

Receptivity and judgement: expanding ways of knowing the climate to strengthen the resilience of cities

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The Future Resilience for African Cities and Lands (FRACTAL) project aims to address the challenge of providing accessible, timely, applicable and defensible climate information that is needed by decision makers operating at the city-region scale in southern Africa. FRACTAL has been running since June 2015. It is part of the Future Climate for Africa (FCFA) multi-consortia programme. FCFA's major objective is to generate fundamentally new climate science focused on Africa, and to ensure that this science has an impact on human development across the continent. FCFA is funded by the Department for International Development (DFID) and the Natural Environment Research Council (NERC).

These knowledge products have been developed to share findings from the research in the hope of fostering dialogue and eliciting feedback to strengthen the research. The opinions expressed are therefore those of the author(s) and are not necessarily shared by DFID, NERC or other programme partners.

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Executive Summary

The information and knowledge that we need to address climate risks and impacts in cities, and make cities more resilient, is held by many people and in various places, and much of this knowledge has not yet even been developed. To understand and act on the many inter-connections between fluctuations and changes in the climate and city dynamics, we need to find better ways of drawing together and learning from disparate and different types of information. The integrating and extending of this urban climate information needs to be done in a way that grows the collective knowledge base and empowers people to act in their various individual capacities and organisational mandates. This could be as a city official, an elected political representative, a researcher, an active citizen or a business leader.

In this working paper the concept of receptivity is presented as a way of understanding what is needed for people to be able to open themselves up to engaging with and assimilating different perspectives, frames of reference, values and interests that others bring. Receptivity goes further than simply opening up. Receptivity entails actively and critically reflecting on one's own knowledge and that offered by others (i.e. recognizing various assumptions and framings). This forms the basis for expanding or enhancing one's ability to make less partial, narrow judgements, and to shift ones practices and actions based on a broader view of the system and what changes are underway and are sought (by individuals, organisations and collectively). As such, receptivity to other frames of reference is in no way passive. Rather it is a stance, a way of engaging, thinking and acting in relation with others that is open and considered, with a willingness to share, to let go, to take on and arrive at new insights and new ways of thinking and being.

In this working paper we discuss how receptivity - of decision-makers, of scientists and other knowledge-holders and actors - can be exercised and increased, so as to enhance the co-production of actionable climate information and the use thereof in making decisions about urban development and management. These might be decisions regarding infrastructure investment and maintenance, land use, the regulation of water abstraction and alike. Examples from the FRACTAL project, especially from the Learning Lab processes in each city, are discussed in terms of how the receptivity of those involved was affected. The concept of receptivity offers an alternative to that of entry points for integrating climate information into decision-making. Receptivity draws attention to the relational, political and philosophical aspects of operating at the urban climate science-policy interface.



1. Introduction

Based on their participation in the Future Resilience of African Cities and Lands (FRactal) Learning Labs, the authors propose the concept of receptivity as an important theoretical concept for thinking about the relationship between knowledge and decision-making in cities. Receptivity provides an alternative to the notion of finding ‘entry points’ for inserting climate information into urban decision-making in a purely technical sense, that tends to dominate the climate services literature (Brasseur and Gallardo, 2016). The rationale argued in much of the climate services literature is that decision-makers, armed with the appropriate and relevant climate information and decision support tools (Taylor et al., 2017), will make decisions that are more climate sensitive thereby contributing to more climate compatible and resilient urban development (Vaughan and Dessai, 2014; Brasseur and Gallardo, 2016; Steynor et al, 2016; Scott et al, in press). These would be decisions taken by elected political actors (Councillors at the city scale) who decide on policies; and by the appointed officials who are then delegated the power to implement policy through “technical design and rational execution” (Joshi and Houtzager, 2012, 147). In the standard model of accountability, the officials would then exercise ‘judgement and discretion’ in the implementation of policy which has been decided by political actors.

Rather than climate information simply travelling from science to society through a linear transfer process between experts and an ‘entry point’¹ in the decision-making domain, this working paper argues that the uptake of climate information is highly dependent on the receptivity of the actors and decision-makers who are situated in their urban context. This means that more information does not necessarily mean better decision-making.

