CURRENT WORK ON COMPARING ECOSYSTEM SERVICE CLASSIFICATIONS

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Introduction:

This brief paper summarises current follow-up work to an expert group meeting Towards a standard international classification on ecosystem services, hosted by UNSD in New York on 20-21 June 2016 (summary below *). This work is being developed in cooperation between EEA/Univ. of Nottingham and USEPA in the US (who have sponsored the FEGS and NESCS systems. Information on FEGS-CS can be found under: https://cfpub.epa.gov/si/si_public_record_report.cfm?dirEntryId=257922

Information on NESCS is available under: https://www.epa.gov/sites/production/files/2015-12/documents/110915_nescs_final_report_-_compliant_1.pdf

EEA has provided financial support for expert meetings and technical work in 2016 and expects to provide further support in 2017. USEPA is developing a project to support this work from 2017 onwards.

**** Key outcomes of expert meeting on ecosystem services classification 20-21 June 2016, New York - summary by Anton Steurer at UNCEEA meeting in June 2016:***

- Small group from US EPA, EEA, academics, statisticians
- Discussed CICES and FEGS/NESCS developed by US EPA
- Meeting advanced understanding, recognised different uses (national, sectoral, local) and agreed testing in one area (potentially more)
- Interdisciplinary discussion - hard to get shared interpretation of technical terms (e.g. service, good, benefit….)
- ESS = final i.e. benefit humans but classification lists *potentially final* as real use is context dependent
- *intermediate* ESS problematic term - different meanings
- Classifications modular (separate classifications for ESS, assets, users)
- Separate classification for abiotic (e.g. subsoil)
- Initial ideas to further improve CICES identified, timing should include testing ***the future revised classification*** and to align timing with SEEA EEA revision.
- Next steps are testing existing classifications, clarify terms, agree principles for revised classification, develop and test revised classification

Planned sequence of steps to develop a 'multi-purpose ES classification':

Discussion among the cooperating partners, with UNSD staff and experts at statistical offices, has led to the development of the following planned schedule of work to develop a shared multi-purpose ES classification (or system of connected classifications):

a) A review of issues linked to the use of ES classification for ecosystem accounting purposes at the London group meeting on 28-30 September in Oslo;

b) A presentation at the December 2016 ACES (A Community on Ecosystem Services) Conference representing the USEPA, ORISE, EEA, and Univ. of Nottingham co-authors' work, which outlines the

goals and status of the effort, and which will be used as a focusing step and benchmark on the way to writing a joint paper by the same collaborators – see Annex 1;

c) A two-day workshop, hosted by Lars Hein at the University of Wageningen on 17-18 November 2016, to review critical technical issues, to compare the three main ES classification systems in detail, and to identify steps forward – see Annex 2 for a draft Agenda (*Note: feedback welcome!)*

d) Joint background paper between USEPA-affiliated and European cooperation partners (on the basis of joint comparative work and outcomes from the workshop in Wageningen) for review at a planned 2nd expert meeting hosted by UNSD in New York in Q1 2017;

e) Potential adoption of the UNSD expert meeting conclusions at UN-CEEA meeting in June 2017 (if work has advanced enough), or potential further technical review at the 2017 London group meeting, in Mexico in autumn 2017.

Next steps planned in the comparative exercise between US and EU partners:

Ongoing work includes the following elements:

- Detailed comparative review of definitions and concepts to identify in further detail similarities and differences between the three systems, and review options for potential alignment in the future
- Co-organisation of the workshop in Wageningen to discuss findings with experts from statistical offices and ecosystem service research projects
- Identification of case studies and logistical and methodological preparation of comparative work between the three respective systems in these case studies. Technical discussions so far have identified the following key components for review (more may follow) –
    - Ecosystem units to be covered – there will be a great mixture of those in most case studies and we would like to focus on the ones that are most important or most comparable.
    - Categories of final ES to be covered as a minimum set – for CICES this would mean to select ES classes from all three main sections (provisioning, regulation & maintenance, cultural).
    - Comparing definitions or metrics that are used for describing / quantifying these ES.
    - Compare approaches for identifying beneficiaries / users to support comparability of results between the three ES classifications.
- Writing of the paper to be discussed at the ACES conference – see Annex 1 below.

