1. Sustainability assessment concept and origins

Some definitions:

- Sustainability assessment is…a tool that can help decision-makers and policy-makers decide what actions they should take and should not take in an attempt to make society more sustainable
- The aim of sustainability assessment is to ensure that plans and activities make an optimal contribution to sustainable development

A simple definition of sustainability assessment…

*A process that directs decision-making towards sustainability*


What kind of decisions can sustainability assessment be applied to?

- Project planning decisions (site selection, materials selection etc)
- Project approval decisions
- Development of policies, plans and programmes
- Evaluations of existing practices or sectors (e.g. transport/energy use)
- Evaluations of infrastructure, buildings
- State of sustainability reports on places or countries
- And many others…

Thinking about sustainability assessment

- Consider:
  - *What* is being assessed? (plan, project, building, place, practice, industry etc)
  - *Who* is assessing it? (regulator, proponent, third party)
  - *When* is it being assessed?
    - During the development of a proposal?
    - After the proposal has been developed?
    - After the proposal has been implemented?
  - *Why* is the assessment being conducted (purpose?)
- Different applications of sustainability assessment will have different methodologies
Sustainability assessment as a form of impact assessment (i)

- Many forms of sustainability assessment are based on impact assessment processes and methodologies.

- Impact Assessment (IA) simply defined is the process of identifying the future consequences of a current or proposed action. The “impact” is the difference between what would happen with the action and what would happen without it.
  - International Association for Impact Assessment – [IAIA](http://www.iaia.org/)

Sustainability assessment as a form of impact assessment (ii)

- Impact assessment is predictive:
  - Occurs before a proposal has been implemented
  - Often conducted by Regulators e.g. statutory Environmental Impact Assessment (EIA) that determine whether a proposal is environmentally acceptable and the conditions that should be applied
  - Ideally, also used by proponents to guide the development of a proposal before statutory EIA
  - (May also be undertaken by third parties e.g. non-government organisations)

Sustainability assessment as a form of impact assessment (iii)

- 1st generation: Environmental Impact Assessment – EIA
  - Usually applied to project proposals (traditionally biophysical focus)

- 2nd generation: Strategic Environmental Assessment – SEA
  - Applied to ‘strategic proposals’ (policies, plans and programmes)

- 3rd generation: Sustainability Assessment – SA
  - Extending both EIA and SEA to cover sustainability

SA has also evolved from land use planning, natural resource management, Agenda 21 etc.

- since Rio Declaration on Environment and Development 1992 all governments seemingly uphold sustainable development as fundamental goal

International context for sustainability assessment

- Canada – extension of EIA process
- South Africa – sustainable development objective for EIA
- England – sustainability appraisal of local authority development plans
- Hong Kong – CASET (Computer Aided Sustainability Evaluation Tool): voluntary aid for proponents
- World Bank, UN programmes - International trade agreements and development projects
- + many individual tools available...

Dimensions of sustainability assessment

The ‘Right Hand Rule’ model


Comparing traditional project EIA with SA... (i)

A spectrum of possibilities exists for what might be called a ‘sustainability assessment’

- major difference is contribution each can make to delivering “sustainability”

[Image: In this diagram by Hackling & Guthrie 2008 the most integrated, strategic and comprehensive, form of SA is farthest advanced on spectrum relative to traditional EIA (which is the ‘lowest’ SA form).]
Comparing traditional project EIA with SA... (ii)

<table>
<thead>
<tr>
<th>EIA</th>
<th>SA</th>
</tr>
</thead>
<tbody>
<tr>
<td>project focus</td>
<td>any decision</td>
</tr>
<tr>
<td>reactive – project decided by proponent, minimise impacts</td>
<td>proactive – starts with a sustainability vision for future</td>
</tr>
<tr>
<td>natural capital slowly erodes (‘nibbling’ of environment)</td>
<td>seeks to grow capital (make the world more sustainable)</td>
</tr>
<tr>
<td>biophysical focus</td>
<td>integrate environ/social/economic</td>
</tr>
<tr>
<td>short time-frames</td>
<td>consider future generations</td>
</tr>
<tr>
<td>project location focus, hard to address cumulative impacts</td>
<td>regional (holistic) approach, often more than just proponent actions</td>
</tr>
<tr>
<td>acceptable impact often defined and achieved (monitoring)</td>
<td>sustainability concept challenging to define or ‘prove’</td>
</tr>
</tbody>
</table>

2. Sustainability challenges and imperatives

- How can we operationalise 'sustainability' in a meaningful way?
  - uphold 'good' process
  - achieve sustainable outcomes

3. Thinking about the concept of sustainability

- The concept of ‘sustainability’ (obviously) underpins the whole practice of SA
  - but it is a highly contested concept
    - there is no single universal definition that we can apply
  - Therefore, the first task in any SA is to clearly explain what ‘sustainability’ means in the context of the decision you are making

4. Defining sustainability for SA

- in simple terms...
  **What is to be sustained, for who and over which time frame?**
  - ‘what’ = e.g. environment? development?
  - ‘who’ = equity issues (winners & losers):
    - intra-generational equity
  - ‘time’ = future generations: inter-generational equity

5. ‘Sustainability’ challenges in SA practice

   (1) agreeing on meaning of sustainability (so all stakeholders share understanding)
   (2) tailoring definition of sustainability for decision at hand (e.g. policy different to building retrofit)
   (3) factoring in long-term time horizons (children’s children = 100 years or more?)
   (4) maintaining a holistic approach (choosing indicators – not narrow/reductionist)
   (5) delivering sustainable outcomes (manage trade-offs carefully and transparently)


An effective SA process must deliver all of these **simultaneously**
Gibson’s 6 sustainability imperatives

• reverse prevailing trends to deeper unsustainability (every project must make positive contribution)
• ensure integrated attention to all of the key intertwined factors
• seek mutually reinforcing gains
• minimize trade-offs
• respect the context
• be open and broadly engaging


Criticisms of traditional EIA as a sustainability tool...

