



MURDOCH RESEARCH REPOSITORY

This is the author's final version of the work, as accepted for publication.

Bond, A., Morrison-Saunders, A. and Stoeglehner, G. (2013)
Designing an effective sustainability assessment process. In: Bond, A., Morrison-Saunders, A. and Howitt, R., (eds.)
Sustainability Assessment Pluralism, Practice and Progress. Routledge, Taylor & Francis Group, Oxon, UK, pp. 231-244.

http://researchrepository.murdoch.edu.au/6742/

Copyright: © 2012 Taylor and Francis Group.

It is posted here for your personal use. No further distribution is permitted.

Chapter 15: Designing an effective sustainability assessment process

Alan Bond, University of East Anglia

Angus Morrison-Saunders, Murdoch University and North-West University Gernot Stoeglehner, University of Natural Resources and Life Sciences Vienna

15.1 Introduction

At this stage of the book it should be clear that sustainability assessment is very complex and sustainability assessment needs careful design if it is to help to achieve sustainable development. Chapters 3 and 8 have set the scene for considering what matters in sustainability assessment, while chapters 9-12 provided examples of some existing practice which is summarised in this chapter in order to highlight the critical areas which need to be addressed if practice is to be considered effective (judged by our own evaluation framework). Chapters 13 and 14 dealt specifically with the issues of *pluralism* and *knowledge and learning* and we recognise that these are critical to effective Sustainability Assessment, and have provided some insights on the best ways forward.

This chapter aims to help future practitioners navigate through the sustainability assessment design process. We argue that it is not (necessarily) appropriate to pick an off-the-shelf process, but that it is necessary to gain an understanding of the ways in which sustainability assessment will influence outcomes, values and perceptions so that it is designed to be fit-for-purpose. Indeed, the practice chapters have made it clear that in some countries, whilst the approaches taken have a sustainability remit, this in no way relies on formal or legal process requirements. In designing sustainability assessment, our argument is that an effective assessment process seeks to achieve the six imperatives of sustainability (as set out in Chapter 1 by Gibson), which must always be considered as criteria against which the process will be tested, through achieving effectiveness in all aspects of the evaluation framework. If efforts are not made to achieve effectiveness in all aspects, there will be a gap between the aspiration of the assessment process and the goals which are achieved.

Part 4 of this book (including chapters 13-17) is about providing solutions to common problems which can arise during practice or be levelled at sustainability assessment by practitioners reluctant to change their ways and embrace the challenges such an approach demands. It is always easier to criticise than it is to find answers, but our aim here is to build on what we believe is already commendable practice and to take sustainability assessment to a new and higher level.

We begin by summarising what has been established, that is, what has been learned about process in practice through chapters 7, and 9-12 in this book. Then, drawing on the literature, we establish principles for ensuring that sustainability assessment will be effective. In order to do this, there is a brief consideration of the theoretical framing of 'effectiveness' to try and ensure that the principles are not valid through one theoretical 'lens' only. We then move on to a conceptualisation of the linkages between the effectiveness criteria, and the sustainability imperatives established by Gibson in

chapter 1 – this conceptualisation allows further principles to be derived which accommodate all of the inter-linkages identified, and so provides a robust means of developing practice in sustainability assessment.

15.2 Summary of practice

15.2.1 Procedural effectiveness

In general, it seems that legal and administrative provisions for sustainability assessment procedures are well respected in the jurisdictions addressed in this book. If there is a particular requirement to do something, it can be expected that it will be done and there is little to suggest that current regulations are inadequate to the task of enabling a robust sustainability assessment process to be established within their remit. There is, however, some concern over the extent to which some tasks are conducted adequately (for example, in England there is a question mark over the extent to which alternatives are properly covered, and in South Africa there is some frustration over the actual sustainability benefits accruing from following set procedures), which indicates a direct relationship with substantive effectiveness. In short, sustainability is not likely to be achieved if appropriate procedural steps are not followed, but the evidence suggests that the procedural steps are generally being followed. Furthermore the ability to implement sustainability assessment in large part in the absence of formal expectations or requirements to do so, as the examples from Western Australia demonstrate, offer hope that practitioners can transcend procedural limitations and still achieve good outcomes. Overall what the situation demonstrates is that the procedural steps themselves are inadequate on their own for achieving sustainable outcomes at present.

