

Process Report – CoReCT Project

MAY 2020



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1. Background

As part of an AXA-funded research project on urban water governance, University of Cape Town (UCT) researchers at the African Climate and Development Initiative (ACDI) have been engaging with Environmental Monitoring Group (EMG) to identify and support community activities focused on water-related urban issues. Through this process, it became clear that the Western Cape Water Caucus (WCWC), a community organization based in several informal settlements and townships in Cape Town – which EMG supports and helps coordinate – could be a suitable partner. The ACDI researchers attended multiple meetings hosted by the WCWC from December 2018 to June 2019, to better understand their work and organisational needs. During these meetings, WCWC expressed a wish to learn how to conduct a study to collect data that can support their work on water-related issues in low-income areas. This led to the creation of a collaborative research project that came to be referred to as the CoReCT project (Community Resilience in Cape Town). It used a transdisciplinary approach to co-design and execute research, and aimed to build knowledge about the lived experiences of and responses to problems with water access, water services and other water issues at a household level.

In parallel to the discussions between ACDI and the WCWC, Stellenbosch University (SU) helped identify potential methodological approaches for supporting the CoReCT project. A tool called SenseMaker, which SU had been working with for 4 years, was identified and its approach presented to WCWC representatives to give an understanding of its use and limitations. SenseMaker enables the combined collection of qualitative and quantitative data. It allows respondents to share their lived experiences in a qualitative narrative form while also indicating the meaning of their story within a standardised signification framework which can be quantitatively analysed. SenseMaker software tools make it possible to compile and present insights from large numbers of stories.

After questioning the researchers and taking time to discuss among themselves, the WCWC decided that they would like to proceed and use SenseMaker for the project. The WCWC appointed twelve members (referred to here as “citizen scientists”) to attend a first training workshop with support and facilitation from the EMG staff. For the second workshop (see below), five participants were replaced with other WCWC members.

The CoReCT team from various organisations involved was as follows:

- **African Climate & Development Initiative, UCT:** Gina Ziervogel and Johan Enqvist
- **Environmental Monitoring Group:** Thabo Lusithi, Siya Myeza, Apiwe Mduyvelwa
- **Centre for Complex Systems in Transition, Stellenbosch University:** John van Breda
- **Environmental Learning and Research Center, Rhodes University:** Luke Metelerkamp
- **Western Cape Water Caucus:** 7 individuals who attended both workshop 1 and 2; 5 individuals who attended only workshop 1; and another 5 who attended only workshop 2. These have been anonymised for this report on request by the Water Caucus.

2. Description of Process

Introduction to SenseMaker approach

The SenseMaker (SM) approach is, as its name suggests, essentially a sense- or meaning-making approach fundamentally focused on people's many *different and differing* lived experiences of a particular problem situation. It is founded on the assumption that individuals and groups make sense of the world through the assemblage of fragmented narratives and that in probing for narratives around a given topic, valuable insights can be gained into underlying needs, values and attitudes (Deprez et. al. 2012, Kurtz 2014). Taking people's lived experiences as its point of departure, SM uses custom-designed software tools for the capturing, analysis and sense-making of the individual micro-narratives. The tool's power lies in its ability to use user self-signification to detect emerging patterns within the narrative data.

Through a combination of qualitative narrative sharing and self-signification by respondents, the process produces a blend of qualitative and quantitative data well suited to the analysis of complex social phenomena (Lynam & Fletcher 2015). In practice, this means respondents share a story, and then answer some questions about what the story means. The power of SM lies in its application as a narrative pattern-detection software system capable of linking these two data sets in order to make sense of individual narratives on scales which elucidate values and attitudes at a broader – community or societal – level (Deprez et. al. 2012).

In our case, we collected individual perceptions toward water related issues to create a picture of the social perspectives and opinions of water users in communities where WCWC has been working for years and where many of their members reside. The communities were: Dunoon, Joe Slovo, Mitchells Plain, Green Park, Makhaza, Kraaifontein. Most of the data was collected at these six sites, although stories from adjacent communities were also common - as well as a small number from more distant places.

Application of SenseMaker within a transdisciplinary research process

The study used SenseMaker as the primary research tool. While SenseMaker can be applied under a range of different research methodologies, it was well suited to the transdisciplinary approach which the CoReCT project was aiming for. Integrating SM into a transdisciplinary process had significant implications for the way in which the project was conceptualised, designed and implemented.

The key tenets of this transdisciplinary approach were:

- The guiding research problem (described in more detail under preparation & strategy-making section [step.1] below) was set by the citizen scientists, while the academic partners played a supporting role in deepening and widening the understanding of the guiding problem statement as well as the provision of funding and research methods.
- Important aspects of the research tool were co-designed collectively by the team in the process. Training became central to the research process, because the citizen scientists had no academic background or experience in *doing* research, in general, and the design of research tools, in particular. The training process is outlined in detail in Section 3 below.
- Data collection was undertaken by the citizen scientists themselves, in their own communities.

- The analysis, interpretation and presentation of the data was undertaken collectively by the team.

The SenseMaker process can be broken down into an iterative four-phased process, of:

1. *Co-designing the SenseMaker tool*
2. *Collecting Stories*
3. *Analysis & Sensemaking*
4. *Returning the Stories*

As shown in Figure 1, these four phases were underpinned by three fundamental guiding principles, namely:

- *Co-designing (of research method)* - through an iterative process the WCWC shared their research needs and the researchers shared possible methods, a research method was collectively designed.
- *Distributed cognition & learning* - this means recognising that learning and cognition in and of a situation does not happen in just certain purposely structured locales, but rather in multiple places and spaces throughout the community through the eyes and ears of so-called ordinary peoples - in other words, this principle recognises that researchers should work through these multiple observations and experiences of others.
- *Self-signification* - this principle allows for the participants / interviewees in the research process to attribute their own meaning to the stories they shared in the process. This differs from the types of text analysis and coding which traditionally accompanies qualitative research, in which researchers perform the data interpretation and synthesis without any direct involvement by the interviewees who provided the information.

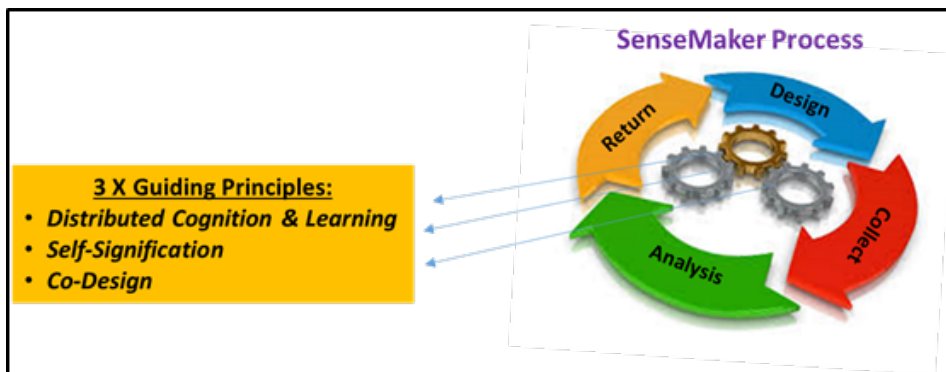


Figure 1. The SenseMaker process' four phases and underpinning principles.

The four-phased process described above can be broken down loosely into following more detailed 7 steps, outlining the implementation of the full research process.

