



Neighbourhood responses to drought in the Western Cape

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Abstract An extreme drought event occurred in the Western Cape when the mean level of water supply dams declined to 28% of capacity in August 2017 (Odendaal 2019). Our survey of 240 households and 71 businesses identified neighbourhood variations in response to the drought and to local government restrictions in water usage, and in the methods of adaptation that were implemented to mitigate the impact of the disaster. Whereas water consumption declined dramatically in comparison with drought responses in other contexts (Shaw et al. in *Am Water Works Assoc* 84(10):34–41, 1992, <https://doi.org/10.1002/j.1551-8833.1992.tb05862.x>; Miller and Buys in *Soc Nat Resour* 21(3):244–257, 2008; Buurman et al. in *Int J Water Resour Dev* 33(1):31–50, 2017, <https://doi.org/10.1080/07900627.2016.1138398>; Okaka and Odhiambo in *S Afr Geogr J* 100(3):378–393, 2018), significant variations in attitude and behaviour emerged between respondents of Western Cape neighbourhoods with different socio-economic profiles. Middle class and older households and water-intensive businesses or organisations were more likely to report substantial decreases in water usage and to be critical of official interventions than were poorer or younger households and small businesses.

Keywords Drought · Adaptation · Neighbourhood · Water restrictions · Conservation

Introduction

After the winter rain of 2017, dams that supply water to Cape Town were only 38.5% full. Whereas the drought extended across the Western Cape and into adjacent provinces (News24 2019), Cape Town's vibrant tourism industry catapulted news of the city's predicament into the international media. The city management published several alerts and warnings, which had little impact on consumer behaviour. An early intervention entailed the establishment of an online 'water dashboard' (City of Cape Town 2019a) to provide ongoing regular updates about the levels of the city's dams. In January 2018, the Mayor of Cape Town, Patricia de Lille, announced that in the absence of rainfall or a change of consumer patterns, the prevailing rate of water consumption would lead to the depletion of the municipal supply by the 16th April 2018. This prospect was designated as 'Day Zero'. Residents of the city were restricted to an allocation of only 50 litres of water per person per day for all purposes. The Mayor requested the national government to declare a disaster in order to ease the mobilisation of resources to mitigate the impact of the drought. Only then did households, businesses and

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organisations begin to grasp the urgency and severity of the drought. Municipal water consumption declined dramatically.

The vulnerability approach is an appropriate lens through which to study adaptation to the drought, factoring in people-centredness and the social, political, and cultural vulnerabilities of communities. Local skills, knowledge and social institutions serve as critical mechanisms for dealing with a disaster (Baumwoll 2008; Daskon and Binns 2010), which are ignored by state or developmental agencies at their peril (Nunn et al. 2007). The likelihood of successfully reducing disaster risk increases if a community is allowed and encouraged to make autonomous decisions regarding adaptive interventions (Hewitt 2007; Berkes 2008; Huntington et al. 2011) that capacitate itself “to better cope with, manage or adjust to some changing condition, stress, hazard, risk or opportunity” (Smit and Wandel 2006, 282). Conversely, maladaptation to climate change risks can result in unintended negative consequences (Magnan et al. 2016). Appropriately, national legislation in the form of the Disaster Management Act, 2002 (Act No.57 of 2002) provides for consultation with communities and stakeholders as a means of reducing disaster risk, and the Disaster Management Amendment Act, 2015 (No. 16) (Republic of South Africa, 2015; van Niekerk 2014) identifies several forms of vulnerability, namely physical, economic, environmental and social, that increase the susceptibility of a community to the impact of a drought or other hazard. The skills and capacity of government and civil society are perceived to be critical to the mitigation of drought risk (Botha and van Niekerk 2013, 9; Mudombi et al. 2017, 1). Moreover, the age of the farmers and the imbalance of decision-making powers between men and women have been shown to increase social vulnerability to drought (Muyambo et al. 2017, 6), while religious beliefs (Schuman et al. 2018, 10) and indigenous knowledge systems in respect of the African and Asian environments (Singh and Singh 2006; Lunga and Musarurwa 2016; Marango et al. 2016; Musarandega et al. 2018) impact on drought or flood disaster reduction by providing for vulnerable families against food and water shortages.

