System of Environmental Economic Accounting

Introduction to the SEEA and the SEEA Ecosystem Accounting

SEEA webinar series: Using the SEEA for monitoring and informing the global biodiversity framework

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Outline

- The need for Natural Capital Accounting and the SEEA, and policy applications
- The SEEA as international statistical standard with the focus on SEEA Ecosystem Accounting
  - > Country examples of SEEA Ecosystem Accounting applications
- Implementation of the SEEA
  - > Guidelines and tools in support of implementation
- The SEEA and GBF indicators

The need to account for the Environment

- Nature and the services it provides support almost every aspect of human well-being
- But headline indicators like GDP, the unemployment rate and inflation do not capture the full economic contributions of nature
- Traditional accounts don't help us understand how the depletion of natural resources and degradation of the environment affect the economy and wellbeing
- The System of Environmental Economic Accounts (SEEA) fills that gap
- SEEA integrates information on the economy and the environment showing their interrelationship complementing the System of National Accounts

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Growing interest in Natural Capital Accounting

*A **historic step** towards transforming the way how we view and value nature.*

António Guterres
UN Secretary General

*this new statistical framework moves **beyond GDP** and takes better account of biodiversity and ecosystems in national economic planning.*

Frans Timmermans
VP European Commission

Monitoring framework for the GBF (COP 15 decision 15/5) :

- "Notes the value of aligning national monitoring with the United Nations **System of Environmental-Economic Accounting statistical standard** in order to mainstream biodiversity in national statistical systems and to strengthen national monitoring systems and reporting as appropriate and according to their national priorities and circumstances;"
- "Invites the Statistical Commission,..... and other relevant organizations to **support the operationalization of the monitoring framework** for the Kunming-Montreal global biodiversity framework;"
- "When possible, **indicators are aligned with existing intergovernmental processes under the Statistical Commission**, such as the SDGs, the FDES or the SEEA"

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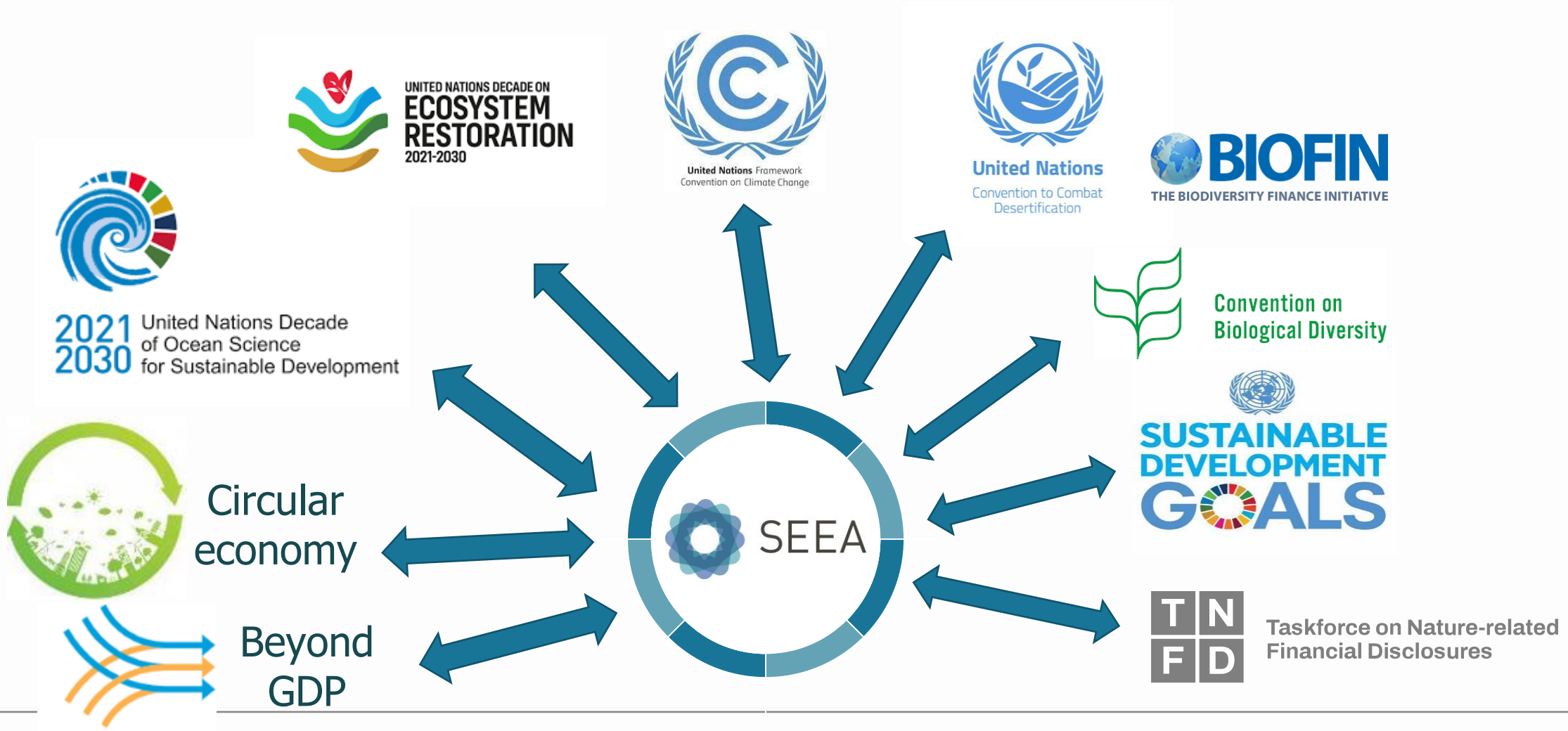
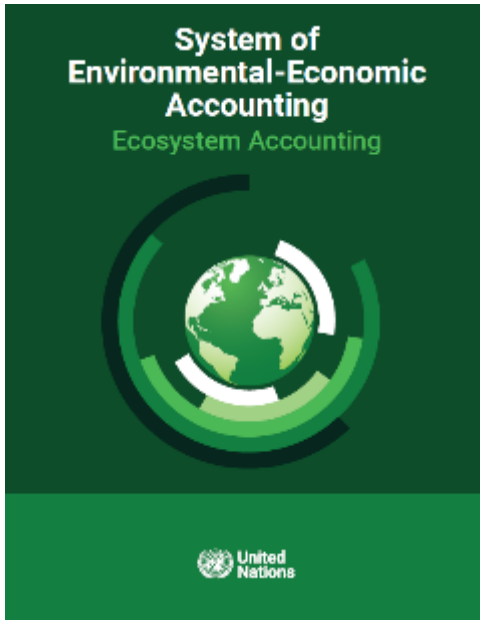
The SEEA supports multiple ongoing initiatives