Step 1. Pre-project: Co-exploration

The ACIDI researchers and WCWC members had been working together on an Action Learning (AL) process, already being run with the WCWC by Jessica Wilson. As part of that process the Caucus members had expressed a desire to strengthen their research skills. The ACIDI researchers talked to John van Breda about the SenseMaker methodology, that seemed to be a good methodology to use for the purposes of the WCWC. On 7 June 2019, John van Breda came to EMG to give an overview of SM approach and process to EMG + WCWC. This was followed by a strategic discussion on how this approach and process could work with and support the AL process. Considerable discussion was had around the integration of the SenseMaker and action learning processes, which in practice proved somewhat difficult to achieve.

Step 2. Preparation and Strategy-Making

After the initial meeting, further discussions were undertaken about how the SenseMaker might contribute to the questions the WCWC and EMG had raised in their earlier work. The Caucus had, in previous discussions, decided to focus its attention particularly on three main issues namely: (i) billing, (ii) water management devices, and (iii) sanitation issues related to broken/blocked sewage pipes.

The mandate for the narrative-based SM process was to use the pre-existing knowledge of the WCWC as a starting point for the work. Their knowledge as residents and activists would serve as a guiding point of reference for the project as it unfolded.

Step 3. Workshop One. Co-Designing the research tool

In the first 4-day workshop, held in July 2019, the citizen scientists and academic researchers worked jointly to define the central issues of concern, develop the SM questionnaire and agree on the process for data collection. This process was led by the CST researchers. The workshop was attended by twelve citizen scientists, UCT researchers, one representative from the City of Cape Town, and one staff from EMG. All participants were treated as vested stakeholders with a right to contribute to the development of the process. The lived experiences of everyone attending the training workshop(s) were treated as of equal value, through careful facilitation.

The training began with a broad introduction to research methods, the SM approach and data collection. Following this the group moved on to consider what aspects of the water crisis they were most interested in. Agreeing on the key issues and also defining the lenses through which to approach these issues proved challenging and required careful facilitation and considerable time. A general observation was that the citizen scientists found it difficult to conceptualise or anticipate what kinds of data would be most useful in supporting WCWC's work. Considering that many experienced academics struggle with the translation of research into practice, it is hardly surprising that this transdisciplinary group found this particularly challenging. The challenge of deciding how to focus the research continued through the four days of the workshop. Tensions notwithstanding, the work of developing the research tool moved forward.



Figure 2. Workshop 1, day 2 – signification framework design.

The key objective of the week had been to develop the research tool to a level the CoReCT team were happy with. With this in mind, and guided by the above mentioned design principles, the main components in developing the actual research tool were as follows:

- **Co-design the signification framework**

There are two components within the signification framework: the ‘story prompt’ which is the question that elicits the qualitative story from respondents, and a quantitative questionnaire that allows respondents to attribute meaning to the story they shared. While a good prompting question for the story is important in setting the tone and richness of qualitative stories that will be collected, the most challenging part of the process is refining down the infinite number of ways in which meaning can be attributed to these stories. This quantitative framework meaning-making needs to be abstract enough to work across many different people's personal stories, but at the same time, concrete enough to generate coherent, useful insights based on the needs of the process. Bear in mind that the same qualitative survey is used by all respondents to signify very different stories.

Designing this survey was done collaboratively through small group work and facilitated classroom discussion aimed at understanding the core concepts, areas of uncertainty and hunches around water problems faced by local communities in the areas the WCWC works.

- **Piloting the initial signification framework**

Two rounds of piloting were done. The first was done in class at the end of the second day. Based on the inputs from the group from this, the CST facilitators developed an initial online version of the signification framework that could be tested in the field on the third day of the workshop. During this process the team piloted the draft signification framework in one of their home communities. Makhaza was chosen for its proximity to the training venue.

- **Refining the signification framework**

The morning of day 4 opened with a discussion of the field testing. Based on the experiences from the pilot, the group discussed issues that had come up and further refined the signification framework. Through this process the ongoing discussion around the most strategically relevant areas of the water crisis to focus on narrowed the framework further.

Once consensus was reached, the signification framework was set up on the online platform as shown in Figure 3. Once uploaded it could then be used via the SenseMaker cellphone app, or via a web-link.

- **Translating the signification Framework**

The English version was then translated into isiXhosa and Afrikaans. As the narrative signification process is linguistically nuanced, the process enlisted local translators from the areas where the research would be applied to ensure that it was tailored to the local vernacular. A full version of the signification framework can be found in Annexure 1.

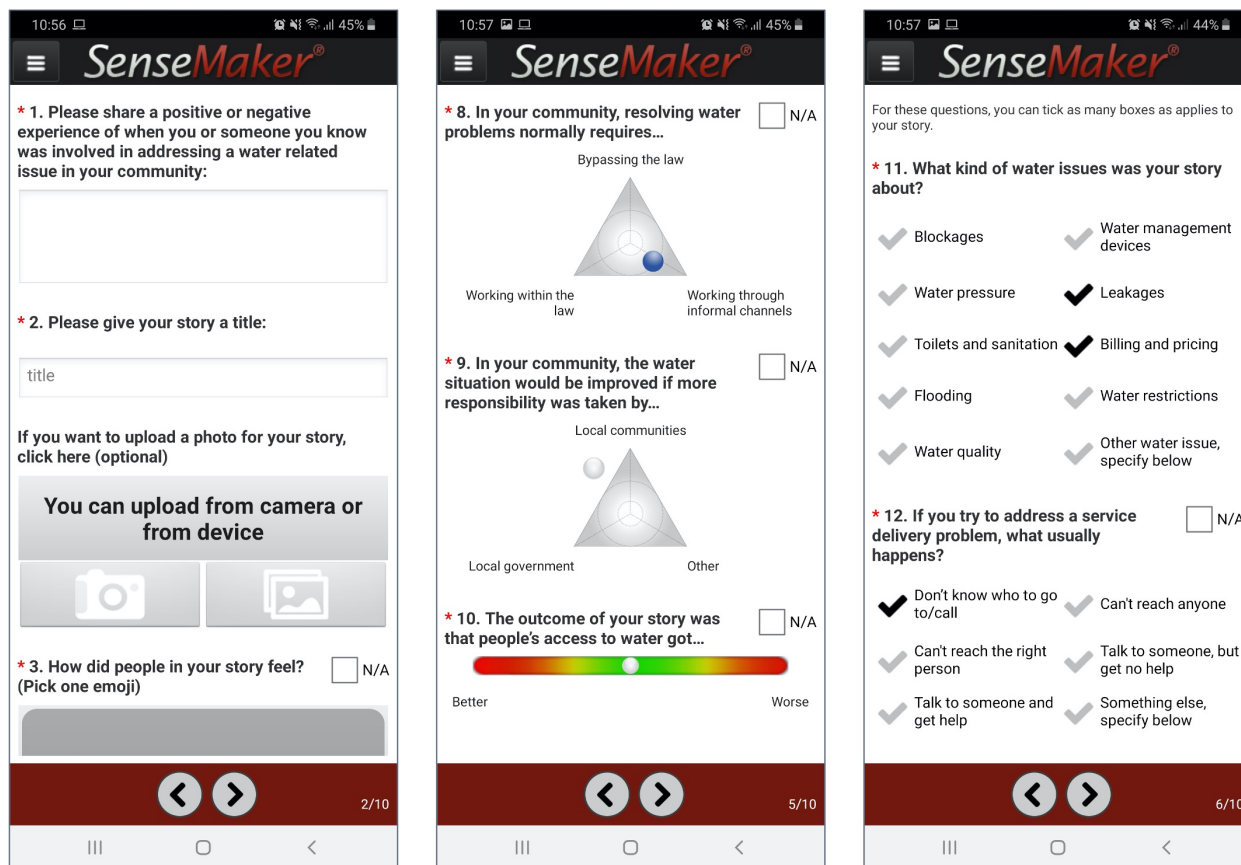


Figure 3: Screenshots of the smartphone app version of the English signification framework.