15.2.2 Substantive effectiveness

The views on substantive effectiveness between jurisdictions vary. In Canada, England and Western Australia sustainability assessment has been found to change plans or even decisions in some cases (e.g. in Canada). In South Africa, sustainability assessment to date has not been seen to have directly changed plans, but to have indirectly had influence through raising knowledge and learning, and even influencing policy. So a direct link between the procedure undertaken and knowledge and learning can be seen in South Africa. In the other countries, despite the apparent positive influences of sustainability assessment, some frustrations remain that the changes were often minor, and the outcome was a move in the direction of sustainability, not actual attainment of 'sustainable development'. The challenge remains for all current and future practitioners of sustainability assessment to push sustainability thinking into mainstream and 'business-as-usual' approaches to impact assessment and decision-making.

15.2.3 Transactive effectiveness

With respect to transactive effectiveness, in jurisdictions where forms of sustainability assessment are conducted as a legal requirement, the analysis suggests that proponents and governments express some discomfort over the time the assessments take and the expense. However there is also a feeling that improvements are possible and, indeed, likely as experience with sustainability assessment is gained and opportunities taken for tiering, whereby information and knowledge gathered at one level of decision making is passed down to the next, e.g. from plans down to projects (see, for example, Sánchez and Silva-Sánchez, 2008). In Western Australia, sustainability assessments are not

mandatory and, where conducted, are considered by the proponents investing in them to be an efficient use of time and money. One could suggest that the difference between these two positions reflects one situation where sustainability assessments are undertaken for which (at least some) key stakeholders consider it valuable or necessary (in Western Australia), and another where sustainability assessment is undertaken much more widely because of legal requirements. In the latter case, it might be argued that no dialogue has taken place to debate the merits (or otherwise) of undertaking sustainability assessment (beyond the initial enactment of legal requirements for sustainability assessment), and the approach taken is less flexible than in Western Australia.

15.2.4 Normative effectiveness

Achieving normative effectiveness appears to be a major challenge in all jurisdictions examined in this book. The South African case is perhaps representative of practice in that the normative principles outlined by Gibson in chapter 1 are all mandated as goals of the process. However, there is little, if any, measurement of the extent to which these goals are actually achieved. As already discussed at the outset of this chapter, measurement of success in conducting assessment is still largely focussed on procedural compliance, and not on the achievement of normative goals. In Canada, where there are many separate jurisdictions, practice varies and some (limited) success is reported. In both Western Australia and England, there are concerns about whether the process is really reversing unsustainable trends (evidence suggests it just slows the trend towards unsustainability), over trade-offs whereby the processes still seem to set economics against the environment, and over demonstrating mutually reinforcing gains. All jurisdictions claim openness and transparency with respect to the sustainability assessment process, but it is not clear that this openness is mirrored in the decisionmaking process in which firm choices for the trade offs must necessarily be determined. The normative concept of sustainability on which a sustainability assessment is based influences the design of process as well as specific tools and methods applied, as described in Chapter 16 (where strong sustainability is pursued). Therefore, a certain amount of normative framing for designing process, tools and methods has already taken place, and effectiveness is then more likely when viewed through the same frame only. Svarstad et al. (2008) make exactly this point in relation to application of the Drivers-Pressures-State-Impacts-Responses (DPSIR) framework, an approach for providing and communicating knowledge on the state of, and causal factors for, environmental issues that has been adopted by the scientific community and environmental agencies in most developed countries, the United Nations, Organisation for Economic Co-operation and Development, European Environment Agency, etc. (see, for example, European Environment Agency, 2006; Organisation for Economic Co-operation and Development, 2008). Therefore, judging normative effectiveness has at least two levels: on the level of the individual process it has to be assessed whether the norms adopted in the sustainability assessment agree with the norms laid out in the respective framework (for instance, the weighting of objectives, the consideration of trade-offs etc.). On the second level, there needs to be reflection on whether the sustainability assessment frameworks actually pursue sustainable development. The result of this reflection can be twofold and connects to issues of knowledge and learning: if frameworks are sufficient, but practice is not sufficiently promoting sustainability, education of practitioners to facilitate instrumental learning may resolve

existing problems. If the normative base laid out in the sustainability assessment framework is not adequate and/or precise enough, the values and norms underlying the sustainability assessment have to be changed, which calls for conceptual learning. Drafting such sustainability assessment frameworks means making normative decisions which reduce the possibilities to accommodate normative pluralism in sustainability assessment, as it might not be possible to, for instance, pursue strong and weak sustainability at the same time, so these decisions have to be made cautiously and consciously.

