SEEA EA Revision
Key indicators from the monetary accounts

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What does the SEEA suggest?

5 indicators from the monetary flow and asset accounts (Para 14.29 and Table 14.4 refer)

1. Gross Ecosystem Product
   - The economic value (-added) of all ecosystem services generated

2. Ecosystem service values linked to industry value added
   - Provisioning service values and relationship to primary industry production/GVA

3. Ecosystem asset value
   - Ecosystem asset value by ecosystem type

4. Asset value as a percentage of total national wealth

5. Cost of degradation
   - Decomposition of changes in asset values, by ecosystem type

Questions for discussion

Questions to consider as we go along:

- **Should we say more in the SEEA about the nature of the proposed indicators?**

- **And something about the strengths and weaknesses? Can the weaknesses be overcome by the use of other information or by focusing only on a subset of data?**

Question at the end:

- **Are there other indicators we should include?**

1. Gross Ecosystem Product

- **Gross ecosystem product (GEP)** is the aggregation of the monetary value, in exchange value terms, of the ecosystem services supplied by the ecosystem assets within an EAA less the imports of (intermediate) ecosystem services from ecosystem assets outside the EAA

- Widely piloted within China, it is seen as a means of evaluating government performance in key regions (officially designated as "key ecological function zones"), for assessing the effectiveness of a policy to sustain cross-regional flows of ecosystem services through compensatory transfer payments between areas
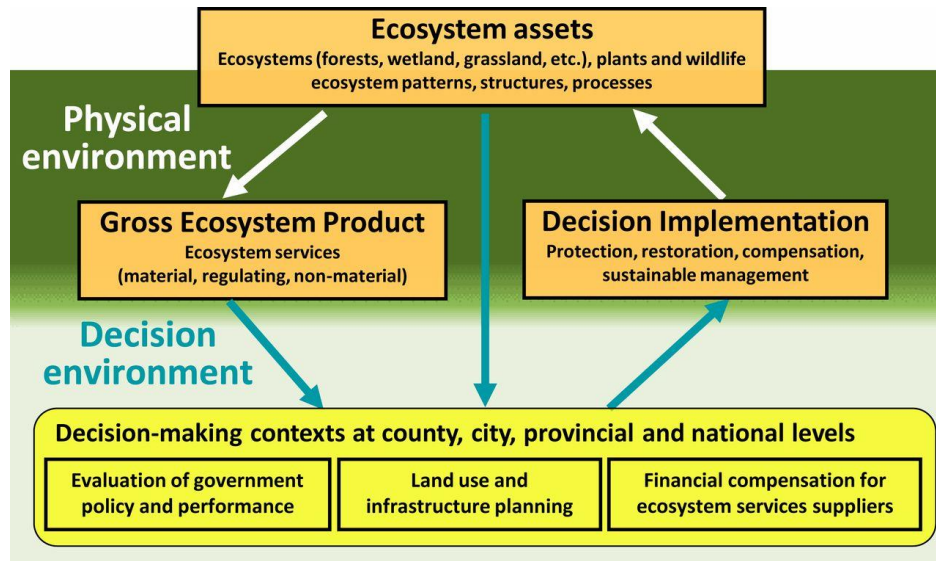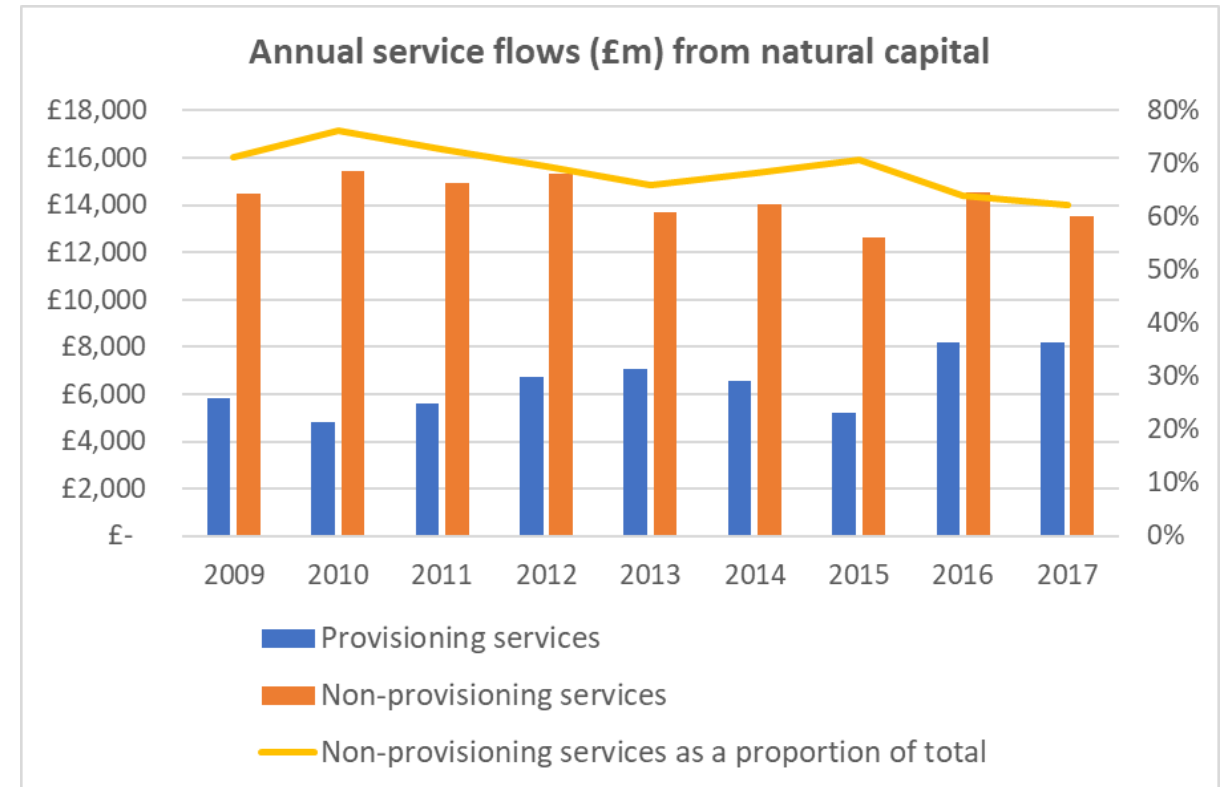
1. GEP and the value of different ecosystem services

