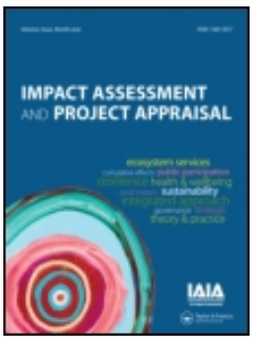

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Environmental impact assessment: the state of the art

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This paper reviews progress in environmental impact assessment (EIA) over the last 40 years, with particular emphasis on the last 15–20 years, and poses the question: is EIA ready to meet future challenges? The first part of the paper briefly examines the spread of EIA around the world, recent trends in the uptake of EIA, and the continuing emergence of variants of impact assessment. The second part of the paper concentrates on current issues in EIA, under three broad headings: theory and EIA, practice issues and EIA effectiveness. An important thread running through the second part of the paper is how discussions about EIA theory, a feature of the last 15 years, are affecting the different areas of EIA practice and evaluation.

Keywords: EIA; NEPA; environmental law; theory; decision-making; methods; participation; effectiveness

Introduction

The emergence of environmental impact assessment (EIA) as a key component of environmental management over the last 40 years has coincided with the increasing recognition of the nature, scale and implications of environmental change brought about by human actions. During that time, EIA has developed and changed, influenced by the changing needs of decision-makers and the decision-making process, and by the experience of practice (Morgan 1998). At a time when it is more important than ever to scrutinize decisions that might have significant implications for people and communities, and the systems that comprise the natural environment, it is useful to take stock of the progress made in the field, and to reflect on current and future challenges. Accordingly, this paper has two parts. The first briefly examines the origins and development of EIA, to establish the current extent of EIA usage, the forms of impact assessment that have emerged and the contexts within which EIA is applied. The second part reflects on recent trends in EIA in the areas of theory development, practice and effectiveness, before drawing some broad conclusions about the current state of EIA, and the opportunities that are available to shape the future of EIA.

For the purpose of this paper, EIA is taken to mean the broad process that emerged from the National Environmental Policy Act 1970 (NEPA) in the USA: it is used here as an umbrella term that captures the essential idea of assessing proposed actions (from policies to projects) for their likely implications for all aspects of the environment, from social through to biophysical, before decisions are made to commit to those actions, and developing appropriate responses to the issues identified in that assessment (Morgan 1998). Hence, the paper approaches EIA in a broader conceptual way, rather than being limited to the consideration of operational issues associated with project-level EIA.

Ortolano and Shepherd (1995) provide an invaluable overview of EIA, including a consideration of some key trends and issues to that date. Therefore, this paper tends to focus on developments since that time, particularly in its second part.

Origins and development of EIA

Institutional considerations

The National Environmental Policy Act (NEPA) represented the first formal incorporation of the impact assessment process in a legislative form (O'Riordan and Sewell 1981). The Act established an environmental policy to guide the activities of those Federal agencies whose actions had the power to affect people, communities and the natural environment in significant ways, and was a response to a rise in scientific and popular concern about contemporary environmental changes (Ashby 1976). The Federal agencies were required under NEPA to produce a statement of environmental impacts and release it to the public, in order to demonstrate how these considerations had been recognized and addressed. This statement was the enforcing mechanism to keep agencies accountable to the public, but the substantive requirement of NEPA was for a well-founded assessment of the relevant environmental impacts of proposals, and for these to be used in the agencies' decision-making. The irony, of course, is that the enforcing mechanism was widely adopted around the world, but the environmental policies it served tended to be overlooked (Caldwell 1978, 1988).

Following the example of the early adopters (countries such as Australia, Canada, Eire, Sweden, New Zealand etc.) (O'Riordan and Sewell 1981, Wood 2003), many other countries have incorporated some form of impact

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assessment process into formal procedures or legislation relating to planning or to other areas of environmental decision-making. In the international arena, the institutionalization of EIA has progressed steadily over the last 15–20 years, gaining particular momentum from rising political recognition of the problems associated with climate change, loss of biodiversity, threats to freshwater sources and water quality, damage to marine areas and other forms of global environmental change. Hence, environmental impact assessment, or sometimes simply environmental assessment (EA), is recognized in a large number of international conventions, protocols and agreements, including:

- the Convention on Transboundary Environmental Impact Assessment;
- the Convention on Wetlands of International Importance;
- the Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters;
- the United Nations Framework Convention on Climate Change;
- the United Nations Convention on the Law of the Sea;
- the Protocol on Environmental Protection to the Antarctic Treaty.

