5 Receptivity to the knowledge of others

Building urban climate resilience in Southern African cities

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Introduction

The field of climate services is based on the premise that relevant climate information and tools for decision-makers can be provided by authoritative experts and transferred to societal users of information who will then use the information to make decisions that lead to climate-compatible urban development (Vaughan and Dessai, 2014; Brasseau and Gallardo, 2016; Nagy et al., 2020). This stems from the deficit model that assumes that poor decisions are made because of a lack of scientific knowledge (Cook and Melo Zurita, 2019). Yet there is a growing body of knowledge suggesting that people learn and shift their perspectives and values through affective experiences, rather than being given information, no matter how tailored.

This chapter explores how transdisciplinary collaborative processes can be designed to provide a space for thoughtful and critical dialogue between diverse urban stakeholders to engender an enhanced understanding of and receptivity to creating more resilient cities through the inclusion of climate information in decision-making. The Future Resilience for African Cities and Lands (FRACTAL) project proposed from the outset to use a transdisciplinary approach to knowledge production and application, as literature over the last two decades has critiqued the conventional disciplinary academic system and its conceptualisation of science and society as a binary set of categories (Hessels and van Lente, 2008; Klein, 2013; Swilling, 2014; Polk, 2015; Vogel et al., 2016). As transdisciplinary research aims to produce knowledge to address real-world social problems, it requires a “messy engagement” of diverse participants who bring different types of knowledge to the engagement process (Davies et al., 2008, quoted from Nagy et al., 2020, 149).

This chapter presents one of the critical outcomes of the FRACTAL project, namely, the emergence of the concept of receptivity as an alternative way to understand the shift to a more sustainable way of thinking about future development decision-making in Southern African cities. Receptivity is argued here to be a subjective, non-material process associated with values, identity, ethics, and emotions operating at individual and social group or community scales (Lotz-Sisitka et al., 2015; Gosnell et al., 2019, 58). This notion of receptivity echoes
the emerging literature casting the Anthropocene as a social problem, requiring socially negotiated solutions and situating human agency as central to this process (Lövbrand et al., 2015). This differs from the technical, expert-dominated solutions to climate change issues in cities (Gosnell et al., 2019).

The chapter provides a brief review of the concept of receptivity, outlines the context of the FRACTAL research project, and gives evidence of how receptivity was stimulated in it. The evidence is presented through the following five overlapping themes:

- The creation of a safe space for engagement.
- The engendering of cross-sectoral dialogue in participatory forums.
- Embodied practices and the use of serious games.
- Disrupting conventional assumptions about contentious issues.
- Expanding time horizons and thinking about the long-term future.

The first four of these themes were identified from a review of existing literature on receptivity and used to deductively structure the analysis of the FRACTAL evidence. The fifth theme emerged from the evidence inductively as an important aspect of receptivity as related to issues of climate change and urban sustainability.

**The concept of receptivity**

The notion of receptivity has been debated by political scientists and philosophers (Kompridis, 2011; Nedelsky, 2011; Mihai, 2016; Beausoleil, 2019), as well as researchers from science and technology studies (Lawson, 2010; Latour, 2011) and various studies in applied fields such as agriculture, education, and medicine (Gosnell et al., 2019; Kumagai et al., 2018; Hendren and Kumagai, 2019; Kumagai and Naidu, 2015, 2020; Nagy, et al., 2020). These writers question the established ways of thinking about human judgement, decision-making, and action to understand societal change and the deepening of democracy.

The literature shows that receptivity occurs when actors, in their encounters with frames of reference and knowledge different from their own, open themselves to the frameworks of others (Kompridis, 2011; Nedelsky, 2011; Mihai, 2016; Stengel, 2018). If they do not open themselves, it suggests that they do not want to change their frame of reference and instead want to remain in the realm of business-as-usual in their decision-making and practice (see Scott and Taylor, 2019, for a literature review). Essentially, it is posited that receptivity results in a shift in epistemology or way of knowing social reality.

When encountering different frames of reference, through engagement and dialogue on substantive issues, peoples’ views expand, and their decision-making becomes more impartial. It is the everyday engagement with different points of view that enables the cultivation of judgement and the ability to respond to the inevitably changing world around us (Nedelsky, 2011). Experimentation and new possibilities arise: “we experience an enhanced understanding of ourselves, each other and the world around us, through the opening up of additional questions
and possibilities” (Kumagai et al., 2018, 1779). Receptivity to other frames of reference is in no way passive, it is rather a stance, a way of engaging, thinking, and acting in relation to others that is open, with a willingness to share, to let go, to take on and arrive at new insights and new ways of thinking and being (see Scott and Taylor, 2019, 4).

