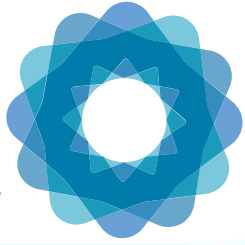


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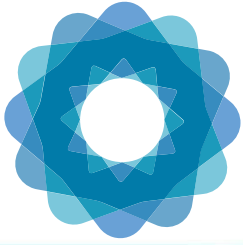


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Treatment of monetary values connected to ecosystem services

Aldo Femia (Istat), Alessio Capriolo (ISPRA), Üllas Ehrlich (Tallin University of Technology), Ioanna Grammatikopoulou (European Commission), Aki Kadulin (Statistics Estonia), Kaia Oras (Statistics Estonia), Simon Schürz (DESTATIS), Michael Wolf (Statistics Sweden), Menuka Udugama, (Wayamba University of Sri Lanka)

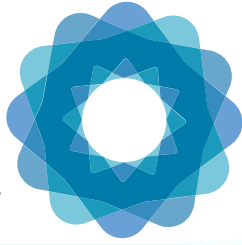
30th September to 3rd October 2024 | Washington D.C



- **Fundamental clarifications**
- **Latest news from the UNCEEA**
- **Objective**
- **How to proceed?**
- **A disclaimer**
- **Concepts for a classification**
- **A tentative and partial classification of values**
- **Some practical examples**
- **Communication of multiple values**
- **Questions**

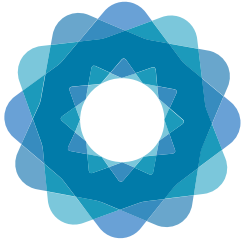
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Fundamental clarifications



✿ This is **not** a paper about valuation meant as *pricing* of ecosystem services for inclusion of additional or complementary values in estimates of „ecosystems’ output“

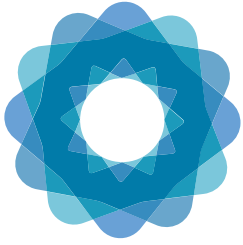
✿ It builds on the call for papers and participation issued by the LG Bureau for the present meeting:

„Under a different approach [...] these values are seen as the values of goods and services that are connected to (depending upon) ecosystem services but not as these services’ exchange values,,

✿ Which values are we talking about?

✿ All the values deriving from the methods put forward in Chapter 9 of the SEEA EA, whether judged fit for valuation/pricing or NOT

✿ All the values deriving from the methods put forward in Chapter 12 of the SEEA EA, including *welfare values, restoration costs, defensive expenditures*



So **let us all forget** about „the value of ecosystems and their services“ and „the contribution of ecosystem services to economic activity and households‘ welfare“

And consider the **direct** meaning of the values provided by the methods used for valuation in different contexts (SEEA EA, Academia, Cost Benefit Analysis...).

In other words: there is, for each of the values used in valuation/pricing:

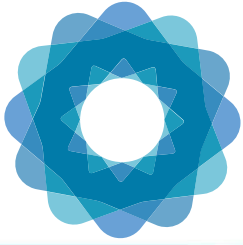
- A „native“ meaning of the estimate
- A traslation of the value to ecosystem services „as if“ it was *their* value.

The traslation is of course based on the „native meaning“, which includes some relation to ecosystem services.

In our perspective those values are only **connected** to, or **dependent** upon, ecosystem services. We do not care whether they might or not be taken as a representation of the value of something else (the ecosystem service)

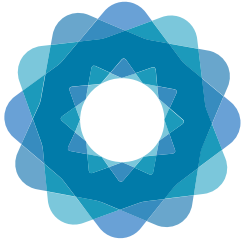
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The latest news from the UNCEEA



The UN Committee of Experts in Environmental-Economic Accounting, at its 19th meeting (25-26 June 2024):

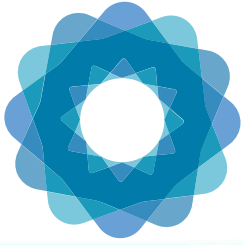
“Highlighted the need to advance the research agenda on valuation for SEEA EA, taking into account country experiences and **different approaches to monetary values connected to ecosystems and their services** and building on the work being carried out in the **London Group**”.

