

THE NEED FOR PRAGMATIC CARBON MANAGEMENT:  
*bridging the science/policy divide at the local  
government level (esp. in the Global South).*

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# Important Oversights



1. Current carbon management/climate change debate is focused primarily at the global/regional level
2. Insufficient recognition by the scientific and policy communities that it is the actions of individuals and communities at the local level that are the cause and possible solution to global carbon/climate challenges





# Important Oversights



3. Insufficient acknowledgment of the critical role that cities (and the local governments that manage them) have to play in addressing carbon management and climate change issues

# Need for a Reality Check!

- It is important to do a reality check and realise that local level politicians and decision makers in the Global South don't necessarily care that the global carbon cycle is being disrupted or that the climate is changing?

Why?

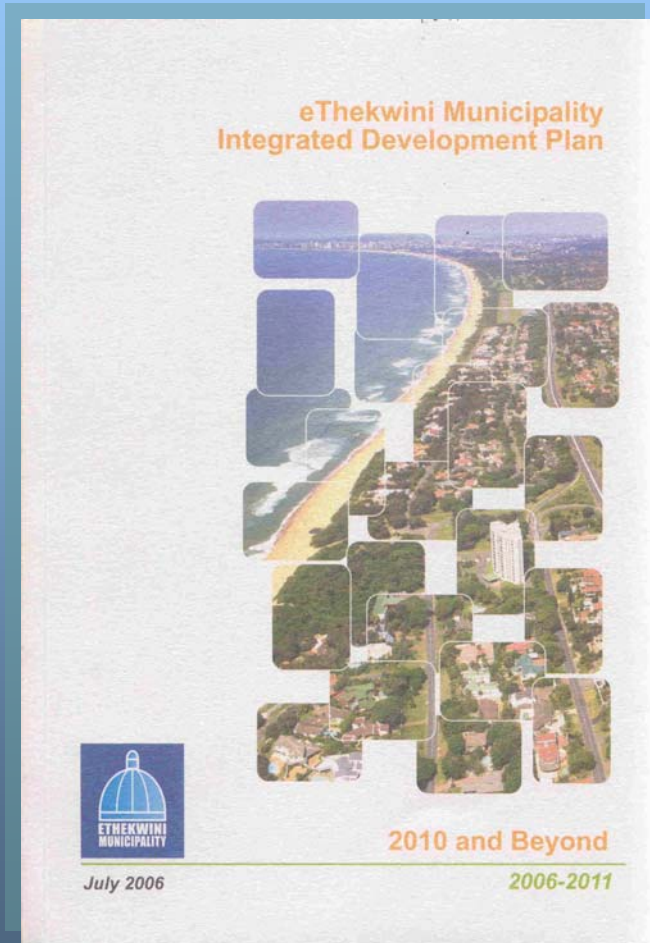


# Context for Decision Making



- Largest port and city on east coast of Africa: 2 300 km<sup>2</sup>
- Population: 3.5 million
- 2/3 of the province's GDP
- 43% unemployment
- HIV/Aids - life expectancy of 47
- Backlog of 204 000 housing units
- A Host City for 2010 FIFA Soccer World Cup
- Global biodiversity hotspot

# Bridging the Divide



- Bridging the science/policy divide requires that the carbon/climate agenda become aligned with the development agenda of local governments (especially in cities of the Global South).

# Alignment: Science must answer locally relevant policy questions

1. What are the local impacts of climate change?
2. How do we adapt to climate change? (*“mitigation is nice, but adaptation is essential!”*)
3. How can carbon management and climate science inform city planning in the:
  - short-to-medium term?
  - long-term?



# 1. What are the local impacts of climate change?



- Partnership between municipality and research institute
- Downscaled global/regional climate change scenarios and datasets resulting in an understanding of local impacts in Durban:
- **Temperature**
- **Rainfall**
- **Sea level rise**



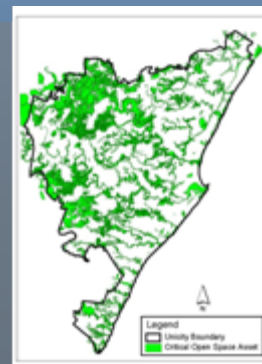
# Demonstrate that the local impacts of climate change will compromise the city's development agenda



- Increased heat stress
- Higher energy consumption
- Increase in the frequency and intensity of floods and droughts
- Decreased water availability
- Increase in vector borne diseases (e.g. malaria)
- Decreased food security
- Extinction and changes in the geographical distribution of plant and animal species
- Increased erosion of coastal areas
- Increased infrastructure damage
- Severe impacts on development agenda: economic losses, loss of productivity, decrease in quality of life etc.

