Capacity Building on Natural Capital Accounting and Investment Prioritization Tool

November 1-2, 2023, Addis Ababa, Ethiopia

Natural Capital Accounting for Ethiopia

Recap, overview, progress, and next steps

Addis Ababa, Ethiopia

1-2 November 2023

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Advancing Natural Capital Accounting in Ethiopia

Institutional arrangements

Advance land cover accounts

- Classifications
- Maps and table
- Report content and structure

Design and develop ecosystem accounts

- A work plan
- Investment Prioritization Tool – what can be used (“recycled”) for the accounts
- Link to policies and programs (e.g. payments for ecosystem services)

Key lessons from natural capital accounting

Cooperation

- Need sustained high-level institutional support
- Strong partnerships (co-design)
- Clear responsibilities and people are allocated time
- Need links to policy and decision-making
- Experimental accounts are useful (but need to lead somewhere)
- Accounts get better over time and usefulness is increased when repeated

Cooperation

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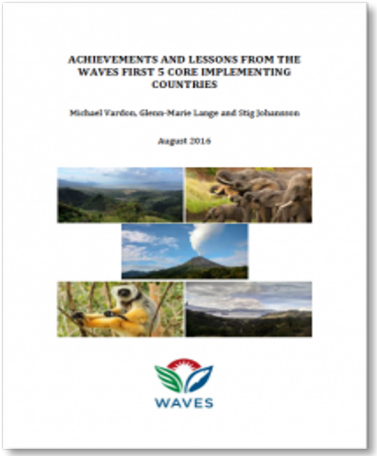


https://www.wavespartnership.org/en/knowledge-center/achievements-and-lessons-waves-first-5-core-implementing-countries

https://www.wavespartnership.org/en/knowledge-center/edit-knowledge-center-accounts-policy-waves-closeout-report-2012-2019

NATURAL CAPITAL ACCOUNTING

The System of Environmental-Economic Accounting (SEEA)

Beyond GDP and response to Agenda 21 (Rio 1992)

- Links to the System of National Accounts (SNA, the source of GDP)
- First version in 1993, updated 2003

2012 SEEA Central Framework standardized

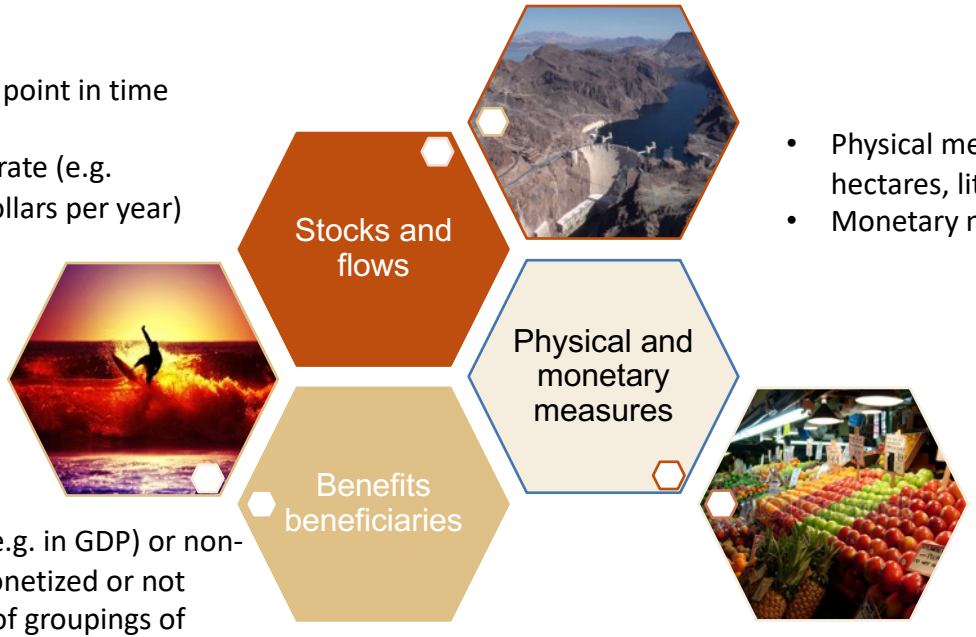
2021 SEEA Ecosystem Accounting standardized

Many different types of accounts

- Land, water, minerals, forest, soil, carbon, air and water pollution, solid waste, environment protection expenditure, environmental taxes and subsidies, ecosystems extent, ecosystem condition, ecosystem services, biodiversity.

Three pairs of concepts for natural capital accounting

- Stocks are measured at a point in time (e.g. 1 January)
- Flows are measured as a rate (e.g. megalitres per annum, dollars per year)



- Physical measures like kilograms, hectares, litres, parts per million, etc.
- Monetary measures like $, €, ¥, £, etc.