With this phrasing, the UNCEEA for the first time acknowledged our approach and the related efforts.

The report of the UNCEEA meeting is available at <https://seea.un.org/events/19th-meeting-un-committee-experts-environmental-economic-accounting>.

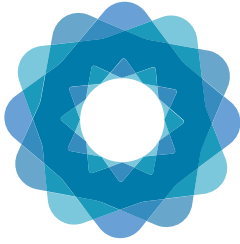
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Objective



There are a lot of economic values connected to specific ecosystem services out there.

We need to organise them and clarify their status by **developing a series of satellite accounts**,
i.e., tables structurally connected to SNA tables (mainly, but not necessarily only, SUTs)

where the values can be presented,

to show their dependence from ecosystem services,

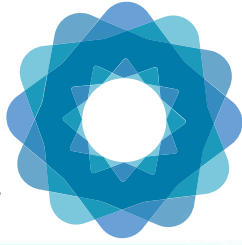
highlighting the specific kinds of dependence

without implying that they represent **the value** of ecosystem services.

of course, others may use the figures that way – but that's beyond our control

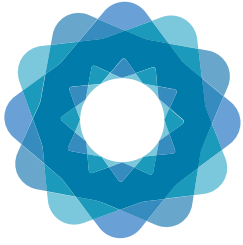
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How to proceed?



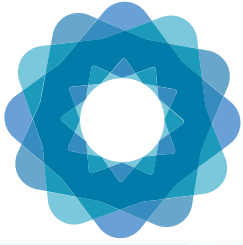
This is the main challenge!

Having recognised that the connected/dependent values reflect a range of different meanings, we need to:

- carry out an exam of the various values, considering them one by one;
- characterise them with reference to a set of criteria,
i.e. develop a **classification** of the values connected to/dependent upon ecosystem services,
based on **characteristics that are relevant for accounting**

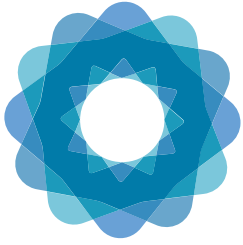
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A disclaimer



We could only sketch the program of work

The “solutions” which this issue paper offers

are general

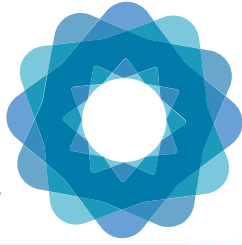
need refinement and development.

They point in certain possible directions, which will be worth exploring further if enough

consensus on this direction will emerge from the discussion

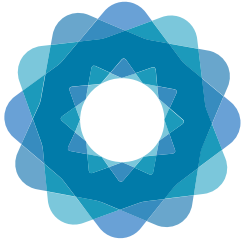
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Concepts for a classification



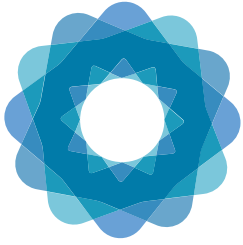
Relevant features, mentioned in the paper, are:

- observability of the phenomenon,
- actual/hypothetical nature,
- public/private nature of the items to which the values refer.

There may be more...

The characterisation is also useful in order to assess:

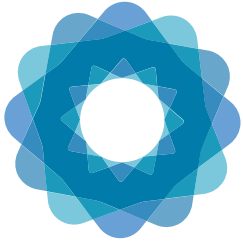
- communication options (how to present the result in an appropriate way) and
- policymaking use potential (how to use the values in decision processes).



Characteristics that are relevant for accounting

i.e. that have implications:

- for the possibility of using the values in satellite accounting of official statistics altogether
- for the possibility of putting the values in a same table or in different ones, expressing different kinds of dependence from ecosystem services;
- in terms of additivity of different values, i.e. the possibility to derive wider aggregates with a more general maximum common conceptual denominator (homogeneous groups of values that can be summed among them with no need for further assumptions)



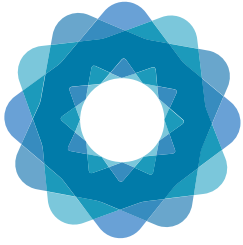
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Observability:

Let us put ourselves in the perspective of a “dumb” statistician, who is only interested in collective phenomena and in describing them in a way that is, as much as possible, aseptic and objective:

Rents, are not a phenomenon, unless actually paid.