SEEA – a statistical standard for the environment

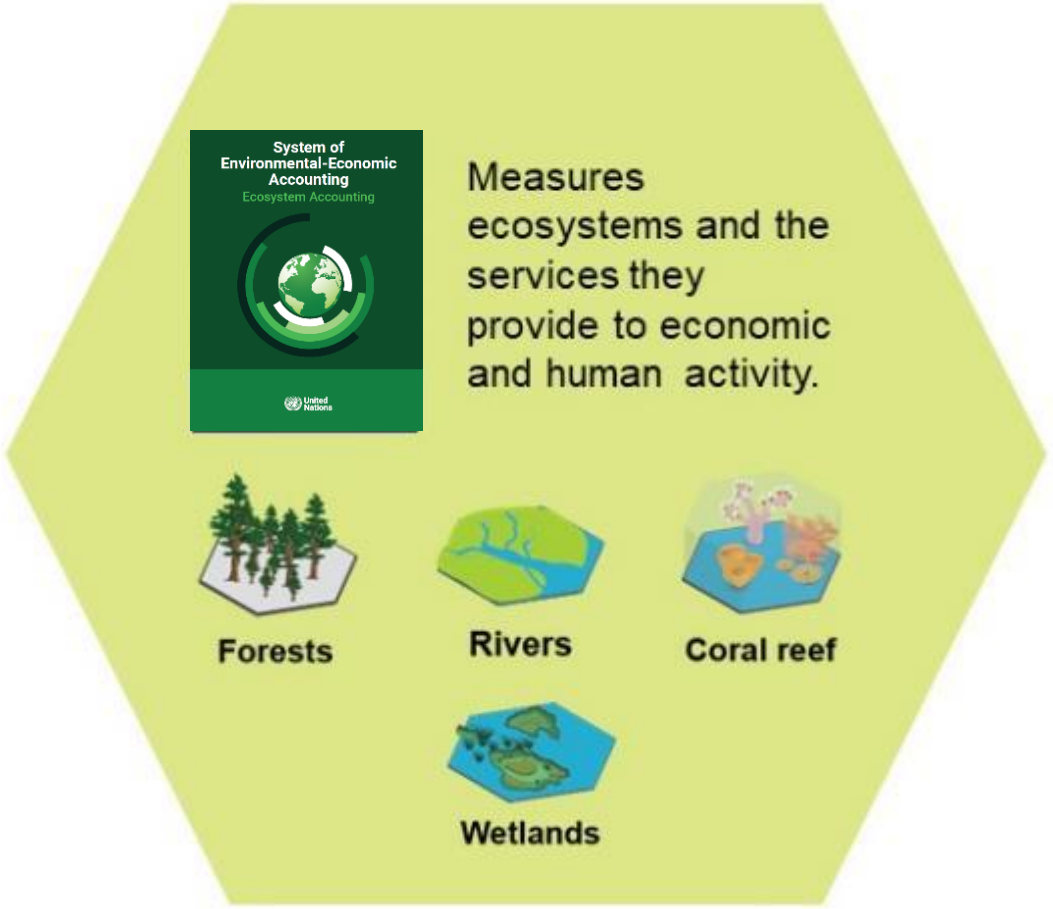
Adopted in 2012



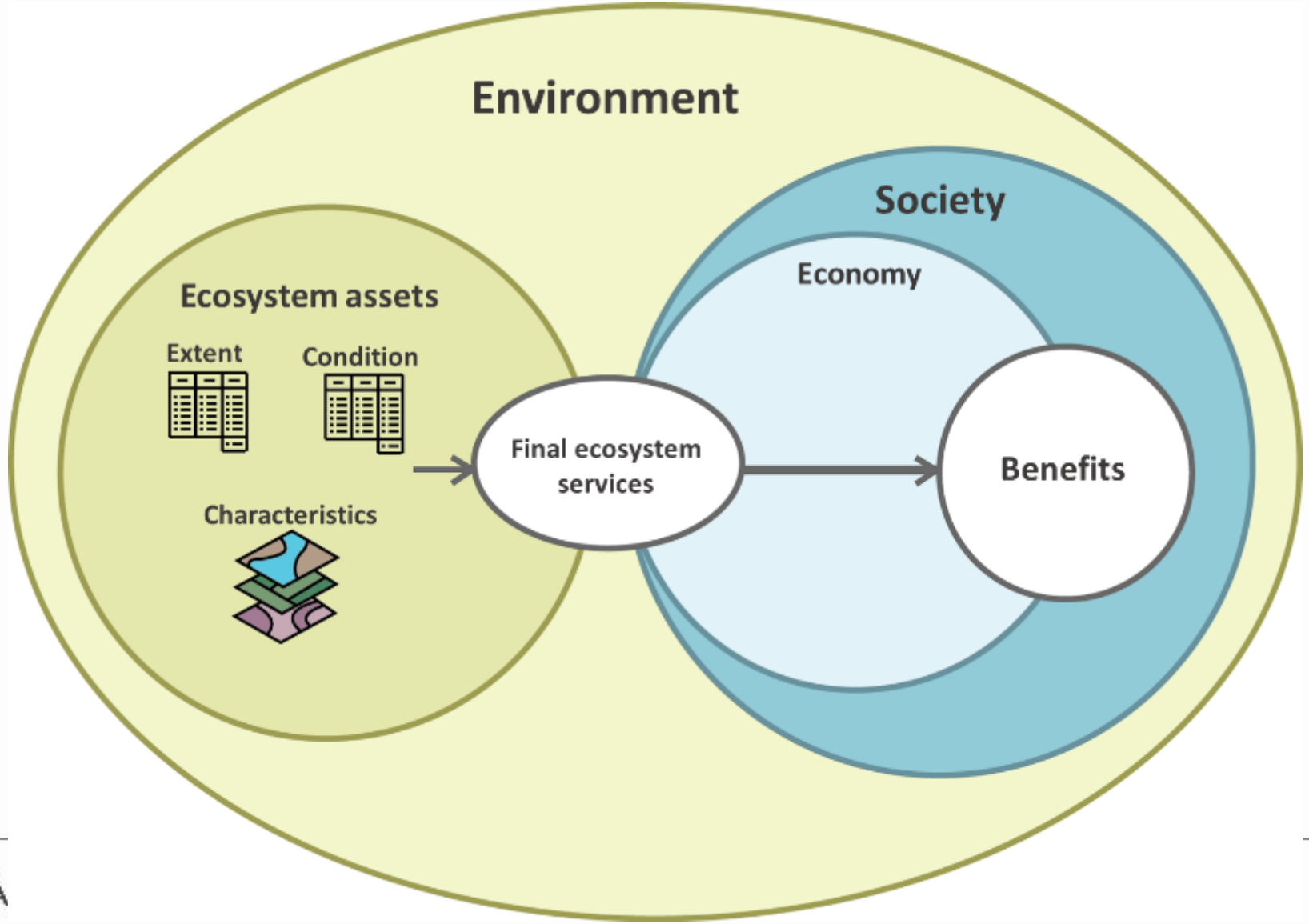
Adopted in 2021

- Brings together environmental and economic data using the same accounting principles of the SNA
- Credibility, reliability, replicability of data
- Consistency over time and space
- Common language between different communities
- Breaks down silos and fosters collaboration

SEEA Central Framework and SEEA Ecosystem Accounting – Two sides of the same coin



