



Tackling Trade-offs and Offsets in EIA Decision-making for Progress Towards Sustainability

Angus Morrison-Saunders

- North West University, South Africa
- Murdoch University, Australia

a.morrison-saunders@murdoch.edu.au



Main Points

- trade-offs are unavoidable – **all** EIA decisions involve trade-offs
 - screening/scoping/alternatives/mitigation...
- 2 types of trade-off:
 - process and substantive
- understanding and managing trade-offs in EIA is vital to reverse current trends towards deepening unsustainability

Why do trade-offs matter?

Trends are towards
"deepening unsustainability" (Gibson 2006)

"Jobs vs the environment dilemma" (Glasson 1999)

- environment traded-off for short-term socio-economic gain

EIA approval decision-making occurs
"behind closed doors" (Sadler 1996)

EIA, sustainability and trade-offs

Trade-offs undermine the sustainability potential of EIA

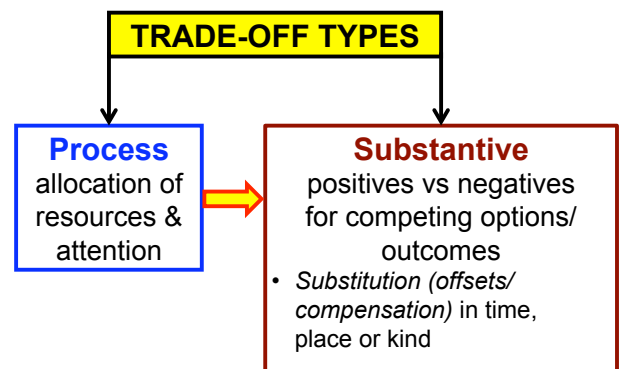
"Sustainability assessment" calls for an explicit examination of trade-offs both during proposal development and at the approval decision point (Morrison-Saunders & Pope in press 2012)



Purpose of this presentation

To present:

1. a conceptual model for understanding trade-offs in EIA decision-making
2. examples that illustrate effective trade-off management strategies



[Glasson 1999, Wood 2003, Gibson et al 2005]

Generic EIA process steps

1. *Screening* – Decide to take sustainability approach?
2. Identify *desired outcome* (decision question)
3. *Scoping* – Establish sustainability goals & criteria
4. Identify *alternatives* to achieve desired outcome
5. Impact *prediction* and evaluation of each alternative
6. *Mitigation* – Select & enhance preferred alternative
7. *Approval decision* & conditions
8. *Follow-up* – Implementation & monitoring

Generic EIA process steps

1. **Screening** – Decide to take sustainability approach?
2. Identify *desired outcome* (decision question)
3. *Scoping* – Establish sustainability goals & criteria
4. **Identify alternatives** to achieve desired outcome
5. Impact *prediction* and evaluation of each alternative
6. **Mitigation** – Select & enhance preferred alternative
7. **Approval decision** & conditions
8. *Follow-up* – Implementation & monitoring

Process decisions → Substantive trade-off outcomes

Screening – Decide to take sustainability approach?

Important *process* decision

- e.g. by proponent or EAP/consultant

May adopt a sustainability approach to EIA even if no regulatory expectation to do so

- e.g. experiences in Canada, Western Australia



Identify alternatives to achieve desired outcome

- type of alternatives considered affects potential sustainability outcomes
 - e.g. alternative locations of coal fired power station
- vs
- alternative ways to generate electricity – coal/solar/wind/hydro/nuclear...

Mitigation (i) – Select & enhance preferred alternative

Alternatives hierarchy



Mitigation choices are trade-off decisions
proponent objectives
 (e.g. profits/costs)
 vs
env. protection

Mitigation (ii)

Offsets involve *substitutions* of impacted resources in:

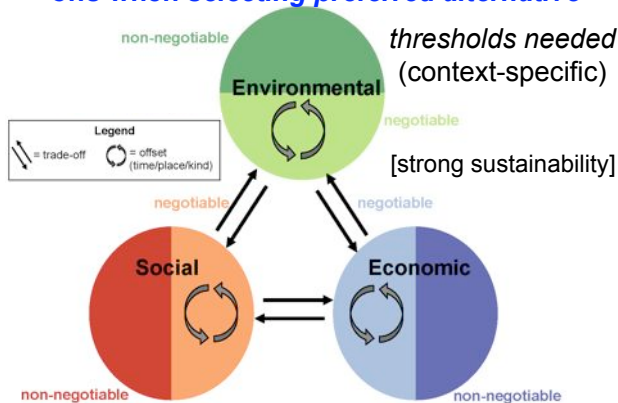
- **time** – e.g. rehabilitation of mine site } *like for like*
- **place** – e.g. construct artificial wetland }
- **kind** – e.g. exchange traditional hunting for recreational facilities } *like for better?*

Residual impact *must* deliver a net benefit outcome!