Middle class and older households are more inclined to adapt their water consumption patterns prior to and during drought events than are poorer or younger households (Brooks 1982). In San Francisco,

drought response programmes in 1977 were deemed to be fair and effective, with some concerns raised about the clarity and communication of the water conservation plan (Bruvold 1979). A decade later, droughts in Los Angeles and San Diego achieved reduced consumption of up to 25% (Shaw et al. 1992). Funds are now accessible specifically to poor communities in California for technical assistance and water infrastructure development (Reibel et al. 2020). In Australia, predominantly middle class suburbanites have implemented robust and affordable solutions in response to regular and pervasive droughts (Mortazavi et al. 2013). A high degree of social capital in a community is arguably an indicator of capacity to collaborate in dealing with environmental disasters (Putnam 2000; Selman 2001). One form of social capital, namely Neighbourhood Connections (Onyx and Bullen 2000), was shown to enhance urban water conservation in suburbs where almost half of urban water is used for gardens. A survey of 276 middle class households (Miller and Buys 2008) demonstrated that neighbourhood connections were a predictor of the environmentally-friendly practice of car washing on the garden lawn rather than on the driveway. This resulted in the grey water running directly into the garden, rather than down the driveway and into the municipal storm water drain system. Information about any environmentally-unfriendly behaviour of neighbours could easily spread and thus served as a constraint (Miller and Buys 2008).

Differences in culture, social systems, ecosystem dynamics, topography, beliefs about climate change, socio-economic conditions, and distinct knowledge systems should be factored into the management of resources and sustainable livelihoods (Kamara 2005; Lindner 2008; Mwaura 2008; Birkmann et al. 2010; Campisano and Modica 2009; Nunes 2016; Otto et al. 2017; de Matos Carlos et al. 2019). Failure to heed warnings of disaster and to implement ameliorative strategies constitute a high risk (Muyambo et al. 2017; Mathivha et al. 2017).

Drought in the Western Cape

Four million of the Western Cape’s 6.3 million people live in Cape Town (City of Cape Town 2019b). The city’s main water sources are six storage dams, namely Theewaterskloof, Voëlsvlei, Bergrivier, Wemmershoek,

Steenbras Lower and Steenbras Upper, with a combined storage capacity of 898,221 megalitres. They rely on the supply of upstream precipitation in the catchment areas of the Cedarberg, Boland and Langeberg fold mountain belt. After the poor rainfall during the winter of 2016, a local disaster proclamation was issued by the Mayor on the 1st April 2017. This was extended to the entire Western Cape Province in May 2017, and adjacent Northern and Eastern Cape in March 2018. The declarations resulted in a financial allocation of R500-million for implementing mitigation measures. The need for greater diversification of water sources became urgent and the construction of three desalination plants and 300 boreholes commenced. Water restrictions of 50 litres per person per day were imposed and the communication and messaging by the authorities resulted in widespread solastalgia (Kaiser and Macleod 2018, 10) or “a feeling of distress associated with environmental change close to home”. The effect of the messages was a decline in water consumption: 1200 million litres per day in 2015; 900 million litres in 2017; 520 million litres in March 2018 (Jones 2018). The ‘Day Zero’ campaign identified the point at which dam capacity would have dropped to 13.5%, after which there would be only six weeks left before no more usable water could be extracted. Although the campaign was subjected to intense criticism, a city official (interview, 18.11.2018) opined that “it was innovative, in your face, and it convinced people that we are serious”. He said, “I can’t conceive of ever using pure water to flush toilets again..... I’ve learnt that water is very sacred. ...Cape Town needs to be complimented, the way we have rallied”. As Day Zero approached, the city planned and piloted for more than 200 points of distribution where water could be collected from communal standpipes in the event of a shut-off of main supplies to the city grid. Regular meetings were held with the city’s Disaster Management Unit staff and 400 volunteers across the city, and with community neighbourhood watch groups, religious organisations, business groups and water experts. Other factors contemplated in the Disaster Risk Reduction planning were how to deal with potential build-up of methane in sewerage works that were not receiving sufficient water; safety and security in the event of a riot; potential epidemic outbreak; and bottled water supply to vulnerable residents.

