Can Collective Action Lead to Sustainable Outcomes in the Provision and Management of Domestic Water in Zimbabwean Urban Areas?

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Abstract

This paper investigates prospects for collective action in the provision and management of domestic water in Zimbabwean urban areas in the light of the deteriorating water situation. It interrogates the view that a collective of individuals in a community can be an important resource (social capital) that, together with appropriate institutional design, be harnessed for the good of the community. The paper uses Harare, Zimbabwe's capital, as a case study to test this assumption. Empirical data was collected from two low income suburbs that represented an established suburb and a new suburb that was being developed by a co-operative. In both suburbs collective action has been and continues to be attempted with regards to domestic water provision. The study was undertaken between February and December 2011. Key informants, focus group discussions and participant observation were used to study the dynamics of collection action. There was more evidence of collection action in the newer than in the established suburb. However, the collection action was experiencing problems. The paper discusses the reasons behind this observation. The paper concludes that while collective action seemed desirable and was being attempted, its operationalisation proved to be a challenge, which underlines the need to identify the conditions under which this may work. Understanding the physical and social context of social capital, as well as defining the role of the state, is critical if the benefits of collective action, in the form of sustainable water service outcomes for the residents, are to be realized.

Keywords: collective action, social capital, institutional design, domestic water

1. Introduction

In many urban areas in developing countries the demand for clean and safe water is outstripping supply mainly because of rapid population increase (Banerjee et al., 2008), and the general failure of water supply and sewerage systems. Unfortunately the situation is projected to get worse. For example, it is estimated that by 2020 the urban population in Africa, Asia and Latin America will have increased from its 1980 total of 1 billion people to reach more than 3 billion people (Douglass, 1992). This explains why, of the over one billion people in the world who do not have access to safe drinking water, the majority are in developing countries (United Nations Development Programme [UNDP], 2006; UNDP, 2004). A case in point is sub-Saharan Africa where just over half (56%) of the population has access to safe water and less than half of the urban population (39%) is connected to piped water compared to 50% in the early 1990s (UNDP, 2006; WHO/UNICEF, 2006). In southern Africa the number of urban dwellers without access to safe drinking water is said to have doubled between 1990 and 2004 (WHO/UNICEF, 2006). As a consequence frequent outbreaks of water-related diseases have been reported, and have been compounded by the collapse of health delivery systems (Mason, 2009). Poorer households are mostly affected (Manzungu et al., in press). The fragile socio-political and environment of many African countries has made the continent very vulnerable to cholera outbreaks -over 90% of the cholera cases reported by the World Health Organisation (WHO) originate from the continent (Said et al., 2011).

In Zimbabwe inadequacies in water and sewerage reticulation has caused an increasing number of households to rely on unsafe water sources (Manzungu et al., in press). The consequences have been catastrophic as attested by the over 4 000 deaths that occurred in 2008-2009 due to the cholera outbreak, which was said to be the worst in Africa in the last 15 years (Mason, 2009). While the situation was contained, thanks to international assistance, the problem still persists as indicated by a typhoid outbreak in Harare, Zimbabwe's capital city in 2011/12. This has since spread to the rest of the country, and the government has admitted that it has no capacity to contain the outbreak (The Sunday Mail, 4-10 March 2012). Attempts by households to internalize the water crisis, in the face of poor prospects for changing water governance in the city (Manzungu & Chioreso, in press), do not seem to be making much impact, at least in terms of coming up with a sustainable solution. However, richer households are reported to be coping much better -they have invested in boreholes, storage tanks, and in some cases, buy water from bulk suppliers. On the other hand poorer households have tended to rely on unsafe shallow wells (Manzungu et al., in press). While the internalization attempts do not appear to be leading to sustainable outcomes regarding the provision of water in the city, the willingness by households to do something about the water situation can be seen as boding well for the future. The materialization of such willingness, it goes without saying, depends on some form of collective action. This is because the water problems confronting urban residents are beyond the capacity of individual households. In Zimbabwean urban areas "the nucleus" for such cooperation seems to be housing cooperatives that have come to be accepted as part and parcel of the housing delivery system. Housing co-operatives pool together their financial resources, and collectively service residential stands through the provision of roads and water supply. The fact that building bye-laws (in relation to building standards) have been relaxed, and it is no longer a requirement that a residential stand should be fully serviced before it is occupied, has also helped the situation. However, even in old suburbs water shortage has resulted in the search for alternative water solutions especially in the aftermath of the cholera 2008/2009 outbreak. The gravity of the cholera outbreak saw boreholes being drilled by the United Nations Children' s FUND (UNICEF) in many urban centres including Harare. There were attempts to promote community-based management of the boreholes (Simango, 2010).