SEEA Ecosystem Accounting - conceptual framework



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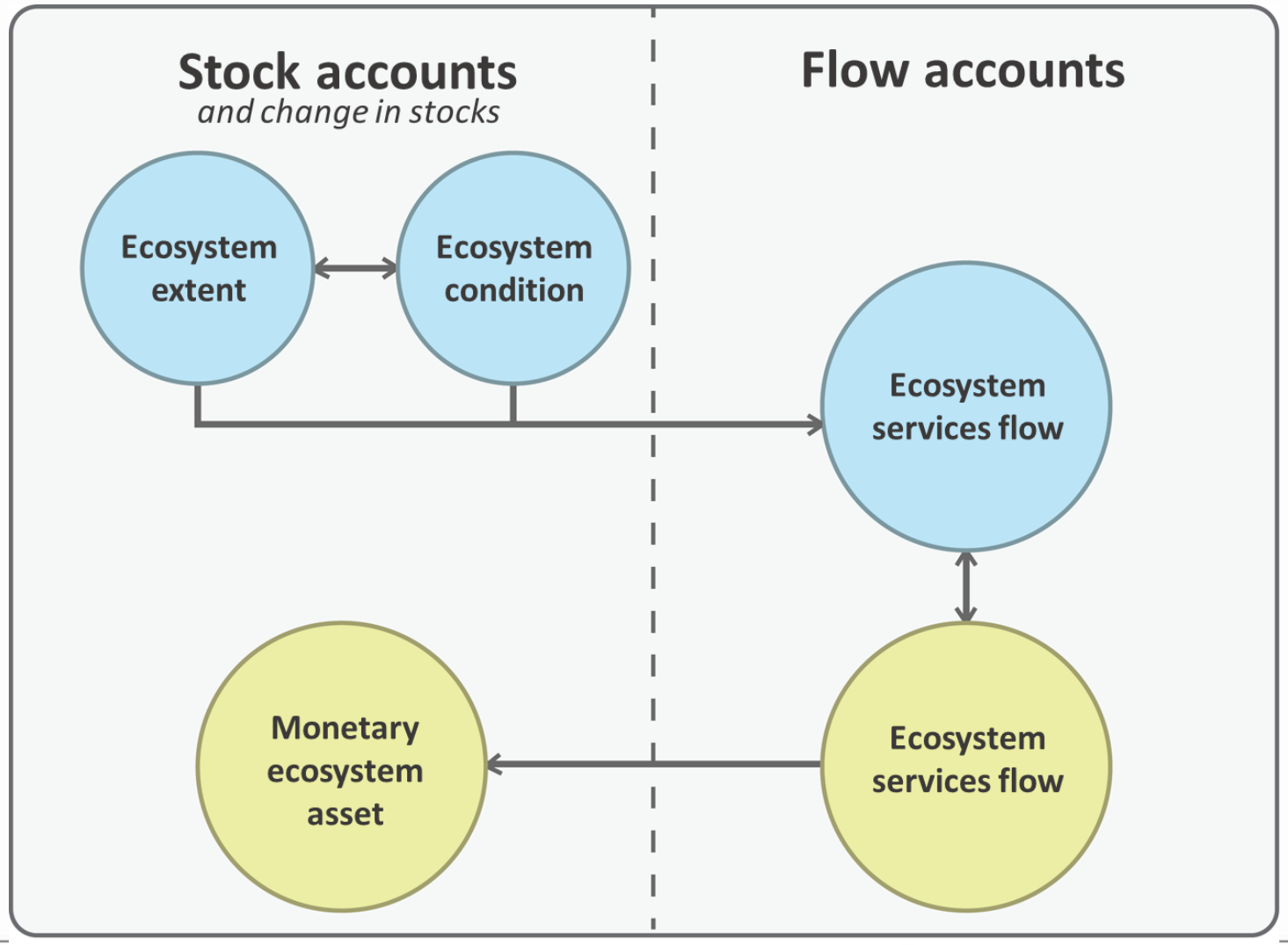
SEEA Ecosystem Accounting – core accounts