It is in participatory processes in which actors engage in dialogue that they are likely to come across different frames of reference and a state of receptivity can be facilitated (Kompradis, 2011; Patton and Parker, 2017; Kumugai et al., 2018). It is proposed that in these spaces, a community of practice could become receptive to different ways of thinking and doing, and actors thereby shift into a more transformative mode in their practice. In suspending their existing categories, space is made for “new or marginalized viewpoints to find their way into the political arena” (Ryan and Flinders, 2018, 137). Through dialogue, mutual recognition and respect grow, nurturing trust between parties (Hendren and Kumagai, 2019).

When people feel safe in an environment of trust and empathy, receptivity and listening is enhanced (Beausoleil, 2014, 2019). Thus, if receptivity is an affective and thus primarily embodied state, some authors argue that embodied practices, such as role-playing, playing serious games, and storytelling, might be among the most direct and effective routes to fostering receptivity and giving people a voice (Furber et al., 2018; Justice et al., 2018; Magnuszerski et al., 2018). Therefore, it can be argued that receptivity is a crucial forerunner of both transformation and change (Lotz-Sisitka et al., 2015).

The literature on receptivity highlights several concepts, namely collaboration, dialogue, safe spaces, trust, listening, empathy, mutual learning, communities of practice, and affect (Callon, 1999; Beausoleil, 2014; Patton and Parker, 2017; Justice et al., 2018; Kumagai et al., 2018; Beausoleil, 2019; Hendriks et al., 2019; Scott et al., 2019). Theorists from a range of domains have used these concepts to argue that in transdisciplinary, collaborative research, a “safe space” – a space in which it is safe to take risks and venture out of one’s comfort zone – is essential for fostering dialogue, and that receptivity to other viewpoints and knowledge prompts critical assessment of conventional categories, opening the door to mutual learning and transformational thinking (Hendren and Kumagai, 2019; Nagy et al., 2020). Furthermore, theorists argue that an affective, dialogic approach that captures voice and personal experience allows for the suspension of existing frames of reference and has the potential to shift to more transformative understandings of complex problems (Beausoleil, 2014; Meijers et al., 2016; Ryan and Flinders, 2018; Hendriks et al., 2019).

Context of the research

The transdisciplinary FRACTAL project commenced in July 2015 with a view to better understanding regional climate patterns impacting Southern African cities and the governance arrangements shaping urban development pathways. It was designed to facilitate engagement between scientists, government
decision-makers, and civic actors in Southern African cities, all of whom hold knowledge that is not only “legitimate” but “indispensable” for building climate resilience (Polk, 2015, in Scott et al., 2019). The model adopted assumed that there were many sources of expertise in society other than scientific knowledge (Lane et al., 2011) and that co-production of knowledge was needed to understand and manage urban problems in the face of increasing complexity and uncertainty in the Anthropocene (Callon, 1999; Lövbrand et al., 2015).

Assuming that cities are an integral part of the region they are situated in, the FRACTAL project aimed to contribute to creating more climate-resilient city-regions across Southern Africa. To do this, it was necessary to engage with city decision-makers to understand the specific context of the cities, their key developmental issues and climate risks, and how climate information could be integrated into their decision-making processes. The project consisted of a large team of academics and city stakeholders working across nine cities in Southern Africa. The stakeholders included city officials and councillors, as well as a range of non-state actors such as community organisations, NGOs, and international organisations (e.g. UNDP). The engagements mainly took place through a series of Learning Labs (LLs) held in the cities of Lusaka, Maputo, and Windhoek between 2016 and 2019, as well as a series of Dialogues focusing on special issues. The research questions that guided the process were:

- Which “burning issues” facing cities need to be addressed through climate-sensitive decision-making so as to avoid exacerbation?
- What types of climate information are needed for different types of decisions?
- Which policies and legislation include climate change considerations, and which do not?
- Who are the actors who would need to be involved in the production and application of climate information?
- What are the “entry points” for climate information in each city?

Implicit in the latter two questions is a one-way mechanism of climate information moving from expert scientists to city decision-makers. This chapter aims to show how this implicit unidirectional movement of climate information was challenged through a participatory and iterative research process in the FRACTAL LLs and Dialogues, whose participants produced locally relevant climate knowledge to inform decision-making.