Our hypothesis is that it is crucial to understand the receptivity of various actors, both researchers and decision-makers, to the process of including climate considerations into political and technical decision-making through incorporating alternative frames of reference. So rather than looking for ‘entry points’, the governance research aims to interpret the extent to which actors exercise agency and reflective judgement in processes of producing and applying climate information in the pursuit of decisions and actions that make cities more climate resilient. Thus, receptivity is not a passive state of being but includes human agency and action. In this FRactal working paper we critically discuss the political concepts of receptivity and reflective judgement, and their important role at the interface of science and society. We then proceed to relate this to the FRactal research project. We provide evidence that the collaborative and participatory processes of the Learning Labs, designed to enable engagement between various experts and the city stakeholders, do indeed foster the receptivity and reflective judgement of the actors involved. We first turn to the academic literature to flesh out the concept of receptivity, before turning to practices in the FRactal project.

1 For example, a champion, a policy process or the officials in a specific department.



2. The concept of receptivity

While there are many lay interpretations of 'receptivity', the concept of receptivity has been debated by political scientists and philosophers (Kompridis, 2011; Nedelsky, 2011; Mihai, 2016) and those from science and technology studies (Lawson, 2010; Latour, 2011) who seek ways of thinking about human judgement and action with a view to understanding societal change and the deepening of democracy. There has recently been an increased theorising about the 'politics of receptivity' with a focus on how actors engage in encounters with different frames of reference to their own, deciding

"to close or open [themselves] to 'others'... where [their] frame of reference rubs up against another, and [they] decide to turn to familiar strategies of self-preservation against the intrusion of the foreign, or to truly listen as democracy demands of [them]" (Beausoleil, 2014, 20-21).

Closing oneself to 'other frames of reference' suggests that one remains in the realm of 'business-as-usual' and is not open to the possibilities of societal change and transdisciplinarity or knowledge co-production². It is in participatory processes where one is likely to come across views that are different to one's own. The literature argues that participatory processes where actors engage with others across a spectrum of frames of reference, are 'democratic spaces' and that the deliberations and debates that take place are inherently political (Beausoleil, 2014, 20). Integral to these spaces is also how people listen to views other than theirs. There has been a revived interest in the concept of listening, and Waks refers to the concept of the "'innermost silence' [which] is the moral virtue of receptivity that sustains openness to others even under challenging conditions" (2008, 65). This activity is positioned between science and society and is integral to democratic decision-making.

2.1 New sense-making vocabularies

We all have sense-making vocabularies which have developed through education and experience in situated contexts and these facilitate and constrain what possibilities there are for contributing to social change in the future (Kompridis 2011, 256). It is proposed that by developing a 'receptive stance' (258) actors would gain through engagement in a collaborative process as it would potentially provide them with a new "sense-making vocabulary" which would allow them to see beyond the business-as-usual vocabularies which foreclose alternative possibilities for the future. These new vocabularies "disclose what is intelligible and what is possible" (Kompridis, 2011, 256) so new vocabularies make us open to thinking differently about the problems we face and "disclose new possibilities".

Receptivity is not a passive state of being, nor is it simply 'openness'. It is active, critical and reflexive engagement with alternative perspectives, new concepts, new information, new technologies and different ways of knowing.

It is postulated, based on philosophical thought, that "we all always ready with a pre-reflective, holistically structured and linguistically shaped understanding of the world"³. If such sense-

² Transdisciplinarity involves using collaborative methods to bring together scientists and practitioners to address societal problems and together co-produce the necessary theoretical and practical knowledge to transition to a more just and sustainable society.

³ Drawing on Heidegger, Kompridis (2011, 259) proposes that human beings have a 'pre-reflective...understanding of the world'.



making vocabulary, for example, includes concepts of risk, vulnerability and resilience then actors will be in a higher state of receptivity to engage with biophysical climate information as part of their decision-making processes. Receptivity is thus a stance, as opposed to the position of mastery, that an actor is usually supposed to act through. It is a condition for making sense of ourselves, the issues we must deal with and “different understandings of the world in a new way”, and possibly to critique these issues (Kompridis, 2011, 256). In this sense, when we apply this to the decision-making space, the gaining or co-production of new knowledge about climate change will open the possibility of alternative futures for urban living. Being receptive to “claims that first sound unintelligible to our ears” we reflect on such claims to the point where we have “to ‘make room’ for something that did not exist before, and being answerable to this new learning, be prepared to “go on differently in light of what we have learned” (Kompridis, 2011, 267). In this way critical reflection leads to the notion of the actor having agency to willingly ‘risk dispossession’ of previous business-as-usual ways of making decisions and acting in the world and change their normative reality of what ‘ought to be’ in society (Kompradis, 2011, 268-9).

2.2 Reflective judgement and transformative agency

The concept of receptivity confers agency and transformative potential upon the agent, as it places the agent in a position to change both their thinking (i.e. their way of seeing and understanding the world) and their business-as-usual practices.

