

LEARNING FROM CRISIS

A series of modular learnings from the 2017-2018
Cape Town water crisis

☺☺☺ THE RESILIENCE SHIFT

THE CAPE TOWN
DROUGHT RESPONSE
LEARNING INITIATIVE

module

16

Is Cape Town more drought resilient now?

The city is more drought resilient due to new water-saving infrastructure and practices. It is committed to adding significant diversified sources of supply over ten years. Resilience requires having these in place.

Text component of module 16, accompanying the film www.vimeo.com/cinesouth/ctdri-trs-lfc-module-16

Duration: 20:57

Is Cape Town more drought resilient now?

There is a case for arguing that Cape Town is more resilient to drought now than it was before the crisis. There is a new approach to water, with new water-saving infrastructure, systems and practices in place. If there were to be another call for a reduction in consumption, the response by users will probably be faster. The city government has committed itself to a long-term programme of diversification of its sources of water supply, including desalination, groundwater and reuse, aiming to add supply capacity of three hundred million litres per day over the next ten years. But these are large-scale projects with long lead-in times. Once these are in place, Cape Town will be better positioned to deal with such a multiyear drought, but this is only expected to be the case ten years from now. Until these schemes are in place the city remains vulnerable to drought and the situation remains precarious. Also, drought resilience is only one aspect of the city's overall resilience, which includes many other aspects. It would be a mistake to think Cape Town is resilient because it came through the crisis; the reality is that the city was lucky – it rained in time.



I think we are definitely more resilient, given what we've learnt

Councillor Xanthea Limberg

I would say we are certainly in a far better place than we were prior to this drought

Dr Gisela Kaiser

Cape Town, I think, is more resilient now than it was two years ago

Craig Kesson

EXECUTIVE SUMMARY

- There are a number of reasons for arguing that Cape Town is more resilient to drought now than it was before the drought
- At both household and business level, there is a new understanding and appreciation for water, and a new relationship with it; there are now also water-saving infrastructure, systems and practices in place at households, businesses and other users such as hospitals and schools, that did not exist before
- A better understanding of water and an improved sensitivity to it among the citizenry mean that if there were to be another call for a reduction in consumption, it will be better understood, with probably a faster response
- The focus in long-term planning and strategy has shifted from merely reconciling supply and demand to a more holistic approach
- Most importantly, the city government has committed itself to a long-term programme of diversification of its sources of water supply, including desalination, reuse and groundwater, aiming to add supply capacity of three hundred million litres per day over the next ten years, with committed funding
- These additional sources of supply the city can put in place on its own, without any reliance on outside parties such as national government
- Furthermore, this programme has a fixed and a variable component, the latter being adaptable depending on prevailing rainfall conditions at the time, so specific augmentation schemes within the programme can be sped up if needed
- The drawback – and the counterargument that Cape Town is not yet better positioned to stave off a crisis triggered by a prolonged drought such as that experienced over the 2015-2018 period – is that these supply augmentation schemes are by their nature large-scale projects with long lead-in times; once the additional three hundred million litres per day supply is in place Cape Town will be much better positioned to deal with a three-year drought such as the recent one, but this is only expected to be the case ten years from now; until then, the vulnerability remains
- Cape Town has committed itself to building resilient systems generally. But this takes time, not all battles are won, and it requires building redundancy into the system, which often means paying for things that are not used – a hard paradigm to break into
- We came through the crisis not because we are resilient, but because we were lucky

Interviewees in order of appearance:**Councillor Xanthea Limberg**

Mayoral Committee Member for Informal Settlements, Water and Waste Services and Energy,
City of Cape Town

Dr Gisela Kaiser

Previously Executive Director: Informal Settlements, Water & Waste, City of Cape Town

Craig Kesson

Chief Resilience Officer: City of Cape Town

Helen Davies

Chief Director: Green Economy, Western Cape government

Andrew Boraine

CEO: Western Cape Economic Development Partnership

Peter Flower

Recently retired Director: Water and Sanitation, City of Cape Town

Dr Piotr Wolski

Research associate: Climate System Analysis Group, University of Cape Town

Full interviews on [Cape Town Drought Response Learning Initiative](#) website

Opinions expressed by interviewees are personal viewpoints
and do not necessarily reflect those of their organisations

