation and restoration be boosted and leveraged to combat climate change?



Ecosystem condition

Pollution from emissions, untreated waste, and oil spills impact all ecosystems as well as the global atmosphere. While ecosystems can support some level of pollution, at a certain point the costs arising from the polluting activities start to outweigh the benefits.

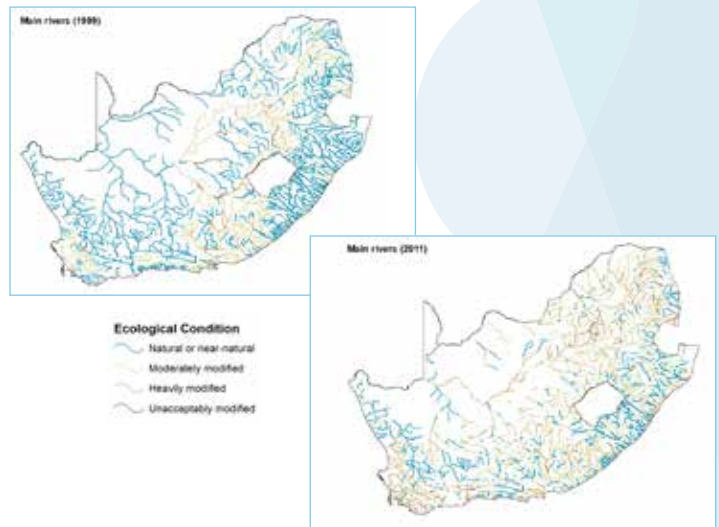
What are the trends in the number of threatened species and where are they located?

What is the effect of current levels of expenditures aimed towards biodiversity protection?

SAFEGUARDING ECOSYSTEM SERVICES PROVIDED BY RIVERS IN SOUTH AFRICA

As rivers are at the center of the water-food-energy security nexus, they are critically important ecosystems. To ensure that rivers will continue to provide water for drinking, agriculture and hydroelectric power dams, Statistics South Africa and the South African National Biodiversity Institute have worked together to compile national river ecosystem extent and condition accounts. The SEEA framework was used as a basis for aggregate indicators to calculate an easily interpretable ecological condition index.

The accounts showed the extent of the impact economic activity and resulting pollution have had in terms of ecosystem degradation, including a 10 per cent decline in ecological condition from 1999 to 2011. They also identified the areas where the decline has been most pronounced, so that solutions can be identified to better manage catchments and rivers and support economic and social development.



Source: Nel and Driver (2015)

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Please visit seea.un.org, where you can find more information and e-learning on the SEEA and its policy applications.

Comments and questions are welcome.

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System of
Environmental
Economic
Accounting