Urban Caucus Report

Attendees at the FRACTAL Urban Caucus in Lusaka, Zambia

Golden Peacock Hotel, Lusaka, Zambia | 19-21 June 2019

DAY 1

The Tactical Urbanism in George Compound

Welcoming remarks were given by David, a member and coordinator of the Zambia Youth Federation from People's Process on Housing and Poverty in Zambia (PPHPZ). These were followed by introductions.

Speeches

The Area Councillor, Hon. Cllr Salubusa (Area Councillor for George Compound in Kapwepwe Ward 25) highlighted the major landmarks of the community, such as the clinic, and mentioned a few challenges that the community faces. He cited some community projects and initiatives that are being undertaken, such as 'Know your neighbour', whose rationale is to engage members of the community to help solve the community's challenges - in particular crime and waste management. The approach takes self-policing thinking, and local interactions are strongly encouraged.

The Community Based Federation

An account of the George Federation was given by Brenda Tembo, one of the Federation leaders. The Zambia Homeless Federation has its origins in India and dates back to 1958. She explained that the Federation is a national movement that began in Zambia in 2007 and George Compound was the birthplace of the federation movement in Zambia. It currently has 49,000 members across 10 provinces of Zambia and each federation is further divided into smaller groups of 10 people called Housing Saving Schemes. Each group saves money or makes contribution to a group pool fund which is later used to help members in distress or to solve a community problem, such as sanitation. She added that the savings are a backbone of the Federation and three categories of savings exist:

1. Swaliswano /Tigwilizane which is a capital fund. Contributions are k10 per day.
2. Daily savings which are primarily to reduce poverty at a household level.
3. Health savings of k4/person per week. This money is primarily used to help members who are sick.

She added that the Federation also discusses social issues, such as gender-based violence, HIV/AIDS, *inter alia*. The women of the Federation always aim to showcase their various skills to address their household and community challenges. An example given was how they were involved in the acquisition of the land where the community resource centre was built. It was acquired using the capital fund under the Federation and built by the women of the Federation.

Sharing the story of FRACTAL with the Community

Chris Jack

FRACTAL brings together experts from various fields to work towards achieving a better future.

Youth Presentations

1st presentation - Poem titled '*Electric Jesus'* about climate change.

2nd presentation - Poem on water scarcity and climate change *'An intricate chain reaction'.*

3rd presentation - Sketch/poem on climate change titled *'Tiekosesa'* interpreted as 'enforcing the issue of water scarcity and climate change effects'.

Reflections from the Tactical Urbanism

The following are some of the key reflections made during the Tactical Urbanism from the community members, together with the team:

- The settlement has no water supply during the day and youth spend restless nights because they have to be up early to collect water as early as 0200h. This has dire effects on their academics.
- Climate change and effects are shared experiences in countries all over Africa and are not limited to Zambia. Therefore, there is a need to work together to co-produce of helpful climate knowledge that will bring contextualized and relevant solutions.
- There is both power and water rationing in the settlement which affects a number of activities.
- Grievances experienced and possible opportunities that may exist can be shared using the Zambia Federation, the People's Process on Housing and Poverty in Zambia (PPHPZ) platform and via youth conventions for knowledge exchange.
- There is a need for a two-way consultation and collaboration process among the different stakeholders in the community.
- The local authority has formulated a City Resilience Adaptation plan in George and Kanyama Compounds.
- There ought to be an open line of access among the major stakeholders who are in the community, public and private sectors. Experiential knowledge exchange within these interactions is critically important, especially in communicating climate change and coupled with the use of statistics and projects.
- Youth should take up initiatives or roles in addressing climate change through:
  - Documentaries to sensitize the community.
  - Enlightening the community about the dire water situation with regards to availability and quality of groundwater resources by relevant authorities.
- Authorities should take interest in matters affecting the community.
- Governance structures should take cognisance of age groups in the community so that they can devise appropriate methods of communication to the youth. Youth can be used as an appropriate media, using to communicate to people within their community.

> THOUGHT OF THE DAY | *"How can we in our various departments and areas of expertise ensure that what we are doing speaks to the relevant issues that affect people in the community?"*

Tour of George Compound

The tour provided an experience of the neighbourhood and their attempts to address their sanitation challenges.

First site visit: Water kiosk | The tap leader giving a narrative of her typical day in the community and how the water kiosks are managed. The water at the kiosks is supplied by the Lusaka Water and Sewerage Company (LWSC) and a unit user fee is charged per 20 litre container.

Second site visit: Unconventional pit latrine | Above is a dug-out pit latrine, shared by the households around. It is made of recycled iron sheets and does not have a roof. The FRACTAL team were told this is a common sight in George Compound.