The LLs were set up to be a “third space” where the diverse participants would meet face-to-face and bring their own knowledge and share it with others through collaborative engagement on a level playing field (see Scott et al., 2019). The binary knowledge categories at issue in the FRACTAL project were the scientific knowledge produced in the academic domain, and the practice-based knowledge produced by government officials in the spaces in which they operate. It was assumed that in the third space, neither of these knowledges was dominant, promoting the development of new conceptual categories and creating the potential for new hybrid meanings to emerge (Wallace, 2004; Klein, 2013). As
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a transdisciplinary process, the goal was to set aside the hierarchies, dominant in both government and academic workplaces, and the dualistic relations between “experts” and “practitioners”. The collaborative LLs were intended to facilitate mutual learning by creating a free and open space where participants would learn about the approaches and worldviews of the other participants. They were specifically designed to be learning spaces as well as spaces for producing knowledge products. The authors participated in the LLs and Dialogues and contributed to their design. Their observations and the reports produced after each event provide the evidence presented in this chapter.

Ways of engendering receptivity

This section reviews evidence from a range of processes and activities in the LLs held in the cities of Lusaka, Windhoek, and Maputo, in which participants demonstrated receptivity. The four themes derived from reviewing the literature on receptivity are applied deductively to analyse the undertaken collaborative activities and the reactions of the participants. The fifth theme that emerged from a reading of the evidence through the lens of receptivity is then discussed. The findings for each of these themes are presented separately for analytical purposes, although the themes are overlapping and reinforcing of each other.

The Learning Lab as a safe space for engagement

At the outset of all FRACTAL LLs, the democratic principles of the open interactive “third space” were presented to give everyone equal voice, value, and respect. However, it was acknowledged that while engaging with one another in this shared, safe, third space, participants still belonged to their organisational, disciplinary, and community “home spaces”, which provided them with a sense of dignity, purpose, and solidarity (Routledge, 1996, 410).

The concept of the “third space”, as a shared space in which everyone was outside of their home spaces together, was actively used in the activities to break down binaries and the barriers between different domains, between the academic and the practitioner, state and civil society actors, and within hierarchies, to produce more constructive and transformative relationships (Scott et al., 2019). For example, the Head of the Maputo Council participated in the first Maputo Water Dialogue (Maputo Water Dialogue 1 Report) and, after the opening formalities, was observed participating on a more equal footing with the participants who were junior officials in the municipal government, than was usually the case in other meetings. Considering the municipality’s highly hierarchical culture, this was evidence that the playing field had been somewhat levelled in terms of power and rank. In this way, the goal of each LL was to work against power as a basis for sharing and producing knowledge and creating inclusive opportunities to contribute openly to new understandings (Kumagai et al., 2018).

The activities in the LLs were designed to be dialogic, interactive engagements, rather than relying on the conventional didactic approach to learning.
based on “banking” abstract concepts and data. Although discord, power exertion, and struggle were occasionally observed, the reflection sessions held at the end of each day provided participants with the opportunity to question and reflect on their own values, experiences, and worldviews (Kumagai et al., 2018). As the process proceeded, participants began to let go of the need to be defensive and more readily share their interpretations with others. A Lusaka participant reflected that “there was a sense of togetherness” at the LLs (Lusaka LL4 Report).

Field trips that accompanied the LLs proved successful in creating a mobile third space to explore linkages between climate, water, and urban issues in the region. Travelling together in buses and staying overnight and eating together at the LL field sites provided rich opportunities for dialogue, building bridges between participants from municipal and national governments, civil society organisations, and academia. For example, the second Maputo LL was held at the Pequenos Libombos Dam, with a field trip to view the origin of the drinking water supply for the Greater Maputo Region. Since the issue of water supply, quality, and management had been established in the previous LL as “burning issues” impacted by climate change, this visit was particularly illuminating because it showed the dam level to be critically low, only 20% of the dam’s capacity, due to the three previous years of drought during which Maputo experienced a “water crisis” (Maputo LL2 Report). Similar experiences were recorded in Lusaka and Windhoek, where participants travelled together to view the Iolanda Plant and the new pipelines to supply water from the Kafue River to Lusaka, and to inspect the Goreangab water reclamation plant as well as a groundwater injection point of the Windhoek managed aquifer recharge scheme (Lusaka LL3 Report; Windhoek LL3 Report).

The dialogic approach created excitement and participants pronounced the novel experience of the Learning Lab to be so different from the more conventional “stakeholder workshops” relying on one-way knowledge transfer that provided little potential to surprise (Scott and Taylor, 2019, 9). Reflections did not, however, exclude criticism. For example, people criticised the shortage of engagement time, the lack of participation by high-ranking officials of water institutions, and the tendency of some participants to dominate.