15.2.5 Pluralism

The typical position in relation to the plurality of sustainability assessment is that certain authorities with a statutory remit to be consulted are engaged properly. However, the position regarding members of the public in England and Western Australia is that opportunities for comment are provided, but this does not necessarily equate to a genuine engagement and incorporation of views. Already, this raises concern that the divergent views of sustainability, and whether weak or strong sustainability framings should be pursued, are not being debated. In South Africa, there is no specific research to draw on, but it seems clear that those who do not like the decision are not happy about their engagement opportunities. In Canada, very large and contentious projects seem to cater well for stakeholder engagement, including participative hearings and funding to support citizen groups to gather evidence (this is not a cheap undertaking); smaller projects tend to suffer from the same problems as found in England and Western Australia. Clearly there is considerable scope to improve the plurality of sustainability assessment practice through greater engagement, although the examples provided in Chapter 13 of the complexity of engagement in culturally diverse pluralist settings, highlights the incumbent challenges which lie ahead.

15.2.6 Knowledge and learning

All experience suggests that knowledge and learning has been enhanced by sustainability assessment. This learning may benefit regulators, proponents and other affected stakeholders alike; the burgeoning published literature on sustainability assessment (such as that cited in this book) points to learning and knowledge sharing in the academic and practitioner communities. However, there is no clarity over the exact mechanisms taking place, or the extent to which learning is instrumental or conceptual. Also of concern is that practice suggests that learning is largely restricted to the sustainable assessment community, including proponents, consultants, decision makers and consultees. Indeed, in Western Australia, the restriction of learning to this community was specifically noted, whilst in South Africa, the need to engage with 'value-based' and 'experiential' knowledge as opposed to traditional 'scientific' knowledge was recognised. Only in Canada has some evidence of participant learning been identified (with the inference being that the public are participants in the process). The goal for learning is clearly to achieve instrumental and conceptual learning in any sustainability assessment process, particularly within key stakeholders like decision makers, planners, proponents on the one hand, and the interested and affected public on the other hand.

However, at present, there has not been research examining the extent to which sustainability assessment has led to institutional learning, and it will be a particular

challenge for researchers to distinguish between true conceptual learning and political learning where improvements are purely symbolic.

15.3 Some reflections on the theory of effectiveness

All impact assessments have been founded on the principle that they provide evidence to decision makers so that they can make a better decision (although the notion of a 'better decision' is ambiguous given the plurality of views associated with the definition of sustainable development – as explained in chapter 3). This is the rational underpinning for impact assessment which was explained by Cashmore and Kørnøv in chapter 2. However, there are two key points that warrant initial consideration when thinking about sustainability assessment effectiveness. Firstly, Cashmore and Kørnøv made it clear that there are many other models for the way that decision making works and that rational consideration of evidence by decision makers alone is not generally accepted to reflect reality (see, for example, Lawrence, 1997; Bartlett and Kurian, 1999; Cashmore et al., 2009). Tools like sustainability assessment can be manipulated by decision makers (who may have individually compelling political pressures or agendas) which can undermine the principle that sustainability assessment is seeking to make better decisions. This point is dealt with in the following chapter which specifically addresses issues surrounding the integration of sustainability assessment into decision making. Secondly, decision makers in most (democratic) countries are elected, which is a governance principle which is rigorously defended. More pluralism (a principle which is being strongly advocated in this book) has been argued to lead to poor governance in situations where an emphasis on participatory and qualitative approaches presents poor evidence about sustainability impacts, based on a lack of technical understanding of cause and effect relationships (Kidd and Fischer, 2007; Bond et al., 2011). What this means is that science and expertise is vital, but that this must be properly embedded in normative expectations. Sustainability assessment may contribute to make clear distinctions between the participatory negotiations of values, and the science based examination of facts as well as aggregation of values and facts (rational-collaborative planning paradigm, see chapter 16, Stoeglehner, 2010). Therefore, sustainability assessment might cater for a clear division of tasks between decision-makers, involved stakeholders and public, science and expertise concerning issues of content as well as process design. In this way sustainability assessment might help to not only broaden the information base and clarifying the value base for the decision, but also to reveal power relations as well as inherent interests and hidden values, and increase normative and substantive effectiveness while facilitating learning and incorporating pluralism.