This paper investigates the prospects for collective action in the provision and management of domestic water in Zimbabwean urban areas. The focus on the urban areas is well merited. At independence access to safe water used to be 99% (Manzungu & Machiridza, 2005). However, this has dramatically changed as illustrated by the cholera outbreak in 2008/2009. In the face of a crumbling formal water supply system, many residents turned to unsafe alternative water sources (Manzungu et al., in press). Despite the theoretical rumblings about the validity of collective action in urban water supply (Bakker, 2008), it still remains attractive to policymakers and practitioners alike. It is often seen as the 'natural way' of doing things. Such a view now holds a lot of currency in urban areas in Zimbabwe. However, the dynamics of the collective arrangements that exist in urban areas in Zimbabwe in terms of whether these represent a sustainable solution to the water crisis remains little studied. The paper used Harare, Zimbabwe's capital, as a case study to investigate prospects for collection action in urban areas. Accommodating some 3 million people or 25% of the total Zimbabwean population, Harare together with its neighbouring towns of Chitungwiza, Norton and Ruwa, is Zimbabwe' s largest metropolis. The water problems in the metropolis are well documented (see for example Nhapi, 2009; Manzungu, 2008). Despite the intervention of UNICEF and other benefactors, provision of safe water and adequate sanitation continues to be a challenge in the city to the extent that prospects for achieving sustainable water service outcomes are low. A sustainable water service outcome approach is meant to address the water needs of residents rather than focus on cost recovery through the "front door" by making water users pay for what are called economic tariffs, or through the "back door" by letting residents bear a disproportionate burden of ameolirating the water shortages. It looks at possibilities of innovative ways of meeting the demand, by for example avoiding centralization of the water supply system, emphasising efficient mechanisms that will result in change of behavior, as well as addressing water quality aspects (Mitchell et al., 2007). Given that earlier studies have shown that this is the case in urban areas in Zimbabwe (Manzungu et al., in press; Musemwa, 2010) the question is; can collection action be the vehicle through which sustainable water service outcomes are guaranteed?

In the following section we explore the usefulness of the concept of social capital in the provision and management of urban water supply, and juxtapose this to the notion of institutional design, both of which are prominent in collective action literature. Empirical data was collected from two low income suburbs that represented an established suburb and a new suburb that was being developed by a co-operative. In both suburbs collective action has been and continues to be attempted with regards to domestic water provision. This is followed an account of collective action dynamics in two residential areas of Harare. The description and analysis of the two cases serve to distil the main principles that structure and influence collective management of urban water supply. Last to be presented are the discussion of the findings and conclusions of the paper with

regards to as to whether collective management of domestic water in is a viable proportion in Zimbabwean urban areas.

2. Collection Action, Social Capital and Institutional Design in Urban Domestic Water

In Africa collective action in urban water supply is being driven by the failure of the state to provide basic social services (Bakker, 2008; Kyessi, 2003). Faced with the prospect of not meeting water-related (and other) Millennium Development Goals (MDGs), as well as the emergence of an increasing number of people without basic social services such as those in the fringes of the city (Mwakalila, 2007), community-based management (CBM) is being considered as a viable option in urban water supply. In some cases CBM is occurring by default –residents are rising up to fill the gap left by the state. In Zimbabwe there is evidence of what Jaglin (2002: 234) calls "back door" decentralization of water supply services. The question is; given such a chaotic withdrawl by the state, what role can collective action play in the management of domestic water in Zimbabwean urban areas?

