

SEEA Experimental Ecosystem Accounting: Revision 2020

SEEA Ecosystem Accounting

Preliminary outline

15 June, 2018

Background

There has been widespread enthusiasm and support for the development of ecosystem accounting since the finalisation of the SEEA Experimental Ecosystem Accounting manual in 2013. This support is evidenced by the numerous case studies and programs of work that have been initiated since then by government agencies, environmental NGOs, academics and in the corporate sector using the SEEA EEA framework.

With this support, the UN Statistics Commission through the UNCEEA endorsed a revision of the SEEA EEA and the revision process is now underway. The revision will use the SEEA EEA and the more recent SEEA EEA Technical Recommendations (UNSD, 2017) as the starting point for the revised document with the intention to submit an updated document to the UN Statistical Commission for the March 2021 meeting.

While the work on ecosystem accounting remains a new area for official statistics, it builds on a wide range of long-standing expertise in measurement from a range of disciplines. The challenge thus lies primarily in the synthesis of measurement rather than the development of new techniques. The experience over the past 5 years, and the learnings anticipated through the next two and half years of the revision process, are expected to reach a point where the “Experimental” tag can be dropped. Hence the proposed title of the revised document is the SEEA Ecosystem Accounting (SEEA EA).

Further, there is a general ambition to raise the concepts and definitions in SEEA EA to the level of a statistical standard and thus support as high a degree of harmonisation in measurement as possible. It is accepted that this standard may not be able to be met in all areas but assessment of the progress will be made through the latter stages of the revision process so that appropriate advice can be provided to the statistical community ahead of the UNSC 2021 meeting.

This document provides a draft outline for the proposed content of the SEEA EA. It builds on the framing of ecosystem accounting that has been developed for the description of ecosystem accounting in the SEEA EEA and in the Technical Recommendations.

One feature of the engagement of many disciplines in the ecosystem accounting work is that the understanding of the purpose of a statistical standard is not well understood. As a result, it is clear that to receive wide endorsement, it will be important to consider not only include agreed concepts, definitions, accounting structures and treatments, but must also place a wide range of applications and extensions of ecosystem accounting in context.

Given this, a two part structure is proposed for the SEEA EA where Part A describes the core ecosystem accounting framework and associated concepts, terms, classifications, accounting

treatments and accounts; and Part B describes a number of potential complementary accounts that have emerged as being important parts of the ecosystem accounting discussion and suited to supporting discussion of a wider variety of policy and analytical questions.

In addition, it will be necessary to document the connections between the core and complementary accounts and various policy applications and analytical approaches. To provide an indication of the types of topics that should be documented, a list is provided following the description of the proposed content of Part A and Part B. Consideration is being given to updating or complementing the SEEA Applications and Extensions which currently only focuses on topics related to the SEEA Central Framework. This may be one avenue by which these other aspects of the ecosystem accounting discussion can be recognised.

A number of annexes are being considered including a glossary, classifications and a research agenda as developed for other similar documents. Further, it is planned to incorporate in the accounts of the core framework stylised data to support better articulation of the relevant concepts. Finally, as part of the SEEA EEA revision process, work will be undertaken to continue the development of technical guidance to support current testing and future implementation of ecosystem accounting.

This preliminary outline has been prepared for discussion and feedback from the UNCEEA at their June 2018 meeting. It will also be provided as a background document to the Expert Forum on Ecosystem Accounting to be held in New York, 18-20 June, 2018. It will be subject to ongoing development and refinement through to November 2018 at which time the drafting process is expected to commence.

System of Environmental-Economic Accounting: Ecosystem Accounting

Preliminary Outline

V1.0, June 2018

Introduction

Purpose of the SEEA EA

Description of the ecosystem accounting approach

History and development process

Connections to other statistical standards including the SEEA Central Framework, SNA, FDES

Relationship to other global environmental measurement initiatives (e.g. wealth accounting, SDG, CBD, UNCCD, IPBES, ...)

Structure of SEEA EA document / Reading guide

Part A: Core Ecosystem Accounting Framework

1. Overview of the core framework

- a. Core concepts and definitions
 - i. Ecosystem extent, condition, capacity, ecosystem services, benefits
 - ii. Production and asset boundaries
- b. General national accounting principles
- c. Summary of core ecosystem accounts
- d. Introduction to stylised example/case study

2. Spatial units for ecosystem accounting

- a. The role of spatial units in the core framework
- b. Definitions of spatial units for ecosystem accounting
- c. Considerations in the delineation of spatial units
 - i. Connection to land use and land cover
 - ii. Delineating spatial units in marine areas
 - iii. Connections to economic units
 - iv. Other considerations (e.g. treatment of linear features, atmosphere, subterranean)

3. Accounting for ecosystem extent

- a. Purpose in accounting for ecosystem extent

- b. The scope of ecosystem accounting
 - i. Terrestrial
 - ii. Freshwater
 - iii. Marine
- c. Classification of ecosystem types
- d. Ecosystem extent account
- e. Considerations in accounting for ecosystem extent
 - i. Ownership and land tenure

