

**Title:**

**Reconciling views and values of Ecosystem Services for sustainability? – Thoughts and tools from the Belgium Ecosystem Services community of practice.**

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**Authors' disciplines:**

Geography, Biology, Sociology, Economics, Ecological Economics, Political Sciences, Bioengineering, Agroecology.

**Theme chosen from the eight proposed topics:**

The contribution could be associated to either of the two topics mentioned below:

1. Global commons: energy, climate, biodiversity (particularly stock-based vs flow-based economy; energy thresholds and peak resources – fossil fuels, rare earth metals, phosphorus, forest, fisheries resources; implications of production and lifestyle patterns – consumption and transportation; prevention of and adaptation to systemic crises; management of common goods...).
2. Research stream on transdisciplinary research: research findings on a specific sustainability topic based on a transdisciplinary mode of organisation or analysis of the various problems that arise from this type of approach (e.g. selection of stakeholders, learning best practices or design principles). [8th category ]

**Indicative bibliography containing the main sources considered: see end of document.**

## **Abstract:**

### **Reconciling views and values of Ecosystem Services for sustainability? – Thoughts and tools from the Belgium Ecosystem Services community.**

#### ***Theoretical framework***

The concept of Ecosystem Services first emerged as a utilitarian justification for preserving ecosystems and biodiversity (Gomez-Baggethun et al. 2010). Indeed, beyond the intrinsic, aesthetic and spiritual values one may assign to biodiversity, the reasons to manage it are multiple due to its central role in a wide panel of ecological functions crucial to human wellbeing and development. For instance, biological structures and ecological processes provide us with food, raw materials, water and energy, protect us against erosion or floods, control water quality, pest impact, pollination, give us large enjoyable spaces for recreation, sport and leisure activities, etc. Despite contributing considerably to economic development, social welfare and health, biodiversity has often been considered as inexhaustible and unlimited which has caused dramatic damages in economic, social and environmental issues.

This can partly be explained by the fact that many ES are ‘public goods’ or ‘common goods’: they are often open access in character and non-rival in their consumption. Market and policy decisions often fail to capture most ES values with the exception of a few marketed provisioning ecosystem services ‘ES’ (e.g. food, timber). This systematic under-valuation of ecosystem services and failure to capture the values is one of the main causes underlying today’s biodiversity crisis.

Latest developments related to ES research bring forward the potential of ES as a tool to guide natural resource management and landscape planning. For example, practical applications of the concept include guiding land consolidation schemes, biodiversity offsetting, and environmental impact assessment in general (Jacobs et al., 2013).

Current research and practice on ES is mostly advancing in trade-off analysis, comparing potential and actual delivery to various societal demands. However, this ‘efficiency’ is only one of the three central ES values (and of the three components of sustainability). Optimizing efficiency is important, but determination and consideration of (1) limits to the use related to ecological resilience and (2) equitable sharing of the earth’s resources is central in root literature of both sustainability and ES, but underrepresented in current research and practice. This contribution confronts the ES concept with the theoretical and practical sustainability context.

The origin of the research field and concept of biodiversity, natural capital, and ES is indeed rooted in sustainability thinking, and bridges principles from economy and ecology (Arnaud de Sartre et al., 2014). The explicit link between sustainability and ES assessments stresses the importance of three values of ES: ecological sustainability and resilience, social fairness and distribution, and economic efficiency. Conclusively, the final goal of ES valuation is to achieve a more sustainable resource use, contributing to wellbeing of every individual, now and in the future by providing an equitable, adequate and resilient flow of essential ES to meet the needs of a burgeoning world population (Millenium Ecosystem Assessment, 2005).

#### ***Diagnosis***

Until now, there is reluctance to fully embrace the message that by ignoring the dependence on our ‘natural capital’ we are literally living at the expense of the poor and the future generations. Still, the ES concept could be an effective lever to contribute to sustainable development with more than just lip service. This concept has been picked up widely,

percolated in many policy documents and is being implemented in a variety of contexts including for the management of multifunctional landscapes. As the time left to effectively tackle sustainability challenges is running out, as resilience of many local systems is eroded, their thresholds crossed, and future ES supplies jeopardized; urgent refocusing of ES research and -more importantly- practice on its strong sustainability roots is essential. This conclusion directly arises from the methodological and conceptual challenges for ecosystem service valuations developed in the recent book entitled "Ecosystem Services – Global Issues, Local Practices" (Jacobs et al. 2013), echoes in many reflections from practice, and mirrors current scientific opinions on the topic.

### ***Reconciling views and values of ES for sustainability?***

This interdisciplinary contribution builds on the outputs of the above-mentioned book "Ecosystem Services – Global Issues, Local Practices" (Jacobs et al. 2013) with contributions from more than 80 authors from the BEES (Belgium Ecosystem Services) community of practice (<http://www.beescommunity.be/en/>). In this context, we recently performed a (non-exhaustive) review of how the ecosystem service (ES) concept could be useful to Belgian and international policy actors. This contribution has been jointly conceived and written by authors from most of the cases reviewed. Our contribution intends to elaborate on the concept of ES valuation and how it could (not?) reach the intended goal.

Results highlight that a clear tension appears between policy actors' desire to acquire tools for monetary valuation and the risks posed by monetary valuation (e.g. commodification of nature, neglect of other values...). On the one hand, there is the need for 'proof of concept', and the availability of economic tools and mainstream character of 'money talk' is a pragmatic choice. On the other hand, we note a strong reluctance and critical attitude towards the culture of 'math and money' at all levels: it is perceived as one of the main causes of social and ecological unsustainability. Several actors therefore urge for more collaborative approaches of ES valuation, e.g. to build trust between providers and beneficiaries, as monetary valuation alone is not relevant in their working context.

In the first part of this contribution, we expand on the main outcomes and challenges, and develop some key points that should be kept in mind and transparently addressed if ES research, governance and practice have to contribute to a truly sustainable multifunctional and resilient landscape management. In particular, several actors point out the necessity to account for environmental thresholds and ecological values, to consider socio-ethical values, and to deal with uncertainty, ambiguity, and complexity in decisions and actions. We believe these are crucial items that should be considered when engaging in ES valuation.

In the second part, based on our case studies review, some valuation tools and test cases are presented. Among the suggested solutions are the development of alternative new valuation methods and practices - amongst others using social debate and including relations between humankind and nature - as well as methods to integrate different types of values (e.g. economic, heritage, and biodiversity value) in decision making.

We conclude that integrated valuation of ES could start reconciling human viewpoints on nature and pave the way forward to the intended social and ecological sustainability, but there is still a long way to go.

**Key References:**

Arnaud de Sartre, X. Castro, M., Dufour, S., and Ozward J. 2014. Political Ecology des Services Ecosystémiques. Peter Lang, Bruxelles.

Gomez-Baggethun, E., De Groot, R., Lomas, P.L., and Montes, C. 2010. The history of Ecosystem Services in theory and practice: from early notions to markets and payment schemes. *Ecological Economics*, 69 (6), 1209-1218.

Jacobs, S., Dendoncker, N., and Keune H. 2013. *Ecosystem Services: Global Issues, Local Practices*. Elsevier, New York.

Millennium Ecosystem Assessment, 2005. *Ecosystems and human well-being : synthesis*. Island Press, Washington D.C.