

From Zero to Hero: Champions of resilience during the Cape Town water crisis, beating Day Zero in Delft

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The notion of “Day Zero” in the Cape Town drought years 2016 to 2018 conjure scary apocalyptic images in the minds of many. Day Zero was predicted as the inevitable drying of water taps in Cape Town due to increasing water scarcity. By November 2017, dam levels had dropped to around 20%, prompting the City of Cape Town (CoCT) to predict 13 May 2018 as the day on which the City’s dam levels would reach 13.5% and citywide water rationing through specified points of distribution (PODs) would have to be implemented.¹



Against the backdrop of Day Zero, I reflect on the experiences of vulnerable residents of Delft, a township community in Cape Town where poverty, crime and substance abuse are rife². I encountered the community of Delft through a multidisciplinary research project entitled: ‘*Water and Fire: Enhancing capacity and reducing risk through 15 ‘Best Bets’ for transformative sites adaptation with vulnerable residents on the Cape Flats*’, <https://gcrfwaterandfire.com/>). The research seeks to address disaster risk challenges of three environmental hazards, i.e., drought-related water shortages and poor water quality, frequent flooding, and large-scale recurrent fire outbreaks in three vulnerable communities of the Cape Flats. It is often cited that the immediate causes of the Cape Town water crisis were ecological, infrastructural, and political³. Climate change induced drought resulting in low levels of rainfall reduced dam levels to between 15-30% from 2017 to 2018, making it difficult for water managers to predict and manage resources. More so because of the worldwide standard practice of relying on surface water as the main source of supply. Thus, the CoCT’s longer-term strategic decision that renders 95% of Cape Town’s water to be derived from six reservoirs around the Western Cape proved inadequate in the face of changed (low) rainfall. Deteriorated infrastructure that includes sand clogged and cracked canals that transport water from nearby rivers to Voelvlei dam, for example, also cause water losses in the overall system. Lack of coordination between relevant government entities such as the national Department of Water and Sanitation, which manages and provides bulk water supply, and the CoCT that distributes water for industrial and domestic use as well as partisan politics exacerbated the water crisis⁴.

¹ Millington, N & Scheba, S. 2020. Day Zero and the infrastructures of climate change: Water governance, inequality and infrastructural politics in Cape Town’s water crisis. *International Journal of urban and regional research*. John Wiley and Sons Ltd. Urban Research Publications Ltd. DOI:10.1111/1468-2427.12899

² Le Roux, L., & du Trevou, C. (2016). Residential property market processes as found in Delft, Western Cape. *Cape Town: Centre for Affordable Housing Finance in Africa*.

³ Knapp, J., Clayton, P., Fackenthal, J., Hixson, A., Leaning, E & Tanovic, A. 2020. The W12 Framework: *W12 Congress*. Supporting cities among collaboration among cities for water security. <http://w12-congress.com>

⁴ Ibid

Responding to the water crisis, the CoCT optimized a longstanding water demand management program established in the early 2000s which included *inter alia*, repairing leaks, replacing pipelines, mild restrictions to prevent water loss even during wet seasons and the installation of household flow regulators and water management devices. Water reuse / reclamation plants were piloted to conserve water alongside alternating pressure-reduction responses at peak and off-peak times. The city installed water management devices (WMDs) to restrict water access by automatically cutting off water supply once the allocated household daily limit of 350 litres had been reached. Through these strategies, the city saved 50 mega litres of water per day, earning an international award from the International Water Association in 2018.⁵



Despite these noble efforts at broad-scale water saving by the CoCT, residents of the Delft community bore the brunt of water scarcity anxiety as a consequence of the looming Day Zero. For the residents of this Cape Flats community, this anxiety had far-reaching effects. During one of the digital storytelling processes held as part of the UKRI GCRF Water & Fire project, one Delft resident stated, “*We lived in constant panic. I kept thinking Day Zero was going to be the end of us*”. Despite the fears, the Delft community and Cape Town at large narrowly escaped Day Zero largely because of concerted water conservation and demand management efforts. Community resilience to disaster shocks such as the Cape Town water crisis build in people the capacity to survive immediate impacts whilst building future adaptive capacities.⁶ This was true of some Cape Town residents who related that despite not being able to alter the water scarcity situation during the drought years, they learnt new ways of conserving water, such as reusing greywater for gardening and flushing toilets, collecting water from the Newlands (and other natural) Springs, entrapping rainwater in large containers, reducing frequency of bathing and laundry, and generally using water sparingly. Because of these water conservation methods, residents managed to bring their per capita water use to less than 50 litres per person per day, almost unprecedented in world terms.