We accept there is validity in different theoretical perspectives, and agree with Cashmore *et al.* (2004) that there is a need for theory building to better understand the potential for impact assessment to contribute to sustainable development. Such theory building can usefully support practice 'on-the-ground' and help resolve issues and dilemmas faced by sustainability assessment practitioners.

15.4 Connecting criteria and imperatives

In order to be effective, the evaluation framework presented in chapter 8 would suggest that the normative imperatives need to be achieved, and so sustainability assessment

needs to be designed with this in mind. Figure 15.1 connects the imperatives with the evaluation framework criteria from chapter 8. This conceptualisation of the cross linkages presents an opportunity to consider the key aspects of sustainability assessment that need to be considered in order to deliver a robust and effective process. As with any conceptualisation, it simplifies the actual situation in terms of linkages in order to reduce complexity and allow its use as something of a design tool. Nevertheless, it draws on our current understanding of practice, and the evaluation framework introduced in chapter 8, in order to map out how the sustainability imperatives identified in chapter 1 can be achieved. Figure 15.1 is not mapping out an integrated approach to sustainable development; Hacking and Guthrie (2008) commented on the complexity of the term 'integration', indicating that a link between procedure and 'integrating factors affecting sustainability' is questionable. However, in this context, the imperative is that there is an understanding of the importance of the interactions between the various influencing factors on sustainability, and that institutions typically struggle to work across disciplinary boundaries and institutional (or institutionalised) boundaries.

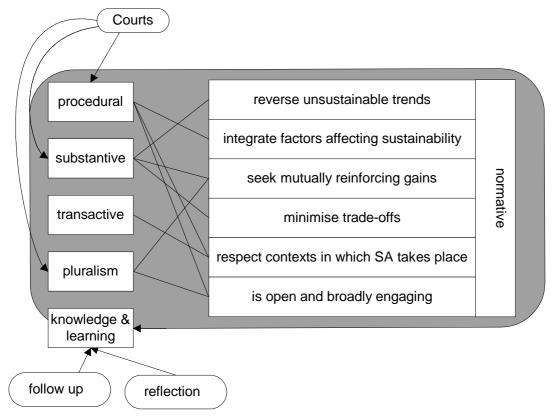


Figure 15.1 Inter-linkages between effectiveness criteria for sustainability assessment

Having presented the sustainability imperatives as a component of normative effectiveness, in line with the evaluation framework presented in chapter 8, consideration has then been given to the inter-linkages with other effectiveness criteria. Procedural effectiveness has to be interpreted within the context of the sustainability

assessment conducted in any particular jurisdiction. In chapters 9-12 it was made clear that assessment can have a legal basis, or be conducted on a voluntary basis. Whichever of these is the case, clearly the particular steps or activities undertaken as part of the sustainability assessment have implications for the outcomes. Procedure does not change mindsets, but can demand dialogue to enhance interactions, and can impose methodological approaches which try to deal with interaction (as in the English case described in chapter 9). Most important for procedure is that it not only supports individual rights of access to information and opportunity for consultation, but that it allows for learning experiences in dialogues between decision-makers, planners (and proponents), stakeholders and the public, which is the subject of the next chapter. In democratic societies, the fact that environmental decision-making is subject to a certain amount of public participation (normally information and consultation) is understood and, to a degree, enforceable by the Courts. Both sustainability assessment procedures and practice, and the associated decision-making context can demand particular levels of involvement going beyond consultation – and there is a need to ensure these are truly open and broadly engaging.

