The SEEA as a conceptual model and tool for 'Ridge-to-Reef' management

29th Meeting of the London Group on Environmental Accounting

Pretoria, South Africa

11-15 September 2023

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Outline of presentation

- Questions to London
 Group
- Research aims
- Ridge-to-reef management
- Research components
- Preliminary work





Questions to

London Group

- 1. Do you know of any research completed or underway relevant to linking SEEA to ridge-to-reef management?
- 2. Do you have any comments on the conceptual map of ridge-to-reef management and how this relates to SEEA? (See Fig.1 and Table 1)
- 3. Which ecosystem services and ecosystem assets are most relevant to ridge-toreef management? (See Fig. 1 and Tables 1 and 3)
- 4. What are possible data sources, methods, and models for account production? (See Section 3.2)
- What valuation approaches are most suitable for particular ecosystem services? (See Section 3.4)
- 6. Do you think that there is a way to record 'two-way' ecosystem service flows in line with the perspectives of First Nations People? (See Fig. 7)



Research aims (preliminary)

- Determine the potential usefulness of SEEAbased accounts for ridge-to-reef management
- 2. Work with land and sea managers and accountants to co-design SEEA-based accounts for ridge-to-reef management
- 3. Use available data sources and methods to produce SEEA-based accounts for ridge-to-reef management
- 4. Identify theoretic and practical issues with designing, producing, and using SEEA-based accounts for ridge-to-reef management



Ridge-to-Reef Management

Biodiversity conservation in terrestrial and marine ecosystems: Protecting and restoring natural habitats, biodiversity, and ecological processes, ensuring the long-term sustainability of both land and marine ecosystems.

Sustainable natural resource management: Promoting practices that minimize soil erosion, sedimentation, and pollution, reducing the negative impacts on downstream water bodies, coastal water, and reefs.

Integrated planning and decision-making: Developing and implementing management plans that consider the entire watershed, integrating land and water management strategies.

Stakeholder engagement and capacity building: Involving local communities, indigenous groups, and other stakeholders in the decision-making process, fostering participation, and building their capacity to manage and protect ecosystems.

Climate change adaptation and mitigation: Addressing the risks posed by climate change to ecosystems, communities, and economies through an adaptive management process.





Ridge-to-Reef Management and SEEA

Accounting area

• Biophysically defined

Ecosystem assets

- Terrestrial
- Intertidal
- Marine

Ecosystem services

• Many!

Industries and sectors

- Agriculture, Forestry Fishing
- Water supply ad sewerage
- Manufacturing
- "Tourism"
- Households



Research components (preliminary)

- 1. Systematic literature review linking the SEEA to ridge-to-reef management concepts
- 2. A co-design accounting process using a case study area
- 3. Account production and potential applications using a case study
- 4. Identification of opportunities and barriers for the general use of the SEEA in ridge-to-reef management





Systematic review (preliminary)

- 1. If the SEEA has been used in ridge-to-reef management
- 2. The key concepts and components of ridge-to-reef management and how they can be linked to the SEEA concepts and accounts
- 3. The metrics, data sources, and methods (including models) used to measure the physical inter-ecosystem flows (intermediate ecosystem services) between the riverine, estuarine, and marine ecosystems
- 4. The metrics, data sources, and methods (including models) used to measure the final ecosystem services supplied by the riverine, estuarine, and marine ecosystems to the economic units
- 5. The metrics, data sources, and methods (including models) used to measure the riverine, estuarine, and marine ecosystems ecosystem extent and condition
- 6. Comparison of valuation techniques recommended in the SEEA and those used in ridge-to-reef management



Co-design of accounts (preliminary)

- 1. Contact stakeholders
- 2. Assess policy and management issues
- 3. Determine which accounts would address policy and management issues
 - Assets, services and industries of interest

- 4. Identify available data
- Codesign accounts based on user needs
 (2) and data (4)

- 14



Study area: Clyde River, New South Wales, Australia



Preliminary assessment of R2R and SEEA

Main features of ridge-to-reef management	Relevant SEEA accounts	Notes
Biodiversity conservation in terrestrial and	Ecosystem extent	SEEA Ecosystem accounting
marine ecosystems	Ecosystem condition	
	Ecosystem service	
	Biodiversity	
	Environment protection expenditure	SEEA Central Framework
Sustainable natural resource management	Land cover	SEEA Central Framework
	Land use	
	Land zoning	
	Forest	
	Solid waste	
	Natural resource management	
	expenditure	SEEA Water
	Water	
	Emission accounts (water pollution)	SEEA Agriculture, Forestry, and Fisheries
	Agriculture, Forestry	
Integrated planning and decision-making	-	Linking of SEEA to the adaptive management cycle
Stakeholder engagement and capacity building	-	The need to co-design accounts has been recognised
		as important for SEEA uptake.
		Links to human and social capital, outside of the
		scope of SEEA
Climate change adaptation and mitigation	CO ₂ emissions	SEEA Central Framework
	Land	SEEA Central Framework
	Carbon	SEEA Ecosystem Accounting
	Climate regulation service	

Preliminary assessment of stakeholders

Stakeholder type	Identified stakeholders	
NSW State Government	Department of Planning and Environment	
agencies	Treasury	
	Department of Regional NSW Department of Communities and Justice	
	Department of Primary Industries	
	National Parks and Wildlife Service	
	Fisheries NSW	
	Environment Protection Agency	
	State Emergency Service	
NSW local government(s)	Eurobodalla Shire Council	
Local Land Services	South East Local Land Service	
Industry representatives	Tourism	
	Fishing	
	Aquaculture	
	Agriculture	
	Forestry	
Australian Government	Department of Climate Change, Environment and Water	
	Department of Agriculture, Forestry and Fishing	
First Nations	Yuin	
Local landowners	Ratepayers association	
Information agencies	Australian Bureau of Statistics	
National	Geoscience Australia	
• State	Other data providers	
Others	Australian National University	

Indigenous stakeholders and perspectives

Normyle, A., Doran, B., Vardon, M., Mathews, D., Melbourne, J., & Althor, G. (2022). An Indigenous perspective on ecosystem accounting: Challenges and opportunities revealed by an Australian case study. Ambio, 1-13. <u>https://doi.org/10.1007/s13280-022-</u> 01746-8



Data sources for ecosystem extent and land use



Data sources for land zoning and ABS statistics





Raster v cadaster world view





Valuation of ecosystem services for R2R

SEEA recommended methods	Ridge-to-reef management
Value directly observed	Provisioning servicesAquaculture licencesFish licences
Value from the price from similar goods and services	Regulating serviceMicro-climate regulationWater filtration
Value is embedded in market transactions	 Provisioning services Aquaculture Fish Timber Water Regulating service Coastal protection (insurance)
Value is based on revealed expenditures	Recreation
Value is based on expected expenditures or markets	
Other methods	
Contingent valuation	
• Other	

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THANK YOU





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