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How Appropriate is your Framework for Conducting Ecosystem Services Assessments?!

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The Issue and Research Aim

What is an appropriate methodology for ecosystem services assessments?

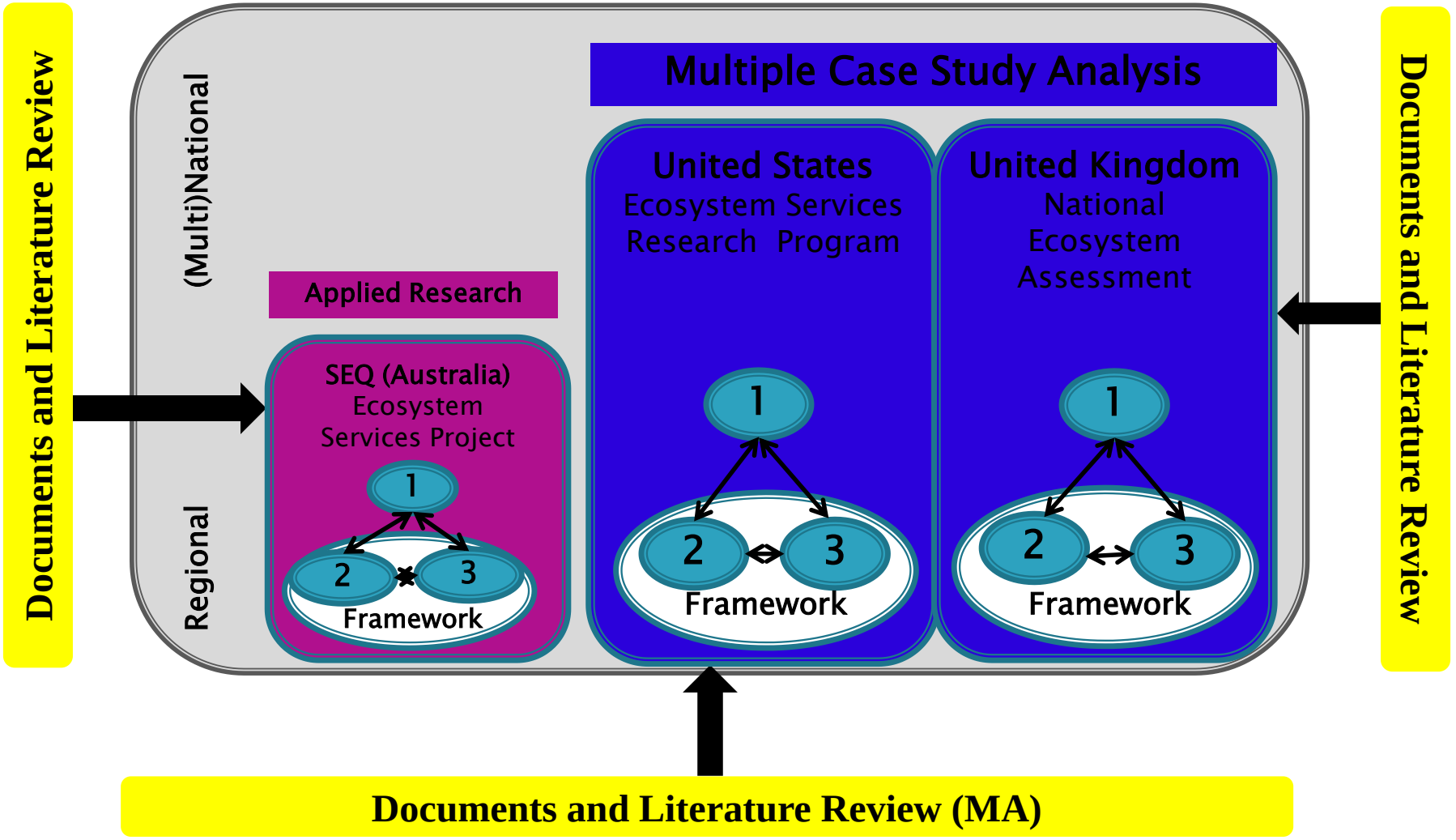
Three Lines of Enquiry

LOE 1: Processes	LOE 2: Information	LOE 3: Tools
Factors Underpinning the Program's Initiation	Biodiversity	Conceptual Frameworks
Coordinating Organisation	Assessment Units	Maps and Models
Resources	Ecological Processes	Scenarios
Structure of the Program	Ecosystem Services	Reports and Websites
–	Valuation	–

Three Pronged Research Approach

1) **Document and literature reviews**
   - MA 2005 (benchmark)
   - Other schools of thought
2) **Applied research**
   - South East Queensland (SEQ) Ecosystem Services Project
3) **Multiple case study analysis**
   - US EPA's Ecosystem Services Research Program
   - UK National Ecosystem Assessment

