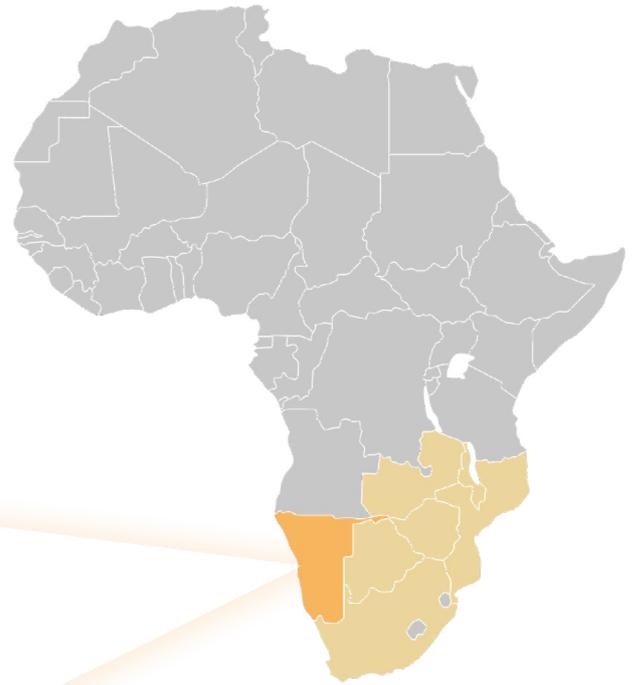


## Summary of FCFA work in Namibia

[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 Namibia, was carried out in the capital city, Windhoek, by the [FRACTAL](#) consortium and led by the University of Namibia.



### Highlights from Windhoek

- [City learning process](#) which included providing climate information, contributing to water-related infrastructure planning and building climate change leadership within the City of Windhoek.
- [Learning Labs](#), an [Embedded Researchers](#), and councillor training facilitated engagements between FRACTAL researchers and City council.
- [Climate Risk Narratives](#) were developed to illustrate possible climate futures
- Engagements lead to FRACTAL informing and co-designing sections of [Windhoek Integrated Climate Change Strategy and Action Plan \(ICCSAP\)](#).

### 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. 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 are co-producing relevant knowledge that will support resilient development pathways and enable decision-makers to better integrate pertinent climate knowledge into their resource management decisions and urban development planning.

## Learning Labs in Windhoek

Learning Labs is a transdisciplinary process involving [co-producing research questions that are relevant for all actors](#), including academics and practitioners, and knowledge that contributes to answering these questions. FRACTAL's Learning Labs approach partly contributed to a shift in how the City viewed climate issues, most notable was the reframing of their climate response plan into a broader response with an *Integrated* Climate Change Strategy and Action Plan (ICCSAP) rather than the sectoral Climate Change Strategy and Action Plan (CCSAP), which was initially envisioned.

The [first Learning Lab](#) in Windhoek in March 2017 played an important role in framing climate change, with a variety of stakeholders co-exploring relevant 'burning issues' in Windhoek. The biggest issues identified by participants were [water insecurity, and the lack of access to energy and services in informal settlements in Windhoek](#). Later in 2017, [the second of these Learning Labs](#) introduced stakeholders to the proposed CCSAP and presented preliminary results of the water security research being conducted by FRACTAL partners. After the second Learning Lab, stakeholders identified key next steps for the ICCSAP being: the need for technical support for climate components of ICCSAP, a vulnerability assessment, focused training with councillors to improve governance and leadership on climate change issues, and for the next Learning Lab to present an opportunity to consult external stakeholders. These steps were supported through FRACTAL, and in order to improve the technical capacity of the City at least two climate science training workshops were implemented.

At the [third Learning Lab](#) in August 2018, FRACTAL facilitated dialogues about water and energy. This allowed stakeholders to co-explore key issues and concepts, while climate information training increased stakeholders' knowledge of climate systems and climate modelling. The lab also reflected on the way forward for the ICCSAP and the sustainability of the "co-learning" work to support the implementation of the response plan. Two FRACTAL representatives from Gaborone (from the University of Botswana and the City of Gaborone) attended this lab to learn from Windhoek stakeholders, as they had initiated discussions in Botswana to develop their own city-specific climate change plan.

