



DEPARTMENT OF ECONOMIC AND SOCIAL AFFAIRS  
STATISTICS DIVISION  
UNITED NATIONS



System of  
Environmental  
Economic  
Accounting

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

### **First Global Consultation on:**

**Chapter 6: Ecosystem services concepts for accounting**

**Chapter 7: Accounting for ecosystem services in physical terms**

### *Comments Form*

**Deadline for responses: 20 August 2020**

**Send responses to: [seea@un.org](mailto:seea@un.org)**

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The comment 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 the following e-mail address: [seea@un.org](mailto: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](mailto:seea@un.org)

## Questions related to Chapter 6

### **Question 1: Do you have comments on the concepts and definitions for ecosystem services, benefits and associated components of the ecosystem accounting framework?**

All seems good and clear. The logic chains work rather well. It might be worth showing one as a graphical representation, which can be more intuitive; but the tabular form is a more efficient format. Note that the potential beneficiaries column needs completing for recreation-related services – though the question must be whether it would be better to label the column as “other beneficiaries” (in addition to the users).

But it still lacks clarity on whether there should be differential treatment of health outcomes / benefits between say air filtration and physical recreation. This is partly a valuation issue (can we put an avoided cost valuation for visits to ecosystem assets?). Here, the Logic Chains table categorises the health benefits of both these services in the same way, which seems correct; yet the draft seems happy with valuing the health benefits of air filtration but not those of recreation. The only conceptual distinction we can see is a temporal one: namely that the physical health benefits of recreation may take longer to emerge than air filtration, but even this seems weak – it’s just as physiological. Is the distinction more about ease of measurement (which would not be a good reason)?

Para 6.18. Policy and practitioners are increasingly talking about green space especially urban as providing preventative healthcare services. Of course there is a separate accounting issue about double-counting between benefits / users. And mental health is more problematic, in terms of the impact pathways and certainly measurement. Nevertheless in the end we are looking for a consistent conceptual treatment of health benefits across the accounts as a whole.

### **Question 2. Do you have comments on the content and descriptions in the reference list of selected ecosystem services?**

General comment: where there isn't a discussion in the later text, more examples will be needed. And where there is, it would still be worth consolidating in the table. Some consistency in the degree to which elements of the logic chain are referenced would also be helpful e.g. in references to ecosystem components, vegetation or plants.

Global climate – see comments under Question 3.

Rainfall pattern regulation. Tricky interaction with water supply and water flow regulation - we don't think we can be categoric about it being a final service.

Local climate regulation. We would certainly want to include blue space (i.e. not just plants) within the definition. And we're not sure the cooling effect of vegetation is actually provided through evaporative cooling: our research was based on evidence that green spaces have lower thermal heat capacities, which means that (i) much more energy is needed to heat these spaces (and raise temperature by 1°C) compared to buildings and (ii) green spaces cool more quickly whereas buildings act as thermal stores holding heat well through the night.

Education etc. services. “Representative interactions”. Not sure what these are, or how they relate to the artistic services covered in the next line.

Artistic services. What are these?

Amenity services - needs clearer articulation to be mutually exclusive from local recreation and noise / pollution regulation.

Recreation services. See comments under Question 3. Note that the treatment of businesses as users conflicts with Chapter 7 as currently drafted.

**Question 3. Do you agree with the proposed treatments for selected ecosystem services described in Section 6.4 for biomass provisioning services, global climate regulation services, cultural services, water supply and abiotic flows?**

Biomass provisioning

The conclusions are fine. We struggled a little with the thought process for cultivated livestock, which seemed (in 6.53 and 6.57) only to recognise the need to have a link with the ecosystem rather belatedly in the discussion.

Global climate regulation

While accepting the need to include carbon storage as a service, we do not believe the draft is well-balanced and it is worrying that the proposed approach (of failing to distinguish between capture and storage, as well as the implications for valuation) has not been effectively tested. The key issues would seem to be:

- i. How is soil carbon to be treated? Is carbon stored in soil under buildings an ecosystem service? Or is the view that by virtue of being built on, the soil is part of the economy in the same way as wood products? Are deep peat deposits providing a storage service or are they not seen as part of any ecosystem? Or is the focus on carbon in the top layers? If so, how far down do we go? Should the assessment be based on risk or some other criterion?
- ii. What is the measurement baseline? There is no discussion on this issue. The counterfactual has to be conceivable and plausible. Total absence of carbon below, within or on all surfaces is obviously not a realistic reference point either locally, nationally or globally. Whereas for other regulating services the counterfactual is bare earth – which is clearly conceivable.
- iii. The emphasis on capture and storage as a single service, retention, is untested and potentially problematic. Forests have a key role in capturing carbon and enabling it to be stored once harvested. Combining the two services into one means that the benefit obtained from being able to store the carbon outside of the ecosystem will be overlooked.
- iv. And a slightly more wide-ranging question - why is the storage service limited to carbon? We know that ecosystems store other pollutants, but we don't categorise this as a service. What makes carbon storage different?

For all the other forms of waste mediation, we simply base it on an active process of some kind.

#### Recreation-related services

The distinction between tourism and local related services is a bit odd when it's been stated that services shouldn't be defined by user. This means that a local person and a tourist could both have the same experience of the same ecosystem, but a non-local person who makes a day visit to the site is not seen as having received any ecosystem service. The distinction is unhelpful and potentially misleading.

#### Other cultural services

Cultural benefits, 2<sup>nd</sup> type – This seems in para 6.69 to refer to what economists term "non-use" values - but some confusion as these values are not generally (or at least not necessarily) identified with a "direct experience". Hence for the definition to encompass these values would require reference to "non-use" or "non-active", indirect "experiences". OK, it's a slight redefinition of experiential but something along these lines would seem to be needed.