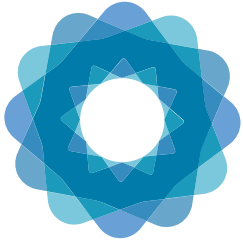
Revealed expenditures in related goods and services are... revealed

Money is actually spent “on preventing or mitigating the negative effects and damages caused by adverse environmental impacts”

Travel costs are money actually spent on travelling;

Responses to enquiries on willingness-to-pay / to-accept are phenomena

Here we are interested on whether the value is or would be observable *in principle*, independently from its having or not actually happened (otherwise, “observable” coincides with “non-hypothetical”)



Hypotheticals:

Several of the values proposed in the SEEA EA are the result of a mental exercise of the “what if” kind.

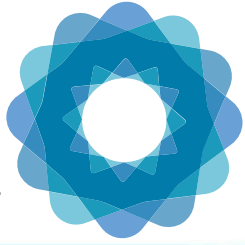
In particular, the values of “expected expenditures” are “expected”:

- “replacement costs” (as understood in the SEEA, different from SNA) may be observable as unitary values, but are hypothetical when applied to ES quantities;
- “avoided damage costs” also refer to “services provided by ecosystems that are lost **if the ecosystem were not present or was in sufficiently poor condition** such that the services were not available” (9.52).
- “simulated exchange values” are definitely hypothetical (and non-observable). They “estimate the price and the quantity that would prevail if the ecosystem service were to be traded in a hypothetical market”.

The value of assets and/or of current activities’ outputs that are **at risk** is an hypothetical fraction of all assets and current activities accounted for under the SNA. Here it is the risk that is hypothetical.

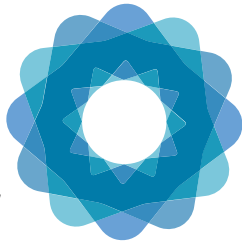
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A tentative classification



Femia and Capriolo (OneEcosystem, 2022) try a classification of the methods deemed fit to determine monetary values of ES in the SEEA EA.

They make no distinction between „observable“ and „hypothetical“

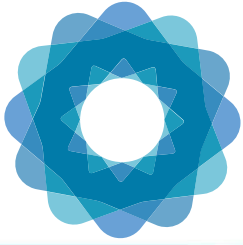
They assume that what is valued is always some product or economic activity that is somehow related to the ecosystem service.

Conceptual framing of the main SEEA EA methods for determining monetary values connected to ESs

Actual situation for the ES		Hypothetical situation for the service	Hypothetical situation for related economic activities	Method
The ES exists...	...and it is traded	No need for		Directly observable prices
	and it is not traded (but directly embodied in products)	the right to use the ES is traded on its own	no change, as long as the right to use is given to the same unit which already benefits from the service. Otherwise income shifts between units	Residual, Resource rent, Hedonic pricing, Prices from similar markets, Simulated Exchange Value (also based on Stated preference)
		The ES disappears	Some economic activity appears or grows	Replacement costs, Restoration costs, Opportunity costs of alternative uses, Shadow project costs
The ES does not exist...		...but it appears	Some economic activity disappears or shrinks	Avoided damage costs, Travel costs, Productivity change (decrease in ES input)
			Some economic activity appears or grows	Productivity change (increase in ES input case), Averting behaviour

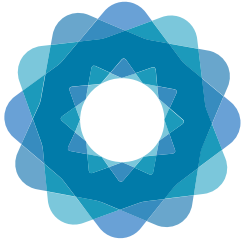
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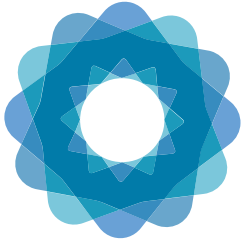
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Some application examples