It is important to note that the main actors that are involved in domestic water supply in Zimbabwe have no experience with CBM in urban water supply. Both state and non-state agencies have, since independence in 1980, been at the forefront of implementing CBM in rural water supply (Musemwa, 2010; Simango, 2010). The sinking of boreholes in urban areas was thus a challenge -the fact that the boreholes catered for a large number of people meant that some form of collection action was needed. Few lessons could be gleaned from water professionals either.

The majority of water professionals in Zimbabwe only became aware of CBM in water management with the introduction of Integrated Water Resources Management (IWRM)-informed water reforms that gathered steam in southern Africa in the 1990s. One of the founding principles of IWRM is the promotion of stakeholder participation in water management (GWP, 2000). But as observed by Fatch et al. (2010) even here collective action, was more often than not, was implemented without the support of durable concepts. The irony is that community-based management of rural water supply remains problematic despite its longer history. Chanakira (2010) makes the observation that CBM in rural water supply in Zimbabwe has and will largely continue to fail to sustainably provide water services for the rural population. Basically Chanakira (2010) seems to cast doubt over the effectiveness of the social capital, which is believed to have positive effects in fostering collective action and can therefore achieve favourable outcomes. Social capital has been defined as features of social organization such as networks, norms and trust that facilitate coordination and co-operation for mutual benefit (Putnam, 1993).

Adherents of social capital believe that collective action can is useful because multiple individuals stand to benefit from collaborating when undertaking a certain action that has an associated cost that is difficult for individuals to undertake it on their own. According to this view it is in the interest of individuals within a neighbourhood or locality that are faced by water problems, for example a broken down borehole, to pool their resources together and undertake repairs. Evidence of such an approach exists. In Tanzania in Africa the failure by the designated agencies to provide adequate water services has resulted in residents of informal and formal settlements mobilizing themselves to fill in the gap (Kyessi, 2003). While this suggests spontaneity on the part of the residents, there are cases where external agents are the initiators of such collective action arrangements. In Zambia and Uganda, a donor agency (Danida), assisted respective governments to provide alternative water sources to residents that were not served by conventional water infrastructure (Danida, 2006). But do such cases illustrate the validity of collection action arrangements in urban water supply in general?

Some of the underlying assumptions are that there exists an identifiable group of community of individuals which can operate according to certain norms that are created and enforced through social control (Bray, 2012) is not always borne by reality. Bakker (2008) warns of the danger of romanticizing the concept of community management in urban water supply on the basis of evidence gleaned from rural water supply and the management of common pool resources (also known as the commons). For example the notion of community in urban areas where people who reside in one locality may hail from different background and are thus essentially "strangers" to each other may not be applicable. This is unlike in rural areas where there tends to be longer episodes of group association, which result in shared norms that are not limited to water supply. In such a context institutional bricolage is relevant as people can take advantage of pre-existing institutional frameworks to craft new institutional arrangements (Cleaver, 2002).

We need to remember that the renewed interest in community-based management in urban water supply on the part of the state may not be wholly altruistic (Jaglin, 2002). As states fail to provide basic social services there is a temptation to want to externalize some of the infrastructural and management to user organizations in the name of "participation." The underlying basis seems to be that there exists social capital, which is a resource that can be tapped (Cleaver, 2005). However, empirical evidence suggests otherwise. For example poor people in many

cases find it difficult to "tap into" social capital networks, and gather "the fruits" of social capital. Besides, exploitation of social capital does not automatically result in improved better accountability (Bakker, 2008). In other cases collective action may be used as a substitute for lower quality service (Jaglin, 2002). With reference to water reforms in Zimbabwe, Dube and Swatuk (2002) express similar reservations about social capital. They argue that institutional reforms built around notions of trust and stakeholder participation, both of which encapsulate the essence of social capital, can do more harm than good by masking the politics that are inherent and integral to water.