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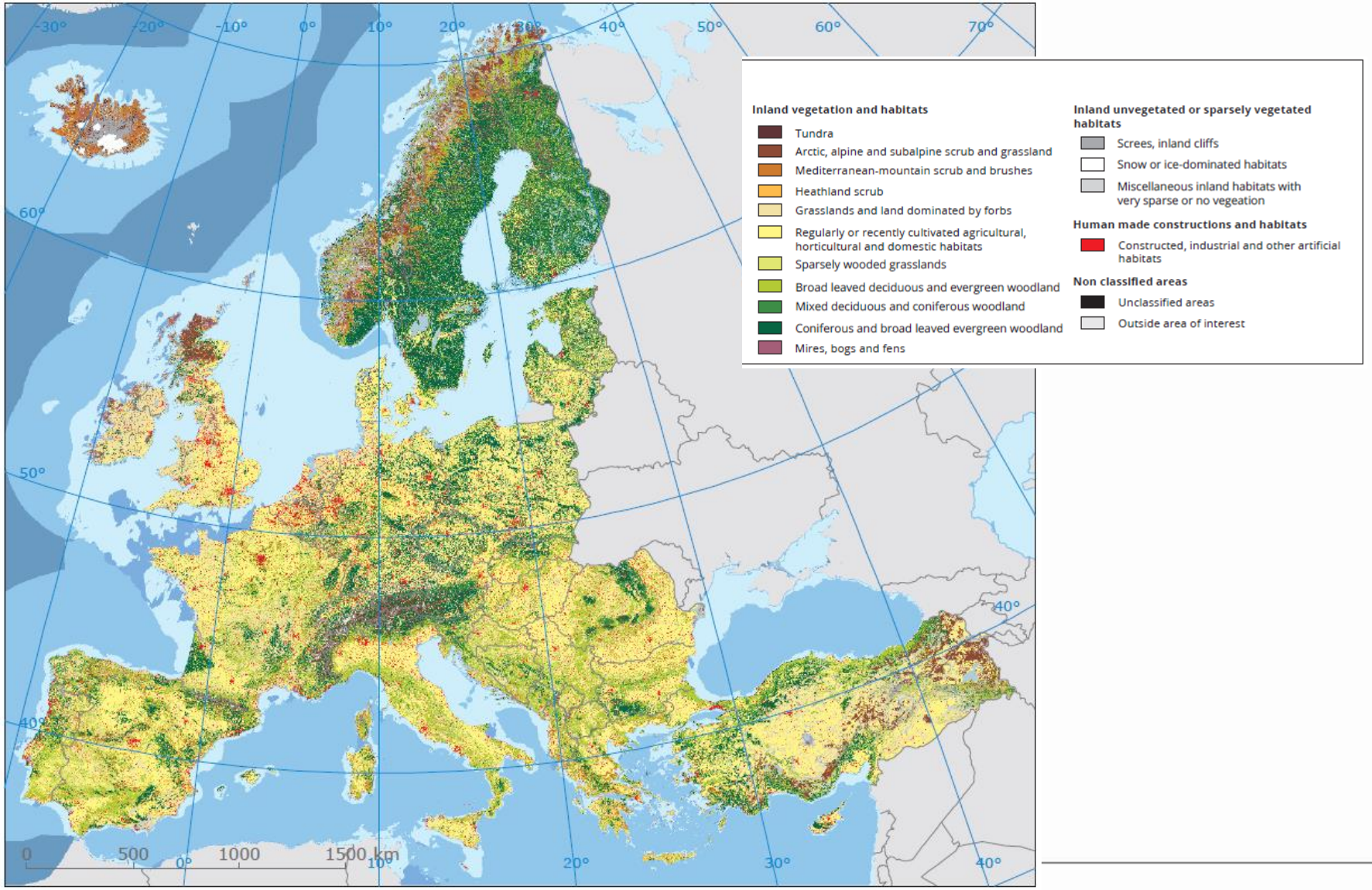
Ecosystem extent account: Example from the EU



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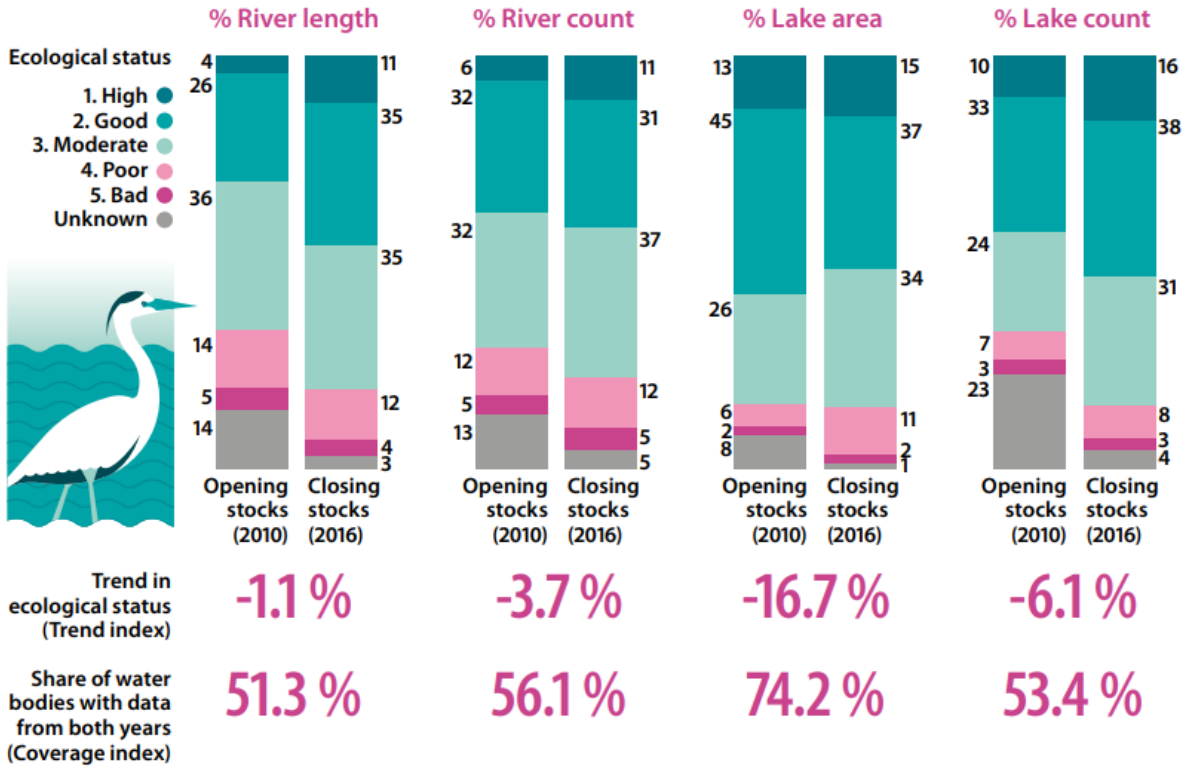
Source: EEA, 2015a, *European ecosystem assessment: Concept, data, and implementation,* EEA Technical Report No 6/2015, European Environment Agency

