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Chapter 10: Learning by doing: sustainability assessment in Western Australia

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10.1 Introduction

Western Australia covers one third of the Australian continent, is home to only slightly more than 10% of the national population, and accounts for around 44% of Australia's exports (DFAT, 2010). Its economic strength derives from the exploitation of the state's rich mineral resources, which include crude oil, natural gas, iron ore, gold, nickel, copper and other metals (DFAT, 2010). Western Australia also has a long and strong tradition of project-based environmental impact assessment (EIA) to which these major extractive projects are subject. For example, in his comparative review of EIA performance for around a dozen jurisdictions worldwide, Wood (1994, p.333) stated that: "*Widely perceived as a comprehensive and effective EIA system, Western Australia's EIA process is of particularly comparative interest*". One strength singled out by Wood (1994) is the independent Environmental Protection Authority (EPA) which administers and reports on EIA to the Minister for Environment.

However the scope of EIA in Western Australia is limited in legislation to mainly consideration of biophysical impacts (Bache *et al.*, 2006). The *Environmental Protection Act 1986 (EPAct)*, under which EIA in Western Australia occurs, contains some sustainability provisions; these were added as s4A in the 2003 amendments to the Act, a time when the State Government was actively pursuing sustainability assessment initiatives as noted in Chapter 7. Specifically s4A of the *EPAct* specifies that the object of the Act is to protect the environment of the State, having regard to the precautionary principle; intergenerational equity; intragenerational equity; the principle of the conservation of biological diversity and ecological integrity; principles relating to improved valuation, pricing and incentive mechanisms; and the principle of waste minimisation. While the EPA does give some consideration to these principles in its application of EIA, ultimately it has not substantially deviated from its traditional focus on biophysical considerations.

The evolution of sustainability assessment in Western Australia has been characterised by a willingness on the parts of government, proponents and the community to experiment and to adopt a 'learning by doing' approach to this emerging decision-aiding tool, underpinned by a commitment to generating better outcomes from development for the community as a whole, as well as to 'make a case' for development projects. Early sustainability assessment processes were led by government and integrated with the formal project assessment and approval processes, including EIA, and therefore were examples of *external* sustainability assessment (see Chapter 7). Increasingly, however, proponents ranging from major corporations to small local governments have embraced and experimented with *internal*

forms of sustainability assessment that guide their internal planning and decision-making processes. In some cases these processes are conducted in the early stages of a project that is subsequently subject to statutory EIA, but in others, particularly at more strategic levels of planning, it is undertaken purely for reasons of good governance.

In this chapter we describe some diverse Western Australian case studies of sustainability assessment, some of which were introduced in Chapter 7, highlighting innovative approaches to sustainability assessment as they have emerged in Western Australia in the absence of any statutory mandate or formal process. We draw primarily upon our experiences as practitioners and researchers in conducting this analysis. We conclude by presenting our findings within the framework for comparing and evaluating sustainability assessment practice established in Chapter 8.

10.2 The Evolution of Sustainability Assessment in Western Australia

Although a number of organisations had been making efforts to incorporate sustainability thinking and planning and decision-making for some time, the term ‘sustainability assessment’ came into common use in Western Australia in 2002 with the publication of the draft Western Australian State Sustainability Strategy, followed by the final Strategy the following year (Government of Western Australia, 2002; 2003). One early example of sustainability assessment was the Perth’s Water Futures study conducted by the then Water Authority of Western Australia (now the Water Corporation) in 1995 which utilised a multi-criteria analysis (MCA) approach to select between water supply options. Although the terminology was not used, the criteria reflected sustainability considerations (Water Authority of Western Australia, 1995).

The 2003 State Sustainability Strategy included commitments that Government would undertake sustainability assessments of complex and strategic projects, and that government agencies would apply sustainability assessment in internal decision-making. While the latter commitment was never fully implemented, the period 2002-2005 saw two significant proposals subject to external regulatory sustainability assessment: the Gorgon Gas Development on Barrow Island (hereafter ‘Gorgon’) and the South West Yarragadee Water Supply Development (hereafter ‘SWY’). A change of Premier in Western Australia in January 2006 saw the Government-led sustainability agenda quietly disappear, taking any active promotion of this form of sustainability assessment with it.

At this point the centre of gravity of sustainability assessment practice shifted from Government to proponent activities. In the hands of a range of proactive proponents, including some from the resources sector but also public infrastructure providers and local governments, sustainability assessment practice has continued to evolve in different forms, arguably benefiting from the common language and understanding that emerged from the Government-led processes. A body of sustainability assessment practitioners has emerged, and although the group is more disparate than it probably was during the Government’s period of experimentation with sustainability decision-making, it is alive and well, as evidenced by robust attendance at two Sustainability Assessment Symposia convened in

Perth in 2008 and 2010 (the proceedings of which are available at www.integral-sustainability.net).

10.3 The Practice of Sustainability Assessment in Western Australia

In this section we present some examples and case studies of sustainability assessment from Western Australia. We commence by focusing in some detail on the two Government-led sustainability assessment processes, before sketching the contours of current proponent-led sustainability assessment practice.