4. Accounting for ecosystem condition, biodiversity and ecosystem capacity

- a. Purpose in accounting for ecosystem condition and capacity
- b. Definition of ecosystem condition
 - i. Structure (including types of indicators) for the measurement of ecosystem condition
 - ii. Key characteristics in measuring condition
 - Terrestrial
 - Freshwater
 - Marine
- c. Accounting for biodiversity
 - i. The role of biodiversity measurement in ecosystem accounting
 - ii. Accounting for ecosystem diversity
 - iii. Accounting for species diversity
 - iv. Other considerations in accounting for biodiversity (e.g. spatial scale, aggregation across species and ecosystems, accounting for genetic diversity)
- d. Structure of ecosystem condition accounts
- e. Reference conditions for ecosystem accounting
- f. Aggregate measures of ecosystem condition
- g. Accounting for ecosystem capacity
 - i. Definition of ecosystem capacity (including links to related measures – potential supply, capability)
 - ii. Integrating measures of capacity in ecosystem accounts

Annex: Accounting for water, carbon and other individual environmental assets and flows in physical terms

5. Accounting for ecosystem services in physical terms

- a. Purpose of accounting for ecosystem services

- b. Definitions and concepts concerning ecosystem services
 - i. Transactions in ecosystem services
 - ii. Final ecosystem services
 - iii. Intermediate ecosystem services
 - iv. Abiotic services
 - v. The treatment of services related to biodiversity
 - vi. Benefits
 - vii. Users and beneficiaries
 - viii. Joint production and aggregation of ecosystem services
 - ix. Treatment of ecosystem disservices
 - x. Treatment of non-use related services
- c. Classification of ecosystem services
 - i. Principles of the classification
 - ii. Key ecosystem services
- d. Accounting for the supply and use of ecosystem services
 - i. Ecosystem Services Supply and Use Account in physical terms
- e. Considerations in accounting for ecosystem services in physical terms
 - i. Connections to alternative conceptions of ecosystem services
 - ii. Alternative perspectives on recording supply and use of ecosystem services

6. Valuation of ecosystem services

- a. Purpose and focus of valuation in ecosystem accounting
 - i. Integration with economic accounts
 - ii. Welfare valuations
 - iii. Non-monetary valuations
- b. Defining exchange values
 - i. National accounting valuation concepts
 - ii. Institutional settings for non-monetary transactions
- c. Techniques for valuing non-monetary transactions
 - i. Situations where a direct connection to market prices exists
 - ii. Situations where revealed expenditures can be related to individual ecosystem services
 - iii. Situations where the connection to revealed economic behaviour is not close
- d. Ecosystem services Supply and Use account in monetary terms
- e. Considerations in the valuation of ecosystem services

- i. The use of benefit transfer techniques
- ii. Aggregation of ecosystem service values

7. Accounting for ecosystem assets

- a. Principles of accounting for assets
 - i. Concept of Net Present Value
 - ii. Estimating asset lives
 - iii. Discussion of discount rates
- b. Ecosystem asset account in monetary terms
- c. Defining and measuring ecosystem degradation
 - i. Definition of ecosystem degradation
 - ii. Link to ecosystem capacity
 - iii. Allocation of ecosystem degradation to economic units
 - iv. Considerations in the valuation of ecosystem degradation
- d. Considerations in measurement of ecosystem assets
 - i. Connection to market-based land valuations

8. Integrated accounting for ecosystem services and assets

- a. Combined presentations for ecosystem accounting
- b. Extended supply and use accounts
- c. Integrated sequence of institutional sector accounts and adjusted income aggregates
- d. Extended and integrated balance sheets

Part B: Complementary accounts

1. Complementary approaches to valuation

- a. Measuring welfare changes
- b. Describing concepts of shadow prices and consumer surplus
- c. Complementary valuations and accounts for ecosystem services and ecosystem assets
- d. Connections to wealth accounting
- e. Connections to ecological debt and expected liabilities for ecosystem restoration

2. Ecosystem accounting at alternative scales

- a. Considerations in accounting at sub-national and landscape scale

- b. Ecosystem accounting for urban areas
- c. Connections to corporate natural capital accounting

Annexes

- 1. Glossary
 - 2. Classifications
 - 3. Research agenda
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Topics relating to application and extension of the ecosystem accounting framework

- 1. Using the SEEA EA framework to derive indicators**
 - a. Role of accounting frameworks, the information pyramid and types of indicators
 - b. Ecosystem accounting and the SDGs

- 2. Extended analytical techniques**
 - a. Cost-benefit and trade-off analysis
 - b. Input-output and CGE analysis
 - c. Productivity analysis
 - d. Life cycle and supply chain analysis
 - e. Other analytical techniques

- 3. Connections to policy applications**
 - a. Policy themes
 - i. Biodiversity conservation and management
 - ii. Climate change mitigation and adaptation
 - iii. Land degradation
 - iv. Agricultural policy
 - v. Other policy themes
 - b. Policy approaches and tools
 - i. Monitoring and evaluation (e.g. SOE reporting)
 - ii. Development of environmental markets
 - iii. Other policy approaches