Australian Bureau of Statistics

statistics for informed decision making

Soil Carbon Accounting in the SEEA

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London Group Meeting

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Overview

1. Soil carbon science
2. Measurement issues
3. Recommendation

What is soil carbon

- Carbon stored within soil, plant and animal matter in various stages of decay
- Characterised into 4 components - crop residues, particulate organic carbon, humus, recalcitrant organic carbon
- Each component has different composition and properties and therefore ‘stability’ of carbon storage
- *Well accepted and understood*

- Many factors influence the amount of carbon a soil could potentially store
  - Rainfall, temperature, vegetation, soil type and depth, clay content and mineralology
- *Factors largely well accepted, but quatifying the impact of each needs further research*

- Amount of carbon stored is a balance between inputs and losses

Measurement issues

- Complicated and labour intensive
  - Tools exist to determine content from a sample
- Issues extrapolating samples over wider area
  - Spatial variability
  - Depth of sample
  - Number of samples to get reliable estimates
  - To measure changes over time sampling regime needs to be repeatable
  - Changes can be quite small, so greater reliability and more samples needed to detect them
- No real evidence of comprehensive, wide scale estimates to support account production

Measurement issues *(cont.)*

- Soil Carbon, and land management practices, are included in Australia's National Carbon Accounting System
  - Used for LULUCF component of Australia's National Greenhouse Accounts, in relation to land use change
  - Also available for use in project based applications

Recommendation

- Soil carbon accounts be included in Volume 2 of the SEEA revision
  - Labour intensive and costly to get comprehensive estimates
  - To measures changes over time, samples need to be repeatable
  - Very little demonstrated practice of wide scale estimation of soil carbon stocks and changes

- Do London Group agree?