Presenting SEEA CF and SEEA EEA statistics together: UK experience and lessons learnt

Issue paper for the London Group, April 2018

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In 2011 the UK Government committed to working with the UK Office for National Statistics (ONS) to incorporate the value of natural capital into the UK Environmental Accounts by 2020. The aim of this project being that the benefits of nature would be better recognised. In partnership with the Department for Environment, Food and Rural Affairs (Defra), ONS has been developing and publishing natural capital and ecosystem accounts for a number of years.

By 2020 we envisage the ecosystem accounts moving beyond experimental status, to be part of the UK Environmental Accounts, and integrated as far as possible. As the 2020 target draws nearer it has led to a lot more discussion and thought about how the general Environmental Accounts, which follow the SEEA Central Frameworks (CF), and the UK Ecosystem Accounts, which follow the SEEA Experimental-Ecosystem Accounts (EEA), are presented together.

This short note discusses some of the issues faced in bringing statistics from these two frameworks together and includes and builds on a paper presented at the 23rd meeting of the London Group in Costa Rica in 2017.

The following sections discuss three issues that arise when the two accounts are being published in tangent.

- Issue 1: Grey areas – recognising when environmental accounts and ecosystem accounts are telling two parts of the same story
- Issue 2: The usual conundrum of frequent short articles or releases versus one annual compendium, exacerbated when ecosystem accounts are introduced
- Issue 3: Spatial data – If it is spatial in the ecosystem accounts, shouldn't it be spatial for the environmental accounts too?

The issues vary from a need to harmonise methodology and data sources where there are overlaps to where the development of further environment-related statistics has led to questions over the

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best way to present and maximise the usefulness of the data. Finally, this note addresses how the development of spatial ecosystem accounts could impact on the currently non-spatial central framework accounts.

Although not every country has two separate teams following the two frameworks, the issues discussed will be relevant to any country producing both sets of accounts. It is hoped this issue paper will be useful to other practitioners using or thinking of using the two frameworks together.

UN SEEA development in the UK

In the UK, environmental account compilation and development takes place mainly in the Office for National Statistics but is split into two distinct areas.

The ONS Environmental Accounts team analyse and produce statistics following the Central Framework (CF). Their main output is an annual bulletin (UK Environmental Accounts) which covers fuel and energy use, air emissions, material flow accounts, environmental taxes, environmental protection expenditure and environmental goods and services sector estimates[3]. Separate ad hoc articles with further analysis of interest or methodology notes are also published throughout the year.

The ONS Natural Capital team and Defra jointly produce ecosystem/natural capital accounts, following the Experimental Ecosystem Accounting (EEA) framework. The main outputs are an aggregate UK natural capital account bulletin and habitat based ecosystem accounts, these are updated on an ad hoc basis although generally every two years. Separate ad hoc articles and bulletins with further analysis of interest, methodology notes or further accounts are also published throughout the year.

Currently, Central Framework accounts and Ecosystem accounts are published separately, but it is recognised there is substantial value in presenting the two together, in particular by focusing on certain topic areas. This would require viewing the two frameworks as one, which presents some challenges.

Issues faced when presenting national environmental and ecosystem accounts in parallel

Issue 1: Grey areas – recognising when environmental accounts and ecosystem accounts are telling two parts of the same story

As presented in the 2017 paper and repeated here for completeness, both frameworks have specific uses, but there are some grey areas of overlap between the two, demonstrated in table 1.

[3] The UK also produces waste statistics, but these are compiled and published by the Department for Environment, Food and Rural Affairs

Table 1: Accounts developed in the UK and areas of overlap identified (grey areas)

Accounts produced by the Central Framework team	**'Grey areas'**	**Accounts produced by the Natural Capital Accounting/Ecosystem team**
Air emissions Energy - Fuel use - Energy consumption - Energy intensity - Oil & Gas stocks Material Flows Water[4] Environmental Protection Expenditure (EPE) Environmental goods and services sector Environmental taxes Waste[5]	Air emission and air filtration Physical and monetary asset accounts Material flows and provisioning ecosystem services (timber, minerals etc) EPE and restoration cost accounts	Extent - Land cover - Land use Condition accounts Ecosystem services - Air filtration - Energy (renewable) - Water - Minerals and fossil fuels - Timber, agriculture biomass and fish - Other regulating services - Recreation Restoration cost accounts

The Central Framework focuses on individual environmental assets, for example, minerals and energy resources. It considers direct use of environmental assets as natural inputs for the economy by enterprises and households. It doesn't consider non-material benefits that comes from ecosystems. In contrast, the Ecosystem Accounts focus on the interaction between ecosystems as a whole and the wider economy, and cover both material and non-material benefits (e.g. air filtration by woodland as well as timber provisioning).