10.3.1 External Regulator-led Sustainability Assessment

The Gorgon and SWY assessments were conducted by Government, with the co-operation and collaboration of the relevant proponents, in the absence of any legal frameworks and in accordance with an active policy of ‘learning by doing’. These case studies have been examined in some detail (DoIR, 2004; Pope *et al.*, 2005; Newman, 2006; Pope and Grace, 2006; Pope, 2007). They have also been introduced in Chapter 7 of this book, and their salient characteristics are summarised below.

Gorgon Gas Development on Barrow Island

The Gorgon assessment, conducted in 2002-2003 by the Government of Western Australia (Pope *et al.*, 2005, Pope and Grace, 2006), represented the first example of a sustainability assessment (but actually referred to as an ‘integrated strategic assessment’, acknowledging that it represented a step forward but perhaps not one that truly deserved the sustainability assessment label) undertaken as part of a formal project assessment and approvals process in Western Australia. The purpose of the process was to support the decision as to whether or not access would be granted to Barrow Island for the purposes of the proposed development.

The proposed development was unlikely to be found to be acceptable under the statutory (biophysically-oriented) EIA process due to the potential for significant environmental impacts on Barrow Island, which had been a Class A Nature Reserve (i.e. the highest level of conservation protection status possible in Western Australia, requiring approval from both houses of Parliament to be amended) since 1910 and which has unique and internationally significant conservation values. In line with commitments made to introduce sustainability assessment processes for complex and strategic projects (Government of Western Australia, 2002; Independent Review Committee, 2002) it was decided that a new, integrated assessment process would be trialled for this highly controversial proposal. The intention was that a sustainability-oriented assessment process would permit a more thorough and transparent examination of the strategic, social and economic, as well as the environmental implications of the proposal, and form a more appropriate basis for decision-making.

The environmental assessment process was modelled on EIA as conducted in Western Australia, with the environmental assessment by the EPA mirrored by a non-statutory assessment of the strategic, social and economic implications of the proposal which was

undertaken by an Expert Panel of consultants appointed by the Western Australian Department of Industry and Resources (DoIR). A scoping document was prepared identifying relevant strategic, environmental, social and economic issues; the proponent was required to prepare a draft Environmental, Social and Economic (ESE) Review which was then released for public comment; a final ESE Review was prepared, taking into consideration comments made; and then the EPA and the Expert Panel provided their advice to the Western Australian Cabinet, charged with making the decision. The Conservation Commission of Western Australia, the body in which the conservation estate is vested, also provided advice to Government on the conservation implications of the proposal.

One of the key limitations of the Gorgon assessment was the extremely limited consideration given to alternative locations for the development. The proponent, ChevronTexaco and its joint venture partners had announced its intention to develop the Gorgon gas fields and argued that Barrow Island was the only commercially viable location for the necessary processing and shipping facilities, and this was the premise for the assessment process that followed. The proponent's own site selection analysis was reviewed by the Expert Panel, but under a confidentiality agreement to protect commercially sensitive data. A peer review of the proponent's MCA methodology applied to the site selection process found it to be flawed but no comprehensive, transparent assessment of alternative locations on the mainland was undertaken. Hence the decision faced by Cabinet was either to grant access to Barrow Island or not. This decision would clearly involve significant trade-offs whichever way the decision went, and the situation was exacerbated by a lack of clear sustainability objectives or criteria upon which to base the assessment (Pope *et al.*, 2005).

It was unsurprising to most commentators that the EPA and the Conservation Commission recommended to Cabinet that the development should not be allowed to proceed on environmental grounds, particularly the risk of the introduction of invasive animal and plant species into Barrow Island's sensitive ecosystem (EPA, 2003; Conservation Commission of Western Australia, 2003), while the Expert Panel recommended for the proposal on the grounds of positive socio-economic and state strategic benefits (Allen Consulting Group, 2003). Cabinet ultimately came down in favour of proceeding with development. Following the initial in-principle approval by Cabinet of the proposal, the proponent was required to submit more detailed development proposals as part of the formal EIA process; once again the EPA recommended against the project proceeding but was overruled and formal development approval granted by the Environment Minister. At time of writing the project is under construction.

South West Yarragadee Water Supply Development

The SWY sustainability assessment commenced soon after the completion of the Gorgon assessment, and although it was also a regulatory assessment process the approach taken was markedly different. The proponent was the Water Corporation of Western Australia, the government-owned water utility, and the proposal involved the extraction of 45 GL/day of groundwater from an aquifer approximately 300km south of Perth. From previous

planning exercises, the Water Corporation had identified this source as the next most suitable water source to supply the city of Perth and connected areas. The purpose of the sustainability assessment was therefore not to compare this option with any others but to determine the most sustainable way to develop the resource. The starting point for the assessment was a conceptual design or a 'rubbery proposal' (Pope and Grace, 2006).

The Water Corporation worked closely with the Western Australian Government to develop the process steps and the governance structure for the sustainability assessment, drawing heavily from the lessons learnt from Gorgon. Key improvements introduced included: the assessment process commenced before the proposal was finalised, and therefore had elements of both internal and external sustainability assessment; clear sustainability objectives were established early in the process; a non-statutory Sustainability Panel (modeled on the Canadian Panel approach to environmental assessment under the Canadian *Environmental Assessment Act* 1992 - see Chapter 11) was formed to provide integrated advice to Government alongside the environmental advice provided by the EPA through the statutory EIA process; and the social, economic and environmental implications of the proposal were reviewed within an integrated sustainability context by both the Sustainability Panel and the project team.