Survey of residents and businesses

Our sample survey of households and business or institutional respondents targeted seven broad neighbourhoods in the Western Cape, five in Cape Town, and two in small towns to the north of the city (Fig. 1). Within each, a cluster sample was selected, comprising a minimum of 20 households and five businesses/institutions.¹ The localities were chosen to represent the province’s diverse communities, socio-economic circumstances, ecologies, political preferences and environments (Table 1). Respondents were either interviewed or requested to complete the questionnaire themselves. Interviews were conducted in one of the three provincial official languages (Afrikaans, isiXhosa or English). The survey yielded 311 responses (Table 2) across the five Cape Town areas (Central Low-Income (CLI); South-East (SE); North (N); Central Middle-Income (CMI); and South (S)) and two small towns, Piketberg and Clanwilliam, respectively 130 km and 230 km north of Cape Town.

Impact of the drought

We asked what impact the drought had made on our respondents, and just over one-third (32%) indicated that it had had a *small impact* on either their households or organisations. A further 30% said the impact was *considerable*, while 30% indicated that the impact had been *major*. A lower proportion of households (28%) than businesses/organisations (38%) indicated that the drought had had a *major impact* on their operations. Although geographical differences in response were not statistically significant, the proportions perceiving the impact to have been either *major* or *considerable* were highest in CoCT-CMI (75%) and lowest in Piketberg (51%). Differences in perception between households about the most serious effects of the drought in the seven areas were statistically significant ($X^2 = 88.741$; $df = 36$; $sig. = 0.000$), and mention of the impact on hygiene and health duties ranged from 53% amongst households in CoCT-North to only 19% in CoCT-CLI,

¹ Valuable comparative qualitative data were simultaneously collected by means of key informants across the city, by the University of Cape Town’s African Centre for Cities (Ziervogel 2019).

