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WHAT IS WRONG WITH EIA AND SEA ANYWAY?
A SCEPTIC’S PERSPECTIVE ON SUSTAINABILITY ASSESSMENT

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Abstract
Environmental impact assessment (EIA) was initially introduced as an advocacy instrument for the biophysical environment in project decision-making. Strategic environmental assessment (SEA) evolved with a similar mission for strategic level proposals. However, recent trends towards more integration, particularly in the context of sustainability assessment (SA) mean that social and economic aspects are now frequently considered on a par with the environment in impact assessment processes. There are indications that this development will ultimately favour trade-offs towards socio-economic benefits, causing adverse environmental impacts. In this paper, we discuss problems connected with these types of integrated assessments. Based on observations of SA processes are actually environmentally unsustainable, we argue that the need for environment focussed EIA and true SEA in planning processes is now greater than ever. We suggest that until power relationships
develop in a way that will allow integration in an environmentally sustainable manner, practitioners should not give up the benefits that have arisen from 35 years of EIA practice. We conclude that in our current world, there is nothing wrong with environmental advocacy - let’s continue to use EIA and SEA effectively to protect the environment!

*Keywords*: EIA; SEA; environmental protection; sustainability assessment; sustainability appraisal; trade-offs.

**Introduction**

Environmental impact assessment (EIA) was first introduced in the US in 1970 and rapidly spread throughout the world due to a perceived under-representation of environmental aspects in planning processes. Initially, EIA was meant to ensure that the biophysical environment be adequately considered in decision-making for development proposals. Over the last 35 years, EIA has been followed by the development of many other forms of impact assessment, including, for example, health impact assessment, social impact assessment, risk assessment and others. Since the beginning of the 1990s, EIA has increasingly targeted strategic levels of decision-making. In this context, we have come used to talk of strategic environmental assessment (SEA). More recently, EIA and particularly SEA have started to increasingly consider not only biophysical, but also social and economic considerations and there is clearly a growing interest in more integrated forms of assessment. This has led to the development of sustainability assessment (SA), which seeks to integrate economic, social and environmental components.
This paper explores this trend towards integration within EIA and SEA. It questions whether opposite to initial intentions, integration has led to a downgrading of environmental considerations in assessment and decision-making processes. In line with Pope et al.’s (2004) assertion, we hypothesise that sustainability assessment: ‘can be seen to overly promote the prevailing economic agenda and thereby undermine 30 years worth of hard-won environmental policy gains’. We consider this elevation of socio-economic considerations in assessments clearly to be inconsistent with sustainability goals, as: ‘what is good for business or preferred by consumers today is not necessarily compatible with what is good for environmental protection in the long term, nor for the creation of a more equal society’ (Scrase and Sheate, 2002).

Throughout this paper, we use the terms ‘environment’ and EIA to signify biophysical, or non-human, aspects of impact assessment. The term ‘social’ is used to denote human elements such as health and general social impacts and the term ‘economic’ is used to denote monetary or financial matters. In the subsequent sections, we first provide reviews of the international impact assessment literature to explore other authors’ perceptions on the treatment of environmental issues in EIA, SEA and also SA. We then present several arguments in support of maintaining a biophysical emphasis on EIA and SEA, i.e. we make the case for a real strategic environmental assessment dedicated to biophysical matters as opposed to ‘integrated SEA’ which also includes social and economic assessment. In being supporters of environmental advocacy in impact assessment, we are not ignoring the potential for SA to become an important decision-making tool. However, we argue that certain conditions need to be fulfilled before SA processes can be considered truly ‘sustainable’. Until this is the case, we urge practitioners not to erode the valuable service provided by EIA and SEA without good case.
EIA and SEA — Advocacy Instruments or Integrative Tools?

EIA’s origins lie in the *National Environment Protection Act* (NEPA) of the United States (1970). This recognised the need to ensure that environmental consequences of major development proposals were considered during decision-making. The initial focus on the biophysical environment has been a fundamental tenet of the rationale for EIA ever since (e.g. Wathern, 1988; Sadler, 1996). Gibson (2000), for example, noted that EIA:

‘has generally been viewed as a means of adding environmental considerations into predominantly financial, technical and political decision-making processes, encouraging some adjustments to the usual objectives in the interests of avoiding serious environmental harm’.

