System of Environmental Economic Accounting

SEEA and Post-2020 GBF Monitoring Framework

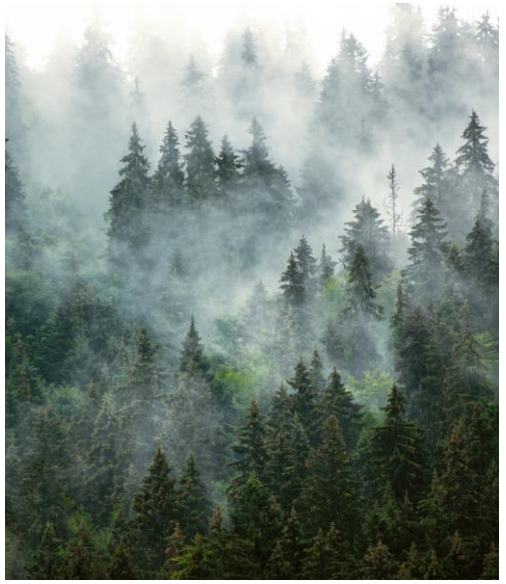
Alessandra Alfieri

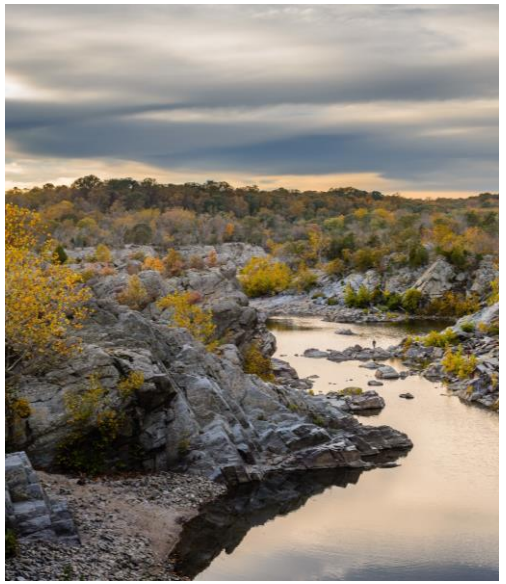
United Nations Statistics Division

United Nations

The Need

- Our economic well-being crucially depends on nature.
- But headline indicators like GDP or the unemployment rate do not capture these vital contributions.
- As a result, decision makers don't have access to key information necessary to effectively pursue and track sustainable development.
- 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





Mandate of the UN Committee of Experts on Environmental-Economic Accounting (UNEEA)

- Established by UN Statistical Commission at 36th session in 2005
- Functions as an intergovernmental body to provide overall vision, coordination, prioritization and direction in environmental economic accounting and supporting statistics
- Three broad objectives
    - Mainstream environmental-economic accounts and supporting statistics
    - Elevate the SEEA to an international standard
    - Advance country implementation

UNCEEA Work Programme

United Nations Statistical Commission
UNSC

UN Committee of Experts of Environmental-Economic Accounting
(UNCEEA)

1. Coordination and communication

2. Methodological development

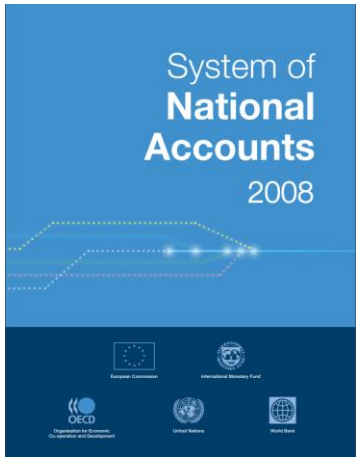
3. Development of databases

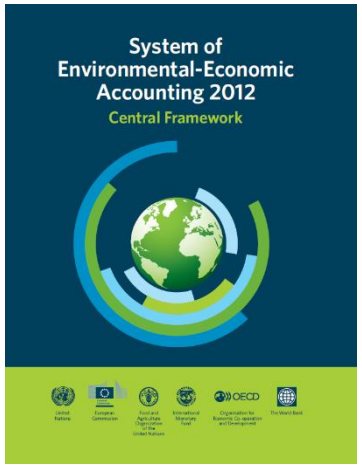
4. Implementation and statistical capacity building