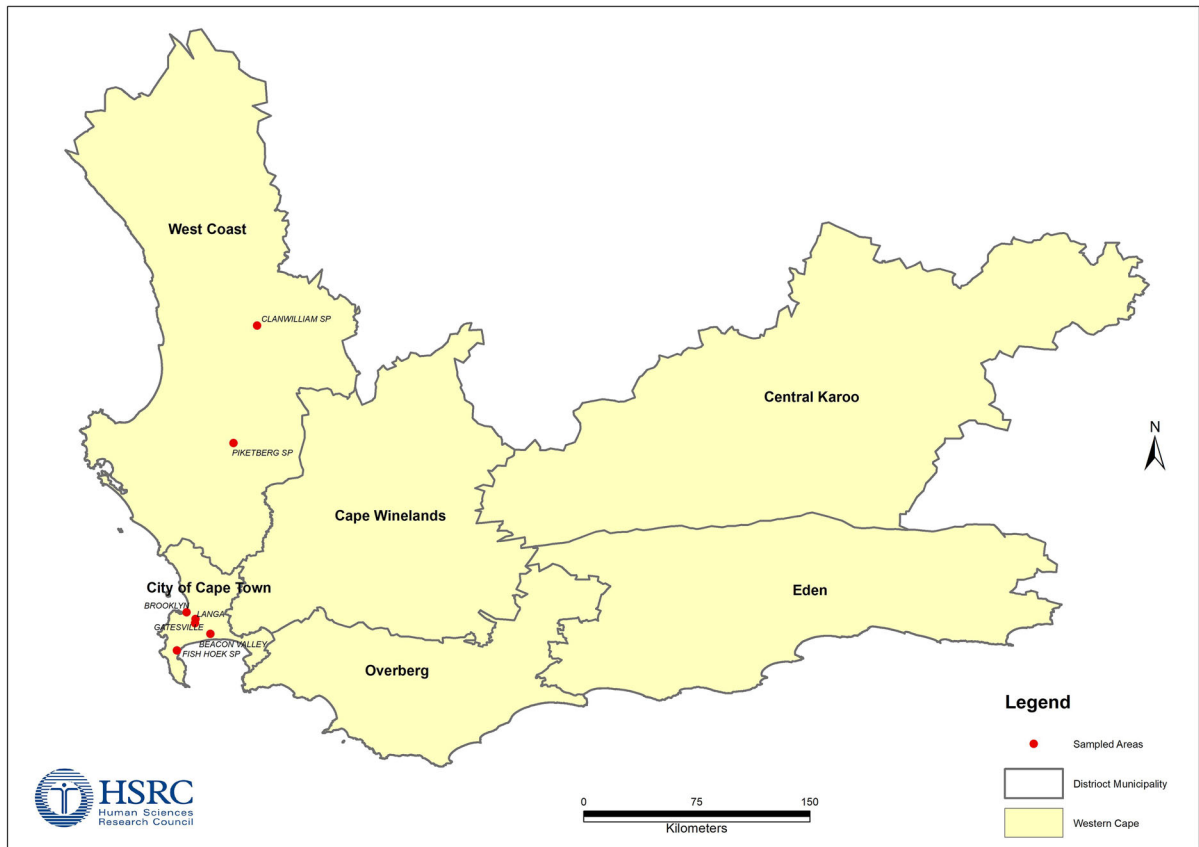


Fig. 1 Western Cape survey sampling points

where health per se was of equal concern and highest of all seven areas (Fig. 2). Table 1 signals several indicators of poverty in CoCT-CLI, namely highest level of informal housing (23%) and lowest level of employment (42%). This poorer neighbourhood is located in Langa, which was established in 1927 exclusively for Black African settlement in terms of the Urban Areas Act of 1923 (SA History 2019). Strongly associated covariation is evident in the highest proportions Black African (99%) and isiXhosa-speakers (89%) and second lowest proportion born within the province (55%) owing to the large numbers of first generation migrants from the Eastern Cape.

Many of the impacts related to normal daily activities and duties within the home or business enterprise. Hygiene and household duties included daily ablution routines. Common behaviour changes were taking shorter showers, saving bath water for re-use, catchment of grey water, and less frequent

laundry and cleaning activities. Within the business environment, the trends were similar, except in respect of water-intensive business operations, where water conservation was less feasible. In businesses involving food processing or retailing, water usage continued as normal. In contrast, the most mentioned serious effect in the two small towns and in CoCT-South, was on gardening activities. Fieldworkers observed much greater evidence of vegetable gardening on domestic properties in Clanwilliam and Piketberg than in Cape Town, which would account for gardening activities being seen as most seriously impacted by the drought in these small towns. In CoCT-South, located within the middle-income suburb of Fish Hoek, the impact was on grass lawns and flower beds.

Table 1 Mean demographic and other characteristics of survey sample areas

Household characteristics (%)		Sampling area						
		CoCT-CMI	CoCT-CLI	CoCT-S	CoCT-SE	CoCT-N	Piketberg	Clanwilliam
Election 2016	DA	76	7	92	89	91	72	64
	ANC	9	73	2	2	4	24	30
Median age		29	26	39	27	33	29	29
Race group	Coloured	77	0	17	95	24	72	77
	Black African	7	99	14	3	25	12	14
	White	0	0	64	0	45	16	9
	Indian	14	0	2	1	4	0	0
Home language	Afrikaans	36	1	12	48	19	83	84
	English	57	3	75	49	59	2	2
	isiXhosa	3	89	1	0	4	1	5
Born in Western Cape		91	55	49	96	59	81	83
Housing	Informal	7	23	0	3	1	5	10
	Owned	59	29	60	81	42	51	50
Employed		44	42	66	47	62	51	54
Internet access on cell phone		40	37	14	57	25	44	31
Grade 12 or higher education		41	44	75	32	62	29	23

Table 2 Geographical distribution of survey sample

	n	Business/organisation (%)	Household (%)
City of Cape Town (CoCT)			
SOUTH-EAST (Mitchell's Plain/Beacon Valley)	38	18.4	81.6
CENTRAL MIDDLE-INCOME (Gatesville/Athlone/Bellville)	28	14.3	85.7
NORTH (Brooklyn)	33	39.4	60.6
SOUTH (Fish Hoek)	23	26.1	73.9
CENTRAL LOW-INCOME (Langa)	69	11.6	88.4
Small towns			
CLANWILLIAM	57	31.6	68.4
PIKETBERG	63	23.8	76.2
	311	22.8	77.2

Awareness of the water restrictions

Most respondents were aware of the municipally-imposed water restriction, with a peak of unawareness (19%) in CoCT-CLI. Perspectives on municipal communication about the drought were accordingly most negative (Table 3) in CoCT-CLI. In five areas, half (50%) or less thought the authorities had communicated well. In the other two, more than two-thirds held this view. Differences between

localities were statistically significant, indicative of the need for greater disaggregation and targeting of future communication strategies.