ANNEX 1: ABSTRACT OF PAPER FOR ACES CONFERENCE

CLASSIFYING ECOSYSTEM SERVICES FOR ECOSYSTEM ACCOUNTING AND RESEARCH PURPOSES – STATE OF THE ART AND KEY CHALLENGES

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Purpose and scope: This presentation explains current progress and challenges associated with international efforts to build an ecosystem services (ES) classification system that meets the needs of multiple users. “Ecosystem services” have become a key research topic for academics, agencies, and governments, but is also a central concept in the UN handbook on “Experimental Ecosystem Accounting” (see: http://unstats.un.org/unsd/envaccounting/eea_white_cover.pdf), which aims to use the rigor of national accounting principles to measure the contribution of ecosystems to the economy and to human well-being.

The United Nations Statistics Division (UN-SD) has the task of developing standards for the “System of Environmental-Economic Accounting” (SEEA) to be used by statistical offices and official research efforts. As part of this process UN-SD has asked the developers of three ES classification systems to explore what common ground exists between them, with the goal of developing a unified and multi-functional ES classification (or set of linked classification systems). The systems are the *Common International Classification of Ecosystem Services*, (CICES), the *Final Ecosystem Goods and Service Classification System* (FEGS-CS), and the *National Ecosystem Services Classification System* (NESCS). This paper sets out the approach and objectives for that exercise.

Methodology and interim outcomes: The first step in the comparison of the three systems is to establish key user requirements in different communities (accounting, ecosystem assessment, trade-off analyses, etc.) and to identify criteria essential for statistical classifications. The second step is to clarify key concepts and terminology used in all three systems, to arrive at shared conceptual interpretations and a common vocabulary, or at least a joint translation tool where necessary – for example, the “final ecosystem services” concept is interpreted differently between the systems and in different application contexts. The third key step is to apply the three systems to a selected set of case studies, to compare approaches and outcomes. The final step involves reviewing whether the main user requirements and criteria can all be accommodated within a single system, or whether a small set of linked systems would be the better approach.

All three ES classification systems are complete, consistent within their own objectives, and ready to be used. However, each would need modification to be fully "SEEA compliant.” All three seek to identify “final ecosystem services,” but each system frames the concept differently, especially as they classify abiotic elements of the environment in addition to biotic ones. The three systems further differ in how they identify beneficiaries and benefits.

Conclusions and next steps: The cooperative process established for comparing the ES classification systems offers a useful way forward. Results will receive feedback from experts and SEEA advisory bodies. Feedback is also sought from disciplines represented at ACES. The UN-SD process foresees developing a common approach across purposes and academic disciplines by mid-2017. Commitment to a common approach should also enable easier comparison of ES assessments results across different research teams, and perhaps enable the building of a joint database of results that estimate the benefits that human society derives from ecosystems.

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ANNEX 2: DRAFT AGENDA OF EXPERT MEETING ON ES CLASSIFICATIONS

Developing ecosystem service classification(s) for ecosystem accounting – taking stock & moving forward

Expert workshop - draft agenda

Wageningen University, Netherlands, 17-18 November 2016

Starting from the three classification systems used, CICES, and FEGS-CS, and NESCS, participants shall discuss the stated principles and definitions underlying the three classification systems in order to plan a way forward to create a multi-purpose classification of ecosystem services (or a system of explicitly connected classifications). The meeting is organized as part of the process guided by UNSD to develop a multi-purpose international classification for ecosystem services (or a system of explicitly connected classifications) that builds on practices of existing European and American classifications; i.e. CICES, FEGS-CS, and NESCS, to support implementation of ecosystem accounting as developed in the UNSD handbook on Experimental Ecosystem Accounting (SEEA-EEA).