UK experience

- Focus is on relative importance of non-provisioning service – over half the services have no direct market value

- The breakdown by ecosystem type also influential e.g. in contrasting value of timber compared to other services

- These kinds of estimates are widely used to communicate the benefits of urban green space

- On the downside, we haven't managed to get these estimates established as formal indicators – emphasis is on the relativities between the values rather than the change in values over time

Annual service flows (£m) from natural capital

Legend: Provisioning services; Non-provisioning services; Non-provisioning services as a proportion of total
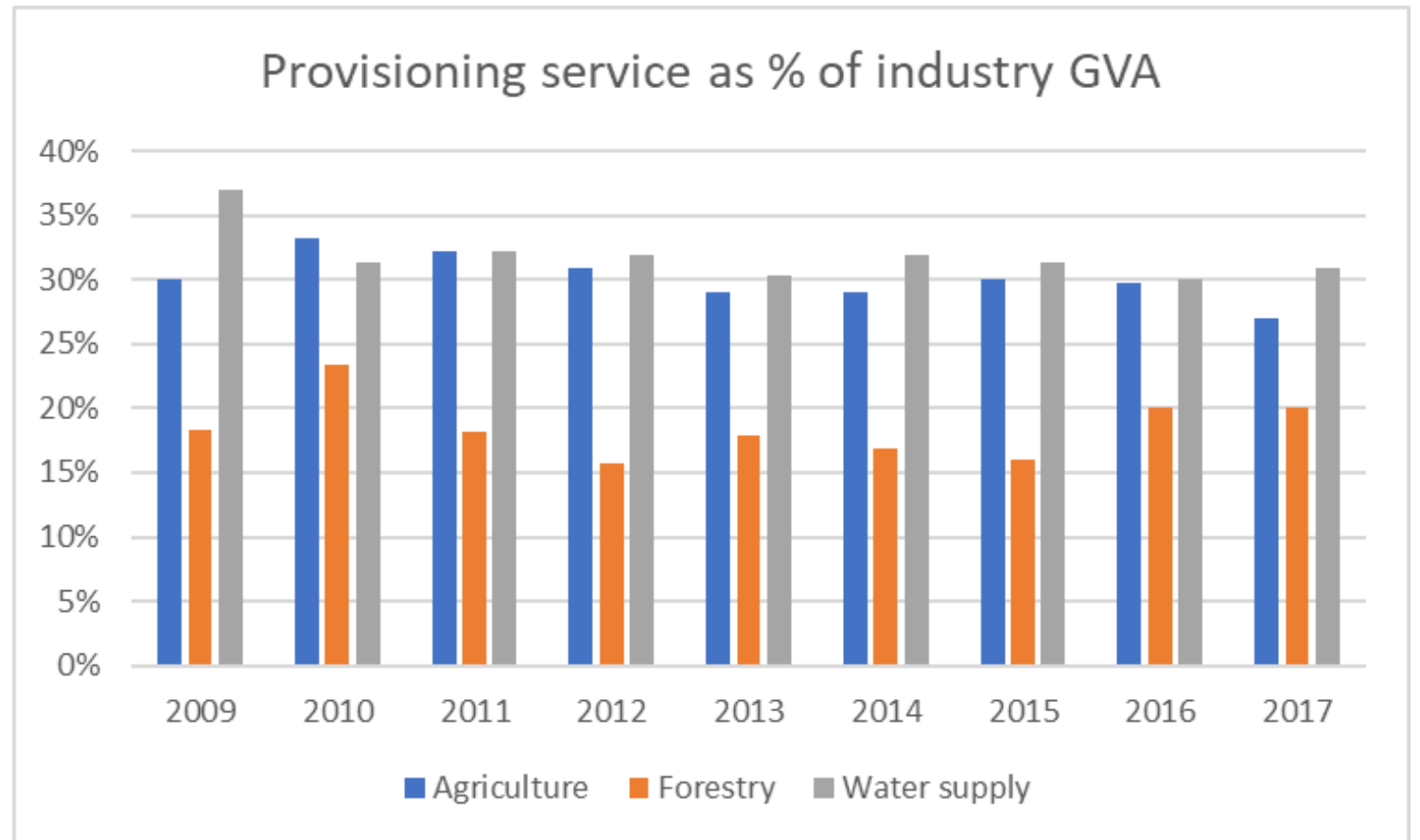
Nature is an economic sector in its own right

- As a productive asset, natural resources in the UK provide market and non-market services of £29 billion each year. This is a lower bound, as some services have not yet been measured

- This makes it bigger than the Gross Value Added of any single UK manufacturing sector (such as vehicles, food, chemicals, civil engineering)

- Note also that industry GVA is gross of any environmental damage caused by the activity

2. Links to Industry Value added

- Primary industry GVA tends to be overstated, as it draws on the productivity of natural assets

- It's possible to develop indicators to track this relationship

- Alternative is to focus on the degree to which primary industries are dependent on ecosystem services

- Interpreting change is still challenging

Provisioning service as % of industry GVA

Legend: Agriculture, Forestry, Water supply (years 2009–2017)

3. Ecosystem asset values

Woodland in the UK provides a wide range of important services, hence

- Asset values per hectare are around 10x higher than farmland values
- The asset value of non-market services from woodland is about 17x greater than the asset value of timber

Urban natural capital is even more valuable

- Urban green space contains only 2% of the UK land area, but accounts for 25% of the worth of UK Natural Capital
- Helps awareness raising, although interpretation of change over time requires care

4. Asset values and the National Balance sheet

As a productive asset, UK natural resources are conservatively valued at nearly £1 trillion

Hence the UK's natural capital is:

- Worth 50% more than the world's biggest company
- 170 times greater than the asset value of English Premier League football clubs

This compares with dwellings valued at £1.75 trillion, other buildings valued at 0.8 trillion, and land valued at £6 trillion

But it needs maintaining (=> indicator of return on investment?)