Overall, a larger proportion of businesses or organisations (60%) than households (51%) said the authorities had communicated well about the water restrictions. Among households, 29% indicated that the communication was 'partly' well executed and 20% said that the authorities did not communicate well. Just over one-fifth (21%) of business or

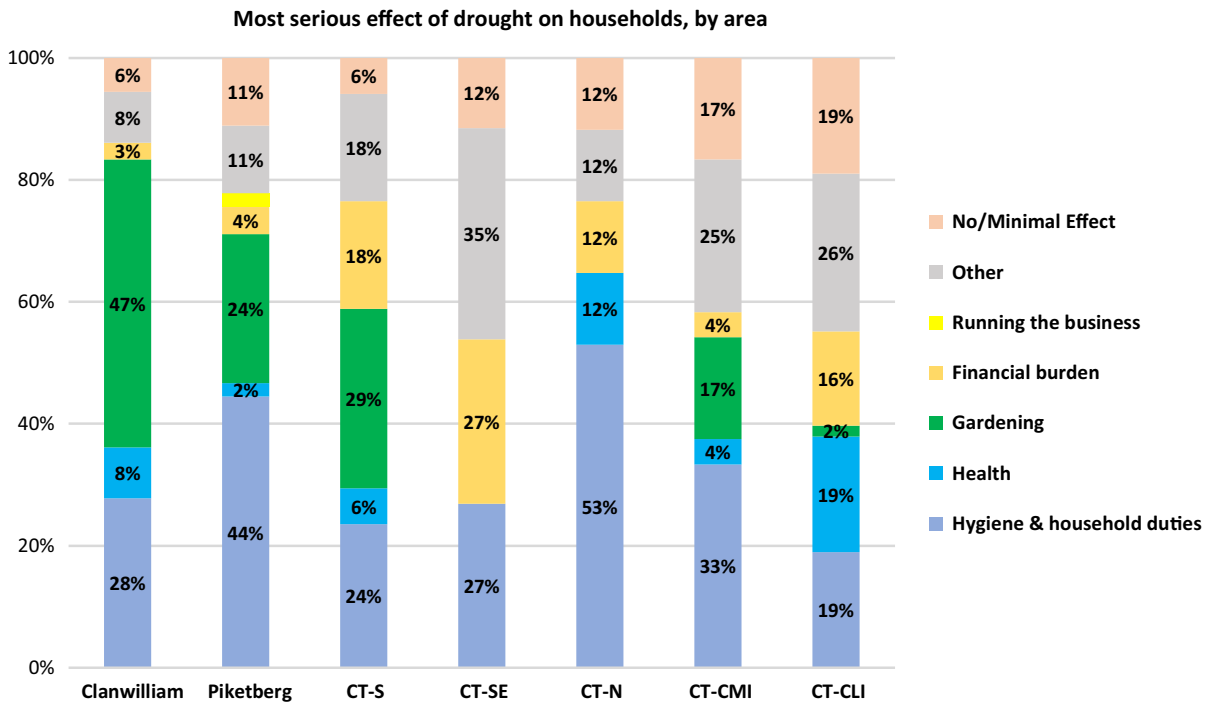


Fig. 2 What was the most serious effect of the drought on your household?

Table 3 Do you think the authorities communicated well about the restrictions?

	Clanwilliam (%)	Piketberg (%)	CoCT-SOUTH-EAST (%)	CoCT-CENTRAL MIDDLE-INCOME (%)	CoCT-NORTH (%)	CoCT-SOUTH (%)	CoCT-CENTRAL LOW-INCOME (%)
Yes	48.2	67.2	47.4	75.0	50.0	45.5	42.6
Partly	35.7	14.8	26.3	21.4	34.4	45.5	25.0
No	16.1	18.0	26.3	3.6	15.6	9.1	32.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Significance: $X^2 = 12.811$; $df = 12$; $sig. = 0.006$

organisation respondents said that official communication had been partly well done, and 19% that communication had not been effective. Respondents' views varied about the most appropriate means of communication. Three traditional methods were nominated by more than half of the respondents, namely television (60%), radio (57%) and posters (53%). Less popular were public meetings (42%), SMS (39%), WhatsApp (34%), Email (26%), the Internet (21%) and Twitter (15%). Businesses and organisations were more likely than households to select email (35% vs. 23%), SMS (41% vs. 38%) and WhatsApp (41% vs. 32%). The same pattern distinguished younger and

older respondents, with those aged 18 to 29 years being more than twice as likely as those aged 50 or older to opt for Twitter, WhatsApp and the Internet. Television was more popular in poorer and small town environments, radio in CoCT-N and CMI. Posters were most popular in the small towns.