Ecosystem condition account: Example from the EU

Table 4: Condition variable account for rivers and lakes, EU28 (spatially averaged values)

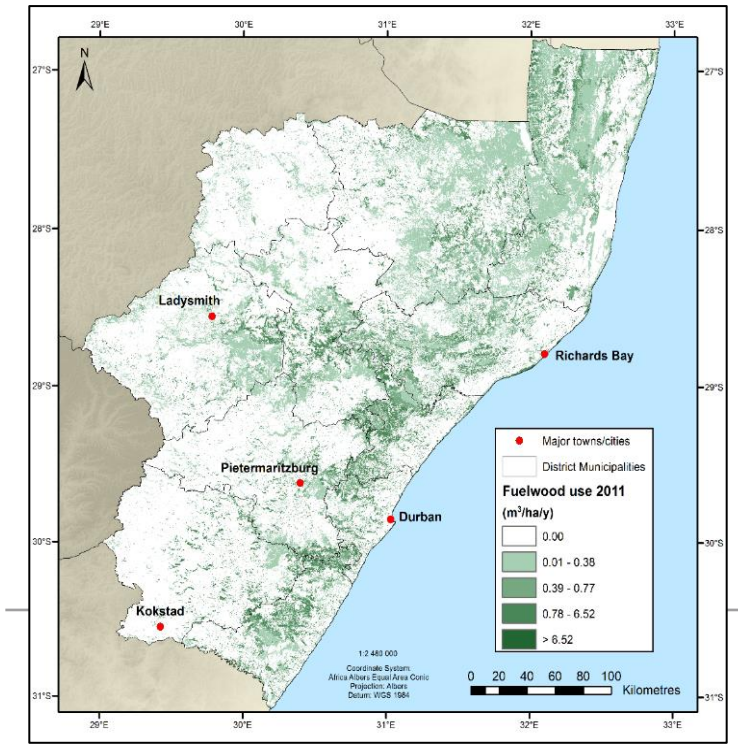
Condition class	Descriptor	Units	Opening stock (2010)	Closing stock (2020 - projected)	Change (% per decade)	Confidence
Physical state	Share of artificial areas in riparian land	%	7	7.5	7	high
	Gross water abstraction	million m3/y	204 489	204 448	-2	medium
Chemical state	Ammonia concentration	mg/l	0.131	0.034	-74	high
	Nitrate concentration	mg/l	1.87	1.7	-8	high
	Phosphate concentration	mg/l	0.07	0.05	-28	high
	Total phosphorus concentration	mg/l	0.103	0.059	-43	high
Composition	:	:	:	:	:	:
Structure	Length of rivers achieving good ecological status (1)	%	30	46	44	low
	Area of lakes achieving good ecological status (1)	%	58	52	-14	medium
Function	Biological oxygen demand	mg/l	2.09	1.55	-26	high
Landscape	Dam interception of streamflow	%	60.3	:	:	:

