DEPARTMENT OF ECONOMIC AND SOCIAL AFFAIRS
STATISTICS DIVISION
UNITED NATIONS

System of Environmental Economic Accounting

System of Environmental-Economic Accounting— Ecosystem Accounting

Global Consultation on the complete document: Comments Form

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

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The comments form has been designed to facilitate the analysis of comments. There are six 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: seea@un.org.

All documents can be found on our website at: https://seea.un.org/content/global-consultation-complete-draft

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

General comments

Question 1: Do you have comments on the overall draft of the SEEA Ecosystem Accounting?

- We would like to congratulate the authors and the SEEA EEA/EA community for a substantial improvement and progress made since the SEEA EEA.
- It might be useful to be upfront and perhaps more explicit about what SEEA EA cannot do. A subsection or at least a paragraph very early on (e.g. Section 1) on this might be useful for avoiding disappointment for some stakeholders. Nonetheless, in that same subsection it might be explained that it is precisely the harmonisation of data structures about ecosystems that would be facilitated by SEEA EA framework which might be used for different purposes that SEEA EA is not primarily aimed for. This can include, for example, different complementary approaches to valuation (as per Chapter 12), but it can also be used a basis for putting together different datasets in a more experimental and fit-for-purpose basis which might meet the demand from policymakers for more than "only" nature's contribution to economic activities. Such an idea of Complementary Accounts Network (CAN) was introduced in Turner, Badura and Ferrini (2019a, 2019b) and Badura, Ferrini and Turner (2020).
- Consider including a paragraph on the CAN approach in either of chapter 1,2, or 12 as follows: "To help expand understanding of the SEEA EEA across multiple stakeholders and also to extend its capacity, protocols are required to augment the main accounts with complementary indices. The construction of such a complementary accounts network (CAN) proposed in Turner et al 2019 and Badura et al 2020 offers a pragmatic way forward in this context. The environmental challenges facing society require immediate policy responses based on the best comprehensive data sets available. So the CAN concept offers a near term way forward, rather than an approach seeking to achieve the full economic integration of the diversity of ES values within the SNA, which inevitably has a long gestation period."
- Throughout the SEEA EA – and particularly in reference to Total Economic Value framework (e.g. 8.10) – the document should be referring to Pearce and Turner (1991) instead of Pearce (1992).

References;

➔ Turner K, Badura T, Ferrini S (2019) **Natural Capital Accounting** Perspectives: a pragmatic way forward. *Ecosystem Health and Sustainability*

➔ Badura T, Ferrini S, Turner K (2020) Natural Capital Accounting For Better Informed Decision Making: A Case For Complementary Accounting. Report to the European Commission.

➔ Turner K, Badura T, Ferrini S (2019b) Valuation, Natural Capital Accounting and Decision-Support Systems: Process, Tools and Methods. Synthesis report to the European Commission.

➔ Pearce, D. W., and R. K. Turner. Economics of Natural Resources and the Environment. Baltimore MD: Johns Hopkins University Press, 1990, 378 pp.

Comments by sets of chapters

Question 2. Do you have comments on Chapters 1-2 of the draft SEEA Ecosystem Accounting?

- It is not clear what Figure 2.4. is meant to show or whether it is based on an agreed typology or theoretical developments. Assuming it is, it needs to be better explained if it is to be attained in the document. Where the four quadrants ("Living as nature" etc.) come from? The axis Instrumental vs Intrinsic/relation doesn't seem to be correct - from the definition intrinsic value is not in any way based on people, while relational values directly are – and in this figure we have the two together.

Question 3. Do you have comments on Chapters 3-5 of the draft SEEA Ecosystem Accounting?

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

Question 4. Do you have comments on Chapters 6-7 of the draft SEEA Ecosystem Accounting?

