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Civil Society and Residents' Coping Strategies with Water Shortages and Household Food Insecurity in Gweru, Zimbabwe

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ABSTRACT

Domestic water shortages are distressing many urban areas in developing countries and require well planned and sustainable coping strategies in order to bequeath citizens decent lives. The objectives of this paper were to identify water related civil society groups present in Gweru; reveal devised coping strategies to combat water shortages and household food insecurity; and challenges faced by civil society and residents in obtaining sustainable coping strategies. A survey was conducted through interviews, questionnaires and observations as data collection instruments. The findings show that residents relied on borehole drilled in their respective areas by the municipality, Non-Governmental Organisations (NGOs) and through individual initiatives. Although public boreholes were available, they were found at an average of only two in a given residential area, regardless of its population. Residents also collected water in containers during late hours of the night or early hours of the day. Gweru residents in addition devised strategies to cope with household food insecurity caused by water shortages and high monthly water bills. Combined with the aforementioned water shortage coping strategies, the stratagem by residents included coming up with payment plans, denying city personnel access into their premises for water disconnection; and self-reconnection in the event of disconnection. Community gardens initiated by Non-Governmental Organisations and food imports from neighbouring countries were some of the adaptive mechanisms dealing with household food insecurity. However, despite resolute efforts by civil society and residents to muddle through water supply and food security challenges, the city needs financial aid to enhance service provision that does not solely relying on residents. Financial injection and investment in sustainable alternative water sources for the city's multiple uses will go a long way in solving the water shortages and food insecurity without further exposing citizens.

Keywords: Community Gardens, Coping Strategies, Food Insecurity, Urban Areas, Water Bills, Water Shortages.

1. Introduction

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Water has an essential role to play in human everyday living. Unfortunately, several geographical locations do not have sufficient water to meet the growing demand for a range of uses (Swaminathan, 2001). Water is dwindling in quantities mainly due to rainfall variabilities and increasing population (Gumbo, 2006). Since water supports all forms of life, its shortage poses a setback on every potentially productive activity (Savedoff and Spiller, 1999). Approximately three quarters of the world's population represented in about 45 countries suffer from serious water shortages as a result of various reasons and the situation is projected to worsen by 2020 (Jobson,1999; Rekacewicz, 2005). For that reason, developing countries' cities must plan and prepare sound coping strategies to sustainable water service delivery. According to Pereira et al. (2009) coping with water scarcity means living in harmony with the environmental conditions specific to and dictated by limited available water resources. Consequently, coping involves employing diverse measures to meet the water needs of people. Adaptive measures may include but not limited to rainwater harvesting, wastewater reuse and water rationing that prioritises critical aspects such as sanitation and food availability (Ferguson, 2014; Jamwal, et al. 2014; Dauramanzi, 2016).

Since independence, most urban centres in Zimbabwe have been facing water supply problems, with some of them going for periods varying from hours, weeks or even months without water (Mangizvo and Kapungu, 2010; Chaminuka and Nyatsanza, 2013). Recently, water problems in Zimbabwe have been exacerbated by unclear policies, weak legislation and institutional management and to some extent, political interference (Chenga, 2014; Dauramanzi, 2016; Mangizvo and Kapungu, 2012; Nhlanhla, 2008). The stated circumstances have instigated shortage of water even for basic domestic use. Zimbabwe is experiencing rapid urbanisation and population expansion (Chirisa, 2008), a development that has in consequence overwhelmed the available conventional water supply capacities.

Apart from the stated shortage contexts, the economic meltdown of the country has also exacerbated the challenges faced by citizens. Residents struggle to purchase food from supermarkets as a result of intrinsically low incomes such that they imperatively resort to actual production of food at household level (Hungwe, 2006 and Moyo, 2013). However, the shortage of water creates a challenge of food insecurity. Nonetheless, the sustainability of farming, given the limited water supply capacities, is questionable. The shortage of water supply directly translates into household food insecurity because water for irrigation is reduced, causing wilting and death of crops (Kusena, et al. 2016). Worth noting is that Gweru municipality does not prohibit the use of municipal water for backyard and household food production activities as long as they do not use hosepipes during drought seasons (GCC Housing department report, 2016). However, there is need for further research on the sustainability of urban agriculture that relies on municipal water despite the fact that it is done for subsistence, especially considering that the amount of water channelled towards the activity is unknown. Collectively, literature has demonstrated that the city of Gweru experiences water shortages and household food insecurity. The food insecurity has been as a result of low food buying power and limited food production potential (Kusena and Beckedahl, 2016; Kusena, et al., 2016; Matsa, 2012).