Third site visit: Improved pit latrine under the Lusaka sanitation programme | The toilet in the illustration above, is one of the toilets that has been constructed under the Lusaka Sanitation Program (LSP). This is an intervention under the Lusaka Sanitation Master Plan, by the Lusaka Water and Sewerage

Company. The LSP is also required by the by-law that the Lusaka City Council has passed prohibiting the use of pit latrines and conventional septic tanks and soak-aways.

Climate science lab

The climate science labs were used to simulate the climate change scenarios and illustrate some climatic phenomenon that the earth is experiencing.

Activity 1 | Climate experiment with balloons filled with air and water

An air-filled balloon was exposed to a flame (left), and the balloon quickly exploded. A balloon was then filled with water and exposed to the flame (right). The observation was that the second balloon did not explode even after being exposed to the flame for a longer time.

Reflections

- The reaction of air and heat is much more volatile hence the popping of the balloon under hot air. Higher temperatures can therefore cause high energy in the atmosphere and these temperatures extremely affect global temperatures.
- Effects exist both on land and in water. It can thus be used to explain the causes of the cyclones due to the temperature increases in the atmosphere.

Activity 2 | Reactions when water resources are constrained - 'spilling the beans' game

Participants in the experiments were given a spoon with a small plastic cup to draw water from a bowl of water. First, a small group was picked to draw water from the bowl. The second time an increased group were given the same task with the same amount of water in the bowl. With the increased number of people drawing from the bowl, it became more difficult to collect water without spilling.

Reflections

Scenario 1

- Sacrificing one's needs to ensure smooth drawing and a chance for all to draw water
- Exercising patience when drawing water
- Different water requirements for different households

Scenario 2

- More difficult to draw water when it is not enough as each one wants to get their ration
- People in the communities strive to satisfy their needs

Scenario 3

- More scrambling, and as a result wastage
- The way to make people resilient is not always effective
- There is need for cooperation to achieve aspired goals

Energizer | 'Eleven fingers'

Reflections

- Sometimes we try and do not succeed, yet we keep at it
- Difficult game because it's difficult to achieve the number 11 and hence frustrating
- Trying to assume what the other will put forth therefore very tricky
- Tried the same technique by going lower or higher number
- Entertaining when you exceed the number
- We need cooperation to achieve goals

Climate change question session

Chris Jack and Richard Jones

This session's aim was to provide a platform for the community to engage with the climate scientists, ask questions and interact over the matter issue of climate change.

Left: Chris and Richard host the climate science question time

A number of thought-provoking questions on climate knowledge were asked and some of them sparked deep conversations at the tactical urbanism event as well as setting the tone for discussions during the days that followed. The questions included:

1. What is the relationship between Greenhouse Gases and climate change?
2. What is climate change?
3. Do climate scientists know the exact cause of climate change?
4. Are there places that have definite extreme temperatures and have there been any changes in these temperatures?
5. What causes erratic temperatures in Lusaka?
6. What is the difference between climate change and Global warming?
7. What can climate scientists do about climate change?
8. If carbon emissions are reduced by planting trees, is it possible to combat climate change?
9. Is climate change purely a result of anthropogenic activities?

The questions above set the rhythm for the Caucus that started on Day 2, and set the context for conversations during the Caucus. The overall task became how to distil the climate narrative in a language or vocabulary that is accessible to the ordinary member of the community in the city regardless of the locale.

In closing Dr. Gilbert Siame made remarks, highlighting how FRACTAL focuses on creating reach knowledge through a process that tells the story from the community. Such an approach contextualizes need. The meeting was then called to a close by Hon. Cllr Bwalya.

DAY 2

The Opening Session

The opening session was led by Gilbert Siame. In his remarks he gave a background to the FRACTAL project. He pointed out that FRACTAL was based on an identified need to link knowledge generated from research to mainstream decision-making processes and platforms, the decisions that impact people's real-life situations. He added that the effects of decisions that are not evidence-based are creating challenges in how we are managing our cities. This is the main cause that set the path of FRACTAL, to move beyond the walls of the universities and engage with people in the communities, in political offices and in all forms of decision-making.

After the preamble he introduce the invited delegates from the government and the universities. Invited delegates included the Deputy Mayor of the City of Lusaka, the Deputy Mayor of the City of Harare, the Deputy Vice Chancellor, the Dean of the School of Natural Sciences and the Head of the Department of Geography and Environmental Studies from the University of Zambia. The invited guests delivered speeches. The common threads from the speeches were around the need to create links between research institutes and city governments so that decision-making can incorporate the nuances of evidence that is grounded in the real world. With the complexity attached to climate change and how to create an urban governance that renders the urban space

resilient, the speeches also highlighted that climate knowledge needs to be made available to those that hold decision-making positions. As such, collaboration between research entities and the city government through FRACTAL could not be more relevant than at a time like now.

