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?

The document represents a substantial step forward in the construction of an integrated accounting framework for the economic system and the environment.

- We think that each section should have a summary with basic recommendations for implementation.

- The document considers many aspects related to ecosystems, biological diversity and the environmental services that depend on them; however, it would be useful to incorporate a section on ecosystem dynamics to relate the changes that could affect them. The value of Biodiversity is not limited to the contribution of individual species and genes, but also to the value of a conglomerate of species in an ecosystem and their interactions, as a complex whole. Thus, new targets and indicators should not only reference species extinctions, but also how these losses could impact ecosystems as a whole – as well as the bigger picture of biodiversity within evolutionary/phylogenetic and ecological perspectives, as well as the many and complex services biodiversity provide to people and planet, and how it all relates to society and sustainable development.

- We recognize that, while this revision represents significant progress, not all issues are resolved, or all the complexity of biological/ecological systems are/can be -- reflected fully through accounting approaches. This should be emphasized as a key caveat or introductory consideration in the revised handbook. Rather than subtracting from its use and potential to guide countries and institutions in these difficult but necessary issues, such acknowledgments would reflect a scientific, down-to earth vision that, while keeping ambition and aspirations high, there is still much to learn, test and understand about the complexity of ecosystems and biodiversity.

Comments by sets of chapters

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

Regarding to paragraph 1.16, the idea of a standard in the first chapters is considered very important to ensure the development of ecosystem accounts within a common framework. The standard does not mean that countries must implement the entire framework, they must decide which accounts to compile based on their priorities. Furthermore, it is important to recognize that issues such as biodiversity and valuation must advance a research and development agenda.

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

- The description of the state of the art in the valuation of ecosystem assets and services is solid; however, it would be advisable to incorporate the schemes for the use of monetary accounts. This may be related to environmental policies.
- It seems that the term "experimental" can already be removed from both, the title and the document. In its place, we can move forward to adopt a different term, such as “provisional”.
- In addition to the citations already in the current draft, it would be helpful to include more concrete examples of aggregate indices of ecosystem condition, which adequately capture their complexity and inter-relations. Also, that these may be applicable to different regions, biomes and latitudes. The examples currently included in the present draft are mostly from developed countries. In particular – and in addition to other included indices —, we suggest considering examples of indices currently under study within the NCAVES pilot country projects. Although these projects are still underway, and conclusions are not yet been finalised, many of the research under consideration within the overall projects have been published and tested in limited areas and approaches. We see no point in undertaking such projects within the SEEA-EEA framework if they are not going to be considered in these major revisions.
- As examples, we suggest the inclusion of the following indices, either as more detailed descriptions or at the very least as part of the citations and references included in the document presented before the UN Statistical Commission:

  Ecosystem Integrity Index
  Ecological Integrity Index
  & Human Footprint Index:

  seea.un.org/sites/seea.un.org/files/assessing_ecosystem_condition_in_the_ncaves-mexico_project_june_24.pdf

- When referring to disturbance regimes, it is important to incorporate at least one table that specifies the disturbances, whether natural or anthropogenic.
- For the SEEA-EA framework, the IUCN ecosystem typology is defined. However, it is likely that the countries where the Environmental Accounts project is being developed have their own typology, so there should be at least one other typology in addition to the current IUCN one, and work towards having all the necessary crosswalks between local typologies and IUCN. IUCN typology should also evolve and improve.
- The concept of ecosystem conversion is unclear. According to the ecological literature, the conversion of an ecosystem refers to the transformation of that one into another, in a given time, and because of a high magnitude disturbance. In the SEEA manual it is mentioned that this can be calculated annually. However, most ecosystems are not very dynamic, and the changes are reflected in the medium-long term. There are also apparent changes because of either, temporary disturbances (fire, hurricanes), and cyclic-recurrent phenomena, just as drier-humid, warmer-colder years that may also produce temporary changes, so it is important to distinguish between true degradation processes and trends from temporary variations.