Substantive effectiveness relates more to the outcomes of conducting sustainability assessment (see Chapter 8). This is an area where, traditionally, the Courts do not intervene, both because it is rarely possible to link cause and effect in relation to outcomes with so many contributing variables, but also because decision-makers are allowed discretion to make their decisions provided that procedures have been followed. The right to make those decisions has been mandated through the democratic process and it is not for the Courts to intervene. In Chapter 6, it was demonstrated that the Courts have little power to ensure sustainable decisions are made! For substantive effectiveness, the immediate goal has to be to move away from the existing trend of unsustainable development. To an extent, this can be exacerbated by sustainability assessment itself, where often it is predicated on the basis of ranking, whereby the least worst plan wins (see, for example, Thérivel *et al.*, 2009). In these circumstances, it is essential that the conduct of sustainability assessment be changed to a situation where the outcome is paramount and seen as the determining factor in decision-making.

An issue here is related to these imperatives being normative and, therefore, the definition of what a sustainable outcome is may vary between those affected. Hence another critical determinant of substantive effectiveness is the extent to which the gains are mutually reinforcing. This overlaps with the imperative of minimising trade-offs in that more universal agreement that sustainable outcomes will be achieved depends on an attitude that all the pillars of sustainability are seen to be improving, rather than one or two at the expense of the others. This means not treating the sustainability assessment process as an end in itself, but treating the desired sustainability outcome as the end point which should influence assessment activity. We suggest that sustainability assessment practitioners must be ever vigilant on realising this and responding accordingly throughout any assessment activity; this involves a degree of reflection, as recommended by Burgess et al. (2007) and Chilvers (2007), which is dependent on follow up providing some evidence for the outcomes resulting from sustainability assessment. In the context of the Courts, the Strategic Environmental Assessment Directive (European Parliament and the Council of the European Union, 2001) states, in its Article 10 on Monitoring "Member States shall monitor the significant

environmental effects of the implementation of plans and programmes in order, <u>inter</u> <u>alia, to identify at an early stage unforeseen adverse effects, and to be able to undertake</u> <i>appropriate remedial action". It remains to be seen how Courts will interpret this particular Article; the Directive was adopted in 2001 and Member States had until 21st July 2004 to adopt it. It has since been applied to plans and programmes which, for the most part, are in force for ten to fifteen years or longer. The implications of this Article text are, therefore, yet to be tested, but the inference is clearly that unpredicted impacts have to be identified (i.e., there must be some follow up) in order to empower decisionmakers to carry out some form of reflection to see what the difference is between the vision and the reality after the action has been implemented, and either resolve the unforeseen impacts or choose the accept them.

Transactive effectiveness is pragmatic. There is little to be gained by spending more time and money on an assessment than is warranted by the decision context. The cost and resource implications of conducting sustainability assessment should be considered as part of the assessment process – whereby the social, economic and environmental benefits and costs of the assessment itself are considered part of the project, plan, activity etc being considered. In most cases, the assessment should have negligible footprint overall and so should not be influencing sustainability outcomes. However, in situations where a sustainability assessment may be so time-consuming and costly that it risks affecting the ability of the decision-process to accommodate it, then it must necessarily be redesigned. Yet, transactive effectiveness is relative. It largely depends on the perception of sustainability assessment as being something useful. This perception is dependent on the other effectiveness issues, like substantive, normative etc. and on the experiences different stakeholders have already have with it. If sustainability assessment supports decision making in some effectiveness dimensions this creates 'ownership' (Stoeglehner et al., 2009) of it by respective stakeholder groups and changes the value base for judging transactive effectiveness (see also chapter 16). With respect to SEA practice, Thérivel (2004) provides some SEA design examples tailored to different time and money resourcing constraints such as how to carry out an SEA using a one person day of resources compared to 10 person days and 100 person days, with the level of effort therefore being proportional to the scale of the proposed activity. The idea is not to compromise on quality or outcome, but simply to pragmatically 'cut your cloth according to your means'; we suggest sustainability assessment could be guided by similar thinking.