- Benefits may be in SNA (e.g. in GDP) or non-SNA (e.g. not in GDP), monetized or not
- Beneficiaries are people of groupings of people (e.g. farmers, government, miners)

The fried egg view of transactions

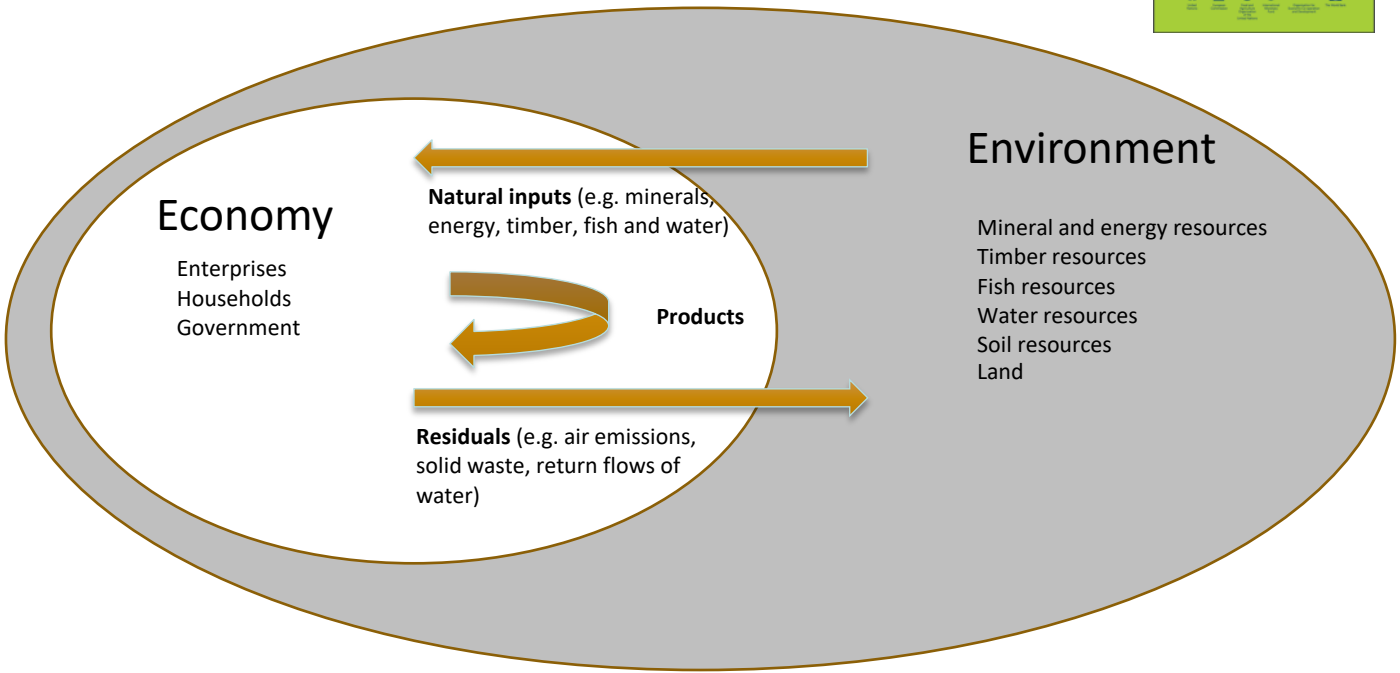
The environment as a party in transaction