The assessment followed an iterative process, whereby the proposal was evaluated against the defined sustainability objectives, and modified if required to ensure a better performance against all the objectives (Strategen, 2006). Tensions between apparently competing environmental and social objectives were resolved by reframing the concept design. The result was a proposal that was demonstrably more sustainable than the original, and one which initially at least appeared to have more community support. Both the Sustainability Panel and the EPA recommended that the project proceed, albeit with extensive conditions attached to guide and monitor the development in order to ensure acceptable outcomes would be delivered (EPA, 2006a; Sustainability Panel, 2006).

However, although the sustainability assessment process up until this point was generally considered to have been successful, community opposition increased in the period leading up to the Government decision. In response, the Premier of Western Australia rejected the proposal and in the same moment announced the construction and location of the Southern Seawater Desalination Plant (Perth's second desalination plant) in order to meet water supply demands (Carpenter, 2007). This was deeply ironic given that this decision was derived from an almost completely opaque process, in stark contrast with the rejected SWY proposal. That desalination plant was subjected to normal EIA and is nearing completion at the time of writing.

10.3.2 Internal Proponent-led Sustainability Assessment

By definition, sustainability assessments undertaken by proponents to inform their own decision-making processes are *internal* sustainability assessments (Pope, 2006). Several different forms can be distinguished, one particularly common application being the evaluation of options (commonly site options) using techniques such as multi-criteria analysis (MCA) using criteria reflecting a range of sustainability considerations. Another

distinct and interesting trend is that proponents are increasingly undertaking social impact assessments (SIAs) and developing social impact management plans (SIMPs) even though these are not required under Western Australian law. These are often made public, and sometimes incorporated into the proponent's statutory EIA documentation. It is worth highlighting here that the proponents themselves recognise the value of presenting their projects within a sustainability context.

Site Selection Sustainability Assessment

In 2005 BHP Billiton voluntarily engaged in what can be classified as a sustainability assessment for the purposes of identifying a site to locate a new LNG plant for processing natural gas from the Scarborough field 250km offshore from the north-west coast of Western Australia (URS, undated).

The process commenced with the identification of all potentially suitable coastal locations within 400km of the gas field based on broad regional constraints. One of these sites was on Barrow Island, in the vicinity of the Gorgon gas development site, but this was rejected because it was considered to be contrary to the BHP Billiton Corporate Charter. The short list of eight potential sites was subjected to evaluation against a specified set of environmental, socio-economic and safety hazard risk factors, or criteria (but not including financial considerations). Transparency and community consultation and participation throughout the process were fundamental parts of the methodological approach (URS, undated).

Only once a favoured site emerged from the sustainability assessment process did BHP Billiton carry out an engineering cost-benefit analysis of the potential sites; it turned out that the chosen site was the most cost effective solution. Following this sustainability assessment process, BHP Billiton then proceeded into the formal EIA process for the LNG plant at the chosen site which was subsequently approved and the project is currently being implemented.

More recently, the Northern Development Taskforce (NDT) appointed by the Government of Western Australia undertook a sustainability-oriented MCA process in 2007-2008 to identify an appropriate site for a proposed multi-user precinct for the processing of natural gas from the Browse Basin in Western Australia's Kimberley Region (NDT, 2008). If the Precinct is established, individual project proponents will have the opportunity to develop projects within the precinct for the purpose of processing natural gas from the offshore Browse Basin. The Precinct site selection process incorporated several stages, and the EPA provided strategic advice to Government on the environmental implications of the final shortlist of four sites (EPA, 2008).

Similar MCA-based sustainability assessment processes have been undertaken for the purpose of selecting sites for public infrastructure such as water treatment plants and power transmission lines. These processes have usually involved extensive community engagement, with community members often given the opportunity to weight the sustainability criteria in terms of their significance to the decision, as input into the MCA.

Other Options Evaluation Sustainability Assessment

Options other than site selection options have also been subject to sustainability assessment processes grounded in MCA. For example, the Water Corporation's Water Forever project utilised a two-tier sustainability assessment process to evaluate the sustainability of a range of water supply options for Perth as input to long-term planning (Water Corporation, 2008); and the Sir James Mitchell Park tree planting project in which alternative landscape plans were subject to sustainability assessment to determine the most appropriate way for a municipal council to plant additional trees on a section of iconic parkland adjacent to the Swan River in accordance with a 2001 foreshore management plan (City of South Perth, undated).

The respective proponents of these projects had different incentives for integrating a form of sustainability assessment with their planning and decision-making processes. In the case of the Sir James Mitchell Park project, the City of South Perth's main goal was to demonstrate a robust and transparent decision-making process with opportunities for community involvement that would provide decision-makers (in this case elected local councillors) confidence that the proposal to plant trees would deliver sustainable outcomes for the City, that the recommended landscape plan represented the most sustainable option, and that interested members of the community had provided input and the majority were supportive of the proposal (Pope and Klass, 2010).