Caldwell (1998) suggests that a mandatory EIA requirement with public participation ‘offers the best prospect for sound and ecologically sustainable policy’. It achieves this through the ‘evaluation of the effects likely to arise from a major project or any other action that may systematically affect the environment’ (Wood, 1995, p1). Similarly, Sadler (1996) defined EIA as ‘an instrument of integrated environmental management’. According to Marr (1998, p4), EIA has the following objectives:

- to improve the quality of decisions from an environmental point of view;
- to aid project management;
- to smooth consent procedures; and
- to raise environmental awareness.
Therefore, EIA is normally not only understood as an environmental protection tool, but also as an instrument for strengthening environmental management processes (Roberts, 1995; Morrison-Saunders and Bailey, 1999; Marshall and Fischer, 2004). During the 1990s, EIA was increasingly applied within planning systems that became dominated by the sustainability agenda. In this context, the emphasis broadened out and issues were included that went beyond the boundaries of discrete development projects, such as cumulative effects, transboundary impacts and strategic level impacts. Furthermore, widespread involvement of various bodies and the general public in EIA processes led to a growing interest in social impacts and other factors affecting human well-being. Various specialist branches of impact assessment developed, for example social impact assessment (SIA), health impact assessment (HIA), risk assessment and others. In this overall climate towards integrating different issues in impact assessment, the limited ability for project based EIA to adequately consider different factors was increasingly perceived as a weakness (Sadler, 1996; Dalal-Clayton and Sadler, 2005).

It is clear that any development is based on perceived socio-economic benefits and very often comes at some environmental cost. The scope of EIA and probably also of SEA to proactively lead to positive environmental impacts of developments has been observed to be normally rather narrow and the focus tends to be on impact minimisation. In this context, Upham (2001) commented on airport operations, noting that associated growth in environmental impacts represents a: ‘movement away from conditions of global sustainability’. Furthermore, he observed that to date this impact has not diminished in the presence of EIA. In this context, he sees a major problem in the way we attempt to implement sustainable development, which is too imprecise and not related to actual outcomes;
‘When the European Commission, UK Government and airports refer to sustainability as an intended attribute for transport, this should not be taken to mean a realised commitment to environmental impact reduction. In an airports context, sustainability has been interpreted by some UK airports as meaning only a *consideration* of environmental and social impacts alongside economic and financial performance […], there is no evidence of a reduction in total environmental impact [due to EIA] or a commitment to general consumption or waste limits, but rather of extensive mitigation aimed at regulatory compliance for selected local environmental quality standards, environmental efficiency and cost reduction’ (Upham, 2001, p. 247).

Particularly with the recent emergence of sustainability appraisal (SA) processes, the move towards full integration of environmental, social and economic parameters has grown even stronger. This has been commented on by a range of authors, mainly in terms of how outcomes can be achieved through impact assessment that is indeed economically, socially and environmentally sustainable (e.g. Lee and Kirkpatrick, 1997; Eggenberger and Partidario, 1999; Sadler, 1999; Devuyst, 1999, 2000 and 2001; Gibson, 2000; Dalal-Clayton and Sadler, 2005). Furthermore, integration has become a principle of international generic guidance for good quality SEA practice (IAIA, 2002) and is also increasingly a feature of SEA and SA guidance (e.g. Canadian Environmental Assessment Agency, 2003; Environment Canada, 2003; Office of the Deputy Prime Minister, 2004a, 2004b). Whilst it is not our intention to review this literature here, it is important to note that integration of environmental, social and economic factors in SEA is now seen as a global trend (Dalal-Clayton and Sadler, 2005).
Calls for a More Cautious Approach Towards Integration in EIA and SEA

This section is divided into three parts. Section 1 provides some general background. Section 2 identifies five main problems that arise when attempting to integrate the different substantive sustainability aspects within SEA and EIA. Section 3, finally summarises conceptual and theoretical aspects of integration.