While the dialogue that took place in the LLs did not always lead to specific outcomes, it enabled participants to “understand [themselves], each other, and world around [them] through the asking of additional questions and possibilities” (Kumagai et al., 2018, 1179). A common and important reflection from the LLs was a new understanding of the complex linkages between water issues and climate change.

**Engendering cross-sectoral dialogue in participatory forums**

Beausoleil (2014) differentiates between the intellectual/cognitive approach (didactic) to knowledge and the aesthetic/affective approach (dialogic). The former is the conventional, direct form of knowledge sharing where there is a one-way stream of information presented to participants, while the latter involves
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transactional engagement between participants, that is, dialogue. While the didactic knowledge transfer was recognised as having a place in the LLs, dialogue as a form of knowledge sharing was prioritised. It was recognised that there was a need to include both knowledge transfer and reflective dialogues in the LLs (Kumagai et al., 2018) so that participants could include their own thoughts and values and factual knowledge (Nagy et al., 2020). Dialogue, according to Kumagai and Naidu (2015, 283), allows for “the inclusion of affective and experiential dimensions... and for an emphasis on discovering new perspectives, insights, and questions instead of limiting participants solely to an instrumental search for solutions”. This dual approach was the dominant strategy applied in the LLs. The engagements lasted several days and included a number of short presentations and collaborative exercises led by various participants relating to current research, policy, and planning initiatives.

Nikulina et al. (2019) propose that differences in culture and language, and a variety of epistemic communities among participants, present barriers to dialogue. It is therefore important to include participants representing these cultural and linguistic differences and epistemic communities in the research team, as the FRACTAL project attempted to do.

Group work was also used as a dialogic method in the Maputo Learning Lab 4 (Maputo LL4 Report), where groups were tasked with building a physical model using various materials such as cardboard, string, and pipe cleaners to depict the voyage of a drop of water from the Lebombo mountains to Maputo – “from the mountains to the sea”. Again, the groups consisted of diverse participants, and the intense engagement and dialogue sessions brought about new understandings across the water institutions and highlighted the need to have institutionalised cross-sectoral forums through which these institutions could engage to understand all the implications of water governance. As in other LLs and engagements, participants voiced that they greatly valued the opportunity to engage in dialogue across the siloed institutions in the water sector, especially about the impact of climate change on water supply: “It was nice to meet colleagues from the water sector, the [water] distributors, consumers, etc. were all there, which is rare” (Maputo Water Dialogue 1, 23/2/2018).

Disrupting conventional assumptions about contentious issues

Operating in the third space as a location of knowledge co-production has the potential to foster the reconfiguring of different viewpoints (knowledge domains), lead to innovations, broaden horizons, and give rise to many possibilities for future action (Routledge, 1996; Klein, 2013). Hence, the third space holds the potential for socio-political transformation and transgression (Lotz-Sisitka, 2015). Working in the third space where conventional understandings of problems are disrupted can create a “different awareness of the problems and situations that mobilise us” (Stengers, cited in Whatmore and Landström, 2011, 583). The literature on receptivity critically debates how a heightened receptivity places the agent in a position to act in transformative ways by changing the
way they think, leading to a shift away from business-as-usual practices (Scott and Taylor, 2019). Through dialogue, agents “learn how […] to place themselves in the shoes of others” (Mihai, 2016, 24), and in so doing make less biased judgements and decisions. With enhanced receptivity comes the potential to bring about change, allowing ourselves to be “unsettled, decentred, thereby making it possible to occupy a potentially self-critical and illuminating stance” (Kompridis, 2011, 264). Receptivity to new possibilities for the future is critical for the transformation and disruption of conventional thinking (Nedelsky, 2011). In the reflection session, when asked what they would do after the workshop, one of the participants from the third Windhoek LL said: “We will change our mindset to consider that climate change impact is a serious issue affecting everybody” (Windhoek LL3 Report).