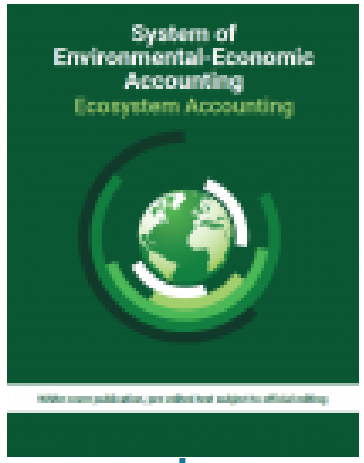
Main achievements of the UNCEEA:

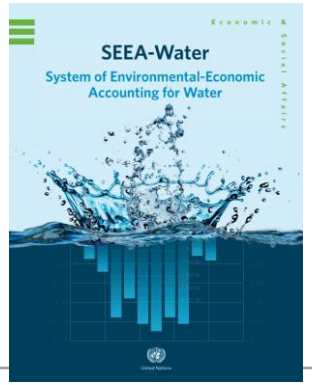
- SEEA EA adopted by UNSC in 2021
- SEEA CF adopted as an international statistical standard in 2012
- Thematic handbooks: (e.g. energy, water, measuring sustainable tourism, ocean)

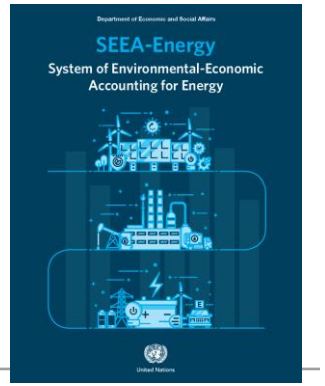
The SNA and SEEA: Systems of integrated information

