Conceptualising the effectiveness of impact assessment processes

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ABSTRACT

This paper aims at conceptualising the effectiveness of impact assessment processes through the development of a literature-based framework of criteria to measure impact assessment effectiveness. Four categories of effectiveness were established: procedural, substantive, transactive and normative, each containing a number of criteria; no studies have previously brought together all four of these categories into such a comprehensive, criteria-based framework and undertaken systematic evaluation of practice. The criteria can be mapped within a cycle/or cycles of evaluation, based on the 'logic model', at the stages of input, process, output and outcome to enable the identification of connections between the criteria across the categories of effectiveness. This framework is considered to have potential application in measuring the effectiveness of many impact assessment processes, including strategic environmental assessment (SEA), environmental impact assessment (EIA), social impact assessment (SIA) and health impact assessment (HIA).

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1. Introduction

Conceptualisation of effectiveness as a basis for evaluating impact assessment processes is the main aim of this paper. Impact assessment processes such as environmental assessment (which includes strategic environmental assessment (SEA) and environmental impact assessment (EIA)), social impact assessment (SIA) and health impact assessment (HIA) have been introduced to support the decision-making process with a goal to promote sustainable development (Glasson et al., 2005; Sheate, 2010; Wallington et al., 2007). Although these assessment processes might be employed differently depending on the specific context, their evolution to achieve sustainability is considered as the unifying basis given that health, society and the environment are interconnected whereby changes caused by either of these elements could bring about change(s) in the other(s) (Barrow, 1997; Rattle and Kwiatkowski, 2003; Vanclay, 2004).

However, questions about 'effectiveness' have been raised with a variety of perspectives on what 'matters'. For example, Cashmore et al. (2010) emphasised that the 'complex dynamic' of 'politics and power' should be a key focus when building a theory for measuring effectiveness; Theophilou et al. (2010) also added that 'political issues' could influence the effectiveness of these tools; and Runhaar and Driessen

(2007) pointed out that "values and interests of the main decision makers" (p. 12) could influence how SEA shapes decisions, in other words, how SEA is considered effective.

Other relevant studies have shown that perspectives on the effectiveness of impact assessment (IA) tools have differed widely. For example, Sadler (1996) tended to pay attention to the process and outcomes to ascertain whether the results of the process met the expected purposes, based on three categories of the effectiveness of environmental assessment: procedural, substantive and transactive. Similarly, Taylor et al. (2003) and Birley (2003), in the context of HIA, were concerned about effectiveness in terms of its contributions to policymaking based on the purposes and resources used. Moreover, while Baker and McLelland (2003) evaluated the effectiveness of environmental assessment processes procedurally, substantively and transactively based on Sadler (1996), they added normative effectiveness as an additional category, whilst Kauppinen et al. (2006) added 'learning and changes in views' as another perspective of effectiveness to consider.

Given current threats to the existence of impact assessment in times of global economic recession where effectiveness cannot easily be demonstrated (Bond and Pope, 2012) it is imperative that a greater understanding of the meaning of effectiveness is obtained. The main aim of this paper is, thus, to operationalise a framework for measuring effectiveness in the impact assessment field based on the four categories of procedural, substantive, transactive and normative effectiveness. Furthermore, the paper aims to explore the connections between the various categories of effectiveness using a 'logic model' based on the inputs, activities, output and outcomes identified when evaluating a case study (Yin, 2012). This approach should lead to a more nuanced understanding of the elements which comprise our understanding of effectiveness, and

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help to identify the interdependencies between particular effectiveness criteria that will help both in capacity development (where needed) and further refinement of impact assessment as a tool for achieving sustainable outcomes.

The next section of the paper introduces key (contested) definitions and categories of effectiveness which justify the need for an operationalised framework for measuring effectiveness in the light of current inadequacies of understanding, and partial analyses which focus on some elements of effectiveness at the expense of others. The same section develops a working definition of 'effectiveness' based on the existing literature. This is followed by a section which identifies, from the literature, the key criteria for each of the effectiveness categories thereby building the full effectiveness framework. The fourth section applies the logic model to the effectiveness framework criteria to identify progression in effectiveness throughout the impact assessment processes and examine the interdependencies between different categories of effectiveness (where effectiveness measured against one particular criterion is a precursor of effectiveness based on a different criterion). The final section concludes on the potential value of applying the framework.

2. Effectiveness (contested) definitions and categorisation of effectiveness

2.1. Contested definitions of effectiveness

Effectiveness is a troublesome term which seems to have many different meanings. In terms of its definition, for Young and Levy (1999, p.3), 'effectiveness' is "a matter of contribution that institutions make to solving the problems that motivate actors to invest the time and energy needed to create them". Wimbush and Watson (2000) consider that intended and unintended effects of policies, projects and programmes could be identified as a result of effectiveness evaluation. This suggests that 'effectiveness' can be observed based on the outcome of actions.