Para 6.70 rules out remote experience of ecosystems but doesn't say why. This is material particularly since there is a sense in para 6.69 that the non-use values are also in a sense "remote".

6.72 includes "maintenance of ecosystem service options" as a cultural service but this is not included in Table 6.2. This service is problematic as by definition it involves human maintenance (e.g. donations, volunteering). But we can't limit ecosystem accounting to use values and pretend that it is comprehensive. There are many nature reserves which don't have a high recreation use but public money goes in to them for their existence / biodiversity value. More work needed on all of this.

#### **Question 4. Do you have any other comments on Chapter 6?**

Footnote 2. An important clarification!

6.14. "While ecosystem accounting does not require the recording of non-SNA benefits". This could be confusing in the context of physical accounts, as the metrics could be the same and hence the benefits will be recorded.

6.15 and 6.16 need connecting – indent ii isn't covered in the latter paragraph. It could be a public good if provided to local communities at large? Depending of course on how large a local community needs to be in order to qualify as receiving a collective benefit?

6.25. We're still not clear how one would identify and record a flow within an ecosystem asset as an intermediate service. And it doesn't seem in line with the SNA definition.

Section 6.2.9. This is all good stuff but lacks a conclusion in the context of this chapter. We imagine much of this material will be replicated in Ch 13. If so, this could be much reduced. And simplified to the key points as set out in 6.32.

6.33. Landscape processes? Please explain.

6.40. Discussion is a bit understated: "intended to provide clarity on the production boundary of the service and hence support consistency of measurement etc."

6.46 2<sup>nd</sup> bullet. Not clear that this would, for example, cover noise mediation. Is it an Earth surface process? Air filtration would be a biological process?

6.57. Final two lines. Not clear what these clauses have to do with grazed biomass.

6.58. Pigs and chickens. Need to be careful here, by no means all pigs and chickens are kept indoors, in which case there is bound to be some provision of an ES.

6.60 third indent. "There is no international trade in biomass provisioning". This is correctly contradicted by 7.41 where it states that fish caught in non-national fishing waters by resident operators should be treated as imports.

6.62. "IPCC". Note acronym needs explaining and perhaps merits a footnote on the (current) differences.

6.72. No mention made of artistic services – what are these and where would they be categorised?

6.79 penultimate sentence. This isn't entirely clear - if the recreation use is included in the accounts, then recording the water purification service to swimmers as a final service would lead to double-counting.

6.80 second sentence. "Deep aquifers". This seems sensible, but i) needs definition and ii) justification.

6.83. We welcome this clarification.

6.84. This doesn't make any sense. The service is defined by type of use and sustainability of the source? If the peat is used for compost, not energy, then it's an ecosystem service? If timber takes 300 years to regrow, its harvesting would get defined as an abiotic flow? The fact remains that peat is biomass extracted from the ecosystem, for whatever reason and however sustainably or unsustainably. The only exception we can see is if the peat is so deep lying that it falls outside of the definition of an ecosystem – but this would need to be clarified, and taken outside of the section on generation of energy.

6.86 second indent. We agree the conclusion but the text doesn't make any sense. "Unvegetated sand dunes are ... influenced by ... associated vegetation".

6.89 final sentence. We agree the conclusion but should note that the benefit to the user may be valued in terms of the avoided costs to the polluter.

## **Questions related to Chapter 7**

### **Question 5. Do you have comments on the proposed recording approaches for ecosystem services supply and use tables described in section 7.2?**

The inclusion of abiotic flows is helpful.

The proposal in 7.47 to have a supplementary row to record the connection between the ecosystem and businesses is not clear. Obviously it represents the transaction between the household and businesses relating to the contribution of the ecosystem to the recreational visit. But what would the row look like and where in the table would it go? This could be a more general issue: for the owner of a field leased out for grazing, there will be a corresponding connection between the contribution of the ecosystem to the biomass provisioning service received by the user of the grazing service.

An alternative (as in Annex 6.1) would be to record the business as a joint user of the service, by virtue of directly benefitting from the existence of the ecosystem recreational service. This could be equated to capturing the resource rent, as far as the case where the owner charges entrance fees is concerned (although a separate table showing supply by owner might cover this point).

### **Question 6. Do you have any other comments on Chapter 7?**

The SUT examples are very helpful, and could usefully be repeated / extended as implied in 7.50.

7.64. "Default baseline". This seems circular i.e. "the quantity of service is the level of service less zero". Isn't it better to define the counterfactual as "no ecosystem", which then implicitly implies no service? The issue then becomes how to define "no ecosystem". No vegetation is the default proxy.

7.64. "Amount of service provided by bare land". The term "service" is circular, as in this case we are saying that the "service" by bare land is not a service. It might be better to call it an abiotic flow (i.e. not an ecosystem service).

7.65. "Deposited". Suggest to use "absorbed", as pollutants are deposited on bare land and other surfaces including brickwork.

7.71. "Individual resource-perspective". Please explain.

7.72 last sentence. Worth elaborating – will an outline of a research agenda be included in the revised SEEA EEA?

Footnote 4. The usual categorisation is "air pollutants, effluent and solid waste".

Table 7.6 / para 7.65. We have used bare land as measurement baseline for air filtration. This was discussed and I thought agreed at the January 2019 workshop and at the 2019 Forum, and is consistent with the other proposed baselines.

We might then bring global climate regulation onto the same basis – this would probably work for peatland where the storage service provided by bare (i.e. eroded) peat would be a suitable counterfactual to the service provided by peat in good condition.

There is still the issue of what we mean by bare land in the case of water flow regulation – is the soil compacted or porous?