Natural Capital Accounting

The System of Natural Accounts (SNA)

The SNA is the internationally agreed-upon standard for measuring economic activity, which is primarily done through Gross Domestic Product (GDP). The SNA does not account for changes in natural capital, so GDP can be growing even as nature is degrading. However, the 2025 SNA update will treat the depletion of natural resources as a cost of production. This will integrate degradation of nature (albeit in a limited way) for the first time in the SNA, but it is not expected that these statistics will be compiled until 2030. More information can be found here https://www.oecd.org/en/publications/measuring-natural-resources-in-the-national-accounts_420c7c2a-en.html

As it has been long recognised that conventional metrics do not reflect depletion of natural assets / resources and the degradation of nature, Ecosystem and Natural Capital Accounting approaches have been developed as a way of compiling information so that nature can be integrated into decision-making.

The System of Environmental Economic Accounting – Central Framework (SEEA Central Framework)

The SEEA-EA central framework is a standardised approach to measuring environmental flows, stocks of environmental assets, and economic activity related to the environment in a way that is compatible with the SNA. More information can be found on it here: https://seea.un.org/en/methodology/seea-central-framework

The System of Environmental Accounting – Ecosystem Accounting (SEEA EA)

The SEEA EA framework is a standardised approach to organising data on ecosystems that enables changes in ecosystems and their services to be tracked. It has been adopted by the United Nations Statistical Commission. It is made up of five core accounts which are

1. Ecosystem extent accounts
2. Ecosytem condition accounts
3. Ecosystem services – physical flow accounts
4. Ecosystem services – monetary flow accounts
5. Monetary ecosystem asset accounts

The SEEA EA Chapters 1-7 on compiling ecosystem extent, condition and service accounts for physical flows have been accepted as international statistical standards. Chapter 8-11 on the monetary valuation of ecosystem services has not been accepted in the same way, but they represent current recommendations. Guidelines for compiling monetary accounts use the concept of exchange values, rather than other approaches such as welfare values. This enables the accounts to be comparable with the SNA, however there are limitations to this approach. More information on the SEEA EA can be found here: https://seea.un.org/en/methodology/ecosystem-accounting

In the EU

From 2026, EU Member States must report to Eurostat on ecosystem extent accounts, seven ecosystem services accounts and ecosystem condition accounts for five types of ecosystems

and using nine indicators. There is not yet a legal requirement for States to produce monetary accounts for ecosystem services. However, it is recognised that the next step to producing SEEA EA accounts comparable with the SNA will be to produce monetary accounts. To that end, Eurostat has published a feasibility study on valuation for ecosystem service accounts, which can be accessed here: https://ec.europa.eu/eurostat/web/environment/methodology#Reference%20documents%20on%20environmental%20accounts

Ecosystem Service Classification Systems

Millenium Ecosystem Assessment (MA)

This assessment took place from 2001 to 2005. Ecosystem services were defined as "The benefits humans derive from nature". They were grouped into the four categories of supporting, provisioning, regulating and cultural services. This approach is not currently in use and it has been superseded by approaches such as CICES and the SEEA EA (described below). However, the MA marked the beginning of an increase in research on ecosystem services and how they contribute to and impact human well-being. More information can be found here: https://www.millenniumassessment.org/en/index.html

The Economics of Ecosystems and Biodiversity (TEEB)

TEEB is an initiative that followed on from the MA and was launched in 2007. TEEB defined ecosystem services as "the direct and indirect contributions of ecosystems to human well-being". They produced a classification system of 22 services divided into groups of provisioning, regulating, habitat, and cultural / amenity services. These services are listed here: https://www.esvd.info/_files/ugd/53b4f9_1e5e0ba457744f3ea3e8f3d1bab78e88.pdf

Common International Classification of Ecosystem Services (CICES)

CICES was first published in 2013 and the last update, Version 5.1, was published in 2018. CICES defines services as "the contributions that ecosystems make to human well-being, and distinct from the goods and benefits that people subsequently derive from them". This classification only focuses only on final ecosystem services, and includes provisioning, regulating and cultural services (NOT supporting or habitat services which were included in the MA / TEEB classifications). There are 84 specific classes (of services) defined in CICES, and it can be accessed here: https://cices.eu/applications-of-cices/. The file provides a crosswalk between the classes of services identified in CICES and those used in other classification systems, such as the MA, TEEB and IPBES

The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES)

IPBES prefers to use the framework of Nature's Contributions to People (NCP) rather than ecosystem services. NCPs are defined as "contributions, both positive and negative, of living nature to the quality of life of people". There are 18 NCPs defined in the IPBES global assessment report, which can be found here: https://www.ipbes.net/global-assessment

National Ecosystem Services Classification System (NESCS)

NESCS is developed in the United States of America by the EPA. This classification system is also focused exclusively on final ecosystem services. They state that "Final ecosystem service flows occur at the "point of handoff" from natural systems to human systems." This framework uses codes to link the environment to the "ecological end-product", to the direct use, to the direct user. The "direct use" class is the one which is most analogous to other classifications definitions of services. There are 17 direct use classes. Information on the NESCS can be accessed here: https://cfpub.epa.gov/si/si_public_record_Report.cfm?dirEntryId=350613&Lab=CEMM

SEEA EA

The SEEA Ecosystem Accounting module outlines a further classification of ecosystem services because at the time of publication, an internationally agreed classification of ecosystem services had not been finalised. In the SEEA EA, ecosystem services are defined as "the contributions of ecosystems to the benefits that are used in economic and other human activity". The services included in the SEEA EA list include some of those listed by CICES, NESCS, TEEB, and the IPBES NCPs, and are based on the principle that "the service be regarded as constituting a relevant and important ecosystem service in many countries and contexts." There are 37 services defined in the SEEA-EA reference list; it can be accessed here: https://seea.un.org/en/methodology/ecosystem-accounting at the link to "Ecosystem Services Reference List Crosswalk"

What's going on with the economy and nature? Why do we need to value nature?

The Economics of Biodiversity: The Dasgupta review, led by Sir Partha Dasgupta, explains the dependence of our societies and economies on nature, and calls for changes in how we view nature, and in particular how we measure economic success, so that we can enhance both human prosperity and the health of the natural world. It can be found here: https://www.gov.uk/government/publications/final-report-the-economics-of-biodiversity-the-dasgupta-review

The IPBES Global Assessment emphasises how the current western economic paradigm is linked to environmental harm. More detail can be found here: **https://www.ipbes.net/global-assessment** The IPBES Values Assessment in particular details how the biodiversity crisis is linked to the ways in which nature is valued (or not) in political and economic decision-making. The summary for policymakers can be found here: **https://www.ipbes.net/the-values-assessment**