Perceptions of changes in water usage during the drought

The issue of water consumption attracted considerable media, government and public attention. The *Day*

Table 4 Do you think that your consumption of water decreased, stayed the same or increased during the last two years?

	Clanwilliam (%)	Piketberg (%)	CoCT-SOUTH-EAST (%)	CoCT-CENTRAL MIDDLE-INCOME (%)	CoCT-NORTH (%)	CoCT-SOUTH (%)	CoCT-CENTRAL LOW-INCOME (%)
Increased	7.0	12.9	17.9	14.3	6.7	4.3	16.2
Stayed the same	35.1	33.9	28.3	21.4	23.3	4.3	36.7
Decreased	57.9	53.2	53.8	64.3	70.0	91.4	47.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Significance: $X^2 = 20.486$; $df = 12$; $sig. = 0.058$

Zero campaign was particularly focused on encouraging, urging and warning residents to reduce water consumption. The majority (58%) said that they had reduced their water usage, 30% said it had remained at the same levels, while 12% thought that it had actually increased. The latter trend was highest amongst those in the 18–29 year group. Between areas, perceptions of change in water usage differed significantly (Table 4). The largest proportion that reported an increase was in CoCT-CLI (16%), coinciding with highest reported lack of awareness about the water restrictions. The highest rate of reported decrease was in CoCT-S (91%). Female respondents were more likely to report that their water usage pattern had either decreased or been similar (91%), than was the case with males (84%).

In respect of actual water consumption, 10% of respondents were able to provide some data for the period 2016–2018. There was a general pattern of dramatically decreased usage for households (average consumption decreased from 16.8 to 8.9 kilolitres per month) and for businesses and organisations (from 434 to 123 kilolitres per month). Two key drivers of this pattern emerged in our discussions with respondents. These were the increased cost of water owing to higher tariffs; and heightened awareness of the need to save and recycle water (Fig. 3).

The ability to find alternative water sources is in many ways related to financial capacity. Wealthier communities were more likely to afford the cost of installing water catchment tanks, boreholes, purification systems and related infrastructure. A key suggestion, particularly in township and poorer areas was the request for installation of water tanks by the municipality, rather than through individual investment.

Opinions about civic management of the drought situation

Public opinion about the management of the drought situation (Table 5) was multi-layered and politically tainted within the context of imminent national elections that were to be held in May 2019. Almost half (43%) agreed or strongly agreed that the authorities had dealt very effectively with the drought. Just over a third (34%) indicated disagreement, and 23% were neutral. Disagreement peaked at 61% in CoCT-CMI, coinciding with a dramatic decline in electoral support for the Democratic Alliance (DA), the ruling party in the City.²

Asked in what ways a drought could be better managed in the future, respondents focused on six main themes. Saving water (22%) was the most frequent, followed by communication and awareness (19%) and improving infrastructure and resources (18%). Smaller proportions suggested that government should maintain water restrictions (9%), provide water tanks (7%) or install boreholes (6%). Although differences between areas were not statistically significant, the broad trend was for middle-income areas to ask for better infrastructure while the poorer areas were more likely to mention the imperative to save water.

² Whereas DA support had been at the 69% level in one of the Ward 46 voting districts (97,090,847) in the 2014 national election, it decreased to 39% in the subsequent national election in May 2019. The beneficiary parties were the ANC, GOOD and Al Jama-ah (IEC 2019).



Fig. 3 Household water harvesting and use in Piketberg

Table 5 The authorities dealt very effectively with the drought disaster situation

	Clanwilliam (%)	Piketberg (%)	CoCT-SOUTH-EAST (%)	CoCT-CENTRAL MIDDLE-INCOME (%)	CoCT-NORTH (%)	CoCT-SOUTH (%)	CoCT-CENTRAL LOW-INCOME (%)
Strongly disagree	10.7	12.9	12.8	10.7	9.6	13.0	11.4
Disagree	23.2	14.5	15.4	50.0	25.8	30.4	22.8
Neutral	19.6	4.8	35.9	10.7	25.8	34.8	22.8
Agree	39.4	53.3	28.2	14.3	32.3	13.0	32.9
Strongly agree	7.1	14.5	7.7	14.3	6.5	8.8	10.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Significance: $X^2 = 50.539$; $df = 24$; $sig. = 0.001$

Behaviour change and awareness of the need to use less water

Residents of the Western Cape were exposed to numerous press, social and national government messages on all media platforms about the urgency of the drought situation and the critical need to save water. These messages were sometimes emotive in order to illicit behaviour change. More than half (58%) agreed or strongly agreed that *the public cooperated well with the water restrictions that were imposed*.