While many international legal instruments concern only a few countries, and usually for a narrow range of situations, some, such as those listed above, are broad and have been signed by many countries. This complicates efforts to determine how widely EIA is now used around the world. A search carried out in November 2011 on the ECOLEX database (an environmental law information service jointly operated by UNEP, FAO and IUCN: http://www.ecolex.org) for legislation and treaties containing text references to 'environmental impact assessment', or to the Spanish and French equivalent terms, across all countries, indicates that 191 of the 193 member nations of the United Nations either have national legislation or have signed some form of international legal instrument that refers to the use of EIA. The two that have no such commitments are the Democratic People's Republic of Korea and South Sudan (the latter only gaining UN membership in July 2011). Of the 191 countries, fewer than 10 appear not to have some form of national legislation that contains a reference to EIA or an equivalent process (e.g. 'assessment of environmental effects' in New Zealand), although the use in some cases can be for very specific sectors and purposes (e.g. pollution threats from marine resource development). When commitments under national legislation are combined with the commitments under the major international conventions on climate change and biological diversity, and the large number of regionally based agreements and protocols on topics such as marine pollution or water resource management, virtually all member countries of the UN have agreed in principle to use EIA within a number of policy contexts. After 40 years, it seems reasonable to say that EIA is now universally recognized as a key instrument for environmental management, firmly embedded in domestic and international environmental law.

EIA and major projects

Impact assessment practice around the world is dominated by its use at the project level, with particular emphasis on major projects (Wood 2003). Unfortunately, and notwithstanding the above comments, not all countries have introduced planning or development control legislation to require the routine use of EIA for proposed projects that might have significant environmental impacts. This gap was partly addressed by the World Bank group, which developed Safeguard Policies, including environmental and social assessment procedures, to guide funding decisions with respect to major projects in developing countries. However, as the World Bank group's share of major project funding declined significantly in the 1990s, it became obvious that the Bank's Safeguard Policies, including provisions for EIA, were in danger of being marginalized: many large projects were going ahead without environmental and social assessment as they were funded from other sources. The solution has been to encourage the other major funders – the private sector financial institutions and bilateral lending agencies – to adopt similar requirements for environmental and social assessment when making their own funding decisions.

With regard to the private sector financial institutions, the International Finance Corporation (IFC), part of the World Bank group, met with several major banks in 2002 and initiated discussions that led to the launch in June 2003 of the Equator Principles, which provide guidelines on the use of EIA in relation to major project funding decisions by the institutions. By 2006, 40 institutions had signed up to the Principles, and this has risen to more than 70 at the time of writing (representing 'over 70% of international project finance debt in emerging markets' http://www.equator-principles.com). The Principles are based on the social and environmental performance standards developed by the IFC, and the environment, health and safety guidelines of the World Bank, and central to these is EIA. In essence, for major projects above a certain funding threshold (currently US$10 million), Equator Principle finance institutions must ensure that an impact assessment appropriate to the scale and nature of the project is provided by the applicant.

With respect to bilateral funding, an important development has been the move by the OECD group of countries to agree environmental and social assessment procedures in relation to export credit lending by the member countries, much of which is linked to major projects in developing countries. The latest version of the procedures, adopted in 2007, are very similar to the Equator Principles in content and intention.

These initiatives are important as they increase the proportion of major development projects being subject to EIA and related assessments. In addition, by following the IFC and World Bank guidelines they promote greater consistency in how those projects are scrutinized.