Step 4. Story Collections

Between August and October 2019, the citizen scientists collected stories from residents of their communities. All were visited in the field during the first few weeks by Johan Enqvist from UCT and/or EMG staff. Enqvist and CST researcher Luke Metelerkamp also provided remote support for the technical aspects of the SM app and uploading of collected data to the SM online platform.



Step 5. Care-Day

As mentioned, doing field research was a totally new experience for most of the citizen scientists. This created a need to talk about and share some of the challenges experienced during the story collection period, for which a care-day workshop was organised on 29 August 2019, hosted by EMG.



The following are some of the main issues and concerns that emerged from this one-day workshop.

General feedback points from the citizen scientists:

The emotions and personal challenges of settling into a new and unfamiliar role as a researcher within one's own community was a leading theme within the care day.

'I am used to being researched and now I am the researcher. The roles have changed'

'There is a tension that research brings as people have hope that things will change – especially because the research is now being done by people they know'

'I had to do research in another area to which I lived, which was hard. But at the end I realized the people I spoke to had a story to tell and wanted to talk to someone.'

Signification framework challenges (with the tool):

Some issues surrounding the signification framework came up, but on the whole this did not come up as a major issue.

'I'm lacking clarity with the signification framework – e.g. question 5 - what does it mean when we say "needs of the present"?''

Technical issues:

Technological issues were common, primarily relating to the use of mobile phones in the data collection and uploading of stories to the SM server.

'I have 20 stories but I have only uploaded 1. I have a problem with technology and didn't know' what my phone was asking. [uploading/phone]'

'I have collected stories, maybe 10. But I lost my phone so I couldn't upload them.'

'I received data from Johan to upload but couldn't because of phone problems.'

Practical / personal challenges:

Unsurprisingly, people's personal issues placed pressure on their ability to commit fully to their research:

'I have been looking after my uncle who was sick and passed away so I didn't collect as many as I wanted to.'

'I was caught by personal issues that needed urgent attention.'
'I had a problem uploading stories.'

Power dynamics:

There were a small number of problems with political power dynamics:

'There are people who are linked to the counselor and then they are not answering well as they have an attitude that you might threaten the counselor.'

Research process issues:

Some issues around the research process and one's own objectivity came in. For many citizen scientists, knowing when to step in and try to fix the problems they were hearing about in the field and when to stay disconnected was a big challenge.

'Sometimes people are confiding in you- there are hard situations that people share. In one instance a man I interviewed came to my house to follow up and give more information. Then I said I am also facing the same issues.'

'You must be very careful when dealing with people who are over researched as you may need to skip over the question.'

'Interviewing style is important as sometimes you need to be informal and others formal. Need a balance.'

Being aware of these practical, conceptual and emotional challenges faced by citizen scientists in processes such as this can help improve training in future.

The main take away from the care day was the potential role of citizen scientist support groups. Setting up simple support groups and peer-to-peer check in processes was highlighted as a key mechanism through which groups of newly trained researchers could debrief and support one-another as they embarked on their data collection quests.

Step 6. Workshop two: Collaborative Analysis & Sensemaking

In the second workshop, held in October 2019, the citizen scientists and academic researchers worked together to engage with/make sense of the emerging story patterns and agree on the process for story returns. This was attended by members of WCWC of Dunoon, Makhaza (Khayelitsha), Joe Slovo, Green Park, as well as two staff from EMG. For various reasons five of the original participants were not able to return for the second workshop due to various reasons; they were replaced by five new WCWC members. Representatives from the City of Cape Town (CCT) joined the group on the last day, Thursday

31 October 2019, for a special session during which WCWC members presented some of the key research findings to them (discussed in more detail below). This was also attended by other members of the WCWC, EMG and communications staff from UCT.

This training workshop began with a **recap and feedback session** on the citizen scientists' personal and field experiences during the story return phase. This was followed up with a **contextualisation session**, which involved introducing the citizen scientists to the story packs (the compendium of individual stories) and then contextualising these in terms of their community and demographic settings.

This, in turn, created an opportunity for the participants to become familiar with the ways in which the quantitative data they had collected could be processed using the SenseMaker software tool. This involved some preparatory back-end work with the data by the CST facilitators, which was then printed out on large A0 posters. This allowed the citizen science team to engage with the visual representations of their data in a tactile way.

Once the qualitative and the quantitative data had been introduced through engagement with the story packs and data print outs respectively (Figure 4), the focus in the **insights-identification session** shifted to drawing connections between the individual stories and the quantitative data.



Figure 4a (left): Groups reading through story packs; Figure 4b (right): Discussing the data print outs

For this, the citizen science team divided themselves into groups based on the three topics that WCWC has focused on in their work: bills and pricing; water management devices; and sanitation and blocked sewers. Each group read through the story pack to identify any stories that touched on their topic, and then proceeded to identify a 'typical' story that captured important points or the most common themes seen in respondents' stories. Each group then presented their story to the rest of the workshop participants: one chose to role-play a scene where a community leader helps a neighbour confront their local counselor, another featured a "talkshow" programme with guests from different communities and the municipality, the third was a more conventional presentation with facts, figures and examples.

A round of feedback was given to each group from the rest of the participants. In particular, the academics helped show out how the findings illustrated on posters could be used in the presentations to emphasise certain points. The groups revised and presented their stories a second time, this time in front of a larger audience: an additional eight WCWC members who had not taken part in the previous SenseMaker work, but were invited to learn more about the work and provide feedback on the presentations.

The emphasis then shifted in two directions: first, figuring out the necessary logistics of **returning the stories** - in other words: who, where and when to conduct the story returns - and, secondly, how to do this - in other words: what are some of the context-appropriate ways of presenting the graphic visualisations of the story patterns?

The three groups used the input from the visiting WCWC members and gave a final round of presentations on the final day, Thursday 31 October. This was attended by a delegation from the CCT Water Department, additional staff from EMG, and two UCT researchers working on similar topics. This served as an exercise for the citizen scientists to present their research findings for a broader set of stakeholders, and learn about how it can help facilitate discussions and collaborations. The key insights on water issues that emerged from the collective analysis and sense-making work done in this workshop are presented in detail in Annexure 2.

Step 7. Story Returns

Three 'story return' sessions were organised on 21 – 22 Nov 2019. The sessions were held in the three areas where most stories had been collected: Dunoon, Mitchells Plain and Makhaza. The citizen scientists were in charge of these sessions, choosing what members to invite and how to organise the time. Typically, this included creative use of skits against back-drop of quantitative data and bringing these *into* the skits. This demonstrated a creative way of *integrating* qualitative data, depicting lived experiences, and the quantitative insights emerging from the full package of stories (Figure 5).



