

Developing an international classification for ecosystem services for environmental-economic accounting

Comments – Carl Obst

16 June, 2016

The following comments and observations are intended to support discussion at the upcoming meeting on a classification for ecosystem services to be held in New York on 20-21 June. I'm sorry I won't be able to attend but wish you well in the discussions.

Core framing issues

1. While in much of the discussion the focus has been on the CICES, FECS-CS and NESCS classifications, there seems to be a general lack of clarity on the role of classifications for SEEA type / national accounting exercises. The following are my thoughts on this issue.

- a. We need to establish the relevant measurement concepts and then use classifications to provide the detail to analyse these concepts. It may be that discussion of classifications helps to define the measurement boundaries for a given concept but, in the final phase, the concept and associated measurement boundary must be set first before a classification can be finalized. In the situation here, we ultimately need an agreed definition/boundary for ecosystem services and then a classification can be established which, in effect, identifies different types of ecosystem services within the agreed boundary.
- b. Three distinct classifications are relevant for ecosystem accounting
 - i. Classification of ecosystem types – recognizing that ecosystem assets are quasi-producing units in the ecosystem accounting framework then a classification of different types of producing units is needed.
 - ii. Classification of ecosystem services – here the accounting logic is that the ecosystem services are the production of ecosystem assets – in effect sales by a producer. We could lump all types of ecosystem services together without distinction in the same way as all products (goods and services) from production by economic units could be grouped together. But it is meaningful to record different types of ecosystem services and this is the role of the classification.
 - iii. Classification of user/recipient - The production of ecosystem services reflects a transaction between a producing ecosystem asset on the one hand and a recipient or user on the other. For “final ecosystem services” the user is an economic unit, household/individual or society generally. It would be useful for these users to be classified following the classifications used in the SNA – either by institutional sector or by economic activities (ISIC). A convention to treat use by society as use by general government would be consistent with the SNA. For intermediate ecosystem services the transaction is between a producing ecosystem asset and another ecosystem asset (the convention suggested/implied here is to ignore transactions internal to a single ecosystem asset which is also the starting convention for national accounts). The relevant classification of these ecosystem asset “users” is the classification of ecosystem types as above.

- c. Some notes on these points
- i. These three classifications are distinct in accounting terms. That is, while there may be relationships between them that emerge – i.e. there are combinations (or “triplets”) that happen more often than others (e.g. forest/timber/forestry unit), national accounting does not require that the triplets be known before the classification is established. One might argue that to establish the relevant classes you need to map out the combinations but that is a question of how you delineate the classes not a question of the role/nature of the classification itself.
 - ii. The scope of the classification of ecosystem services need not be, and indeed, should not be, necessarily limited to final ecosystem services. Whether a given type of ecosystem services is final or intermediate – any single transaction must be one or the other – depends on the type of recipient not on the type of service. This is exactly the way in which the Central Product Classification (CPC) is used in the national accounts. A single product type (e.g. bread) may be final (if purchased by a household) or intermediate (if purchased by a restaurant).
 - iii. Further on this point, it may be the that scope of the classification at this stage is limited to the types of ecosystem services that are final, but this should be taken as implying the classification itself is only relevant for classifying final ecosystem services.
 - iv. The set of economic units (including households and individuals) who receive ecosystem services may be collectively termed beneficiaries. As a corollary, the ecosystem accounting model considers that these (final) ecosystem services are inputs to the supply of benefits – SNA and non-SNA. SNA benefits are those goods and services already recorded in the SNA, i.e. they are within the SNA production boundary (and as a result can be classified using the CPC). Non-SNA benefits are new (wrt SNA) but even still, final ecosystem services are contributions to these benefits.
 - v. For each final ecosystem service there must be an associated (and distinct) benefit and a corresponding beneficiary. This is particularly important to reinforce when considering the description of services and benefits and when considering valuation.

Other issues

- d. Determining the treatment of specific flows can be difficult. Six examples come through in the discussion that has been held – crops, carbon sequestration, biodiversity, cultural services, open space and abiotic services. The treatment in each case might be determined in response to two questions:
 - i. What is the nature of the contribution of the ecosystem – ie. what did the ecosystem do to produce the services that is reflected in the transaction between the ecosystem asset and the recipient?
 - ii. To what extent is the ecosystem service already captured in the existing production recorded in the SNA?
- e. The second question is important if the objective is integration with the national accounts. Since ecosystem accounting implies an expansion of the production boundary, then treating something that is already included in the production boundary (e.g. crops) as ecosystem services could be considered double counting. If no integration is anticipated then this question is less relevant.

- f. There is some consideration of the extent of human inputs as being a criteria to consider. I think this is a red herring – the issue is whether things like cultivated biological resources are already in the scope of the CPC and the production boundary of the SNA. To the extent that they are, then the scope of ecosystem services needs to exclude these products.
- g. There has been some discussion on ecological production functions and I think an issue here is that the accountants (me at least) have used the term too loosely. The intent for me was to suggest that the ecosystem accounting framework provides a means by which a more complete set of inputs to the production of outputs can be recorded. Thus for example, pollination by wild pollinators can be recorded as an input to the production of crops, in addition to fertilizer, fuel, etc.
- h. A key objective of a classification of ecosystem services should be establishing a more common language around types of ecosystem services. I suspect there is a considerable variability in what is meant/interpreted when someone says they are measuring water regulation services, for example.
- i. A transaction in ecosystem services need not imply physical flows between supplier (ecosystem asset) and the recipient (beneficiary). The classification of ecosystem services should therefore focus on describing what is being transacted rather than trying to make connections to physical movement or lack thereof.
- j. I can't see a reason why a classification of ecosystem services that is used for accounting would not equally be used for mapping, valuation, cost benefit analysis and testing of scenarios. I'd note that I think the same classification would apply irrespective of the variables or measures being considered. Perhaps the issue here is more around scope of the classification.
- k. I have no particular preferences concerning the structure of the classifications I would just like there to be distinct classifications for different concepts. We should recognize that to a far greater extent than in economic statistics there will be secondary and other production from individual ecosystem assets. Consequently, imagining there would be a nice diagonal through a supply table is not realistic. Indeed, a number of ecosystem services will be produced through more than one ecosystem type working together.
- l. Provisioning, regulating and cultural services is quite useful for conveying the scope of final ecosystem services. My concern is not these high level classes but that what is placed under these categories can vary considerably. Indeed, I suspect that many cultural services are in fact benefits. Of course, since these broad categories emerged from the MA in which ecosystem services equaled benefits this wasn't a problem.
- m. In the notes for Session 5, point g asks about double counting. It would be useful to be clear what is meant by double counting. Is it the distinction between final and intermediate, is it the difference between ecosystem services and benefits, or something else. In concept, there is no reason for double counting to emerge as an issue for accounting purposes providing the measurement boundaries and definitions are clearly established.
- n. I'd like to suggest that it would be beneficial to include sink services explicitly in the discussion. This would include the service that the atmosphere provides as the recipient of GHG emissions for example.