Background

EIA and SEA protagonists have promoted integration in EIA and SEA for a number of years, but more recently there have been calls for a more cautious approach. In this context, the greatest concern from those who advocate a better consideration of environmental aspects is that environmental impacts are becoming increasingly traded-off for socio-economic gains. Whilst we acknowledge that: ‘decision-making involves a continuing process of trade-offs among economic, social and environmental objectives, which must be adapted to the location and the circumstances of development’ (Sadler, 1999), we are rather cautious about starting this necessary integration already within SEA and EIA. This is in line with Kidd and Fischer’s (2005) assertion that the increasing emphasis on integrated assessment in Europe and the UK:

‘could be viewed as part of an incremental erosion of the environmental focus within the field of impact assessment as environmental concerns are increasingly subordinated to broader sustainability and governance debates’.

Putting it somewhat more bluntly, Dovers (2002) asserted that: ‘environmental and social issues matter, until it matters economically’. Along similar lines, the Environmental
Protection Authority (EPA) of Western Australia suggested that: ‘traditional thinking is generally based on the model which sees the economy as the main game, with social and environmental issues peripheral’ (EPA, 2004).

Therefore, integrated forms of impact assessment may simply serve to promote dominant economic perspectives over broader sustainability and environmental concerns (Scrase and Sheate, 2002; Kidd and Fischer, 2005). As ‘the drivers of environmental change tend to be economic pressure, and the drivers of economic activity tends to be social needs and demands’ (Ravetz, 2000), no proponent is going to put forward a proposal that is not economically profitable to them and thus economic considerations are implicit in any EIA process. In other words, the emergence of proposals that trigger EIA in the first place are due to socio-economic advantage. Explicit inclusion of socio-economic aspects into assessment as advocated in most integrated SEA and SA models, other than for the purpose of identifying indirect or induced environmental effects, unnecessarily elevates the consideration of economic matters and this comes at the cost of diminished consideration of environmental factors. In this context, Therivel (2004, p. 85) noted that sustainability assessment: “increases the risk that, beneath the comforting rhetoric of integration and ‘joining up’, environmental concerns continue to be marginalised because economic interests continue to have the institutional power”.

**Problems with integration**

There are five main problems for why we think we need to take a cautious approach towards current developments. The first problem is connected with the use of objectives in EIA and
SEA from sustainable development strategies that, in many systems, are insufficiently
defined and work within an overall economic growth paradigm. In the UK, for example, the
national sustainable development strategy (UK government, 1999) aims at four main
objectives, namely:

- social progress which recognises the needs of everyone;
- effective protection of the environment;
- prudent use of natural resources; and
- maintenance of high and stable levels of economic growth and employment.

Here, only economic growth and employment levels appear sufficiently well defined. All
other aspects are open to interpretation. Furthermore, there are problems of compatibility, as
it is questionable whether an effective protection of the environment can be achieved in the
presence of ‘high and stable levels of economic (GDP) growth’.

The second problem is connected with the main driving forces behind the move towards
integration. In the UK, for example, the main drivers of integration are the aims formulated in
the ‘White Paper on Modernizing Government’ (DETR, 1999), revolving around an ‘open
government’ and ‘good governance’. Environmental aspects only play a minor role in this
context. Therefore, generally speaking: ‘integrated appraisal, may reflect a subtle, but
perhaps significant shift in the focus from substantive environmental and sustainability
concerns to the procedural aspects of effective governance’ (Kidd and Fischer, 2005). In this
context, Kidd and Fischer (2005) suggested that the loss of environmental emphasis is a
product of:
An over-reliance on participatory and qualitative methodologies (that) may promote dominant economic perspectives at the expense of sustainability and environmental concerns and result in inadequate appraisal processes.

The third problem is connected with the availability of time and resources to devote to impact assessment. EIA practitioners have long been criticising that in EIA, insufficient time and effort goes into pre-decision activities such as baseline monitoring and other investigations and the preparation of environmental impact statements (EIS) (e.g. Sadler, 1996; Dalal-Clayton and Sadler, 2005). It is likely that the move to integrated SEA and SA processes will further exacerbate this. As Scrase and Sheate (2002, p283) have argued:

‘The limits of time and resources going into any assessment mean that there will necessarily be a loss of depth in consideration of the environment if social and economic objectives and criteria are considered simultaneously’.