In the case of the Water Forever process, however, the sustainability assessment contributed directly to the development of a portfolio of water supply options intended to provide Perth and surrounds with climate-change resilience over the next 50 years (Water Corporation, 2009). *Water Forever* involved extensive community consultation and the identification of a broad range of potential future water supply options. The 35 options included new water source developments (e.g. surface and groundwater), desalination, wastewater recycling and reuse schemes, changing water use behaviour and individual water supply and reuse schemes (e.g. household rainwater tanks and backyard grey-water systems).

A two-step multi-criteria analysis (MCA) process, with environmental, social and economic criteria, was used to rank the water options in terms of their sustainability performance. The first step was a high level screening aimed at eliminating any options considered unsustainable with the second providing a ranking of the remaining options according to their overall sustainability performance, highlighting particular strengths and weaknesses. In this case the purpose was not to identify a single 'most sustainable' option but to understand the sustainability implications of a range of options from which a robust portfolio of options could be identified (Water Corporation, 2008).

Environmental and Social Impact Assessments

Another trend that can be distinguished is that project proponents, particularly proponents of major resource projects, are increasingly voluntarily conducting SIAs as a supplement to their EIAs, despite the lack of statutory requirement to consider anything other than

biophysical environmental impacts (and some related social impacts such as impacts caused by noise and dust). Technically this is a re-emergence given that a Social Impact Unit existed within the State Government in the early 1990s - see Beckwith 1994.

Two examples by proponents discussed in this chapter, are ChevronTexaco's Wheatstone LNG Project (ChevronTexaco, 2010), and the Water Corporation of Western Australia's Southern Seawater Desalination Plant (GHD, 2008). Given that it is also common practice for proponents to include in their EIA documentation some analysis of the potential economic benefits of their project, proponents are effectively making a sustainability statement in their project documentation, which is released for public comment as part of the EIA process. The irony is that the EPA as the regulator to which this documentation is submitted then only assesses the biophysical component of the proposal to determine its environmental acceptability, leaving the social (and economic) dimensions with nowhere to go from a regulatory assessment and approvals perspective. In their initial assessment of site selection for the Browse LNG Precinct the EPA (2008, p.14) stated: "*there is no formal process in Western Australia for the assessment of socio-economic impact or indeed for their integration with environmental issues into a sustainability assessment*". For this particular assessment they highlighted some of the important social issues brought to their attention by participants in the assessment process "*to ensure that their importance is not lost*" (EPA 2008, p.14) but stated that it is only "*the environmental aspects of these analyses on which it is qualified to comment*" (EPA 2008, p.14).

The strategic assessment of the proposed Browse LNG Precinct, which is well advanced at the time of writing, is a good example of a proponent recognising that their 'social licence to operate' depends upon a robust consideration of social impacts and a public demonstration of how they intend to manage these impacts and deliver benefits to the local community. As discussed previously, the identification of a suitable site for the Precinct was the responsibility of the Government-appointed NDT, which utilised a form of MCA-based sustainability assessment. The proposed Precinct on the site determined by the NDT process (James Price Point, approximately 60km north of the major tourist destination of Broome) is now subject to strategic assessment. The proponent in this case is the Western Australian Department of State Development (DSD) on behalf of the Government of Western Australia (for documentation on this project see <http://www.dsd.wa.gov.au/8249.aspx>). As might be expected, the potential social impacts of the proposed precinct are significant, particularly on the town of Broome and the Aboriginal communities close to the proposed site, especially since it would represent the first industrial development of this scale in the West Kimberley. Following what is arguably becoming standard practice, the proponent has undertaken a comprehensive SIA as part of its strategic assessment report. At the time of writing, DSD's strategic assessment report is being assessed by the Western Australian EPA (under the *EPA Act* 1986) and the Federal Department of Environment, Water, Sustainability, Population and Communities (under the *Environment Protection and Biodiversity Conservation Act* 1999). The extent to which social impacts will be considered in their assessment and recommendations to the respective Governments remains to be seen.

10.4 Procedural effectiveness

The absence of any formal requirement to conduct sustainability assessment in Western Australia means that each sustainability assessment process is developed on a case-by-case basis in response to an identified need or opportunity. Given that some of the case studies discussed in this chapter are examples of external, regulatory sustainability assessment (conducted for the purpose of determining whether or not a proposal should be approved) while others reflect internal processes informing project planning and development (conducted to select between options), it is not surprising that approaches to sustainability assessment have varied considerably. However, it can also be observed that each process incorporated some common steps: the identification of relevant sustainability issues (which in some cases were developed into clear objectives or criteria); assessment of the performance of the proposal or the options with respect to these issues; some level of community and stakeholder engagement; and a final decision by a nominated decision-maker, either a regulator or internal to the organisation as appropriate.