Only 24% of respondents disagreed (or strongly disagreed) and 16% were neutral. Older respondents (70 + years) were more likely than their younger counterparts, and males more likely (66%) than females (55%) (Fig. 4) to say the public cooperated. Agreement or strong agreement was much higher in CoCT-CMI (93%), CoCT-S (78%), and Piketberg (68%) than in CoCT-CLI (53%), CoCT-N (52%), CoCT-SSE (49%) and Clanwilliam (44%) (Table 6).

Respondents were asked an open question about how they had saved water. Thematic coding yielded

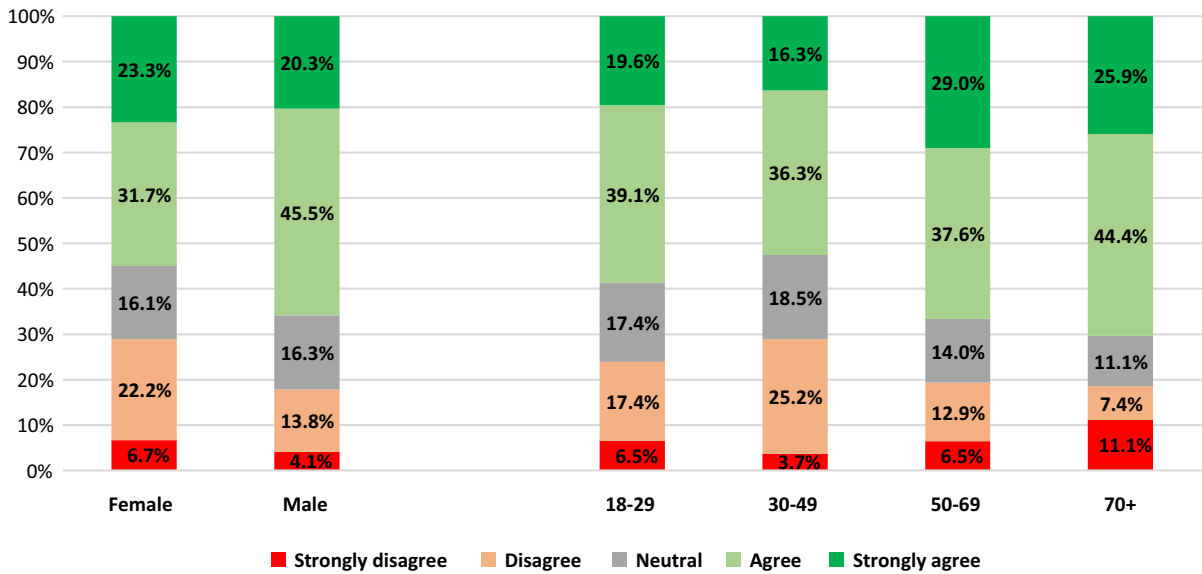


Fig. 4 The public cooperated well with the water restrictions, by gender and age group

Table 6 The public cooperated well with the water restrictions that were imposed

	Clanwilliam (%)	Piketberg (%)	CoCT-SOUTH-EAST (%)	CoCT-CENTRAL MIDDLE-INCOME (%)	CoCT-NORTH (%)	CoCT-SOUTH (%)	CoCT-CENTRAL LOW-INCOME (%)
Strongly disagree	7.3	4.8	5.1	0.0	6.5	0.0	9.1
Disagree	30.8	14.3	20.5	3.6	25.8	4.3	19.7
Neutral	18.2	12.7	25.7	3.6	16.1	17.4	18.2
Agree	38.2	28.6	33.3	50.0	38.7	56.5	34.8
Strongly agree	5.5	39.6	15.4	42.8	12.9	21.8	18.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Significance: $\chi^2 = 51.104$; $df = 24$; $sig. = 0.001$

three major categories: recycling (34%), use of less water (34%) and storage of water (18%), with smaller proportions indicating other methods (Table 7). The use of less water was the major strategy implemented by respondents in CoCT-CMI (46%), Clanwilliam (42%) and CoCT-CLI (35%). Recycling of water was the method most adopted in CoCT-S (46%), Piketberg (38%) CoCT-SE (36%) and CoCT-N (31%).