- On the ecosystem condition account, the definition of "reference condition" is not clear. It is tentatively mentioned as the original condition of an intact (undisturbed) ecosystem, although that condition clearly does not exist. It would be better to establish a reference period to evaluate the trajectory of ecosystems together with their components. It is also convenient to separate secondary growth ecosystems: those that have been transformed to a greater degree and have a different species composition, structure and dynamics than the original, primary ecosystem condition.
- Within the subject of the ecosystem condition, species richness and diversity are used as synonyms. These are different concepts, so they need to be clarified.
- The indicators of the condition of ecosystems are not clear. For example, diversity is considered, but this concept is very broad (plant diversity, animal diversity, fish diversity, etc.), so it is necessary to limit it.
- In summary, ecosystem condition assessment might require more work and time to reach more robust definitions and methods.
- In section 3.2.1. It is suggested to include a reference to paragraph 1.21 (with the distinction between ecosystem assets in the context of the SEEA-EA and assets in the context of the SNA).
- Paragraphs 3.49 and 3.51 imply that correspondences between the national classification and the SEEA Ecosystem Type Reference Classification shall be developed. This should be explicitly included in paragraph 3.51 (similar to paragraph 4.11).
- The inclusion of an annex discussing annual interpolation techniques for environmental data (unavailable on a yearly basis) could be helpful for both the extent and condition accounts.
- Another item that seems to be insufficiently treated in this document is a proper description integration and monitoring related to agricultural biodiversity (or agro-biodiversity), as well as the protection of “centers of origin” of agricultural diversity. These are only mentioned in section/para 3.61, but only in passing and in a general sense for classification purposes. While this may yet be an immature field for the development of more concrete indicators, there is a large body of research by:

  CGIAR and its many centers devoted to the study of economically relevant crops and their wild relatives: https://www.cgiar.org/research/

  The Crop Wild Relative Diversity Project
  https://www.cwrdiversity.org/

  And laboratories within the LANGEBIO (Mexico):
  https://langebio.cinvestav.mx/en/Dra-Angelica-Cibrian

  A proper consideration of Agricultural Diversity, or agrobiodiversity, is key to the treatment of agriculture and food provision as an ecosystem service. In addition, the consideration of “TIME” as a variable, could be useful in comparing agricultural systems (as well as fisheries, forestry, livestock and any other such system) in an ecosystem accounting scheme.
- The reference to rows and columns is missing in paragraph 4.32.

- In Chapter 5, we suggest including a discussion on the international comparability of the aggregated indicators of condition, due to the discrepancies in the availability of data between countries. In the other hand, in section 5, which refers to indicators of the condition of ecosystems, there are tables of "indicative characteristics" that are endless. These makes the definition of indicators impractical -and with very high costs- which in the end limits the implementation of evaluation and monitoring systems. Many are very difficult to obtain (e.g. floor sediment density) and it would impose countries greater difficulties to implement these kinds of indicators.

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

- In general terms, we agree with the concepts presented in Chapter 6 and with the way to record the supply and use of ecosystem services in biophysical terms.
- Regarding the link between biodiversity and ecosystem services, it is understood that it is about assigning an economic value to ecosystem services, but the relationship between these and biodiversity goes far beyond economic valuation. It would be important to include at least one reference to the direct assets and values that diversity brings to society (for example, sport hunting, photographic safaris, medicinal plants)
- An alternative to recording non-SNA benefits could be to assign them to households to avoid double counting.
- The description of the types of services is clear, however, the variables that can be used for their evaluation are not clearly explained.
- It is not clear what the manual refers to with intermediate recording services.
- It is not clear what is meant by cultural recording services
- For better measurement–assessment of ecosystem services more knowledge is needed not only about the “visible”–instantaneous ecosystem variables (i.e. at times t1 and t2), but also about the underlying processes that occur between one moment and the other, as well as the nature of those processes: normal ecological processes, natural climate fluctuations, and human influences.
- The issue of ecosystem deprivation is a complex and controversial issue, but it is very important for ecosystem accounting. We consider that recording ecosystem service losses as a loss of ecosystem service can be very useful (for example, pests translate into a loss of biomass ecosystem service).
- We agree that the ecosystem services for the provision of cultivated biomass is a fraction of the total cultivated biomass, however, in biophysical terms it can be very difficult to separate the net contribution of the ecosystem. In the same sense, we agree that the contribution of ecosystems to cultural services is a fraction of the total service, however, when cultural ecosystem services are recorded in biophysical terms, there are complications when separating the net contribution of the ecosystem from the assets produced and human capital involved. Additionally, it is not entirely clear whether cultural services should be registered as household use or by the economic units in charge of operating such service.
- Finally, we consider that in table 7.3 the category of “society in general” is missing to register the use of ecosystem services that benefit society as a whole, such as the

carbon capture and storage service that benefits all inhabitants of the world and not only those who live in the country that is the subject of ecosystem accounting.