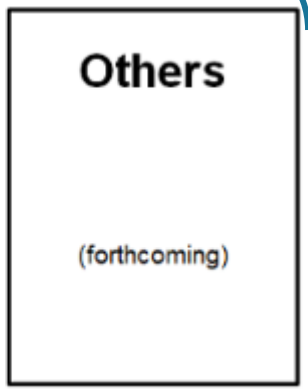


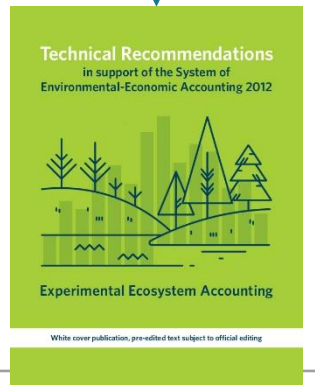












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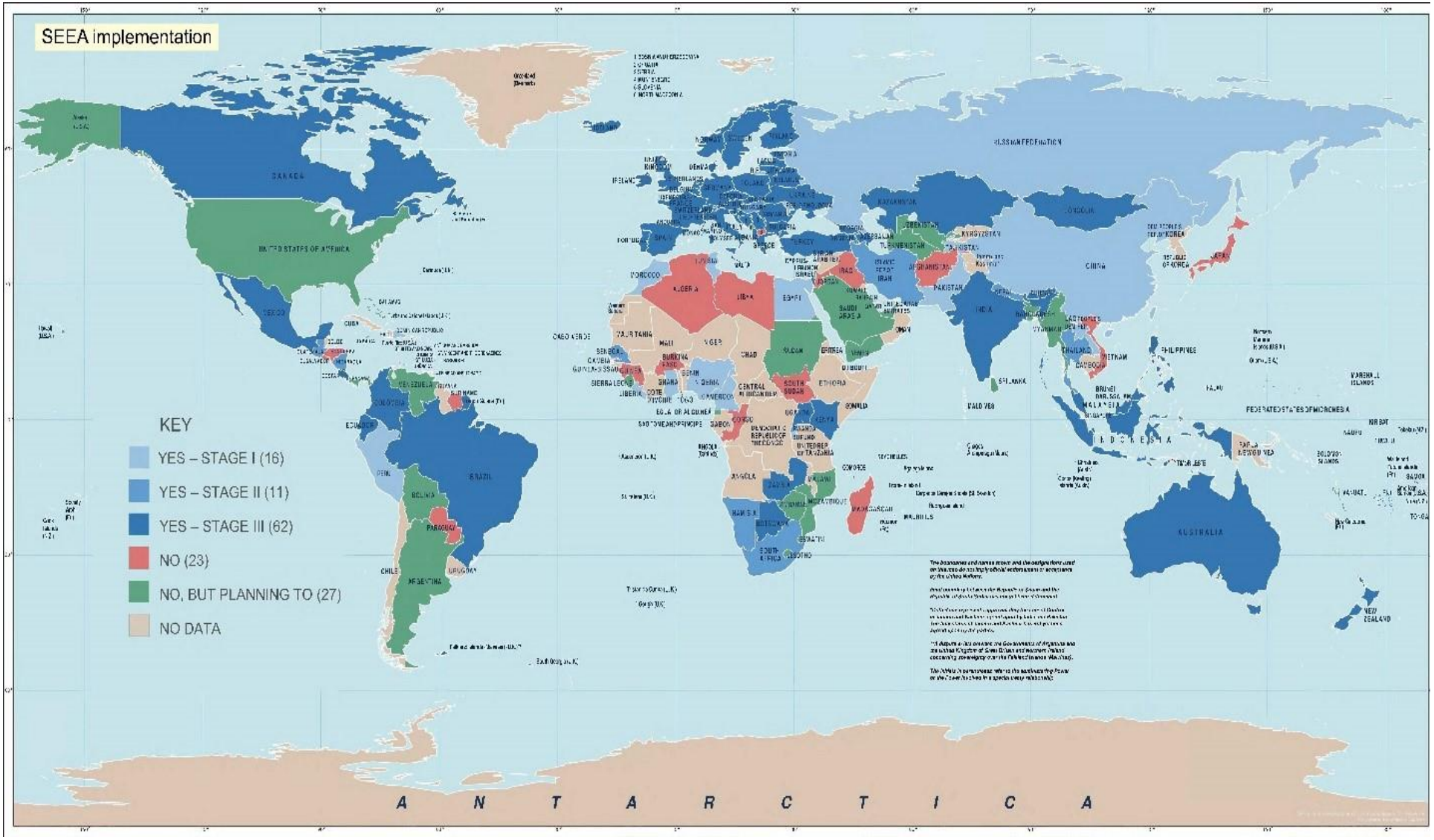
SEEA implementation



- 2020 Global Assessment for Environmental-Economic Accounting and Supporting Statistics
- 89 countries implementing the SEEA Central Framework
- 34 countries compiling SEEA Ecosystem Accounts
- 27 countries planning to start implementation of the SEEA