The processes developed for the two case study examples of external, regulatory sustainability assessment (Gorgon and SWY) were structured around the statutory EIA process, which provided a robust and well-established structure upon which to build. However, the Gorgon case clearly demonstrated the limitations of simply adding a parallel strategic, economic and social ‘stream’ to a reactive EIA process. As discussed above, this approach left no opportunity to consider the dimensions of sustainability in an integrated fashion, and no scope to consider alternatives, particularly alternative locations for the development. While demonstrating ‘comprehensiveness’ in its scope, it performed poorly in terms of ‘integratedness’ and ‘strategicness’, two of the dimensions of best practice sustainability assessment identified by Hacking and Guthrie (2008).

In contrast, the SWY sustainability assessment process commenced sufficiently early in the project planning process to allow the findings of the assessment process to inform the project definition. Sustainability considerations were discussed by both the project team and the Sustainability Panel in a holistic and integrated fashion, and this led directly to an amended project concept that provided an opportunity to deliver on two sustainability objectives that had previously been in conflict. The Sustainability Panel also represented an innovative improvement over the Gorgon process with respect to governance, enabling the provision of a clear recommendation to Cabinet based upon a holistic, sustainability-oriented assessment of the proposal. We conclude that the SWY process not only aligned with established EIA practice but demonstrated significant progress (from Gorgon) towards the evolution of an effective sustainability assessment process.

The two forms of proponent-driven sustainability assessment practice that have emerged, namely the use of MCA techniques with a sustainability orientation to distinguish between options during planning, and the undertaking of SIA and development of SIMPs, are based upon well-established methodologies.

10.5 Substantive effectiveness

The substantive effectiveness of sustainability assessment can be demonstrated by changes in process, actions or outcomes. With respect to process developments, we believe that the lack of stipulated process for sustainability assessment may be a strength, since it allows for flexibility in process design that demonstrates learning from experience. We believe that the SWY process was significantly better than the Gorgon process, for example, for reasons highlighted in the previous section, and know from our personal experience that the developers of the SWY process drew significantly upon the lessons learnt from Gorgon. It is unfortunate that political support for this experimentation, and for sustainability assessment in general, has waned, leaving us with no further examples of external regulatory sustainability assessment to explore.

It also appears likely that the lessons learnt from Gorgon, particularly the criticism directed at the process for failing to adequately address alternative sites, may have encouraged proponents to adopt sustainability assessment methodologies to support site selection processes. The Pilbara LNG site selection case study was one example, and the practice has become common in a range of organisations, including the state-owned power and water utilities.

There is also anecdotal evidence that the Gorgon case study prompted policy and process improvements beyond sustainability assessment practice. For example, ChevronTexaco was required as part of the sustainability assessment process to demonstrate 'net conservation benefit', effectively a biodiversity offset. At the time there was no policy in place outlining how this should be achieved, but within two years, the EPA had released its draft Position Paper on Environmental Offsets (EPA, 2006b). Environmental offsets have now become a normal part of conventional EIA practice in Western Australia (e.g. Hayes and Morrison-Saunders, 2007) being incorporated into the *Environmental Impact Assessment Administrative Procedures 2010* (*Government Gazette*, 26 November 2010, No. 223: 5979-6000, Perth, s2) as a way to counterbalance adverse residual environmental impacts remaining after other mitigation measures have been exhausted.

Similarly it can be argued that the rejection of the SWY proposal by Government precipitated the highly transparent and inclusive planning initiative of *Water Forever*, which belatedly provided the strategic context for the SWY proposal.

Considering outcomes from a slightly different perspective, in the case of the Sir James Mitchell Park tree planting project the sustainability assessment provided structure and legitimacy to a decision-making process that would otherwise have been conducted behind closed doors. Based upon previous attempts to plant additional trees on the park, any proposal by the City of South Perth would have been strongly opposed by certain groups within the community and would have been unlikely to have been successfully implemented. Thus the sustainability assessment enabled quite a different outcome from what might otherwise have been expected.

10.6 Transactive effectiveness

The fact that sustainability assessment has been entirely voluntary in Western Australia and yet practice is established is testimony to perceived value by proponents and regulators. Although we have limited ourselves to only a few examples in this chapter, we can point to other practice including some consultancy firms who have taken the lead and encourage or even 'require' their clients to adopt a sustainability assessment approach to what would otherwise be conventional EIAs (e.g. Elliott, 2008).

Attendance at the two Sustainability Assessment Symposia in Western Australia over the past few years (over 90 participants in each case) again demonstrates that sustainability assessment is alive and well in Western Australia, and that practitioners (proponents and consultants to proponents) are convinced of its value.

Involvement in sustainability assessment processes has in some cases also been personally rewarding for those involved, as discussed in Chapter 7 in relation to the SWY assessment.

10.7 Normative effectiveness

In terms of reversing prevailing unsustainable trends, it is perhaps unrealistic to expect too much from individual projects given some of the systemic pressures on the environment, society and economy but in a project-only context sustainability assessments including Gorgon, SWY and the proposed Browse LNG Precinct have attempted to deliver positive outcomes rather than just minimise adverse effects (notwithstanding that for Gorgon this was contentious because of the unique nature of Barrow Island such that no amount of mitigation or compensation was considered acceptable by the EPA (2003) in the event of a loss of biodiversity values on the island).

