System of
Environmental
Economic
Accounting

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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?

As it is indicated in the Document, different ecosystems are reflected or captured as spatial units, and Ecosystem Assets (EA) correspond to the statistical units for ecosystem accounting. Therefore, it is important and necessary to determine a clear link between the conceptual and the operational definitions of the ecosystems, particularly in lieu of the lack of internationally agreed ecosystem typology and classification, and the existence of ecosystem and biomes classes that exist at the national level.

From the text, it is not clear for all users how to unambiguously identify a specific ecosystem based on the definition contained in the Convention on Biological Diversity, and delineating its boundary clearly. Is it possible to imagine that this could be done through field work observations, or based on remote sensing i.e. satellite image, groundthuthing, or perhaps based on existing map? Secondly, it is important to consider the operationalization for data production once an ecosystem is actually identified, in terms of how is then data collected or compiled, in order to clearly distinguish the set of biotic and abiotic components. These aspects we consider that require further methodological guidance with more detail and perhaps providing illustrations/examples.

It is mentioned that in practice, the high resource costs involved in ground assessments mean that the delineation of EAs will involve the mapping of ecosystem assets within an EAA using Geographic Information Systems (GIS) platforms and techniques. We understand that such techniques and tools support the integration of data (and its attributes) and topographic or thematic maps prepared on advance, depending on the availability of sources for such purposes.

It is mentioned in the text that to operationalize the delineation of EA within GIS, a basic spatial unit (which is a geometrical pattern as a grid cell) or polygons can be considered and used. If we understood correctly, that means that the first step should be to identify and locate the ecosystem on a map, or on an image, and only then the grill cell or the polygons can be overlapped in order to refer to the different layers and type of data of the GIS.

In our experience, data describing ecological characteristics are not easy available, nor it is produced periodically for a sufficient number of significant ecosystems within countries. Furthermore, the range and scope of information required for ecosystem accounting, at different spatial levels, is very wide indeed, as it includes topography, land use land cover, types of vegetation, species, hydrology, soil resources and geological data, meteorological data, bathymetry (for coastal areas), administrative boundaries, population, built-up areas and settlements, transport and communication.

Although many countries of the LAC region and other regions are starting to develop and some of them already have National Spatial Data Infrastructure (NSDI), there is still a lot of work to be done, mainly related to data collection in preparation for integration.

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

With regard to the use of the IUCN Global Ecosystem Typology, we understand there is considerable discussion ongoing among experts about the need of adapting the classification for the countries of the LAC region, and defining the spatial distribution of each of the categories. Such analysis is evidently still work in progress. At the same time, many countries that are biodiverse and megabiodiverse in the region already have a tipology of biomes or ecosystems (i.e. Brazil) that they are using for the preparation of the production of statistics, indicators and accounts involving both ecosystems and land cover/use.

Could the text perhaps provide specific step to step guidance on how to build correspondence between classes and types among national and global typologies as this can perhaps facilitate the implementation of the EEA?

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?

4.2.2 Structure of extent accounts and accounting entries

While carefully reading and checking Table 4.1 we were under the impression, that perhaps the heading of columns and rows may possibly be switched. The columns indicating classes of selected Ecosystem Types (ET), and the rows the logic of asset accounts in terms of area using measurement units as appropriate for the scale of analysis e.g. hectares, square kilometers.

Undoubtedly, there is high relevance of having the Ecosystem Extent Account EEA as a or actually the basis for describing and analyzing the composition and changes of Ecosystem Types within a country. Nevertheless, we think that it could be quite useful to describe and discuss options in the choosing of the sources of data for the calculation of the accounting entries, as well as operationally define each of the categories, including:
    i.   Opening and closing extents of each ecosystem, that represent the total area of EAs for a given ET at both the beginning and end of the accounting period, generally one year.
    ii.   Additions to extent, separated into the two caterogies, i.e managed expansion and natural expansion.
   iii. Reductions to extent, that represent decreases in the area of an ET and it should be separated into managed or natural regression.
   iv. Reappraisals, as upward or downward changes that can be recorded.

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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?

About a **stage zero**: characterization of the ecosystems.

A very complex problem of Experimental Ecosystem Accounts is the definition of the ecosystem; both conceptually and statistically operational definitions. Unfortunately, after reading it is our impression that the EEA manuals does not go elaborate in this key matter with enough depth, particularly considering it is the methodological guidance manual for EEA, and the same is the case with this Chapter 5.

Evidently, the ecosystems do not coincide with the territory of a national State, its provinces or local municipalities or any other administrative units. On the contrary, it is common to find multiple ecosystems in the same territory and one ecosystem pertaining to management by more than one authority or government.

Additionally, there is always resource constraints (infrastructure, human and financial) to advance in accounts production in the developing countries.

For this reasons, we suggest adding a needed prior stage to the three stages already considered in the Manual, a new "zero stage" or "preliminary stage"; one that will be aimed at gathering expert and scientific knowledge in order to be able to identifying the most relevant ecosystems in the territory or country (including potential transboundary ecosystems).

If the unit of analysis of the conditions account is the ecosystem asset (EA), therfore a clear delimitation of the territory will allow to enumerate the ecosystem assets located there, and to improve the measurement of its condition describing the main ecosystem dynamics, quality, integrity and so on.

Thus, insisting on such a preliminary step would help the institutions in charge of ecosystem accounts to work more accurately. This stage would also call for the allocation of human and material resources to characterize the territory from an ecosystem perspective.

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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?

This question is closely linked with the problem of standardization of variables. Let us elaborate:

(a) What to do with ecosystem variables whose favorable reference value is a range of values and/or includes positive and negative values? For example, ice and water temperatures around glaciers. Here, the characteristic admits a physical transformation (ice and water) considered normal, and therefore, the unfavorable values would only be outside a certain range. In this case, $I=(V-Vf)/(Vf-Vu)$ is not useful, unless a single indicator is defined per season, i.e. for the same physical state (solid-solid, liquid-liquid).

Additionally,

(b) What about variables with a time and space dynamic that admit negative and positive values? In this case, the difference $(V-Vf)$ may lose its meaning. In this case it may be better to measure absolute deviations, i.e. $(V-Vf)^2$ (the square of the difference)? This perhaps should be considered or explained fully in the text as well.

Considering these ideas, we suggest to improve the description and explanation, to present examples of characteristics and indicators for each of the following:

(i) Variables that admit only non-negative values, and

(ii) Variables that admit both negative and positive values.

Table 5.3 can be used for this purpose.

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

Around the ecosystem condition typology, we were wondering if human population living within the ecosystems that are identified are to be considered and in what way.

From looking at Table 5.1, one could read or assume that the ecosystems are pristine, where there is no anthropic interaction or pressure, or perhaps if there has been some interaction with human, these people are not residents. However, in landscapes we consider "connectivity", "farmland" and "semi-natural elements", all corresponding to anthropogenic interventions that define an ecosystem asset.

This raises two questions:

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(i) Why then is the resident human population, its number, structure, occupation, etc. not considered?

(ii) What are the criteria for defining what asset is included and not included in the landscape level? What non-natural assets are thus included?

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

We would like to suggest to improve and deepen both the conceptual and statistically operational definitions of the units, in order to be able to clarify the boundaries for:

 i.   Ecosystems assets (EA), mainly the biotic and abiotic components and the relationship between them.
 ii.   Ecosystems types (ET)
 iii. Ecosystems Accounting Areas (EAA),

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?

Please see our comment for Q 6.

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