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

- The overall vision of these chapters still reflects a perspective of price and monetary exchange values, which may be unacceptable to some – as is the concept of "CAPITAL" or any other conception that does not reflect the overall and intrinsic value of ecosystems as complex systems.
- An alternative, which is suggested in particular in this section, is to integrate more fully and explicitly the concept of "COST". While there are many instances in the text where references are made between the values of a pristine and a degraded ecosystem, there are very few and insignificant places where the actual cost of ecosystem degradation (or replacement/elimination) is presented on stark and clear terms in the face of concrete events. Examples include: presence vs loss of a mangrove or dune ecosystem in the face of a hurricane or tsunami, as felt by the hotel/hospitality industry, or in terms of human and property damages. Equally, if a forest ecosystem is lost, and this is compared with the provision of clean water from other sources instead of from direct filtration and retention from the lost ecosystem.
- CHAPTER 8. The relationship between the flows of ecosystem services in physical terms and the monetary valuation of the ecosystem services have multiple transmission channels and furthermore there is evidence of a non-linear circular relationship. For example, the monetary valuation of the pollination service can increase in case that the structure of the main agricultural products moves towards products that have larger pollination dependence ratios. Even in the case that the condition of the ecosystem is not improving or getting worse. In this sense, it could exist an asymmetric relationship between the physical flows of services of the ecosystems and the monetary values of the ecosystem services. This should be argued in the text to avoid analysis with a linear relationship between the physical flows of the ecosystem services and the monetary valuation of the ecosystem services.
- CHAPTER 9. The estimation of the monetary value of the series of the ecosystem requires to consider the identification problem. That is, the use of a general definition of ecosystem services induces the risk of including other factors that difficult the individual analysis and the attribution of the ecosystem services. Additionally, it is necessary to consider that the ecosystem services are not exogeneous to the economic system and that there are different forms of appropriation and enhance the ecosystem services that depend on the type of producer and production types.
- The assignment of an economic value to a good produced is clear (for example, price of timber, wood, coal, a hunting trophy, etc) However, the assignment of an economic value to an environmental service must be carefully assessed, since its value is different for each country, especially in cultural aspects, which is not clearly defined.

- It is not clear how to assign monetary values to degraded ecosystems or to ecosystem conversion. To achieve this, there should also be a categorization of the health status of ecosystems (better-conserved-managed ecosystems/less-conserved-managed ecosystems), which clearly does not exist. On the other hand, the degradation of ecosystems has several aspects: decrease in vegetation cover, changes in species composition, decrease in species richness, soil erosion, among others, which are clearly not considered either. Regarding the conversion of ecosystems, it is not clear how to assign an economic value to an ecosystem that changes to another, since most of the time this conversion results in a secondary successional ecosystem (remembering that this is not a short-term process), considering that the transformation is not always negative. Therefore, it is suggested to incorporate a small section on the dynamics of landscapes.
- CHAPTER 10. The evidence shows that the elaboration of scenarios, should incorporate the uncertainty, instead of using only one value. This considering that:
  1. There are points of not return in the ecosystems and the ecosystems services that should be considered. That is, the assumption in order to obtain a monetary value of the ecosystem assets that the same flow of monetary services can be maintained could be not realistic.
  2. Direct estimations of the ecosystem services show significant volatility. This is, arguably, due the inclusion of another factors. In this sense, the projections should be taken with caution.

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

- Chapter 13. Regarding thematic accounts by region, and as Chapter 13 is considered non-standard, it is suggested that some specific country examples (or fictitious examples) of the application be included in a future update of the SEEA EA.
- Past experience with previous versions of the SEEA (especially that 2003 version) worked mainly due to the inclusion of this type of examples and facilitated (at least in the case of Mexico) the updating and improvement of some calculation processes, mainly with respect to issues in monetary values. It is considered important to resume these good practices, which will help countries that are starting from scratch to take the first steps, or to strengthen processes in countries that are already at some stage of progress.
- Chapter 14. Regarding the proposed list of possible indicators, it is suggested to include some per capita indicators, either of extension or condition, allowing users to have a basic perspective of the main results and that they are reflected in this type of information. In addition, they can provide an approach to analysis and description of the condition of ecosystems, in the sense that a greater flow of services may be associated with a relative improvement in the quality of ecosystem assets. Even developing them by region can help to better illustrate certain flows or assets, and even for regional public policies.