The site selection processes for the Pilbara LNG plant, Browse LNG Precinct and various public infrastructure projects have likely chosen the best possible option from a sustainability assessment perspective although there must inevitably be negative impacts associated with the actual development activity. Similarly *Water Forever* has set up a mechanism for enabling future water sources to be selected from a portfolio of choices rather than the narrow single option focus of SWY.

Integration is at the heart of sustainability assessment practice, and arguably its motivation. Government and proponents alike can see that it makes sense to consider proposals (or options) in a holistic way. Even in the Gorgon example, which was not successful in this respect, integration was an underpinning goal of the process.

All processes exhibited a reasonable degree of openness and transparency, although this is not to say that improvements in stakeholder engagement and empowerment cannot continue to be advanced. Where Gorgon was based in large part on consultation and opportunities for the public to comment on project documentation, many of the other case studies demonstrate considerable investment in active community engagement and

participation in the decision and implementation of the sustainability assessment processes. This is to be expected, since one of the main incentives for assessing and communicating the sustainability implications of a proposal or option is to obtain social legitimacy.

Overall with respect to impact assessment practice in Western Australia it is too early to be able to lay claim to having 'turned the ship around' in terms of charting a course towards sustainability, but at least the emerging sustainability assessments have resulted in practitioners starting to ask the right questions that will help movement in this direction.

10.8 Pluralism

There is a long tradition of stakeholder consultation surrounding development projects in Western Australia associated with EIA practice. However the extent to which this rises above 'consultation' per se to more engaging forms of interaction and participation is highly variable.

Of the case studies discussed, Gorgon probably most represented a traditional Western Australian EIA approach where most of the public input was attained through formal public review stages (i.e. public submissions on development proposals that the proponent is expected to respond to). In other cases there was much greater evidence that proponents openly and actively consulted affected persons: for example many of the MCA processes offered community members an opportunity to weight the sustainability criteria.

10.9 Knowledge and learning

There is clear evidence that instrumental learning within individual sustainability assessments, reflected in changes to project design and assessment practices. Conceptual learning was particularly evident in the SWY case where the development concept itself was revised as a result of the sustainability assessment, and we suggest that an integrated, holistic and collaborative approach to sustainability assessment that embraces the pluralism inherent in the process is essential to initiate this form of learning.

Without regulatory requirements to guide sustainability assessment practice there has been an opportunity to experiment with different designs and approaches, and Western Australian practitioners have reflected on what has been learned from attempting and carrying out sustainability assessment and taken the trouble to analyse it and to share experiences and theoretical ideas in published materials. Overall we would argue that a spirit of knowledge and learning prevails in Western Australian practice with sustainability assessment, notwithstanding that most of that learning probably resides principally with the relatively small number of practitioners (e.g. consultants and some senior officials within regulatory agencies) involved in the case studies and experiences to date. Not until sustainability assessment is widespread or 'mainstream' practice would we expect broader learning across the entire community.

10.10 Concluding remarks

The absence of regulatory requirements to undertake sustainability assessment has not hindered enlightened proponents and regulators from initiating their own processes and practices. The *ad hoc* nature of practice is overall best characterised as 'learning by doing'. We take a cautiously optimistic view here that practice and interest is growing over time. Early attempts at sustainability assessment initiated by the Government of Western Australia appear to have whetted the appetite for more recent proponent and consultant led approaches, which seek to realise the benefits of taking a more holistic approach to development planning and impact assessment activities.

The most recent emphasis has been on strategic assessment, which both the government and private sector appear to be keen to pursue. While from a regulatory perspective strategic assessment in Western Australia predominantly has an environmental emphasis (i.e. formally it occurs under the *EPA* Act), there are signs that the scope is expanding into socio-economic issues too. What remains to be seen is whether sufficiently sophisticated governance mechanisms will be put in place to ensure that the socio-economic aspects of development in the State of Western Australia will be managed into the future.

Of course there remains much that can still be improved. While our 'score-card' against the sustainability assessment framework criteria (summarised in Table 10.1) is generally positive, perhaps though the ultimate test for future progress surround the six sustainability imperatives identified by Gibson in Chapter 1. For example, there is no real evidence yet that the sustainability assessments carried out in Western Australia can demonstrate that existing unsustainable trends are being reversed. However if nothing else the initial attempts at sustainability assessment in Western Australia have started to put important sustainability issues into the mind-set of practitioners and the public and attempts are being made to better adopt an integrated approach, address trade-offs and engage more effectively with the community and affected parties. This is an important start and Western Australia has a valuable foundation upon which to continue building effective sustainability assessment processes and practice.