Transactions between the environment and economy

- Natural resources
- Ecosystem services
- Residuals

Flows within the economy

- Products (goods and services) for final and intermediate consumption



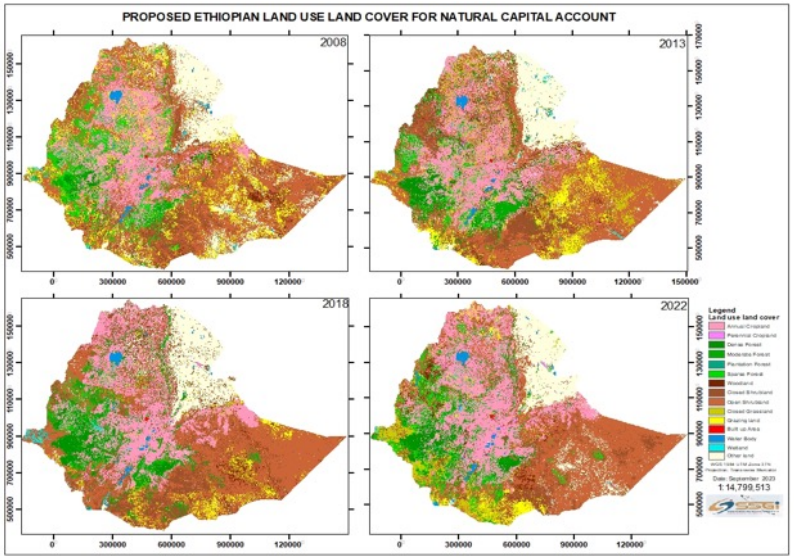
Source: UN SEEA Central Framework

LAND ACCOUNTING UPDATE

Draft nations landcover table and maps

Development of land cover classification

Maps



Table

LAND USE LAND COVER AREA IN SQUARE KILOMETER				
Area Cover	2008	2013	2018	2022
Dense Forest	36412.2522	64619.0838	50047.2927	41006.1881
Moderate Forest	21164.5944	26973.1476	56992.815	61277.2756
Sparse Forest	80240.0553	47919.897	46288.0044	54021.6193
Woodland	14554.4211	23899.86	17640.9405	19398.0003
Closed Grassland	11328.7311	71154.1251	12905.6508	52329.9522
Grazing land	111645.8577	62820.8118	31090.4442	31754.0366
Closed Shrubland	109701.3456	122848.2504	108219.9015	105775.4886
Open Shrubland	383290.2792	345168.2025	421283.6406	337001.7188
Perennial Cropland	809.1603	1142.1972	1869.9246	3292.9916
Annual Cropland	207542.9232	225797.3334	243936.4896	278891.4326
Wetland	5897.7414	4303.5084	2940.3261	2895.5026
Water Body	7825.455	8225.4672	8157.2787	10771.9108
Built up Area	1586.1465	1724.8383	2021.9283	3042.6639
Other Land	140441.2974	126062.2017	128630.4705	130538.2153
Plantation Forest	744.1182	594.765	1299.8484	1237.194
Total	1133184.379	1133253.689	1133324.956	1133234.19

More later today

ECOSYSTEM ACCOUNTING

SEEA Ecosystem Accounting a step beyond natural resources and residuals

Ecosystem asset
- Extent
- Condition

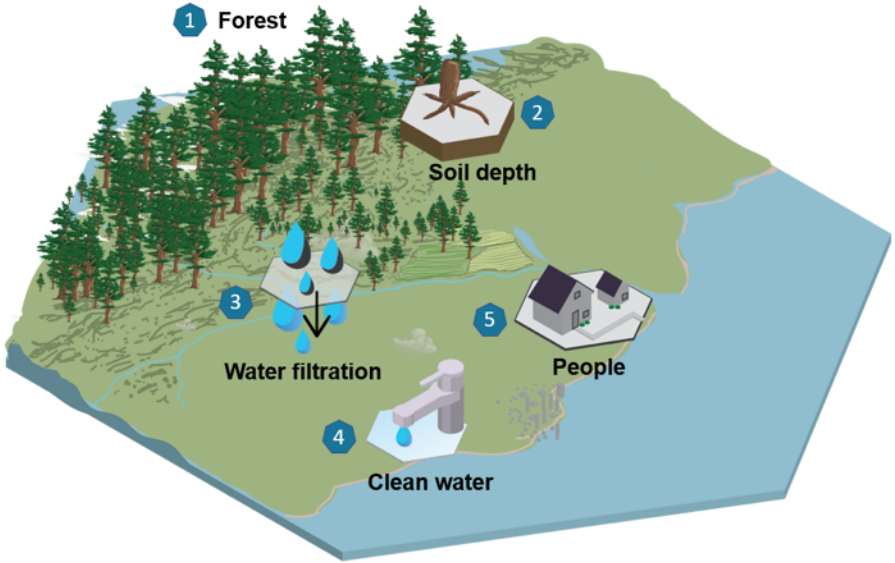
Ecosystem services
- Not a service unless it is used by people