Despite the numerous misgivings around social capital, there continues to be cases where it appears that it may work. In some cases collective action is used as an insurance against failure -while people may prefer to act as individuals, there may be situations where there is no any other alternative given the (huge) demands of the task. It is the contention of this paper that instead of dismissing collective action out of hand, it is more profitable to examine under what circumstances it may work. For example Van Koppen et al (2008) documented the viability of community-based informal and cultural arrangements that shape access to productive water and its management. These arrangements, which often exist in oral form only, tend to be embedded in local governance structures and normative frameworks of kinship groups and often rely on indigenous knowledge (Ferguson & Mulwafu, 2008). They also tend to be livelihoods-oriented, and are based on notions of equity and fairness (van Koppen et al., 2008).

Table 1. Ostrom' s design principles for long term enduring institutions

1	*Clearly defined boundaries*
	The boundaries of the resource system and the individuals or households with rights to harvest resource units are clearly defined.
2	*Congruence between appropriation and provision rules and local conditions*
	The rules are considered fair and legitimate by the users and also match the local conditions.
3	*Collective choice arrangements*
	Individuals affected by the operational rules can participate in modifying these.
4	*Monitoring*
	There is a presence of monitors who actively audit CPR conditions and appropriator behavior and are accountable to the users or are users themselves.
5	*Graduated sanctions*
	Users who violate rules – in – use are likely to be sanctioned by their peers and/or from officials accountable to the users, depending on the seriousness of the offence.
6	*Conflict resolution mechanism*
	Appropriators and their officials have rapid access to low – cost local mechanisms to resolve conflicts among appropriators or between appropriators and officials.
7	*Minimum recognition of rights to organize*
	The appropriators have the right to devise their own institutions or legitimacy without being challenged by other authorities.
8	*Nested enterprises*
	Appropriation, provision, monitoring, enforcement, conflict resolution and governance activities are organized in multiple layers of nested enterprises.

Source: Ostrom (1992).

One of the commonly cited "building blocks" for effective management of commons is institutional design. It is based on the rational action theory where people are regarded as social entrepreneurs who consciously invest in relationships of trust and creation of norms in anticipation of reciprocity and tangible benefits (Cleaver, 2005). According to Ostrom (1992; 1990) successful common pool resources (CPR) management regimes can provide effective coordination among users and even promote investment. Table 1 shows the design principles that are claimed will curb individuals' inclination to free-ride (Ostrom, 1992). In this discourse Ostrom emphasizes the

importance of institutions, which refer firstly to 'rules of the game' – rules that provide a framework of incentives that shape economic, political and social organization (North, 1990). Institutions are seen as composed of formal rules, such as laws and constitutions, and informal constraints, conventions, code of conduct and norms of behavior. For maximum effectiveness it is believed in some quarters that institutions should be generally small and largely homogenous. However, there is no consensus on the role of heterogeneity and group size on collective action for CPR institutions (Komakech & van der Zaag, 2011).

3. Methods

The findings that are reported here are part of a larger study on emerging alternative institutional forms for managing domestic water in Zimbabwean urban areas, which started in January 2011 and is scheduled to end in June 2012. A number of steps preceded the study whose findings are reported herein. First, interviews were held with key informants that included officials from the City of Harare, the government as well as community leaders. Second, a questionnaire was administered in between mid January and end of February 2011 to assess the status of domestic water supply in high and low income suburbs as well as informal settlements (Mangwanya, 2011; Manzungu et al., in press). Third, participant observations of the situation in the suburbs were made. Fourth use was made of secondary sources so as to provide a context of the study. Fifth, water quality was assessed to find out the potability of the water (Manzungu et al., in press).

This paper is based on the findings of the research undertaken in two suburbs, namely Mabvuku and Harare North Cooperatives where collective action was being attempted. Both suburbs are of similar poor socioeconomic backgrounds. The average household income for both suburbs was found to be a paltry US $100 per month. The focus on low income suburbs was informed by the fact that an earlier study had shown that high income suburbs were generally more self-sufficient as far as water supply was concerned –they had the financial means to invest in the necessary infrastructure (Manzungu et al., in press). Thus low income earners had theoretically much to gain from collective action as they could not afford to drill boreholes and purchase the expensive water storage tanks. The study was undertaken between February and December 2011. Key informants were interviewed to understand the broad water issues in the area and these included the Harare City Council officials and the community leadership in the two suburbs. A total of four focus group discussions were held in each suburb during the duration of the study. In Mabvuku the focus group discussion was in general composed of 4 men and 3 women while in Harare North the compostion was 5 and 3 respectively.