Point 6.2. We would suggest to revise as:

"The potential of applying an ecosystem services approach to foster an understanding of the relationship between humans and the environment has been further strengthened through work in various initiatives including The Economics of Ecosystems and Biodiversity initiative (TEEB, 2010), the Mapping and Assessment of Ecosystems and their Services (MAES) framework (Maes et al., 2013); the Integrated system for Natural Capital Accounting (INCA) project (Vallecillo et al., 2019); the Natural Capital Project at Stanford University; and the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) (Díaz et al., 2015);"

Point 6.74 We would suggest to revise as:

"Although in practice there is a considerable measurement challenge in either identifying all of the relevant individual inputs or accurately measuring the ecosystem contribution to the gross biomass that is harvested ~~that takes into account the diversity of cultivated production contexts. Thus,~~ the gross biomass harvested cannot be ~~is~~ considered as a suitable proxy to measure for the flow of biomass provisioning services in cultivated production contexts because it does not consider~~, irrespective of~~ the extent of human inputs and the intensity of management practices. To use input-output

datasets, agronomic/agricultural production function or energy/emergy based approaches could support in estimating suitable proxies for ecosystem contribution."

Point 6.89
The example is very confusing as, although water can be a determinant of recreation choices, it is very complex to account for water supply for recreation reasons. There is high risk of double counting.
We would suggest to remove the example.

Question 5. Do you have comments on Chapters 8-11 of the draft SEEA Ecosystem Accounting?

The point 8.3 seems to contradict 8.2. Point 8.2 stresses the importance to have a monetary metric compatible with national accounts. Points 8.3 suggests that accounting can support public awareness. Since 1990 environmental and ecological economists have produced policy awareness with multiple valuation techniques not compatible with accounting. Turner et al. (2019) and Badura et al. (2020) promote the Complementary Account Network which incorporates the SEEA EA account structure and wider measures of assets changes and values (as performance indicators,…).that would enable to accommodate this stock of knowledge.

Point 8.3. We would recommend to revise as:
"Further, within the general ambition of making explicit the role of ecosystem services and assets in economic activity, the data generated from a set of ecosystem accounts that covers multiple ecosystem services and multiple ecosystem assets will support public awareness of ecosystem related issues, the derivation of performance indicators, benchmarking the activity of industries and sectors, and undertaking general policy framing and analysis especially considering connections across environmental and economic policies. The public awareness is achieved using a complementarity of measures as discussed in 8.13, chapter 12 and in Turner et al 2019"

The point 8.13 reports the role of complementary measures and stress the importance of supporting a Complementary Accounting Network. The following reference should be included Turner RK, Badura T., Ferrini S., 2019. Natural Capital Accounting Perspectives: a pragmatic way forward. Ecosystem Health and Sustainability,5,1: 237-241

8.7. First bullet point: "Data on the physical flows of ecosystem services and on the extent and condition of ecosystem assets may support assessment of these other value perspectives." reconsider into "Data on the physical flows of ecosystem services and on the extent and condition of ecosystem assets may support assessment of some value perspectives, while other aspects of nature's value (e.g. spiritual dimension) might be not suitable for an accounting framework altogether but it can be recorded in complementary accounts as suggested by Turner et al (2019)."

8.11 Reconsider this sentence "Generally, where there is a focus of analysis on the inputs of ecosystems to the production of marketed goods and services, for example agricultural

production, there is a good alignment between monetary valuations for accounting or welfare analysis. However, since values recorded in the accounts exclude consumer surplus and the coverage of ecosystem services in ecosystem accounting excludes non-use values, monetary valuation undertaken for the purpose of accounting will regularly differ from estimates of monetary values obtained in environmental economic studies
As this statement is completely misleading:

"However, since values recorded in the accounts exclude consumer surplus and the coverage of ecosystem services in ecosystem accounting excludes non-use values, monetary valuation undertaken for the purpose of accounting will regularly differ from estimates of monetary values obtained in environmental economic studies"
This specification is needed as non use value and consumer surplus are not necessarily linked and in welfare economics if the production function is to measure the contribution of ecosystem services the accounting and welfare measures are precisely the same as focused on production surplus.