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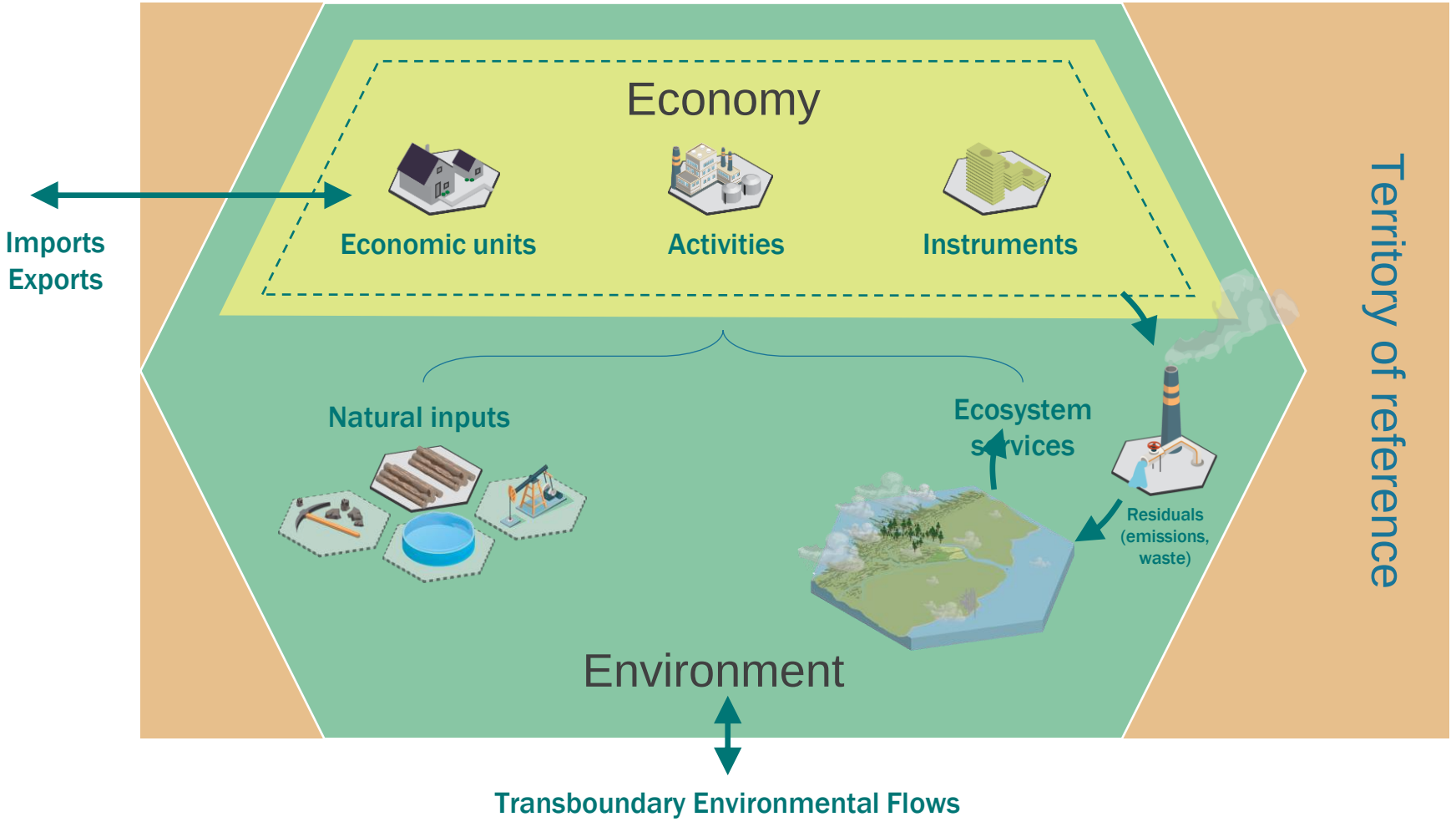
SEEA Conceptual Framework