4. Results

The results of that endeavour are hereunder presented in the form of two cases studies, which illustrate the complexity of collective action arrangements.

4.1 Case 1: Mabvuku

Mabvuku is one of the 15 low income suburbs that are found in Harare and was opened up for settlement in 1952 (Zinyama, 1993). It is located 20 km to the east of the city. As an old suburb, the water infrastructure is in a poor physical state. Residents in the suburb have been facing water problems since 1998. The situation is made worse by the suburb's high elevation. The unreliability of municipal water has resulted in residents relying on private wells, public boreholes, and water from friends and relatives whose houses are on low elevation. In 2009 public boreholes were installed in the suburb by the United Nations Children's Fund (UNICEF) as a way of combating the cholera threat. The boreholes are an important complementary source of water when municipal water is not available, which is quite often. Despite their reliance on public boreholes, residents have not taken any serious initiatives to manage and maintain them. Consequently the boreholes constantly break down either due to overuse or to vandalism. Although the residents had organized some youths to guard some of the boreholes, this did not stop the parts from disappearing overnight as some bolts, nuts, rubbers and even handles were stolen.

One of contributory factors was that there was little if any participation from the stakeholders during the establishment of the boreholes. Residents argued that the boreholes were supposed to be repaired by either UNICEF or the City Council who they thought were the brains behind the installation of the boreholes. The residents also felt that they were not obliged to contribute anything, be it time or money, towards the maintenance of the boreholes. As a result, in the event of a borehole breakdown, the residents simply moved on to the next available one. Both UNICEF and Harare City Council were not willing to accept the responsibility of maintaining the boreholes. UNICEF argued that it had drilled the boreholes in response to the cholera outbreak and had since handed over their maintenance to the City Council. It also indicated that it had provided spares and toolkits as well as training for City of Harare staff in the operation and maintenance of the boreholes (The Daily News, 20 May 2011). Meanwhile City of Harare authorities professed ignorance and were quite surprised over the fact that they were responsible for the maintenance of the boreholes (The Daily News, 18 April, 2011).

Perhaps this explains why 60% of the boreholes drilled by UNICEF between 2008 and 2009 in Harare are reported to have broken down (The Herald, 10 April, 2011). Meanwhile alternative water sources in the suburb, in the shape of shallow wells that people dug for themselves, the "UNICEF/City Council" boreholes and the rainwater harvesting tanks installed between 20009 and 2011 by the International Relief and Development (IRD), complicated the situation.

4.2 Case 2: Harare North Cooperatives

Harare North Cooperative is made up of several cooperatives. The aim is for members to pool their resources together to build houses. The cooperatives lie 10 km to the north of the city near the low income suburb of Hatcliffe. The water supply situation has been very poor, which has been worsened by the fact that the suburb has been growing rapidly since its inception. Currently it is its fifth phase. This study was based on one part of the suburb made up of Phases 1, 2 and 3. The area has a membership of 350 registered households. Although the area is connected to the Harare water supply system, the water supply is very erratic. Residents indicated that they could go for more than a month without receiving piped water. Water is usually available early morning and for a short period of between 2 - 3 hours. However, it is only a small section of the area that receives the water in such circumstances. As a result groundwater obtained by a public borehole that was drilled in the areas and private wells put up by individuals, have become an important source of water for the residents. However, the private wells, sometimes dry out leaving the public borehole as the only source of water for most households. The area is served by a borehole that was sunk by UNICEF in 2009 amidst the cholera outbreak. With the help of the organization, the residents formed a Borehole Committee to manage the borehole. The Committee is made up of seven office beaters. The mandate of the Committee is to oversee the operation and maintenance of the borehole. This Committee has not been changed since its inception in 2009.