Table 10.1 Sustainability Assessment Scorecard for Western Australia

Framework Criterion	Questions Asked	Western Australian perspective
Procedural effectiveness	<i>Have appropriate processes been followed that reflect institutional and professional standards and procedures?</i>	Sustainability assessment processes in Western Australia have been developed on a case-by-case basis reflecting context and evolving expertise, building upon well-established practices such as EIA, SIA and MCA.
Substantive effectiveness	<i>In what ways, and to what extent does sustainability assessment lead to</i>	There is evidence that development proposals have been improved through the application of sustainability assessment process during project planning. Furthermore, the practice of sustainability

	<i>changes in process, actions, or outcomes?</i>	assessment itself has continued to evolve and mature as proponents and regulators have learnt from others' experiences. Sustainability assessments have also identified policy and strategic gaps that have subsequently been addressed.
Transactive effectiveness	<i>To what extent, and by whom is the outcome of conducting sustainability assessment considered to be worth the time and cost involved?</i>	The fact that proponents and regulators are volunteering to engage in sustainability assessments in the absence of any legal requirement to do so strongly implies that they see benefit from taking such an approach and therefore the cost and time investment is worthwhile.
Normative imperatives	<i>In what ways, and to what extent does the sustainability assessment satisfy the listed normative imperatives?</i>	It is still early to judge just how effective sustainability assessment practice in Western Australia is with respect to the six normative principles. While having open and engaging processes is a normal part of any impact assessment activity and there is increasing respect for the complexity and context within which sustainability assessment takes place, challenges remain with integration, dealing with trade-offs and demonstrating that mutually reinforcing gains will be delivered by development activity that will reverse prevailing unsustainable trends.
Pluralism	<i>How, and to what extent are affected and concerned parties accommodated into and satisfied by the sustainability assessment process?</i>	Communities are increasingly demanding that they are involved and have influence in sustainability assessment, and the notion of 'social licence to operate' is understood and respected by proponents and regulators. However community engagement practices can still be significantly enhanced to ensure movement from 'consult and comment' approaches to active engagement and empowerment.
Knowledge and learning	<i>How, and to what extent does the sustainability assessment process facilitate instrumental and conceptual learning?</i>	There is clear evidence of instrumental learning, and in some cases conceptual learning, where sustainability assessment has directly influenced the development of proposals. An integrated, holistic and collaborative approach to sustainability is essential for the conceptual learning potential of sustainability assessment to be realised. Conceptual learning about sustainability assessment itself is also continually evident within the practitioner community.

References

- Allen Consulting Group (2003) *Proposed access to Barrow Island for Gas Development: Advice on social, economic and strategic considerations. A report to the WA Department of Industry and Resources*. Perth, Allen Consulting Group. [Online] Available at: <<http://www.allenconsult.com.au/publications/view.php?id=283>> (accessed 13 September 2011).
- Bache S, Bailey J, Evans N (1996) "Interpreting the Environmental Protection Act 1986 (WA): Social impacts and the environment refined", *Environmental Planning and Law Journal*, 13, 487-492.
- Beckwith J (1994) "Social Impact Assessment in Western Australia at a Crossroads", *Impact Assessment*, 12(2), 199-213.
- Carpenter A (2007) *Second seawater desalination plant to be State's next major water source*. Ministerial Media Statement 15/7/07. [Online] Available at: <<http://www.mediastatements.wa.gov.au/Pages/Results.aspx?ItemID=128275>> (accessed 13 September 2011).
- ChevronTexaco (2010) *Draft Environmental Impact Statement/ Environmental Review and Management Programme for the Proposed Wheatstone Project: Executive Summary*. ChevronTexaco, Perth, Western Australia. [Online] Available at: <http://www.chevronaustralia.com/Libraries/Chevron_Documents/Wheatstone_Draft_EIS_ERMP_Executive_Summary.pdf.sflb.ashx> (accessed 13 September 2011).
- City of South Perth (undated) *Sir James Mitchell Park Tree Planting Project Draft Sustainability Assessment Report* (City of South Perth, Western Australia) [Online] Available at: <http://old.southperth.wa.gov.au/sustainability/pdf/DraftSustAssessReport_JP_v6Final.pdf> (accessed 19 July 2011).
- Conservation Commission of Western Australia (2003) *Biodiversity conservation values on Barrow Island Nature Reserve and the Gorgon Gas Development: Advice to Government from the Conservation Commission of Western Australia*. (Crawley, WA: Conservation Commission of Western Australia).
- DFAT – Department of Foreign Affairs and Trade (2010) *Western Australia Fact Sheet*, Government of Australia. [Online] Available at: <<http://www.dfat.gov.au/geo/fs/wa.pdf>> (accessed 7 September 2011).
- DoIR – Department of Industry and Resources (2004) *Draft Retrospective Review on the In Principle Agreement for Considering Access to Barrow Island for the Processing of Gorgon gas: Consolidated Summary Report (unpublished)* (Perth, Western Australia: DoIR).
- DSD – Department of State Development (2010) *Browse Liquefied Natural Gas Precinct Strategic Assessment Report (draft for public comment) December 2010 Part 1 Executive Summary*, DSD, Western Australia. [Online] Available at: <<http://www.dsd.wa.gov.au/8249.aspx>> (accessed 19 July 2011).
- Elliott P (2008) "Sustainability Assessment Challenges and Lessons" (presented at *Sustainability Assessment Symposium 2008*). [Online] Available at: <<http://integral-sustainability.net/wp-content/uploads/sas2-1-elliott.pdf>> (accessed 21 July 2011).