Using the group dialogue method, an activity was explicitly designed to collectively explore what the shift from business-as-usual to transformative decision-making that integrates relevant climate information might entail. This was pioneered at the Windhoek Strategic Executive Climate Leadership Workshop (6/3/2019). In the morning session of the workshop, hypothetical case studies of urban development projects were proposed, and groups were created to work on each case. The cases were as follows: the development of a new township north of Windhoek; a circular road around the city of Windhoek; a new dam northeast of Windhoek; and the formalisation of an informal settlement in the west of Windhoek. Groups worked to describe the sequence of decision-making steps necessary in the development process. For example, the steps involved in participatory processes with local stakeholders and undertaking an Environmental Impact Assessment. Discussions often became heated as group members, made up of government officials, politicians, and civil society representatives from various sectors, teased out the sequence of steps in the decision-making process. In the afternoon session, after some briefing about the mainstreaming of climate change (see Scott et al., 2019), the groups were tasked with thinking about how they would include climate information, in what format, into decision-making steps.

In both sessions, through dialogue and debate, each participant had opportunities to engage with other team members and assimilate their frames of reference. Their receptivity was exercised through their willingness to let go of the notion that their views were the only or most valid ones, and that there were other ways of viewing the issue under discussion. This had the potential to open them to new ways of thinking and being. Many of the participants reported during the reflection session at the close of the event that it felt like they had experienced a paradigm shift and were seeing the world and the development, water, and climate challenges facing Windhoek in a completely new way.

Embodied practices: The use of performance and serious games

The cultivation of conditions that employ visual, affective, and physical aspects of communication in collaborative processes is thought to enhance the receptivity that democracy requires (Beausoleil, 2014; Justice, 2018). Theorists argue that
performative practices in which people use their bodies heighten their feelings and lead to their emotions and values influencing how they perceive the issue (Pile, 2010; Beausoleil, 2014, 2019). The affective approach differs greatly from the conventional verbal and cognitive approach that is didactic and involves the transmission of knowledge through abstract conceptual models or normative terms, such as principles of climate resilience or good urban governance. The dialogic approach, which includes embodied practices, enhances brain functioning and learning, and it improves mood, energy level, motivation, and capacity to focus (Beausoleil, 2014). It is evocative and transactive, allowing for the experience of the concrete reality of issues and for feeling the humanity within them, enabling people to connect with, care for, and be impacted by what they experience. Therefore, if receptivity is an affective state, and thus primarily one that is felt by our body, then embodied practices, such as role-playing, might be among the most direct and effective routes to encouraging and fostering receptivity.

During the LLs and Dialogues, various physical activities were used as ice-breakers and energisers, such as the paparazzi and bodyguards game and the broken telephone game, where a climate message is circulated among participants and, despite best efforts, becomes distorted through repeated communication. In addition, the project team actively sought to replace expert-led didactic presentations, with more embodied performances. A successful example of this was Tupopyeni oClimate (translated as Let’s Talk Climate), a staged talkshow in which the host engaged a panel of invited guests (drawn from the participants) with questions and took questions from the “live studio audience” (i.e. other LL participants). This was first undertaken at the second Windhoek LL (Windhoek LL2 Report) and the format was then used again in various subsequent FRACTAL events. This was a novel way of providing information in an interactive and engaging way, allowing for improvisation and surprise.

The most overt form of embodied and performative methodologies employed in the LLs were serious games (Callon, 1999; Beausoleil, 2014; Edwards, 2019). It is argued that collaboration can be achieved more effectively through the use of serious games that have the potential “to create a safe critical space to recognise and negotiate differences, value what each partner brings, and co-create innovative research processes and outputs” (Justice et al., 2018, 1). Games have rules and are a simplified but realistic version of reality, however, the outcomes can be variable depending on the strategies adopted by the participants. They are a method of triggering discussion and social learning that can be transferred from a fictional world to the real world (Furber et al., 2018). Because participants are acting out a position in a game, it allows them to develop empathy by better understanding their colleagues’ positions and goals as well as the power dynamics (Justice, 2018). Games also have the potential to reveal the importance of investing in relationships, partnerships, and collaboration to achieve goals and the need for reflective practice throughout a collaboration (Edwards et al., 2019).

One of the serious games played in the FRACTAL LLs was the spilling the beans game. It involves six or seven participants representing households competing for water supply (the beans) whose goal is to fill their glasses to a
certain level with beans to ensure an adequate household water supply under average rainfall conditions. Two common yet different ways of thinking about the resilience of the water supply system are presented, namely, 1) maintaining the status quo or “bouncing back” and 2) changing to a new system or “bouncing forward” (Lee et al., 2017, 1). The game produces winners and losers with winning requiring some boisterous scooping up of beans from a bowl. This is followed by a discussion of the strategies used by the two teams, after which two more scenarios are presented: a year of below-average rainfall and a water shortage due to faulty water tanks. The game is repeated for each of these scenarios. When this game was used in the LLs, it sparked lively discussion, with participants debating whether or not the water system was resilient and what adaptive measures could be considered. As one participant commented:

I have learned a lot. Sometimes we pretend to know things when we do not. We should not just go along. Should learn from others in the group. I learned we are not all at the same level and we need to accommodate each other’s opinions and knowledge.

