Expert group meeting – Towards a Standard International Classification on Ecosystem Services

20-21 June 2016

Two United Nations Building, DC2-1684

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Final report

1. SUMMARY

On 20-21 June 2016, a small group of experts met to discuss the issue of an ecosystem services (ESS) classification and other classifications needed for the SEEA Experimental Ecosystem Accounting. The meeting was organized by UNSD in collaboration with the European Environment Agency (EEA) and the United States Environmental Protection Agency (US EPA). Participants included representatives of the US and EU Environmental Agencies as well academics, statisticians, and practitioners of ecosystem accounting.

The meeting reviewed the three existing classifications for ecosystem services, namely the Common International Classification of Ecosystem Services (CICES), and the US Environmental Protection Agency's a) Final Ecosystem Goods and Services Classification System (FEGS-CS), and b) National Ecosystem Services Classification System (NESCS); explored the role of each system for the compilation of the SEEA Experimental Ecosystem Accounting; and discussed the key criteria, principles, and structure for an international classification for ecosystem services. The meeting identified the process and next steps for developing of a multipurpose international classification approach for ecosystem services.

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2. OUTCOME

The meeting achieved the following outcomes:

i. There was a shared conclusion that underlying rules in constructing CICES, FEGS-CS and NESCS are fundamentally different, and it is important to understand the differences and underlying rationales.

ii. There was a shared conclusion that a modular approach to classification is preferred, where there are three distinct classifications relevant for ecosystem accounting. These three are:

- Classification of ecosystem types, focusing on environmental/spatial units
- Definition and classification of ecosystem services
- Definition and classification of beneficiaries, focusing on users and beneficiaries.

iii. There was a shared conclusion that identifying final ecosystem services in an ecosystem accounting context needs to be linked to discrete ecosystem types and beneficiary/users. Any ecosystem services classification should enable this linking, whereby modules for ecosystem types, ecosystem services, and beneficiaries can be connected. In addition, it was discussed that a complementary classification of "abiotic outputs" could be added to such a system.

It was discussed that the nature of the classification of ecosystem services ideally would be a multi-purpose classification, serving multiple uses, including ecosystem accounting; national accounting; general, local, and detailed sectoral policy analyses; project-specific cost-benefit analyses; mapping functions; valuation applications; and other purposes. It was suggested that ES classification prioritize ecosystem accounting as a purpose but be applicable for other purposes.

iv. Regarding the definition of ecosystem services, it was recognized that there are multiple definitions of ecosystem services, and at this stage it is difficult to come up

with a standard definition that different communities will agree on. The interdisciplinary nature of the work has generated a proliferation of terms and different uses of terms, e.g., terms such as good, services, benefits, and "intermediate services" are used with different meanings by ecologists, ecological economists, and accountants.   The accounting community at this stage will continue to use the definitions as stated in the SEEA Experimental Ecosystem Accounting, which indicated that the scope of ecosystem services for accounting is "final" *only*.

v.   It was recognized that the term "intermediate service" is problematic as this term has a different meaning across different communities, including the ecological community, and the statistics, and national accounting communities.

vi.   There was a shared conclusion that the scope of the classification of ecosystem services for the SEEA Experimental Ecosystem Accounting will be limited to "final" ecosystem services. This means ecosystem services that flow exclusively within or between ecosystems and specifically do not flow to human use or appreciation of any directly measurable economic impact (for the "transaction" between the ecosystem and humans) will be excluded from such classification. Because the actual use is context dependent (e.g., clean water for drinking or as a habitat for fish taken in recreational fishing), a stand-alone classification of ecosystem services would be a list of potential ecosystem services, such that every element capable of inclusion in the classification can potentially be considered as final in some context. Hence, a classification of ecosystem services is necessarily a classification of potential final services.

vii.   It was recognized that additional ecological research could be useful to complement the classification of ecosystem services, as it provides additional information that is useful to inform policy decision.

viii.   There was a shared conclusion that abiotic entities (e.g. minerals, land and atmosphere) in and of themselves will not be considered to be final ecosystem services. Whether any or all abiotic outputs (natural resources, land and global/atmospheric services) should be nested into the classification of ecosystem services was a topic of interest and discussion. The enviornmental accounting and

national accounting representatives recognize a complementary set of classification/list of abiotic services is useful in complementing the classification of ecosystem services for integrated analysis. Each of the three ESS classifications has some abiotic services embedded within its current form (Water, for example, is in all of them). The multi-functionality of different configurations of abiotic elements through classifications or annex classifications was marked as a known topic for further discussion. While there was not agreement on a specific structure, the national accounting criteria were expressed clearly enough that representatives of the three ESS classifications were made aware of the need to further consult national and environmental accounting specialists when determining principles and criteria for a multi-purpose ESS classification.

ix.   There was a shared conclusion that a clear definition of key concepts, such as the distinction between ecosystem function and final services, and between services, goods and benefits in the classification system should be consistently applied in the forthcoming classification system.

x.   The meeting discussed the need to separate the contribution of nature from economic inputs when identifying final ecosystem services from agricultural ecosystems. This recognizes the often large economic production function (human capital and labor) often associated with agricultural products (e.g. milk, meat, grain, etc.).

xi.   While there was a shared conclusion that cultivated crops are not final ecosystem services in concept, the practical difficulties in detangling the contribution of each individual service from nature were recognized.

xii.   It was also noted that the value of crop measures in SNA may not recognize some of the contribution of nature where there is no market transaction. To this end, the proxy indicator of "ecosystem's contribution to cultivated crops" could be the value of crops factoring out human inputs (e.g., crop yield factoring out any effects from artificial fertilizer and other human inputs).

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xiii.   There was a discussion on the possible structure for the classification. It was recognized that a hierarchical structure that allows aggregation will serve the needs of ecosystem accounting. It was also agreed that individual services in the classification should be mutually exclusive.

xiv.   There was a discussion on the underlying rules for delineating classification categories, and a recognition that further discussion is needed in order to reach agreement on whether rules should be based on characteristics, functions, ecosystem types, uses or some other rules.

3. ACTIONS

The meeting proposed the following actions:

i. Advance the international ecosystem services classification effort by testing, clarifying, and contrasting outputs of the CICES, FEGS-CS and NESCS within a case geographical region or country. It was suggested that both US-EPA and EEA will aim to establish comparison of final ecosystem services and examine how they correspond to one another.

ii. Review and contrast the principles and hierarchical structure of CICES, FEGS-CS, and NESCS to help derive principles and structure for the international classification.

iii. Clarifying the concept and definitions related to ecosystem services (final, intermediate, end "products"/ecological output, boundaries etc.) as used by the three classifications.

iv. Develop criteria for evaluating the classification system and case studies. To this end,

- It was proposed that UNSD, US-EPA, and EEA develop key criteria and identify concrete elements/issues that need to be examined and resolved.

v. Explore the possibility of developing an international classification of ecosystem types for ecosystem accounting that is capable of connecting to the FAO's recent 15 land-type classes. In addition, it would be useful to develop metrics and indicators that could inform the condition accounts and assessments of ecosystem capacity.

vi. Propose a follow-up workshop to be held early next year (around April 2017), possibly back-to-back with the UN Forum on ecosystem accounting, to go through the outcome of follow-up technical work between key players and potentially the results of the case-study comparisons.

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