Forms of impact assessment

Under the umbrella of EIA a number of specific forms have developed since the 1970s, including social impact

assessment (SIA), health impact assessment (HIA) and strategic environmental assessment (SEA). To some extent, each tends to have arisen through some level of dissatisfaction with EIA as it has been practised. SIA, for example, developed strongly in the late 1970s and 1980s because EIA, especially in the USA, was considered to have a strong biophysical emphasis, often neglecting social impacts (Taylor *et al.* 2004). More recently HIA has emerged as a vigorous form of impact assessment, responding to a sense among many public health professionals that EIA did not adequately address project impacts on community and individual health (National Academy of Sciences 2011).

SEA has been vigorously promoted as a way to extend impact assessment to higher level decision-making at policy, programme and plan levels, a reaction to the project orientation of most EIA applications (Sadler 2011). A related approach, sustainability assessment (SA), has emerged in recent years, its focus being more specifically on sustainability criteria in the assessment of policies, plans or projects. However, sustainable development has a variety of meanings, and as a consequence the process of SA can be viewed in different ways (Pope *et al.* 2004, Bond and Morrison-Saunders 2011). Moreover, SEA is often justified on the grounds that it promotes sustainable outcomes (Sadler 2011), further blurring the boundaries with SA. Similar problems occur across the impact assessment field, as finer differentiation of the EIA model into named varieties throws up conceptual as well as terminological complexities.

Other forms of impact assessment that have emerged in recent years include regulatory impact assessment (RIA), human rights impact assessment, cultural impact assessment, post-disaster impact assessment and climate change impact assessment. The last-mentioned looks set to generate many new challenges for the EIA community, as governments struggle to reconcile the national policy and project decision-making processes with global agreements to reduce greenhouse gas emissions, while also dealing with the wider implications of climate change adaptation strategies.

The broader challenge for the EIA community, however, will be to ensure all forms of impact assessment contribute to the effective assessment of proposals, based on well-understood principles shared across the field of impact assessment, and conducted in an integrated and complementary way. With this in mind, in the second part of the paper I reflect on recent thinking about EIA, in terms of its theoretical basis, and the extent to which those views are informing ideas about impact assessment practice and the wider issues of effectiveness.

Current issues in EIA: theory, practice and effectiveness

Ortolano and Shepherd (1995, p. 3) note that EIAs have had 'far less influence than their original supporters had hoped they would' in influencing project and plan decision-making and identify a number of broad areas of concern: the different views about the nature and purpose of EIA and especially its relationship to decision-making processes; institutional implementation issues; problems associated with practice, including limited or no public participation; and the limited substantive effect of EIA as a process.

These areas of concern are echoed by Retief (2010), who identifies three broad themes based on a review of the international literature on environmental assessment:

- Theoretical grounding – do we have a clear sense of the purpose of EA, and what it comprises?
- Quality – what is good practice, how do we judge quality, what guidance do we provide?
- Effectiveness – what are we achieving through this process?

The following discussion of issues uses these three broad themes, but replacing quality with practice as the key consideration for the second theme as it provides a rather broader perspective. Public participation is given some prominence under practice issues, as a topic which has developed substantially in the last 20 years, is critical to all forms of impact assessment, but is still the source of many problems in practical impact assessments.

Theory and EIA

The theoretical foundations of impact assessment have been subject to much greater attention in recent years. Ortolano and Shepherd (1995) touch briefly on the debates surrounding the nature of EIA, especially the dominance of the technocratic model of impact assessment and the rise of alternative views that recognize the political realities of decision-making. However, dissatisfaction with the lack of serious critiques of EIA as a process gained momentum in the late 1990s, as the influence of debates in related disciplines finally began to reach the impact assessment community. For example, referring to the first 25 years of EIA development, Lawrence (1997, p. 79) observes that 'the conceptual foundation of EIA has received limited attention'. The answer, he feels, is more reflection and greater attention to coherent theory-building in EIA, to replace uncritical approaches that frequently fail to recognize the contextual implications of concepts taken from related fields.