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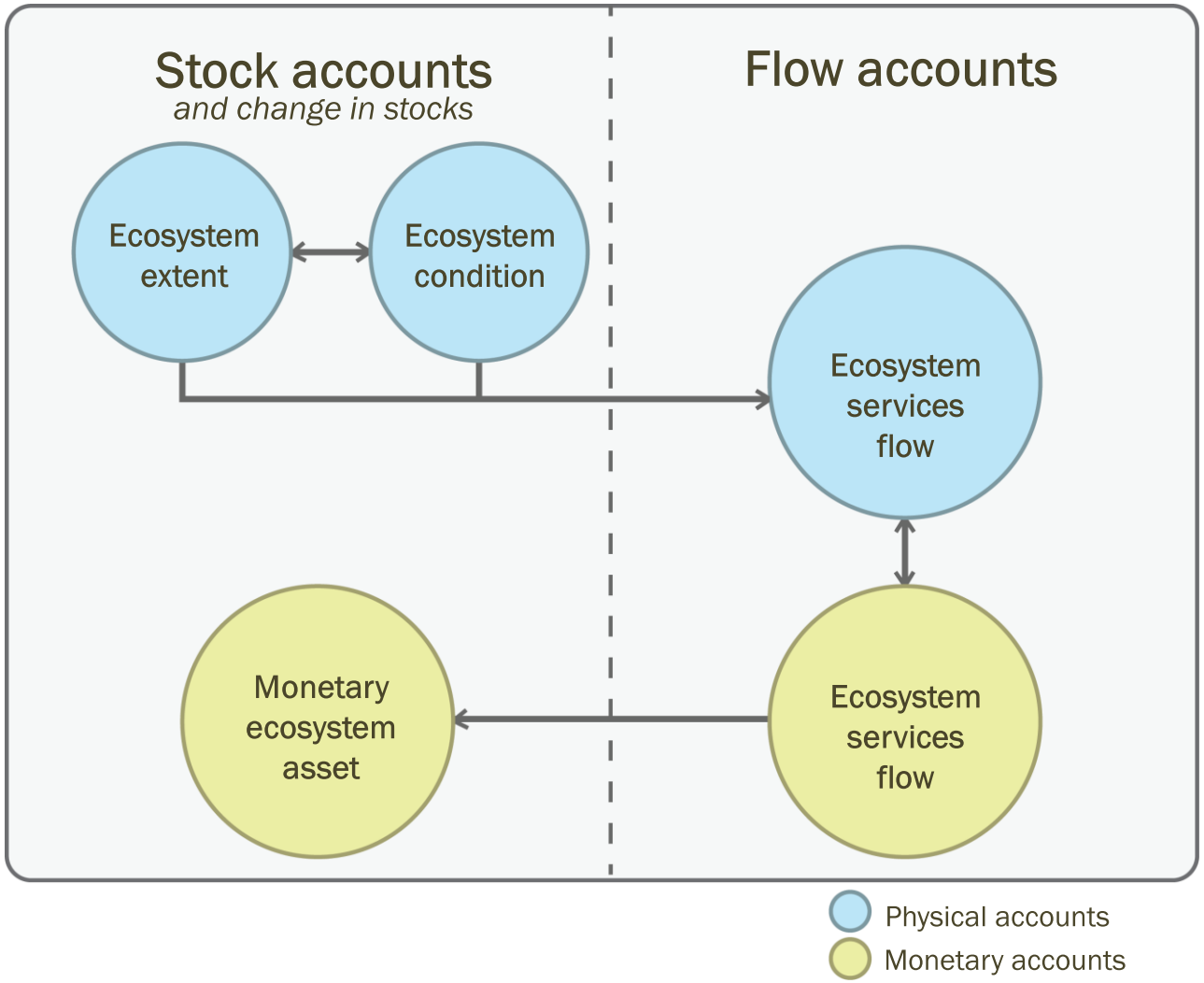
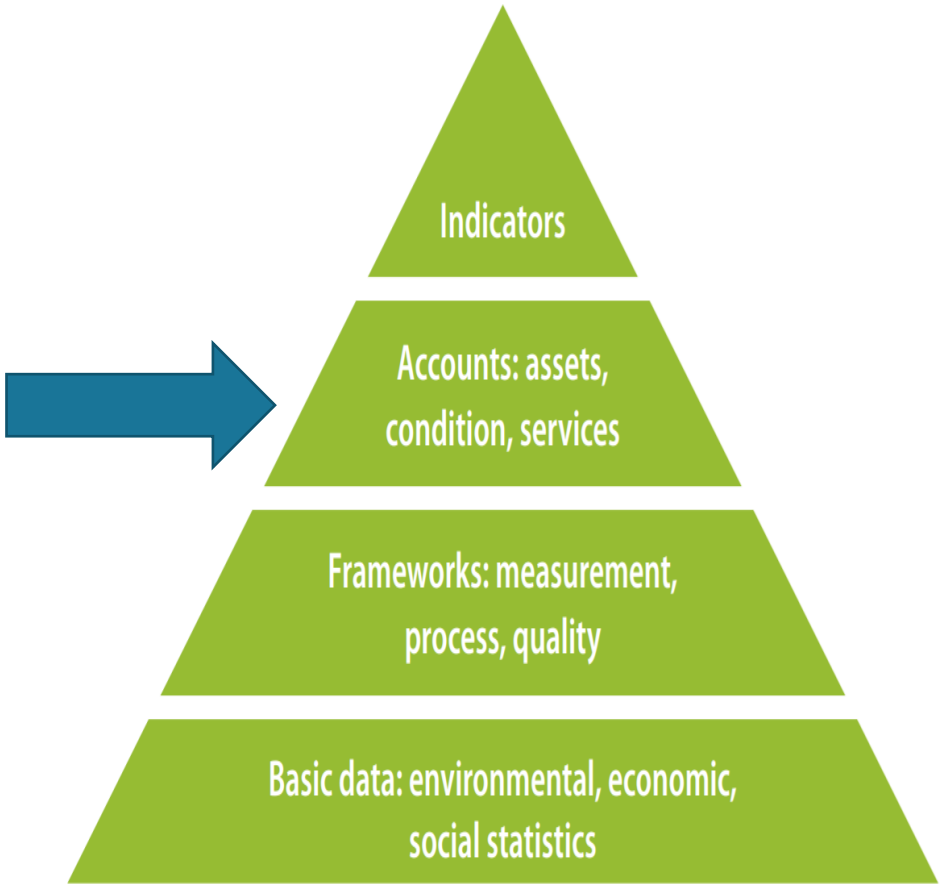
SEEA EA - Core Accounts