The fourth problem follows on from the loss in depth and concerns the way in which the different components of SA are integrated. The previously noted trend for EIA to expand into numerous different categories beyond the biophysical environment, along with the addition of social and economic considerations favoured in integrated SEA and SA processes runs the risk of sustainability assessment taking on the whole world; i.e. people may want to include any possible factor. In this context, there is a real danger that with everything included in the impact assessment process, quantity may eventually overcome quality and no aspect of the assessment is done well.
The fifth and final problem concerns the presentation of sustainability elements to decision-makers regarding the possibility that socio-economic factors are presented or considered more than once during the process (i.e. a kind of ‘double-dipping’) but that the same does not apply for environmental elements. The environmental assessment of plans is supposed to occur in conjunction with normal planning procedures which are based on socio-economic assumptions. In land use planning, for example, most developments considered will relate to socio-economic benefits and the land use plan making process already seeks to trade-off between environmental, social and economic factors to find the optimum land use. SEA comes into this process as an advocacy instrument that is supposed to support the weakest aspect in this trade-off process, namely the bio-physical environment. Therefore, if SEA processes are expanded to include social and economic factors, then double-dipping of these factors will occur and the environment will be disadvantaged (see Kidd and Fischer, 2005; Fischer, 2005). In this context, criticism has been expressed, for example, in Australia at the national level where Dovers (2002, p32) stated that in the federal SEA system:

‘We have the situation where an implicitly lower priority is attached to the discretionary environmental considerations compared to the mandatory economic and social considerations in SEA provisions of the Commonwealth Environment Protection and Biodiversity Conservation Act 1999. That reflects a policy position at odds with sustainability principles, and most importantly allows a ‘double trading off’ of environmental - and probably social-concerns against economic concerns when decisions subject to SEA then are considered by core economic agencies and Cabinet.’
Theoretical and conceptual thoughts

Theoretically, the moves towards integration are often justified based on Habermas’ notion that people inevitably search for acceptable rational arguments in open and fair debates. In this context, EIA and SEA are thought to develop into arenas for conversation among equals. Based on this thinking, consensus building processes are seen to be at the core of democratic decision making. However, there is an increased criticism of this approach based on the conviction that it is impossible to have public debates in which everyone’s opinion is weighed the same (Tewdwr-Jones and Allmendinger, 1998; Voogd and Woltjer, 1999 and Fischer, 2003a). This follows the Foucauldian conviction that it is impossible to create discourse spaces that are free of power (Richardson, 1996) and may be illustrated through the analogy of preparing a meal with various foods; green vegetables, steak and mashed potato. These foods correspond to the environmental, social and economic elements respectively and the diner is the impact assessment decision-maker (Personal communication, J. Arts, August 2004). The options for presenting this meal range from:

- placing the raw ingredients on a plate - which represents a non-integrated delivery of unprocessed data in each of the categories (i.e. little or no value to the diner);
- serving three separate courses of the cooked food in turn on separate plates - which represents three independent and non-integrated assessments (i.e. rather boring for the diner because no taste combinations are possible);
- serving the cooked food in a suitable arrangement on a single plate – which represents a careful integration of independent assessments at the final stage of the assessment process (i.e. the meal is attractively presented and enables the diner to combine the three foods according to their personal tastes); or
• blending the cooked food in a food-processor and serving it as a ‘smoothie’ - which represents an over-integrated approach (i.e. an unappealing grey-brown liquid that tastes bland).

Current procedures for integrated SEA and SA are clearly aimed at the smoothie model which is not in the best interests of the environment. One taste is highly likely to dominate the meal, namely that of the mashed potatoes (i.e. the economic factors).

Based on the aspects presented in this section, we conclude that integration in impact assessment runs the risk that certain elements will be downplayed. Lee (2002) termed this: ‘The risk of impact assessment capture’ whereby ‘one paradigm or set of interests will dominate the assessment process, leading to the neglect of other assessment approaches and/or of particular types of impacts’. Whereas Lee did not single out the environment as being the most likely element to suffer in this way, other commentators have. In this context, Sheate et al. (2003), for example, noted that:

‘Care is needed to ensure the environment is not diminished in decision-making as a consequence of taking a more ‘integrated’ approach through sustainability appraisal (SA). SEA and SA have different objectives.’