Important sources of thinking about the theoretical basis of EIA have been the various theories and models of planning and decision-making. For example, Lawrence (2000) examined five planning theories: rationalism, pragmatism, socio-ecological idealism, political-economic mobilization, and communications and collaboration, while Leknes (2001) uses a simpler three-fold categorization of decision-making approaches: the rational, new institutionalist and negotiation perspectives. In contrast, Bartlett and Kurian (1999) adopt a political science perspective and identify six models they consider to have been implicit in previous discussions of EIA in the literature:

- the *information processing* model – essentially the rationalist, decision-support model;

- the *symbolic politics* model – EIA used to suggest accordance with certain values, but not necessarily holding to those values;
- the *political economy* model – EIA used by the private sector to reduce financial risk, and if possible increase financial opportunities, by internalizing environmental externalities;
- the *organizational politics* model – changes occur in the internal politics of organizations required to use EIA;
- the *pluralist politics* model – EIA process used to open opportunities for negotiation and compromise among different interest groups;
- the *institutionalist politics* model – political institutions are changed significantly by the effect of EIA on values, actions and perspectives in their policy-making processes.

A common theme in all these discussions is the critique of the rationalist model of planning/decision-making, and by implication of mainstream EIA, and the consequent need to explore and develop models that embrace new thinking about planning and decision-making processes in their wider social, cultural, political and economic contexts (Bartlett and Kurian 1999). The basis of the rationalist model was the adoption of a rational process to guide the choice, from a range of alternatives, of the best solution for a defined problem or need, based on an analysis of all the relevant information necessary to make that choice. After the enactment of the NEPA, EIA came to be seen as one of the important sources of information that would inform the choice of the best solution when the decision involved project proposals. The model is characterized as having a strong technical emphasis, with planners and other professionals acting as neutral processors of information, producing independent evaluations of the alternatives, to be provided to decision-makers (Lawrence 2000). The form of EIA that emerged in the 1970s and still dominates institutionalized EIA in many countries is strongly influenced by this model.

As the basis of the rational comprehensive planning theory which dominated strategic and development planning in many Western countries in the 1960s and 1970s, this model has been the subject of significant criticism (Holden 1998). A key theme has been the impossibility of recognizing all possible alternative solutions, from which to select the 'best' solution, so more constrained and practice-informed models of the rationalist approach emerged (such as the bounded rationality model and the incrementalist model) (Holden 1998, Wood and Becker 2005, Weston 2010). However, these variants still carry the rationalist imprint, and they too have attracted criticism for their failure to recognize the political and value-based nature of decision-making (Wilkins 2003, Richardson 2005). This has encouraged the promotion of deliberative and collaborative approaches to planning and decision-making processes, including EIA itself: bringing stakeholders and communities into the processes, emphasizing the importance of communication as a means of negotiating consensus solutions that capture the values of those participants, and moving the professional technocrats from a controlling role to a facilitating role in the decision-making process (Wilkins 2003, Elling 2009).

Such collaborative and consensus-oriented models, which draw on the work of Habermas, have in turn been criticized by those influenced by Foucault for not recognizing sufficiently the issue of power relations between participants which inevitably affect the ability of different groups or individuals to enter social negotiations in an equitable way (Flyvbjerg 2000, Richardson 2005). Richardson (2005, p. 343) relates this to impact assessment: 'EA needs to engage with competing multiple rationalities, and ... value conflicts and judgements about them are inescapably present in EA'. Accordingly he sees the need to shift theoretical perspectives from communicative rationality to one that allows 'EA practitioners [to] operate in an ethically reflexive way in a world of contested rationality' (p. 343).[1]

Taking this thinking to the next level, which Weston (2010) suggests should be done, a critical, Marxist-inspired, analysis of EIA would conclude that '[a]s a state led process of development management both planning and EIA are there to serve the interests of capitalism and they do that by trying to provide a rationalist justification for the outcome of environmental decision-making' (Weston 2010, p. 370). He suggests the time has come to search for something radically different from the rationalist-inspired EIA processes.