Decision from UNSC 2021

The United Nations Statistical Commission at its 52nd session in March 2021

- Agreed to remove the "Experimental" from the title of the revised SEEA Ecosystem Accounting, adopt chapters 1-7 describing the accounting framework and the physical accounts as an international statistical standard, keep all chapters together in one document, with chapters 8-11 describing monetary valuation and integrated accounting for ecosystem services and assets, and chapters 12-14 describing the applications and extensions, and regularly evaluate and report on the usefulness and pertinence of the accounts; (decision 8c)
- Recognized that, Chapters 8-11 of the SEEA Ecosystem Accounting describe internationally recognized statistical principles and recommendations for the valuation of ecosystem services and assets in a context that is coherent with the concepts of System of National Accounts for countries which are undertaking valuation of ecosystem services and/or assets, and requested the Committee to promptly resolve the outstanding methodological aspects in chapters 8-11 as identified in the research agenda; (decision 8d)

Source: https://unstats.un.org/unsd/statcom/52nd-session/documents/decisions/Draft-Decisions-Final-10March2021.pdf

SEEA Ecosystem Accounting

- One integrated document, remove “Experimental”
- Chapters 1-7 on accounting framework and physical accounts adopted as an international statistical standard
- Chapters 8-11 on valuation
- Chapters 12-14 on applications and extensions
- Next
  - SEEA EA Implementation Strategy
  - Guidelines for biophysical modelling, valuation, scenario analysis
  - Implementation guidelines and technical notes
  - ARIES for SEEA (https://seea.un.org/content/aries-for-seea)

Section: A
Introduction and overview

- Ch.1: Introduction
- Ch.2: Principles of ecosystem accounting

Section B
Accounting for ecosystem extent and condition

- Ch.3: Spatial units for ecosystem accounting
- Ch.4: Accounting for ecosystem extent
- Ch.5. Accounting for ecosystem condition

Section C: Accounting for ecosystem services

- Ch.6. Ecosystem services concepts for accounting
- Ch.7. Accounting for ecosystem services in physical terms

Section D: Monetary valuation and integrated accounting of ecosystem services and assets

- Ch. 8 Principles of monetary valuation for ecosystem accounting
- Ch. 9 Accounting for ecosystem services in monetary terms
- Ch. 10 Accounting for ecosystem assets in monetary terms
- Ch. 11. Integrated and extended accounting for ecosystem services an assets

Section E: Complementary valuations, thematic accounting and indicators

- Ch.12: Complementary approaches to valuation
- Ch.13: Accounting for specific environmental themes
- Ch.14: Indicators and combined presentations

Why SEEA?