Three types of ecosystem service
- Provisioning
- Regulating
- Cultural

Benefits

Beneficiaries

Spatially explicit



Source https://seea.un.org/ecosystem-accounting

Account sequence

Valuation

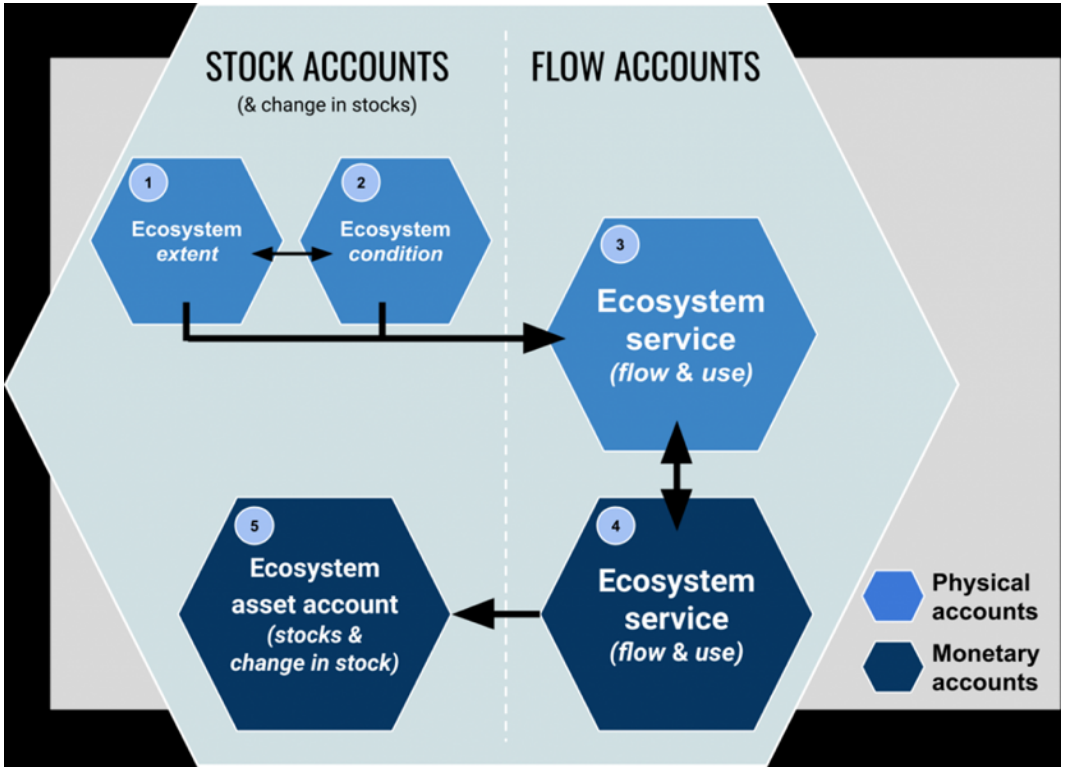
- The last steps in the account sequence

Monetary valuation is not necessarily the goal

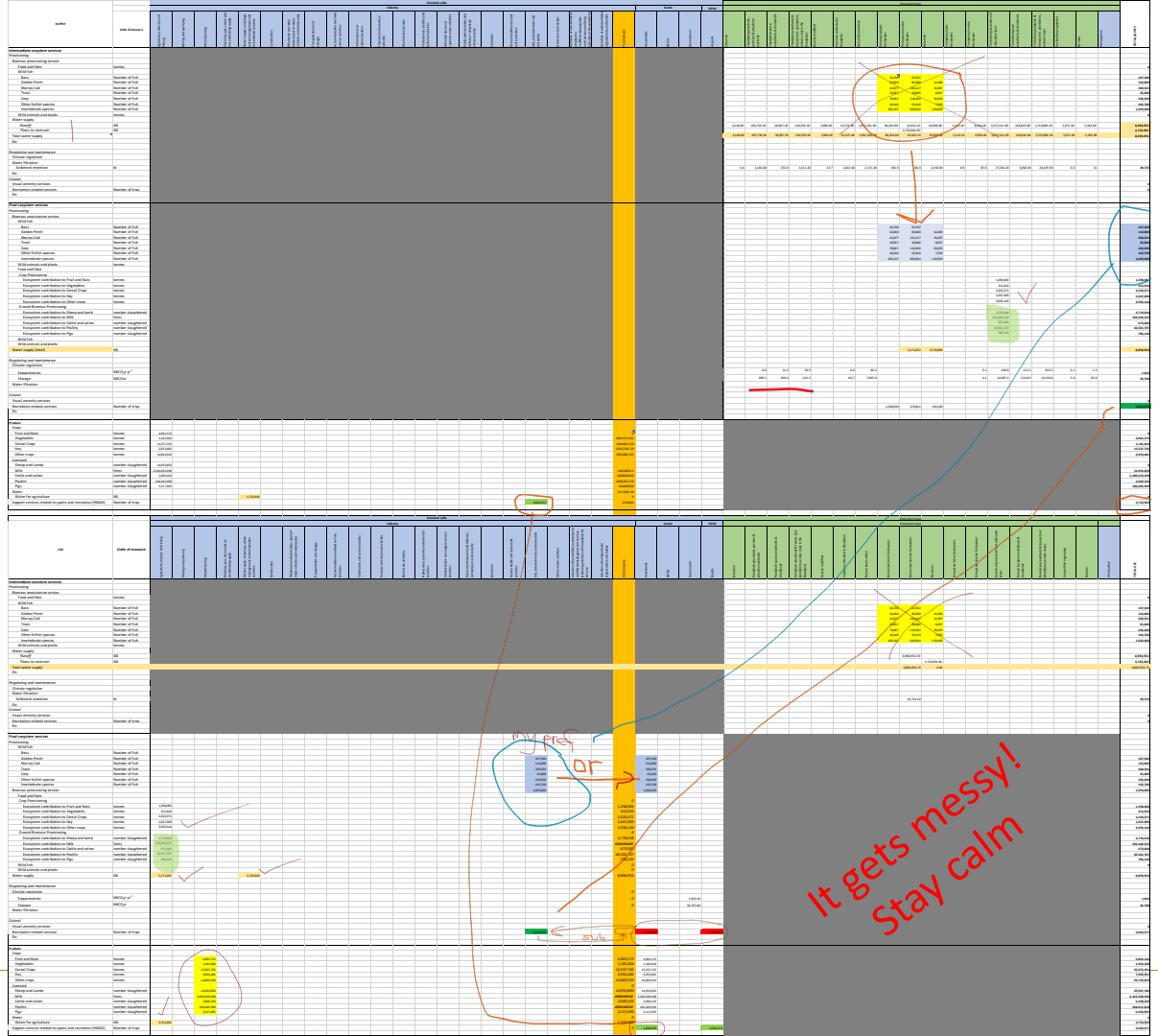
- Many studies do not proceed to valuation

