



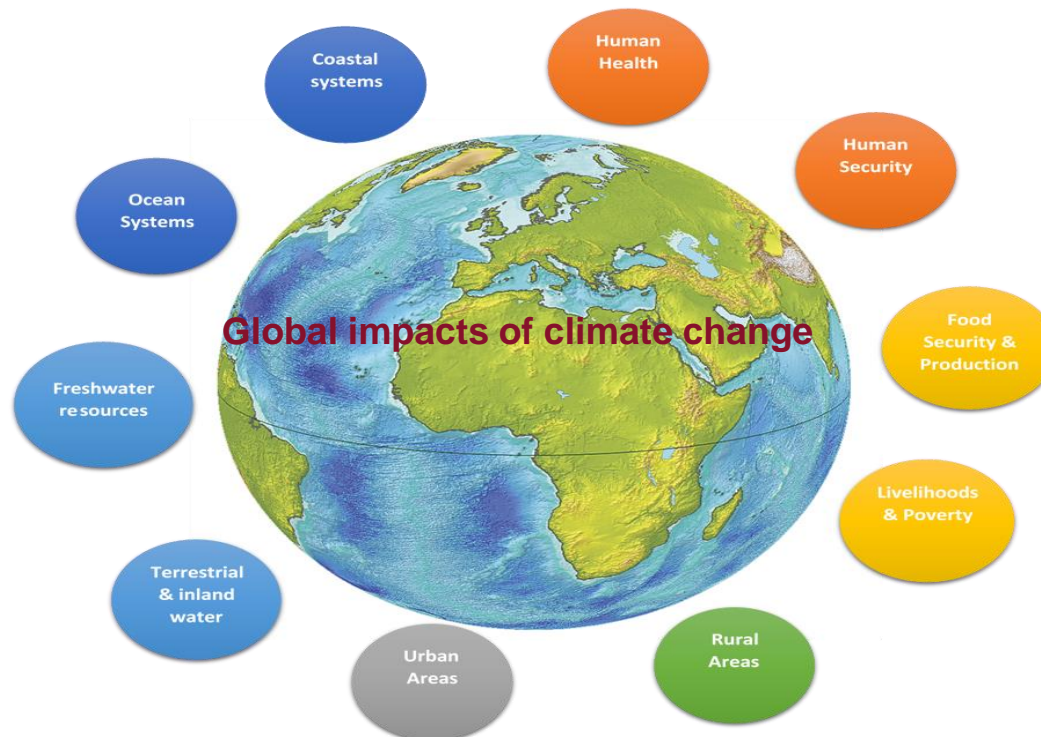
# **A critical review of the consideration of climate change risks and opportunities in EIAs**

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Maxwell Denga & Carli Steenkamp  
School of Geo and Spatial Sciences  
North-West University Potchefstroom Campus  
[maxwell.denga@grinaker-lta.co.za](mailto:maxwell.denga@grinaker-lta.co.za) & [Carli.Steenkamp@nwu.ac.za](mailto:Carli.Steenkamp@nwu.ac.za)

# Introduction

- UNFCCC (2003) describes climate change as “*the change of the earth’s climate due to the harmful effects of human activities*”
- Climate change should be considered to be amongst the most serious threats to global sustainable development (IPCC, 2000b)
- Adverse impacts expected on natural (water security) and anthropogenic systems