Pluralism has been a central theme of this book, as it is critically bound with normative interpretations of sustainability (Jansen, 2003; Bond *et al.*, 2011; Bond and Morrison-Saunders, 2011). Sneddon *et al.* (2006) argue that pluralism must be embraced where multiple interpretations of sustainable development exist and, in the context of sustainability assessment, this means multiple interpretations of the goals of the process. Partly, this is aligned with the imperative that the process is open and broadly engaging, as this is the basis of integrating pluralism into the process. It also partly aligns with the imperative of seeking mutually reinforcing gains as the pluralism of views about the desired gains can lead to conflict. Accommodating pluralism will not automatically lead to sustainable outcomes and Chilvers (2007) stresses the need for reflection as a means of evaluating the connection between process and outcomes. Yet, incorporating pluralism might support sustainability assessment to reach a more holistic view of the

values to be considered in decision-making. This calls for participatory dialogues to agree on joint visions for sustainable development to be applied as a normative base in the assessment process. It also helps individual stakeholder or interest groups to reflect their own values and adjust them in order to reach sustainable development. In recent years, there has been a move for the Courts to exercise some jurisdiction over public participation (i.e. facilitating some level of engagement with a population likely to have very different views) through instruments like the Aarhus Convention (United Nations Economic Commission for Europe, 1998), although it is clear from Chapter 6 that there is some way to go before there is a consistent legal basis to ensure equal funding for all parties affected by a particular decision.

Knowledge and learning are not directly aligned with the normative imperatives in the conceptualisation presented in figure 15.1. However, we consider that progress towards sustainable development will be a learning process, and that considerable reflection will be needed on the extent to which normative imperatives are being achieved through the sustainability assessment process, and how the process is helping or hindering their achievement. Bond et al. (2010) found that knowledge needs to be managed in an impact assessment process, and a learning approach needs to be adopted in order to accommodate plurality of views and move towards sustainable decision-making. Runhaar et al. (2010) indicate that actors involved in impact assessment selectively interpret knowledge generated through the process as they are subject to a variety of discourses which act as filters that sieve the relevant from the irrelevant. The end result can be that dominant discourses take over and knowledge which is inconsistent with them can be ignored (although knowledge is no less valid simply because it does not support certain discourses). They recommend reflection to ensure that knowledge is used in decision making. Sinclair et al. (2009) trialled a community-based approach to strategic environmental assessment based around critical reflection exercises, and found that the approach offered considerable potential, not least because the critical reflection reduced the power differentials between workshop participants, which otherwise might have favoured dominant discourses (as suggested by Runhaar et al., 2010). One means of reflection familiar to impact assessment practitioners is the use of follow up (Arts and Nooteboom, 1999; Morrison-Saunders and Arts, 2004). This is the practice of checking on the performance of the impact prediction after the action that is the subject of the assessment has become operational. Sánchez and Morrison-Saunders (2011) found that, in Western Australia, knowledge was not captured from follow up activities, and new knowledge was not generated; the conclusion here is that knowledge also needs to be managed. Hunsberger et al. (2005) recommend community involvement with monitoring and follow-up as this can produce results which are more locally meaningful, and can help to accommodate pluralism. An inescapable conclusion is that sustainability assessment must be designed such that learning ('instrumental' and 'conceptual' as explained in Chapter 8) is facilitated and knowledge is impartially managed and effectively used.

15.5 Better process?

In this chapter, the learning from the previous chapters in terms of the effectiveness criteria has been summarised, and an attempt has been made to conceptualise the links between the effectiveness criteria and sustainability imperatives. One thing that is clear

is that no single model for effectiveness adequately explains decision-making, and so if the sustainability imperatives are to be achieved, some attention needs to be paid to each of the criteria. Based on the analysis, a set of principles can be proposed which provide the basis for conducting any sustainability assessment practice; these principles are derived based on the linkages detailed in figure 15.1 and explained above. Principle 1: pluralism must be accommodated throughout the sustainability assessment, including the initial definition of desirable sustainability outcomes, and then throughout as implications of decisions are analysed. There is an opportunity for such engagement to be embedded in statute to allow enforcement through the Courts. However there is nothing stopping practitioners from encouraging pluralistic engagement irrespective of legal arrangements.

Principle 2: the focus for the assessment must be on the sustainability of the outcome, not just the completion of expected steps in the assessment process. This means not stopping an assessment at the stage where outcomes are known, but continuing an iterative process of design and assessment until the outcomes are sustainable.