Figure 5. Story returns

3. Reflections on the process

From a transdisciplinary perspective, in which co-engaged research seeks to address unresolved societal problems, the process of research cannot be separated from the process of reciprocal learning. The objective of this research was to collectively learn about challenging problems in the local water system

that do not have simple solutions. In spite of the fact that many of the citizen scientists had no form of tertiary qualification, the process enabled them to meaningfully participate in the co-creation of scientifically credible information around complex socio-ecological problems. In doing so they benefited from a transfer of various skills around research, as well as learning via a process of new knowledge creation, to understand their own work and communities in a new light. Importantly, the process also created valuable learning opportunities for the academic researchers, getting a chance to access and reflect information together with 'field experts' who had often themselves experienced the problems described in the collected stories. This reciprocal, two-way learning provides important opportunities to reflect on what knowledge is, who holds knowledge, and how new knowledge is generated.

Collectively these forms of learning shifted how they were seen as legitimate stakeholders in the eyes of other academics and city officials. Because of the transdisciplinary project structure, their role as valuable knowledge collectors and holders was central to the process. The research outcomes could not happen without them and they taught the researcher and city officials valuable information. When the city officials attended the workshop, the citizen scientists were the ones that presented the data, rather than the scientists and so had agency around owning and sharing community-generated data.

From the perspective of a co-designed research process, a central challenge surfaced repeatedly through the different phases of the work. This revolved around co-defining the strategic direction for the research - deciding what issues to focus on, how broadly to cast the net, and who the findings should ultimately be targeted at. For instance, there was a tension where the academic researchers more often and easily tended to view questions in a more abstract way ("How do we phrase it to get the respondent to think about the right issue?"), while the citizen scientists tended to view them from a practical point of view ("How can the problem we are asking about be resolved?"). Given that the group came from very different perspectives and were used to different ways of using information and knowledge, this is something that should have been better anticipated and planned for during the design phase.

The challenge of linking research to practice and advocacy remains, in particular around how research should be put into action in a democratic way within the loosely organised structures of the WCWC. One tool to help was a Data Use Policy that was developed to state that the collected data is owned by WCWC, and clarify whom and under what circumstances the data can be used by others (e.g. researchers, other organisations, CoCT officials). However, it might be necessary to develop additional mechanisms to support the WCWC to put the data to good use. From an academic perspective, knowing when to lean in and when to step back is a constant tension since too much "hand-holding" risks getting in the way of an organisation's own agency.

The process also caused a number of tensions within the WCWC. These occurred at different levels; firstly, between those who had been part of the Sensemaker process, and other WCWC members (due to the payment of small "per diems" for the time spent on data collection, and around the dominance of the SenseMaker over other WCWC activities). Secondly, tension emerged depending on who had been part of various parts of the process and who were seen as 'newcomers' or outsiders (again, part of this was linked to the per diems, where some were viewed as only participating for the money and not the cause – WCWC is a voluntary organisation). Thirdly, tensions emerged within the group as some were seen as having a closer, 'friendly' relationship with the academics, raising suspicion of favours or

preferential treatment (for example, some contacted academics with questions through direct WhatsApp messages rather than asking in the group, which left room for rumours and suspicion).

These examples demonstrate that supporting community-based organisations is far from straightforward, and that especially when money is paid out there is a risk for misunderstandings, resentments and conflict. Here, it is invaluable to have an organisation like EMG that can act as an advisor and mediator regarding best practices as well as help resolve misunderstandings within WCWC and between WCWC and the academics. A key lesson is to share information about any possible monetary remuneration as early as possible, and in a forum where clarifying questions can be asked, and ideally also be flexible in terms of how, when and to whom the money should be paid. One alternative that is under consideration is to make all future payments go fully or partly to a dedicated WCWC account, administered by EMG. This would prevent accusations of people acting in their own self-interest, and also give the group a greater capacity to fund its own initiatives.

4. Conclusion

While not without its challenges, the process provided fresh insights and a much needed community perspective on the City of Cape Town's responses to increasing water scarcity and sanitation challenges. The process also provided insights into using SenseMaker in transdisciplinary knowledge co-production and learning processes. Importantly, we believe that transdisciplinary projects should be viewed, from the outset, as something that generates much more than just data, or prepares for data collection in a more conscious way. The academics that take part need to be willing to *learn new ways of working* rather than simply doing their normal work at a slightly slower pace. Similarly, planning for the outcomes also needs to include *planning for the social impact* the project will have, as well as acknowledging that the *involved parties might be affected* in positive and negative ways. In other words, transdisciplinary work covers the whole process from design through execution and analysis to impact and learning, both personal and systemic.

We believe the lessons learnt in this process can play an important role in helping the City of Cape Town to incorporate community-generated data into its decision-making processes and, in so doing, fulfil the mandate of its own Water Strategy. The Strategy, launched in early 2020, commits to “an ongoing action learning research agenda in collaboration with relevant stakeholders and partners to improve the effectiveness and impact of the City's efforts to improve water and sanitation services in informal settlements” (p 24), as well as increased use of community-generated to enable “better decisions on interventions in informal settlements” (p. 44). Partnering with initiatives such as the CoReCT project could be a way to initiate such collaborations. This research is a prime example of community-generated data that, if could be combined with City data, holds great potential for developing more locally appropriate interventions. Importantly, this requires the development of effective mechanisms for how to incorporate and value different forms of information in decision-making. While this lies beyond the scope of this project, early engagements with WCWC and City officials indicate that academics can play an important role in facilitating constructive discussions by providing ‘safe’ neutral spaces, and giving legitimacy to the community-generated data that formed the basis of discussions.

5. Acknowledgments

- AXA Research Fund for funding for the project
- ACDI (UCT) for providing academic and strategic leadership as well as facilitating the connection to the EMG / WC project.
- EMG for facilitating the complementarity / synergies between the Action Learning and SenseMaker approaches and processes.
- WCWC for providing access to the studied communities.
- CST (SU) for creating institutional and academic spaces to experiment with developing practical and context-relevant methods for doing transformative transdisciplinary research.
- City of Cape Town for actively engaging in the process through one observer during the first workshop, and through five high-level staff attending the initial interactive data sharing and findings session on 31 October.
- The Sustainability Institute not only for their hospitality of hosting our various training workshops during 2019, but, above all, for sharing their sustainability living and learning spaces at Lynedoch EcoVillage
- Cynefin Centre for allowing us to use the SenseMaker tool free of charge for research purposes in this project.

6. Annexures

Annexure 1: Full signification framework

Annexure 2: CoReCT project summary

Annexure 3: Data use policy

Name of interviewer:

Date:

Thank you for taking the time to fill out this questionnaire. It has been developed by the Western Cape Water Caucus, a community organisation, with support from Environmental Monitoring Group, University of Cape Town and Stellenbosch University.

This study is being done because we believe it is important that voices of community members are heard. We want to give you an opportunity to share your experiences and opinions. This means that there are no right or wrong answers to the questions. Participation is completely voluntary, so if you decide that you do not want to answer any questions, that is completely fine.

You are also free to stay anonymous, no one reading your responses will know your name or identity if you do not include it in your response.

The answers you give in this questionnaire will not affect your own water services or issues you may have.