STRUCTURE

00:00:05

Hooks:

- I think we are definitely more resilient, given what we've learnt (XL)
- I would say we are certainly in a far better place than we were prior to this drought (GK)
- Cape Town, I think, is more resilient now than it was two years ago (CK)

00:00:48

YES BUT

- On balance not sure if we'd be able to stave off a repeat of such a crisis more effectively: while there have been many improvements which will help, the needed diversification of water sources requires large-scale projects with long lead-in times, so these won't be in place any time soon (HD)
- While we have learnt a lot about water, and citizens have a new understanding of and relationship to water, it's not clear that we've become socially more resilient, as we've reverted to type and resumed business as usual too soon (AB)

00:04:59

YES

- We are more resilient because we are developing alternative resources which will ramp up over the next ten years to provide an additional three hundred million litres a day of capacity, from a mixture of desalination, reuse and groundwater; furthermore, this programme has both a committed and an adaptive component, so implementation can be sped up over time if required by circumstances prevailing at the time (PF)
- In addition, we are now far more sensitive and the public's understanding is much better, so if there is a call to reduce demand it will be understood better (PF)
- Better water-saving knowledge and water-saving infrastructure make us more resilient, as does improved information flow between government and citizens (PW)
- Whereas previously the focus was solely on reconciling supply and demand, the new water strategy has five pillars, bringing a more holistic approach and more resilience (GK)
- Augmentation of supply committed to, within realistic timeframes and with committed funding, ensuring more resilience in future (XL)

00:15:37

YES BUT

- Cape Town has committed itself to building resilience; but it takes time, and is a hard paradigm to break into; we came through last time because we were lucky, not because we are a resilient city (CK)

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- 00:00:48 “If we were to get as little rain in 2020 and the next two years as we’ve just had from 2016 to 2018, would we be more resilient? And could we stave off a crisis in the way we did, or stave it off in a more effective way? I’m not sure – is the honest answer.” In certain respects there have been improvements – communicating better, identifying who the stakeholders are, many hospitals, schools, businesses have put in their own water supply systems, improved water efficiencies. “But in terms of managing or providing water from diversified sources, the large-scale type of projects that we potentially need to get the volumes we need, I think we would have a challenge. So there’s a lot of talk, particularly in the City around new water supply schemes from groundwater sources, from desalination, etcetera, but those have very long lead-in times. And they have long lead-in times because they require extensive planning, extensive procurement processes, and then just time to build them. And the concern is that the more we think that the recent drought was potentially a once-off drought, or not to be repeated anytime soon, the longer we’ll take to press the green light for investing in those new diversified water sources ... There’s certain large-scale water projects we should be investing in right away. So some of those the City certainly is investing in right away, but some of them are kind of in a second phase plan, and I think the concern is that there’re quite a few those that we should probably be investing or at least starting the investment in right now.”
- Another issue in need of attention and a lot of work in a short space of time is the issue of a centralised bulk water supply system versus a hybrid of a centralised and decentralised system. “I think we need to change a lot of fundamental things in the system within a very short space of time.”
- 00:03:30 “Are we a more resilient city? I think we’ve learnt a lot about water. I think we understand the water system much better. I see my colleagues at the City of Cape Town and in municipalities understanding the need to not just manage their part of the system but join up and influence the behaviour and the management of other parts of the system. I’ve seen citizens have a new understanding, their own understanding and relationship to water, and to the public authority.”
- “Are we a more socially resilient city? I would say the jury is out. I think we have reverted to type too quickly, back into our separate areas, separate spheres, separate sectors, and we on the whole continue life, you know, the crisis is over, life continues, it’s business as usual. And it’s not business as usual in our city. We have to continue disrupting the way in which we don’t relate to each other, and don’t connect across the traditional racial, class, and geographic boundaries that divide us as a city.”
- 00:04:59 “I think Cape Town is now better positioned to deal with a three-year drought than it was previously, for the simple reason that we’re now well down the programme of certainly developing the alternate resources which will ramp up in

time over the years to come, but we're moving on a programme to sort of increase the capacity."