By opening freely to the call of new and alternative knowledge through being receptive, we become ‘answerable to it’ and allow ourselves to be “unsettled, decentred, thereby making it possible to occupy a potentially self-critical and illuminating stance” (Kompridis, 2011, 264).

Receptivity thus places on us the obligation to be answerable to, and to work differently in the world, considering what we have learned. Theorists working in the field of reflective judgement argue, in general that:

“political life is centred on deliberation over what citizens ...consider as ‘common concerns’. Through deliberation, they become experienced in public affairs and learn how to pause, to place themselves in the shoes of others, mobilise prior experience, ponder alternative courses of actions and make decisions together... and through this process bring novelty into the political space” (Mihai, 2016, 24).

Drawing on the concept of ‘enlarged mentality’ and ‘going visiting’ from Arendt⁴, stakeholders’ decisions are ‘validated intersubjectively’, so that the more individuals that are making decisions together the more inclusive the judgement will be of different approaches, that ends in a decision. One must train one’s mind to ‘go visiting’ so that one can see different frames of reference and develop a common sense upon which action can take place, i.e. decision-making. It is the openness of receptivity that has the power to bring about social change through the receptivity to innovation, novelty and experimentation.

Nedelsky (2011, 236) makes the point that ‘enlarged mentality’ or ‘enlarged thought’ occurs

⁴ Hannah Arendt (1906-1975) was one of the leading social theorists in the United States and wrote a classical treatise in political and social theory titled, *The Human Condition* (1958) a second edition of which was published in 1998. She argues that human action is the fundamental condition of human existence.



when one's own thought is 'enlarged' by considering the perspective of others, and this allows for greater impartiality in making judgements.

No longer trapped in our own frame of reference or business-as-usual ways of thinking we, both individually and as a group, can respond to things in new and novel ways.

We "become aware of new and unforeseen possibilities" (Mihai, 2016, 25). It is the everyday engagement with different points of view that enables the development of judgement and the ability to "respond to the inevitably changing world around us", in our case the uncertainty and complexity of the Anthropocene⁵. It is crucial for both "freedom and transformation" (Nedelsky, 2011, 236).

However, Mihai (2016) cautions that the reflective judgement theorists are overly optimistic about the ability of receptivity and 'enlarged mentality' to bring about social change and suggests that there are other sources of exemplary judgement that can be drawn on, namely, art, theatre, social movements which he argues can provide a more 'plausible account of social change'⁶. There is a rapidly growing body of political theory that engages with the concepts of affect and performance [and] has begun to consider the role of receptivity in politics. Recent work by Beausoleil (2014, 22) argues that deliberative democratic processes work best when preceded by empathy⁷ and receptivity. She proposes that we all have an 'implicit memory' (enlarged thought) which serves as a permanent framework which shapes our experience and interpretations of the world and when the body feels that it is 'safe' we maintain a state of receptivity.

2.3 Affect and embodying knowledge

The question is then how can we enhance receptivity by making people feel safe? Making a presentation to people in highly abstract and unfamiliar conceptual terms (e.g. climate modelling) about the intricacies of climate patterns or hydrological flows, or of governance arrangements (e.g. the concept of a governance configuration) or using highly normative terms about what they should be doing differently (e.g. advocating principles of good governance), is unlikely to achieve this sense of safety and openness. Beausoleil (2014, 22) maintains that performative practices⁸ are embodied and when used in collaborative processes they heighten our feelings and experiences⁹. So, if receptivity is an affective and thus primarily embodied state¹⁰, one that felt by our body, then embodied practices, such as role playing, might be amongst the most direct and effective route to encouraging and foster receptivity. As summarized in table 1, Beausoleil compares how an affective, performative approach to engagement differs significantly from that of the conventional verbal and cognitive approach we are all so used to at workshops.

5 The Anthropocene is conventionally thought to be the geological time period commencing during the Industrial Revolution which evidence shows that human activity is the dominant influence on earth systems process altering the atmosphere and all dimensions of the environment, including the geology, the hydrology and the biosphere.

6 Mihai draws on the social theory of 'habitus' proposed by Bourdieu.

7 Imagining yourself in another's shoes, while being conscious that they are not yours (Beausoleil, 2014).

8 Performative practices are those acted out by actors using their bodies, as in the theatre.

9 Pile (2010), citing McCormack (2003) argues that embodied performances give rise to feelings which are expressed as emotions. Pile (2010) argues that emotions, such as powerlessness, injustice, and happiness do matter as ways of knowing, being and doing... and shape society and space.