Principle 3: trade-offs and pluralism must not mix. Innovative approaches might be needed to design for gains across all pillars of sustainability, but this should be a requirement rather than an exception. One simple starting point to encourage practice in this direction would be to revise the mitigation hierarchy; currently this advocates 'avoid', 'reduce', 'abate', 'repair', 'compensate', enhance' as the essential steps to be conducted, in the order written (Mitchell, 1997; Tinker *et al.*, 2005). However, we would advocate placing 'enhance' on the top of the mitigation hierarchy – the present emphasis on 'avoid' and 'minimise' obviously are not enough to meet the sustainability imperatives identified in Chapter 1.

Principle 4: there must be a presumption that sustainability assessment process and practice can always be improved. Sustainability or sustainable development is a moving target, and sustainability systems are dynamic; there will be no steady state that can be definitively categorised as being 'sustainable' but rather the opportunity to be 'more sustainable' should be evident. Reflection, adaptability and ongoing learning are requisite for the continuous improvement this principle anticipates.

Principle 5: Process facilitates outcomes – and design facilitates good process. The discussion about process versus outcomes has to be approached from a different angle: process has to be designed in a way that principles 1-4 can be embedded in any particular sustainability assessment (see also chapter 16). Procedural design is a means to embed the complexity of the linkages between the dimensions of effectiveness within the decision making and assessment process.

These principles are few and straightforward. However, reference to chapters 7 and 9-12 makes it clear that they are not universally applied, and from this we can begin to explain some of the weaknesses in effectiveness that were identified in those chapters and summarised in this chapter. Assessment needs to move on from the fixation with procedure and emphasise instead the outcome, acknowledging that there is much to be learned about how desirable outcomes might be achieved in any particular context. In terms of enforcement, this can be especially challenging given the complexity of multiple intervening factors which can affect sustainability outcomes. However, there are still opportunities to enforce the principles through procedural requirements for appropriate engagement, for follow up, and for demonstrating that the approach taken in a given situation has maximised the gains across all pillars of sustainability. Such an approach may entail added burdens in terms of engagement and open-ended timescales for assessment when follow up is considered. In the context of transactive effectiveness, we would argue that sustainability assessments are proportional to the activity being assessed, as advocated by Thérivel (2004). Sustainability assessment with an outcome focus rather than a procedural focus is likely to be a much better way to achieve sustainable outcomes and, as a welcome by-product, to avoid future litigation.

References

- Arts J and Nooteboom SG (1999) "Environmental Impact Assessment Monitoring and Auditing". In Petts J (ed.) Handbook of Environmental Impact Assessment - Vol.1 Environmental Impact Assessment: Process, Methods and Potential (Oxford: Blackwell Science) 229-251.
- Bartlett RV and Kurian PA (1999) "The Theory of Environmental Impact Assessment: Implicit models of policy making", *Policy & Politics*, 27(4), 415-433.
- Bond A, Dockerty T, Lovett A, Riche AB, Haughton AJ, Bohan DA, Sage RB, Shield IF, Finch JW, Turner MM, Karp A (2011), "Learning how to deal with values, frames and governance in Sustainability Appraisal", *Regional Studies*, 45(8), 1157-1170.
- Bond AJ and Morrison-Saunders A (2011) "Re-evaluating Sustainability Assessment: aligning the vision and the practice", *Environmental Impact Assessment Review*, 31(1), 1-7.
- Bond AJ, Viegas CV, Coelho de Souza Reinisch Coelho C, Selig PM (2010) "Informal knowledge processes: the underpinning for sustainability outcomes in EIA?", *Journal of Cleaner Production*, 18(1), 6-13.
- Burgess J, Stirling A, Clark J, Davies G, Eames M, Staley K, Williamson S (2007) "Deliberative mapping: a novel analytic-deliberative methodology to support contested science-policy decisions", *Public Understanding of Science*, 16(3), 299-322.
- Cashmore M, Bond A, Sadler B (2009) "Introduction: The effectiveness of impact assessment instruments", *Impact Assessment and Project Appraisal*, 27(2), 91-93.
- Cashmore M, Gwilliam R, Morgan R, Cobb D, Bond A (2004) "The interminable issue of effectiveness: substantive purposes, outcomes and research challenges in the advancement of environmental impact assessment theory", *Impact Assessment and Project Appraisal*, 22(4), 295-310.
- Chilvers J (2007) "Towards Analytic-deliberative Forms of Risk Governance in the UK? Reflecting on Learning in Radioactive Waste", *Journal of Risk Research*, 10(2), 197 222.
- European Environment Agency (2006) Integration of environment into EU agriculture policy the IRENA indicator-based assessment report. Report No.2/2006 (Copenhagen: European Environment Agency).
- European Parliament and the Council of the European Union (2001) "Directive 2001/42/EC of the European Parliament and of the Council of 27 June 2001 on the

assessment of the effects of certain plans and programmes on the environment", *Official Journal of the European Communities*, L197, pages 30-37.