(Windhoek Transformative Leadership Workshop Report)

The use of serious games in the LLs demonstrated that with the suspension of reality, participants open up to new ways of viewing issues and become receptive to alternative solutions to problems such as drought and water security.

Expanding time horizons and thinking about the long-term future

The LLs revealed that the climate-sensitive “burning issues” in the cities of Lusaka, Windhoek, and Maputo were water-related. However, decision-making related to these water issues was largely conceived of within a timeframe of a political five-year term that conventionally frames the horizon of municipal decision-making. In the context of climate change, it is crucial to extend this decision-making time horizon by facilitating participants to think across the 25-to-30-year timeframes in which climate (and urban) trends play out. In a more general sense, thinking about the future requires a shift to more transformative and multigenerational thinking due to the pressing need for building greater resilience and sustainability to protect the environment and society.

The LLs included activities to facilitate thinking about possible climate and urban development futures and how to get from the “here and now” (i.e. business-as-usual practices) to the “there” of a climate-resilient future (i.e. adaptive and transformative practices that foster inclusivity, equity, and sustainability). The Maputo Water Dialogue 2 (Maputo Water Dialogue 2 Report) provides evidence of a series of participatory, group activities that dealt with the contemporary challenges faced by the water sector, the question of what the future climate and its impacts might be like, and building scenarios of the future (both positive and negative), including the visioning of a future city of Maputo. Sessions were designed based on the Three Horizons approach.
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(H1), which represents business-as-usual with the shortcomings and problems of the present. The second horizon (H2) is a moving border between the present and the future. The third horizon (H3) is the long-term future. This approach, originally developed in business management, has been widely applied\textsuperscript{19} to think about and plan for long-term societal change. The Three Horizons is a model that allows for the need to manage the present while exploring the future. The idea is that the shortcomings in H1 have led to innovations that address problems in H1 and eventually become mainstream in H2. H1 is therefore the dominant system that has a managerial mindset with problems that challenge future sustainability, while H3 is the desirable state that inspires us. H2 then is a horizon of tensions and dilemmas where innovations to prolong the status quo of H1 clash with the need to achieve a more transformative vision of the future in H3 (Leicester et al., 2017, 18–19). H2 is a very important horizon as it contains the processes that “enable the transition” to H3.

Prior to undertaking the Three Horizons exercise at the LL, representatives from a range of water institutions based in Maputo collaboratively described what the future climate of southern Mozambique might be by the 2040s. They explored what impacts the climate scenarios would have on the city, developing a positive and a negative scenario for the future. A joint vision for the future water supply of Maputo was also produced. Using the information gathered in these future-orientated activities, groups mapped the situation/problems and actions onto the three horizons (Figure 5.1).

![Figure 5.1](image-url) Example of one group at the Maputo Water Dialogue using stickers to add comments to the present (H1), the transition phase (H2), and the future (H3). Note the use of Portuguese to annotate the charts. (Photo source: Izidine Pinto, FRACTAL project, 2018.)
By working in groups to characterize the three horizons, participants exercised their receptivity by sharing and integrating their perspectives and expertise to grapple with trends and possible interventions operating at a decadal scale (rather than being constrained to political terms of office). Examples of some suggested actions for the transitional phase (H2) included education measures to promote water conservation, increasing investment in water treatment and recycling, and measures to increase institutional coordination.

The importance of receptivity in developing the Lusaka Policy Briefs

While the discussion of the five themes related to receptivity in the previous section provides examples of activities in the FRACTAL LLs and Dialogues, this section integrates the five themes into one example of enhancing receptivity through the development of the Lusaka Policy Briefs. The briefs were not a planned output of the LLs, but rather emerged out of the collaborative process that took place in Lusaka and culminated in a presentation of the briefs at a high-level breakfast to the Lusaka Mayor, city councillors, and ministerial representatives (see Nchita, 2019). The five LLs were “safe” participatory forums specifically designed for the engagement and collaboration of the FRACTAL team of researchers, the Lusaka Municipal officials and some councillors, national government officials, and civil society actors, explicitly established as being equals in the knowledge production and learning process.20 The main activities were designed to stimulate cross-sectoral and cross-disciplinary engagement using a group method.