Media and awareness campaigns by NGOs and community-based organisations supplemented the messages emerging from government. An unintended

consequence was reduced municipal revenue as a result of reduced water consumption.³

³ *Groundup* (Jones 2018) reported “The tariff for water usage between zero and 6000 litres would increase from R26.25 per 1000 litres to R40.73. And the tariff for usage between 6000 and 10,500 litres would increase from R46.00 per 1000 litres to R48.88..... But monthly water usage between 10,500 and 35,000 litres would still carry a much higher tariff: R127.13 per 1000 litres. Using more than 35,000 litres of water will cost R768.64 per 1000 litres, which the City describes as punitive. (10,500 litres per month is exactly equivalent to a family of seven using 50 litres per day each in a 30-day month”. <https://www.groundup.org.za/article/city-explains-new-water-tariffs/>.

Table 7 What were the main ways your household or business saved water?

	Clanwilliam (%)	Piketberg (%)	CoCT-SOUTH-EAST (%)	CoCT-CENTRAL MIDDLE-INCOME (%)	CoCT-NORTH (%)	CoCT-SOUTH (%)	CoCT-CENTRAL LOW-INCOME (%)
Used less water	42.0	26.7	33.3	46.4	23.1	22.7	34.8
Recycled water	36.0	38.3	36.4	25.0	30.8	45.5	20.3
Stored water	18.0	20.0	12.1	25.0	15.4	4.5	23.2
Fixed leakages	0.0	1.7	0.0	3.6	3.8	0.0	4.3
Other methods	2.0	0.0	18.2	0.0	26.9	27.3	11.6
Did not save water	2.0	13.3	0.0	0.0	0.0	0.0	5.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Significance: $X^2 = 65.580$; $df = 30$; $sig. = 0.000$

Few residents of the Western Cape were unaware of the drought and the need to save water, as confirmed by the 80% who agreed or strongly agreed that ‘*Most people in the Western Cape are now very aware of the need to save water*’. Although variations between areas were not statistically significant, older respondents (70 +) were more likely to recognise general public awareness of the need to save water (89%) than were those aged 18–29 years (77%). A higher proportion of males (86%) than females (78%) agreed.

Conclusions

This paper sets out to assess the extent of intra- and inter-urban differences in response to the severe Western Cape drought of 2016–2018. A survey of 240 households and 71 businesses or organisations collected data on attitudes about government management of the situation; mitigation measures implemented; and suggestions for improved handling of any future drought disasters.

Almost all respondents indicated their awareness, or at least partial awareness of the drought and the water restrictions that were imposed. Significantly, almost 20% of respondents from the surveyed low-income township (Langa) said that they were not

aware of the water restrictions, reflective of their normal lower usage patterns. Awareness of water restrictions increased with age, those aged 50 to 70 + years more likely to have been aware than their younger counterparts. About half of the respondents had been satisfied with the municipal management approach and communication methods. Dissatisfaction was most prevalent amongst those living in poorer neighbourhoods, those aged 30 years or more, as well as residents of a middle-income neighbourhood with some other specific political grievances about the metropolitan government. The most serious effects of the drought were reported as being on hygiene and household duties, significantly more so in Cape Town’s middle-income suburbs and Piketberg, and amongst the oldest and youngest respondents. The maintenance of gardens was mentioned more in Clanwilliam than elsewhere, household budgets (with water being more expensive) appeared to be affected most in Cape Town’s east-middle-income area and amongst respondents aged over 50. The running of businesses was affected, especially in northern Cape Town. Residents in the south were more likely than those living elsewhere, to think that the public cooperated well with the water restrictions. Common household drought mitigation strategies were to use less water; to flush toilets and to water gardens with

recycled water (especially in the south, east and small towns); to acquire storage facilities (central middle-income and low-income areas); and to access water from non-municipal sources such as wells and springs. Middle-income households and water-intensive businesses incurred greater impact on activities such as maintaining gardens and topping up swimming pools. Conversely, the impact was much less for low-income households and small non-water intensive businesses. Suggestions for the management of future droughts were for increased water saving (22%), enhanced communication and awareness (19%) including greater use of social media, improved infrastructure and resources (18%), continuation of water restrictions (9%) (this view was strongest amongst the under-30 s), and public provision of water tanks (7%) (notably in the small towns) and boreholes (6%).

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