Exchange and welfare values

- Methods overlap



The very big picture: the super-table



- Ecosystems
- Industries
- Ecosystem services
- Products
- Residuals

Supply
=
Use

Data for ecosystem accounts

Environmental

- Ecosystem extent (best match to land cover)
- Ecosystem condition
- Ecosystem services (best match to ITP and PES)

Economic

- Industry value added
- Income (poverty)
- Environment protection expenditure

Social

- Population

Administrative

- Regional and city governments
- Protected areas
- Zoning

Time periods

- 2008, 2013, 2018, and 2022 (to match land cover)
- 2012 to 2022 (to match IPT)

Output areas for tables

- National
- Regions

The twelve regions and two city administrations

Flag	Name	Population (2023)[10]	Area (km²)[11]	Capital	Map
	Addis Ababa (city)	3,945,000	527	Addis Ababa	
	Afar Region	2,076,000	72,051	Semera	
	Amhara Region	23,216,000	154,709	Bahir Dar	
	Benishangul-Gumuz Region	1,251,000	50,699	Asosa	
	Central Ethiopia Regional State			Welkite	
	Dire Dawa (city)	551,000	1,559	Dire Dawa	
	Gambela Region	525,000	29,783	Gambela	
	Harari Region	283,000	334	Harar	
	Oromia Region	40,884,000	284,538	Addis Ababa[12]	
	Sidama Region	5,301,868	12,000	Hawassa	
	Somali Region	6,657,000	279,252[13]	Jijiga	
	South Ethiopia Regional State			Wolaita Sodo	
	South West Ethiopia Peoples' Region	4,197,164	39,400	Bonga	
	Tigray Region	5,838,000	50,079[a]	Mek'ele	

Raster and cadastre (vector) – two views of the world

Raster – environmental

Cadaster (vector) – economic ownership and management

THE ACCOUNTING PAYOFF FOR POLICY AND MANAGEMENT

Example problem: woodlands in decline

Landscape less <10% of the ecosystem's original extent remains

77% of the remaining woodland is on privately owned agricultural land

A landscape problem requiring local solutions

- Protection
- Restoration

Sustainable Farms


nature ecology & evolution ARTICLES

Ecosystem accounts define explicit and spatial trade-offs for managing natural resources

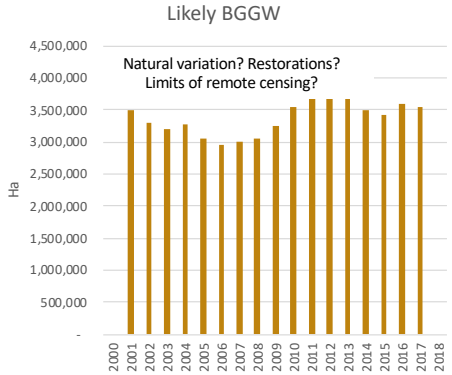
Heather Keith, Michael Vardon, John A. Stein, Janet L. Stein and David Lindenmayer