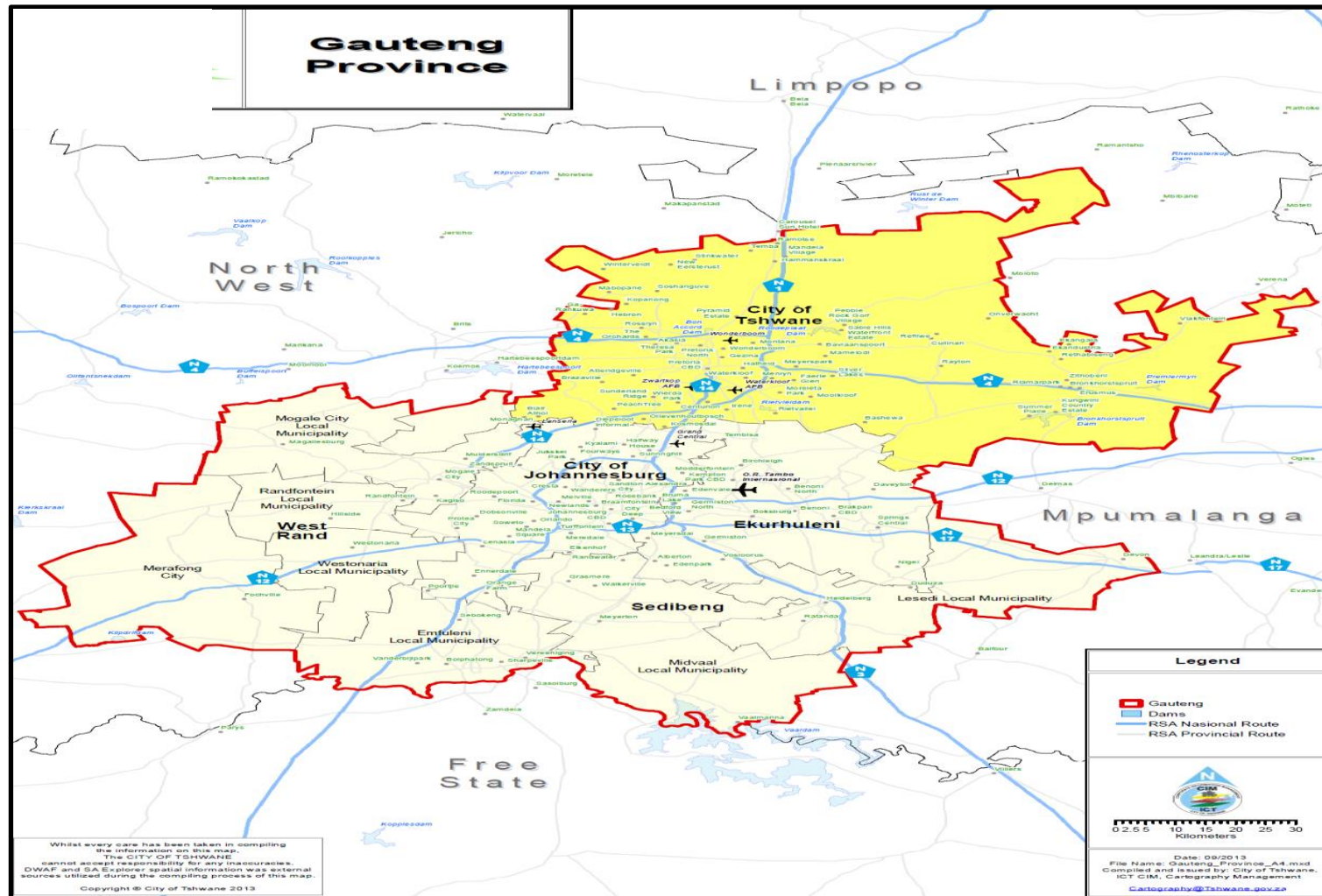


- SA faces particular challenges with regards to climate change
- The government acknowledged that climate change is real and that it poses a serious threat (DEAT, 2008)
- Government is committed towards responding to the climate change impacts, stabilising global GHG concentrations and implementing CO<sub>2</sub> emission reduction targets
- To achieve these targets, SA needs to take drastic and decisive actions in the immediate to medium-term future
- Mainstreaming climate change considerations into social, economic and environmental policies (DEAT, 2004)
- EIA is one of the tools for environmental protection through which climate change could be potentially addressed (Sok *et al*, 2011)
- The current EIA approach does not encompass climate change issues or the broader long-term implications for sustainable development (Gilder and Parramon, 2011)

- The objectives for the research:
  - To what extent do EIAs for housing developments in the Gauteng Province consider climate change risks and opportunities?
  - What are the drivers (opportunities) and barriers (challenges) to improving the consideration of climate change issues in EIAs?

# Scope and method of research

- Twenty (20) case studies from the CJMM and CTMM were analysed





# Scope and method of research

- The analyses grouped by the developed 5 criteria in order to get a true reflection of similarities and differences between case studies:

Criterion No	Criterion requirement
1	<ul style="list-style-type: none"><li>Development should be housing-related and within the selected metropolitan areas</li></ul>
2	<ul style="list-style-type: none"><li>The EIA regulation regime should be based on either the 1997, 2006 or 2010 EIA regulations</li></ul>
3	<ul style="list-style-type: none"><li>Access to the relevant reports granted by the respective authorities</li></ul>
4	<ul style="list-style-type: none"><li>Reports should be compiled by different environmental practitioners</li></ul>
5	<ul style="list-style-type: none"><li>Reports should be the final reports submitted to the authorities for review</li></ul>



# Scope and method of research

- List of evaluation questions and justification used:

Review criteria (RC)	Phase in the EIA process	Criterion question	Justification
RC1	Scoping	<ul style="list-style-type: none"> <li>Were the impacts (risks and opportunities) associated with climate change considered during scoping?</li> </ul>	Gilder <i>et al</i> (2008)
RC2	Public participation	<ul style="list-style-type: none"> <li>Have stakeholders raised the need to consider climate changes in EIAs during the public participation process?</li> </ul>	Sok <i>et al</i> (2011) IEMA (2013)
RC3	Assessment	<ul style="list-style-type: none"> <li>Was climate variability included in the assessment of the potential impacts?</li> </ul>	IEMA (2010) Braklacič (2008)
RC4	Significance rating	<ul style="list-style-type: none"> <li>Are identified climate change-related impacts thoroughly evaluated in terms of their significance?</li> </ul>	IEMA (2013) Byer and Yeomans (2007)
RC5	Mitigation	<ul style="list-style-type: none"> <li>Does the EMP include information on the measures that need to be taken to ensure the project's own resilience to climate change?</li> </ul>	Personal Communication (2012) NCCRS (2004)

# Scope and method of research

- Scoring criteria for consideration of climate change issues:

Scoring level	Definition	Justification and application
A	Considered	Climate change risks and/or opportunities are completely and clearly referred to and directly addressed.
B	Generally considered	Climate change risks and/or opportunities are considered to a limited extent and are at times generally referred to and/or indirectly/somewhat addressed.
C	Not considered	Climate change risks and/or opportunities are not identified or considered at all.



# Results: RC1 - Consideration of climate change in scoping

Case Study	RC1
1	A
2	A
3	A
4	C
5	B
6	A
7	B
8	C
9	C
10	B
11	B
12	B
13	C
14	B
15	C
16	B
17	C
18	C
19	C
20	C
Overall	B

- Climate change impacts are generally considered (B) during scoping.
- Some of the issues raised:
  - Floodline determination, storm water control, energy efficiency, extreme events...



# Results: RC2 - Consideration of climate change in public participation

Case Study	RC2
1	A
2	C
3	C
4	C
5	C
6	A
7	C
8	C
9	C
10	C
11	C
12	C
13	C
14	B
15	C
16	C
17	C
18	C
19	B
20	C
Overall	C

- Climate change impacts are not considered (C) during public participation.
- Some of the issues raised:
  - Impacts during extreme weather events. Request by local authority to include storm water and flood line requirements...
  - Wetland delineation and potential for flood reduction...



# Results: RC3 - Consideration of climate change in Impact Assessment

Case Study	RC3
1	B
2	A
3	A
4	C
5	A
6	A
7	B
8	C
9	C
10	C
11	B
12	B
13	C
14	A
15	C
16	C
17	C
18	C
19	B
20	C
Overall	C

- Climate change impacts are not considered (C) during impact assessment.
- Some of the issues raised:
  - Assessed the impact of climate variability: how it will affect transportation, housing, social well-being, health, etc.



# Results: RC4 - Consideration of climate change in significance rating

Case Study	RC4
1	B
2	C
3	B
4	C
5	B
6	B
7	C
8	C
9	C
10	C
11	C
12	C
13	C
14	A
15	C
16	C
17	C
18	C
19	B
20	C
Overall	C

- Climate change impacts are not considered (C) during the significance rating.
- Some of the issues raised:
  - Determination of costs of damage and the aftermath of storm surges, proximity to water resources from the settlement areas...



# Results: RC5 - Consideration of climate change in mitigation strategies

Case Study	RC5
1	B
2	B
3	A
4	C
5	A
6	A
7	B
8	B
9	C
10	C
11	B
12	B
13	C
14	B
15	C
16	B
17	C
18	C
19	B
20	C
Overall	B

- Climate change impacts are generally considered (B) during the mitigation strategies.
- Some of the issues raised:
  - Resource efficient and climate resilient housing buildings, planting of indigenous trees, use of gas for cooking purposes, use of public transport...





