DEPARTMENT OF ECONOMIC AND SOCIAL AFFAIRS
STATISTICS DIVISION
UNITED NATIONS

System of Environmental Economic Accounting

System of Environmental-Economic Accounting 2012 – Experimental Ecosystem Accounting Revision

First Global Consultation on:

Chapter 3: Spatial units for Ecosystem Accounting

Chapter 4: Accounting for Ecosystem Extent

Chapter 5: Accounting for Ecosystem Condition

Comments Form

Deadline for responses: 30 April 2020
Send responses to: seea@un.org

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The comment form has been designed to facilitate the analysis of comments. There are nine guiding questions in the form, please respond to the questions in the indicated boxes below. To submit responses please save this document and send it as an attachment to the following e-mail address: seea@un.org.

All documents can be also found on the SEEA EEA Revision website at: https://seea.un.org/content/seea-experimental-ecosystem-accounting-revision

In case you have any questions or have issues with accessing the documents, please contact us at seea@un.org

Question 1: Do you have any comments on the definition and description of ecosystem assets and ecosystem accounting areas and the associated measurement boundaries and treatments?

Thorough documents.

Our fear is that it is so broad and massive that it may detract from collecting the most crucial data points. It would be great to offer more of a triage – which are the most important aspects and which ones secondary…

Question 2. Do you have any comments on the use of the IUCN Global Ecosystem Typology as the SEEA Ecosystem Type Reference Classification?

There are all kinds of logical reasons for classifying areas, as you point out in Chapter 3. Our experience is that most land-use categorization between various statistical systems vary enormously, and it is not just because they do not know IUCN classifications. Even though the sum-total, per country, has to be the same, the categories that seem to be similar get reported vastly differently.

Statistical entities may have strong reasons to have chosen a particular classification, and they may not want to change, as they are committed to organizing by:

- Legal boundaries
- Watersheds
- Satellite resolution
- Landcover
- Waterways

You mention also the problem of 2d objects like streams. And I am not clear how this can be made consistent with other parts of the accounts. Also there is problem that small entities (like physical footprint of a built structure) may not get captured, even though as a sum total, these urbanized areas are quite significant in size.

In our work, we not only use the extent of these assets, but associated productivities and harvests. So those data sets have to match the same categorization in order to be meaningful, adding another layer of complication.

Question 3. Do you have any comments on the recording of changes in ecosystem extent and ecosystem condition, including the recording of ecosystem conversions, as described in chapters 4 and 5?

This is an important question.

Now, within UN systems, there is little about changes over time for most ecological functions.

For instance FAO does not report how forest productivity might be changing over time, in spite of increased forest fires, new pest outbreaks and other aspects which are getting accelerated by climate change.

Question 4. Do you have any comments on the three-stage approach to accounting for ecosystem condition, including the aggregation of condition variables and indicators?

The main concern is to not use multi-dimensional indices as indicators. But otherwise it makes sense to have a hierarchy.

Question 5. Do you have any comments on the description and application of the concept of reference condition and the use of both natural and anthropogenic reference conditions in accounting for ecosystem condition?

Some of the reference conditions may be speculative as it is not possible to go back in time.

But other aspects, can be empirical, even thought it might be hard to accurately measure: such as “potential NPP” i.e., the currently inherent capacity to support NPP if undisturbed by humans.

Question 6. Do you have any comments on Ecosystem Condition Typology for organising characteristics, data and indicators about ecosystem condition?

To us, a fundamental condition is

a) Regeneration (or "capacity", or yields or net primary productivity etc.)
   Vs.
b) Human harvest / demand

This is one of the most significant attributes – how much does land deliver, and is it currently in overuse?

This is also a more generic comment. For accounting one aspect alone does not provide information, it always needs to be compared with something else. (like income versus expenditure, liabilities vs assets, longevity in one country vs longevity in another country etc.). This does not seem to come out much in this discussion.

Question 7. Do you have any other comments on Chapter 3?

You say:
"Keith et al (2020), building upon assembly theory (i.e. the selection of ecological communities through environmental filtering of available trait/species pool; Keddy, 1992), distinguish five groups of processes that govern ecosystem functioning.
• • **Resources** (Energy, nutrients, water, carbon, oxygen etc.). One of more of these will often be limited, inducing an ecosystem functional response such as competition. "
The better word is probably limiting

Question 8. Do you have any other comments on Chapter 4?

Click here and start typing (The length of your response is not limited by this text box.)

Question 9. Do you have any other comments on Chapter 5?

A) This is rich chapter, and it shows the near infinite aspects that could be tracked. How will you prioritize?

From our perspective, key characteristics include:
What is on the land (biomass type and stock amount)
How much is regenerated?
How much is harvested?

Secondary are the change in quality: like improvement (or deterioration) of its fertility (soil levels, groundwater levels etc.).

Will all these data points be identified as "high-priority"?

B) One aspect that is of particular concern is *5.2.5 Ecosystem condition indexes*

There are lots of "multi-dimensional" indexes published, even in the academic literature. However, the scientific validity is minimal. They do not have clear research questions, and are arbitrary aggregations. They should be discouraged. Otherwise, these kind of data points proliferate, but it is not possible to know what they mean.
Unidimensional indices are ok. For example, the Living Planet Index that tracks over time average population sizes of vertebrate species.

We would suggest to discourage multi-dimensional indexes in general, as they undermine the credibility of data across the board.
Same applies to 5.3.4

C) While understanding the utility of having data linked to "favourable and unfavourable" this may be too simplistic. Section 5.3.3

The reality is that there are trade-offs. For instance, one the one hand we may want high productivity (which leads to use of fertilizer), but this is in conflict with lower pollution and biodiversity.

Or we may reduce pressure on some land (reduce agricultural intensity in country 1 to improve biodiversity), but this leads to importing more feed for the cattle of country 1 from country 2. And in net terms, there may well be no biodiversity gain as more pressure is put on biodiversity in country 2 than gained in country 1.

In essence, the normative part should be kept more separate. Provide clean, good, clearly defined data organized in an understandable framework.
It is in the applications of SEEA where judgements can be made.

Re 5.7.8
While understandable that you argue that climate conditions should not be attributed to the particular piece of area, the vulnerability of a particular area to climate change is

important information. For instance, to what extent the area may lose (or gain) in certain ecosystem functions (like yields, water retention, or carbon in soil etc.). Therefore, the pressures from a general context to a particular area should not be ignored when data on the area is collected.

Re Annex 5.2

On the one hand, it is good to collect data without clearly defined purpose, as it gives a general description of aspects whose relevance may not be clear yet.

On the other hand, the possibility of characteristics is so vast, that there also should be a more functional approach starting from questions of what are key parameters that determine "asset maintenance" or "good management" of the asset. This may help with the triage. Different disciplines may have different answers to this question. So there does not have to be unity in theory, but the main (possibly competing theories/disciplines/views) should all have the necessary evidence base through the data set to meaningfully test their hypotheses.

I did not find anything on the following issues (and may have overlooked):

a) How do you map against **ecosystem services** – which ones are the most essential ones to track?
b) The discussion between **biophysical metrics** and **valuation** seems to be missing. To us, valuation only start to be possible if you have a clear biophysical metric of what is happening. And some aspects are better measured biophysically – similar to longevity which is never expressed as a dollar value.
c) What might be missing is a catalogue **of the most relevant and priority question** a SEEA is built to capture. Without that clarity, the project might become too utopian because so much data would need to be collected, and in the end, if there is no clarity of what really matters, data evidence for the most significant aspects may not be strong enough because efforts get too diffused.