New South Wales ~0.8 million km^2

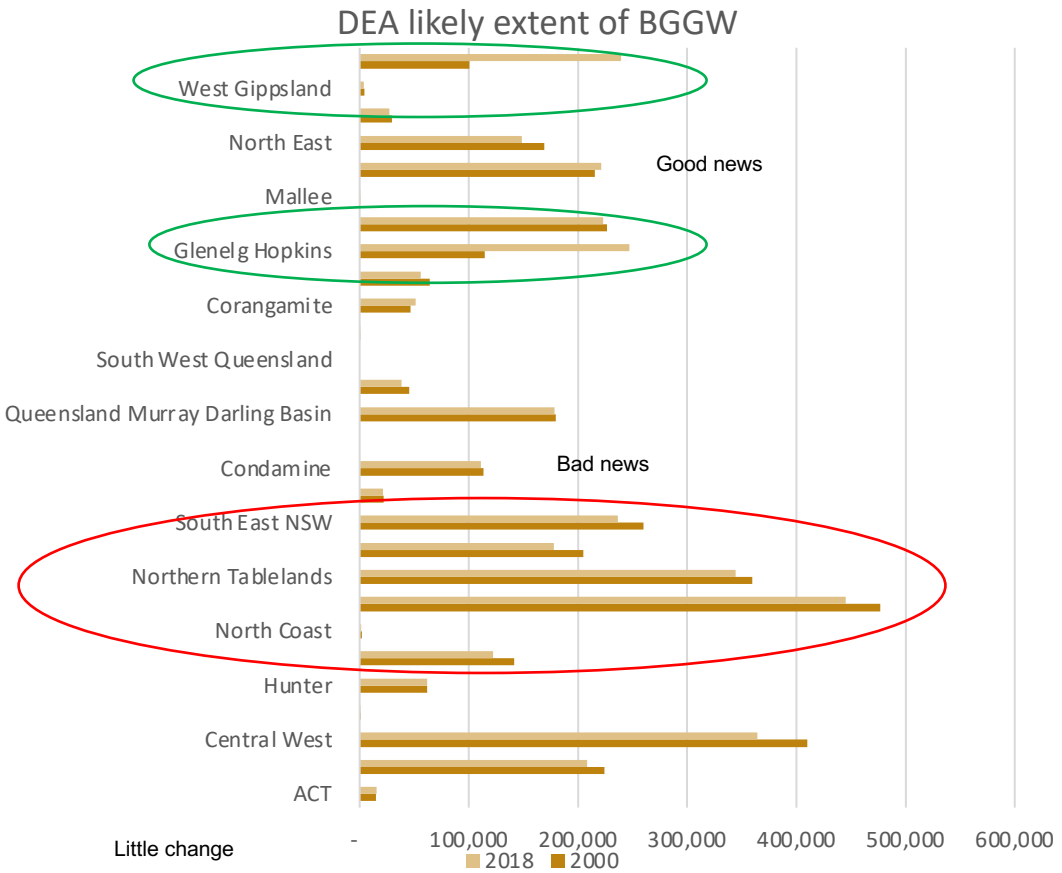
Ethiopia ~1.1 million km^2

Keith, H., Vardon, M., Stein, J. A., Stein, J. L., & Lindenmayer, D. (2017). Ecosystem accounts define explicit and spatial trade-offs for managing natural resources. *Nature Ecology & Evolution*, *1*(11), 1683-1692. https://doi.org/10.1038/s41559-017-0309-1

Likely extent and change varies between NRM regions



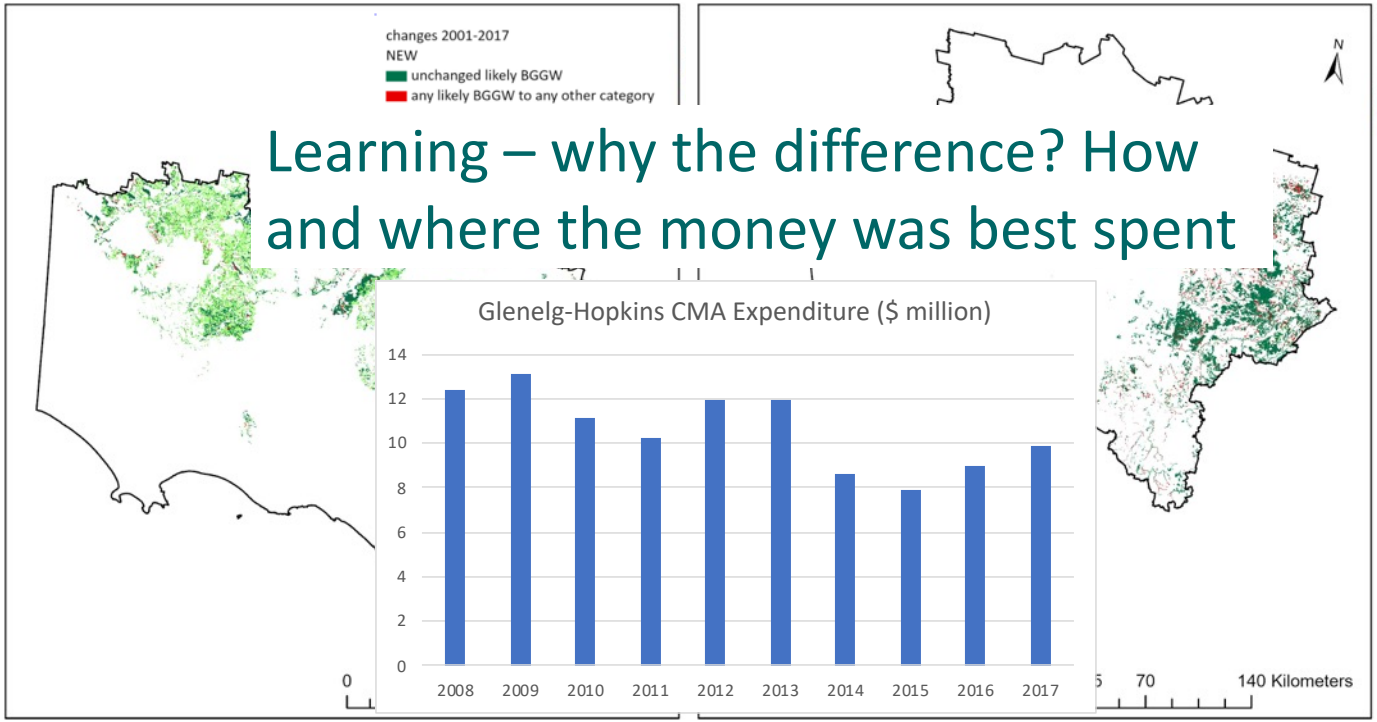
- Some good news and some bad news
- Most increase in Victoria (384,000 ha or 24%)
- Most decrease in New South Wales (-178,090 ha or -8%)