Among different sections access to a particular borehole is limited to households that stay within certain boundaries. The Borehole Committee, in consultation with the users, came up with rules for use around the resource use. Except for signposts at the source nothing is written down and all operating rules as well as the constitution. All the same water users are aware of the rules that apply. For example users are required to stand in a queue for their chance to fetch water using the first come first served rule, keep the area around the borehole clean, and not bang the pump handle on the ground. Each user is allowed to fill not more than 7 buckets/containers at a given time. Drums and tanks are not allowed. Water is specifically for domestic use (cooking and sanitary purposes only) and not for gardening or building. Policing of the queue and conformity to other rules is done by the committee, users themselves or by both.

The users meet in the event of a breakdown, usually meet at the borehole. This is the forum used by the committee to alert the users of the need to make financial contributions towards the repairs, as well as discuss any other pertinent issues. The meetings are usually chaired by the chairperson. Although there is a secretary in the committee in place, the proceedings of these meetings are not recorded. It seems that the role of the secretary is only to keep an updated list of members which is sometimes used for other purposes. Users are required to make a one off payment of US$1 towards the cost of the repairs in the event of a breakdown. The money is collected by the committee members usually at the borehole. The repairs are done by a local technician who charges a flat fee US$ 300 per job on a fix and supply basis. The charge stays the same for each breakdown. This means that even if the boreholes break down twice a month residents have to contribute the US$1 for each breakdown. The initial claims of high rate of compliance, users never failing to pay for the repairs, defaulters being denied access to the borehole, and that the chairperson of the committee, who resides less that 50m from the borehole, kept and liased with the secretary on the list of all households that are eligible to use the borehole were not the whole story.

Researchers later found out that users generally felt that the committee was ineffective. There were some dissenting voices that felt that there was no proper accountability in the way the money collected for repairs was being used. There were also complaints that the borehole was not repaired on time, and that some committee members abused their powers by restricting access to the borehole without following the rules. They cited cases where committee members allowed people who would not have paid access to the borehole. In time an increasing number of people began to refuse to pay. This became a serious issue to the extent that on three occasions between middle and end of 2011 the borehole could not be repaired because not enough people had made the financial contribution. Members resorted to buying water from owners of private wells and other boreholes in the vicinity of the area. They were asked to pay for accessing water from other boreholes which were functional as way of making them "look after" their own borehole. In the end, an anonymous donor paid the required $300 required. It turned out that the anonymous donor was someone who was campaigning to be member of parliament or a councillor for the area. The "free" donation had the effect of dislocating the rules

because it removed the incentive for people to cooperate. All the restrictions regarding access to the borehole fell away because the committee had no reason to bar anyone from using the borehole.

4.3 Summary of the Two Cases

Table 2 shows that Mabvuku residents had better access to water than those in Hatcliffe because of the presence of a number of water sources. The rainwater harvesting tanks that were introduced in Mabvuku provided yet another source. At first glance Harare North had a better social capital because of the presence of housing co-operatives –they are (supposed to be) highly organized as they have to deal with issues of land acquisition, allocating stands to members, and dealing with a myriad of issues relating to roads, drainage, water and sewerage. It can therefore be expected that the management of the public boreholes would be part and parcel of a pre-existing institutional framework. In other there was a prima facie case for institutional bricolage as there were some seeds for collection action. In the next section we will examine why these favourable factors for collective action have not exactly translated into a durable collective action.