➢ Annual education spend is estimated to represent around 0.4% of the human capital stock

➢ Annual spending on natural capital is estimated to be less than 0.1% of stock

5. Cost of degradation

UK ecosystem asset: balance sheet

£ billion

	2009	2010	2011	2012	2013	2014	2015	2016	2017
Opening stock	698	721	718	754	676	700	690	784	742
Volume change	-25	-1	7	1	5	13	19	27	21
Revaluation	49	-2	29	-80	20	-24	75	-69	-16
Closing stock	721	718	754	676	700	690	784	742	747

Experimental decomposition of asset values

- Annex 10A of the SEEA proposes a methodology for using the condition account changes to estimate the extent to which volume changes are due to degradation or enhancement
- This requires the condition changes to be linked to particular service flows

5 (cont.) Cost of degradation

- The indicator might then be based on cumulative changes from a base year

- Clearly degradation is a subset of the total volume change and is small compared to other factors affecting asset values

Cumulative changes to asset value £m 2009 to 2017

Legend: Volume change, Revaluation
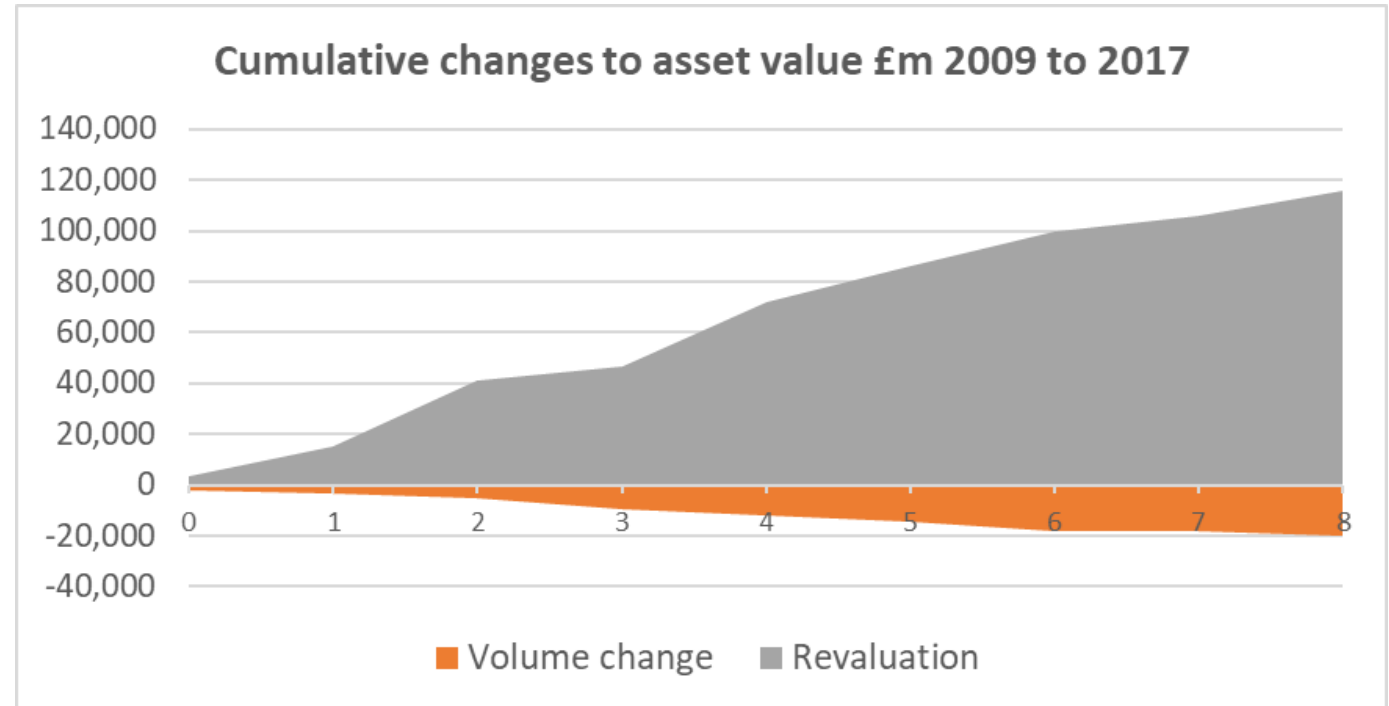
Experimental decomposition of asset values (excludes recreation)

Main conclusions

- Monetary accounts produce a lot of information which is policy relevant

- Much of this is due to a focus on relative values within the same accounting period

- Time series can be presented but interpreting the causes of change requires care

Questions for discussion

- **Should we say more in the SEEA about the nature of the proposed indicators?**

- **And say something about the strengths and weaknesses? Can the weaknesses be overcome by the use of other information or by focusing only on a subset of data?**

- **Are there other indicators we should include?**