10 The focus is on what the body is doing, e.g. gesturing, laughing, experiencing pain.



Table 1: Comparison of verbal/cognitive and aesthetic/affective modes of engagement (Source: Beausoleil, 2014, pages are cited in table).

VERBAL AND COGNITIVE APPROACH TO ENGAGEMENT	AESTHETIC/AFFECTIVE APPROACH TO ENGAGEMENT
Descriptive (talking heads)	Productive (p. 22). Information is not enough to evoke change and action (p. 26)
Formal conventional setting and process	Creation of a space that is safe enough to risk ourselves
Didactic and direct	Dialogic. (p. 22). Approaches conventional spaces obliquely. (p. 35)
Assertive; Reliance on reasoning (p. 22)	Communicating through the evocative engagement (p.34); Evocative (p. 22); Encourage own interpretation
Communicative (One-way knowledge transfer)	Transactive (p. 23)
Use established frames of reference	Temporarily suspend recourse to established frames of reference (p. 23)
Work in the realm of the business-as-usual	Propel us beyond the familiar (p. 23); Interrupt the perceptual field that bars the way to new thoughts; Work in an in-between space (p. 32)
Could result in defensiveness and denial (p. 24)	Provoke receptivity (p. 24); Create conditions for the emergence of new insights (p. 23)
Could result in closure and withdrawal	Help participants feel safe and relaxed (p. 23)
	Greatly enhance brain functioning and learning as well as improving mood, energy level, motivation and capacity to focus (p. 24)
Demands an immediate response	Works indirectly so does not demand an immediate response (p. 24); Creates a temporal 'breathing space' (p. 33); Creates a 'sediment' in the participants' minds' (p. 33); Creates a 'reflective distance' (p. 32)
Use of objective data, statistics and images from the media	Capture voice and personal experience (p. 26); Encounter the 'concrete reality of issues and 'feel the humanity within them'; Allows people to connect with, care for, and be impacted by what they experience
Addresses the surface issues	Addresses contentious issues which are normally hidden in conventional approaches
Little potential to surprise	Catches us off guard and creates surprise - 'uncanny' encounters
Can perpetuate patterns of exclusion, reduction and devaluation in deliberative processes	Democratizes collaborative forms of engagement (p. 36)

In democratic spaces of engagement where participants come from different backgrounds, have different types of knowledge and varied life experiences, it is demanded that we respect the views of others and undergo social learning (Arrighi, et al, 2016). An understanding of the



concept of receptivity, ‘enlarged thought’ and how reflective judgement in such a context can enhance the potential for transformative decision-making, provides a path to alternative social futures. Such understanding can also inform the design of ‘democratic spaces’ which facilitate mutual learning, receptivity, and reflective judgement using embodied and performative methodologies (Callon, 1999; Beausoleil, 2014). A state of receptivity has been facilitated in the FRACTAL Learning Labs through iterative attempts to create and sustain such democratic learning spaces to co-explore and co-produce knowledge on using climate science in urban decision-making - this is discussed in the following section.

3. Receptivity in the FRACTAL project

The FRACTAL research project is one of five large DFID and NERC funded projects in the FCFA programme that aims to generate new climate information and find entry points for integrating it into decision-making in southern African city regions (www.fractal.org.za). FRACTAL is the only FCFA project that has a focus on climate change and cities and has a specific focus on water and energy¹¹. In its original form, the aim of the project is expressed as finding the ‘entry points’ that would have the most potential to insert the climate information into decision making. The FRACTAL project proposes that it is through an understanding of the ‘urban institutional arrangements’ or the ‘governance arrangements’ that such ‘entry points’ might be determined and explored (Scott, 2017).

In the Decision-Making Cluster¹² of FRACTAL, where research on urban governance is being undertaken in support of achieving the goal of integrating climate science into city decision making, the following questions are asked about the ‘decision-making space’: Which ‘burning issues’ in cities need to have climate-sensitive decision-making to address them, in order that they do not become exacerbated? What kind of climate information is needed for different types of decisions? Who are the actors who would need to be involved in the production and application of climate information? Which policy and legislation lacks inclusion of climate change considerations and which does not? What are the ‘entry points’ for climate information? Implicit in the latter three questions is a causal mechanism of climate information moving from expert scientists to the decision-makers of the city.

