

Handling negative monetary values of economic flows depending upon ecosystem services in SEEA accounts. Reflections from the UK Natural Capital Accounts

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Abstract

The UK Office for National Statistics has identified conceptual and practical challenges in applying SEEA-EA framework in treating negative monetary values connected to ecosystem services in Natural Capital Accounts (NCAs).

We examine two scenarios where negative valuations arise and argue that they require different treatment depending on the ecosystem service's features.

The first case concerns provisioning services, specifically water supply, where physical flows are positive though the Resource Rent (RR) approach produced negative monetary values in 2025. Previous studies (Edens and Graveland, 2014; Obst et al., 2016) suggest such outcomes are not uncommon in highly regulated contexts. However, negative monetary values connected to provisioning services raise both theoretical and practical concerns. According to SEEA-EA, externalities of provisioning services providing positive final or intermediate economic goods (such as water, which fulfil a fundamental human need) should not be recorded separately. Moreover, negative monetary values risk undermining decision-maker confidence in SEEA-based accounts and recognition of natural resources as economic providers. In collaboration with [ESCoE](#) academics, we are exploring alternative valuation approaches, including replacement cost, abstraction prices, value transfer, and refinements to RR methodology to better reflect constraints on fixed capital.

The second case relates to greenhouse gas (GHG) sequestration services. The UK's NCAs record both negative physical and monetary values when ecosystems act as net emitters, such as through peatland degradation. Although SEEA-EA recommends recording zero service supply in such cases, we argue that negative values are economically meaningful in this context, as GHG sequestration is an intangible, non-marketed service defined by its capacity to internalise a negative externality.

Using the framework proposed by Femia et al., (2024), we add empirical results to applications by Oras, Schenau et al., (2024), highlighting the importance of aligning valuation methods with the characteristics of the ecosystem services they are connected to, and seek feedback on our methods.

Keywords:

Ecosystem services; valuation; SEEA

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