- Hacking T and Guthrie P (2008) "A framework for clarifying the meaning of Triple Bottom-Line, Integrated, and Sustainability Assessment", *Environmental Impact Assessment Review*, 28(2-3), 73-89.
- Hunsberger CA, Gibson RB, Wismer SK (2005) "Citizen involvement in sustainabilitycentred environmental assessment follow-up", *Environmental Impact Assessment Review*, 25(6), 609-627.
- Jansen L (2003) "The challenge of sustainable development", *Journal of Cleaner Production*, 11(3), 231-245.
- Kidd S and Fischer TB (2007) "Towards sustainability: is integrated appraisal a step in the right direction?", *Environment and Planning C*, 25, 233-249.
- Lawrence DP (1997) "The need for EIA theory-building", *Environmental Impact* Assessment Review, 17, 79-107.
- Mitchell J (1997) "Mitigation in Environmental Assessment Furthering Best Practice", *Environmental Assessment*, 5(4), 28-29.
- Morrison-Saunders A and Arts J (eds.) (2004) *Assessing Impact: Handbook of EIA and SEA Follow-up* (London: Earthscan).
- Organisation for Economic Co-operation and Development (2008) *Environmental Performance of Agriculture in OECD Countries since 1990* (Paris: OECD).
- Runhaar H, Runhaar PR, Oegema T (2010) "Food for thought: Conditions for discourse reflection in the light of environmental assessment", *Environmental Impact Assessment Review*, 30(6), 339-346.
- Sánchez LE and Morrison-Saunders A (2011) "Learning about knowledge management for improving environmental impact assessment in a government agency: The Western Australian experience", *Journal of Environmental Management*, 92, 2260-2271.
- Sánchez LE and Silva-Sánchez SS (2008) "Tiering strategic environmental assessment and project environmental impact assessment in highway planning in São Paulo, Brazil", *Environmental Impact Assessment Review*, 28(7), 515-522.
- Sinclair AJ, Sims L, Spaling H (2009) "Community-based approaches to strategic environmental assessment: Lessons from Costa Rica", *Environmental Impact Assessment Review*, 29(3), 147-156.
- Sneddon C, Howarth RB, and Norgaard RB (2006) "Sustainable development in a post-Brundtland world", *Ecological Economics*, 57, 253–268.
- Stoeglehner G (2010) "Enhancing SEA effectiveness: Lessons learnt from Austrian experiences in spatial planning", *Impact Assessment and Project Appraisal*, 28(3), 217-231.
- Stoeglehner G, Brown AL, and Kørnøv L (2009) "SEA and planning: 'Ownership' of SEA by the planners is the key to its effectiveness", *Impact Assessment and Project Appraisal*, 27(2), 111-120.
- Svarstad H, Petersen LK, Rothman D, Siepel H, Wätzold F (2008) "Discursive biases of the environmental research framework DPSIR", *Land Use Policy*, 25(1), 116-125.
- Thérivel R (2004) Strategic Environmental Assessment in Action (London: Earthscan).
- Thérivel R, Christian G, Craig C, Grinham R, Mackins D, Smith J, Sneller T, Turner R, Walker D, Yamane M (2009) "Sustainability-focused impact assessment: English experiences", *Impact Assessment and Project Appraisal*, 27(2), 155-168.

Tinker L, Cobb D, Bond A, Cashmore M (2005) "Impact mitigation in environmental impact assessment: paper promises or the basis of consent conditions?", *Impact Assessment and Project Appraisal*, 23(4), 265-280.

United Nations Economic Commission for Europe (1998) Convention on access to information, public participation in decision-making and access to justice in environmental matters (Geneva: United Nations Economic Commission for Europe, Committee on Environmental Policy) 28 pages.