Why Do We Need an Environmental Advocacy Tool?

This section considers the question: Why is there still a need for an environmental advocacy tool? Contrary to some common perceptions, there are clear indications that the environmental situation world-wide actually continues to develop in a negative way.
Therefore, and particularly in a world increasingly dominated by the neoliberal agenda, there is an urgent need for an environmental advocacy tool.

We believe that the environment matters more now than ever before, due to human activities altering natural cycles and systems on an unprecedented scale. As Sadler (1996, p12) noted the: ‘risks and impacts are, therefore, more significant than ever before’ in terms of global changes associated with the enhanced greenhouse effect, vanishing species and the hole in the ozone layer. Therefore, EIA and SEA can be regarded to be of vital importance as they provide a basis for designing policies and plans that take account of environmental issues including the management of impacts and risks associated with development activities. It should be added that the need for EIA to act as an environmental advocacy instrument is probably even stronger today as it was when Sadler wrote this nearly a decade ago, with increased levels of biodiversity loss and climate change.

Environment reporting clearly shows the problem of environmental deterioration. The Government of Western Australia (1998, p. 7), for example, in its second state of the environment report (produced five years after the first) stated that: ‘in general, available information shows a steady decline in the condition of the environment and an increase in the pressure humans place on the environment’. National state of environment reporting findings were similar: ‘…the state of the Australian natural environment has improved very little since 1996, and in some critical aspects, has worsened’ (Australian State of the Environment Committee, 2001).
Reporting on Australian environmental trends during the 1990s, the Australian Bureau of Statistics (2002) found that:

- the number of birds and mammals classified as extinct, endangered and vulnerable;
- the annual area of land cleared;
- the area of land affected by salinity;
- extraction of both surface water and groundwater, particularly for agriculture, leading to a continuing deterioration of the health of water bodies; and
- greenhouse gas emissions

had all increased. During the same period of time, they reported that numerous socio-economic conditions (life expectancy, employment, national wealth, national income and disposable income) had all improved (Australian Bureau of Statistics, 2002).

Similarly, news about the worsening health of the European forests clearly raises some concerns, with acidification remaining a yet unresolved problem with figures going up to 92% of all trees being damaged in Poland and hardly any European country scoring less than 50% in this context (Federal Statistical Bureau, 2005). Whereas sulphur emission from industry have dropped by about 25% over the last decade or so, there are estimations that a cut of 80% to 90% would be required to prevent Swedish waters and forests from further damage (Department of Environment and Local Government, undated). Further problems are highlighted by the regular reports of the European Environment Agency on the state of Europe’s environment. For years, these have indicated remaining problems, particularly related to global climate change, tropospheric ozone generation, the marine and coastal environment and soil degradation. Furthermore, levels of waste and raw material consumption have remained at unsustainable levels (European Environment Agency, 2003).
Examples from impact assessment practice

In support of our previous statements that the environment ‘loses out’ in current trade-off processes, this section presents two recent examples from practice in Western Australia and the UK.

Sustainability and assessment in Western Australia

The Western Australian government has recently explored various sustainability initiatives including the development of a State Sustainability Strategy (Government of WA, 2003), a Sustainability Bill 2004 (currently out for public comment) and a trial strategic level assessment in 2002–2003 of the environmental, social and economic issues associated with the Gorgon gas fields. In the Gorgon case, the proponent prepared an ‘environmental, social and economic review’ of the proposal (ChevronTexaco Australia Pty Ltd, 2003) which resulted in Cabinet being presented with strong economic arguments in support for a project with significant and irreversible environmental impacts to a Class A nature reserve (EPA, 2003). Pope et al. (2004, 2005) have criticised the approach used in this assessment and note that owing to the tradeoff process that occurred, it could not be considered to be a true sustainability assessment (i.e. it was a bogus SA approach). A traditional EIA approach would have shown that the government’s consent to the proposal was contrary to the position recommended by the EPA, but without being able to pretend that this was the result of a ‘sustainability assessment’ process. Thus, it is our contention that the explicit inclusion of socio-economic considerations in the assessment process favoured development at the expense of the environment more than might be the case in a traditional EIA process.
During the time that the government was engaged with the Gorgon process and the development of the State Sustainability Strategy, a separate mining proposal in Western Australia was undergoing formal EIA. The proposal would require the destruction of rare flora habitat. At the stage in the process when the EPA had published its report and recommendations on the project to the Minister for the Environment and Heritage, but the Minister had not then made a decision, the Managing Director of the mining company was quoted in the local newspaper as saying:

