Unique Features of EIA in Protected Areas: Toward Best Practice Principles

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Aim

- Identify unique features of EIA for developments in PAs
  - South Africa as case study

- Contribute towards best practice principles for EIA in these sensitive contexts

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Unique features of environmental impact assessment (EIA) in protected areas (PAs) – towards best practice principles

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ABSTRACT

Protected areas (PAs) preserve ecological system integrity and biodiversity but are threatened by anthropogenic drivers of biodiversity loss such as land use change, direct exploitation of natural resources, land fragmentation, pollution, climate change, and invasive alien species. Internationally, environmental impact assessment (EIA) is a key policy instrument that guides development decisions that affect PAs, especially in the southern African region. This paper aims to identify unique features of EIA in PAs by using South African PAs as a case study towards developing best practice principles. We achieve this through conducting a workshop attended by 81 individuals representing six stakeholder groups, namely, consultants, government entities, protected area management, environmental NGOs, and academics. The results show that EIA within this PA context uniquely requires a more ecocentric ethical framing, rather than an anthropocentric framing of sustainable development. Moreover, PAs face unique governance arrangements, different stakeholder engagement expectations, and experience a greater likelihood of impacts being judged to be significant with limited mitigation options apart from avoidance. Five best practice principles are recommended to incorporate these unique features into EIA decision making affecting South African PAs, although they are also transferable to other similar country contexts where socio-economic development pressures threaten PAs.

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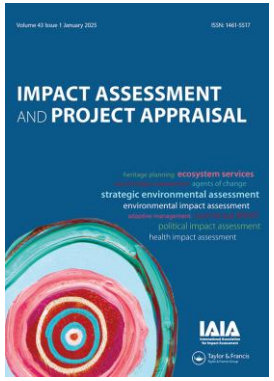

01

EIA in Protected Areas

Background

Role of protected areas (PAs)

- PAs have evolved over time but now internationally recognised to serve **long-term conservation goals** (Mace 2014; Sandbrook *et al*. 2019)
- Crucial for **biodiversity conservation and ecosystem integrity** (Schulze *et al.* 2018; Geldmann *et al.* 2019; Corlett 2020)

Challenges within PAs

- Designation alone does not guarantee biodiversity protection - one-third of global PAs under *"intense human pressure"* (Craigie *et al*. 2010; Du *et al.* 2015; Jones *et al.* 2018)

Southern African context

- Development pressures (e.g., mining, land transformation) threaten some of the region's most iconic PAs

Environmental impact assessment (EIA) in PAs

- EIA is a key decision-support tool used to assess and manage developments impacting PAs in South Africa (Retief *et al*. 2011; Sandham *et al*. 2020; Alberts *et al*. 2021; Claassens *et al.* 2022; Malepe *et al*. 2022)
- Anecdotal evidence suggests EIAs sometimes permit incompatible activities within PAs (Alberts *et al.* 2022; WWF 2023; Ground Up 2024; Namibia Chamber of Environment 2024)
- Limited consideration of how EIA practice should adapt to the unique context of PAs (Alberts *et al.* 2021; Bond *et al.* 2022; Retief *et al*. 2022)

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02

Methodology

Unique features of EIA in PAs – Towards best practice

Workshop in South Africa

- Regional stakeholder workshop hosted at IAIAsa annual conference in Kruger National Park (August 2023)
- 81 participants (EIA consultants:30; Government:29; PA management:8; Environmental NGOs:8; Academia:6)

Workshop aim

- Explore **unique features** of EIA practice in PAs vs. standard EIA
- Used one open-ended question: *"What makes EIA practice for developments in protected areas unique from standard EIA practice?"*
- Participants asked to **share personal views**, not institutional positions

Workshop design

- Participants divided into 3 large groups (25–28 people), then into 14 small groups (5–6 people)
- Each small group listed up to five unique features of PAs on comment sheets
- Ideas were discussed and validated in larger groups
- Reported to the full group of 81
- Consensus views graphically captured using Mural software

Workshop outcome

- Themes derived from broad, often heated stakeholder debate
- Partial validation by experienced EIA practitioners working in PAs