There is a large and growing literature in applied climate science known as ‘climate services’ which seeks to provide climate information to those clients/ users in need of climate information for decision-making, e.g. in municipalities (Vaughn and Dessai, 2014; Brasseur and Galardo, 2016; WMO, 2017). Although attempting to ‘co-explore’ and even ‘co-produce’ climate knowledge, many barriers have been identified in climate services which have impacted on their efforts, and this approach remains largely locked into the causal approach of ‘research into practice’.

Research in the Climate Systems Analysis Group (CSAG) at the University of Cape Town proposes that “co-exploration” is the process whereby climate scientists undertake applied research to determine what kind of climate information prospective users need (Steynor et al, 2016; Taylor, et al, 2017). The question also implicitly assumes that the receivers of the climate infor-

11 The three research clusters of FRACTAL are the climate, decision-making and city learning clusters, with a fourth cluster, the Nexus cluster.

12 The FRACTAL research is divided into clusters or work groups, each of which aims to answer one of the objectives of the research. The Decision-Making, Climate Science, City Learning and Nexus are the main clusters of research activity.



mation are relatively passive, which echoes the linear science-society model or public deficit model (Callon, 1999). This lack of agency, and consequently dependence on the suppliers of the climate information on the part of the 'recipients' is challenged through the City Learning Labs currently being held in the Maputo, Windhoek and Lusaka.

3.1 Learning labs

The Learning Labs are participatory, co-production forums where representatives of the FRACTAL team including its climate scientists, the local university, the municipal council, and civil society organisations engage to share existing knowledge and produce new knowledge to contribute to addressing the local 'burning issues' in each of the sampled Tier 1 cities¹³ and discover how climate change will exacerbate these burning issues. It is proposed that it is through these collaborative processes that mutual learning will take place and climate change information be provided that would be appropriate to the city and relevant to their needs.

In FRACTAL, the Learning Labs are designed to be democratic spaces where diversity is sought, and all participants are expected to respect that it is a 'safe space' where everybody's knowledge is equal and there is no such thing as a 'stupid question' (Arrighi et al, 2016). Efforts are made to set hierarchies aside, and all participants are treated as knowledgeable equals (e.g. Maputo dialogue where the Head of the Maputo Council participated in the Maputo Water Dialogue, 23/2/2018). There have been occasions when certain actors have been observed dominating discussions, but the ethos of the Learning Labs is that everyone is expected to respect and learn from the knowledge and views of other participants.

It is proposed that it is in this space of the Learning Lab that receptivity has been facilitated and nurtured. This means the receptivity of city stakeholders as well as the FRACTAL team. Climate scientist in the FRACTAL team, Chris Jack reflected:

What I've seen is that when the "external experts" also engage with the context and allow their view/perspective to broaden then it significantly changes the way they bring their expert knowledge into the space. For example, when a climate modeler engages with the complexity of these decision spaces you often see that they become less confident that their data provides answers and more open to engaging with other types of knowledge that might contribute towards solutions (Jack, email, 7 November 2018).

Kompradis (2011) reminds us however, that we all come to the engagement process already equipped with our own pre-reflective thought and frames which are usually 'bracketed'¹⁴. So, the Learning Lab is an encounter 'where differences rub up against each other'. It is here that we either adopt a stance of receptivity or not. The participants of a Learning Lab, both scientists and officials, are encouraged to 'co-produce' knowledge and a joint outcome from the workshop. This is achieved by carefully designing the interactions to both satisfy local protocols but also to get participants to 'open up' to 'more complex ways of seeing' and alternative possibilities for social change, which in the FRACTAL project is a future where climate change will be taking place and to which the city and its citizens will need to adapt.

13 Lusaka, Windhoek and Maputo.

14 Implicit or hidden below the surface of the engagements and developed through our life experiences including our education.



3.2 Envisioning alternative futures

Cities in southern Africa, with their growing informality, high levels of poverty and inequality and the need to meet the challenges of service delivery for the rapidly growing population, accompanied by low levels of devolution and small budgets are subject to the immediate pressure to plan for a very short time horizon, usually five to ten years (Sutherland et al, 2015; Parnell and Oldfield, 2016). The term of the Councillors in the three cities of Lusaka, Windhoek and Maputo is five years and this term frames the horizon of their decision-making. The Learning Labs have therefore included activities to extend this time horizon by facilitating participants to think of a future at least 25 years ahead. A range of methodologies have been adopted to facilitate thinking about possible futures and producing ideas about how to get from the 'here and now' (business-as-usual practices) to a climate resilient future. These include deliberating on the challenges faced now; the visioning of the future city; scenario building for the future (both positive and negative); and how to get from the present to a climate resilient future. As an example of such activities, the Three Horizons methodology was adapted for the Maputo Dialogue where participants were encouraged to move from Business-As-Usual responses to urban problems, to thinking about opportunities and experiments to move towards an alternative resilient future. (See Figure 1 and Plate 1).