In the environmental assessment field, Sadler (1996) defined effectiveness as "how well something works or whether it works as intended and meets the purposes for which it is designed" (p.37). 'Something' in this sense means the 'environmental assessment process' which includes SEA, EIA, HIA and SIA. In addition, the effectiveness of impact assessment processes has been considered to be their influence on decision-making processes in selecting the most appropriate option for the development, based on sustainability measures (Partidário, 2000; Van Buuren and Nooteboom, 2009). Table 1 defines 'effectiveness' based on a number of relevant studies covering SEA, EIA, SIA and HIA.

Table 1 illustrates the wide variety of perspectives that encompass understandings of the term 'effectiveness', and it is clear that there are similarities between the definitions of effectiveness in different impact assessment fields. Effectiveness has been defined based on: the process of the impact assessment; the required resources (i.e. staff, time, cost); the purposes of the impact assessment; the involved actors/stakeholders; the values/interests of decision makers; its contribution to policy development; the learning gained from the process; the changing of perspectives through gained knowledge; and the expectations of interested/involved parties/or stakeholders. Thus it is clear that the effectiveness of the impact assessment process depends on the context and key role(s) in participation among key actors and stakeholders (Jha-Thakur et al., 2009; O'Faircheallaigh, 2009; Stoeglehner et al., 2009; Therivel et al., 2009).

2.2. Effectiveness categorisation

Defining categories of effectiveness is a useful approach for determining effectiveness (Theophilou et al., 2010) and this section derives effectiveness categories along with associated concepts of effectiveness evaluation of impact assessment tools. The descriptions of effectiveness categories are based on the literature.

Table 1
Contested effectiveness definitions regarding impact assessment processes.

Tool	Definition of effectiveness in impact assessment processes
SEA	"How well something works or whether it works as intended and meets the purposes for which it is designed" (Sadler, 1996, p.37).
	"A function of the extent it influences, and adds value, to decision making" (Partidário, 2000, p.647).
	The impact of SEA is "the extent to which SEA recommendations were in line with the values and interests of the main decision-makers" (Runhaar and Driessen, 2007, p.12).
	"The contribution of SEA to the selection of the most sustainable, environmentally friendly planning option" (Van Buuren and Nooteboom, 2009, p.146).
	"A function of design, procedure, substance, as well as transaction, influenced by political issues" (Theophilou et al., 2010, p.136).
EIA	"How well something works or whether it works as intended and meets the purposes for which it is designed" (Sadler, 1996, p.37).
	"The potential outcome of a goal-directed process" (Elling, 2009, p.129).
SIA	The quality of "facilitating the political mobilization of affected communities and allowing the renegotiation of power relationships between affected groups, corporations and governments" (O'Faircheallaigh, 2009, p.99).
HIA	"How HIA works, contributes and is accountable in public policy development based on resources used and stated aims" (Taylor et al., 2003, p.2).
	"How HIA contributes to positive changes in project and policy design that take account of the need to safeguard and enhance human health, and that they are cost-effective" (Birley, 2003, p.313).
	The extent of "achieving goals, impact on decision-making, and learning and changes in views" (Kauppinen et al., 2006, p.1036).
	"The capacity to influence the decision-making process and to be taken into account adequately by the decision-makers" (Wismar et al., 2007, p.15).

Sadler (1996) divided effectiveness for environmental assessment into three categories; procedural, substantive, and transactive. He suggested that procedural effectiveness means that the assessment complies with acceptable standards and principles, substantive effectiveness shows the achievement of expected objectives, and transactive effectiveness is achieved where the outcomes are obtained with least cost in the minimum time frame. This conceptualisation of effectiveness has been adopted/adapted/borrowed by other scholars researching in the impact assessment field since, for example, Baker and McLelland (2003) and Theophilou et al. (2010).

Baker and McLelland (2003) added normative effectiveness to the suite of categories developed by Sadler (1996). Bond and Morrison-Saunders (2013, p.45) argued that normative effectiveness reflected the extent to which normative goals, defined as a "combination of social and individual norms", were achieved. They also suggested that pluralism and knowledge and learning critically influence effectiveness.

Therefore, based on the review, effectiveness can be divided into 4 categories; procedural, substantive, transactive, and normative. Table 2 presents these categories substantiated with quotes from the relevant literature.

Referring to Table 2, 'procedural effectiveness' relates to the principles governing impact assessment processes (Sadler, 1996). To measure procedural effectiveness of practice, consideration of the way in which policy or procedures were implemented is required (Baker and McLelland, 2003). Bina (2007) added that the effectiveness should be able to frame the methodological dimension as well as develop the process based on implemented techniques. Furthermore, it was stated that findings and information as a result of an effective impact assessment report, for example, for an SEA process, should be clear and robust when delivered to decision-makers (Therivel, 2010).

'Substantive effectiveness' relates to the achievement of the agreed objectives of the impact assessment tool (Sadler, 1996). Baker and McLelland (2003) concur with this view, whilst Theophilou et al. (2010) emphasised that substantive effectiveness is demonstrated when changes are made to the policy, plan, or programme being assessed. Wallington et al. (2007) proposed that the "substantive purpose of SEA should be environmental sustainability" (p.572). However,