System of
Environmental
Economic
Accounting

SEEA CF Update

SEEA CF Technical Committee

Guidance note discussion : Issue D1 – Carbon stock account

19 November 2025

United Nations

Issue D1: Including the Carbon stock accounting the SEEA CF

- **Issue description October 2024**:
  - "The carbon stock account has strong links to both the SEEA EA and SEEA CF. It should be investigated whether a) the carbon stock account should also be included in SEEA CF and b) if this warrants a more elaborate description (e.g., concerning carbon in the economy)."

- **Statistical context:**
  - Carbon stock estimates for timber resources noted in the SEEA CF Chater 5
  - Carbon stock accounts described in SEEA Ecosystem Accounting and were included in the SEEA Experimental Ecosystem Accounting in 2013.
  - Close links to compilation of some ecosystem accounts, especially ecosystem condition and global climate regulation services – focus on carbon stored in ecosystems.
  - Links to a number of SEEA CF accounts – air emissions, energy, timber, land & soil resources, mineral and energy resources.

Structure of a carbon stock account (tonnes)

	Geocarbon					Biocarbon			Carbon in the economy			Carbon in the seas	Carbon in the atmosphere	Total
	Oil	Gas	Coal	Limestone and marl	Other	Terrestrial	Freshwaters and saline wetlands	Marine	Inventories	Fixed assets, cosumer durables	Waste	Total	Total	
Opening stock														
Additions to stock														
Natural expansion														
Managed expansion														
Discoveries														
Upwards reappraisals														
Reclassifications														
Imports														
Reductions in stock														
Natural contraction														
Managed contraction														
Downwards reappraisals														
Reclassifications														
Exports														
Net carbon balance														
Closing stock														

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Key issues: Treatment as environmental asset

Key discussion points:

- SEEA CF para 2.19 and 2.100 indicate that carbon is not to be treated as a stand-alone environmental asset
- Do carbon stocks provide benefits?
  - Yes in terms of underpinning benefits recorded as being supplied by other environmental assets – timber, oil resources, ecosystem assets
  - However, not true for the vast bulk of carbon stocks - although measurement boundary could be drawn – consider situation for water
  - Also carbon in some reservoirs can provide disbenefits – e.g. atmosphere
- Is there double counting with other environmental assets.
  - Potentially yes but could consider creating a third category of "biophysical components" alongside individual environmental assets and ecosystems
  - Some elemental compounds (water, individual minerals) treated as assets – question of mutual exclusivity (e.g. water in trees not included in water resources)

Key issues: Monetary value of carbon stocks

Key discussion points:

- Currently in the SEEA EA there is no expectation of estimating a monetary value of the physical stock of carbon directly and it was not a point of discussion until this year
- Value from carbon markets
  - Does the existence of carbon markets establish a value for specific carbon stocks in and of themselves?
  - Should some carbon stocks be treated as economic assets? Even if this is true, this will concern a very small proportion of the carbon stock – is that a problem?
- Carbon stock as a third category
  - Look at existing values for environmental assets (timber, oil, ecosystems) and attribute values to carbon
  - Valuation scope could include ecosystem services – beyond SEEA CF valuation scope.

Key issues: Inclusion in SEEA CF

Key discussion points:

- If carbon stock is not an environmental asset, can/should the carbon stock account be included in the SEEA CF?
- No limitation in terms of accounting structure – the use of the asset account structure entirely consistent with SEEA CF
- Current description in the SEEA EA:
  - Provides a basis for compilers to proceed
  - Although, note it is not an international statistical standard but an application and extension (noting there is no guarantee of outcomes for UNSC in 2028)
  - Also, recognized that the content in SEEA EA can be updated and enhanced particularly concerning non-biosphere stocks
- Opportunity through the current update process to highlight the potential of carbon stock accounting and move beyond more limited UNFCCC reporting scope
- Measurement and allocation is challenging for some carbon stocks and depending on the measurement boundary, there may be large uncertainties
- There are strong connections to other accounts in the SEEA CF in accounting terms – especially air emission accounts – presents a more complete accounting structure within the SEEA CF

Key issues: Measurement boundary and treatments

Points:

- Conceptually include all reservoirs but limit focus on oceans
- Need to examine further potential to measure the stocks of carbon in the atmosphere and the allocation to countries
- Need to clarify the boundary between carbon in the economy and carbon in the biosphere: key issues are biological resources and carbon capture and storage – alignment with B3 carbon flows critical.
- Determine measurement boundary for peatlands and related ecosystem types
- Aim to record gross flows among reservoirs

Other topics for discussion and feedback

- Description of linkages to other SEEA accounts
- Discussion on the potential role of carbon stock accounts as a fundamental account underpinning the compilation of many other accounts and supporting integration
- Importance of documenting links to UNFCCC reporting but recognising that its scope and focus is considerably different from that envisaged for carbon stock accounts
- Potential applications and uses
  - Supporting analysis of carbon markets
  - Carbon stock change matrix following principles of land cover change matrix
  - Carbon e2e supply chains for specific activities or products; carbon embodied in international trade
  - Development and implementation of national carbon budgets
  - Tracking the energy transition
  - Spatially explicit data to identify priority locations for NbS and emission reduction

Questions

1. Should the carbon stock be treated as an environmental asset in the SEEA CF? If so, what is the appropriate rationale? If not, what is the appropriate rationale?
2. Should the treatment of environmental assets be modified in the SEEA CF to accommodate different categories of assets in recognition of their different attributes but to ensure no double counting?
3. Should the monetary value of the carbon stock be considered in the SEEA CF or in the SEEA EA? If so, what is the main motivation for undertaking this valuation?
4. Are there negative consequences of not including the carbon stock as an environmental asset?
5. Are there negative consequences of not including the carbon stock accounts in the SEEA CF?