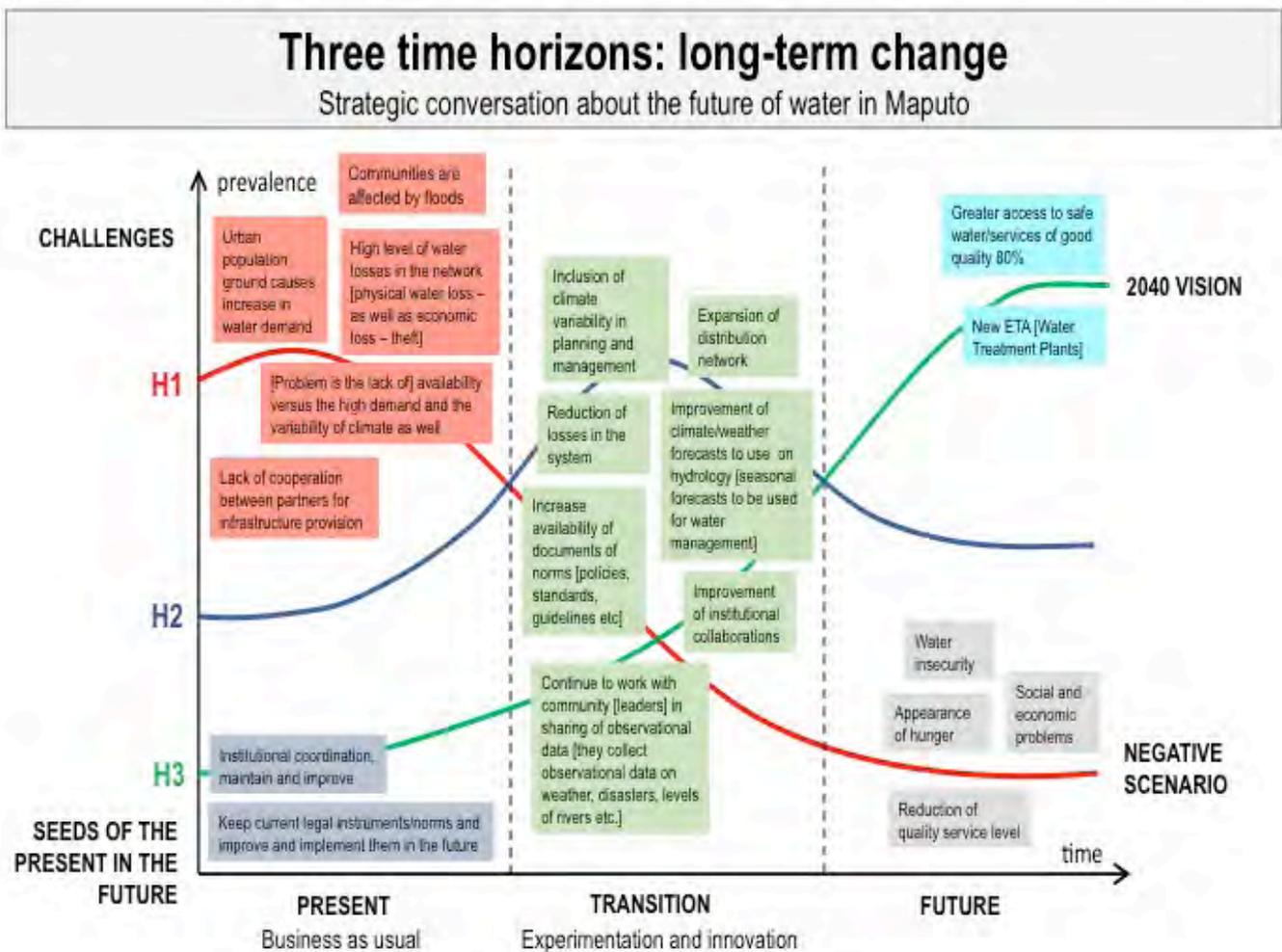


Figure 1: Compilation of the mapping of the Three Horizons undertaken by four groups at the Maputo Water Dialogue (23 February 2018). (Source: Flipcharts from the Maputo Water Dialogue translated by Izidine Pinto and compiled by Celeste Renaud, CSAG).