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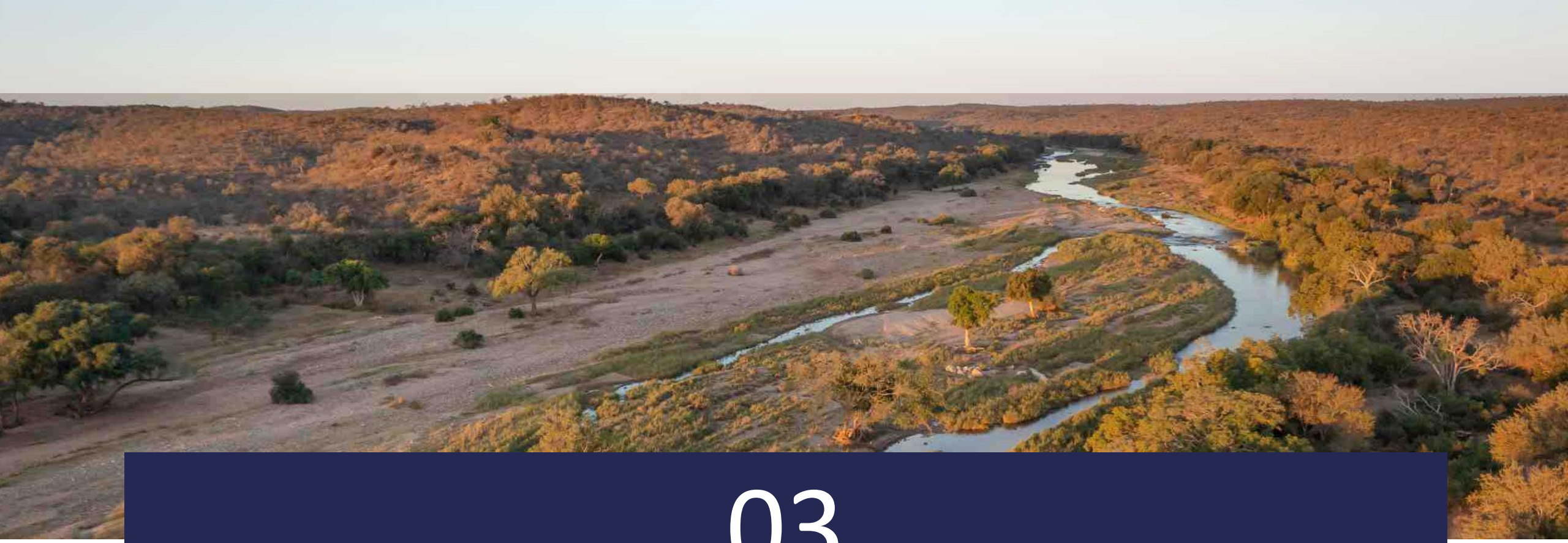