This prepared stakeholders for the [final Learning Lab](#) in June 2019, where the progress of FRACTAL in addressing burning climate change issues was reflected on. The Learning Lab provided a platform for stakeholders from Windhoek, Maputo and Durban to share and learn from the experiences of other FRACTAL cities. FRACTAL colleagues presented research on the factors that have influenced the "Windhoek Managed Aquifer Recharge Scheme" and participants considered how lessons from this research could be integrated into the development of the Master Water Plan for Windhoek, initiated at that time of the last lab. Participants also brainstormed ways to integrate

### The Embedded Researcher in Windhoek

The [Embedded Researcher approach](#) was adopted by FRACTAL to bridge the science-policy divide (most notably for climate science). 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, creating and sustaining learning opportunities to integrate climate information into cities, strengthening urban governance networks and sharing lessons between African cities and beyond. In Windhoek, the ER played a vital role in ensuring sustained engagements around climate issues, in particular support for the ICCSAP in the City.

climate information into this plan. While the learning labs aimed to improve the capacity within the City of Windhoek, much of the final event reflected on whether the work had stimulated human agency to ensure the sustainability of FRACTAL's work. The extension phase of FRACTAL will focus on supporting the implementation of the ICCSAP (co-designing Monitoring and Evaluation) and, where possible, informing the Water Masterplan.

### Information distillation in Windhoek

FRACTAL developed the [distillation framework](#) as an attempt to map out some guiding principles, concepts and processes to inform climate information communication. Information distillation in Windhoek, commenced through engagement around the first [Climate Risk Narratives](#). This engagement highlighted key local insights that were missed by the narratives and also raised the issue of framing the challenge as negative storylines that are ineffective in getting stakeholder buy-in, as opposed to positive outcomes of interventions. Strong engagement by local youth representatives, during a [Climate Change Awareness Workshop for City of Windhoek Junior Council](#), provided a forward-looking positive framing of successful implementation of policies and plans.

The emergence of the Integrated Climate Change Strategy and Action Plan (ICCSAP) process provided a valuable path to impact and the revised narratives, using the distillation framework, provide key storylines in the ICCSAP. Targeted climate science training for councillors focussed on the underlying; assumptions, interpretations, limitations, confidence, and uncertainty of the climate information and built understanding and trust between disciplinary experts and decision-makers.

Further detailed exploration of key issues such as extreme rainfall, and the risk of increasing temperature on wastewater reuse processes also fed into the process.

## Selected Additional Resources

Mfune, J. & lipinge, K. 2017. [Windhoek City Learning Lab Report](#). FRACTAL Workshop Report. University of Cape Town, South Africa.

lipinge, K. 2017. [Windhoek Second Learning Lab Report](#). FRACTAL Workshop Report. University of Cape Town, South Africa.

lipinge, K. 2018. [Windhoek Third Learning Lab Report](#). FRACTAL Workshop Report. University of Cape Town, South Africa.

lipinge, K. & Haukelo, S. 2018. [Windhoek Transformational Leadership on Climate Change Training](#). FRACTAL Workshop Report. University of Cape Town, South Africa.

Scott, D., lipinge, K.N., Mfune, J.K., Muchadenyika, D., Makuti, O.V. and Ziervogel, G., 2018. [The story of water in Windhoek: a narrative approach to interpreting a transdisciplinary process](#). *Water*, 10(10), p.1366.

lipinge, K. & Kokanya, E. 2019. [Windhoek Final Learning Lab Report](#). FRACTAL Workshop Report. University of Cape Town, South Africa.

Brandon, K. 2020. [Learning Labs: creating collaborative ways to address climate change in African cities](#). SEI Oxford. 14 January 2020.

Ndebele-Murisa, M.R., Mubaya, C.P., Pretorius, L., Mamombe, R., lipinge, K., Nchito, W., Mfune, J.K., Siame, G. and Mwalukanga, B., 2020. [City to city learning and knowledge exchange for climate resilience in southern Africa](#). *PloS one*, 15(1), p.e0227915.

Walker, N.J., lipinge, K.N., Cullis, J.D.S., Scott, D., Mfune, J., Wolski, P. and Jack, C. 2017. [Integrating climate change information into long term planning and design for critical water related infrastructure in Windhoek and other African cities](#).

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