Research Approach



LOE 1 – PROCESS

Key Features	MA	SEQ	US ESRP	UK NEA
Initiating factors	CBD; UNCCD; Ramsar Convention; UN-CMS	MA; Population growth	MA; Decrease in budget	MA; Climate change; CBD ; EU Policy
Call for Research	UN Secretary-General	Stakeholders and RLOSAC	US EPA	DEFRA
Coordinating Org	UNEP	SEQ Catchments	US EPA	UNEP
Coordinating Sector	NGO	NGO	Federal Government	NGO
Funds	US $24 million (over 4 years)	AU $360 000 (over 4 years)	US $350 million (over 5 years)	£ $2 million (over 2 years)
Program Aim(s)	1. Assess the consequences of ecosystem change for well-being 2. Establish the scientific basis for actions needed to enhance the conservation & sustainable use of ecosystems & their contributions to well-being	1. Develop an 'agreed' ES framework. 2. Incorporate ES & the framework into NRM, planning & policy.	1. Characterise, quantify & value ES; ensure relationship to well-being is consistently incorporated into decisions. 2. Provide information & methods to decision makers to assess benefits of ES to well-being for inclusion in management. 3. Transform the way decision makers understand & respond to issues by making clear ways policy & management choices affect the type, quality & magnitude of ES.	1. Assess the status & trends of ecosystems & ES at multiple spatial scales. 2. Describe key drivers of change affecting ecosystems. 3. Examine plausible futures (scenarios) for ecosystems & ES. 4. Outline response options to secure continued delivery ES. 5. Value the contribution of ES to well-being.
People/Skills	>1300 involved	1 assigned (190 involved)	272 assigned (? Involved – in-house)	? assigned (500 involved)
Program Leader(s)	2 x Co-Chairs	1 x Project Manager	1 x National Program Director	2 x Co-Chairs

LOE 2 – INFORMATION

Key Features	MA	SEQ	US	UK
Biodiversity	No	No	No	Yes
Assessment units	(10) biomes	(32) ecosystems	– (3) ecosystems (wetlands, streams, coral reefs) – (15) environmental classes	(8) habitats
Ecological processes	(7) supporting services	(19) ecosystem functions	–	(12) intermediate services
Ecosystem services	(24) benefits people obtain from ecosystems	(28) goods and services provided by ecosystems that benefit, sustain and support the well-being of people	(33) components of nature, directly enjoyed, consumed or used to yield human well-being	(14) outcomes from ecosystems that directly lead to good(s) that are valued by people
Valuation	– well-being (low/med/high arrow linkages)	– well-being – individual and shared (0–5 scores)	– monetary (place-based) – human health and well-being (national and place-based)	– individual well-being monetary £ and health +/– – shared social values ☺ / ☹

LOE 3 – TOOLS

	MA	SFO	US	UK
Conceptual framework	yes	yes	- -	yes
Scenarios	- Global orchestration - Order from strength - Adapting mosaic - Techno garden	-	- at place-based scale – vary depending on place/issue - all doing nitrogen	- Green and pleasant land - Nature at work - Local stewardship - Go with the flow - National security - World markets
Maps	- ecosystem maps - variable scales	- ecosystems - ecosystem functions - 25 x 25m	- National Atlas of Ecosystem Services (EnviroAtlas) - variable scales	- habitat maps - economic valuations - variable scales
Dynamic models	- simulation models	- numerical matrix models	- modelling plan - place-based only	- models used in valuations - unavailable to others
Websites and reports	- information website - 5 technical volumes (399 – 918 pages each) - journal articles	- technical website - journal articles	- information and technical website - journal articles	- information website - technical report (1466 pages) - synthesis report - journal articles

Drivers

LOE 1: Process	LOE 2: Information	LOE 3: Tools
Program's Initiation (MA; Biodiversity loss; Pop. Growth; Funding; International agreements)	**Biodiversity** (Culture; Mandates)	**Conceptual Frameworks** (Multiple stakeholder participation)
Coordinating Organisation (Neutrality; Funding)	**Assessment Units** (Existing approaches – integration)	**Maps and Models** (Resources; Use)
Resources (Unknown; Existing staff)	**Ecological Processes** (Resources – modelling potential)	**Scenarios** (Need for information)
Programs' Structure (Resources; Organisational culture; Existing staff; Researcher preference)	**Ecosystem Services** (Science; Researcher/ Stakeholder preferences and understanding)	**Reports and Websites** (Need to distribute information/framework; Resources)
–	**Valuation** (Researcher/ Stakeholder preferences; Mandates)	–

GUIDING PRINCIPLES : LOE 1 – PROCESS

• Chairs	Co-Chairs with complimentary (not substitutable) expertise; credibility
• Coordinating organisation	Preferable coordination by organisations external to policies; Beware missions and mandates
• Role of government	Role of government requires clear defining; Stakeholder; funders; data collection;communicate to ministers; relevance
• Funding/time required	4-5 years; dependant on existing information and ability to access pro-bono inputs
• Skill sets – staff	Multiple disciplines; facilitating/ coordinating roles/conflict resolution skills; design program upfront then find expertise
• Structure of program	Multi-stakeholder representatives; across scales.; stakeholder roles require clear defining.

GUIDING PRINCIPLES : LOE 2 –INFORMATION

- Biodiversity — Agreement across stakeholders on the role of and its position in the framework; insurance role; appropriate definitions??
- Assessment units — Structure existing information; integrate with current programs; new information required
- Ecological processes — Definition of ecosystem services; user group determined – complexity of the tools required; intersection – need for multi-disciplinary input.
- Ecosystem services — Stakeholder agreed – create common language; agreed comprehensive list of ecosystem services
- Valuation — Resources dependant; guidelines required with suggested appropriate methods; assessment of well-being and health associations required.

GUIDING PRINCIPLES: LOE 3 – TOOLS

- Conceptual frameworks — A must!; required for consistency of assessments and integration; develops shared visions.
- Scenarios — More for assessment purposes – good communication tools; can provide information where information not available; develop with stakeholders
- Maps — Maps are essential; mapping methodology required up front; foundational data sets identified; need open access; participatory mapping; use of existing data sets to integrate with current programs.
- Dynamic models — Modelling plan required up front; use and capacity of stakeholders.
- Websites and reports — Who is going to read these large technical reports??; synthesis reports handy – but can't do an assessment with them; websites as central repository; journal articles for credibility

Process is as important,
if not more important,
than the product!

Thank You

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