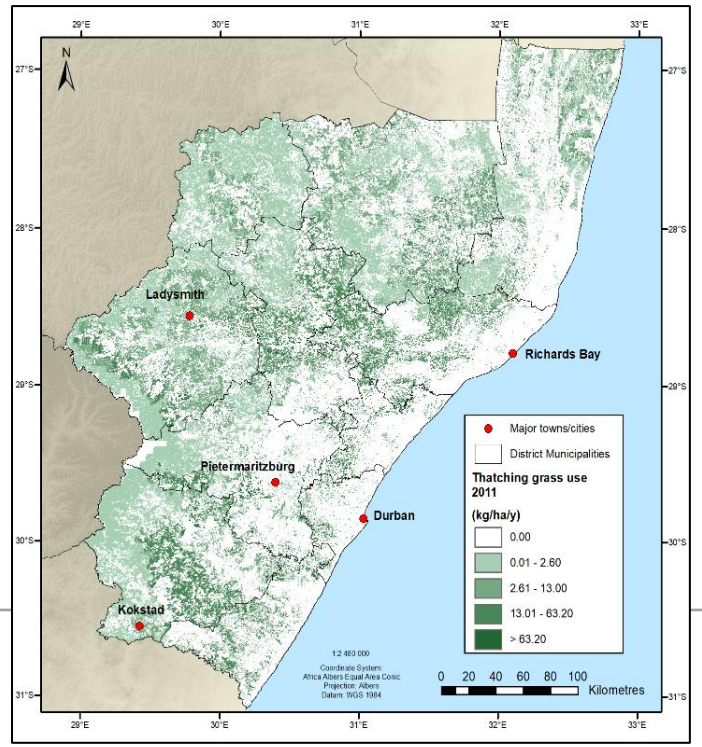


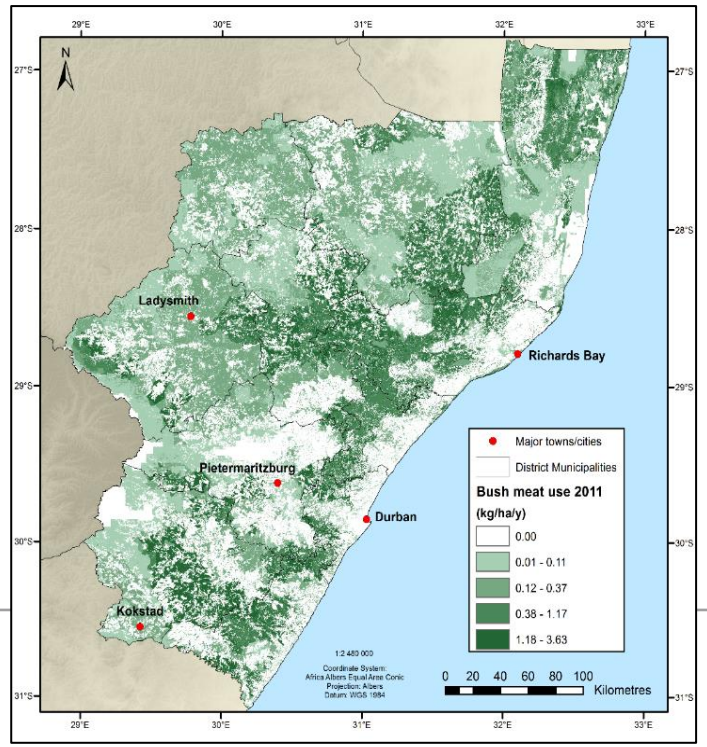
Source: Vysna et al. 2021. Accounting for ecosystems and their services in the EU (INCA). https://ec.europa.eu/eurostat/documents/7870049/12943935/KS-FT-20-002-EN-N.pdf/de44610d-79e5-010a-5675-14fc4d8527d9?t=1624528835061

Ecosystem services account: Example from South Africa

- Output of the EU-funded NCAVES project
- Modelled 11 different ES for 2005 and 2011 for Kwazulu-Natal (KZN) province
- Physical & monetary units







Source: Turpie et al., 2021.

Ecosystem services account: Example from South Africa (2)

- All 11 ES modeled spatially
- After integration, physical supply and use tables (and monetary SUTs + monetary asset account)

Table 5.1. Total biophysical supply per ecosystem type 2005

Resource \ Biome	Freshwater ecosystems	Grassland	Indian Ocean Coastal Belt	Savanna	Forests	Estuaries	Cultivated	Urban green space	Total
Wood products (m^3)	3 523	695 638	235 125	787 294	267 047	169			**1 988 796**
Non-wood products (tonnes)	834	46 494	11 489	34 952	2 911	38			**96 718**
Livestock production (LSU)	1 716	684 698	52 162	289 663	2 010	340			**1 030 589**
Crop production (tonnes)							43 305 781		**43 305 781**
Experiential value (R millions)	14	237	179	218	55	24	85	885	**1 698**
Carbon storage (Tg C)	5	512	61	348	33	0	279		**1 237**
Pollination (R millions)	0	12	6	31	2	0			**51**
Flow regulation (million m^3)	78	3 315	421	2 198	634	36			**6 682**
Flood attenuation (R millions)								31	**31**
Sediment retention (million tonnes)	2	45	6	27	18	2			**99**
Water quality amelioration (tonnes P)	-	3 829	525	5 394	97	6			**9 850**

Source: Turpie et al. 2021

Number of countries compiling SEEA accounts over time

More information is available at https://seea.un.org/content/global-assessment-environmental-economic-accounting