- **Makes nature count** within economic planning and decision-making
- **Standardization is important** in order to obtain high-quality, and comparable statistics
- **SEEA catalyzes collaboration** due its multi-disciplinary nature between different stakeholders--statistical office and universities, line ministries, businesses, etc
- **Provides framework for deriving indicators** to support various monitoring and reporting frameworks such as SDGs, Biodiversity, Climate Change, Green Economy

Decision from UNSC 2021

The United Nations Statistical Commission at its 52nd session in March 2021

- *Welcomed the progress of the Committee in mainstreaming the use of the SEEA in policy, including climate change, circular economy, sustainable finance, and biodiversity policy, and particularly encouraged the Committee to engage in the monitoring framework of the post-2020 global biodiversity agenda and participate in the proposed expert group under the auspices of the Secretariat of the Convention on Biological Diversity to provide the connection between the biodiversity and official statistical communities; (decision 8g)*

Source: https://unstats.un.org/unsd/statcom/52nd-session/documents/decisions/Draft-Decisions-Final-10March2021.pdf

SBSTTA-24

- The Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA) at its recent meeting in May 2021 :
  - > *"Recognizes* 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 information and monitoring systems and reporting"

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Source: Non-Paper on SBSTTA-24 Agenda item 3
https://www.cbd.int/doc/c/13e9/73d6/0de346d7d3433024a3ef1441/sbstta-24-nonpaper-item-03-v1-en.pdf

SEEA and Post-2020 GBF

The discussion on the headline indicators for the post-2020 global biodiversity framework is ongoing. Below is a selected list of **proposed headline indicators that can be derived from the SEEA accounts:**

- A.01 Extent of selected natural ecosystem
- B.0.1. Value of all final ecosystem services (Gross Ecosystem Product)
- 6.01 Proportion of water with good ambient water quality
- 7.01 Total climate regulation services provided by ecosystems
- 8.0.1 Number of people using wild resources for energy, food or culture
- 10.0.2 Ecosystems providing reduced coastal erosion flood protection and other services
- 11.0.1 Average share of the built-up area of cities that is green/blue space for public use for all
- 13.0.2 Integration of biodiversity into national accounting and reporting systems, defined as implementation of the System of Environmental-Economic Accounting
- 15.0.1 Biomass material footprint per capital
- 18.0.1 Official development assistance, public expenditure and private expenditure on conservation and sustainable use of biodiversity and ecosystem system

Example – SEEA and Goal A monitoring

Ecosystem extent accounts in Brazil (2000-2018)

The ecosystem extent accounts (2000-2018), by biomes, show that Brazilian terrestrial biomes lost about 500 thousand km² of their natural areas, due to conversion into modified areas such as land used for crops and grazing.

2050 Goals, milestones and Targets	Headline indicators
Goal A: The area, connectivity and integrity of natural ecosystems increased by at least [X%] supporting healthy and resilient populations of all species while reducing the number of species that are threatened by [X%] and maintaining genetic diversity; **2030 Milestones:** (i) The area, connectivity and integrity of natural systems increased by at least [5%]. (ii) The number of species that are threatened is reduced by [X%] and the abundance of species has increased on average by [X%].	A.0.1 Extent of selected natural ecosystems (forest, savannahs and grasslands, wetlands, mangroves, saltmarshes, coral reef, seagrass, macroalgae and intertidal habitats) A.0.2 Living Planet Index A.0.3 Red list index A.0.4 Species habitat index A.0.5 The proportion of populations maintained within species

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Source: (IBGE 2020), Ecosystem Accounts: Land Use in Brazilian Biomes 2000-2018