Left: Chris Jack, Gilbert Siame and others consider FRACTAL's processes and impacts

The Deputy Mayor from the City of Harare mentioned that from the side of the policy maker, results of research should not be left to gather dust on the shelves but should play a pivotal role in policy formulation by local authorities. The questions such collaboration should answer are around approaches to urban management that are premised on sustainability. The FRACTAL concept should transcend local authorities and local government to include central government, so that decisions made at a local level can be threaded into national level policy. The Deputy Mayor from the City of Lusaka pointed out that FRACTAL has been a game changer on how the city deals with the imminent threats of climate change. At the project's inception, she said that the propositions and process were unfamiliar but that through the FRACTAL processes understanding has been gained. She highlighted the exchange visit to Maputo and the lessons learnt from Namibia on how wastewater is treated and reused as drinking water. She mentioned that this could be a profound idea to try for the City of Lusaka. She further added that such exchange of knowledge allows a localized and contextualized approach for addressing the African cities' problems with African solutions. FRACTAL has created a material link between the cities on this project.

Left: Deputy Mayor of Lusaka opens the Urban Caucus

The FRACTAL Story

"Fractal has been a lot of things
but what it is really about, is telling the stories,
not made up stories but truthful stories...
stories that represent the people's experience"

Chris Jack

Chris Jack reflected on the underlying thinking of the FRACTAL processes during the opening remarks session. He pointed out that the FRACTAL process is one that looks at a better way of understanding the city through grounded approaches that focus on narratives at the grassroots level and pick out their understanding of the world. He pointed out that It has been a very complex process. FRACTAL has had the difficult task of bringing many conversations, which were all reached and unfolded in different ways, to the point where they could draw *one* way forward. As the project fund comes to a close, it has achieved what it set out to achieve, and in fact, has achieved even more.

The Three Phases of the FRACTAL Story

The Early Days

Some people called it confusing, complex and no-clue.

John Mfune

"When I first attended the first meeting, we were at a golf course in Cape Town ... I have met a lot of people I had never met before. It was a session I thought I just needed to go back because, firstly I the jargon that was spoken there ... I remember people talking about climate change, third space ... we didn't know where we were going. At the end of that day I questioned if I was in the right place or should I just leave and go home. But then I remembered professor talking about the third space and moving out of the comfort zone ... it started to become something that become encouraging ... I am a scientist and now am being told about a lab ... and my picture of a lab is equipment ... With time we started to understand and over time we started learning new words ... When we went to Windhoek there was a struggle to explain what FRACTAL was ... even the acronym itself was confusing ... but over time with participation with other people we started understanding and it became very clear and [I] am glad to report that as Windhoek we have done a lot of things ... that we are now developing a climate strategy for the city."

The Mercy Middles

Lulu van Rooyen

"It took me quite some time to understand why I was feeling confused ... it was a process of finding your feet which take a bit of time ... as an ER [Embedded Researcher] in a project

like FRACTAL it may even take you longer to find your feet to settle into the project ... you start in this small consortium then it turns into this huge monster ... I had to interact with over 100 people [who] I had to know personally and work with daily ... am more confident now in the uncertainty and discomfort."

Kornelia Iipinge

"It took a while for the university to come together ... in March 2017 we had our learning lab and it was difficult to ... find ways of going around things ... especially that I was not a member of staff at the university or the municipality ... but through the learning labs where we had our first engagement with external stakeholders ... it opened up for some people to understand the different activities taking place."

Burnet Mkandawire

"When we were beginning FRACTAL in Blantyre the first question I faced was from my CEO was "what are the operational variables of your research"... am coming from an engineering background and we are used to stating the operational variables of research ... it took a while to have a good understanding with the stakeholders and it took a while ... something that is so special and stakeholders attest to it, is that FRACTAL has represented a paradigm shift in terms of how research should be done. We are coming from a compact research defined to your discipline ... the multidisciplinary approach to research in FRACTAL is the way to go ... the approach to co-production prevented the re-invention of the wheel ... and stakeholders were wondering and asking where fractal had been. FRACTAL has been very instrumental in bring[ing] climate knowledge into decision-making."

Where to next?

