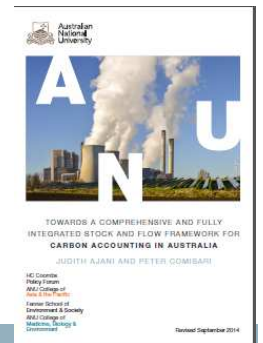# Carbon Accounting in Australia

Towards a Comprehensive and Fully Integrated Stock and Flow Framework

20th Meeting of the London Group on Environmental Accounting

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Outline of presentation

- Background
- Results
- Four key points
- More information and comments
- Acknowledgements

Background

November 2012, ABS, DoE and ANU agreed
on a partnership project to:

- Identify the need for carbon stock
  information and potential data

- Populate the SEEA carbon stock account
  for Australia.

- Assess what is needed for regularly
  producing a carbon stock account for
  Australia.

Results

- Biocarbon 31,081 Mt C
- Geocarbon 239, 581 Mt C (fossil fuel only)
- Total 270,662 Mt C

Geocarbon (fossil fuel only) is overwhelming majority of carbon

(Biocarbon 11.5% and geocarbon 88.5% of total estimate)

Results – Composition of Biocarbon

Primary reservoir	Geocarbon (Mt C)	Hectares (million)	Biomass carbon (Mt C)	Soil organic carbon (Mt C)	Total biocarbon (Mt C)
Biocarbon					
Natural ecosystems					
Rangelands		596.3	6,374	6,603	12,977
Non rangelands:					
Eucalypt native forests		16.7	4,671	3,753	8,424
Shrub lands & woodlands		14.7	500	636	1,137
Grass, shrub & heath lands		1.6	37	51	87
Rainforests		2.3	1,225	252	1,477
Other		0.7	15	16	32
Marine ecosystems		1.8	114	1,084	1,198
Fresh water ecosystems		9.9	4	7	11
Total Natural ecosystems		**644.0**	**12,941**	**12,402**	**25,343**
Semi-natural ecosystems					
Highly modified rangelands		50.0	750	1,500	2,250
Grazing in modified pastures outside rangelands		32.9	132	1,315	1,447
Total Semi-natural ecosystems		**82.9**	**882**	**2,815**	**3,697**
Agricultural ecosystems					
Cropping		25.5	102	1,022	1,124
Irrigated agriculture		2.6	12	105	117
Plantation wood		2.4	177	120	296
Reservoir/dam		0.6	1	6	7
Other		6.3	120	244	363
Total Agriculture ecosystems		**37.4**	**412**	**1,497**	**1,907**
Settlements		2.6	30	79	108
Other		0.5	7	19	26
Total Settlements and Other		**3.1**	**37**	**98**	**134**
Total biocarbon[d]		**767.4**	**14,270**	**16,811**	**31,081**

Key point 1

It is possible to construct carbon stock accounts for Australia with current information.

- Gaps and deficiencies in information and methodologies exist but these have been identified and can be addressed (and data has already been updated since first release)

- The resources needed for on-going production of carbon stock accounts are modest

Key point 2

Having comparable information on carbon stocks in fossil fuels and all ecosystems (terrestrial and marine) linked to economic information enables past policies and future options to be assessed (including scenario analysis. For example:

- The economic and employment impacts of different climate mitigation options can be estimated and the limits to the amount of storage possible in biocarbon.

Key point 3

Carbon stock accounting creates an opportunity to revisit the provision of soil carbon information in support of Australian agriculture.

- Historically, state soil conservation agencies collected information on carbon in agricultural soils. This service ended with changed funding and institutional arrangements between the Commonwealth and States.
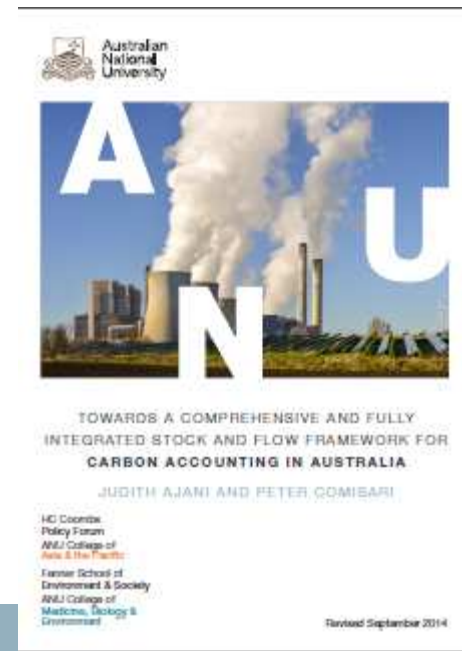
Key point 4

Different parts of government and academia can successfully work together to assess the usefulness and feasibility of producing environmental or ecosystem accounts

- Producing an experimental account provided a reason and focus for cooperation
- The skills, knowledge and networks of each the partner agencies (ANU, ABS, DoE) were important

More information and comments

- The full report is available on-line at:

  https://coombs-forum.crawford.anu.edu.au/publication/hc-coombs-policy-forum/4708/carbon-accounting-australia

- Comments on the report are welcomed

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