• problem when economy & environment considered to be opposition
• core goal of EIA is to seek balance between these competing ends – usually this occurs behind closed doors
• balancing is not the path to sustainability
• for progress to sustainability we must find ways of making gains on all fronts
• sustainability assessment provides a forum and framework for explicit attention to trade-offs

Sustainability is not about balancing, which presumes a focus on compromises and trade-offs. Instead the aim is multiple reinforcing gains. Trade-offs are acceptable only as a last resort when all the other options have been found to be worse.


South African perspective on EIA and sustainability...

... in making decisions in relation to a specific project there is often insufficient attention given to the context in which the decision is being made and to whether or not the implementation of the project would have a positive impact on the attainment of ecologically sustainable development and can be considered to be “justifiable” socio-economic development.


State of environment trends in South Australia

• Residential sector energy & transport emissions INCREASED 28% since 1990 (p8)
• condition of rivers/creeks remained STABLE at generally moderate to poor condition (p9)
• health of rivers, streams and wetlands of River Murray floodplain is DECLINING (p9)
• seagrass extent along the metropolitan coast is still DECLINING (p11)
• extent of acid soils and rates of soil acidification in South Australia is INCREASING (p12)
• number of vulnerable and endangered plants, animals and ecological communities is INCREASING (p14)
• abundance of feral [animals] INCREASING (p14)


Is it time for a new mitigation hierarchy?

[ENHANCE]

Minimization of negative effects is not enough; assessment requirements must encourage positive steps towards greater community and ecological sustainability, towards a future that is more viable, pleasant and secure.

Apply some decision-making trade-off 'rules' in formal assessment and decision-making processes?

- trade-offs are matters of choice
  - ie. there are no rules or techniques for making choices between alternatives
- rules can help determine how trade-off options should be considered
- six basic rules developed by Gibson et al 2005...

The Gibson decision-making trade-off rules

1. Net gains: trade-off must deliver net sustainability gains (long-term)
2. Burden of argument: proponent must be required to justify trade-off
3. Avoidance of adverse effects: no trade-off involving significant adverse effect is acceptable unless all alternatives are worse
4. Protection of the future: no displacement of significant adverse impact from present to future can be justified unless all alternatives are worse
5. Explicit justification: all trade-offs must be explicitly justified (including context specific account of priorities and sustainability decision criteria)
6. Open process: stakeholders must be involved in trade-off making (because value-laden process)


Gibson trade-off rules were addressed in an EIA in WA in 2006 (i.e. it can be done…)

3. Western Australian examples and experiences with sustainability assessment

- the resource sector (i.e. large projects) tends to attract a lot of attention
- traditionally strong EIA system in place

[but sustainability assessment occurs in many other forms and for other activities in WA too]

Originally government led interest in sustainability assessment…

2002 - Review of the Project Development Approvals System
- Keating review
- develop coordinated, integrated & streamlined system of govt decision-making for industry & resource development
- recommended SA for major projects

2003 - State Sustainability Strategy
- draft version 2002 – public comment
- established SA principles

WA sustainability assessment principles…

Foundation Principles:
- long-term economic health
- equity and human rights
- biodiversity & ecological integrity
- settlement efficiency & quality of life
- community, regions, ‘sense of place’ & heritage
- net benefit from development
- common good from planning

Process Principles:
- integration of triple bottom line
- accountability, transparency & engagement
- precaution
- hope, vision, symbolic & iterative change

Govt of Western Australia (2003), Hope for the Future: The Western Australian State Sustainability Strategy. Dept of Premier and Cabinet, Perth, WA.
• 2002 - 2003 WA Government initiated an integrated, strategic level assessment of proposal – social, economic and environmental issues – strategic implications for Western Australia – EIA with socio-economic parts added – separate advice (environment, socio-economic) presented to Cabinet for decision-making

South West Yarragadee groundwater proposal 2005-2007
• Water Corporation sought to make proposal as sustainable as possible (no trade-offs) – Sustainability Panel established to report on proposal to government

After Gorgon and South West Yarragadee, government interest in sustainability assessment waned… (no formal process ever created)

However many proponents do voluntarily carry out SA (especially site/option selection using multi-criteria analysis)

Social impact assessment studies are also increasingly undertaken for major projects during the EIA process (voluntary by proponents and no regulation/approvals)

Sustainability Assessment Symposiums 2008 and 2010 – strong practitioner support for SA…

~100 practitioners – government, consulting, proponents, community…
Conclusions

- nationally and internationally there is an appetite for sustainability assessment
  - often happening in absence of legal requirements
- SA can take many forms
  - directing decision-making towards sustainability
- key challenges
  - integration and comprehensiveness (good process)
  - ensuring positive sustainability gains ensue (good outcomes)
  - avoiding and managing trade-offs (good process and outcomes)

Thank you!