The situation in Gweru depicts a 'wicked problem'. Ritchey (2013) defines a 'wicked problem' as a challenge that manifests itself in different ways and is difficult to solve. Horn (2001) calls these circumstances unstructured realities. A 'wicked problem' creates several other challenges, especially during the course of trying to solve the seemingly major ones. The mitigation is not an easy, quick, or solitary exercise but it demands interdisciplinary collaboration, and most importantly the engagement and cooperation of all stakeholders. Participation of all stakeholders becomes pertinent because 'wicked problems' are exacerbated by mistrust and lack of accountability among stakeholders (Kalulu, 2015). Challenges in service delivery definitely receive responses from both the service provider and beneficiaries. However, poor communication can lead to parallel responses in the wake of defence of space. Unfortunately, the struggles for survival may be legal or even illegal (Narsiah, 2007). Citizens may devise strategies that are not in line with prescribed guidelines in order to counter oppression or hegemony from authorities (Dean, 2003).When citizens feel oppressed, protests may erupt as a result of frustration. Due to innate political powers, authorities or service providers may use repressive

apparatus to silence citizens, nevertheless communities have a tendency of mobilising themselves into action that turns to counter the hegemony (Chaskalson et al., 1987). However, the only challenge associated with actions that are motivated by disgruntlement is maladaptive mechanisms that are short-sighted and usually harm the citizens and or systems in place.

It is in the face of such problems in service delivery that authorities sometimes put mechanisms in place to maintain order. However, authorities may take advantage of the poor and powerless and externalise the negative effects of the system. Political Ecology theory (Adams, 2001; Wolf, 1972) observes that in the middle of service delivery challenges, citizens' discontented voice is in most cases not paid attention to. Adebayo (2002) also states that lack of civil society esteem is a common element of developing countries city existence. Under such cases, engagement is trivialised. Generally, in such cities there is aversion between authorities and citizens resulting in conflicts that are rarely resolved.

Civil society is the entirety of organisations that are formed by citizens outside the state and remain independent in order to play a watchdog role effectively (Cohen and Arator, 1992). These organisations should be able to address common problems affecting common people. Thus an organisation that manifests the interest and will of citizens safely fits under civil society group. For purposes of this study civil society includes residents' associations, citizen elected committees, community action groups, social movements and/or any other established local or international NGOs. This current paper, therefore, focuses on how residents, either singularly or through efforts of civil groups are responding to water challenges and household food insecurity.

1.1 A synthesis of literature: Research gap

Several studies carried out in Gweru focus on how the municipality and government have been dealing with water supply challenges. Responses to water challenges have largely been infrastructural engineering oriented (Mhlahlo, 2007; Matsa 2012). However, no research has assessed water user and civil society response to the challenges associated with water service delivery system at household level in Gweru. Annin (2008) alludes to the fact that in most cases policies are challenged and change can be instigated from the domain of civil society. Civil society creates a platform for engagement and cooperation from all ends. However, failure to fully engage civil society has been a missing link in water service provision in most developing countries' cities. In the process, citizens feel overpowered and disregarded.

Whilst on one hand the city of Gweru suffers water shortages and ultimate household food insecurity; on the other hand the municipality without much input from residents in decision making has prioritised cost recovery and revenue collection from the same hard hit citizens (Kusena et al., 2016). Given the situation in the city, a report from the residents themselves will reveal a dimension that has been largely silent yet critical for water service delivery and citizen engagement policy. Despite the potential availability of innovative coping strategies from residents, the avenue has regrettably remained untapped. Therefore, for purposes of creating a balance, civil society and residents' coping strategies to city water shortages and household food insecurity whether formal or informal warrants investigation.

2. Methods and materials

A household survey was carried out across the residential areas of Gweru. A stratified sampling technique was used to select respondents for the survey. Gweru has 49 residential suburbs with a total of 29 973 housing units, classified under high; medium and low density areas. The high density area constitutes 32 residential suburbs, 3 medium density suburbs and 14 low density suburbs. Of the total 49 residential suburbs, 20% was randomly selected as primary sampling units (PSU) to make a sample of 10 proportionately distributed residential areas with a total of 489 respondents as shown on Table 1.1.