By continuing with this questionnaire, you confirm that:

- You have had the process explained to you in a language with which you are fluent and comfortable.
- You have had a chance to ask questions and your questions have been adequately answered.
- You understand that taking part in this study is voluntary and you have not been pressured to take part.
- You may choose to leave the study at any time without any consequences to you.

1. Please share a positive or negative experience of when you or someone you know was involved in addressing a water related issue in our community:

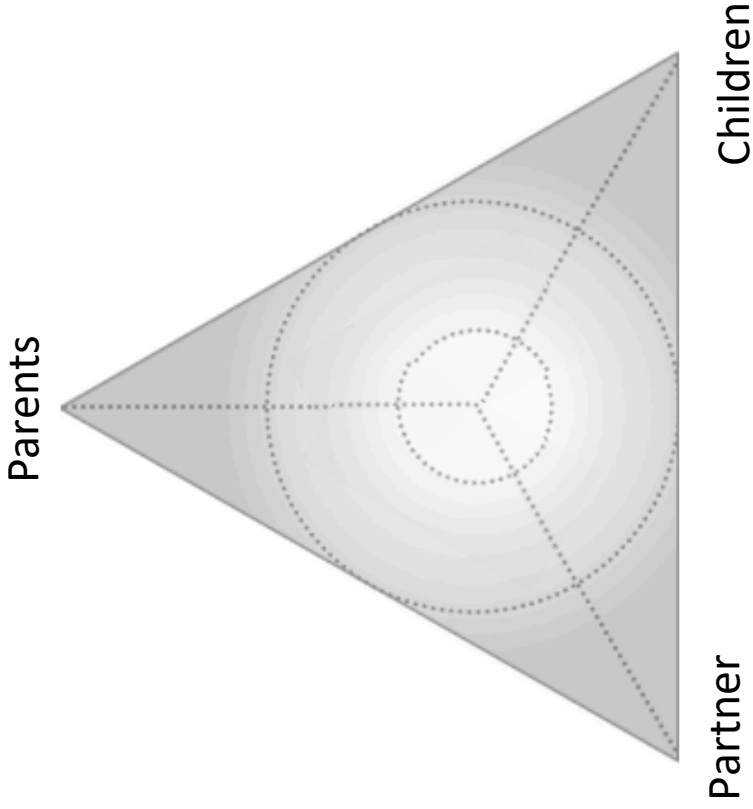
2. Please give your story a title:

3. People in your story felt:
(Select up to three emojis)



TEST EXAMPLE

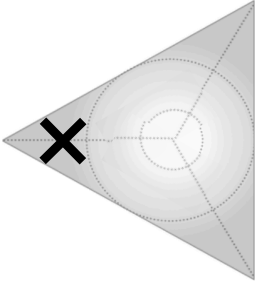
I share my household with my...



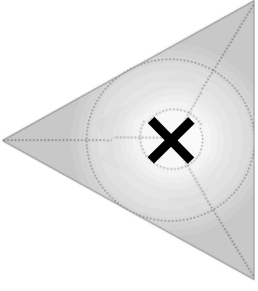
N/A

INSTRUCTIONS:

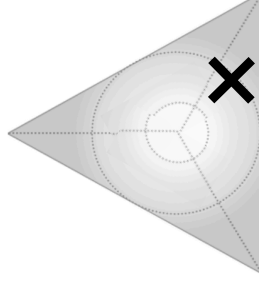
If you live with your parents only, place a mark in the top of the triangle.



If you live with both a parent, a husband/wife and a child, put a mark in the middle of the triangle.

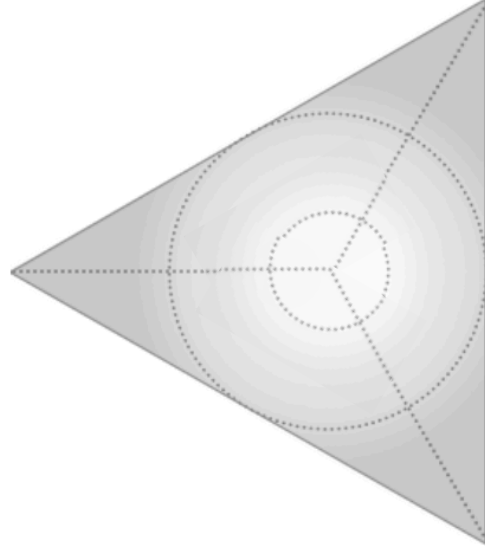


If you live with a partner and several children, put a mark in the bottom of the triangle, closer to Children than Partner.