Gilbert Siame

"FRACTAL is a brand that should go beyond Lusaka and Africa ... when you say transdisciplinary, this is what it is ... this is how such work looks like ... I have been thinking as one of the people that have been at the core of this project not just how this brand shouldn't come to an end but how do we sustain it and the process. I have three points:

1.   Capacity building aspect to continue engaging in the FRACTAL way ... keeping the momentum we have created in the city of Lusaka and other cities in the region is critically important ... this will require us to transition into some space with less resources but keeping the idea [moving] forward ...
2.   ... knowledge management and knowledge sharing and engaging with the barriers that continue to impede utilization of climate information. That remains a component undelivered largely in Lusaka ... we continue to work in silos and integrating is still a challenge ...
3.   To engage with the idea of attribution ... which things can we attribute to climate change and which things are driven by what thresholds such as floods, health ... food security ... and what is that we know and what can be attribute these things to climate change ..."

The FRACTAL Ted Talks

Rudo Mamombe | Making Decisions in Cities

"... am still tongue-tied from yesterday's [Tactical Urbanism Day] performance from the youths over the challenges they are facing ... I connected to the challenges in a number of ways. In Harare we have a project to have a deeper understanding of the decision making in the city. We had the climate risk narratives, the GEC project ... and the innovation fund think tank. Particularly in the Think Tank we were trying to understand the values and perception that drive decision-making in African cities context ... we gathered stakeholders in the water sector ... involved in a particular decision to rehabilitate a water treatment plant ... what really was the drive for that decision ... stakeholders highlighted that the major trigger was the 2008-2009 cholera outbreak ... the outbreak has about 950,000 reported cases with 4,000 deaths ... this pointed out to the nature of how decisions are made in African cities. If the cholera outbreak did not happen the plant would have not been rehabilitated ... one of the stakeholders mentioned that I wish this cholera outbreaks so that we can have more development in our city. To me that was really sad that should we wait for things to get bad to bring development into our cities. The other thing that came out was that there was negative political interference in the decision making process ... we have politicians who have a different goal of wanting to again popularity and would make decisions that would lead to having more votes and not particularly patterning to the development need within the city ... stakeholders argued that there was no wider consultation ... some said they should have rehabilitated the distribution system before the plant because a lot of water is lost as non-revenue water ... we can ride on opportunities in consultation to make decisions more relevant ... we need to be more proactive in our decision making because climate is real and happening. And if we keep making reactive decisions without considering how the climate is going to be like ... we will be dealing with problems we should have dealt with now."

Lulu van Rooyen | I was invited on a trip with biologists...

"... we were supposed to collect as much biodiversity data as we can in four days ... the experience was jaw dropping ... they asked me "what did you do for your post-doctoral research?" And I was very excited and started telling the about FRACTAL ... everything, the learning labs, putting researchers in municipalities, climate information in decision-making, understanding process, innovative ways of learning and engaging ... I then told them that we play games in FRACTAL and then that's the moment I realized that their faces were blank and never heard a word of what I was saying. I learnt two things that day ... 1. They did not understand a thing of what was coming out of my mouth and 2. They actually did not care ... it was so far removed from their day-to-day activities area of research or comfort zones ... it is the case of working in silos ... there is no problem with working in silos because we do have specialized needs requiring specialized skills ... but we should also know that today we are facing real complex problems of climate change ... and these problems are not solvable by working from a specific discipline silo ... we need more of people that bridge across these silos ... and this is what FRACTAL has been good at ... they managed to return their expertise and yet create these platforms for not only engaging across silos but they also developed people who are silo bridgers ... this was the part ERs played ... they were mandated to move between institutions and act between

institutions ... in FRACTAL this has been conceptualized as the trilateral approach ... the ER sits between a local municipality, a local university and they are supported by a third party which is FRACTAL in this case ...in this trilateral space is where the FRACTAL magic happens."

The Distillation Framework

The framework is one of the key outputs to develop out of the FRACTAL process. It starts with creating a foundation that should be deep and based on a common agreement that we are all looking at the same problem and using the same language. The early learning labs across all cities have been about creating the foundation. The second level in this framework is gathering evidence that is as wide and diverse as possible. This brings in not just climate knowledge but people's understanding, engineering knowledge and experience from the community and we bring it all together into a pot of evidence. At the bottom is the distillation of this evidence and turning stories into narratives that will inform decision-making. Here we further look at the risks being wrong, how to deal with uncertainty and complexity of the problems. This is climate distillation in action.

Parallel Sessions

These sessions focused on three themes. An outline of the key issues that came out of the sessions is given below.