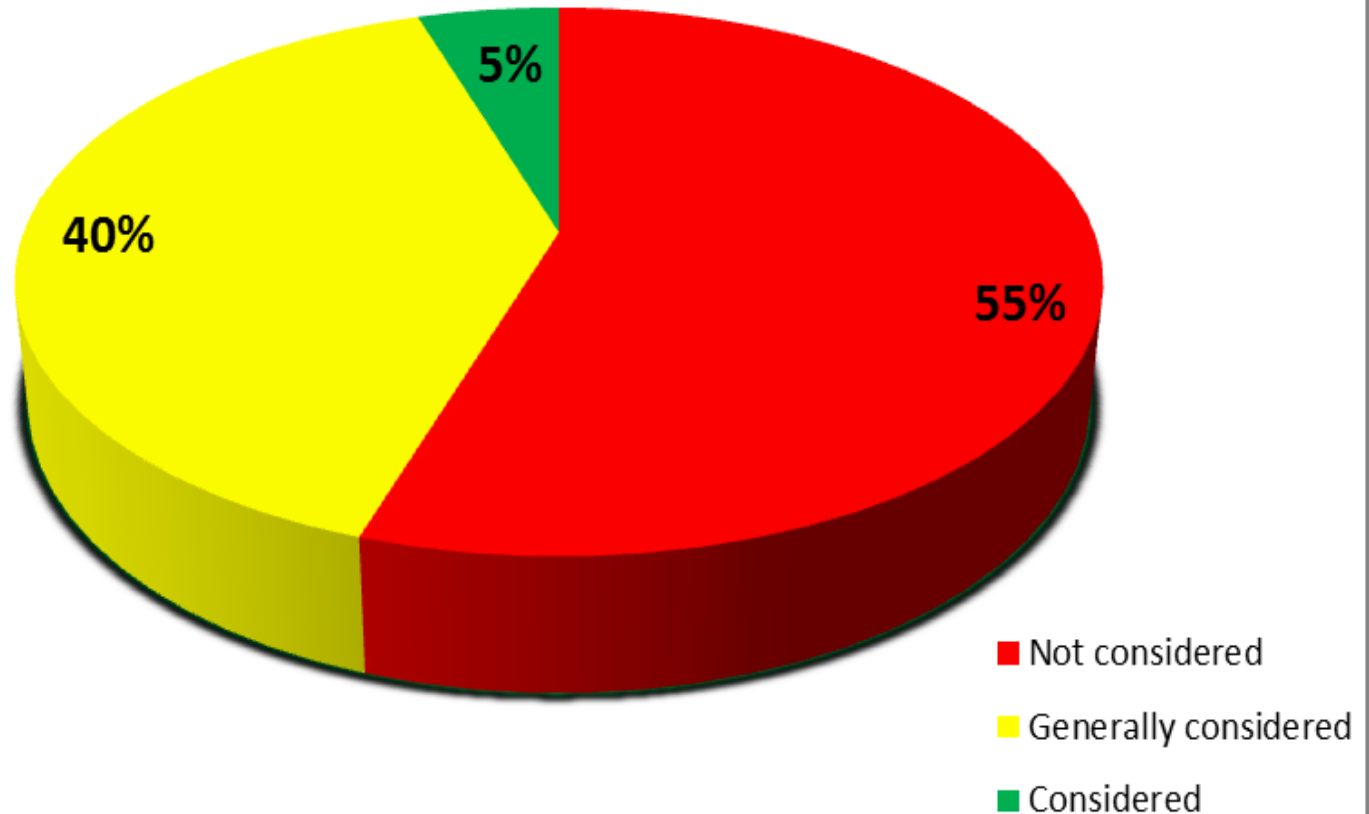
# Overall Results: Consideration of climate change in EIA

Case Study	Scoping	PP	IA	Significance	Mitigation
1	A	A	B	B	B
2	A	C	A	C	B
3	A	C	A	B	A
4	C	C	C	C	C
5	B	C	A	B	A
6	A	A	A	B	A
7	B	C	B	C	B
8	C	C	C	C	B
9	C	C	C	C	C
10	B	C	C	C	C
11	B	C	B	C	B
12	B	C	B	C	B
13	C	C	C	C	C
14	B	B	A	A	B
15	C	C	C	C	C
16	B	C	C	C	B
17	C	C	C	C	C
18	C	C	C	C	C
19	C	B	B	B	B
20	C	C	C	C	C
	B	C	C	C	B



# Overall Results: Case studies

Consideration of climate change in EIAs



# Challenges for considering climate change risks and opportunities in EIA

The following are the main challenges noted from the analysis of the interview and questionnaire responses:

- Climate change as a separate issue
- “*EAPs are not thinking outside the regulatory requirements box*”
- Climate change as a global/regional issue
- Focus on positive approval and not on sustainability
- Capacity at government level
- Climate change knowledge

# Opportunities for considering climate change risks and opportunities in EIA

The following opportunities were identified from the questionnaires and interviews:

- EIA process assists with flood determination and protection
- Building adaptive capacity through provision of basic services
- Improved urban management
- Government authorities/officials should take a lead
- Reconsider household fittings and furnishing

# Conclusion

- Those involved in deliberating on housing development generally do not consider matters relating to climate change in EIA
- Key weakness areas are: public participation, impact assessment and impact significance
- Climate change issues were generally considered during the scoping process and in the mitigation strategies
- The main challenges relate to how climate change impacts are perceived, integrative thinking, and lack of capacity
- Need an enabling regulatory framework and guidance for dealing with climate change
- The goal of incorporating climate change risks and opportunities within EIAs remains aspirational than operational



# Thank you!