4. In your story, is the water issue you describe linked to any of the issues below?

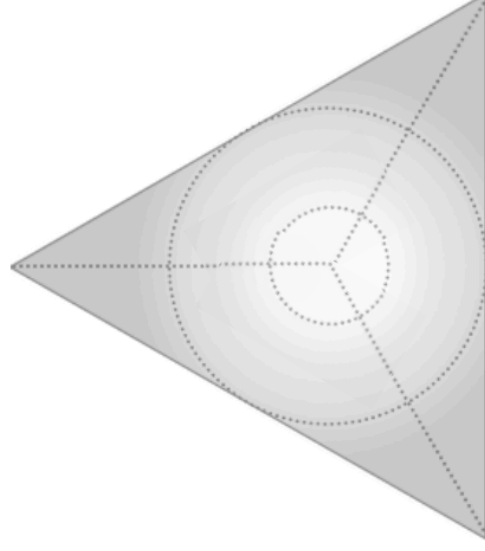
Gardening/food growing



N/A

5. In your story, the person was driven by...

Needs of the present



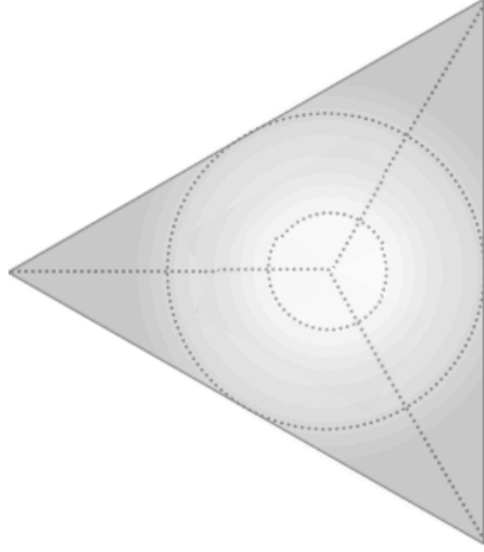
N/A

6. In your story, people's efforts resulted in...

7. In your story, the outcome was influenced by...

No improvement

Local government



A temporary fix

A solution

Local residents

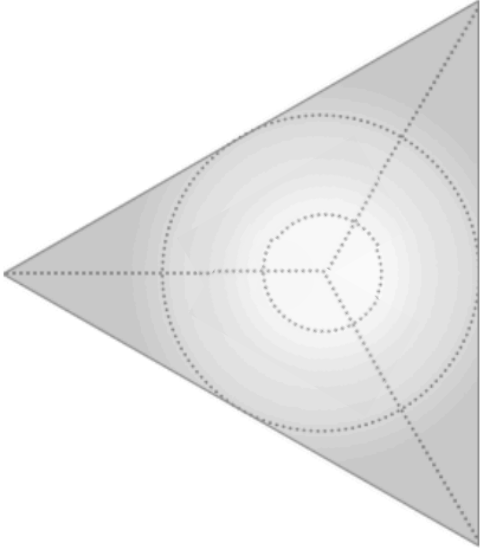
Other organisation

N/A

N/A

8. In your community, resolving water problems normally requires...

Bypassing the law



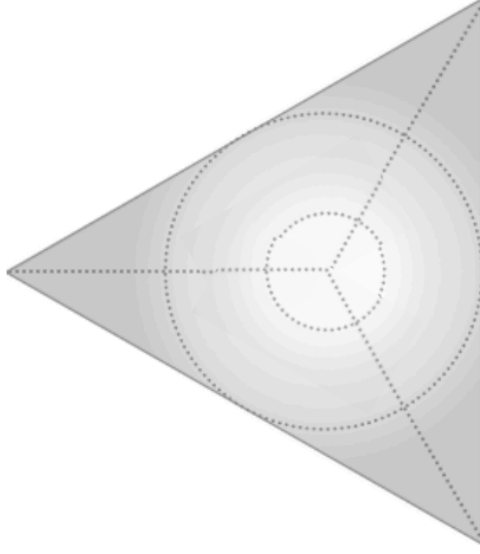
Working within the law

Working through informal channels

N/A

9. In your community, the water situation would be improved if more responsibility was taken by...

Local communities



Local government

Other

N/A

10. The outcome of your story was that people's access to water got...
(Place a mark somewhere on the line as you feel is appropriate)



For the questions below, choose as many options as you think is appropriate.

11. What kind of water issues was your story about?

- Blockages
- Leakages
- Flooding
- Other:
- Water management devices
- Toilets and sanitation
- Water restrictions
- Water pressure
- Bills and pricing
- Water quality

12. If you try to address a service delivery problem, what usually happens?

- Don't know who to go to/call
- Can't reach the right person
- Talk to someone and get help
- Can't reach anyone
- Talk to someone, but get no help
- Other:

13. When did your story take place?

- Still ongoing
- Up to 1 year ago
- 1-3 years ago
- 3-10 years ago
- Over 10 years ago

14. How common is your story?

- Very rare
- Uncommon
- Relatively common
- Very common

15. Where did your story take place? (Pick one)

- Du Noon
- Makhaza
- Other:
- Green Park
- Mitchells Plain
- Joe Slovo
- Observatory
- Kraaifontein
- N/A

16. Who needs to hear your story?

- People in my neighbourhood
- City of Cape Town officials
- Private sector
- Other:
- Local communities
- City of Cape Town contractors
- The media
- NGOs and CBOs
- National government

Lastly, just a few questions about you:

Home language	Age	Disability
<input type="checkbox"/> isiXhosa	<input type="checkbox"/> Younger than 18 years	<input type="checkbox"/> Yes
<input type="checkbox"/> Afrikaans	<input type="checkbox"/> 18-29 years	<input type="checkbox"/> No
<input type="checkbox"/> English	<input type="checkbox"/> 30-49 years	
<input type="checkbox"/> isiZulu	<input type="checkbox"/> 50-69 years	Household water access
<input type="checkbox"/> Southern Sotho	<input type="checkbox"/> 70-89 years	<input type="checkbox"/> Running water at home
<input type="checkbox"/> Northern Sotho	<input type="checkbox"/> Older than 90 years	<input type="checkbox"/> Use communal tap
<input type="checkbox"/> Venda		<input type="checkbox"/> Flushing toilet at home
<input type="checkbox"/> Tsonga	Gender	<input type="checkbox"/> Bucket toilet at home
<input type="checkbox"/> Tswana	<input type="checkbox"/> Female	<input type="checkbox"/> Use a communal toilet
<input type="checkbox"/> Swati	<input type="checkbox"/> Male	<input type="checkbox"/> Have water management device
<input type="checkbox"/> Ndabele	<input type="checkbox"/> Other/rather not say	<input type="checkbox"/> Have a rainwater tank
<input type="checkbox"/> Other: <input type="text"/>		<input type="checkbox"/> Have a borehole or well-point
		<input type="checkbox"/> N/A

Would you like to be invited to participate in a feedback session with other people to hear more about the outcomes of this study?

No Yes please. Contact details:

Community Resilience in Cape Town (CoReCT)

A transdisciplinary research project on water-related issues in low-income areas

As part of an AXA-funded research project on urban water governance, researchers from University of Cape Town's African Climate & Development Initiative (ACDI) have been engaging with Environmental Monitoring Group (EMG) to identify and support community activities focused on water-related urban issues. Through this process, it became clear that the Western Cape Water Caucus (WCWC), a community organization based in several informal settlements and townships in Cape Town – which EMG supports and helps co-ordinate – could be a suitable partner.

WCWC expressed a wish to learn how to conduct a study to collect data that can support their work on water-related issues in low-income areas. This led to the creation of the CoReCT project, that uses a transdisciplinary approach to co-design and execute research. In doing so, the WCWC has been able to both build internal capacity and gain research experience among several members, as well as produce new knowledge about its core issues based on fieldwork in the communities where its members live. The project aims to build knowledge about the lived experiences of water access, water services and water issues at a household level. This is done using a tool called SenseMaker, which allows respondents to share their experience in a narrative form and also indicate the meaning of their story. SenseMaker software tools makes it possible to compile and present insights from large numbers of stories.

Methodology

Ziervogel and Enqvist approached SenseMaker experts, John van Breda and Luke Metelerkamp from the Centre for Complex Systems in Transition (CST) at Stellenbosch University to help run the study. WCWC appointed twelve members (referred to here as “citizen scientists”) with support and facilitation from the EMG staff. The study has included two phases, both supported by 4-day workshops, namely: 1) design and story collection, and 2) story sense-making and return.

In the first workshop, held in July 2019, WCWC and researchers worked jointly to develop a

questionnaire and interview technique to capture qualitative and quantitative information. Simply put, this involves asking respondents to share an experience of when they tried to address a water-related issue, and then fill in a standardised set of multiple-choice questions. The second step lets the respondent “signify” or give meaning to the story they have shared. This includes information about the story in terms of what has driven their actions, where they turn to for help, the role of government versus citizens, etc. The goal is to understand people's experiences and subjective opinions on the topic, rather than just collecting evidence on the performance of water services. After the first workshop, the twelve story collectors were given three months to collect stories from their neighbourhoods, using paper questionnaires or a SenseMaker app on their smartphones. In total, 311 stories were collected from Mitchells Plain, Du Noon, Makhaza, Joe Slovo, Green Park, and several other areas (Figure 1). All stories were uploaded for processing in the SenseMaker software by ACDI and CST researchers.

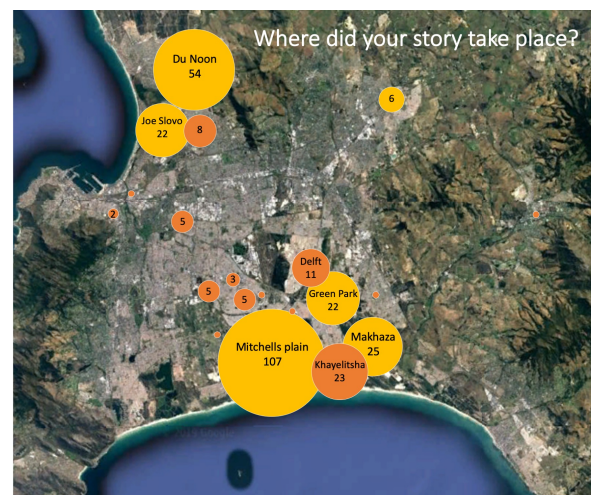


Figure 1. The project collected 311 stories from six primary study sites and several additional communities in and around Cape Town.