## 2. How do we adapt to climate change?

- Access to locally relevant science and data was critical in identifying impacts and vulnerabilities in municipal sectors that are key from a development perspective
- Helped identify which municipal activities (both current and future) would facilitate climate change adaptation and which therefore should be prioritised
- Highlighted gaps in existing knowledge that needed to be addressed through further research

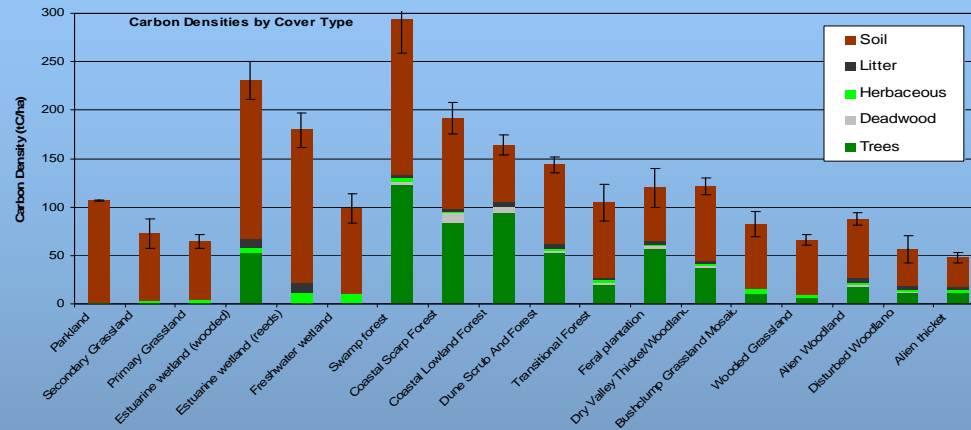


### 3. How can carbon management and climate change science inform city planning?

- *Short-medium term (3-30 years):*  
Day-to-day planning:  
Integrated Development Plan.
- *Long-term (100 years+):*  
Imagine Durban Campaign



# Open space carbon inventory: short-to-medium term



- Open Space System covers an area of 64 000ha (27% of municipal area)
- Carbon storage inventory: Needed to determine open space system's mitigation role. Vegetation and soils in each ecosystem type sampled to estimate carbon density.
- 24.3 million tCO<sub>2</sub> (municipality emits 22.9 million tCO<sub>2</sub> per annum)
- Open space system sequesters 31 000 tCO<sub>2</sub> per annum
- Impact on planning and policy development: Reinforced the critical need to protect system from development

# Urban Integrated Assessment Framework: long-term

How do we proactively incorporate climate change and carbon management considerations into long-term urban planning?

- Working in co-operation with the Tyndall Centre for Climate Change (UK)

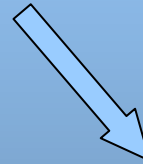
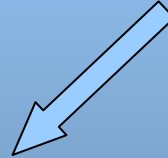
Model that enables the simulation, evaluation and comparison of strategic development plans in urban areas in the context of climate change.



Global climate scenarios B1/A1B

Downscaled global scenarios:

- Socio-economic issues
- Climate change
- Land-use



Emissions accounting tools



Climate vulnerability and impacts:

- Water supply and sanitation;
- Health;
- Coastal infrastructure
- Biodiversity
- Strategic Planning and economic development
- Disaster management



Integrated Assessment tool:

- Development/policy scenarios
- Adaptation and mitigation options



# Conclusion

- *Without access to locally relevant climate change and carbon management science and data, it is not possible for local governments to develop appropriate policies or plans; or to assign adequate resources to tackle the climate change and carbon management challenge.*

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