This last position clearly demonstrates the radical end of a spectrum of current thinking about the nature and role of EIA; there is an abundance of literature, and more importantly an abundance of EIA practice, that suggests the centre of gravity of EIA thinking is still firmly rooted at the rationalist end of that spectrum. However, the recent theoretical debates are pointing to the need to move that centre of gravity of EIA practice from the overly rationalist/mechanistic mode towards a more participatory and collaborative way of operating. In this regard it is interesting to note the Council on Environmental Quality in the USA has recently released a report on collaboration in NEPA processes (CEQ 2007). The value dimension of the EIA process has to be reflected in the way it is designed and carried out. In particular, whenever significance judgements are to be made, the process has to accommodate the values of those potentially affected by the proposed activity, and that must include as a minimum, for example, the scoping phase as well as the impact evaluation phase. EIA practitioners should also be more aware of, and sensitive to, the inherent power relations found in rationalist decision-making processes that can hinder effective participation and exacerbate environmental injustice.

However, Richardson (2005) cautions against simply looking for new theories or models that may not be there: instead, practitioners should use the stimulus of the theoretical debates to develop their own actions, based on critical and ethical reflection – that is, reference points rather than recipes.

The practice of EIA

On the issue of EIA practice, the International Study of the Effectiveness of Environmental Assessment (Sadler 1996, p. iv) concluded:

> Despite the many methodological and administrative advances in EIA over the past two decades, recent experience in many countries confirms that there is still considerable scope for strengthening the process. Immediate and cost-effective measures could help improve the process in four key areas: scoping, evaluation of significance, review of EA reports, and monitoring and follow-up.

However, problems with practice persist. For example, a recent report of the state of EIA in the UK based on practitioner opinions identifies problems in four key areas of practice: screening, scoping and engagement, assessment, and outcomes and outputs (IEMA 2011). An earlier European Union report (Commission of the European Communities 2009) on the application and effectiveness of the EIA Directive identified a number of areas where improvements in practice are needed, including screening, scoping, consideration of alternatives, monitoring, public participation and EIA quality control.

Over the last two decades there have been significant contributions to the literature on each of the main steps in the classic EIA model:

- *Screening*: e.g. Enserink (2000), Wood and Becker (2005), Pinho *et al.* (2010), Rajaram and Das (2011) and Weston (2011).
- *Scoping*: e.g. Mandelik (2005) and Snell and Cowell (2006).
- *Impact prediction*: there are many papers dealing with specific techniques, across the various environmental sectors and different forms of human activity, plus broader contributions, such as Duinker and Greig (2007) on scenario approaches to prediction.
- *Significance*: from a conceptual standpoint: e.g. Lawrence (2007a, 2007b); more technical approaches: e.g. Ijas *et al.* (2010), Cloquell-Ballester *et al.* (2007) and Mustow *et al.* (2005).
- *Monitoring and other aspects of follow-up*: e.g. Marshall *et al.* (2005), Morrison-Saunders and Arts (2004).

The consideration of practical issues in impact assessment constitutes a large proportion of the published EIA literature, and there is every reason to expect this to continue and grow as new challenges come from new areas of application and new forms of impact assessment. However, one area of impact assessment is still comparatively under-developed: cumulative effects assessment (CEA). Most legislated EIA processes refer to cumulative effects as one of the characteristics of proposed activities that need to be considered, but in practice they are often not addressed or are handled inadequately (Duinker and Greig 2006, Gunn and Noble 2011).

However, there is renewed interest in improving CEA practice. In Canada, for example, as a result of the Canadian Environmental Assessment Act 1995, 'the past decade has witnessed a flurry of attention on CEA. There have been conferences, books, guides, short courses, seminars, workshops, research projects and papers, position papers, court battles, high-profile CEAs, new legal requirements and more, all demonstrating that CEA has been perhaps the single most discussed EIA issue in recent years.' (Duinker and Greig 2006, p. 155).