In the second workshop, held in October 2019, WCWC members and the researchers analysed the data and identified key findings with relevance for WCWC's work. A close reading of collected stories helped participants identify

narratives to be used as part of a strategy for communicating findings back to the studied communities. The workshop also included discussions with invited City of Cape Town representatives on how to best share the study in order to improve how the City operates.

After the second workshop, in November, WCWC members organised and hosted story return sessions in Du Noon, Mitchells Plain and Makhaza. The findings were shared with invited community members through role-playing typical stories, and by using posters with the quantitative findings. This was followed by lively discussions. This served as an additional important learning step and opportunity to reflect on the emerging results.

The nature of this project meant that the study has been conducted primarily by WCWC members. Stories were collected and returned to communities in English, isiXhosa and Afrikaans, depending on the neighbourhood. ACIDI and CST researchers provided support and expertise. Moving forward and with permission from WCWC, the collected data as well as observations from the collaborative process will be used for scientific publications.

Transdisciplinary research, reaching across not only academic disciplines but also the boundary between academia and society, is difficult and messy. Challenges have included developing research questions and approaches for data collection that meet scientific rigour while also being appropriate for story collectors and respondents, and meet norms for ethical conduct. This project included ample time during two 4-day workshops in order to prepare participants for their tasks; it also made room for needs-based “care days” during fieldwork in order to resolve emerging issues and debrief around fieldwork experiences.

Findings

Of all the stories shared, 45% were about bills and pricing, 35% about water management devices (WMDs), and 32% about leakages. By comparison, problems with water restrictions (16%) and pressure (14%) are relatively uncommon – which is remarkable considering the city’s recent drought and related efforts to minimise water use through restrictions and pressure management. Further analysis of the qualitative and quantitative information shared by respondents reveals several themes:

Frustration

The most prevailing message is that people are frustrated from not being able to resolve problems. As one respondent explains:

My water bill comes sky high even though I have a water device. I’m sick and tired of going to the City and getting no solution. ... Sometimes we sit without water for days, but our bill still comes out high. Where can we go for help?

A clear majority of respondents (64%) state that their problem is still ongoing. Only 14% of respondents said that they usually get help when they try to address service delivery problems (Figure 2). People’s frustration is mostly directed towards the City of Cape Town, which is ultimately responsible for water services, or the local Ward Councillor, who is supposed to represent the community. In some cases, stories express frustration with community members who misuse water or cause other problems.

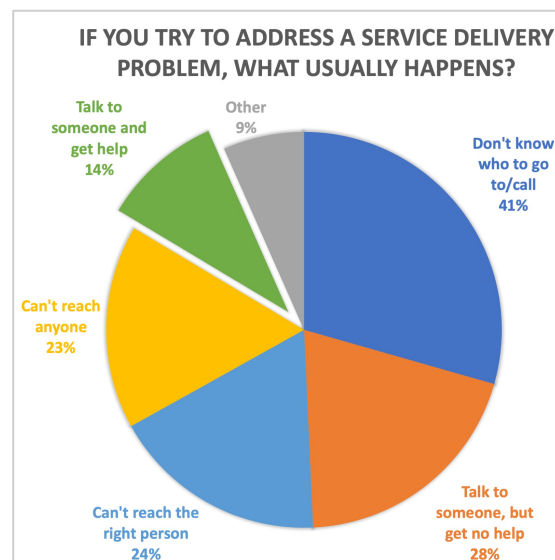


Figure 2. Very few respondents are usually able to resolve problems with service delivery.

Success stories

Only about 13% of respondents reported that their story resulted in a solution (Figure 3). While rare, their stories are important for understanding how the type of problems that people report are usually resolved. Of the 25 respondents that both shared a positive story, and coded it as such in the follow-up questions, the most common reason why the problem was solved was help from community members (9 stories). After this, the stories described help from municipality (7), self-help or hired help (5) and unclear reasons (4) for the solution.



Figure 3. Most respondents saw no improvement in the issue they described, and some only found a temporary fix.

This reliance on local capacity can be problematic. While the problem is addressed, it can lead to sub-standard quality of services and put strain on residents. One respondent exemplifies:

I have a problem with a drain that [keeps] blocking, and ... the smell comes straight into the house. No one has ever come from City of Cape Town [to help]. I end up [relying on] people from the community to come and help, even though they are not trained.

In other cases, collaborating with neighbours to make one's voice heard can be empowering and can help build local capacity to hold authorities accountable:

Living in an informal settlement, we once as a community, asked municipality to put up a tap closer to our houses. The results were positive; we were asked to write a letter to the municipal office and have everyone affected to sign.

Water management devices

The City of Cape Town introduced WMDs to detect unreported leaks, reduce household debt, facilitate demand management and guarantee access to basic water needs. However, in many stories, the outcomes seem to have been the opposite. Respondents with WMD issues were more likely than others to also have problems with bills as well as water restrictions (Figure 4). This is not evidence that WMDs cause those problems; it could be that devices are installed primarily in areas where these problems are more common. However, given that the devices intend to cut off daily water supply at 350 litres,

it is unclear why many of these households are still receiving high bills when they have a device installed.

I am a single mother of two kids. I chose to have the water [management device installed] cause I couldn't afford to pay water bills. But nothing has changed for the better, it has gotten worse: there are days when there's no water. The water bills are sky high and I don't understand why. I have gone to the council to report but for two years no one has come to help.

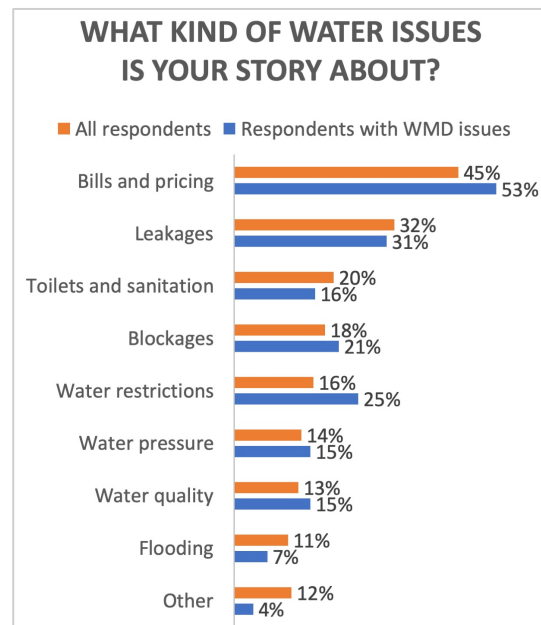


Figure 4. Compared to most respondents, those with WMD problems are more likely to have other water issues as well.

Citizens and the City

As shown in the findings above, the communication between local residents and municipal authorities often fails. This ranges from the frustration when people are not able to find someone to hear their grievances, to resorting to the local community for problem solving, to the perceived violation of disruptive WMDs. Many object to devices being installed without their approval:

I'm very, very angry. I have a WMD which was installed without my consent. Now I'm facing a huge water bill and leakages. I have no one to talk to.