Changes in extent 2001 to 2017

Glenelg-Hopkins, Vic

Central West, NSW

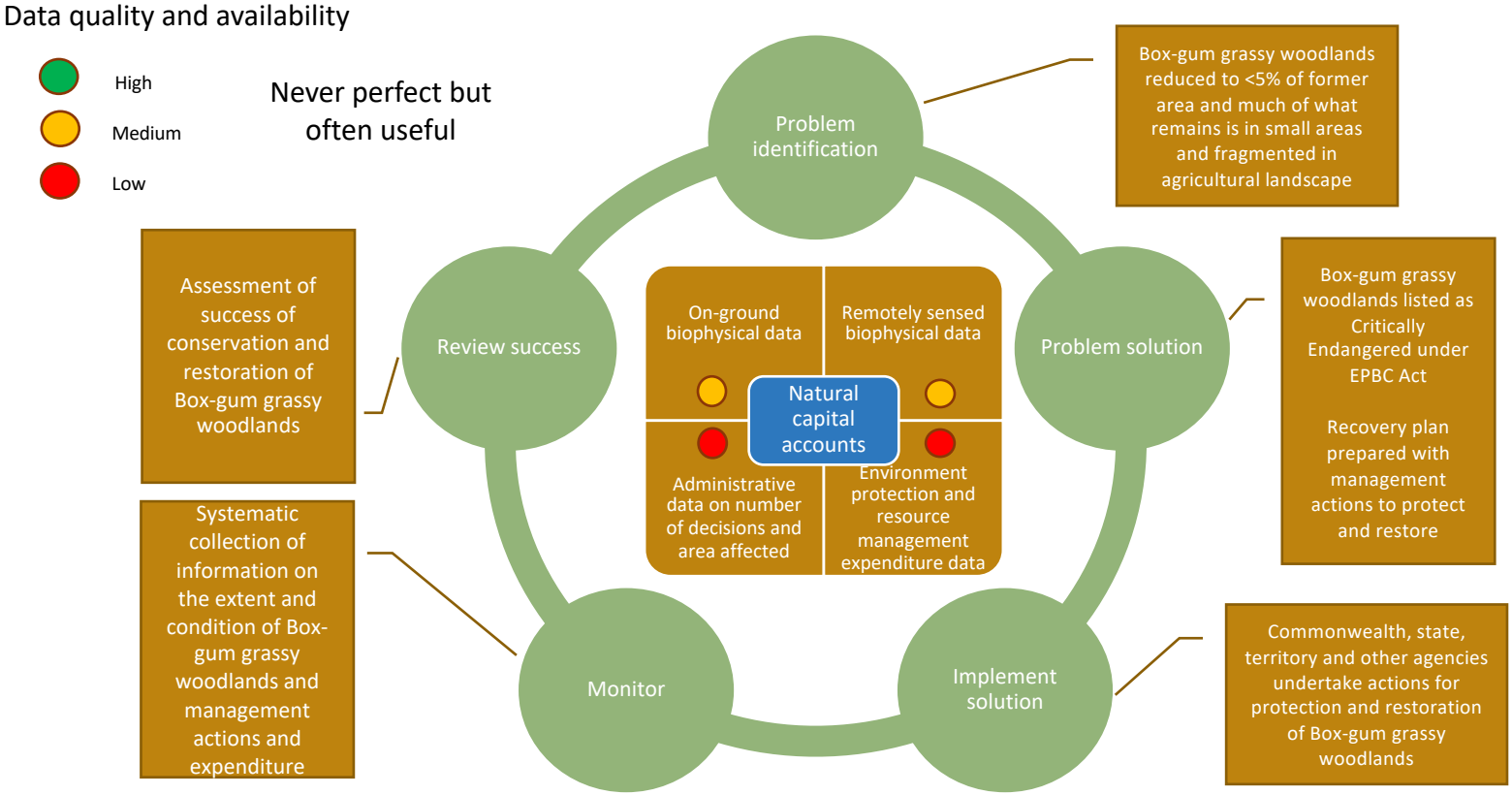


Learning – why the difference? How and where the money was best spent

+132,269 ha – big gain

-45,395 ha – big loss

The endangered woodland and information system

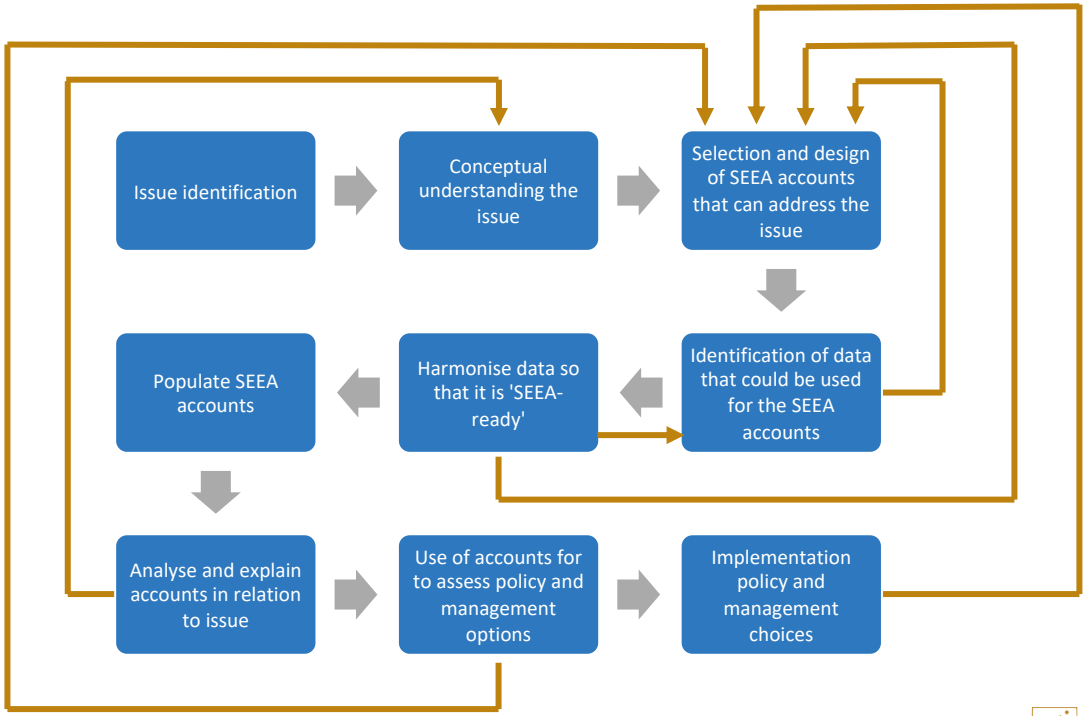


Accounting to target investment and assess efficiency

PROGRESS AND NEXT STEPS

Process to complete the picture

- You have some data but not all data
- Use what you have and make it better next time



Information first aid

Next steps for natural capital accounting

Institutional arrangements

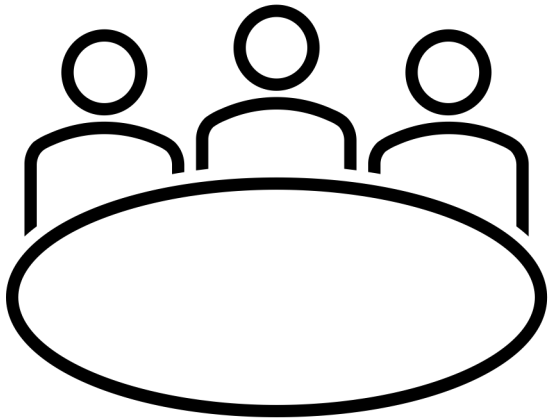
- Data coordination – essential
- Data responsibilities – environmental, economic and social

Advance land cover accounts

- Classifications
- Maps and tables
- Report content and structure

Ecosystem accounts

- Design accounts
- Development work plan



THANK YOU

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