Reasons put forward for the poor development of CEA include the lack of clear understanding of what constitutes 'cumulative' effects, the lack of agreed approaches and methods for carrying out CEA, and the fact that most jurisdictions place the responsibility of addressing cumulative effects on project proponents (Morgan 1998, Gunn and Noble 2011). The latter issue is probably the most problematic: Gunn and Noble (2011) suggest, as have others, that CEA is best carried out at the regional or national level, as part of SEA processes. In contrast, Duinker and Greig (2006) argue that there is still a role for project-level CEA, partly because that is what legislation requires and radical change to those requirements is unlikely to come soon, and partly because all project impacts are cumulative impacts, so the whole EIA process should reflect that. They envisage use of methods such as scenario analysis to help with this more integrated consideration of potential environmental effects of projects. Cumulative effects are central to many impact assessments, so the renewed interest in improving performance in this area is to be welcomed.

Public participation

The effect of the theoretical awakening of EIA in the 1990s has been seen very clearly in the area of public participation, as would be expected given the influence in that new thinking of concepts of deliberative democracy, collaborative rationality and environmental justice. Whether the aim is to temper the rationalist model, or to revise it radically, public participation (used here in the broad sense to include all groups and individuals in a community, and the widest range of forms of involvement) is now given prominence in EIA writing. This trend has been reinforced since the European Union amended the EIA Directive to incorporate the principles of the Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (Hartley and Wood 2005).

Problems with public participation are not new, as the steady growth of literature on this theme from the early 1980s onwards testifies (see, for example, Daneke *et al.* 1983). Hartley and Wood (2005, p. 333) identified the following main barriers to early and effective participation:

(1) Poor public knowledge of planning, legal and waste licensing issues.
(2) Poor provision of information.
(3) Poor access to legal advice.
(4) Mistrust of the waste disposal industry.
(5) 'Not in my back yard' (NIMBY) syndrome.

(6) Failure to influence the decision-making process.
(7) Poor execution of participation methods.
(8) Regulatory constraints.

Issues such as these have been found in many evaluations of public participation practice, but in line with the theoretical turn in EIA more recent research has tended to place greater emphasis on evaluating practices against the expectations of deliberative democracy or collaborative participation (see, for example, Huttunen 1999, Petts 2003, Bond *et al.* 2004, Wiklund 2005, Hostovsky 2006, Martin 2007, Pohjola and Tuomisto 2011, Wiklund 2011).

O'Faircheallaigh (2010) suggests a three-fold classification of the purposes of public participation in EIA – obtaining public input into decisions taken separately by decision-makers, providing some degree of public sharing of decision-making, and altering the structures and power relationships of decision-making. He is at pains to avoid the notion of static frameworks or models with rigid boundaries, preferring instead a dynamic relationship between the three forms of participation (O'Faircheallaigh 2010). And it is in that dynamic relationship between public participation, the EIA process and the decision-makers, that he sees the potential for change in the future: stakeholders, community groups, or individuals using various methods to bring influence to bear on the whole system, to increase the voice of the public and thereby alter the power relationships in existing policy-making processes, within EIA and more broadly.

Case study evaluations provide rich sources of ideas for improving public participation practice. Diduck *et al.* (2007) evaluate practices in two large hydroelectric development projects in northern India and emphasize the development of constructive relationships between public, proponents and decision-makers, and changes in the structure and power relationships of decision-making that O'Faircheallaigh (2010) refers to in his third broad form of public participation. The conclusions from a recent evaluation of public participation in EIA in Chile (Lostarnau *et al.* 2011) serve to remind us that social, political and cultural settings and traditions are important determinants of the development and practice of these processes. Not only do specific approaches and methods need to reflect the reality of the situation on the ground – e.g. 'the use of the Internet as the main communication tool constitutes a disadvantage for the people of rural areas that have limited or no access to this medium' (Lostarnau *et al.* 2011, p. 2477) – but also that 'a serious cultural change of all the parties involved (public institutions, project owners, and the citizens) is required in terms of understanding the real importance of public participation, and therefore to provide a framework for effectively practicing this right' (Lostarnau *et al.* 2011, p. 2477). Such a cultural change can only come about by learning, and this has been reflected in several case studies that emphasize the importance of different forms of social and organizational learning, through participatory approaches to impact assessment.

