

SEEA EXPERIMENTAL ECOSYSTEM ACCOUNTING

REPORT OF EXPERT MEETING IN BONN IN APRIL 2018

Summary (draft)

The Expert meeting on Ecosystem Valuation in the context of Natural Capital Accounting brought together around 100 participants, including policy makers, economists, and statisticians, from about 25 countries, to discuss valuation of ecosystem services and natural capital assets.

The expert meeting was organized by the German Federal Agency for Nature Conservation (BfN), in collaboration with the United Nations Statistics Division and the United Nations Environment Programme, as one of the activities of the European Union funded project "Natural Capital Accounting and Valuation of Ecosystem Services". Financial support was provided by BfN and the European Union.

There is a strong policy demand for the valuation of ecosystems and their services, as evidenced by the Convention of Biodiversity's Aichi Target 2 and Action 5 of the European Union Biodiversity Strategy to 2020, which calls upon countries to map and assess the state of ecosystems and their services, including economic valuation and integration into accounting and reporting systems.

The revision of the System of Environmental Economic Accounting Experimental Ecosystem Accounting (SEEA EEA) that was recently launched, with the objective of reaching consensus on concepts, methods and classifications of ecosystem accounting by 2020 and as a result drop the work "experimental" from the title. The revision process presents an opportunity to advance the research agenda on valuation and address the policy demands on valuation of ecosystem assets and services.

Plenary sessions showcased key approaches and best practices on valuation to achieve policy mainstreaming. Through parallel sessions, in depth discussions were held on the valuation of specific ecosystem services, as well as a wide range of issues ranging from projecting future ecosystem service flows, wealth accounting, ecological debt and degradation. Panel discussions were held to foster dialogue and understanding between the various areas of expertise represented at the meeting.

The meeting provided a platform to share best practices on ecosystem valuations building on experiences from different communities, advance the research agenda on ecosystem valuation and foster enhanced collaboration between various communities on ecosystem valuation. A programme of work was developed as a result of the meeting to contribute to the revision process of the SEEA Experimental Ecosystem Accounting. Considering the tight timeline of the revision process, priorities will need to be set to ensure that key issues are resolved for inclusion in the revised SEEA EA.

Key findings

The meeting was structured around the identified revision issues, and a paper was prepared to frame the discussion. A number of key technical and contextual findings emerged during the discussions:

Technical findings

1. SEEA has to date focused on exchange values, whereas the environmental economics literature uses welfare values. This is a fundamental difference to resolve since welfare values can be many times higher than exchange values, which are consistent with the market valuation principles of the SNA. This is particularly true where markets are incomplete and where natural capital has been treated as “free”. There is a demand for these welfare values to be presented in complementary accounts in addition to exchange values to provide insights in a broader range of values:
 - a. It was agreed that it is critical that we articulate the relationship between valuations based on exchange values and the measurement of welfare. Current discussion focused on the differences between simple monetary values using either exchange or welfare value concepts was not sufficient, and a more nuanced discussion is needed that takes into account aspects such as changes in real terms, shadow prices, and income measures that adjust for the cost of capital. For instance, it was shown that if the focus is change over time, there may be minimal differences between changes in welfare values and changes in volume terms, like deflated income, based on exchange values.
 - b. A crucial element to take into account is the assumptions made regarding institutions / market mechanisms, when doing non-market valuation. In traditional national accounts, exchange values typically represent the outcome of markets under existing governance and property rights scenarios; estimating welfare values often requires assuming conditions such as perfect competition amongst sellers (i.e. no resource monopoly rent) or conversely, open access to the ecosystem service and zero marginal cost. Values are sensitive to these assumptions and therefore the decision to estimate values under real versus hypothetical institutional or market arrangements must be consistently applied across time and across ecosystem services. For instance, the discrepancy between exchange values and welfare values can be driven to zero when we assume that the seller (e.g. the ecosystem) has perfect knowledge of the buyer’s willingness-to-pay and so drive consumer surplus to zero. The simulated exchange value method also needs assumptions about institutions. It was suggested that the range of valuation outcomes may be described as a function of the assumed mechanisms, as a way to bridge.
 - c. There is a need to better explain the uses of exchange values and how they relate to welfare values. It was suggested that information on the broader range of values, may inform the potential welfare gains from investments in conservation.
2. It is noteworthy that the values available in valuation databases do not provide full coverage vis-à-vis the valuation required for SEEA mainstreaming. Although the ecosystem services valuation literature has developed a lot over the past decades, there is a general bias of studies towards interesting/attractive areas. Secondly, a lot less studies have been

undertaken for developing countries, with the result that the literature is often not representative enough for what is needed for accounting.

