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?

I agree with all of the detail, nicely done.

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

I agree with using this typology and the levels chosen for different scales.

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?

Ch 4 is very clear on ecosystem extent. I particularly like the managed vs natural expansion, and the text on dealing with gradual changes.
See also comment relating to this in Q7, on EA delineation.

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?

I am not convinced about the three stages being called accounts. I think having a structured, three-stage approach to collating the datasets that build up to the condition account is an excellent idea, but I would call the first two datasets something else. For those who are not close to this sort of thing, having three accounts could be confusing.
In some cases I imagine it will be necessary to examine trends in variables, moving averages etc. So presenting data in a table such as Table 5.3 might be limiting in this respect.

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?

I have developed and implemented methods for assessing the condition of estuaries in SA, and I think the overall approach is sound. Reference condition is a solid concept. The idea of a reference condition for anthropogenic ecosystem types is a good one and solves all sorts of issues. It may be a challenge to define in some cases, but I think doable.

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

This system, using up to about 10 indicators (para 5.2.1) is sound for assessing condition at a local scale and very defensible. However, I wonder how practical it will be at large scales. I think maybe there should be provision to simplify, where few indicators work well. For example in estuaries, there is strong correlation between all the abiotic and biotic components in terms of their similarity to reference condition. One can probably get 80% of the answer just by looking at one indicator relating to freshwater inflow and one relating to ecosystem elements that are more sensitive to in other pressures e.g. harvesting. I think applying this in large terrestrial ecosystems will be a challenge, especially for data poor countries. Some clear guidance will be needed for the aggregation of composite indices, to avoid averaging effects where an important change may be swamped by the other elements.
I would suggest that using a similarity index might be a useful means of pegging condition levels, as opposed to a normalised index. Remember that in some cases, the variables measured could increase to 1000s of times the "healthy" range of the variable, such as in the case of phytoplankton blooms etc. In these cases it may be difficult to peg the upper end of the scale if these conditions have not yet been observed. (para 5.55-5.58)

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

In general, really well written and clear, and covers all the bases.
A few minor editorial inconsistencies (earth vs Earth; frequent occurrence of ET instead of ETs; "these data" not "this data".)
3.1. Examples like this are really helpful and should be provided often.
3.4. I agree with this important point, that this building block remains for the whole set of ecosystem extent, condition, service and asset accounts (contrary to the thinking of some colleagues that there doesn't have to be a direct link between ecosystem extent accounts and ecosystem service accounts).
3.5 The concept of ecosystem type is introduced here, and although seemingly obvious, it would be useful to define it within this section, and refer to the more detailed explanation that comes many pages later.
3.10 and 3.11 seem to contradict one another. "the atmosphere directly above and within an ecosystem is considered part of the ecosystem asset" and "Parts of the atmosphere above this layer are not considered ecosystem assets" its perhaps just not very clear and would benefit from a diagram.
3.16. This paragraph could be split into two.
3.28-30. Really appreciate and agree with this approach.
3.32 -3.33 This part was not entirely clear and would benefit from spelling things out a bit more and providing examples, perhaps include a conceptual approach for complex ecosystems. In particular, I think we need to be clearer on how to deal with built land cover classes.
3.35. the vertically stratified approach seems to contradict earlier text in 3.13. Perhaps the deep ocean systems with stratified layers could also be treated like complex ecosystems that can be delimited at the surface in two dimensions.
3.5 Perhaps should be talking about the use of remote sensing data as opposed to on the ground assessments. Surely the methods will require GIS regardless.
Sections 3.4.1 and 3.4.2 are very important, since there seem to be differing opinions on this. There may be too many options here, allowing very different outcomes. In 3.56, there are several options to delineate EAs:

- Existing maps of EAs - please give an example here - would this include vegetation maps?
- EA maps generated using land cover, climate etc.
- EAs delineated using land cover alone.

The first option, if it includes vegetation maps, would not change over time (unless repeatedly re-mapped), whereas anything involving land cover would do. I would like more clarity on dealing with the fact that EAs could be shifting in location as well as extent over time. For example, encroachment of savannas by woody vegetation changes the functional ecosystem type (e.g. in non-technical terms, grassland to sparse woodland to dense woodland to forest). These are spatial changes in the location as well as extent of ecosystems. Or are they just accounted as changes in the health of the original grassland? In this example, bush encroachment is a form of degradation caused by poor land management. But functionally, the ecosystem has changed to another type, and the types of ecosystem services

delivered change accordingly. The approach to this kind of problem needs to be spelt out. For example, one could use the historical delineation of vegetation types to define EAs, which are static, in which case one would record the above as a change in health of a grassland (as advocated by some). This would give a completely different result to that using land cover (with or without other info) to define EAs (as commonly seen in the literature). Ecosystem services will be more directly aligned to the latter, so it strikes me as the more parsimonious approach. The former approach for me would be more aligned with a thematic account of biodiversity. I would appreciate seeing a stronger stance on this rather than the wide range of options listed.
In 3.65, I would note up front that all of this should be record spatially, as location matters. The point does come out later.
In general, it was not clear to me how we deal with large spatial features such as open cast mines, industrial areas etc. Surely there is a limit to what we call an ecosystem. They do not appear in the typology, and yet EAs must be "wall-to-wall".
I am not convinced of the value of including the section on Key drivers and characteristics of ecosystems. It is not detailed enough to be of value in delineating systems. If anything I might want advice on delineating "urban ecosystems". Perhaps there should be an accompanying detailed set of guidelines rather.

It would be good to see more guidance on the choice of land cover data. For example if one looks at East Africa now, you can find datasets that better align to date but have low resolution, others that have higher resolution but fewer land classes etc. I imagine that with some clear guidance from the SEEA, land cover products will develop along more consistent lines, and until then, practitioners should know how to trade off the different characteristics of global and regional products.

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

Suggest putting example numbers in Table 4.2 with an explanation of how to read the table.

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

Wrt the normative approach, there are many instances in which a change away from natural/reference state would to many seem to be an improvement. For example, more birdlife in a nutrient enriched wetland, might yield a higher visitation rate. I think we should be clear about what is good or bad, in relation to degree of deviation from reference state, in any direction. One criterion, not criteria (p31)