Another example of enhancing receptivity is the development of climate related Policy Briefs through a series of engagement in the Lusaka Learning Labs. The city partners designed a series of activities to write four policy briefs on the ‘burning water issues’ in Lusaka, namely, flooding, the supply of water for Lusaka, polluted water, and over-extraction of water from aquifers. Each of these issues were collaboratively interrogated to investigate the contributing factors; the actors; the potential solutions and where climate information could feed into more climate-sensitive decision-making; concluding with policy recommendations in the face of future climate risks. The co-produced briefs on polluted water and over-extraction of aquifers policy briefs were presented to senior councillors and national government representatives at a High-Level Breakfast (16 November 2018). The inclusion of climate change implications in the policies provide evidence of expanded ways of knowing the climate and increased receptivity to a climate resilient city.

Through the FRACTAL experience, climate scientists engaged in the Learning Labs have reflected deeply on the process of climate science itself. There has been a strong recognition of the subjective nature of many decisions and assumptions made in the process of constructing climate information and that these subjective decisions and their potential consequences are seldom interrogated with respect to the application of the information and are commonly very opaque to those expected to take up the information. This is evident in the proliferation of climate information services, online portals, climate information profiles and fact sheets, all drawing on different sets of data, making different choices and assumptions, and often resulting in different messages. The result is a confusing and overwhelming landscape of conflicting information which does not create a sense of safety and resulting receptivity in decision-makers.



Plate 1: Participant adding suggestions related to the shift away from business- as-usual approach in water governance that could be undertaken in the next 25 years: Maputo Water Dialogue 23 February 2018. (Source: D. Scott).



FRACTAL has therefore been re-imagining what the process of constructing climate information or messages might entail so that receptivity is enhanced. Climate information distillation describes a process whereby essential meaning, or most important elements of the available climate data or evidence is extracted. Essential meaning is subjective and contextual and, we argue, should be democratically agreed on within a particular context. This means that the construction of the essential meaning, the essential climate messages, needs to involve multiple actors including, to some extent, the decision-makers themselves (see Plate 2).

An example of this in the FRACTAL project was the construction of a water resource model (WEAP) for the Kafue river and related water supply infrastructure for Lusaka. The WEAP model was constructed through a participatory process including assumptions about the structure of the natural and human elements of the water system. This created an understanding and ownership of the resultant model. Receptivity was further enhanced through an informal “fire-side chat” with the modelling expert where participants could actually observe the model being configured and run. This creates trust and understanding and strongly counters the normal process where the expert disappears to perform an opaque and incomprehensible process and then returns with the answers.

The Learning Lab is then a ‘democratic moment’, designed to minimise ‘fear, defensiveness and deepening entrenchments’ between participants due to their different practices and frames of reference (Kompradis, 2011). However, at the same time, the uncertain realities of what social, political and material changes are probable in the local context because of climate change need to be introduced as a new framework for thinking about future development and the future city. The Learning Lab thus becomes a ‘safe’ learning space where different frames of reference meet, as well as different probable futures are imagined (Plate 3).



Plate 2: Maputo Learning Lab 2: (15th May 2018): Bringing different frames of reference together (Source: D. Scott).
Plate 3 (right): Participants at the Windhoek Transformational Workshop engaging enthusiastically in the water sharing game (18 April 2018).

The use of climate risk narratives is a methodology to get participants to imagine future plausible climates and their potential impacts on the local material, social and economic reality (Scott and Jack, 22 February 2017, CSAG blog; Windhoek Learning Lab 1 Report, 14-15 March 2017).



These climate risk narratives have been produced to communicate complex and uncertain climate science evidence to decision makers in Lusaka, Windhoek and Maputo. They are textual descriptions of a number of plausible climate futures and provoke respondents to imagine such futures beyond their business-as-usual context. They are proposed as ‘conversation starters’ to provoke conversations and bring different frames of reference together (Scott and Jack, 22 February 2017). Importantly, the Learning Lab participants have been involved in the evolution of the narratives, particularly the socio-economic aspects (i.e. the climate impacts). Through this process participants have been encouraged and supported in not only engaging with alternative futures but imagining and collectively deliberating (which involves engaging with multiple perspectives) over the nature of these futures. In some cases, for example in Windhoek, hopeful visions were imagined in contrast to the original rather fatalistic narratives, demonstrating a strong engagement and receptivity to alternate ways and thinking.