- i.e. if EIA for sustainability



Mitigation (iii) – Model for acceptable trade-offs when selecting preferred alternative



Approval decision (i)

Trade-offs are particularly obvious at this point

Decision-makers must determine if trade-offs (impacts) are acceptable for community

- i.e. context specific

Decision-making trade-off rules can guide process

Approval decision (ii) – Gibson trade-off rules (strong sustainability)

1. **Net gains:** must deliver net sustainability gains
3. **Avoidance of adverse effects:** a significant adverse effect only acceptable if all alternatives are worse
4. **Protection of the future:** no displacement of significant adverse impact from present to future
2. **Burden of argument:** proponent must justify
5. **Explicit justification:** all trade-offs must be explicitly justified (context-specific sustainability criteria)
6. **Open process:** stakeholders must be involved in trade-off making

Approval decision (ii) – Gibson trade-off rules (strong sustainability)

1. **Net gains:** must deliver net sustainability gains
 3. **Avoidance adverse effects:** a significant adverse effect only acceptable if all alternatives are worse
 4. **Protection of the future:** no displacement of significant adverse impact from present to future
 2. **Burden of argument:** proponent must justify
 5. **Explicit justification:** all trade-offs must be justified (context-specific sustainability criteria)
 6. **Open process:** stakeholders must be involved in trade-off making
- Substantive test (thresholds) [bracketed next to items 1-4]
- processes for making trade-offs [bracketed next to items 2-6]

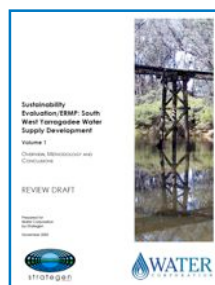
Approval decision (iii) – Example South West Yarragadee (Australia)

VOLUME 1
OVERVIEW, METHODOLOGY AND CONCLUSIONS

Chapters:

1. Introduction, the proposal and regional overview
2. Administrative process for sustainability assessment
3. Sustainability evaluation approach and methodology
4. Environmental impact assessment framework
5. Sustainability commitments and outcomes
6. Assessment against State sustainability principles and Gibson trade-off rules
7. Consolidated environmental commitments
8. References and abbreviations

Proponent's EIS – chapter on Gibson's trade-off rules...



Approval decision (iv) – Example South West Yarragadee (Australia)

Proponent:

The Gibson trade-off rules provide the basis for dealing with tensions and conflicts that may be identified in the process of applying a well considered set of sustainability principles.

They can be used to guide the evaluation of the acceptability of a proposal within a sustainability context by examining the acceptability of the inherent trade-offs that would be made in approving the process.

They are therefore an extremely valuable tool to aid sustainability decision-making.

(Strategen 2006, p6-2)

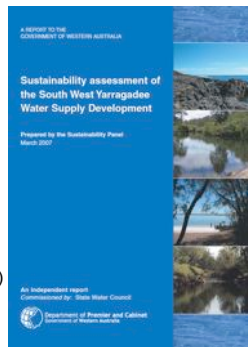


Approval decision (v) – Example South West Yarragadee (Australia)

Regulator:

The Sustainability Panel finds that an evaluation process based on the Gibson rules is sufficient to assess sustainability

(Sustainability Panel, 2007, p13)



Conclusions: *Tackling Trade-offs and Offsets in EIA Decision-making for Progress Towards Sustainability*

- **early attention** to trade-offs is needed – i.e. well in advance of EIA approval decision-making
- the nature of **alternatives** considered determines substantive outcomes
- **thresholds are essential** to determine acceptable impacts and mitigation
- **offsets** are a form of trade-off – residual impact must deliver a net benefit outcome
- Gibson **trade-off rules** provide acceptability criteria for substantive trade-offs & process rules for EIA approval decision-making

Main Points

- trade-offs are unavoidable – **all** EIA decisions involve trade-offs
 - screening/scoping/alternatives/mitigation...
- 2 types of trade-off:
 - process and substantive
- understanding and managing trade-offs in EIA is vital to reverse current trends towards deepening unsustainability

References

- Gibson R 2006 Sustainability assessment: basic components of a practical approach. *Impact Assessment & Project Appraisal* 24(3):170–82.
- Gibson R, Hassan S, Holtz S, Tansey J, Whitelaw G 2005 *Sustainability assessment criteria, processes and applications*. London: Earthscan Publications Ltd.
- Glasson J. 1999 Environmental impact assessment — impact on decisions. In: Petts J, (ed). *Handbook of EIA Volume 1; EIA: process, methods and potential*. Blackwell Science Ltd. pp121–44.
- Morrison-Saunders A, Pope J (in press 2012) Conceptualising and managing trade-offs in sustainability assessment, *EIA Review*, doi:10.1016/j.eiar.2012.06.003
- Sadler B 1996 *International study of the effectiveness of environmental assessment, final report, environmental assessment in a changing world: evaluating practice to improve performance*. Canada: Minister of Supply and Services, 248pp.
- Stratagen 2006 *South West Yarragadee water supply development: sustainability evaluation/environmental review and management programme. Volume 1 introduction, sustainability overview, methodology and conclusions*. Stratagen, report prepared for Water Corporation, Perth, Western Australia, 220pp.
- Sustainability Panel 2007 *Sustainability assessment of the South West Yarragadee water supply development*. An independent report commissioned by: State Water Council. Perth, Western Australia: Dept of Premier & Cabinet, 61pp.
- Wood C 2003 *Environmental impact assessment: a comparative review*. 2nd edition. Harlow, England: Pearson Education Ltd. 405pp.

THANK YOU!

Questions...?

Discussion...?

How can we best address trade-offs in EIA to reverse trends towards deepening unsustainability?