‘It is a very stressful time. This is absolutely crucial to us, but as I’ve said all along I believe at the end of the day the Government will look at this with its triple bottom line approach of social and economic considerations as well as environmental considerations and make a sensible decision (Weir, 2003a).’

It is clear from this quote that proponents welcome the opportunity to elevate the social and economic benefits of their projects, something that is beyond the scope of current EIA processes in Western Australia. In this case the Minister approved the project with less stringent environmental conditions than those advocated by the EPA, and the announcement of the decision led to an increase in the proponent’s share prices (Weir, 2003b). In a democracy, it is acceptable for the Minister to override the advice it receives from the EPA on socio-economic grounds; however, it is our contention that it is not appropriate to create an assessment process that proponents perceive they can manipulate for a particular outcome as the environment is likely to suffer in most, if not all, cases.
Experiences with appraisal practice in UK land use, waste and resource development planning date back to the early 1990s. Whereas initially, the term environmental appraisal was used with a focus almost exclusively on biophysical factors, since the mid-1990s, economic and social aspects have been increasingly included in the process. As a consequence, appraisals have been increasingly thought of as sustainability appraisals, and more recently the term ‘integrated appraisal’ has also been used (North west Regional Assembly, 2003). This trend to integration has grown stronger, particularly following the introduction of sustainability appraisal for Regional Planning Guidance (DETR, 1998) and the formulation of ideas for ‘modernizing government’ (DETR, 1999). Currently, the main aim of sustainability appraisal is commonly understood as leading to better integration and balancing of economic, social and environmental aspects.

Whilst there aren’t any extensive and comprehensive empirical findings, yet, on whether the move towards more integration has been leading to a better or rather worse consideration of the environment in decision making, there are indications that a somewhat cautious approach should be applied (Benson and Jordan, 2004). This caution is particularly based on:

(a) the government’s own weak interpretation of sustainable development with economic (GDP) growth being at the heart of the national sustainable development strategy (UK Government, 1999, see Sec. 3);

(b) the ‘modernizing government’ agenda (DETR, 1999) as a main driver behind integration, in which the environment does not feature;

(c) the current extent of economic competition of UK regions and boroughs; and
Currently, different localities compete for inward investment. Therefore, it is rather doubtful whether any ‘balancing’ experience done by sustainability appraisal would come up with recommendations unfavourable to inward investment, even if this would mean great environmental benefits. Particularly in many towns in northern England with very fresh memories of economic decline and high unemployment, this is highly unlikely. In this context, it is also interesting to note that regional and local sustainable development strategies have been including more and more economic and social aspects, proportionally speaking, at the expense of environmental aspects (Fischer, 2005).

Regarding initial observations on sustainability appraisal of regional planning guidance (RPG - currently being replaced by regional spatial strategies, RSS), Counsell and Haughton (2002) stated that these had only a minor impact, mainly due to an insufficient integration of planmaking and assessment processes. Furthermore, up until now, regional economic strategies (RES - which, together with RPG/RSS are the main regional references for local planning) have not been subjected to any form of appraisal. Appraisal processes are now often conducted communicatively in a ‘round table’ manner and there are indications that economic players have applied some considerable pressure on other representatives to include certain economic related assessment issues (Fischer, 2005). This observation is in fact in line with the Foucauldian conviction that there are no debates in which powerful actors do not put pressure on others. In addition, there are also problems in terms of transparency in the currently much favoured communicative ‘team appraisal approach’. Looking at the sustainability appraisal of the local unitary development plan (UDP) Oldham, for example,
Fischer (2003b) observed that whilst the over 19 appraisal team members had mostly positive opinions of the appraisal exercise, for all those who weren’t part of this team, it was entirely unclear what had happened during appraisal. Trade-offs had largely been internalised and no reporting mechanisms were in place on what issues and alternatives had been considered at what stage during appraisal, when and why. The appraisal report that was subsequently prepared mainly focussed on a description of the process, without providing much information on substantive aspects.