Lotz-Sisitka et al. (2015) stress that transgressive, transformative learning is critical to responding to the accelerating change and uncertainty in our society, to disrupt conventional frames which limit the conceptualisation of possible futures. In Windhoek, at the Transformation Leadership workshop (18-19 April 2018), requested by the City of Windhoek; and at the Maputo Training Programme (15-17 May 2018), an activity was designed for participants to explore their “business-as-usual” decision-making processes, and then to critically assess, where in the process, climate information would be necessary, in order to plan for climate compatible development (Plate 3).

It is also necessary to recognise both in the literature and confirmed by evidence from the Learning Lab experiences thus far, climate change is not high on the political, policy, planning and financing agendas of southern African cities. As in all cities in the global South, southern African cities are pressed to achieve multiple development goals, such as economic growth, the reduction of poverty and inequality, the provision of infrastructure, housing and service, and improved education, food security and health. Decision-makers often see climate change as an add-on at the bottom of the priority list, rather than a cross-cutting issues that intersects with all these pressing goals (Roberts, 2010; Adu-Boateng, 2015; Shemdoe et al., 2015; Taylor et al., 2016). Acknowledging and working with this reality is central to fostering receptivity to climate change and to incubate climate compatible development. Plate 3 shows participants at the Windhoek Transformation workshop (18-19 April 2018) playing a game which necessitated decision-making with regard to water sharing in the context of limited supplies. Valuable lessons were shared through extensive discussion regarding the participants’ decision-making in the game.

Unlike cities of the global North where climate mitigation is the main response to climate change, the focus in cities of the south is on climate adaptation efforts as a reaction to climate change (Taylor et al, 2016). As part of their dedicated approach to climate change in their cities, the City of Windhoek has commenced with the development of a Climate Change Adaptation Strategy and Plan in 2017/2018¹⁵ and the Maputo Municipality is working on a municipal Climate Change Strategy (Maputo Learning Lab 1 Report, (6-7 March 2017); Windhoek Learning Lab 2 Report, 31 October 2017). Collaborative activities were held in these two cities in the Learning Labs to support and contribute to these efforts.

After Councillor Training in Lusaka, and the holding of Learning Labs, the Lusaka FRACTAL team

15 This municipal plan is mandated by the national Climate Change Strategy and Action Plan.



allocated part of their budget to send councillors to University of Cape Town Winter School climate change training, demonstrating receptivity to the notion of climate compatible development.

The Learning Labs held in Lusaka, Windhoek and Maputo provide evidence to show that the processes have facilitated the receptivity of the participants to a different way of thinking about the future is necessary and climate compatible development needs to become the order of the day.

4. Conclusion

This working paper aims to introduce an alternative way of conceptualising the notion of cities as having “entry points” through which climate information can be inserted, as is conceptualised in the climate services literature. The current way in which this is proposed to occur is through the co-exploring of local needs about climate information in collaborative engagement between climate scientists and local stakeholders (mainly municipal officials and councillors, local academics and civil society groups).

Literature from political science, ethics and philosophy provide concepts related to receptivity and judgement in democratic engagements that argue that actors are not passive receptors of information but rather have agency that makes them receptive to, and be able to judge and act on new information (make decisions) from other actors with different frames of reference as well as working collaboratively to contribute to decisions. This form of mutual learning (Callon, 1999; Whatmore, 2009) assumes that our taken-for-granted ways of understanding and acting on present issues can be expanded (expanded thought) through being open to views other than their own and can therefore allow for more impartial judgements related to burning issues.

The paper also shows that the Learning Lab participants have been receptive to processes of co-production. In many reflection sessions in all cities, from the majority of participants, reflections have revealed that the collaboration and co-productive activities in the Learning Labs have been ‘a new way of engaging compared to the usual workshops’; they are ‘exciting and interesting’; they ‘allow participants to speak their minds’; and the learning ‘has changed their view of the world, not only at work but at home too’.

In the context of FRACTAL, this suggests that participants in Learning Labs becoming receptive to integrating climate information when making judgements and decisions that will impact pathways to the future in their cities. It is argued here that the receptivity and judgement are different ‘modes’ of interacting with the world (Nedelsky, 2011, 241) and a way of being that allows for thinking beyond business-as-usual. They are what we could call a mode of being which requires a break from the ‘busyness’ of doing things in our work and lives¹⁶.

16 Western culture over-values doing and provides little recognition of being (Nedelsky, 2011, 241).



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Maputo	Water Dialogue	23 February 2018
Windhoek	Transformational Learning Workshop Report	18-19 April 2018
Maputo	Learning Lab Report	15-17 May 2018
Maputo	Training Workshop	15-17 May 2018