SEEA Experimental Ecosystem Accounting: Revision 2020

SEEA Ecosystem Accounting

Main Purposes of Ecosystem Accounting: Draft

V3.0, 15 June, 2018

Background

Since its release in 2013, the *System of Environmental-Economic Accounting 2012 Experimental Ecosystem Accounting* has drawn many experts from many sectors and disciplines to consider the national accounting and statistical approach to the organisation of data about ecosystems and the integration of these data with standard economic information. Aside from the integration of data, one attraction has been that the core ecosystem accounting framework can be applied at a wide range of spatial scales from the national level to catchment and individual ecosystem scale. The range of applications and the wide interests of those that are now aware of ecosystem accounting has generated a complementary range of perceptions as to the precise intent and purpose of ecosystem accounting.

This note has been drafted to provide a starting point for discussion of the main purposes of ecosystem accounting and hence to establish clear expectations for the process of revising the SEEA Experimental Ecosystem Accounting that is commencing. Following an introduction to the basis for ecosystem accounting, this note describes three areas in which the purpose of ecosystem accounting requires clarification.

Introduction

From a statistical perspective and building on its national accounting heritage, the SEEA Ecosystem Accounting (SEEA EA) has the main purpose of providing national level decision makers with broad, coherent and internationally comparable information about (i) the changing composition and condition of ecosystems and their biodiversity and (ii) the ecosystem services they provide to economic units, including households, and society as a whole. The measurement of both the stock of ecosystem assets and the flows of ecosystem services encourages an assessment of the trade-offs that arise between alternative uses of ecosystems including land and waters and promotes the monitoring and evaluation of changes in them over time.

Ecosystem accounting information directly supports the discussion of environmental sustainability and resilience and provides inputs to the broader discussion of sustainable development, addressing economic, social and environmental aspects. This extends, for example, to supporting the discussion of the 2030 development agenda and the derivation of SDG indicators.

The SEEA EA is based on established national accounting principles and concepts concerning the recording of units, transactions, stocks and flows. Consequently, it supports the

organisation of environmental information in a manner that allows for its integration with standard economic and financial data. In turn, this supports the broadening of economic discussion and analysis beyond standard measures of production, income and economic assets.

One consequence of using national accounting principles and concepts is that some treatments may not easily correspond with common ecological and economic measurement approaches. Understanding and describing the relevant differences will be a key part of the revision process. Further, the SEEA EA (and the SEEA family of publications more broadly) are fundamentally statistical documents written for the purposes of generating internationally comparable official statistics. The SEEA EA therefore stands distinct from, but supportive of, the range of policy and analytical frameworks, such as green economy, natural capital, biodiversity finance, etc. A related point is that the data from the SEEA EA can support, but does not replace, analytical work such as cost-benefit analysis, scenario analysis and comparison and forecasting and projections.

Given this context, an important part of the development of the SEEA EA will be placing the ecosystem accounting framework in the context of the range of other environmental and economic measurement, policy and analysis that is currently underway. Generally speaking ecosystem accounting can readily complement these other areas of work and the revision process will work to describe these complementarities.

Spatial scale for ecosystem accounting

In meeting the main purpose of providing information to decision makers primarily at the national level, the spatial scale for ecosystem accounting in SEEA EA focuses on countries as a whole, large jurisdictional units or large environmental areas within a country. Starting from this perspective requires that ecosystem accounting encompasses measurement of multiple ecosystem types (forests, wetlands, agricultural areas, etc) and multiple ecosystem services (provisioning, regulating and cultural).

Conceptually, the accounting principles used in the SEEA EA can be applied at all spatial scales - just as national accounting principles are applied to large and small countries (USA and Tonga for example). The principles can also be used at relatively fine spatial scales to provide information to support decision making by, for example, farmers, managers of protected areas and local communities. Further, since the accounting concepts are aligned across scales, the information sets compiled through ecosystem accounting at fine and larger scales should be, in concept, consistent and coherent. That is, there should be the potential to establish micro-macro linkages.

In practice, the compilation of ecosystem accounts may be undertaken using detailed spatial data or using more aggregated data, the choice being dependent on the types of decisions and analysis of interest and the data available.

In addition, it would be reasonable to expect that data from national and macro scale accounts can be used to identify those areas where, for example, there may be particular concerns about loss of condition or changes in ecosystem services supply. Based on this initial assessment, a second stage could be undertaken to collect more detailed data on those areas to understand the situation in more depth and develop appropriate policy responses.

The ecosystem accounting "narrative"

The prime motivation for SEEA EA is that separate analysis of the economy, on the one hand, and ecosystems and biodiversity on the other, does not adequately reflect the embodied relationship between humans and the environment. Conceptually, the SEEA EA framework is an accounting representation of a nested systems perspective (economy in society in nature) and can support measurement and analysis based on the use of multiple capitals, such as wealth accounting.

The potential of ecosystem accounting to connect to these broader, more systemic, analytical approaches, provides the opportunity for the development of harmonised data to support such analysis and a common language for the exchange of experiences across disciplines, across sectors and across countries.

Therefore, beyond its role in the organisation of data, the SEEA EA framework supports a more informed discussion of the connections between people and the environment and helps to structure a narrative about these systemic relationships utilising the same language and framing used in economic and financial discussions.

Much work on ecosystem accounting has tended to focus on using the ecosystem accounting framework to organise data without necessarily considering the integration of these data with economic information. However, the potential to translate environmental information into economic decision making is a key feature of SEEA EA, and this directly influences the design of the framework through the application of national accounting concepts and principles. While this may drive some differences from common environmental measurement practice, making the connection is considered of particular importance in the formation of environmentally sustainable economic policy. Further, increasingly, it is highly relevant in environmental policy to enable those charged with maintaining and restoring environmental condition to better explain the rationale and performance of environmental policies in economic terms.

Valuation and ecosystem accounting

Monetary valuation is not a mandatory requirement for the use of the ecosystem accounting framework, nor is there an ambition in the SEEA EA to provide a single estimate of the "total value of nature". Indeed, the initial focus in SEEA EA is to use the ecosystem accounting framework to organise biophysical data concerning stocks and changes in stocks of ecosystem assets (including degradation) and flows of ecosystem services. Biophysical data organised in this way provides a substantial and harmonised information base for all decision makers.

SEEA EA does recognise and support the monetary valuation of ecosystem services and ecosystem assets, following the exchange value concept of the national accounts. The use of exchange values allows ecosystem service and ecosystem asset values to be compared to and directly integrated with the values of assets and income recorded in the standard national accounts. These valuations thus support the derivation of aggregates such as degradation adjusted measures of national income and broader measures of national wealth. Exchange values also support direct incorporation of ecosystem services and assets into multifactor productivity, input-output and general equilibrium analysis.

While for the purpose of integrated accounts there is a requirement to use a consistent exchange value concept, in many cases there is interest in valuations of ecosystem services and ecosystem assets that incorporate social costs and benefits and are more focused on the assessment of changes in welfare. For these purposes, the ecosystem accounting data in biophysical terms can provide a common starting point. Then, through the use of alternative

valuation concepts or different assumptions concerning institutional arrangements, complementary valuations may be obtained to support decision making. Different valuations may be presented within complementary accounting structures.

While these complementary valuations will be different from the estimates obtained from the core SEEA EA framework, together they will provide information to support discussion of a wide range of policy and analytical questions. Indeed, a direct comparison of exchange values (based on existing institutional arrangements) and other valuations based on alternative assumptions, may provide clear messages on the size of the economic effect of current institutional arrangements. The revised SEEA EA will aim to place all valuation approaches in a common context to best support decision makers.