The distinction between the two frameworks, while clear theoretically, entails a significant degree of overlap. The main area of overlap is material use of natural inputs for the economy defined in the Central Framework and the supply of such services in the ecosystem accounts. An ecosystem service is only recognised if society benefits from it so, for example, the ecosystem service of timber is essentially the same as the material use of timber.

[4] available for 2012 only
[5] [1]produced by Defra

A slightly different issue is the treatment of the relationship between the recording of air emissions in the Central Framework accounts and the service of air filtration in the ecosystem accounts. The ecosystem accounts estimate the amount of air pollution removed by vegetation, whereas, the environmental accounts estimate the emissions generated by economic units. Analysing the two together could provide users with a more complete picture of interactions between the environment and air quality, yet a number of technical consistency issues have prevented the two accounts from being presented together. One issue is that the air emissions are calculated on a residency basis, whereas the pollution removal estimates are on a territory basis.

Another issue is that all pollution removed from the atmosphere is included, including pollution created from chemical reactions in the air and pollutant transported from abroad, whereas the air emissions only include emissions directly generated by economic units. In the UK this has meant that the estimates of the removal of certain pollutants are far higher than the estimates of emissions, implying that the UK does not have a pollution problem. In practice we know this is not the case, but demonstrates the difficulties faced when practitioners present the statistics to policy makers and other users.

Issue 2: The usual conundrum of timely short articles vs. one annual compendium, exacerbated when ecosystem accounts are introduced

The UK Environmental (Central Framework) accounts are published annually every June/July, whereas the ecosystem accounts are currently published on an ad hoc basis, although, as previously mentioned, we anticipate regular production rounds will become the norm. It is also anticipated that the ecosystem accounts will eventually form part of the environmental accounts.

There is value in publishing one annual publication containing a complete compendium of environmental information. For the user it provides one flagship publication that can readily be accessed and can be relied upon every year. For the producer it provides opportunity to analyse different environmental statistics together and find common trends that possibly would not have been noticed if published individually.

There is, however, a trade-off, as some of the data could be published earlier in the year, rather than waiting for the publication date which is typically every June/July. It can also be burdensome to produce and some key impact messages may be lost when so much data is released at once. Shorter, more accessible articles tend to garner more attention.

Currently, the natural capital and ecosystem accounts are published separately to the main Central Framework accounts. This enables the ecosystem accounts to be developed and published independently of publication cycles, and data is generally published as soon as it is ready. However, there is little opportunity to analyse the two sets of accounts together and opportunities have been

missed to share methodology developments or spot common trends. It is expected that a future joint annual publication will facilitate this.

This dilemma of one big publication versus many smaller reports is a common problem faced by all data providers. However, as the environmental and ecosystem accounts develop and expand, the burden of the compendium style presentation increases, yet the demand to present the two sets of accounts together is also growing.

It could be useful for practitioners to have guidance about where it is most valuable to present statistics from the two frameworks together and examples and lessons learnt from other countries.

Issue 3: Spatial data – If it is spatial in the ecosystem accounts, shouldn't it be spatial for the environmental accounts too?

Strong emphasis is placed on producing spatially detailed ecosystem accounts from the start within the EEA, whereas in the CF it is generally considered a next step once initial estimates are made. This may create comparability challenges, as different data sources and methods may mean that consistency at national level will not be carried through to more local levels.

Additionally, it can lead to unexpected demand being placed on central framework statistics to become more spatial e.g. for GHG emission estimates to be spatially disaggregated. This is not necessarily a bad thing, as generally there is a push for many statistics to become more spatial and new data sources to be explored. However, changing an existing data system to a spatial one is difficult, often more difficult that setting up a new data system, so takes time. Further guidance about methods for generating spatially detailed data and options for incorporating spatial data into existing systems could help practitioners.

Lessons learnt from the UK experience and suggested further guidance on SEEA implementation

It is important to have the two frameworks to aid the development of the accounts, however when analysing the results and comparing the two together a bridge between the two is needed in order to enable a holistic understanding of the accounts as a whole.

In practical terms this means identifying all areas of overlap and explaining differences in the concepts and methods. Practically, it will also mean ensuring the same assumptions and data sources are used where appropriate and using the same approach to analysis and communication with users.

As many countries now develop accounts based on both frameworks this is of high importance, otherwise there is a risk that inconsistent messaging or competing statistics will be presented, rather than the holistic picture of the relationship between the environment and the economy that would ideally be given.

The frameworks have a lot of value in aiding the development of a suite of environmental statistics, but for the value to be fully realised the two frameworks need to be linked together more to help both sets of practitioners to develop and present the statistics and the end users to understand them.

In summary, further guidance on SEEA implementation around the topics below would be of use:

- Grey areas where methods and sources can be consistently used for both sets of accounts would save time and reduce the risk of inconsistencies.

- Best practice for presenting and releasing the substantial amount of environmental information now incorporated within the accounts, so it is timely and relevant to users and has impact (e.g. country examples).

- Incorporating spatial data into central framework accounts in a way that is consistent with the EEA.