03

Unique features of EIA in PAs: Towards best practice

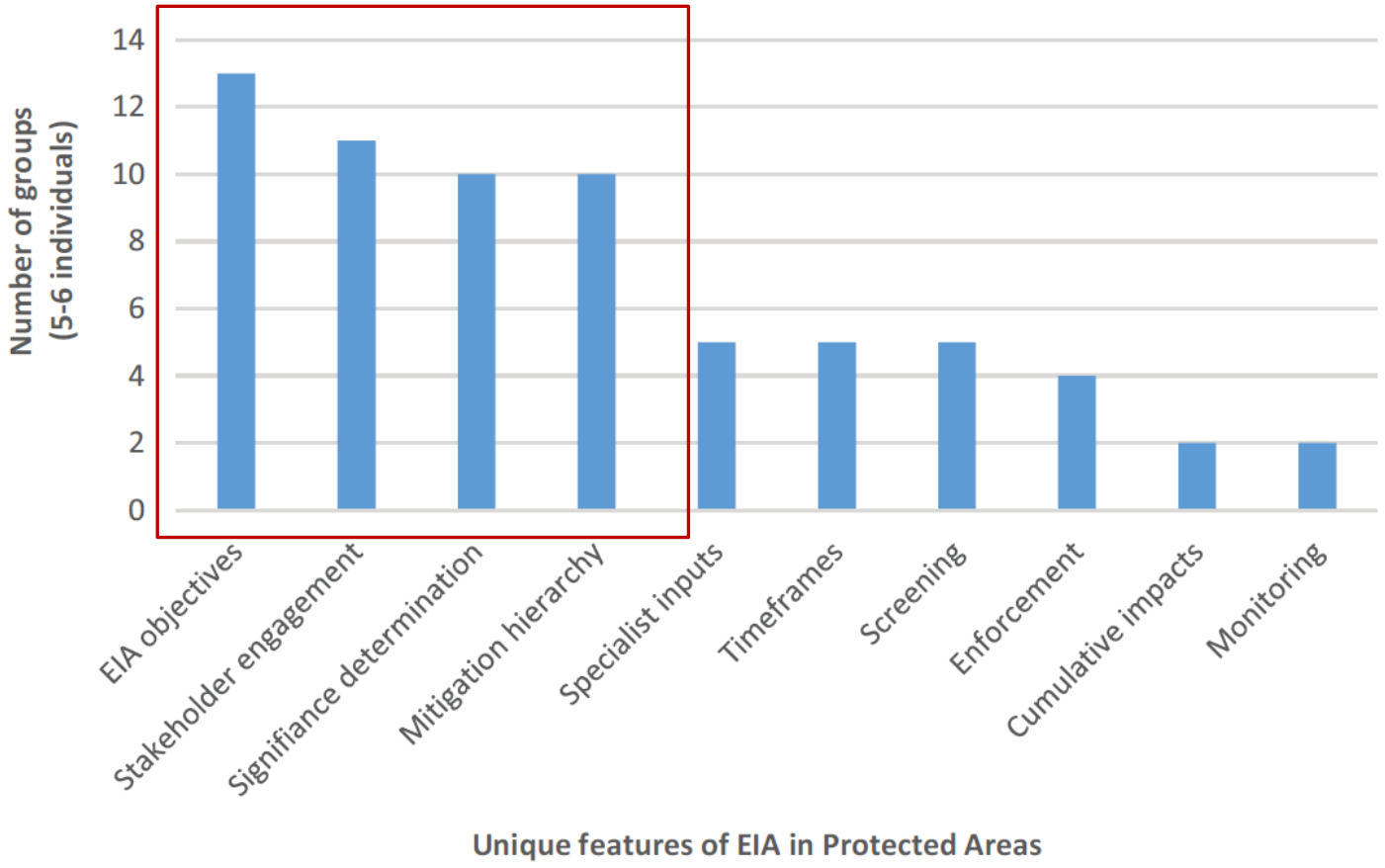
Workshop results

Unique features of EIA in PAs

Top 4 unique features

- 1: EIA objectives and ethical framing
- 2: Stakeholder engagement
- 3: Significance determination
- 4: Application of the mitigation hierarchy

- Identified by 10 to 13 of 14 small groups
- Confirmed in plenary



EIA objectives and ethical framing

Unique feature 1: EIA objectives and ethical framing

- **Shift in EIA objectives:**
  - EIA in PAs **must prioritise conservation** over standard **sustainable development goals**

- **Ecocentric ethical framing needed:**
  - Current EIA practice is largely anthropocentric, limiting biodiversity protection
  - An ecocentric approach (Bond *et al*., 2021; Naess, 1973; Richardson, 2005; Horsthemke, 2017) would:
    - **Recognise intrinsic value** of all living beings
    - Focus on **ecological integrity, non-regression, and avoidance** as the only acceptable mitigation
    - Promote **precautionary and stewardship approaches**

- **Current governance context may present challenges:**
  - EIAs in PAs occur within conflicting mandates between conservation, tourism and socio-economic development departments
  - The risk exists that development goals are prioritised

Best Practice Principles

- Best Practice Principle 1: EIA for developments affecting PAs must apply an **ecocentric ethical framing**

- Best Practice Principle 2: EIA governance and decision making must prioritise **delivering conservation objectives above sustainable development objectives in PAs**

Implications for EIA practice

- Shift from traditional anthropocentric to ecocentric ethical framing (Bond et al., 2021)
- Requires redesign of EIA objectives for PAs as unique governance contexts - prioritising conservation goals over sustainable development goals
- May require jurisdictions to develop parallel ecocentric-based EIA systems to deal with developments affecting PAs (revised screening mechanisms needed)

Stakeholder engagement

Unique feature 2: Stakeholder engagement

- **Unique requirements for stakeholder engagement is a critical factor in EIA for PAs**