EIA effectiveness

The final report of the International Study on the Effectiveness of Environmental Assessment concluded that, while EA had made its mark since it was introduced 25 years earlier, it would be necessary to maintain the efforts to improve its performance if it was to make a substantive contribution to the goal of sustainable development (Sadler 1996).

The theme of effectiveness of EIA has been ever-present in the literature since then, but as Cashmore *et al.* (2004) observe, the bulk of that literature addresses procedural issues, with a much smaller proportion concerned with substantive issues. Both are important parts of the overall assessment of effectiveness, but the procedural aspects are more amenable to study and analysis, while substantive considerations raise more difficult questions.

In 2006, an update to the International Study on the Effectiveness of Environmental Assessment was initiated by the International Association for Impact Assessment (IAIA) and the final report from that process is pending. In the meantime, though, a steady stream of evaluations of national EIA systems have been published. These take stock of practical experiences, and identify, and seek solutions for, shortcomings – but they also provide feedback on innovative practices, or new areas of application of EIA, or new challenges to be recognized and addressed. A closer inspection of a number of such national evaluations reveals two key points. First, any evaluation of EIA effectiveness is only meaningful when made in the socio-economic, political and cultural context of the country or countries concerned. This is well illustrated by the comparison of EIA in Kenya, Tanzania and Rwanda (Marara *et al.* 2011) in which shortcomings in the EIA system in Rwanda can be attributed to weaker institutional structures, and a comparative lack of local capacity to work with EIA. Similarly, evaluations of EIA in member states of the EU must always be interpreted within the political and institutional context of that grouping, and the overarching framework of the EIA Directive (Wood 2003). Second, views on effectiveness depend on one's understanding of the nature and purpose of EIA, a point made by Elling (2009). It is interesting, for example, to contrast the technical, engineering perspective of Kruopiene *et al.* (2009), who laments the politicization of EIA in Lithuania, and calls for much stronger recognition for the role of experts in the process, with the following characterization of EIA in the Philippines by Bravante and Holden (2009, p. 542):

> The shortcomings of the EIA system are not an oversight, or a result of faulty judgment, rather, they reflect a policy direction shaped by those with a vested interest in the continued mismanagement of natural resources (Broad 1995). This is not a demonstration of *policy failure*; it is a demonstration of *political success* in managing natural resources for the benefit of those who control the state (Broad 1995)... the problem is not the *absence* of political will to implement a more meaningful EIA system; rather, the problem is the *presence* of political will representing elite interests (Broad 1995).

Here we have two very different visions of EIA, one clearly rooted in the information processing (rationalist) model, the other a variant of the symbolic politics model, to use Bartlett and Kurian's (1999) terms. Each brings to bear a perspective that influences how the purpose of EIA and its effectiveness, in either procedural or substantive terms, or both, are viewed. It is important that such differences in perspective are recognized and made explicit, if the debate on effectiveness is to move forward in a constructive way (Elling 2009).

If we look again at the political models of EIA suggested by Bartlett and Kurian (1999) (or indeed the various planning or decision-making models) effectiveness can be seen from a number of different, politically oriented perspectives. Has the process opened opportunities for local people to be more involved in decision-making? Have companies become more aware of environmental issues through EIA and modified their practices accordingly to gain competitive advantage? Has change been brought about in government bodies dealing with, say, natural resources, to internalize EIA thinking? Do decision-makers, and other stakeholders, understand and use the EIA information provided to them?

Cashmore *et al.* (2010) take this line of thinking further, using political theory, and especially the notion of politics as the acquisition or exercise of power, to examine effectiveness evaluation and EIA. They demonstrate the degree to which all aspects of EIA as a process are in essence political – including the established methods for evaluating EIA effectiveness which usually involve a limited number of 'experts' using criteria agreed within the group. If EIA is political, then there will be a plurality of views about the way the process operates and what it achieves, and that plurality must be recognized in evaluations of effectiveness. That would then allow the evaluator to examine the basis for, and implications of, the differing perspectives, which would in turn inform policy-making (Cashmore *et al.* 2010). As with other areas of EIA, thinking about effectiveness has moved beyond the mechanistic, process-oriented models to those informed by more recent theoretical perspectives of values, collaborative processes, power relationships, but above all a more thoughtful and considered approach.