The Western Australia and UK cases highlight the tension between environmental and economic elements of proposals which may seriously erode attempts at integrated SEA and SA processes. In order to develop a true sustainability approach to impact assessment, we advocate that an EIA/SEA based approach continue to be utilised until such time as a process that does not undermine environmental protection is established. This is further explained in the next section.

**Possible Solutions for Integration of Economic, Social and Environmental Aspects in Planning**

Subsequently, we identify a range of solutions on how to best go ahead with integrating the different substantive sustainability elements in planning. Probably the most important approach is to develop sustainability criteria and indicators which stem from fundamental sustainability principles (George, 2001a; Gibson, 2000, 2005). Here, rather than treat environmental, social and economic elements as individual ‘pillars’, the approach is to start from sustainability principles which are intended to reflect the changes needed in human
arrangements and activities to move towards sustainable behaviours. The assessment process
must be based on objectives ‘by which sustainable development can be defined’ (George,
2001b). This is necessary, because as Gibson (2000) notes the pillars approach tends to pitch
the economic pillar and the environmental pillar as ‘foundations of warring houses’. In this
context, it is important that clear minimum threshold levels are identified for economic,
social and environmental criteria. Sadler (1999, p. 20) identifies different win-lose
relationships against a hypothetical minimum threshold to which trade-offs must conform for
decision-making to be integrated and for development to be classified as sustainable and
notes that: ‘beyond these boundaries, one set of criteria are being either unduly promoted or
unduly discounted against the others’.

In case any of these threshold levels are violated, alternative solutions should be sought, as
otherwise

‘where trade-offs between the economy and the environment are seen as
legitimate in the pursuit of sustainability, sustainability assessment could be
regarded as a means for economic requirements to override those of the
environment or the social context’ (Fuller, 2002).

Prerequisites for achieving sustainable trade-offs

An important prerequisite for effective integration is transparency. In this context, Sheate et
al. (2003) advocated that: ‘Trade-offs should be transparent and carried out by the decision-
making process, rather than by the tool being used’. Similarly, whilst advocating a
sustainability assessment approach, George (2001a) cautions that:
‘When the assessment is done in aggregate, any tradeoffs between individual aspects or components are hidden. A deterioration in quality of life for some social groups may not become apparent, and potentially unsustainable environmental effects may go undetected’.

Rather than focus on separate environmental, social and economic elements in an integrated SEA or SA process, George (2001b), Gibson (2000, 2005) advocate a process in which sustainability criteria and principles are the driving consideration. The aim of assessment would thus be to seek positive gains over all such principles and over the long term. In this context, a number of authors have advocated the definition of sustainability criteria or thresholds which should not be crossed (Sadler, 1999; George, 2001b; Pope et al., 2004, 2005). There are several problems inherent in this approach. For the purposes of assessment it would be crucial to specify in advance what these criteria are in order to allow proposals to be evaluated in accordance with them. This has not been undertaken to date. Secondly, the approach implies that there are certain factors that should not be traded off during the assessment process and yet it is rather unlikely that all sustainability factors can be maintained all of the time. Thus some ‘tradeoffs are likely to occur in practice.

Gibson (2000) established some ‘trade-off decision rules’ to guide the trade-off process. These rules are intended to maximise positive outcomes for all sustainability categories and eliminate net losses or negative effects (Table 1). Proponents would be required to justify their proposals in accordance with these rules as a means of demonstrating the sustainability of their activities.
Subsequently, Gibson (2000) defined a number of process requirements to put such a SA process into effect. These include:

- explicit commitment to sustainability objectives and to application of sustainability based criteria;
- mandatory justification of purpose; and
- provisions for transparency and effective public involvement throughout the process.