Others even doubt that the City is sincere about improving the lot of the least privileged:

I have no faith in the Council as my complaints fall on deaf ears. ... I have reported [my broken WMD] many times and was promised that it will be seen to. It kept leaking water and my water [allocation] would run out quickly. My husband asked a plumber in our area who charged us R200 to fix ... it so we can have water.

These alternative solutions are notably common, even when they require bypassing the law. Fewer than 2 out of 5 respondents state that water problems can normally be solved by working within the law.

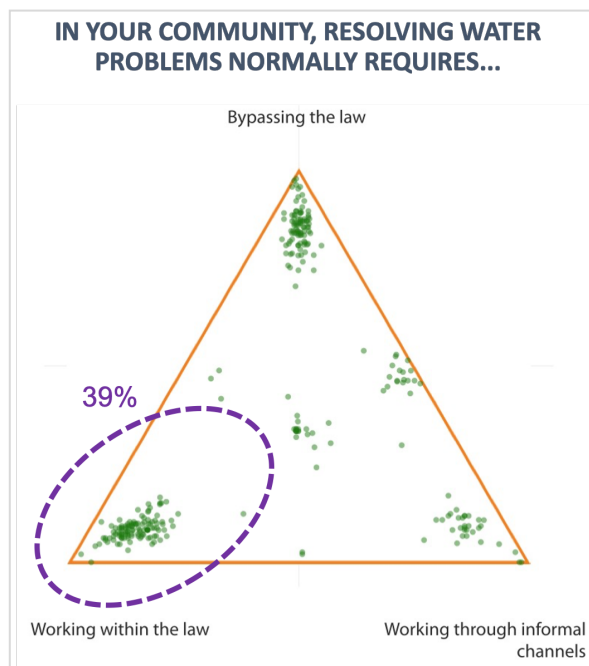


Figure 5. Out of 285 respondents, 112 (39%) think that working within the law normally suffices to solve water problems.

This lack of trust in the formal system can be seen as a serious threat to gaining support for efforts to improve service delivery. However, a majority of respondents still hope that the municipal government will hear their story (Figure 6). People generally want the local government to take more responsibility for improving water service delivery, not less.

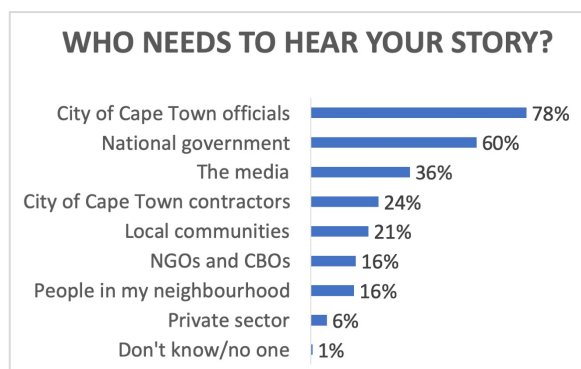


Figure 6. Respondents primarily shared stories that the city and national governments need to hear.

Informality

Many respondents are trying to navigate a system that is partly formal, partly informal. When settlements grow organically without central planning, problems can emerge that formal authorities are unable or unwilling to address.

My problem is a drain leaking inside my yard. My house has been built on top of a pipe, so I have to demolish my house in order to solve the problem. ... The Housing Department and they told me that it's not their problem: ... "The owner is supposed to hire a planner before extending the house." I can't afford all [this]; that's why I took short cuts.

Two of three respondents see their water problem as linked to issues of housing and planning. It seems as if the structural limitations of their environments, paired with poverty and inability to reach public services, forces people to resort to informal and sometimes illegal alternatives to cope with their daily challenges.

Project outcomes and benefits

The findings of this project as well as the process itself speak to several needs. First, the WCWC benefits by acquiring data around the issues it works on to inform their action and advocacy. The process has also helped to build internal capacity and experience in how to collect and present evidence. WCWC's ties to the national South African Water Caucus as well as to other community-based organisations also provides potential for knowledge sharing.

Second, this approach allows community members to make their voices heard and acknowledged. Ensuring that a broad set of experiences are recorded and made part of the collective narrative is particularly important in a city with extreme inequality and traumas from ongoing stresses to service delivery and recent shocks from the drought. Third, the project showcases a tool for the City of Cape Town to better understand residents' lived experiences, and thereby improve service delivery.

Fourth, this project adds invaluable research insights about the city's most vulnerable communities. It pilots a co-design approach to Sensemaker that serves to inform and complement the AXA project's research on urban resilience and water governance.

Data use policy, CoReCT project

This document concerns the use of the data collected in the project *Community Resilience in Cape Town* (CoReCT). The data was collected by members of the Western Cape Water Caucus (WCWC), with support from researchers in the AXA project at University of Cape Town and staff at Environmental Monitoring Group (EMG).

WCWC, AXA researchers and EMG are referred to as the “**project partners**” below.

The document provides guidelines to ensure that:

- respondents anonymity is guaranteed,
- the interests of WCWC are protected,
- the data can be used for academic research purposes,
- that the findings can inform public policymaking and increase the awareness of water issues in society at large.

Three data “packages” has been created for the sake of this policy, described below and summarised in the table further down. In all packages, any *personal information has been removed to guarantee anonymity*.

Basic Package

What does the Basic Package include?

- 4-page project report.
- Press release.

Who has access to the Basic Package?

- Anyone. It will be publicly available online on UCT and EMG websites.

Special package

What does the Special Package include?

- A document with a curated pack of 60 stories, with English translations alongside the original text, edited to improve readability.
- A document with the questionnaire used for the story collection.
- A package of posters and presentation slides, summarizing the key findings from the study.
- All of the items listed under “Basic package” above.

Who has access to the Special Package?

- Project partners.
- Community organisations and non-governmental that the project partners collaborate with.
- City of Cape Town officials that express an interest to any of the project partners.

Access to the Special Package can be granted to an person or organisation, by any of the project partners. If they use the material, they are required to credit the Western Cape Water Caucus as the source of the information.

Full package

What does the Full Package include?

- A document with all 314 stories, with English translations added alongside the original text in isiXhosa and Afrikaans, where applicable. This version has also been edited to correct typos and minor errors, to improve readability.
- A spreadsheet with all the information given by 314 respondents in addition to the stories.
- All of the items listed under “Special package” and “Basic package” above.

Who has access to the Full Package?

- Only the project partners (WCWC, EMG, AXA researchers).

In addition, access to the full package can be given to selected students and researchers. This can be proposed by one of the project partners; if it is EMG or AXA researchers proposing this access, they need to inform WCWC representatives and one week before granting the access. The WCWC has a right to veto access to any person beyond the project partners.

Table: Who has access to what?

	Full story pack	Spreadsheet	Curated story pack	Questionnaire	Slides/posters	4-page report	Press release
WCWC members	Yes	Yes	Yes	Yes	Yes	Yes	Yes
EMG	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AXA researchers	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Selected students/researchers	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Community partners	No	No	Yes	Yes	Yes	Yes	Yes
NGOs	No	No	Yes	Yes	Yes	Yes	Yes
City partners	No	No	Yes	Yes	Yes	Yes	Yes
General public	No	No	No	No	No	Yes	Yes
Website	No	No	No	No	No	Yes	Yes
	Full package		Special package			Basic package	