Questionnaires for the household survey were self-administered using a drop and pick method. The instrument was used to gather data on coping strategies to combat water shortages and household food insecurity. The questionnaires also brought to light the challenges faced by residents in their process of ensuring a water and food secure city. Drop and pick method was opted for in order to give consenting respondents enough time to fill out the questionnaires. Questionnaire respondents who required and requested for assistance in the filling out of the questionnaires were attended to by the researchers.

Table 1.1: Sample size determination

Classes of residential areas	Names and number of suburbs in each class	Number of housing units in each selected PSU. (20%)	Sample size of households (10% of total population in each suburb)
	32 (Mkoba1,2,3,4.5,6,7,9,10, 11,13,14,15,16,17,18,19, 20; Senga; Mutasa/CliftonPark; Mambo; Ascot; Nehosho; Woodlands; Mutapa, Garikai, Shamrock; Montrose	6 (Mkoba 1- 347 Mkoba 12- 405 Mkoba 19- 755 Senga- 1540 Shamrock-25 Mutapa 3 and 7- 489)= 3561	6 (Mkoba 1- 35 Mkoba 12- 41 Mkoba 19- 76 Senga- 154 Shamrock- 3 Mutapa- 49)= 358
	3 (Ivene; Nashville; and Northlea)	1 (Ivene- 370)=370	1 (Ivene- 37)=37
	14 (Kopje; Athlone; Clonsilla; Harben Park; Dalysford; Windsor Park; Ridgemont; Riverside; Kingstone Park; Mimosa; City center; Lundi Park; Southdowns'/Extension; Christmas Gift	3 (Harben Park- 79 Southdowns/Extension- 737 Dalysford- 124 = 940	3 (Harben Park- 8 Southdowns/Extension- 74 Dalysford- 12)= 94
	49	4871	489

Interviews with councillors and other civil society group leaders (NGOs, Churches and residents association) complimented data from the household survey in order to get views from all stakeholders concerning coping strategies to water shortages and food insecurity. Observations were equally instrumental in collecting data about alternative water and food sources in Gweru.

3. Data analysis

Interview and questionnaire responses were organised into sub-themes for results reporting and discussion using descriptive statistics. Borehole-User ratio of the city of Gweru was established using the specific residential area population versus the number of boreholes available in the area against the expected international borehole-user ratio. The recommended international maximum population per borehole is 250 people and not households (DeGabriele, 2002). However, the only limitation is that it is not clear what the population should be if the boreholes are being provided as alternative sources of water in urban areas and not as the main source. ANOVA was also used to test for differences in monthly income across residential suburbs. Chi-Square test was done to show relationship between household income and place of residence.

4. Results

4.1 Socio-demographic characteristics of the population

Four hundred and eleven respondents out of 489 people completed and returned questionnaires for the survey. The response rate is acceptable for analysis and reporting (Babbie and Mouton, 2001). Seventy percent of the respondents' income ranged from USD 101 to USD 500 per month. These were teachers (26%), nurses (9%), security forces (7%), secretaries (4%), pensioners (5%) and self employed (19%). Only 3% of the respondents earned more than USD500 per month. It was observed that the salaried monthly household income for the city was USD 356. The remaining 27% (111) were all unemployed. ANOVA results show that there were no significant differences ($p = 0.231$) in monthly income across residential suburbs. Chi-Square results ($p = 0.11$) showed no relationship between household income and place of residence. Zimstats (2015) states that the Poverty Datum Line for Midlands in July 2015 was USD510, 42 for an average family of 5. As already noted in previous chapters, most residents of Gweru are living in poverty with the exception of 3% who earn a monthly income that is above USD500.

4.2 Identified civil associations in Gweru

The findings revealed that the city of Gweru had limited home grown civil society groups that focused on city water and food availability. The most active civil group in the city in terms of querying policy was the Gweru Residents and Rate Payers association (GRRA). GRRA's mandate is generally on service delivery issues. These include, but are not limited to, issues of billing, water supply and allocation of farming plots. Churches were also part of the civil society that came up with coping strategies for the city. Cases in point were the Roman Catholic, the Latter Day Saints Churches and the Evangelical Lutheran Church that drilled boreholes in their premises which were used by the whole community during times of water restrictions.

The board of councillors elected from wards were also identified as a civil voice. However, it was revealed that as soon as the board members were voted into power, their service to citizens became questionable. There was poor feedback route such that 68% of respondents from the survey were not aware of the existence of ward councillors.

