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Environmental Asset Condition Account Trials in Australia

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Introduction

Thank you for the opportunity to present to you today on the regional asset condition accounting trials we are conducting across Australia.

Might I begin by congratulating the UNSD for this important initiative. SEEA, both the Central Framework and the Experimental Ecosystem Accounts are central to humanity's quest to decouple economic growth from the degradation of our land, water and marine resources.

To do this we need to be able to measure the impact economic activity is having on the condition of our environmental assets.

This is the focus of the Australian trials: measuring asset condition.

The Wentworth Group is an independently funded group of scientists in Australia who work with government and the private sector to connect science to public policy. We believe that better information is fundamental to informed decision making on how to manage our natural resources sustainably.

Accounting for Nature

We developed the *Accounting for Nature* model.

This is a concept which uses scientific information to account for the condition of ecosystem assets.

Under this *Accounting for Nature* model, information is assembled at a regional scale and then aggregated into national environmental accounts.

The regional scale was chosen for two reasons. Firstly, it is at this scale that ecosystem processes operate, and therefore it is at this scale that the assembly of indicators is most appropriate. The second reason is a practical one: most government policy and investment decisions relating to natural resource management are made at a regional scale and where most scientific information is available.

I should mention that whilst the *Accounting for Nature* model focused on regional scale information for aggregation into national environmental accounts, the methodology has been designed to apply at any scale, paddocks on farms, whole farms, enterprises and catchments.

This has important implications for the future ability of humanity to be able to measure the impact economic activity is having on the environment at all scales at which decisions are being made.

At this stage in our trials we are focusing at the regional scale.

A Common Unit of Measure of Ecosystem Condition

Accounting for condition must address a number of significant challenges:

- no two assets are the same;
- often different indicators are needed to measure the same asset in different locations; and
- often indicators must be combined into an index to provide a scientifically valid measure of an asset's condition.

Central to the *Accounting for Nature* model therefore is to test the ability to use scientific information to create a common, non-monetary, unit of measure of the condition of any environmental asset, using any appropriate indicator, at any scale - enabling apples to be compared with oranges.

This common unit of measure of ecosystem condition is based on the established science of reference condition benchmarking.

Reference benchmarking is a method used extensively in the ecological scientific literature to normalize different indicators and create a common unit of measure. It does this by comparing the current condition against reference giving a score out of 100.

I will not go into the details today of how science does this. Instead I refer you to a more detailed paper I presented to the UNSEEA meeting in June this year, and which I believe is on the UNSEEA website.

Central to the creation of a common unit of measure is a formal process of accreditation to ensure that the complex and diverse information that goes into the accounts is scientifically valid.

I shall return to this issue in a moment.

The 2012 Australian Regional Proof of Concept Trials

Let me now briefly describe the 2012 Australian Regional Proof of Concept trials.

In Australia, 56 Regional Natural Resource Management institutions have been established across Australia to undertake natural resource planning and prioritise government investment decisions. In 2011 these regional groups agreed to undertake a proof of concept trial of the Accounting for Nature model. Ten of the 56 regions are currently participating in the proof of concept stage which we expect to complete in early 2013.

These trials have two tests:

1. Is it possible to construct asset condition accounts using a common unit of measure?
2. Is it feasible to do so?

The Australian trials are built on five design principles:

1. Environmental accounts should enable people to understand and track the status and direction of changes to their environmental assets.
2. Indicators may vary from region to region according to agreed standards.
3. Existing data sets should be used wherever possible.
4. Measurements of condition are based on specified reference condition benchmarks against which change in indicators can be measured and compared.
5. Measurements to be generated at a regional scale should be capable of aggregation to the national scale.

Australia is a large, arid continent with a small population – its land mass occupies 7.5 million square kilometers and a population of 20 million- and contains a wide diversity of ecosystems - tropical savannahs, ancient temperate forests, woodlands, grasslands, deserts, and being an island continent, vast areas of coastal and marine ecosystems.

The 10 regions participating in the trials represent many of these very different ecosystems. This enables us to test the construction of ecosystem condition accounts, built at the scale at which ecosystems function.

These 10 regions also vary significantly in their technical capacity, resourcing capabilities, data sources, and organisational arrangements. This too is important for the trials, because it is one thing to test a methodology where resources are abundant, but the real test is whether the least resourced, most data poor regions can.

Assets being measured include native vegetation, including forests, woodlands and savannahs, soil, fauna, rivers, groundwater, wetlands and floodplains.

We have established two expert committees: a *Scientific Standards and Accreditation Committee* and a *Technical Environmental Accounting Standards Committee*. The purpose of these expert committees is to ensure the selection of indicators and their combination to create indices satisfies both scientific and accounting standards.

We have developed 'Guidelines' which set out a 6 step process for constructing asset condition accounts, and an 'Accreditation Manual' which sets the standards for their accreditation. We are also preparing "Technical papers" based on our experience, which addresses some of the more challenging scientific aspects of determining condition indices for some environmental assets.

Scientific Accreditation

Finally let me turn to the issue of Scientific Accreditation.

Measurement standards are fundamentally important to the integrity of any accounting system. For ecosystem condition accounting to be accepted, markets and decision-makers must have confidence that the measured indicators properly reflect the condition of the assets being measured.

Measurement standards are not in the Central Framework, nor are they in the System of National Accounts, because there are already agreed standards for the measures in these accounts, whether they are national currencies or international standards for weights and measures.

For example, the SNA requires that: *"All entries in the accounts have to be measured in terms of money, and therefore the elements from which the entries are built up must be measured in terms of money"*.

The acceptance of ecosystem condition accounting is therefore dependent on the establishment of a formal process by which scientists accredit the quality of the indicators and indices that underpin an ecosystem condition account.

Scientific accreditation requires independent scientific experts formally assessing the account, and the information that underpins it, against a set of criteria or standards, and then making a judgment as to whether it meets those criteria to an acceptable level.

We have set out those standards in our Accreditation Manual.

Conclusion

In conclusion, the industrialisation of our economies has caused and, without corrective action, will continue to degrade our natural capital, and that in turn will deplete the services that ecosystems provide to humanity. The challenge for humanity today is to stop further degradation and to invest in the restoration of those assets we have already degraded.

In other words, to manage the environment you need to measure degradation. To measure degradation, you need to measure condition, and for that you need science.

Thank you.