After agreeing that water was the burning issue in urban development in Lusaka in the first meeting, the LL participants worked through a process to identify the main water issues: the water problems as inadequate water supply and sanitation at the city level; declining groundwater levels; increased flooding; and groundwater pollution (Lusaka LL2 Report). As an important step in the process of understanding water issues, LL participants undertook a visioning exercise, where four diverse groups developed, along a rope on the ground, a set of “stepping stones” necessary to achieve the jointly agreed vision for Lusaka’s water21 from the perspectives of spatial planning, infrastructure, health, research, and information.

The four water issues formed the “golden thread” of the group activities that took place throughout the LLs. The jointly developed policy briefs provided an understanding of each water issue, the climate change implications of each issue, and a set of recommendations (Nchita, 2019). Since most LLs were residential and included field trips, this contributed greatly to the relationship and trust-building necessary for a productive workshop. The residential nature of the LLs and the inclusion of field trips contributed to creating bonds and building trust and collegiality among the diversity of stakeholders. The trip to Lusaka’s main sources of water – the Kafue River and the Iolanda water purification plant – and
the Shaft 5 borehole in Lilayi, grounded the discussions and gave rise to much engagement and debate.

A variety of serious and fun games were woven into the LL programmes. At the outset of LL3, a game was played whereby “old LL members” had to explain to “new LL members” what FRACTAL was all about. In both the Governance Dialogue and LL4, role-playing games were successfully employed to get participants to step into the shoes of other actors to become more receptive to their mandates and perspectives. One game involved thinking about how new seasonal forecast information would be used, shared, and for what purpose by a range of actors. Another game involved groups acting out the recommendations they would make to politicians for each water issue covered in the Policy Briefs.

In LL3, groups were set up to discuss the four pressing water issues in Lusaka. Each group included participants from various government agencies, academic disciplines, and civil society groups. The groups were tasked with mapping out the water issue, including underlying causes, responsible actors, potential solutions, and where climate variability and change could be identified as having an impact. This was termed a “mess map” (Nchita, 2019; Reflections, Lusaka LL 3; see Figure 5.2). The task gave rise to focused engagement among group members and extended debates and dialogues about the various physical, social, cultural, and political factors associated with the water problem, and the relationships

Figure 5.2 “Mess map” of the issue of poor water quality in Lusaka. (Photo source: private picture, taken by the authors.)
between them. A sense of shared ownership of the output and the understanding of how the system works was developed through the group task.

Participants were guided to think about the mid-term future as climate change issues increasingly became entangled with development issues. This led to urban planning institutions emerging as more important than previously thought in water governance. As progress was made at each successive LL, the co-produced policy briefs went through a process of review, where missing actors, important legislation, and root causes of the issues were added (Governance Dialogue, 21/8/2018) before final versions were produced and presented to senior government leaders. Through a detailed design process, each LL promoted bonding and social negotiation among participants, expanding their viewpoints and building receptivity that is central to addressing climate risks in cities.

Conclusion

Based on the evidence from the FRACTAL project, this chapter proposes that the concept of receptivity helps move away from the idea that scientific climate information can be inserted into decisions. Receptivity shifts the focus to the actors involved in shaping decisions and the actors undertaking scientific research to consider how open they are to modifying their judgements through incorporating alternative framings and working more collaboratively to co-develop new ways of thinking about and acting on the climate dimensions of urban development problems, such as water security.

At the start of the FRACTAL project, the primary focus was on building or extending scientific climate knowledge through a combination of primary research within the climate science community and “co-exploration” between climate scientists and decision-makers. Co-exploration was understood to be an iterative process of climate scientists and decision-makers working together first to identify “real” climate information needs stemming from “real” decisions, and, second, to build an understanding among decision-makers of what climate data and information was available and defensible, or could readily be developed, to meet such needs. There was a sense of co-exploration among participants involving a gradual integration of scientific research and decision-making processes, directed at reducing climate risks and impacts within a city context.

