

All I Ask is a Tall Ship and a Star to Steer Her By

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In reflecting on my theme for this presentation, a line from Masfield's poem 'Sea Fever' came to mind: *And all I ask is a tall ship and a star to steer her by*. Inspired to adopt the metaphor of an ocean voyage, I argue that while the ship of EIA is well-designed and seaworthy, the captain cannot navigate to a safe harbour of sustainability without clear instructions from the ship's owners (policy), and comprehensive means of navigation ('informing systems'). This conception of voyaging rather than sailing is reminiscent of the broad vision of environmental decision-making embodied in the United States *National Environmental Policy Act of 1969* (NEPA). This vision was largely lost as American institutions drove a narrowing of the effective scope of NEPA from setting and applying environmental policy to assessing impacts (Lindstrom and Smith 2001). Unless we return to a broad approach, there is a strong possibility that the ship of EIA will land us in unplanned or undesirable ports.

Scope and Assumptions

The paper assumes that the goal of environmental policy is to halt environmental decline arising incidentally from human action, ie to solve a biophysical problem. Specifically, consistent with a systemic view of the environment,¹ the paper assumes, as the IAIA Principles of EIA Best Practice (1999) put it, that the solution to environmental decline lies in 'protecting the productivity and capacity of natural systems and the ecological processes which maintain their functions'. This goal is described for convenience as 'environmental sustainability'. Given its focus, the paper is confined to *environmental* impact assessment but otherwise uses the term 'EIA' broadly.

Discussion is based on the most common model of EIA, the 'information processing model', and its rationalist underpinnings, assuming that the object of EIA is to support comprehensive decision-making by generating, organising and communicating information (Bartlett and Kurian 1999). This is not to deny the value of the other five models identified by Bartlett and Kurian. Rather, on an 'ends and means' model of policy (Howlett, Perl and Ramesh 2009) it is to identify information processing as the 'means' most relevant to advancing an 'end' of halting biophysical decline.

What is EIA Trying to Achieve and Can its Success be Measured?

The literature identifies four dimensions of EIA effectiveness: procedural, substantive, transitive and normative (Sadler 1996; Baker and McLelland 2003). The normative dimension is most

¹ On nature as a complex 'system of systems', see for example Graham Harris. 2007. *Seeking Sustainability in an Age of Complexity*. Cambridge University Press, Cambridge.

relevant here, as it raises the extent to which EIA succeeds in achieving the purposes of or ideals behind the policy (Baker and McLelland 2003). This question in turn raises two further questions: what are the purposes or ideals of EIA and how do we measure its impact?

There is no general consensus about the purposes of EIA, although there is a greater consensus around proximate purposes of informing development decisions about anticipated environmental impacts than there is concerning suggested ultimate purposes of contributing to sustainable development (Cashmore et al 2004). Despite the arguments of several scholars (eg Sadler 1999; Jay et al 2007) that EIA could or should evolve to become an instrument of environmental sustainability goals, Cashmore et al argue that the more common approach has been to adopt sustainable development more as a catchphrase than a purposeful goal, resulting in a 'passive' integration of EIA with decision processes.

The most recent review of EIA effectiveness literature finds that no study has yet satisfactorily measured how EIA affects decision-making directly because it is nearly impossible to test counterfactual scenarios (Loomis and Dziedic 2018). Limited as it is, the literature suggests that the influence of EIA on decisions is moderate.

How Can We Use EIA to its Full Potential?

As I take the policy goal to be environmental sustainability, the question becomes how EIA can best advance that goal. I argue that, in isolation, EIA is limited to facilitating policy integration, but that properly situated in a broader decisional context it can contribute more significantly to environmental sustainability.

Table 1 is a heuristic of six tiers arranged to show the relative policy ambition of various possible environmental policy goals, and the values on which each goal is based. (see Burnett 2018).

<i>Modes of Deciding</i>	<i>Underlying Values</i>	<i>Policy Goal</i>	<i>Rationale</i>	<i>Nature of Policy Intervention</i>
<i>Decisions Under Hard Constraints (prevents some trade-offs)</i>	TIER 6 Inherent Value of Nature	6. Ecocentrism	Inherent value of nature	Offences & strict regulation
	TIER 5 Duty of Intergenerational Equity	5.2. Ecological (or Strong) Sustainability	Maintain the productive capacity of environment (natural capital) for future generations	Measures to protect or maintain natural capital, eg invest in environmental restoration
		5.1. Weak Sustainability	Maintain the stock of wealth (capital, including natural capital) for future generations	Measures to maintain natural capital, eg invest in environmental restoration, but capital substitution allowed
<i>Decisions Under Soft Constraints (suggests some trade-offs not acceptable)</i>	TIER 4 Quality of Life	4. Environment Protection	Protecting health and environmental quality (especially amenity) increases quality of life	Pollution & product standards (NB usually subject to cost-benefit analysis – ie to demonstrated economic efficiency, so overlaps with Tier 3)
	TIER 3 Economic Efficiency	3. Economic Efficiency ('Strong Policy Integration')	Comprehensive markets will prevent over-consumption of environmental resources through efficient allocation	Remedy market failures, eg environmental labelling
	TIER 2 Rationalism: Consider All Relevant Information	2. Weak Policy Integration ('balancing')	Environmental externalities are ubiquitous, so consider environment routinely & balance with other factors	Policy coordination and information requirements, eg some EIA laws, State of Environment reporting
	TIER 1 Pragmatism	1. Case-specific approaches	Deal with problems as they arise	Case by case eg repair ozone hole
<i>Standard Pluralist Decision-Making (bargaining, trade-offs)</i>				

Table 1: Increasing Environmental Policy Ambition as Values Change

Against this heuristic, EIA aligns with and facilitates Tier 2, policy integration, or in Morrison-Saunders' terms, 'think before you act' (2018). Goals on higher tiers require increasingly stronger normative principles. The economic efficiency of Tier 3 is based on concepts of maximising individual utility and Pareto optimality, while the environmental protection aspirations of Tier 4 rely on conceptions about maintaining quality of life. The sustainability of Tier 5 is based on a duty to future generations. Tier 6 reflects the inherent value of nature.

