



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)**

Name:	Tim Liersch
Organization & country:	Australian Government Department of Industry, Science, Energy & Resources  Please note that these views do not reflect those of the whole of the Australian Government, and are limited to those individuals responsible for the official estimation of greenhouse gas emissions for UNFCCC reporting using land carbon accounting practices.

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?**

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

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

Changing from carbon sequestration services to global climate regulation services is a positive and constructive change and this should be mostly supported. This change refocuses attention to the value of the ecosystem itself. It avoids the issues associated with negative flows relating to disturbance events, such as those that arise through biomass provisioning services, nor the need to consider international carbon markets engaged in emissions trading. As such, it better compliments the reporting systems conducted under the UNFCCC rather than seeking to substitute them, and retains the relevance of IPCC guidelines on the general methods for carbon stock changes on the land which help ensure international comparability of accounting practices.

However, neglecting to consider forms of greenhouse gas emissions not related to carbon stock changes has consequences that may over-value these global climate regulation services. This is particularly relevant to wetlands and to ecosystems subject to land clearing or fire. Emissions of methane and nitrous oxide arising from anaerobic decay, lost soil mineralisation or combustion in fire limit the effectiveness of the ecosystem's global climate regulation services, and these should be considered relevant in calculating the volume and value of the ecosystem service.

For example, a flooded wetland produces methane through the breakdown of organic matter, which is a greenhouse gas 28 times more potent than carbon dioxide. This effect is usually exceeded by a wetland's capacity to accumulate and deposit significant amounts of soil carbon. If only the carbon stocks were considered, the value of the global climate regulation service would be overstated due to a failure to consider the methane emissions.

**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?**

Firstly, 6.62 names the two carbon pools of ‘biomass’ and ‘soil’. An additional carbon pool of ‘debris’ should be included. This is because amongst those most actively engaged in national land carbon accounting (GHG emission reporting teams), IPCC guidance is taken as the principal methodological guidance. The 2006 guidelines, which will be applied by all Parties to the Paris Agreement in fulfilling their emissions reporting requirements, specify the three pools of: living biomass, debris, and soil. To only name biomass and soil would be to imply the intentional exclusion of debris, which is not desirable. Debris is important in the context of assessing wildfire risks and considering harvesting residues.

Following on from this, in 6.51 the concept of “gross biomass harvested” is potentially confusing with respect to whether harvest residues should be included or excluded. Statistical measures of this in Australia would equate gross biomass harvested with the volume of logs supplied to sawmills, exclusive of forest residues but inclusive of sawmill residues. It would be more productive to draw a link to the biomass lost from the ecosystem in consideration of carbon stocks for global climate regulation services. These should be consistent in a coherent set of accounts. Where a harvesting and regeneration practice sees harvesting residues oxidised (burned, or expected to quickly decay to the atmosphere), they would then be considered a part of the biomass provisioning service, but where they are left in the ecosystem to decay and turnover into soil, the component that is estimated to remain in the ecosystem would not be a part of the biomass provisioning service. Ensuring these approaches are consistent will significantly reduce the risk of double-counting the value of the harvest residue in ecosystem services within certain types of management regimes.

6.62 would be further improved by noting that while the scope of accounting may be different to that required under UNFCCC reporting obligations, the IPCC guidelines provide useful and internationally-accepted methodology for developing estimates. This is because the IPCC does not set the scope of reporting requirements – the UNFCCC treaty negotiations do. The methods provided by the IPCC are inherently designed as a starting point for the development of more advanced country-specific methods and otherwise provide a set of methods for all countries to draw upon and satisfy UNFCCC reporting obligations. The UNFCCC requirements are also in some cases broader than what is being prescribed in the draft text and in some cases narrower, so this is why it is better to state that they “may be different”.

6.65 would be improved by articulating how a biomass provisioning service can have a negative impact on a global climate regulation service, reinforcing the link between these services.

6.66 would be improved by emphasising how the inclusion of carbon stocks in harvested wood products is overwhelmingly a question for the EEA boundary. If a boundary of a broader territory including settlement zones were taken, it would follow that wood products in the local economy (including in local landfill if disposed of) remain present in the local ecosystem and should therefore be included in consideration of global climate regulation services. Such an approach would be more consistent with UNFCCC reporting systems.

In 6.90, the description of the atmosphere being used as a sink of excess greenhouse gas emissions is conceptually incorrect and not appropriate. The point of global climate regulation services is to reduce atmospheric carbon concentrations and by consequence the greenhouse effect, and this is at odds with the idea of the atmosphere offering an ecosystem service in this respect. The point would be better made in reference to the oceans which absorbs significant quantities of atmospheric carbon, but this also has consequences in the form of ocean acidification which is itself a negative impact on an ecosystem. The example would be better off not used.

An additional clause should be added on the consideration of greenhouse gas emissions from the ecosystem that are not related to carbon stock changes, using methane and nitrous oxide released in fires and methane from decay in flooded lands as examples of relevant non-CO<sub>2</sub> emissions. These emissions should be identified as diminishing the quantity of the global climate regulation service, but not below zero due to the accounting paradox that arises from negative service flows. The global warming potentials found in the IPCC Fifth Assessment Report, which will be applied by all Parties to the Paris Agreement in fulfilling their emissions reporting requirements, can be used to determine the CO<sub>2</sub>-equivalent impact of relevant gases – under AR5, 1 tonne of CH<sub>4</sub> is worth 28 tonnes of CO<sub>2</sub> and 1 tonne of N<sub>2</sub>O is worth 265 tonnes of CO<sub>2</sub>.

Annex 6.1 uses the example of primarily woody biomes to describe the provision of climate regulation services. This setup overlooks the contributions made by non-woody biomes, in particular peatlands and tidal marshes which contain significant amounts of organic soil carbon. The proper management of croplands and grazing lands are also significant to climate regulation, as reductions in tilling practices and the promotion of perennial species use improves mineral soil carbon. I would recommend amending this to 'plant-dominated biomes', to imply a better distinction against paved/settled areas.

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

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

**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 physical supply and use tables should also show the emissions of gases not related to carbon stock changes as a separate line item under global climate regulation services, much like how biomass provision services has multiple subsets of service in different units of measure. This will allow them to be appropriately considered for integration with carbon storage to determine their devaluing effect in valuation using monetary units.

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

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