A Framework for Exploring Effectiveness

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Introduction

Impact assessment (IA) was envisaged as operating in conjunction with a rational approach to government decision making about development, based on "a belief that knowledge and rationality applied to public issues are more likely to yield results in the public interest then inadequately informed action or narrowly focussed objectives" (Caldwell, 1998, p. 12). Since its introduction through the US *National Environmental Policy Act 1969*, IA has been almost universally adopted and has developed into a range of tools including environmental impact assessment of projects and strategic environmental assessment of policies, programs and plans, as well as focussed applications such as social impact assessment and health impact assessment (Morgan, 2012). Its regulatory basis and common procedural requirements have developed along a technical-rational model that "aims to provide a prescriptive approach for decision makers who want to think systematically about environmental factors in decision-making" (Nilsson & Dalkmann, 2001, p. 308).

Does IA have the effects intended, either on decision-making, as originally envisaged or elsewhere within the process of developing proposals for policies, programs, plans or projects?

This paper briefly explores ideas and evidence about how IA may have an effect by exerting influence on development outcomes. It adopts a tentative framework for this exploration:

1. Effects through procedural compliance
2. Effects through proposal design and modification
3. Effects from the information generated by the predictive capabilities of IA
4. The influence of information on regulatory decision making
5. Effects through discourse and debate on the development proposal
6. Effect on organisational learning and transformation.

The interest in building this framework is to explore cause and effect mechanisms, that is, to examine how IA may have an effect.

Unpacking this Framework

Effects through procedural compliance

IA grew out of a "political imperative" (Cashmore, 2004, p. 420) which led to rapid development of legislative and procedural requirements rather than more measured research and theoretical development that typically accompanies introduction of new policies (Owens, Rayner, & Bina, 2004). Cashmore et al (2004) also note that research and reviews of effectiveness have focussed strongly on procedural effectiveness, that is, the extent to which the regulated IA procedures are implemented.

Procedure is associated with rigour, transparency and governance (Richardson & Cashmore, 2011), providing for "better evidence, transparency and participation in the policy process" (Meuleman, 2015, p. 11). The decision-forcing mechanism within EA legislation assigns a degree of accountability to decision makers such that they must at least be seen to be considering environmental issues (Flyvbjerg, 1998). Procedure is seen as imposing

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order; van Buuren and Nooteboom conclude that "as a procedural device SEA contributes to the timeliness, transparency and quality of the overall decision-making process" (van Buuren & Nooteboom, 2009, p. 151), which in turn promotes "good" governance (Meuleman, 2015; Richardson & Cashmore, 2011). Reviews of environmental assessment systems also point to the importance of procedure in terms of providing certainty, reducing delays and promoting fair and consistent treatment of proponents and their proposals.

Good IA procedure and procedural compliance are considered pre-requisites for any other effects to occur (Owens et al., 2004) and provide the impetus for the other elements of this framework to take place. In practice, it is clear that procedural compliance is imperfectly linked to observed outcomes (Owens et al., 2004; Runhaar & Driessen, 2007; Stoeglehner, 2010). This is demonstrated by the wide range of effects in terms of influence of IA on decision making and environmental outcomes, from a clear connection between IA and improved development proposals (Che et al., 2011; van Buuren & Nooteboom, 2009) to complete disconnection of the IA process from the proposed development activity (Isaksson & Storbjörk, 2012; McKillop & Brown, 1999). These studies support the contention that procedural compliance alone will not ensure that environmental assessment will influence proposal design or implementation (McKillop & Brown, 1999; Nitz & Brown, 2001; Ortolano, Jenkins, & Abracosa, 1987; Stoeglehner, 2010).

Effects through proposal design and modification

The substantive purpose of IA to reduce environmental impacts of development is considered compromised if IA does not exert an influence on design of development proposals such that environmental matters are considered in decision making by proponents (McDonald & Brown, 1995). Proposals arise through a larger planning cycle whereby proposals progress from conceptual ideas through to formulation, feasibility assessment and detailed design, with the level of detail on the proposal increasing with each step. IA typically occurs towards the end of this cycle, perhaps coinciding with the feasibility stage. Much of the proposal may be fixed by this stage, however a number of decisions continue to be made by proponents about the nature and form of the development proposal.