If the goal is to halt environmental degradation, policy goals need to align at least with Tier 5.2. On lower tiers, goals of economic efficiency or quality of life do not deal effectively with the intergenerational dimension of the problem and so are weak in addressing long-term degradation. On a higher tier, weak sustainability, while addressing the intergenerational issue, does not guarantee maintenance of ecological function because it allows natural capital to be substituted for by other forms of capital.

The implication is that EIA should support decisions that align with ecological or strong sustainability. Sadler found support for strong sustainability in the literature and international agreements and argued that EIA should transition to 'Environmental Sustainability Assurance', which assesses impacts by reference to sustainability policies and criteria (Sadler 1999). While agreeing with the thrust of Sadler's argument, I argue, applying the voyage metaphor, that rather than EIA transitioning to a new form, it should be seen in the wider context of environmental decision-making. This acknowledges policy, indeed sustainability, goals in an overt and active way and emphasises that they are not just a backdrop for decisions, but the 'end' of decision-making. It also implies that sustainability principles should be given effect as hard constraints under domestic law; endorsement through scholarly or professional processes or under international 'soft law' will not be sufficient.

A further benefit of framing the policy task using a voyage metaphor is to highlight the importance of comprehensive, especially contextual, information in informing EIA. First principles dictate that it is essential to compare the relevant aspects of the existing environment with the environment after predicted impacts, and to separate predicted impacts from expected natural trends (eg Noble 2015). Yet the EIA literature tends to focus on issues surrounding information-gathering specific to the project or program under assessment, while the environmental policy and conservation biology literature emphasises the importance (and lack of) of long term, basic, environmental research and monitoring, usually facilitated by government (eg Dovers and Hussey 2013; Lindenmayer et al 2012). Beyond this, Dovers has been a leader in arguing not only the importance of information, but of 'informing systems', which include both frameworks for arranging information for analysis and institutions to collect and curate it. (Dovers 1996, 2001).

Clear Goals and Hard Constraints: Case Study

Australia's federal EIA law, the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC

Act) illustrates my argument. On its face, it appears to meet the test of ‘clear goals and hard constraints’, setting out formal ‘objects’ of promoting ecological sustainability and requiring decision-makers to have regard to sustainability principles.² The Act even directs decision-makers not to act inconsistently with certain international conventions and statutory plans.³ It also provides for identification and monitoring of biodiversity.⁴

The problem is that, in Australia (and I suspect in countries with similar legal systems, eg Canada) such provisions are not as determinative as they might appear. First, the objects use qualified language, eg to ‘promote’ ecologically sustainable development. Second, decision-makers are directed only to *consider* policy goals and sustainability principles. Such directions are thus ‘soft’ rather than ‘hard’ constraints, affecting *how* the decision is taken but not *what* it should be. Third, questions of consistency with conventions or plans are often regarded as ones of judgement for decision-makers, rather than as threshold questions of law or fact for a court. This is because Australian courts adhere to a fundamental distinction in administrative law, that the Courts decide the law (and questions of fact that go to the jurisdiction to decide) but do not intervene in the merits of a decision, on a rationale derived ultimately from the separation of executive and judicial power (Cane and McDonald 2009). As a result, what may appear to the ordinary reader to be a question of law such as whether a decision is inconsistent with Australia’s obligations under the World Heritage Convention, is interpreted as a question of judgement for the decision-maker.⁵ Finally, while the Act provides for biodiversity monitoring, it does not require it.

The only way to ensure that a discretion is exercised in conformity with policy goals is to elaborate those goals to the point of creating a clear and unambiguous statutory constraint on taking certain decisions, in which case decisions will be open to legal challenge. This might be done through specific decision rules (George 1999, Gibson 2005) or through the detail of a statutory plan. For example, a decision rule might provide that a decision-maker cannot approve any action affecting a species listed as critically endangered or, to similar effect, delineate critical habitat in a plan as reserved and requiring decisions to conform to the plan.

A Revolution of Scope?

I am not the first to suggest that EIA should be linked more closely with decision theory (eg Nitz and Brown 2001), policy goals (eg Gibson, Doelle and Sinclair 2016) or informing systems (eg Sadler 1996). But I hope I have offered a new framing and rationale: that we should ‘zoom out’ and view EIA, along with policy goals and informing systems as an essential component of environmental decision-making.

If we zoom out, scholarship in adjacent fields and developments in policy come into view. Adjacent literatures include those of public policy and ‘decision science’ (eg Gregory et al 2012).

² Ss 3, 136.

³ Eg s 139.

⁴ Ss 171–174.

⁵ See *Australian Conservation Foundation Inc v Minister for the Environment*, (2016) 251 Federal Court Reports 308.

In policy, environmental-economic accounting is being standardised progressively by the UN as the System of Environmental-Economic Accounting (SEEA) (UN 2014), offering rich potential to use accounting as the engine of environmental planning and EIA, because accounts measure flows of ecosystem services and changes in natural capital over time.

This 'revolution of scope' does not require abandoning the EIA ship, but recognition that successful voyaging equally requires a clear destination and means of navigation.

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