The point 9.12 and 9.21 reports that value transfer technique will play a key role in accounting and this raises the question whether approximate/debatable transfer monetary estimates are better than no monetary estimates. Despite the research in benefit transfer techniques debates about the precision and reliability remains (Bateman et al 2011, Ferrini et a 2014). I would encourage to revise as:

Point 9.12 as "Generally, accounting entries for each ecosystem service will be obtained by multiplying a measure of the service flow in quantitative terms by a price estimated using an appropriate method among those described in Section 9.3. In the situations where the estimated price for an ecosystem service supplied in a sample of locations is applied across multiple locations, with a value transfer approach, special attention is needed as caveats on validity and reliability of the method remain as discussed in 9.69-9.75."

and point 9.21 as

"
Ideally, prices would be estimated for individual ecosystem service flows taking into account the distinct context for supply and use. In practice, it is most likely that such detail cannot be measured on the scale required. As result, ecosystem accounting will often employ value transfer techniques in which prices for a particular service in a particular context and accounting periods are applied to estimate prices in other contexts and accounting periods. Methods for value transfer have also been the subject of much research and development in past decades but testing for accounting is still lacking so attention is required. Their use in ecosystem accounting is described in Section 9.5. "

9.22 "The valuation methods described in this section can be applied to the valuation of both final and intermediate ecosystem services. " This is quite confusing for economists who have extensively contributed to clarify why final ecosystem services are the objective of valuation (Fisher, Turner and Morling 2009, Bateman et al 2014). In other part of the guideline, the term intermediate is used in the accounting term which implies that one input from one sector is an input in another. Despite the example this sentence is very confusing and deserves clarity. The distinction of intermediate and final ecosystem services should be clarified along the text and specify that in different context the same ecosystem service can be intermediate or final accordingly to the environmental economists definition but the key point in accounting is to disentangle the ecosystem contribution to economy.

9.44 Travel cost data Is not a method and hence should not be bolded

9.50 “The simulated exchange value method estimates the price and the quantity that would prevail if the ecosystem service were to be traded in a hypothetical market. It thus provides a direct estimate of the value, the SEV, required for entry into the accounts based on the exchange value concept”
We acknowledge that the SEV is a promising approach but the assumption of the institutional context and the simulation of the supply curve, together with the relevant cost structure, play a crucial role and greatly impact the final exchange price. The SEV has been mainly tested in the recreational context which makes the method of limited validity for other ecosystem services. It would be ideal to support this method primarily for recreation until clarity exist on how it can be applied to other ecosystem services, particularly with regards to supply curve and cost structure definition, linkages with biophysical accounting units, and methodological approach

We would suggest to revise as:

“The simulated exchange value method estimates the price and the quantity that would prevail if the ecosystem service were to be traded in a hypothetical market. It thus provides a direct estimate of the value, the SEV, required for entry into the accounts based on the exchange value concept.[70] The SEV method is applied by using results from demand functions for the relevant ecosystem service (for example estimated using the travel cost method, discussed above, or stated preference methods, discussed below). These are used to calculate the price for the ecosystem service that would occur if it was actually marketed. This requires combining the information on the demand function with a supply function and an appropriate market structure (institutional context). The assumption on the institutional context and the estimates of the supply function play a crucial role in the final exchange price and further research is needed to extend this methodology to other ecosystem services. The method has been mainly tested for recreational services“

9.55 consider including mention that SPs can be particularly useful for estimating non-use values which might be of great interest to policy makers. in footnote 71 please consider explicitly stating that Johnston et al 2017 provide state-of-art guidance for SPs.

9.68 “for example the valuation of damages caused by oil spills. ” This example seems inappropriate as oil spills normally cover very large areas. Yes they represent a specific event but I would consider another example.

9.69 Consider making physical characteristics point as first, since this is likely to be the most important factor. Also consider including the following at the end of the ‘physical characteristics’ point: “It might also include different spatial configuration of the beneficiaries relative to the ecosystem which might alter the value of the service significantly (e.g. flood protection).”