While there are methodological difficulties in ascribing modifications to proposal design to a requirement to undertake IA (as compared to other external or proponent driven factors), a range of studies have found that the majority of development proposals do undergo some modifications coinciding in timing with conduct of IA although for the most part, changes were minor to moderate (Cashmore, Bond, & Cobb, 2008; de Bruijn & Heuvelhof, 2002; Kobus & Lee, 1993). Criticism has been levelled at IA procedures for starting too late in the overall project cycle, as many of the most important internal decisions are made in the very early phases of proposal development before environmental information that may input into those decisions has been generated (Runhaar & Driessen, 2007). At a project level, Sadler (1996) and others report anecdotal evidence that the requirement to subject proposals to IA leads to proponents making more substantial changes to development activities before presenting these for screening in order to avoid development proposals that are clearly unacceptable. Changes may also be made to reduce the level of assessment required. Some other triggers for making modifications may include results of IA studies as well as discourse between proponents, regulatory agencies and other stakeholders (de Bruijn & Heuvelhof, 2002; Kobus & Lee, 1993).

Effects achieved through the predictive capabilities of IA

A cornerstone of IA thinking is the use of scientific methods to predict all potential impacts of a proposal. Science is appealed to as being objective and thus able to provide a factual basis for decision making however it is recognised that value-free science is an idealised position (Lawrence, 1997). IA has positively influenced development of a range of analytical and predictive methods and models to assist with the required evaluations (Kobus & Lee, 1993; McDonald & Brown, 1995). The quality, rigour and comprehensiveness of IA reports remains an ongoing criticism (Morgan, 2012). However as pointed out by (Lawrence, 1997) there are valid constraints to scientific rigour in IA, in particular "time and resource restrictions, political and organizational constraints, and data base limitations" (Page 85). Increasingly, constraints arising from the complexity and uncertainty of environmental systems are also being recognised (Partidario & Sheate, 2013). Some have noted that the real value may lie in linking IA reports to impact management and mitigation (Jay, Jones, Slinn, & Wood, 2007) and that highly technical reports may actually serve to shut participants out of the process (Cashmore et al., 2008).

The influence of information on regulatory decision making

Decision-makers face an extremely complex task. They must aggregate information from IA reports, public consultations and other sources, identify critical issues, consider alternatives and determine acceptability of impacts and of the proposal overall (Kobus & Lee, 1993).

Authorities responsible for approval decision making in IA have reported that both IA reports and comments from stakeholders during the IA process are used as input to decision making (see for example (Cashmore et al., 2008; Sadler, 1996; Wood & Jones, 1997)). Some studies indicate that IA reports are considered to have the most relevance when the recommendations align with the views of the decision-makers (Leknes, 2001; Runhaar & Driessen, 2007). The information provided in IA may tend to be more influential on development outcomes when dealing with those issues which are largely technical in nature, as compared to those issues that are more value laden and political in nature (Leknes, 2001; Runhaar & Driessen, 2007). The information from IA reports is often translated into approval conditions, although significant disparities between the recommendations of the IA and the conditions attached to any approval have been noted (Cashmore et al., 2008; Kobus & Lee, 1993; Wood & Jones, 1997). As suggested by Cashmore et al. (2004) it would be useful to have a more detailed understanding of the ways in which information is presented and subsequently used in IA and how that influences the outcomes realised.

Decision-making in relation to development proposals typically becomes focussed on making trade-offs, whether implicit or explicit, with no distinctly right or wrong answers (Leknes, 2001; Morrison-Saunders & Pope, 2013). The desirable balance between environmental and developmental goals is a matter of much debate and so decision making in IA is inextricably linked with the social, political, cultural, legislative, administrative, environmental and economic context in which it takes place (Owens et al., 2004). Acceptable standards of environmental protection have proven difficult to express in quantitative and objective terms for many aspects of the environment (Cashmore et al., 2004). In spite of some significant theoretical advancements (Morrison-Saunders & Pope, 2013) the concept of sustainable development has not been able to be operationalised in meaningful and widely accepted manner (Cashmore et al., 2004). Neither the decision makers or other participants are able to be objective and value-free, their values may be fluid and in many cases, cannot be clearly identified or elucidated (Nilsson & Dalkmann, 2001). Powerful stakeholders actively seek to influence and even undermine decision making processes in order to promote their interests (Abracosa & Ortolano, 1987; Cashmore et al., 2008; Flyvbjerg, 1998). Thus, both the

information provided to decision makers, and the decision making process itself is complex and potentially distorted.

Effects through discourse and debate

IA procedures require consultation between proponents, the community, the regulatory authority and other statutory authorities. Case studies on IA are increasingly recognising that the process of undertaking IA creates an important and in many cases unique space for these stakeholders to debate the relative merits of the particular development action under scrutiny, negotiate appropriate and acceptable levels of environmental impact and discourse on broader issues of environment and development (Cashmore et al., 2008; Leknes, 2001; Owens et al., 2004; Rozema & Bond, 2015). Indeed, IA has shown itself to be a "*powerful instrument to explore an actor's position in complex decision making processes*" (Nilsson & Dalkmann, 2001, p. 311) and a process for initiating conciliation on issues associated with development (Cashmore et al., 2008). Rozema and Bond (2015) go so far as to "define effectiveness of EIA in terms of the extent to which it accommodates the variety of discourses which mobilise in and throughout a particular decision context." (p. 67).