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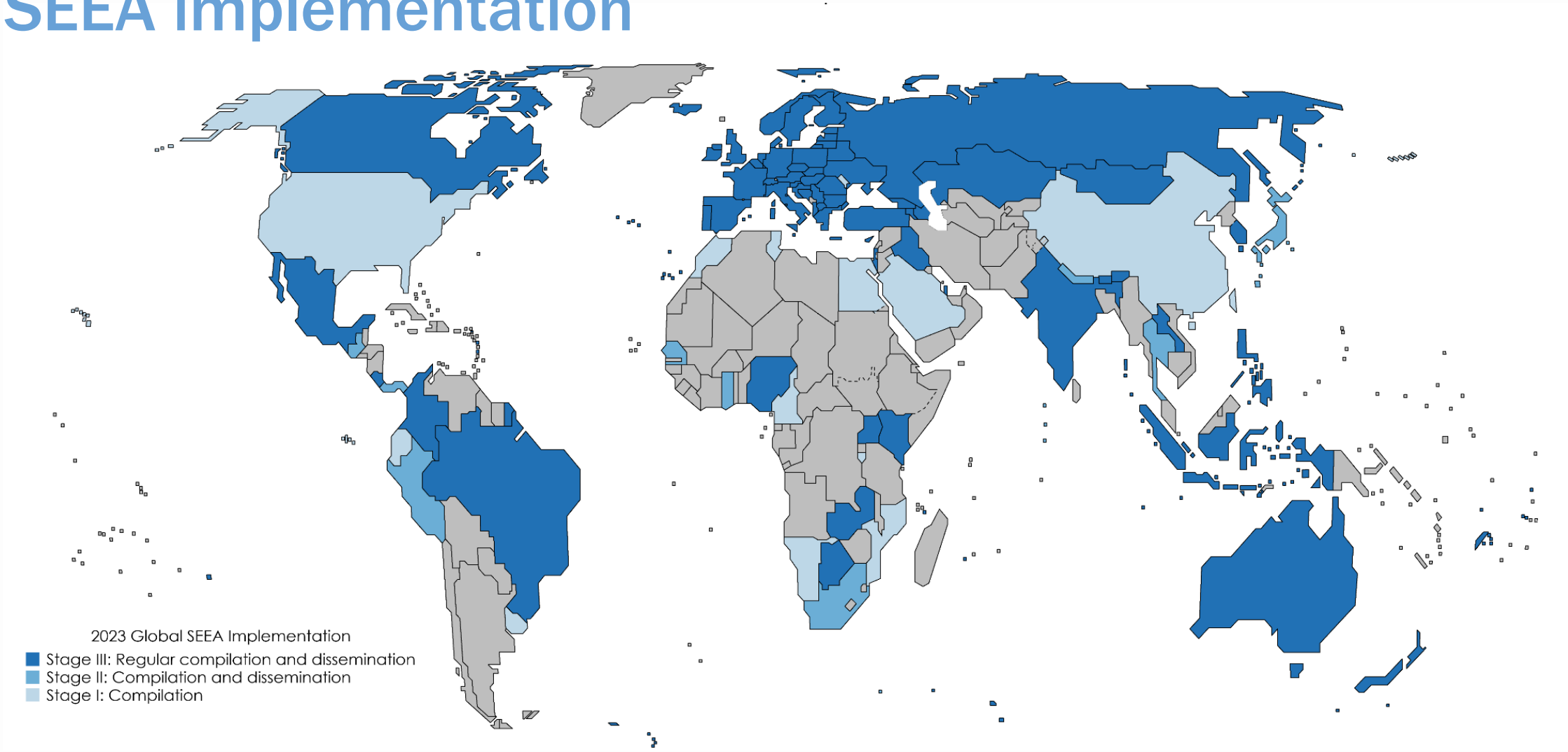
SEEA implementation



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The boundaries and names shown, and the designation used on this map do not imply official endorsement or acceptance by the United Nations. Dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties. Final boundary between the Republic of Sudan and the Republic of South Sudan has not yet been determined. A dispute exists between the Governments of Argentina and the United Kingdom of Great Britain and Northern Ireland concerning sovereignty over the Falkland Islands (Malvinas).

Guidelines and tools in support of implementation

Ecosystem Accounting

- Biophysical guidelines
- Monetary valuation
- Policy scenario analysis
- Eurostat guidance notes (in development)

Tools

- ARIES for SEEA

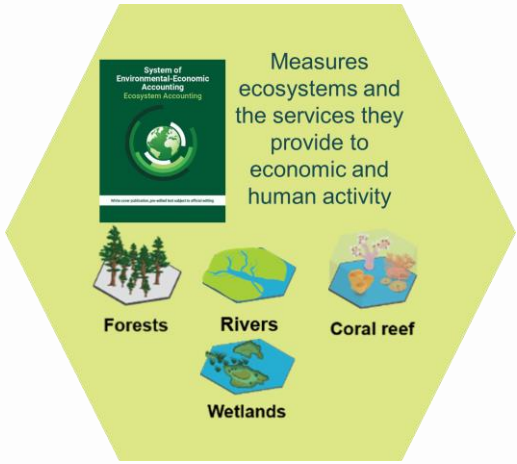
Policy applications

- Linkages of global indicators with SEEA
- How NCA contributes to sustainability policies

The SEEA and GBF indicators

Headline indicators were adopted to monitor each Goal and Target. A few indicators related to the SEEA:

- Extent of natural ecosystems (Goal A)
- Services provided by ecosystems (Goal B and Target 11)
- Sustainable Management of Wild Species (Target 9)
- *Integrating Biodiversity in Decision-Making (Target 14)*



- Domestic public funding, and private funding on conservation and sustainable use of biodiversity and ecosystems (Goal D and Target 19)

THANK YOU

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