"But also, we are far more sensitive, and I think the Capetonians are more sensitive, to the need to restrict when it's necessary than they were before. And I think everybody's relationship with water has changed considerably, so if there's a call to drop again, not that it will be a popular one, but it will be understood better, I think, and we will get a response accordingly. I think nobody wants to have to go through that again, and the City is certainly in terms of its new water strategy is not intending for the city to have to go through such extreme experience again. But, you know, we don't know just how extreme a variation in climate change could impact on Cape Town."

"But certainly with what's intended in terms of the committed portion of the augmentation programme, which is the part that is going to be running, and the portion that we call the adaptive component where we can adjust the amount of capacity – desal and reuse and so on – build, is what we're saying is over the next ten years we will up the supply by about three hundred megalitres a day. And that will comprise a mixture of the desal, the reuse and the groundwater, running out towards the end of that we can adapt according to how the conditions are prevailing at the time."

00:07:05 "So is the city more resilient? In my opinion the city is very much more resilient than it was before. And there is a couple of lessons that we've learnt and there is a couple of factors that the resilience comes from. On the population side, on the citizens' side we've learnt how to live with much less water than we used to ... We got used to it. We know that we can do it, we know how to do it. And that knowledge is going to stay with us."

"Apart from that knowledge we've invested in infrastructure, we have the boreholes, we have the water tanks, we have, you know, pans and pots that we collect our rainwater, and pumps and showerheads and so on. This creates quite a lot of good infrastructure, water-saving infrastructure, and creates quite a lot of resilience in responding to crisis like that."

"Another aspect is the whole sort of interaction between the government and the people, the way the communication goes, the way the information is provided, you know, we have much more transparency, we have much better information flow, which again is something that creates resilience, it creates responsiveness, creates a better possibility to respond to any crises like that."

00:09:06 "I would say we are certainly in a far better place than we were prior to this drought. I think that what we have learnt is really incredible and world-class. That said, if it is the same type of drought with the same type of, you know, 55, 66, 40 percent of rainfall, not 10, 10, 10, because if we get so little rainfall, then we would have to accelerate all our programmes."

“The reason why I’m feeling fairly bullish about this is that previously the City absolutely had managed its bulk water, it knew what its demand was, it had a good handle of it. But it was part of the strategy of the Western Cape water supply system strategy, and that strategy was really about reconciling water supply and demand. The strategy which was approved by Council at the end of May of this year has five pillars, of which only one is balancing supply and demand. So I think the City is taking a far more holistic approach to how to manage water, realising and recognising the value of water in everybody’s life, so it’s about accessibility and safety and it’s about a collaborative effort, which I think is just so, so important when you’re part of a supply system, especially when politics are a little bit up and down and here, there and everywhere. So I certainly feel that the city is more robust. It’s also got a fixed programme and a variable build programme, so things can be accelerated, the costs have been quantified, it’s been included in the medium-term budget, so that means that for three years, you know, money has been made available on the project to provide additional water over the next ten years. And I certainly don’t think it’s money wasted because Cape Town is a growing city, we want people to not feel guilty for having a five-minute shower. We would want people to be able to enjoy water but in a responsible way. So additional water is required as part of the system. These are things that we can do, it doesn’t mean having to build a dam, and as long as we work at our relationships with others and we have a collaborative view, then I’m sure that will help as well. Another pillar is to go more the environmental route and for example use our stormwater better. So I really think that our strategy is very well suited to provide a more secure and more resilient water future for Cape Town.”