Of course, providing space for discourse prior to any decision does not automatically advance the purpose of IA as the matters to be dealt with are still complex and the views and priorities of more powerful interests are still likely to prevail in the final decision (Cashmore et al., 2008). The discourse will be heavily influenced by the context in which it takes place. Apart from informing decisions, participation in environmental assessment has a reflexive effect; that is debates about environment and development that arise from environmental assessment are influenced by the context in which environmental assessment takes place, but in turn can influence this context by highlighting issues, generating information and educating participants (Jha-Thakur, Gazzola, Peel, Fischer, & Kidd, 2009).

While an inclusive, transparent and consensus-building participation process may be held up as the ideal (Elling, 2009; Rozema & Bond, 2015), in practice consultation processes within IA are often criticised as being perfunctory and ineffective (Baker & McLelland, 2003; Dangi, Fernandez, Bom, Belbase, & Kaphle, 2015) and thus unlikely to provide space for meaningful debate and discourse. Some of the key non-procedural factors identified as influencing the quality of participation in EA processes include political will and support of the process, close integration of the IA process with the overall planning and design process, flexibility to undergo design iterations, collaboration between the proponent, appraisal teams and responsible authorities and a genuine intent to involve stakeholders and take their views into consideration (Che et al., 2011; van Buuren & Nooteboom, 2009). There is a developing debate in the literature on how IA procedures may be adapted to promote such discourse and debate within IA (Jay et al., 2007; Owens et al., 2004).

Effects on organisational learning and transformation

The application of environmental assessment to development proposals may potentially promote broader awareness of and learning about environmental issues and the impacts of development beyond the context of the individual proposal (Jha-Thakur et al., 2009; McDonald & Brown, 1995). Organisational transformation arises when this type of learning is associated with changes in values and objectives (Stoeglehner, 2010). (Caldwell, 1998; Lawrence, 1997) assert that to be fully effective, IA must trigger this type of learning and transformation, that is, there must be systemic changes in the context in which development takes place and in the way that organisations go about development, including the values and objectives that underpin decision-making about development.

The indirect nature of this effect makes collection of empirical evidence problematic (Morrison-Saunders, Bond, Pope, & Retief, 2015), however transformational learning of organisations and individuals has been identified as a major benefit of IA in literature (McDonald & Brown, 1995; Owens et al., 2004). Organisational learning may not necessarily increase the effectiveness of IA; case studies in the Philippines and Columbia indicate that regulatory and proponent organisations in these countries learnt to subvert the IA procedure to ensure that their own objectives prevailed and reduce administrative burden (Abracosa & Ortolano, 1987). Case studies pointed at proponents may also reveal new insights into how to maximise positive effects (Morrison-Saunders et al., 2015), as may case studies of regulatory authorities.

Conclusion

The ability to demonstrate and conceptualise the effects that IA has on the nature and outcomes of development activities occupies a significant proportion of IA literature, and rightly so given the widespread adoption of IA, and the resources devoted to its performance. The explicit link of IA with rational decision making (Nilsson & Dalkmann, 2001) and the resultant procedures do have an effect. But limitations to this model of IA are documented in literature, including the ability to achieve the required quality of information to support decision-making, complexity of the issues to be considered in the decision, and potential for discourse and debate and decision making processes to be influenced by context, including the leverage of the more powerful players in the process. Owens, Raynor and Bina (2004) suggest that the technical-rational model of IA could be considerably enhanced by merging with more deliberative approaches, particularly given that discussion may promote heightened awareness of environmental issues and allow a wide range of views to be considered. Many authors have called for further detailed examination of the mechanisms by which IA does have an effect so that both procedures and processes can be made more efficient and effective (Cashmore et al., 2004; Jay et al., 2007; Owens et al., 2004).

This framework is intended to provide a structure for such examination, on the basis that a nuanced understanding of where IA may exert influence and the interface of these aspects with development outcomes may contribute to understanding and optimising the effect of IA on development. This includes (1) the extent to which procedural requirements deliver improved environmental outcomes, (2) factors that influence design and modification of development proposals, (3) the importance of predictive accuracy and relatedly (4) the way that information generated from appraisal is used by participants in the process, (5) ways to promote discourse and collaboration within the appraisal process and relatedly (6) the role and function of IA in transforming an organisation's values and priorities in relation to the environment. This is the starting framework through which the first author's doctoral research will proceed. Data on these effects will contribute to understanding the causal mechanisms by which IA may have an effect and to what extent IA may continue to be a relevant tool for achieving environmental protection and sustainable development.

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