Climate Knowledge Distillation

Alice McClure

One area under this session was around understanding the context of climate change and how the narrative trickles down to the ordinary person in the city. It was about constructing meaning that is based on nuances of the localized urban knowledge systems. The relationships between and across the phenomena. This has been the key undertaking in FRACTAL. How do they build meaning and make connections to climate change? Bringing everyone out of their comfort zone and breaking the barriers to be able to learn about the world from others' perspectives, and refocussing towards what the FRACTAL agenda is trying to achieve.

Experiential Learning

Jess Kavonic

Key points from this session were:

- Learning by doing is important and valuable as you understand events with the nuance of their natural happening. This reduces risks that may result out of not having adequate knowledge about the event, such that you are not able to prepare adequately.
- Sitting and planning on how to handle a phenomenon, which you have little control over it or cannot accurately simulate the behavior of, may not be very

effective. The process of learning is vital before you embark on attempts to deal with a problem. Climate change is such an event, especially because it is very complex.

The power dynamics in the learning process are an important factor to understand as they affect interactions, and safe space for sharing experiences should be created. The process itself is a key element with regards to how actual learning is happening. This is critical when it comes to breaking down the barriers in the interactions of the process. It was pointed out that the process should be able to create a learning space that recognizes different age groups, as each age group experiences the world differently.

Decision-making in Cities

Di Scott

This session looked at the physical things, and absorbed lessons from the decision-making process in the FRACTAL process. It thus looked at the aquifer recharge system in Windhoek and the Ujam water reclamation plant. They also looked at the whole institutional framework that controls the water supply in Maputo. What came out was a multiplicity of actors involved, policies and legislation. For the Ujam case, it is an interesting model based on a Public Private Partnership and how the Natural Resource Management Act in Namibia dictated the management of their natural resources. What is important to note on the Ujam case is that such innovation takes time to settle and start operating optimally. It is not a quick fix but requires observations and learning across time. For the case of Maputo, there is a complex layer of different institutions that are involved in the water supply system, spanning from local (municipal area) to the provincial level.

It was also added as a case on how slum dwellers in Windhoek are pushed out of desperation to draw contaminated water. There is need to critically involve the community in the process. A way should equally be found on how to make the community understand that water is a reticulate service that they should pay for. This understanding may help address the issue of vandalism.

DAY 3

Feedback from Embedded Researchers (ERs)

This session gave reflections on the experience of embedded researchers (ERs) from the cities under FRACTAL.

Hecralito Mucavele | Maputo Embedded Researcher

"First I will start with how I became an embedded researcher. I saw the announcement in the newspaper about a position of an embedded researcher … one day I receive an email from Genito says … you will have an interview from FRACTAL from Cape Town … it was [the] first time that I contacted Alice and the interview was on Skype … The next time Genito called me to be part of the first learning lab … the big challenge I had in becoming an embedded researcher was language … in Mozambique we speak Portuguese and I had

to improve my English ... To be an embedded researcher is a great opportunity because we work in two places ... It is an opportunity to be a linkage between academic and government, linkage of different stakeholders ... Trying to bring all these people speaking the same language in not easy. This is my story about being an embedded researcher; to organize events, to join different sectors, different stakeholders ... My colleague ... sometimes during a call they hear me speak English and they ask "what are you doing?". There is [a] need to be more engaging and take some [patience] and ... Embedded research activity is one that need patience to the process and must be engaging."

Lulu van Rooyen | Durban Embedded Researcher

"I work in an environmental planning department, there were a lot of biodiversity specialists ... at some point last year, I was struggling with a product that I had to develop for the municipality ... there was only one person who could help me with were I was stuck and that was the head of department ... I was struggling to think of how I was going to approach him, but the project could not go ahead without his input. At that point, someone at the university had given me a stack of books about tortoises and I was supposed to hand them out to whoever for free. They were right on my desk, the head of department walked-passed, and he saw the books and it turned out he was crazy about tortoises and he expressed his interest in tortoises. I handed him a book and I realized I should grab this opportunity to ask for his time. ... I followed him and asked if I could set an appointment with him. So for me, it stuck in my head that when you are an embedded researcher, you are an outsider and because you are an outsider, you might not get as much attention as you need ... in order to get your task done. You have to grab every opportunity that comes by."

Brenda Mwalukanga | Lusaka Embedded Researcher

"Based on the FRACTAL projects and engagements we've had, I realized that a lot is about trust and relationships ... In as much as people may have a mandate or [be] obligated by their profession to undertake certain decisions, it also matters the type of trust and relationships you build through these engagements. I learnt that through the learning labs, people who did not speak to each other or did not know each other, started calling each other for ordinary information ... They would not have been able to get that information if ... [they did not create] ... the trust and relationships. It is very important to build relationships and trust ... if you are trusted, you are obligated to provide the other end of the bargain, to provide information, connection and networking. Trust needs to be created in the process. FRACTAL was an experiment that needed trust to be built in the process that results will be attained."