Point 10.6. We would suggest to change as:

"Section 10.2 sets out the structure of the ecosystem monetary asset account and the associated accounting entries. Practitioners should however consider that this framework can work when ES are assessed with fast track approaches, i.e. based on quantities multiplied by unit prices. The applicability of this structure when ES are assessed and valued by using modelling techniques has still to be tested and validated. Section 10.3 describes the key components in valuing ecosystem assets using the net present value approach including the approach to valuing the accounting entries for changes in ecosystem assets over an accounting period. This approach is applicable to both fast track and modelling based approaches."

Point 10.12. We would suggest to change as:

"Ecosystem enhancement is the improvement in the value of an ecosystem asset over an accounting period that is a result of an increase in the condition of the ecosystem asset. Ecosystem enhancement may ~~will~~ be reflected in a rise in the net present value of expected future returns, only if a direct link is established between condition indicators and ES"

Point 10.17 We would suggest to change as:

"Ecosystem degradation is the decline in the value of an ecosystem asset over an accounting period that is the result of a decrease in the condition of an ecosystem asset. Ecosystem degradation may ~~will~~ be reflected in a rise in the net present value of expected future returns, only if a direct link is established between condition indicators and ES."

Chapter 11 and examples conflate two historical vision on nature: individualist and pluralist. The individualist approach aligns with the idea of the land owner who should be entitled to use the possession of her interest (pure neoclassical approach). However many ecosystem services provide plural values which belong to society. The definition of land ownership over the ecosystem services as in point 3.77 provide a controintuitive argument to nationally account for ecosystem services.

The reference Bateman, I. J., Jones, A. P., Nishikawa, N., & Brouwer, R. (2000). Benefits transfer in theory and practice: A review and some new studies. CSERGE and School of Environmental Sciences, University of East Anglia. https://www.researchgate.net/profile/Andy_Jones3/publication/265191995_BENEFITS_TRANSFER_IN_THEORY_AND_PRACTICE_A_REVIEW_AND_SOME_NEW_STUDIES/links/54881d2a0cf289302e2efdba.pdf is not a peer reviewed article and the suggested link does not work anymore.

We would suggest using https://www.researchgate.net/publication/222653319_Using_meta-analysis_for_benefits_transfer_Theory_and_practice

References:

- Bateman, I. J., Mace, G. M., Fezzi, C., Atkinson, G., & Turner, R. K. (2014). Economic analysis for ecosystem service assessments. In Valuing Ecosystem Services. Edward Elgar Publishing.
- Bateman I.J, Brouwer R., Ferrini S., Schaafsma M., Barton D.N, Dubgaard A., Hasler B, Liekens I., Navrud S., Sceponavience D. 2011. Making Benefit Transfers Work: Deriving and Testing Principles for Value Transfer for Similar and Dissimilar Sites using a case study to non-market benefits of water quality improvements across Europe. Environmental & Resource Economics, ISSN: 0924-6460, doi: 10.1007/s10640-011-9476-8
- Turner RK, Badura T., Ferrini S., 2019. Natural Capital Accounting Perspectives: a pragmatic way forward. Ecosystem Health and Sustainability,5,1: 237-241
- Fisher, B.,Turner, R. K., & Morling, P. (2009). Defining and classifying ecosystem services for decision making. *Ecological Economics*, *68*(3), 643–653. https://doi.org/10.1016/j.ecolecon.2008.09.014

Question 6. Do you have comments on Chapters 12-14 of the draft SEEA Ecosystem Accounting?

The complementary accounts network concept (Turner et al. 2019a, 2019b, 2020) is directly relevant to complementary valuations and is able to accommodate the thematic accounts proposed by SEEA in a consistent framework, see King S et al (2021) Linking biodiversity into national economic accounting, Environmental Science and Policy 116:20-29, for an example using species accounts.

References;

- Turner K, Badura T, Ferrini S (2019) Natural Capital Accounting Perspectives: a pragmatic way forward. *Ecosystem Health and Sustainability*
- Badura T, Ferrini S, Turner K (2020) Natural Capital Accounting For Better Informed Decision Making: A Case For Complementary Accounting. Report to the European Commission.
- Turner K, Badura T, Ferrini S (2019b) Valuation, Natural Capital Accounting and Decision-Support Systems: Process, Tools and Methods. Synthesis report to the European Commission.