- EPA - Environmental Protection Authority (2003) *Environmental advice on the principle of locating a gas processing complex on Barrow Island Nature Reserve (Gorgon Venture)* (EPA Bulletin No. 1101) (Perth: EPA).
- EPA – Environmental Protection Authority (2006a) *South West Yarragadee Water Supply Development (Water Corporation), Report and Recommendations of the Environmental Protection Authority* (EPA Bulletin No. 1245) (Perth: EPA). [Online] Available at: <http://www.epa.wa.gov.au/EPADocLib/2412_Bull1245%20Yarra%20ermmp%2081206.pdf> (accessed 13 September 2011).
- EPA – Environmental Protection Authority (2006b) *Position Paper No. 9: Environmental Offsets* (Perth: EPA). [Online] Available at: <http://www.epa.wa.gov.au/docs/1863_PS9.pdf> (accessed 13 September 2011).
- EPA - Environmental Protection Authority (2008) *Kimberley LNG Precinct Review of potential sites for a proposed multi-user liquefied natural gas processing precinct in the Kimberly Region, Advice of the EPA to the Minister for Planning (as the Minister for Environment's delegate) under Section 16(e) of the EAct 1986*, Report 1306, (Perth: EPA).
- Government of Western Australia (2002) *Focus on the Future: the Western Australian State Sustainability Strategy Consultation Draft* (Perth: Department of the Premier and Cabinet).
- Government of Western Australia (2003) *Hope for the Future: The Western Australian State Sustainability Strategy* (Perth: Department of the Premier and Cabinet). [Online] Available at: <<http://www.dec.wa.gov.au/content/view/3523/2066/>> (accessed 21 July 2011).
- GHD (2008) *Water Corporation: Report for the Proposed Southern Seawater Desalination Project - Social Impact Assessment*. [Online] Available at: <http://www.watercorporation.com.au/files/PublicationsRegister/15/SSDP_GHD_06_05_08_MASTER_COPY.pdf> (accessed 13 September 2011)
- 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.
- Hayes N and Morrison-Saunders A (2007) "Effectiveness of environmental offsets in environmental impact assessment: practitioner perspectives from Western Australia", *Impact Assessment and Project Appraisal*, 25(3), 209-218.
- Independent Review Committee (2002) *Review of the Project Development Approvals System: Final Report* (Perth: Government of Western Australia).
- NDT – Northern Development Taskforce (2008) *Final Site Evaluation Report* (Perth: Government of Western Australia). [Online] Available at: <<http://www.dsd.wa.gov.au/documents/000269V04.GARY.SIMMONS.pdf>> (accessed 13 September 2011).
- Newman P (2006) "Sustainability assessment". In Marinova D, Annandale D and Phillimore J (Eds.) *The International Handbook on Environmental Technology Management*. (Cheltenham; Edward Elgar Publishing).
- Pope J (2007) *Facing the Gorgon: SA and Policy Learning in Western Australia*, PhD thesis, Murdoch University. [Online] Available at: <<http://researchrepository.murdoch.edu.au/264/>> (accessed 7 July 2011).

- Pope J, Morrison-Saunders A, Annandale D (2005) "Applying Sustainability Assessment Models", *Impact Assessment and Project Appraisal*, 23(4), 293-302.
- Pope J and Grace W (2006) "Sustainability assessment in context: Issues of process, policy and governance", *Journal of Environmental Assessment Policy and Management*, 8(3), 373-398.
- Pope J and Klass D (2010) "Decision Quality for Sustainability Assessment" *'IAIA10 Conference Proceedings' The Role of Impact Assessment in Transitioning to the Green Economy 30th Annual Meeting of the International Association for Impact Assessment 6-11 April 2010, International Conference Centre Geneva – Switzerland*. [Online] Available at: <<http://www.iaia.org/iaia10/proceedings/submitted-papers.aspx>> (accessed 19 July 2011).
- Strategen (2006) *South West Yarragadee water supply development: Sustainability evaluation/Environmental Review and Management Programme (ERMP)*. Report prepared for Water Corporation, Perth (Subiaco: Strategen).
- Sustainability Panel (2007) *Sustainability Assessment of the South West Yarragadee Water Supply Development*. Report prepared for the State Water Council, Department of the Premier and Cabinet, Perth Western Australia. [Online] Available at: <<http://www.water.wa.gov.au/PublicationStore/first/73423.pdf>> (accessed 13 September 2011).
- URS Australia Pty Ltd (undated) *Pilbara LNG Project Site Selection Study* (Perth: BHP Billiton).
- Water Authority of Western Australia (1995) *Perth's Water Future: A Water Supply Strategy for Perth and Mandurah to 2021 (With a Focus to 2010)* (Leedervilles: Water Authority). [Online] Available at: <http://www.watercorporation.com.au/files/PublicationsRegister/12/perth_water_future.pdf> (accessed 13 September 2011).
- Water Corporation (2008) *Water Forever Sustainability Assessment*, December 2008 (Leederville: Water Corporation of Western Australia). [Online] Available at: <<http://www.thinking50.com.au/go/publications>> (accessed 19 July 2011).
- Water Corporation (2009) *Water Forever: Towards Climate Resilience*, December 2008 (Leederville: Water Corporation of Western Australia). [Online] Available at: <<http://www.thinking50.com.au/go/publications>> (accessed 19 July 2011).
- Wood C (1994) Lessons from Comparative Practice, *Built Environment*, 20(4), 332-344.