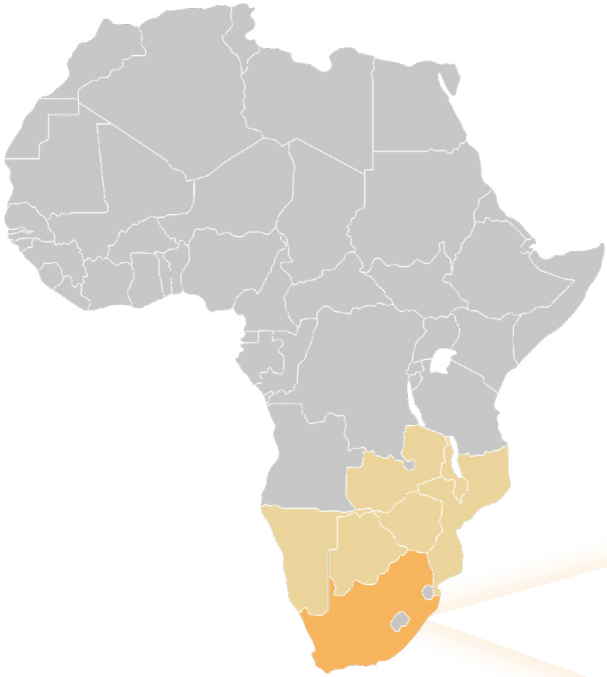
FUTURE CLIMATE FOR AFRICA

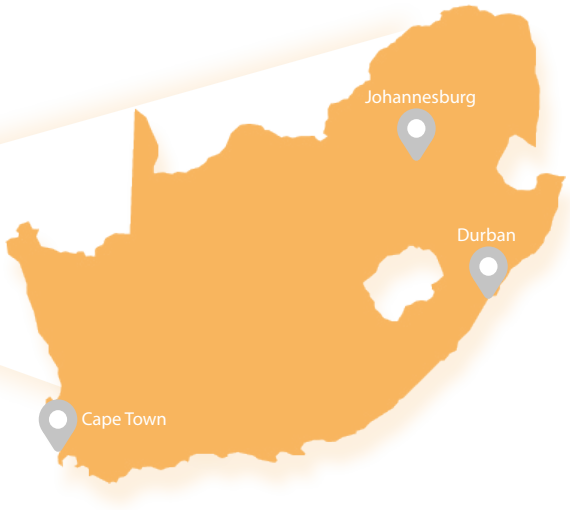
COUNTRY SUMMARY

May 2020



Summary of FCFA work in South Africa

Future Climate for Africa (FCFA) aims to generate fundamentally new climate science focused on Africa, and to ensure that this science has an impact on human development across the continent. FCFA's work in South Africa was self-funded by the cities of Cape Town, Durban, and Johannesburg as part of the FRACTAL consortium.



About FRACTAL

FRACTAL (Future Resilience for African Cities and Lands) aimed to understand the decision context and the climate science required to contribute to climate-resilient development in nine southern African cities (Blantyre, Durban, Cape Town, Gaborone, Harare, Johannesburg, Lusaka, Maputo, Windhoek). The FRACTAL team aimed to contribute to an advanced understanding of scientific knowledge about climate processes, regional and local climate trends to improve understanding of southern Africa's climate and work with decision-makers to integrate this scientific knowledge into climate-sensitive decisions at the city-regional scale (particularly decisions relating to water, energy and food with a lifetime of 5 to 40 years).

The project engaged with scientists, engineers, government representatives and other stakeholders. Working together, the researchers and stakeholders were co-producing relevant knowledge that aimed to support resilient development pathways and enable decision-makers to better integrate pertinent climate knowledge into their resource management decisions and urban development planning.

Highlights from South Africa

- Self-funding meant cities held autonomy regarding work in their city, but were involved in larger project meetings to share lessons with other FRACTAL cities.
- The Embedded Researcher approach in Durban and participation in city learning exchanges, resulted in FRACTAL contributing to biodiversity planning in the city.
- Climate Risk Narratives were developed for Cape Town to update projects for the city, and FRACTAL lessons informed support to the City during the 2015-2018 drought.
- Lessons learned from Cape Town drought have been shared with other FRACTAL cities.

Durban

In Durban, FRACTAL, led by the University of KwaZulu-Natal used the Embedded Researcher (ER) approach to focus particularly on the impacts of climate change on biodiversity. The ER for Durban worked with the Environmental Planning & Climate Protection Department (EPCPD) from the City of eThekwini as well as academics from the University of KwaZulu Natal and FRACTAL. Integrating climate information into biodiversity planning proved to be challenging in Durban due to difficulties in identifying entry points and creating receptivity for officials to take up climate information. Gaps in climate information and data also resulted in challenges for the city.