Lulu van Rooyen | Durban embedded researcher

"One thing I have learnt is to also try and share information with different stakeholders. What we have done is we have engaged the politicians, the youths and other local authorities that have not benefited from FRACTAL ... It is a platform to share with others in the city."

Rudo Mamombe | Harare Embedded Researcher

"For someone who would want to be an embedded researcher, my advice would be [that] you need to be someone who is very flexible and can embrace change because sometimes unexpected things happen. There might be a change of plans [and] so you need to be flexible and someone who is willing to learn. You also need to be someone who is humble … You have to be a risk taker because in my case, the Harare city council took the risk of accommodating someone who is not part of their organization."

Left: Anna Taylor and FRACTAL ERs discuss the ERs' central role in FRACTAL's processes

Interviews with the city partners

How the cities have arrived at identifying the cities' burning issues and how they arrived at the process.

Mulavo Makuti | Reflections from the City of Windhoek

"With City of Windhoek, it started with the first learning lab. However, the identification was based on a drawn consensus among the stakeholders. The issues gravitate [around] water, with a focus on provision of water services in informal settlement[s]. There was also the concern on energy in informal settlements. The City of Windhoek was very flexible to the process and the FRACTAL team did not impose anything but allowed the process to shape itself."

Jackson Murimi | Reflections from the City of Harare

"For the City of Harare the engaging of City with Chinhoyi University and the water authority, in the FRACTAL process, to deal with the climate change situation, was mainly focused on the water frontier. This shape[d] priority setting in the process. The Harare process also came through as an organically self-driven process. Going forward for the City of Harare, the water issue is the critical area and from the FRACTAL frontier the agenda is to push the discourse on water resources management, specifically research in wetland management."

Benghu | Reflections from the City of Durban

"For Durban the case is somewhat different from the other cities. The process came at a point when the Climate Change Strategy had just been approved by the city council which

was divided across 9 themes. However, the approach taken was to identify the key theme and biodiversity was identified as the burning issues. This is because the branch of the city council is situated in the core of the biodiversity corridor. The other reason was to have support from the core unit. Going forward, the city has taken a multi-disciplinary approach and has thus engaged UKZN by creating a partnership that has been running for ten years now, called the Durban Research Partnership. The city through this approach is now able to fund activity on the respective themes. Some of these include the Biodiversity Monitoring Program. The approach was limited to climate change and its impact on biodiversity. After the learning lab the approach was changed not to be limited to climate change but [to] also include other environmental factors that affect biodiversity. The current position is to expand the platform and bring different stakeholders on [board] and broadly understand phenomenon. The city now provides the leadership and support to the process."

Genito Maure | Reflections from the City of Maputo

"For Maputo it started with gathering stakeholder[s] that encompassed people from different sectors and institutions across the country. They were made to identify the burning issues, and this came up to five issues. Further analysis of the issue saw then gravitating toward water and health. The methodology was based on creating a nexus of all the issues and then conducting a vote scenario to come up with the burning issues. The process has evolved into a kind of horizontal conversation over these issues anchored on learning from each other by creating a platform of interaction between partners across the sectors. It was further mentioned that there was a presence of tension in the process, because some of the stakeholders did not fully understand the process of FRACTAL. There was thinking that the process was to bring equipment and some accessories to do seasonal forecasting. However, with the continued engagement, an understanding of the process was built as one that brings all the elements such as law and policies to the discussion and creates nuances on the implications to the climate narrative and brings that into the decision-making corridors across all the stakeholders."

Left: ERs and other members of the FRACTAL team reflect on their various roles

The Interview on the Creation of Partnerships in the FRACTAL Process

The Case of the City of Lusaka

David, GIZ

"The current partnerships, which FRACTAL is actively a part of, called the Lusaka Water Security Initiative (LuWSi), involve the public sector being the government, the private sector and the civil society organizations as well as the community. It is a platform where different mandated organizations as well as interested partners meet and jointly create a common understanding around Lusaka water challenges and collectively find solutions. Under LuWSi the focus is on water security and here the understanding of water security hinges on three things:

> *1.   United capacity over people to safeguard sustainable access to water. Thus, the first element is around access to water for social economic development.*
> *2.   Preventing water related disasters. This is where the issues of flood risks management in the city of Lusaka comes in.*
> *3.   Preserving ecosystems. This has been recognized as one area in Lusaka which is extremely of concern."*