1. The South-African Biodiversity Economy Satellite Account

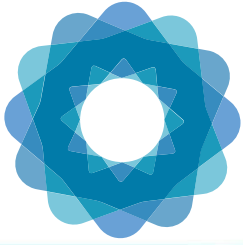
- Thematic satellite account using the framework of supply and use tables (SUTs) as a starting point.
- Defines the biodiversity economy (BDE) in general (“economic activities that rely solely on intensively managed ecosystems and non-indigenous species” are excluded, so that there are links “with some but not all ecosystem services”),
- two broad categories of BD-related activities:
 - A. those that contribute to conserving biodiversity (protection, restoration, research) and
 - B. those that utilise biodiversity. (Non-consumptive use, extractive use)
- has “links and overlaps with environmental activities as defined in Chapter 4 of the SEEA Central Framework”, but these do not exhaust the thematic account, which provides additional information
- puts monetary values in the forefront, but not considering them as **the value of** biodiversity ES. additive values, comparable to the wider aggregates they belong to,
- their share within these is the share of the (existing, actual) chunk of the economy dependent on biodiversity, not of biodiversity



2. Statistics Estonia with experts from Tallinn University of Technology and Statistics Netherlands – several studies
- Analyse in practice the feasibility of calculating different values related to a single ecosystem service using a basket of methods, in the case of a number of services
 - explore aggregation possibilities in particular
 - handled in LG discussion papers on agricultural production, nature education, recreation and the policy perspective
 - In the nature education study, a mix of exchange and welfare based methods have been used to capture different economic values connected of the ES. ES contribute to the economy in various ways.
 - expenditure on maintenance and use of the service and of travel costs: values connected to the ES as they would not exist without the ES. These are considered additive;
 - welfare values (WTP) reflect people’s changing appreciation of the educational aspect of nature. Not additive.
 - All important as they reflect different aspects of the economic importance of the service.
 - Similar application to urban ecosystem services. Addition “dangerous” as it hides smaller or missing components.

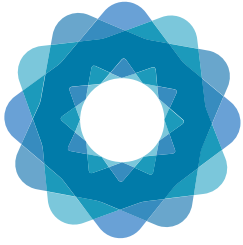
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Communication

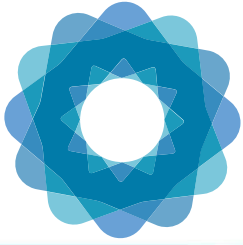


Good communication of connected/dependent monetary values requires attention to:

- the nature of the connection/dependency;
- the range of ES contributing to the value;
- the observability of the values reported;
- the actual/hypothetical nature of the values reported;
- the position occupied in national accounts by the actual values reported;
- the fact that connected values may represent benefits supplied by ecosystems that may be lost as much as business opportunities that may arise. Examples are replacement costs, as well as SEV.
- the possibilities of aggregation /comparability with other values;
- the private or public nature of the goods and services connected/dependent on ES, to which the values directly refer

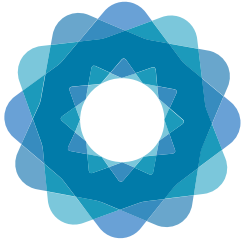
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Questions



Should the LG develop an approach alternative to valuation/pricing for the SEEA EA ?

If yes:

- is the idea of appropriately highlighting in dedicated accounts a varied and potentially large set of different connected/dependent values, each having its own meaning and relation with Ecosystem Services, viable?
- In general, are the ideas and proposals put forward in this paper a good start for defining such accounts?
- Can you provide more examples of monetary values connected to/dependent from ES dealt with in similar ways as proposed here?
- Are you interested in contributing to formally developing the approach in view of the latest conclusions of the UNCEEA?

If no:

- can you suggest a way out of the never-ending quarrel on ES valuation?

In all cases, which of the values/methods for estimation is fit for official statistics in general, considering this has a need for a strong basis in observation?



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THANK YOU

<https://seea.un.org/content/london-group-environmental-accounting>