The Embedded Researcher Approach

The Embedded Researcher (ER) approach was adopted by FRACTAL to bridge the science-policy divide (most notably bringing climate science to decision makers). Early career researchers from local universities were appointed as ERs to work within government spaces (e.g. municipalities) in Southern African cities. The aim of this approach was to co-explore and co-produce knowledge, create and sustain learning opportunities to integrate climate information into cities, strengthen urban governance networks and share lessons between African cities and beyond.

The ER undertook a literature review to understand the ways in which climate information is most commonly used to plan for and manage biodiversity conservation. The ER also compared the activities of EPCPD to recommended practices in global literature. The work of the ER culminated in a monitoring framework to establish and implement a co-produced, comprehensive, adaptive biodiversity monitoring framework/programme in the City of eThekwini, which takes into account long term (climate change) and short term (immediate environmental change) impacts, and draws from various specialists and partnerships.

Through further engagements with the planning process in Durban, the ER was able to support partnerships forming between the Development Planning Department and the Durban Botanical Trust education officers, the Strategic Spatial Planning branch, the Land Use Management Branch, the climate protection branch, Cities Fit For Climate Change (GIZ) and the Municipal Institute for Learning to pilot leadership training on climate change. Furthermore, the ER process improved data sharing and management between stakeholders, which contributed to the creation of a new post for a data manager.

Cape Town

The Climate Systems Analysis Group (CSAG), the lead implementing institution in FRACTAL was actively involved in supporting the City of Cape Town during the unprecedented three-year drought and subsequent water crisis between 2015-2018. Considering CSAG's role in the consortium, many activities were informed by FRACTAL lessons. Furthermore, lessons learned from the Cape Town drought were shared in several other FRACTAL cities (e.g. Maputo, Lusaka, and Windhoek). CSAG contributed to researching climate change attribution, testing water supply models, developing Climate Risk Narratives and improving climate-related terminology to support the response of the City to the water crisis. This included the development of the 'Big Six Monitor' showing water levels in major supply dams in the recent past and immediate future. CSAG is interested in playing a role in developing a climate change think tank within the city, to further develop their information distillation processes.

At the beginning of FRACTAL, Climate Risk Narratives were produced for the City of Cape Town, as part of a move to update the climate projections for the city. These Climate Risk Narratives were developed by scientists who then engaged with the city. These engagements sparked useful discussions between scientists and decision-makers with regarding the city's future.

Climate Risk Narratives

Climate Risk Narratives are stories of various climate futures that have ideally been co-produced using a diversity of knowledge sources and perspectives. The co-production of knowledge uses climate information with stories of plausible futures from a wide range of stakeholders to bring together climate information and local knowledge into Climate Risk Narratives that can broaden conversations across sectors.

The process supports informed decision-making across sectors through learning exchanges and improving understanding of climate change. Climate Risk Narratives should be updated to reflect ongoing interactions between climate, social and environmental aspects.

Johannesburg

In Johannesburg, FRACTAL partners from the University of Witwatersrand worked with the City of Johannesburg with the intention of building relationships and gaining insight into the governance and development within the City. The FRACTAL contact point in Johannesburg has played a key role in developing the updated Climate Adaptation Plan for the City and has shared extremely valuable insights with the broader FRACTAL team. The Climate Change Adaptation Framework reports have been presented to government committees in the City. These were well received indicating the possibility for continued engagement between researchers and government officials on climate change issues.

Selected Additional Resources

Ndebele-Murisa, M.R., et al. 2020. City to city learning and knowledge exchange for climate resilience in southern Africa. PLOS ONE, 15(1), p.e0227915.

Pretorius, L. et al. 2019. An Embedded Researcher approach to integrate climate information into decision making in southern African cities: lessons from FRACTAL. FRACTAL Working Paper. University of Cape Town, South Africa.

Scott, D. and Taylor, A. 2018. Receptivity and judgement: expanding ways of knowing the climate to strengthen the resilience of cities. FRACTAL Working Paper. Cape Town, South Africa

Steynor, A and Lee, J. 2018. Towards developing a common language for climate change in the City of Cape Town. FRACTAL Working Paper. Cape Town, South Africa.

Contributing Authors

Roy Bouwer, SouthSouthNorth, South Africa

Alice McClure, Climate Systems Analysis Group, University of Cape Town, South Africa

For more information, visit http://www.fractal.org.za/ or contact alice@csag.uct.ac.za or info@futureclimateafrica.org

www.futureclimateafrica.org

Twitter: future_climate

FRACTAL Annual General Meeting 2019 in Cape Town, South Africa. Credit: CCKE, FCFA

Disclaimer

FRACTAL
FUTURE RESILIENCE FOR AFRICAN CITIES AND LANDS

Climate & Development Knowledge Network

UKaid from the British people

Natural Environment Research Council