Example: SEEA and Goal B monitoring

First-level indicators	Second-level indicators	Third-level indicators	2016	2017	Net change
Provisioning services	Food/material provisioning	Agricultural /forestry/hay/ aquatic /seafood products	1405.6	1389.4	-16.2
Summation of provisioning services			1405.6	1389.4	-16.2
Regulating services	Global climate regulation services	Carbon sequestration	20.3	20.4	0.1
	Local climate regulation services	Regulating temperature	117.7	126.1	8.4
	Air fltration services	Absorbing sulfur dioxide	20.9	19.4	-1.5
		Absorbing fluoride	0.3	0.2	-0.1
		Absorbing nitrogen oxides	3.9	3.4	-0.5
		Dust retention	380.4	347	-33.4
	Water purification services	Inorganic nitrogen purification	0.2	0.4	0.2
		Active phosphate purification	0	0	-
		Chemical oxygen demand (COD) treatment	4.7	7.3	2.6
		Petroleum disposal	0	0	-
	Water flow regulation services	Conserving water resources	3688.4	3374.5	-313.9
	Mitigation services	Farmland protection	42.1	38.5	-3.6
		Flood mitigation	31.3	26.8	-4.5
	Soil and sedime retention services	Soil retention	18.5	17.2	-1.3
	Nursery population and habitat maintenance services	Biological conservation	3050.9	3011.9	-39
Summation of regulating services			7379.6	6993.1	-386.5
Cultural services	Recreation-related services	Agricultural tourism	74.3	94.4	20.1
		Forest tourism	54.9	50.5	-4.4
		Water conservancy tourism	14.6	21.7	7.1
		Marine tourism	59.9	61.1	1.2
		Urban tourism	152.2	184.3	32.1
Summation of cultural services			355.8	412	56.2
Total			9141	8794.5	-346.5

Highlighted results:

- Regulating services accounts for 60% of total ecosystem services in Guangxi

- The total value of ecosystem services (GEP) as % of GDP in Guangxi
  - 2016: 56.7%
  - 2017: 49.4%

Monetary flow accounts for ecosystem services in Guangxi, China (Unit: 100 million CNY)

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Source: NBS China 2021. Ecosystem Accounts for China. Results of the NCAVES Project.

Next step

- Submit an information note documenting the linkage of SEEA EA with the GBF monitoring framework to Open-Ended Working Group on the GBF scheduled for August 2021.
- Analyze existing metadata developed by the scientific community with regard to consistency with SEEA in collaboration with the relevant agencies (e.g. GEOBON on genetic diversity, BIP indicators and their partners, etc.)
- Prepare Metadata sheets for selected SEEA EA indicators in the current list, for example, indicators related to Goal A (size and condition of natural ecosystems) and Goal B (nature's contribution to people) of the monitoring framework

ARIES for SEEA for rapid, standardized account creation

- Global, customizable models approach enables SEEA EA compilation anywhere & improvement with local data where available
- Faster & easier to learn than other biophysical modeling approaches
- Automate production of maps & accounting tables for all accounts
- Support adoption of SEEA EA as statistical standard by providing a consistent, easy-to-use application enabling ecosystem accounting anywhere on Earth
- Infrastructure for the SEEA community to share & reuse interoperable data & models.
- More information at https://seea.un.org/content/aries-for-seea

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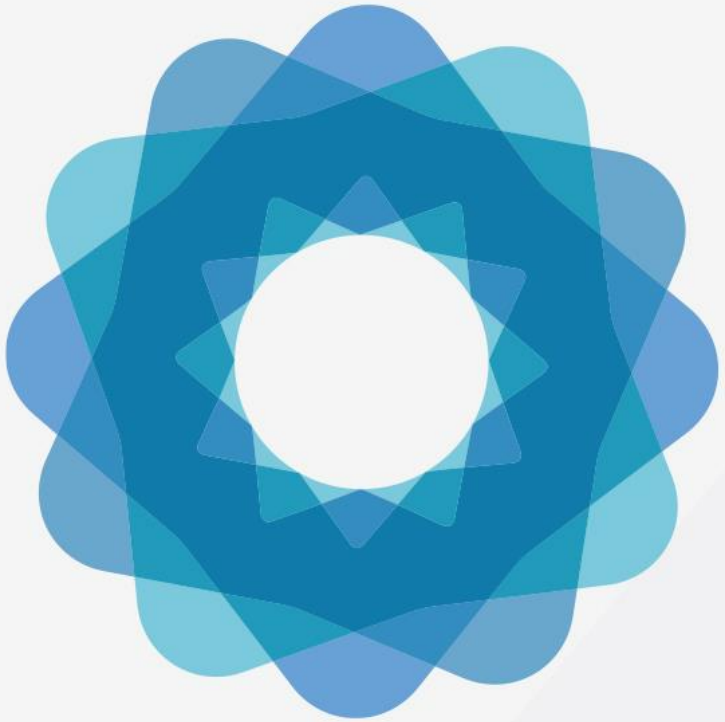

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