Gilbert Siame, University of Zambia (UNZA)

"The University of Zambia (UNZA) is part of the LuWSi network and when FRACTAL was starting, we reached out to GIZ because we knew they had a huge interest in the water sector particularly in Lusaka and had to have detailed conversations to define effective means of tackling the challenge of water insecurity in Lusaka. The exploration are ways to ensure decision-making in city development is climate [driven] ... because one of the drivers of water insecurity is climate itself. The way FRACTAL is inputting into the Lusaka partnership through the LuWSi is that it is tasked to create the climate scenario for Lusaka city ... which are climate risk narratives that feed into the partnership. The second is teaching city officials how to incorporate climate change issues into decision-making and FRACTAL has been carrying out training to [build the capacity of city officials to understand] climate information ... bringing it into the mainstream decision-making process[es]. The trainings focus on educating city officials on types of information on climate change and how it can be brought into decision-making process[es]. There is also a component where the FRACTAL process encourages the need to be pro-poor as this is of particular interest to LuWSi. This focuses on the need to engage local communities to participate in the process. The interest here is to increase the knowledge and capability of city officials on climate change. Overall, it is an approach that looks at inclusivity in decision-making."

Has the partnership been formalised or is it a kind of NGO?

David, GIZ

"The partnership is not necessarily a traditional organization but rather a structure based on an initiative for collaboration. The initiative was about plugging a gap between institutions across the city in relation to water and how institutional performance can be

enhanced through the partnership. Therefore, the formalization of what it will be, is still under discussion but the goals of what it intends to achieve is decided and known."

Is FRACTAL a member of the partnership?

Gilbert Siame, UNZA

"Firstly, it is worth noting that challenges posed by climate change cannot be solved by one institution. It should be a collaborative effort and shared understanding. The university is in the governing structure of the LuWSi system and FRACTAL is a cornerstone of the UNZA's involvement in the partnership. The intent for FRACTAL is to amplify the use of knowledge generated from research in decision-making. One of the key reasons for this approach comes from the awareness that the city has received millions of monies into [the] water sector. However, significant areas of the city still [do] not have access to water. Grounded learning and knowledge is missing and this is the perspective that LuWSI brings ... and FRACTAL is the voice [of] knowledge and learning the urban space."

FRACTAL ending, what does it mean for LuWSI?

Gilbert Siame, UNZA

"Firstly, Fractal is ending but the process still goes on and the process continues within LuWSi. This is because the interest that we have at FRACTAL are still embraced in the LuWSi process and so FRACTAL in a way still continues, however, under a different umbrella.

Secondly, FRACTAL activities will not end but will be scaled down. Therefore, platform for interaction and contribution into the initiative will still continue. What is happening is not FRACTAL ending but transitioning to the next stage. What that entails is that, at FRACTAL we want to define certain activities that will feedback into the LuWSi process. Some of these activities include inputting into the Water Investment Plans for Water Security in Lusaka which LuWSi is leading and funding at a larger scale.

Thirdly, there is a need to deliver the streamlined and coordinated knowledge management and sharing system for decision making. This has strong interest by both parties i.e., FRACTAL and LuWSi. Ideas here include creating an urban dialogue nexus which can happen quarterly through the LuWSi networks and upscaling these dialogues up to national level so that they can impact national development policy in as far as climate sensitivity and resilience is concerned. This depends particularly on national networks that LuWSi has in government systems. Going forward, the FRACTAL process will be scaled down but targeted focusing on key urban issues identified within the partnership."

Has the alliance between LuWSI and FRACTAL impacted the decision landscape in the City of Lusaka?

David, GIZ

"Firstly, what has made LuWSi ... succeed in the partnership with FRACTAL is the mutual trust that has been created between the two. The success of the partnership comes from the shared interest of higher-level interactions focusing on what can be collectively achieved. With this, we have created a network of professionals which makes it easier for

sharing climate information and beyond. It also has a harmonized strategy to take up some of [the] climate information into the mainstream policy making process. At present, the partnership has produced policy briefs which are the informants of the ... water security plans [within] the current Water and Sanitation Master Plans in the City of Lusaka."