Conclusions: strengths, weaknesses, threats and opportunities

Having taken stock of the current state of EIA, what can we conclude? Some broad points are made here in the context of the SWOT framework.

Strengths

EIA is well established around the world, as evidenced by its widespread use in statutory development control and other environmental law processes, and its presence in international law and lending institution standards. The use of EIA at different levels of decision-making is growing significantly, as is the range of decision-types for which it is now used. There is a well-developed support infrastructure, from professional groupings (such as the IAIA, and its national affiliates and branches), through to support units in international agencies (UNEP, World Bank, WHO etc.), and to national environmental agencies and tertiary institutions, providing capacity-building, guidance material and other resources. In addition, a vibrant community of researchers and practitioners is engaged in learning about this process, through case studies, and theory-based analyses.

A feature of the literature over the last 15–20 years is the increasing maturity of EIA research, and in particular the growing influence of theoretical debates in related areas of knowledge, affecting how EIA is viewed, and potentially opening minds to alternative ways to look at the processes that make up the activity of EIA. For many, EIA will retain its inherent rationalist purpose and character, but that is not incompatible with recognizing how other actors in the process may value different aspects of the process, and that these views should be actively encouraged and protected. Similarly, concepts such as environmental justice and inclusivity ought to inform and add value to the design of EIA practice.

Weaknesses

There is concern in many countries over the poor quality of impact assessment information. Depending on circumstance, this might reflect problems with institutional arrangements, low levels of commitment by proponents, or issues with the nature, extent and quality of training and capacity building in the impact assessment, or elements of all of these. Achieving significant change in practice, to improve EIA quality, often means overcoming entrenched professional and bureaucratic perspectives, which can be very difficult without radical overhaul of the institutional procedures. Therefore, there is a significant gap between the best practice thinking represented in the research and practice literature and the application of EIA on the ground – the resulting practice inertia provides a real challenge to the EIA community as the consequences of poor practice (delays, poor decisions, increased costs to proponents etc.) tend to be blamed on the EIA process rather than on the practitioners themselves.

Threats

As governments look to stimulate economic growth and create employment in response to the current financial crisis, many are promoting a major expansion of physical infrastructure, encouraging resource development projects, and generally seeking to speed decision-making about development projects. Both EIA and SEA should be even more important in such circumstances, yet the moves taken in some countries to speed up decision-making may weaken the provisions for environmental protection, including impact assessment. One example is the current proposal in England and Wales to change the National Planning Policy Framework to speed development

decisions, a proposal that is causing concern in many quarters (Levett 2011). The proposals place significant pressure on local authorities to 'operate to encourage growth and not act as an impediment' and 'plan positively for new development, and approve all individual proposals wherever possible' (Department for Communities and Local Government 2011, paras 13 and 14). In a planning system where the development plan is already given priority over other material considerations (which includes, where relevant, EIA) when determining planning applications, the fear is that the increased weight that will be given to the financial viability of developments will further reduce the influence of EIA on development decisions.

Opportunities

Despite the weaknesses and threats outlined above, we should take comfort from the degree to which EIA as a concept has been accepted by governments, the international legal community, the funding agencies and other key players. The profile of EIA can only increase as concerns over issues such as climate change grow and communities and governments recognize the importance of true anticipatory mechanisms in their decision-making processes. The impact assessment community has the opportunity to build on these foundations, and in particular to shift EIA thinking away from the licensing stage and closer to the critical decisions within organizations. That is, EIA should be integral to project development and design processes, not left to the final legal step before project implementation. This would reduce the emphasis on compliance-oriented EIA, allowing impact assessors to work more constructively with proponents and stakeholders to develop processes that meet the needs of all parties, and in so doing result in projects that are consistent with the environmental and social aspirations of local communities.

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Note

1. Elling (2009) is of the opinion that Richardson (and Flyvberg) misunderstand Habermas' notion of communicative rationality.

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