1. OBJECTIVES

The objectives of the meeting are as follows:

i. Elaborate and agree upon a set of principles, criteria, definitions and characteristics for a multi-purpose classification (or system of explicitly connected classifications) to be used, among other things for the compilation of SEEA Experimental Ecosystem Accounts;

ii. Based on CICES, FEGS-CS,/ and NESCS, develop a set of key objectives, definitions, principles, criteria and rules for ecosystem services classification;

iii. Discuss a possible structure of the classification of ecosystem services for ecosystem accounting, (based on agreed criteria and principles) and relations with other classifications used in official statistics;

iv. Agree on the next steps and required research for developing a standardized, multi-purpose international classification (or system of explicitly connected classifications), including for the SEEA Experimental Ecosystem Accounting

2. ORGANIZERS AND PARTICIPANTS

The workshop is organized by the European Environment Agency and the United States Environmental Protection Agency, in consultation with Wageningen University and UNSD. There will be 15-20 participants in the meeting, from statistical offices, environment agencies and research organisations that run projects on ecosystem services for accounting and assessment purposes.

PROVISIONAL AGENDA

Day 1: 17 November 2016

Time	**Session**/Objective
9.30-9:50	**Session 1: Opening; introduction of all participants; Key objectives of the meeting** EEA, USEPA & hosts
9:50-10:50	**Session 2: Setting the frame** 09.50 An SEEA perspective on key requirements of ecosystem service classification systems for ecosystem accounting (UN SD, London group – tbc.) 10.10 Overview of current status of CICES, incl. feedback on last round of consultation (Univ. of Nottingham/EEA, tbc.) 10.30 Introduction to key characteristics and purpose of existing classification system(s) in USA (US EPA, tbc.)
10:50-11:10	***break***
11:10-12:45	**Continue on Session 2** 11.10 Reports from practitioners on using ecosystem service classification systems for ecosystem accounting – a) South America (Conservation International, tbc) Reports from practitioners on using ecosystem service classification systems for ecosystem accounting – b) Europe (DEFRA / JRC ?, tbc) 11.50 Discussion on required and/or desired key functions, principles, criteria and characteristics for a multi-purpose classification in the design of a common ecosystem service classification system (or system of linked-up classifications) for ecosystem accounting (facilitation by n.n.)
	Lunch break

14:00-15:30	**Session 3 (in break-out groups)** Introduction to key issues identified so far (US/EPA): Elaborate and agree upon a set of key functions, principles, criteria, definitions and characteristics of to be used, among other things for the compilation of SEEA Experimental Ecosystem Accounts; Discussion in break out groups to cover these potential issues: - one multi-purpose classification or a set of linked classifications ? - biotic as well as abiotic services to be covered ? - Only 'final' or also 'intermediate' services to be covered ? - Degree of human capital and labor explictly involved in the end-points in question (i.e. cows, carrots, and plantation timber). - ES accounts to cover 'supply', 'demand' and 'capacity' ?
15:30-16:00	***break***
16:00-17:30	**Continue Session 3:** items to be covered could include: - conceptual foundation: ES cascade model / others ? - defining the economy/environment boundary – which criteria or parameters ? - defining the source of ES/FEGS on the landscape – discussion on needs and desires

Day 2: 18 November 2016

Time	**Session**/Objective
9.00-10:20	**Session 4:** Discuss possible structure of the (combined systems on) classification of ecosystem services for ecosystem accounting, (based on agreed criteria and principles) and relations with other classifications used in official statistics Brief introductory statements followed by structured discussion on: - main types of ES (provisioning/regulation&maintenance/cultural or not) ? - how many hierarchical sub-divisions for what purpose ? - start with type or start with purpose ? - include 'land', global climatic / atmospheric services ? - what are key 'operational' criteria ?
10:20-10:40	***break***
10:40-12:00	**Continue on Session 4** - Defining 'goods', 'benefits' and 'services' ? - Avoiding double counting – how to do it ? - the 'ecological production function' concept – how to operationalise ? - Tools for inter-comparison / 'translation' ? - Metrics and Indicators and their relationship to use and users. - Other ?
M	***Lunch break***
13:00-14:30	**Session 5** Reports back from sessions 1 - 4
14:30-15:00	***Coffee break***
15:00-17:00	**Session 5** Agree on the next steps towards a standardized, multi-purpose international classification, including for the SEEA Experimental Ecosystem Accounting