NGOs were also seasonally active in the city. These were: Care International, Red Cross, European Commission and the United Nations Development Programme. The organisations were mainly instrumental in the sinking of boreholes in residential areas both for domestic use and community gardens for household food security.

4.3 Existing coping strategies to water shortages

The study revealed several coping strategies to water shortages as devised by civil society and sometimes through individual household efforts. However, the coping strategies varied spatially and temporally. The strategies included provision of boreholes, the use of large and small water storage containers and wastewater reuse.

4.3.1 Borehole drilling

Besides tap water, Gweru residents get water from boreholes in the event of disconnections due to non payment, water rationing or during maintenance episodes. Gweru City council indicated that most of the boreholes were initiated by donors but the local authority was now responsible for maintenance. Low density areas such as Harben Park and Southdowns did not have public boreholes whilst only Daylesford had two public boreholes as shown on Table 1.2.

Table 1.2: shows the number of boreholes and serviced population

Residential Area	Number of boreholes	Housing Units (average of 5 members)	Provider/ donor
High Density			
Mkoba 1	1	347 = 1735	Care International
Mkoba 12	0	405 = 2025	------
Mkoba 19	4	755 = 3775	European Union
Mtapa 3 and 7	2	489 = 2445	Caritas
Shamrock	0	25 = 125	------
Senga	2	1540 = 7700	Care International, Roman Catholic church
Medium Density			
Ivene	0	370 = 1850	------
Southdowns	0	737 = 3685	------
Low Density			
Harben Park	0	79 = 395	------
Daylesford	2	124 = 620	Gweru city council

All selected residential areas with identified public boreholes had at most two boreholes except for Mkoba 19 which had 4. Mkoba 19 was a problem area in terms of water supply due to its terrain. The local authority did not have adequate pumping capacity for high topographical areas such as Mkoba 19. However, considering the one borehole as to two hundred and fifty ratio, the 4 boreholes in Mkoba 19 were still oversubscribed.

Low density respondents indicated that they were not making use of the community boreholes. In any case, the findings revealed that low density areas only had two boreholes. Eighty one percent of the respondents revealed that they had their own boreholes as a result of household efforts and initiatives. However, half of the boreholes still qualified under wells because they did not have hydraulic pumping accessories and still used the manual rope and bucket method to draw water. ZINWA documented 54% boreholes for Daylesford and Harben Park combined. No wells or boreholes were recorded for medium density suburbs. This could be due to the fact that water supply in medium density areas of Gweru was relatively better as compared to low density and high density areas of the city.

4.3.2 Water storage containers

Respondents indicated that they used from the smallest (2 litre containers) to the largest possible movable container (100 litres) to store water (Plate 1). However only 2% of the population surveyed had large water tankers mounted on stands at their premises. Respondents mainly from Senga, Mkoba 17 and 19 indicated that water was only available in the earliest hours of the day or just before midnight.

It was however revealed that in areas such as Southdowns, Ivene, and Mkoba 12 where tap water supply is relatively better, residents kept the same water in containers for a period that would sometimes exceed even a month till supplies were interrupted. Nonetheless, in areas such as Mkoba 19 and Mkoba 1, containers were used on a daily basis because tap water was rarely available. However, it was observed that most of the containers used, especially in high density suburbs, had no lids.

Plate 1.1: Small and large water containers

4.3.3 Wastewater reuse

Thirty five percent of the respondents

indicated wastewater reuse as an option to counter water shortages. Containers with used water especially large dishes and buckets were observed during the survey. The water that was used for laundry and dishes was then reused to water gardens and flush toilets during times of water shortages.

4.4 Coping strategies to high water bills

Respondents revealed strategies that are used in the city in the event of high water bills in order to avoid disconnections and safeguard household income. These included self reconnection to supply, locking of gates, keeping vicious dogs and payment plans.

4.4.1 Payment plans

Twenty three percent of the respondents revealed that they always approached the municipality offices and arranged payment plans in order to avoid being disconnected from water supplies. It was indicated that the payment plan was spread over a period of three months after an initial upfront payment of a third of the total current bill. During the payment period agreed upon by the two parties, water supply disconnection was not allowed. Eighteen percent of the respondents were of the view that payments plans were effective in reducing the water bill burden. However, the remainder of the residents who relied on payment plans indicated that the arrangement was not effective because it would become a cycle. The municipality encouraged residents to pay according to payment plans while simultaneously honouring the current bill. This was urged in order to avoid accumulation of yet another debt that would lead to disconnection and an unaffordable bill.