This paper has shown that current SA practice neither meets the trade-off rules, nor the process requirements fully. It is, therefore, our conviction that SA, as currently applied cannot be considered an effective tool for supporting environmentally sustainable decisions.

**Conclusions - The Case for Keeping EIA and SEA Alive, at Least for Now!**

This paper has outlined real concerns that the move towards integrated SEA and the practice of SA is leading to an undermining of the representation of environmental concerns in decision-making established from over three decades of EIA. The need for environmental protection is just as important, if not greater, than it was when EIA was first introduced. Thus, it is alarming that impact assessment practitioners are currently running the risk of sacrificing the only tool available that plays a genuine environmental advocacy role. Concerns that the emerging interest in forms of assessment that extend beyond the scope of EIA might lead to its downfall are not new, as the following quote from a decade ago demonstrates:
‘...you could contemplate that EIA has had its time. Certainly some think so, and certainly it has been more effective where it has been young and fresh. I rather think it is having a “downer”. I think that those of us who are practitioners have stopped selling and emphasising the fundamentals of the process, and the value to stakeholders. I guess we have not been sufficiently attentive to the changing public, the changing players and the changing decision-makers to ensure that they are sufficiently involved and informed. I wonder if our introspection on the “sexy new bits” like policy assessment and strategic assessment has meant that we have taken our eyes off the main game (Carbon, 1995, p. 64).’

We acknowledge that current debates about the nature of sustainability assessment in the theoretical literature offer some promise that a genuine SA process might be possible to implement. The EPA (2004) document requirements for achieving a move to genuine SA but note that: ‘it will take time for such processes to develop and gain legitimacy’.

Until such time that a legitimate and (environmentally) robust sustainability assessment process is inscribed in a regulatory framework, let’s not give up on the use of EIA and true SEA, to ensure that the environment is protected and managed in a sustainable fashion. In this context, Therivel (2004) noted the tendency for environmental concerns to be marginalised in the face of economic interests and stated that: ‘by keeping environment
arguments separate, a clear environmental case can be made and environmental constraints clearly stated, so it will at least be clear if they are set aside’.

That current developments in SEA and SA should downplay environmental issues is somewhat ironic and certainly a cause for concern since the driving force behind the development of EIA in the 1970s was to ensure that environmental factors were adequately considered prior to decisions on development proposals being taken. We argue that this need has not changed, and given the extent of national and global environmental degradation, if anything, is greater than it has ever been before.
References


Table 1. Trade-off decision rules for Sustainability Assessment (Gibson, 2000).*

1. Trade-offs in (all or specified) sustainability-related matters are undesirable unless proven otherwise; in other words the burden of proof falls on the proponent of the trade-off.

2. No significant trade-offs with adverse sustainability effects are acceptable. These include:
   - trade-offs of permanent losses against temporary gains;
   - trade-offs of nearly certain losses against highly uncertain gains (precautionary principle);
   - significant compromises to ecological integrity;
   - significant increases in inequity of opportunity and influence;
   - significant increases in energy and material flows, except where the gains address serious deprivation and inequity;
   - trade-offs where the adverse effects are uncertain and the undertaking is not designed for adaptive response; and
   - trade-offs where more than one aspect of sustainability may suffer adverse effects.

3. Only undertakings that are likely to provide neutral or positive overall effects in each principle category (e.g. no net efficiency losses, no net additional inequities) can be acceptable.

4. No significant adverse effects in any principle category can be justified by compensations of other kinds, or in other places (this would preclude cross-principle trade-offs such as ecological rehabilitation compensations for introduction of significantly greater inequities).

5. No displacement of (significant, net, any) negative effects from the present to the future can be justified.

6. No enhancement can be accepted as an acceptable trade-off against incomplete mitigation if stronger mitigation efforts are feasible.

7. Only compromises or trade-offs leading to substantial net positive long term effects are acceptable.

8. No compromises or trade-offs are acceptable if they entail further declines or risks of decline in officially recognized areas of concern (set out in specified official national or other sustainability strategies, plans, etc.).

*Note: The specific of these trade-off decision rules have been amended somewhat in Gibson (2005), but the fundamental tenet remains unchanged.