- **Why?**
  - PAs hold **local, national, and international** significance
  - Communities often have **emotional and cultural** ties to these areas
  - EIA may be the **only governance mechanism** allowing **public input** outside PA authorities (Alberts *et al*., 2021)

- **Unique challenges:**
  - Stakeholders are **diverse, pluralistic, and often geographically** dispersed
  - Balancing **competing views** is exceptionally difficult in PA contexts
  - Standard participation methods may be insufficient
  - EIA in PAs must adopt **inclusive, tailored, and transparent** stakeholder processes
    - While some EIA cases show exemplary participation (Sandham *et al*., 2020; Alberts *et al*., 2021), others expose misuse of EIA to legitimise harmful development without meaningful participation (Malepe *et al*., 2022)

Best Practice Principle

- Best Practice Principle 3: Stakeholder engagement/participation within EIA must be **sensitive to the plurality of views**, locally, nationally and internationally towards achieving PA **conservation objectives**

Implications for EIA practice

- The purpose and aim of the stakeholder engagement/participation needs to be redirected towards PA objectives

Significance determination

Unique feature 3: Significance determination

- Significance determination is central to EIA and directly informs decision making (Wood, 2008; Ehrlich & Ross, 2015; Retief *et al.,* 2023)

- **Unique requirements for significance determination in PAs:**
  - **Existing national standards** (e.g. for biodiversity, noise, effluent, emissions) may be **inadequate**
  - **Higher sensitivity and value** of PAs demands **stricter thresholds**

- **Key quotes from workshop:**
  - *"Separate standards needed inside PAs"*
  - *"Impacts acceptable outside should not be acceptable inside"*
  - *"Significance thresholds must be reconsidered in PA context"*

- **Identified weaknesses:**
  - Review of SA national park EIA reports show poor handling of significance and mitigation (Sandham *et al*., 2020; Alberts *et al.,* 2021; Malepe *et al*., 2022)

Best Practice Principle

- Best Practice Principle 4: **All** environmental impacts should be assumed to be **significant**; therefore, significance thresholds should be **tailored** to the conservation context and designed to achieve relevant **conservation objectives**

Implications for EIA practice

- Requires different definition and stricter thresholds for levels of significance, compared to standard EIA practice outside of PAs
  - Threshold re-classification required for land transformation/modification, biodiversity loss, noise and visual impacts, increased access, resource extraction, pollution, etc.
- Significance classification related to environmental attributes should be ‘high’, ‘very high’ and ‘exceptional’ rather than including the standard options of ‘medium’ and ‘low’ significance
- Will most probably require policy and law reform

Mitigation hierarchy

Unique feature 4: Mitigation hierarchy

- **Unique requirements for applying the mitigation hierarchy:**
  - Mitigation in PAs must prioritise **strict avoidance** to uphold conservation objectives

- **Key quotes from workshop:**
  - *"Don't avoid using avoidance"*
  - *"Avoidance should be the only mitigation option"*
  - *"The standard hierarchy does not apply"*
  - *"Avoid offsets as a mitigation option"*

- **Challenges with application of the hierarchy:**
  - In typical EIA, the mitigation hierarchy (avoid → minimise → restore → offset) is rigorously applied (Brownlie & Treweek, 2018)
  - In PAs, **only avoidance** supports long-term conservation goals
  - **Offsetting** is highly controversial due to uncertain ecological gains (Bull *et al*., 2013)

Best Practice Principle

- Best Practice Principle 5: All significant impacts must be **avoided**, whilst the rest of the **mitigation hierarchy does not apply**

Implications for EIA practice

- Requires a paradigm shift from standard EIA mitigation practice
  - Location, layout, design, operational, timing and technology **alternatives** will be even more important in providing **avoidance mitigation options**

- Certain activities (i.e. mining) will be deemed fatally flawed since reasonable and feasible avoidance options would not be possible

- **Precautionary principle:** Where projects present high levels of uncertainty and residual impacts, they should not be approved/considered in the PA context

04

Conclusion and way forward

Conclusions

- We, recognise that the five principles proposed present fundamental challenges to the *status quo* of impact assessment regimes

- Some of the principles require radical shifts, however, it is necessary to ensure that EIA delivers real protection where it matters most

Next steps

- Share and test principles internationally
- Develop context-specific guidelines for EIA practice for developments affecting PAs

Let’s continue the conversation!

Message me your questions or comments in the IAIA25 app.

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