4.4.2 Self reconnection to water supplies

Seven percent of the residents survived through self reconnection to supplies in the event of disconnections. However, most residents were not at liberty to divulge such information despite confidentiality assurance which was evidenced by a consent form with an ethical clearance reference number. Chances are high that those who resorted to self reconnection could have been more than the 7% of the respondents. Residents expressed unwillingness to pay due to the fact that the bills were too high. However, some of the respondents indicated that self reconnection was their only option because they could not afford the water charges although they were more than willing to pay. One 34 year old respondent from Mtapa said '*ndakaona kuti chero ndikabhadhara shoma yandinayo, next week bill rinenge ratokwira futi. Saka better kuinvestor mubhobhojani, vakangovhara ndovhura kusvika ndazowanawo mari' meaning* 'even if I settle my bill now, in one week's time I will receive a new, exorbitant, bill again, so it is best that I invested in a spanner and reconnect myself whenever I am disconnected'.

4.4.3 Gate locking and keeping of vicious dogs

Some of the respondents indicated that they resort to tight security at their premises. Vicious dogs also served to scare away municipal personnel responsible for disconnections. Secured gates were in place in order to make access almost impossible especially in high density and low density areas. However this strategy was only feasible in areas with water meters within the residential yards. In Southdowns and Ivene (medium density) it was not possible because most of the meters were erected outside the premises so the municipality personnel had unrestricted access to the meter for both reading and disconnections.

4.5 Household Food insecurity coping strategies

The alternative sources of food besides purchasing and backyard gardens were community gardens, food purchasing and remittances from neighbouring countries.

4.5.1 Community Gardens

Non-governmental Organisations initiated the programme of community gardens in Gweru. This was done in order to increase the area of crop production and availability of borehole water for irrigation. The gardens were funded by CARE international and the European commission. The European commission project accommodated former sex workers and gave them an opportunity to decent food security source amid agriculture water shortages and low food purchasing capacity in the city.

4.5.2 Food stuffs from neighbouring countries

Gweru residents had low food buying power and limited household food production capacity. Findings revealed that some respondents still visited Botswana and South Africa for cheaper food stuffs. Sixty three percent of the respondents indicated that they were still conducting their shopping in neighbouring countries. Most of the households that were still buying food from South Africa and Botswana were those with family members who were into cross boarder trading. However, during the period of the study, the government of Zimbabwe banned all imports in order to promote local market. This is likely to affect a significant number of residents' food security source if the economic situation does not change for the better.

4.5.3 Remittances

Respondents indicated that they were getting money to supplement food and assist in water bill payment from their family members who were employed in the neighbouring countries. Forty four percent of the 411 respondents were still benefiting from remittances for household food security. However, noteworthy is the fact that beneficiaries transcend all areas of residences without following any pattern. Both the employed and unemployed benefited from remittances.

Table 1.3: Remittances from neighbouring countries

Country	Average monthly remittances	Beneficiaries N=180 (44%)
South Africa	R870 (--USD)	120 = 67%
Botswana	P480 (--USD)	60 = 33%

*exchange rate with USD was as at 18 July 18, 2016

It was however noted that the remittances were not consistent. Sometimes some of the households would go for months without receiving money. The findings showed heavy reliance on South Africa (67%) as compared to Botswana (33%). The money received lacked stability and certainty because exchange rates were always fluctuating on both formal and informal markets.

4.6 Challenges militating against sustainable coping strategies to household water and food insecurity

Inasmuch as residents and civil society were eager to come up with strategies that protected the interests of all citizens, several challenges worked against their concerted efforts.

4.6.1 Citizen apathy

There was general fatigue in citizens to cooperate with the civic groups for a change in the water supply circumstances due to historically poor engagement culture in the city. When invited to meetings that discussed city water issues, residents rarely attended the meetings in their numbers. Therefore, changes in the billing system were always passed without adequate input from the public. The scenario created parallel efforts whereby residents were struggling to clear debts whilst the municipality continued to hike charges and in the process affecting household water availability and food security.