Over the course of implementing the FRACTAL project, we inductively revised the conceptual framework of co-producing knowledge and decisions in a way that can make cities more resilient to climate extremes and changing climate patterns. Actors with a stake in the climate resilience of cities operate in a multitude of home spaces (whether disciplinary, sectoral, or organisational), all of which hold, produce, and use knowledge of various kinds, and all of which make decisions that have a bearing on the climate resilience of cities (some more directly and powerfully than others). We have come to understand co-exploration as what happens in the borderlands between these home spaces, where
perspectives bump into and rub up against one another. Receptivity is what enables people (scientists, policymakers, government administrators, and business and civic representatives alike) to move from their home spaces into a third space, a transdisciplinary space, to explore the knowledge of others and work collaboratively to co-produce products and services for building the climate resilience of a city region. Receptivity is stimulated through multi-sectoral engagements in safe spaces, such as LLs and Dialogues, where knowledge and decisions about urban climate resilience can be co-produced. The example of developing the Policy Briefs in the Lusaka LLs illuminates how such a process may work. The focus is shifted from the temporal evolution of engagements that integrate knowledge from science into decision-making (assuming that a deficit of climate information is a key constraint on decisions driving urban climate resilience), to the relational space in which shared understanding and expanded judgements are built through networks of people, that in turn can nudge decisions in a direction that strengthens urban climate resilience.

The chapter presents five themes that explore the engendering of receptivity, with examples of how they played out in the FRACTAL project, particularly through a series of Learning Labs. We found that applying an affective approach, through dialogic engagement in group sessions, reduced power differentials, surfaced the voice and personal experience of participants, and suspended their existing frames of reference. This created the potential for other possible futures to be considered and potentially created. By creating democratic spaces where diverse knowledges were valued and mutual learning was encouraged, receptivity was fostered and epistemological shifts took place, giving rise to a shared and contextually relevant agenda for building urban climate resilience.
Notes

1 FRACTAL stands for Future Resilience for African Cities and Lands.
2 See Taylor et al. (2017) for a theoretical overview of co-production and transdisciplinarity.
3 See Scott et al. 2019 for a review of the concept of “third space”.
4 Beausoleil (2019, 123) proposes that receptivity is the precursor to listening, a “disposition of openness that makes listening possible” and “entails being affected by and responding to what one listens to” (see also Waks, 2008; Beausoleil, 2019; Hendriks et al., 2019).
5 Serious games are games for a purpose other than entertainment and trigger dialogue and learning (Farber et al., 2018).
6 The nine cities are Lusaka, Maputo, and Windhoek (Tier 1 cities), Harare, Blantyre, and Gaborone (Tier 2 cities), and Durban, Cape Town, and Johannesburg (Unfunded cities).
7 The FRACTAL Annual meetings held in Cape Town brought all the city teams together.
8 FRACTAL partners, the Red Cross Climate Centre, ICLEI, and the Stockholm Environmental Institute (SEI) provided experience, skills, and principles for the design of the Learning Labs (Arrighi et al., 2017).
10 Between 2016 and 2019, Lusaka held five Learning Labs. Windhoek and Maputo held four each, and there were several Dialogues in each city as well.
11 The Reports from the Learning Labs and other engagements provide a record of the engagement processes that took place. These are listed by city and date in the References. They will be referred to, for example, as Lusaka LL3 Report and Maputo Water Dialogue 1 Report.
12 A lecture is typical of the didactic approach. Didactic approaches use accepted frames of reference and require an immediate response from participants.
13 For example, in one of the Maputo Learning Labs, a senior official was observed pulling rank on junior officials blatantly and effectively silencing them (names and dates withheld to maintain anonymity).
15 Each participant is famous and has to choose (without telling them) a participant to be their bodyguard and another to be a paparazzo chasing them. As such, the movement of each participant is only dictated by their role as the celebrity, as they move to stay behind their selected bodyguard and out of sight from their chosen paparazzo. They are unaware of who may have selected them as a bodyguard or paparazzo. Everyone then moves through the crowd of participants aiming to be near their bodyguard and far from their paparazzo, resulting in a bit of chaos and much laughter.
16 For full explanations of these and other games see www.climatecentre.org/resources/games/games.
19 For example, in care for the elderly (Leicester, 2016) and education (Leicester et al. 2017).
20 Participating institutions in the LLs included Lusaka City Council (LCC), Ministry of Local Government, Water Resources Management Authority (WARMA), Lusaka Water Security Initiative (LuWSI) Network, GIZ, NWASCO, Lusaka Water and Sewerage Company (LWSC), Climate Change Secretariat (Ministry of National
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Development Planning), academics and students from the University of Zambia, Zambia Homeless and Poor People’s Federation, and Village Water.

21 “Accessible and affordable quality water for the present and future generation in Lusaka for all”.

22 A “mess map” is a visual representation of the elements of a complex and uncertain social problem, produced interactively, to provide a framework for analysing and resolving the problem (see Horn and Weber, 2007).

References