00:11:49 “I think we are definitely more resilient, given what we’ve learnt. It is important to just make the point that what occurred over the last three years is a one in five hundred and ninety year event. Our current assurance levels in terms of water supply is ninety eight percent, meaning we can plan for implementing restrictions once every fifty years. So what we experienced is far beyond what could have been predicted. That just shows you the severity of the drought and the fact that no amount of climate data could have actually prepared or planned us for that. So going forward what we have learnt is not necessarily completely depending on any historic modelling or data that we’ve used to model rainfall and climate change, and making provision for flexibility in our modelling, most importantly understanding that in that modelling we have to be prepared for a water-scarce scenario in the event of another protracted drought. At this point in time we have no understanding of what rainfall patterns are for 2019 – it may not be the end of the drought. So we’ve realised that we cannot afford to go back to business as usual, and we will definitely not be doing that because the risk of that is just far too great. And we can’t be communicating another Day Zero scenario to our residents.”

“We got started on a process to develop a new water strategy for the Water and Sanitation department, we did that through the assistance of both local and international experts, that looks at augmenting our supply, but in a far more realistic timeframe, and at what we deem is a far more affordable cost to our ratepayers. So essentially we are planning to augment our supply by just over three hundred million litres of water over the next ten years. However, the water augmentation programme that we are planning for in our new water strategy has been stress tested, so it does make room to accelerate in the event that we have another poor rainfall year in 2019 or beyond. We can accelerate components of that plan to get new water into the system far more sooner. It’s very clear as well in terms of how much this will cost, so the estimated cost at this point in time is just over R5.3bn, with additional water demand management interventions just over that amount. And that’s what we are committing to for the next ten years.”

00:15:37

“Cape Town, I think, is more resilient now than it was two years ago. It made a decision, the correct decision, to my mind, a few years ago that it was going to buy into building urban resilience, to looking at the shocks and stresses of the city system, and I have a very simple anecdotal reference point, which is just in my daily job I remember being appointed as the Chief Resilience Officer, on the back of another job I already had in the City, and saying to colleagues, well, you know, I’m the Chief Resilience Officer, and they would say, well, congratulations, that’s great, what is that? What’s resilience? And you go to the City now, two or three years later, no one will question what resilience is. They know what it is. They’re building it. They’re working towards it. And they care about it. And for me that is a massive cultural change.”

“There is still some way to go in truly building a resilient city. I mean, it’s one of the trade-offs for example of government is how do you use resources effectively, and the principle of resilience for example is building redundancy into your system, which is sometimes paying for things that you may not need, or that you may not need to call upon if a disaster is averted or a crisis is averted. That’s a very hard paradigm to break into. But one that we began. When we engaged in the work of the water resilience task team that modified and changed over time, the water plan, but most of those augmentation projects for example remain on the books and are being executed. The demand management projects remain and are being executed, because of the importance of redundancy. The function of resilience thinking and a resilience office, I think, from direct professional experience and reflection, whomever that person is, a resilience officer must be prepared to be unpopular. Your job is to say hard things. The person thinking about resilience is not thinking about what is the best way to manage or utilise every cent of your budget in this financial year. They’re thinking about it in the next fifty years, in the next one hundred years. And to raise these possibilities and these horizons sometimes feels unnatural. It also sometimes is hard to tell

decision-makers that a decision they are making now, whilst it seems right in the short term, may have disastrous or catastrophic effects in the long term. And you know, I don't think that people charged with resilience thinking or instituting resilience frameworks in cities or any organisation should be dissuaded by the fact that their advice will not always be heeded. That's a function of any position. It's always a battle of ideas, a battle of argument, a battle of data and evidence. And you don't win every battle. But the importance is having a voice at the table, and I think that in the way that Cape Town is pursuing its decision-making now, resilience is always a lens through which we view any major decision."

"You know, in hindsight it's all very well to look back and say, well, we came out of it OK, therefore we are a resilient city. But I ask the question: are we truly a resilient city or are we a lucky city? We were lucky, I think – it rained. We were lucky that we were able to get our planning and coordination efforts together to reduce demand in the way that we were, and we were lucky to begin to schedule augmentation. Of course that was a bit of assisted luck. But still, I think the relationship between resilience and chance is something that needs to be explored further."

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Interviewer: [Peter Willis](#)
Film and text: [Victor van Aswegen](#)
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