4.6.2 Poor communication between the municipality and citizens

Respondents expressed their displeasure and indicated that engaging the municipality was not changing the city situation. The authorities made decisions that disregarded citizen views. For instance, concerning billing, it was revealed that tariffs were hiked despite the disapproval of the few citizens who would have participated. GRRA representative further indicated that the municipality does not pay attention to their submissions. In some cases, even petitions that are signed by the participating residents were disregarded. The city was highly top down in approach such that policies and decisions that affected household incomes and water availability were just implemented without full consultation with residents.

4.6.3 Limited financial resources

GRRA lamented lack of resources to invest in sustainable coping strategies such as dual water systems and water harvesting. On the one hand, financial incapacity plunged GRRA more into social media activism with little tangible effects. On the other hand, the assistance offered by capable civil society groups such as NGOs is only seasonal and leaves residents with no means to continue with initiated projects. An example was the community gardens.

4.6.4 Contentious/maladaptive environmental strategies

Some of the strategies devised by residents were just for momentary survival. They were short-lived and illegal. For example self reconnection as a strategy showed the desperation of citizens. Due to the economic situation, Gweru residents were running out of options and resorted to drastic measures that created conflict with authority. Such strategies attracted punishment and could not be relied on.

5. Discussion

Due to challenges dictated by the water supply system of Gweru, residents and civil society came up with coping strategies to counter the discrepancies created by the status quo. Coping strategies from the side of the civil society and residents were inevitable because the municipality operations were punctuated with a myriad of shortcomings that culminated in water shortages (Madebwe and Madebwe, 2011). Some of the municipality challenges included low water pumping capacity, leading to a wide supply and demand imbalance, poor water conservation and low citizen engagement culture, and relatively high monthly water bills (Kusena and Beckedhal, 2015; Madebwe and Madebwe, 2011; Matsa, 2012). All those challenges inevitably gave momentum to a rise in civil society movement. Annin (2008) refers to the changes in the state of affairs do not just happen, they require citizens and groups that speak out and act against any weaknesses of a system, be it injustices or incapacities to offer the required service. Civil society voice is particularly important in cases where challenges are evident but the State and authorities pretentiously cast a blind eye on service delivery issues whilst expecting too much from the citizens in the form of service payment.

Unfortunately, some of the initiatives devised directly from the residents to cope with water shortages and food insecurity were in conflict with the municipality regulations. When citizens devise own survival mechanisms without engaging the authority, dispute is inevitable. For example in South Africa meter readers are chased away by disgruntled residents in Soweto. Narsiah (2007) describes the scenario as defence of space through use of counter discursive strategies. Residents reconnected water soon after disconnections were instituted by the municipality. This was done to ensure supply regardless of inability to pay for the service. The city of Gweru is characterised by high unemployment and low household income (average USD358). Therefore such actions are to be expected, especially considering that the government is not offering any form of assistance to the municipality and citizens. Although the strategies used, such as self reconnections, sound uncivilised and are illegal, citizens are left with no option but to devise even the most drastic methods for survival. It is unfortunate that sometimes due to circumstances, citizens cease to be 'civil' and act for survival. However, such actions and resistance

mutate into serious conflict between citizens and authorities and are construed as irresponsible actions that attract punishment.

It was also revealed that GRRA effort to engage the municipality was always trivialised (Kusena et al., 2016). This could explain why it was now difficult to mobilise residents because they were already privy to the fact that the association would hardly yield any results to change their situation. Instead, residents trusted in their own ways around their challenges more. This concurs with the coping strategies fashioned in Soweto, South Africa, where citizens mobilise themselves into social groups that reconnect themselves to supplies in the event of disconnections. Such actions usually appear when authorities are using power to oppress citizens and the citizens then counter the efforts (Foucault, 1982).

In Gweru, self reconnection to water system is also an illegal act but, nevertheless, it is practised. This is mainly because the citizens feel disrespected and unprotected by authorities. Ironically, the municipality is always lamenting financial incapacity (GCC finance report, 2016) but expects residents to religiously pay for services yet they are in the same, if not worse, situation. The circumstances in Gweru reflect traits of 'wicked problems', existent but difficult to solve especially without a holistic strategy.