3. The ecosystem accounting approach provides added value. It not only imposes discipline on the debate by providing clear definitions and concepts, but it also is able to avoid issues such as double counting. By looking at both the supply of ecosystem services and the condition of the underlying ecosystem, ecosystem accounting will detect situations where the value of a specific ecosystem service increases due to a specific management regime which favors higher yields, at the detriment of the condition of the underlying ecosystem condition.
4. The meeting showcased that cost based approaches have progressed a lot, and should no longer be seen in opposition to service based approaches (as during the SEEA 1993 and 2003), but rather as complementary:
 - a. The potential of ES valuation to inform the motivation and underpinning of policy was recognized as important, and restoration costs need not only be perceived in relation to a former reference state but may better be considered in as being forward looking reflecting the costs required to reach socially agreed desired states (based for instance on international environmental agreements such as the Paris Agreement).
 - b. Restoration cost approaches may even be instrumental in obtaining a valuation of specific ES such as carbon sequestration.
 - c. There appear to be various uses of different definitions of costs, ranging from replacement cost and damage costs to avoided costs and restoration costs. The differences between these and other definitions of cost (e.g. opportunity costs) should be clearly defined.
5. There is general support for the net present value approach towards valuing ecosystem assets. This approach is applied widely by countries as well as in wealth accounting approaches such as the Wealth of Nations of the World Bank and the Inclusive Wealth Index of UNEP. In some instances, more sophisticated methods are used, such as dynamic biophysical models that take into account issues such as scarcity and feedback loops when projecting future prices. The potential to adapt dynamic methods should be evaluated.
6. A key challenge in ecosystem accounting has been determining the appropriate approach to allocate ecosystem degradation to economic units. The fundamental question is whether degradation should be allocated to the unit affected by it through loss of income; or whether it should be allocated to the unit causing the degradation. There was broad agreement that the allocation should be to the unit causing the degradation, notwithstanding the acceptance that this may be difficult in some circumstances. This outcome provides a strong starting point for future work in this area in the course of the SEEA EEA revision.
7. An important aspect related to understanding changes in welfare in an accounting context is determining an appropriate recording of ecosystem disservices. These arise not through a mutually agreed transaction but when environmental processes and changes impact negatively on economic units and people. While ecosystem disservices fit very directly into

an externality and welfare change perspective, the lack of an observed transactions makes recording challenging for accounting. Nonetheless, it is clear that for ecosystem accounting to be considered most useful, it is necessary for information about ecosystem disservices to be meaningfully organised, and more generally for ecosystem disservices to be effectively placed in context.

8. The meeting expressed support for using time-use information to assess services such as nature based tourism or recreation. The issue of the extent to which time-use information can be used to place a value on such services should get more prominence in the revision process, as there are concerns regarding consistency with national accounts principles such as the production boundary.

Context and process findings:

9. While many conceptual and measurement challenges were identified, given the experiences built up in many disciplines and in countries, there is an excellent foundation for describing concepts and methods that will be appropriate for ecosystem accounting.
10. A fundamental issue is that the purpose of ecosystem accounting needs to be made far clearer. For those new to the SEEA community it was unclear what type of question ecosystem accounting was trying to answer and hence it was difficult for them to ensure their responses were appropriate. This speaks to both the spatial scale at which ecosystem accounting focuses and the assumptions concerning non-market valuation. It was agreed that a short note be drafted for discussion that aims to clarify the main purpose of ecosystem accounting.
11. There was a clear benefit in discussing the issue of ecosystem valuation using a focus on individual ecosystem services. To this end it was proposed that the future development of technical guidance on valuation be structured around individual services, and that such an approach would also be useful during the SEEA EEA revision process.
12. There is a need to engage broadly as part of the revision process to better understand the users demand and clearly articulate how the SEEA can answer these demands while at the same time making clear the purpose and boundary of the SEEA, being closely related to the SNA, and ensuring the priority issues are addressed within the time frame of the revision process.

Ultimately, the ecosystem accounts should become the “go-to” dataset for biophysical and valuation data, being multi-year and comparable across countries, driving a virtuous cycle of engagement with policy.

The meeting generated a lot of enthusiasm among participants, and succeeded in bridging between the various disciplines. Overall, this meeting was an excellent commencement to the revision of the SEEA EEA.