Policy Briefs - LuWSI and FRACTAL

Dr Nchito

"Firstly, what underscores the success of LuWSi is that the secretariat has been moved from GIZ and is now sitting with NWASCO for a simple reason. We want to create a sense of ownership. If it stays at GIZ it can lead to a sense of relaxation to parties when it is not locally hosted. Coming to how the policy briefs were generated, the start was identifying burning issues which was done during the first FRACTAL learning lab in Lusaka. Four issues were identified:

1. *Flooding in the city*
2. *Ground water*
3. *Water supply and sanitation*
4. *Water quality*

From this learning lab, it was ... agreed that going forward FRACTAL for Lusaka will be focused on these issues. The second learning lab was a synthesis of the four burning issues. This focused on identifying the drivers and causes. After the two learning labs, the next question was how to put this information out there and how the information can impact mainstream decision-making. Policy briefs were the most appropriate platform to document this information and the most effective way to communicate this information to the policy makers. The process of drafting the policy briefs was a highly engaged and inclusive process which brought a number of stakeholders into the formulation."

Partnerships in the City of Harare

Simon Mserere

"Reflections from the City of Harare. FRACTAL in Harare has been focused on bringing stakeholders together into a partnership and breaking barriers to create a safe space for interaction. This has been a huge achievement for Harare. FRACTAL has also come in as a form of advocacy within the municipality over key water security issues. It could be interesting for Harare to make a deliberate attempt to learn the partnership processes that are happening between FRACTAL and LuWSI in the City of Lusaka because it has [been an] interesting process that Harare would find very useful."

Where to from here?

In framing the way forward, discussions centred on exploring and expanding the networks by layering them at national and regional levels. Areas of thought here were that firstly, we need to ask questions about how we bring the informal process of FRACTAL into these formal networks that exist. Who takes what role and whose

mandate is it? The second is how do we make the intangible tangible? The role of arts in the community plays a key role in making intangible tangible. Arts provide a more effective methodology to describe the process. The third is around how we demonstrate the value in the FRACTAL process. When we experience the process and feel the tangible value, how do we demonstrate it? How do we make FRACTAL go out into the world and not be seen as workshop after workshop?

Questions and Commentary on how to get "there" from Caucus Discussions

1. During the next FRACTAL event, there should be a creative session, where you have a heart making session so that you manifest FRACTAL ideas in a heart which will have the harvested ideas for FRACTAL as the takeaway.
2. How do we consolidate the games that we have learnt in FRACTAL within the cities?
   - Formalize how to bring people together to share knowledge and expertise.
   - Create a budget line.
   - Matrix to demonstrate value.
   - FRACTAL has to generate some findings on value that it has added to the existing systems and networks in the cities.
   - Move away from project cooperation to MOUs between institutions and government departments and create an annual reporting system as a way of creating sustainability in the process.
   - Having a platform to share lessons, successes and tool-framework and consideration for hosting this platform at SADC level - this will be a relevant contribution to reporting on SDG 11.
   - Ensure local NGOs, communities and advocacy groups are involved in policy processes and the forums mentioned above.
   - Ensure that universities are part of the networks with focus on relevant action research with broader (regional) level influence
3. The other focus is on community livelihoods and climate change. Three points were made:
   - Community involvement and empowerment in dealing with climate change. This will make interventions relevant and sustainable to the needs and livelihoods of the community. It will also make the community responsible to their environment. Further, there needs to be capacity building to effectively implement mechanisms for addressing climate change and this should be followed with sharing of knowledge. These processes should identify focal point persons in the community to spearhead the initiatives.
   - Stakeholders, such as those from the city or researchers, should question regulations on planning in order to interrogate their relevance to the urban needs, for both the formal and informal areas of the city.
   - Decentralization of the urban setup. The planning role should be decentralized from the council level down to the ward level of the urban planning functions. This should aim at finding appropriate methodologies that can improve provision and access to services in the city.
   - Accountability of government institutions and communities.

4. Future plans for water supply in the face of climate change
   - We need to plan for water demand management.
   - Implement water conservation practices and reduce waste.
   - Inculcate water conservation practices
   - Secure water. Encourage water harvesting during rainy season.
   - Reinforce reserves to ensure water sources are safe and separate from wastewater.
5. How to encourage evidence-based planning techniques and decision-making processes:
   - Using experiences as learnt from the FRACTAL process of co-production in producing the evidence through strengthening partnerships.
   - Embedded researcher model has proved to be successful and can be replicated but an analysis of funding modalities for it to be sustained is necessary
   - Enrolling of local authority official in training programs on evidence generation on climate change. They should be bonded to work for the local authority.
   - University curriculums should include climate change and evidence generation.
   - Commitment by the council leadership by council official to go on long term training.
   - Address aspects of access to MET data. It has been observed that access to this critical information needed for making climate adaptation decisions is not easily accessible or available.

Photo Gallery

Above and left: Members of the FRACTAL team, ERs and Lusaka stakeholders share the 'friendship couch' at the Urban Caucus