Coping strategies such as large container water storage, wastewater use, borehole drilling and borehole water use are very common in water scarce areas. However, measures such as borehole drilling at household level may not be feasible for ecological (Hlatywayo, 2013) and financial reasons (Chuma et al., 2013). Regrettably, the available options were mainly at the disposal of average families who could afford drilling boreholes or even buy large containers. Otherwise the rest of the residents walked long distances to fetch water from boreholes provided in the city. The boreholes were oversubscribed and residents experienced long queues during water rationing periods. Round-trip water haulage time was likely to exceed 30 minutes due to the limited number of boreholes and that infringed on residents' productive time. WHO and UNICEF (2006) state that time spent fetching water must not exceed thirty minutes because it leads to loss of time for other productive activities. The time spent fetching water was not as a result of distance only but the borehole-user ratio. International guidelines recommend a maximum of 250 people per borehole (DeGabriele, 2002). The city of Gweru has very few boreholes that are overwhelmed by numbers during times of water cuts.

Literature reveals that since 2011 the central government has not been adequately funding local authorities (Mutema and Kanyane, 2015) and very little is done to make residents cope. Gweru municipality is relying on residents for funding (Kusena et al., 2016) making the already suffering residents more vulnerable. Non-govenmental organisations, only via the State, have been working towards provision of alternative water and food sources. The fact that the central government is not assisting municipalities is not peculiar to Gweru. Chinyama et al., (2012) reported that the Bulawayo City Council was complaining that very little of all estimated costs were realised by the government despite their promises. To make matters worse, the central government in its fiscal policy review of the last quarter of 2016 gave a directive to all government aided institutions to self fund all their operations with no assistance from the government due to the economic situation (IMF, 2016). The central government was failing to meet its obligations to the local authority and unfortunately all the 'hiccups' in service delivery were felt by citizens.

High monthly charges in order to generate revenue for the municipality affected household income. On average residents' household income is $358 and paying an average of $55 is consuming almost 15% of the average households' income. This is 10% more than the 5% that was recorded in Nigeria (Ahile, et al., 2015). However residents devised some drastic measures to cope with the situation of high monthly bills. Taming vicious dogs for tight security could be a sign of hostility against the system. The municipality is regarded by residents as a common enemy. However, good measures such as payment plans should always be encouraged and facilitated as a coping strategy. Bill payment plans are not endemic to the city of Gweru only; the City of Raleigh Report (2016) encouraged residents to make necessary arrangements for payment prior to service disconnections. However, the challenge with the

municipality was communication, where in most cases utility bills delivery was done simultaneously with disconnections.

Concerning household food security, literature shows that community gardens are seriously deteriorating in output mainly because of poor management (Matsa and Dzawanda, 2014). Remittances from nearby countries especially South Africa are reported to be dwindling. Business is no longer lucrative for those who rely on cross border trade with South Africa and those working there. To further cripple the situation the June statutory instrument 64 of 2016 that declared an import ban on some commodities in order to avoid cash shortages and promote Zimbabwe's local industry seems to cause more harm than it intends to solve given that the basic goods import was a source of livelihood for many.

6. Conclusion

The study assessed the coping strategies used by civil society and general citizens to cope with water supply challenges and the related household food insecurity in the city of Gweru. Findings revealed that the main strategies used to counter the aforementioned challenges were provision of boreholes and community gardens. Residents were also active in devising their own ways of survival. Some of the strategies implemented by residents were illegal and uncivil but implemented. Taming vicious dogs and self reconnection were some of the identified drastic coping strategies due to lack of bill payment capacity. Such measures showed poor engagement between authorities and citizens.

The municipality prioritised revenue collection from citizens who were well known to be incapacitated financially just as the local authority was equally weak financially. The act of expecting payment from suffering residents is just transferring a problem downstream without solving it. It was revealed that residents always devised survival tactics; whether legal or illegal, residents adapted to water shortages, high bill payment and food insecurity through their own means. Noteworthy is the fact that most residents were more than willing to do what is right and legal but the surrounding circumstances left them with no options. Strategies such as payment plans and wastewater reuse showed that residents were self driven to do good. However, there is need to understand the plight of residents and eliminate possibility and existence of deliberate deviant behaviours.

The findings showcased a precarious situation in Gweru. Residents have no food purchasing power; they resort to farming and assistance from neighbouring countries for food security. However, farming had proven to be difficult due to water shortages and high water service bills, food imports were banned and community gardens underperforming. The residents of Gweru were caught between a rock and a hard surface considering that most of the revealed coping strategies were not sustainable and the municipality still expected service payment from the same unemployed and hungry populace. To this end, authorities must not be punitive but always endeavour to address pressing issues. The central government should find means to meet its obligations to the local authority rather than expecting residents to assist them when it must be the other way around.

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