These adaptive strategies persist today. As a Cape Town resident myself, my water usage habits shifted during the drought years towards conservation. A significant change occurred in ways of relating with water. Relational sentiments to water such as, “*not taking water for granted, not*

⁵ *ibid*

⁶ Uddin, M.S., Haque, C.E., Walker, D. & Choudhury, M. 2020. Community resilience to cyclone and storm surge disasters: Evidence from coastal communities of Bangladesh. *Journal of Environmental Management*. 264 (2020)110457

abusing water, changing mindsets on using water, learning new ways of saving water and that Cape Town's best water quality" were common. Thus, people revalorised their relationship with water in animated terms by so doing, building resilience. Writing about resilience in response to cyclone and storm-surge disasters, Uddin *et al.* (2020) assert that in times of disasters, people develop resilient attributes such as developing knowledge, skills, learning values and beliefs, forging people-place connections, and self-organisation capacities. Similar resilient attributes were evident in the Delft residents' sentiments.

At a fundamental level, water is a basic human right. The South African Constitution and the Water Services Act no. 108 of 1997 section 27 stipulates citizens' right to water. To this end, since 2001, a Free Basic Water (FBW) policy has been in place that ensures a basic level of service, i.e., 25 litres per person per day or 6 kilolitres per household per month within 200m from the home.⁷ Yet, as Millington & Scheba (2020) argue, despite water being a basic human right, it is commodified through charging tariffs that the poor cannot afford. Additionally, the poor are forcibly denied access through mechanisms of infrastructural manipulations as a consequence of installing faulty meters for example.

By revising water tariffs and restricting the FBW only to those people classified as indigent, the City deepened existing inequalities for poor people who could not prove their indigency. In addition, the water governance mechanism of making FBW accessible only to households that can prove their poverty status requires an arduous registration process and tends to be exclusionary of some poor and vulnerable households.

Most community residents narrated how municipal regulation of water during the drought years affected them. Some Delft residents complained of faulty meters being installed, and unequal regulation of water restrictions by installing meters at some houses and not others in the same street. In addition, some residents complained about the daily limit of 350 litres being insufficient for large families with many children and other residents in the back yards of their properties. When they requested water increases, they faced a strenuous administrative process.

In relation to urban water governance in the CoCT, Millington & Scheba (2020:116) argue from human geography and political ecology perspectives, that the City's water regulations during the drought years stemmed more from the fear of a financial crisis due to the decline of water consumption rather than a drought crisis. As primary service delivery providers, the local government suffered severe institutional challenges including financial crisis⁸, fiscal constraints because of grant and subsidy cuts, as well as prohibition to operate on budget deficits. Hence water tariffs became pivotal as less revenue was generated during the drought owing to imposed water use restrictions and voluntary water usage reduction across the city. Often evident in South Africa is a tension between egalitarian water service provision and cost recovery through commercialisation of water services which inadvertently intensifies inequalities. Among the impacts of water regulations were psychological (constant worry, anxiety and panic), financial

⁷ Millington, N & Scheba (2020).

⁸ Ibid

(residents had to buy water, loss of jobs that depended heavily on water) and health related (maintaining hygiene and taking care of the sick).

Thus, tensions between ecological, economic (neoliberalism) and equity priorities, go beyond municipal technical and managerial discourses of water governance but also into broader political, cultural, social and ecological domains (*ibid*). Clearly, Delft residents like most Capetonians demonstrated remarkable resilience through learning and developing new ways of adapting to the water crisis despite experiencing the harsh realities of water shortages. The situation altered from an inevitable Day Zero to engendering water heroes who through building resilience managed to conquer the drought.