Table 2. Overview of water shortage situation in Mabvuku and Hatcliffe North

Parameter	Suburb	
	Harare North	Mabvuku
WATER SITUATION		
Alternative water sources	Limited	Many
Level of water shortage	Critical	Not critical because of a number of water sources
Knowledge of boundaries and users	Yes	No
SOCIAL CAPITAL		
History of co-operation	Present because of existence of cooperative culture due to	No because interventions were based on low public participation
Public debate	Yes to discuss	Limited
Possibility of institutional bricolage	Yes	Limited

Table 3. Status of institutional design principles in Mabvuku and Hatcliffe North

Design principle	Mabvuku	Hatcliffe North
Clearly physical defined boundaries	The multiplicity of water sources meant that no exact boundaries could be fixed	Clear boundaries defined by the physical space occupied by the co-operatives
Congruence between appropriation and provision rules and local conditions	Households could migrate from one source to another	Specific boreholes were allocated to specific co-operatives
Collective choice arrangements	No rules	Participants could make and modify the rules
Monitoring	No monitoring	In principle the borehole committee was responsible but could not be sustained because of the breakdown of rules
Sanctions .	No sanctions existed	Sanctions existed but were circumvented in some cases
Conflict resolution mechanism	No mechanisms existed mainly because of poor organizational capacity	Existed in principle but compromised by the committee itself
Minimum recognition of rights to organize	Enjoyed greater autonomy but there was little organisation	Limited scope for greater autonomy because of unclear institutional arrangements
Nested enterprises	Part of a wider urban polity that pitted the two main political parties and the donor community	Part of a wider urban polity that pitted the two main political parties and the donor community

Table 3 shows that Ostrom' s design principles applied much more in Harare North than in Mabvuku. In Mabvuku households could change use of the borehole thereby avoiding commitment to contribute to the maintenance of the borehole. The presence of more alternative water sources made it difficult to fix rules for the resource, and without rules, it was equally difficult to monitor the resources and apply sanctions. In Harare North the conditions for the creation of robust institutions described by Ostrom (1992) were in evidence. One could argue that this was because of social cohesion, which is a critical ingredient for collective action because of the presence of the co-operatives. But as will be discussed in the next section the "glue" that brought about this social cohesion was not strong enough in some cases.

Towards the end of 2011 Harare City Council took over the management of the boreholes that were drilled by UNICEF across the entire city and proceeded to undertake repairs. However, for the residents, the repairs were suspicious. This was confimed by incidents where the Council would take the pump handles away in the name of repairing them and not return them soon enough. Meanwhile the Council would demand that residents settle their outstanding water bills, which in some cases ran into several hundreds dollars. The conclusion that residents reached was that the City Council did not want the fact that residents were accessing free water as this reduced the Council' s revenue base. Despite the different views held by the Council and the residents it was clear that collective action was being superseded if not replaced. Whether this would result in sustainable water delivery outcomes for residents remains to be seen. This is an important observation given the Council does not have a good track record in this regard.

5. Discussion

The precarious water situation in Zimbabwean urban areas, which in itself is symptomatic of a general deterioration of basic social services in the country, has more by default than design led to some form collective action in the provision and management of domestic water, especially among the poor. While policymakers do not explicitly refer to this as the new policy in water supply there is evidence to suggest that this is the case, at least in practice and in the short term. It is against this background that the emerging institutional arrangements need to be properly understood, in terms of how they operate, and whether, they represent a viable alternative proposition for the management of domestic water. The focus should be on how we can understand the nature of the collective action that is (not) emerging.

The housing co-operatives in Harare North represent a new order in the provision of basic social services in Zimbabwean urban areas. These cooperatives are increasingly taking it upon themselves to actively participate, not just in the provision of residential stands, but in the provision of water infrastructure. Implicit in this arrangement is that there exists social capital in the various communities that can be harnessed for the good of the community (Cleaver, 2005). Table 3 showed the institutional design principles were more applicable more to Harare North than Mabvuku. In the former case the co-operative constituted a "nucleus" for some sort of social cohesion that could be used as a platform upon which to craft the rules. However, that "glue" tended to melt away because the effectiveness of the governance mechanisms were in question (Manzungu & Mabiza, 2004) although the rules were in place. It is important to underline that these rules were not immune from politics. The willingness by the aspiring member of parliament/councillor to donate money for borehole repairs showed that water has increasingly become a part of urban water governance (Musemwa, 2010; Manzungu & Mabiza, 2004) and went against the rationally-based institutional rules. In this arena local power brokers, in the form of the committee, worked in cohorts with outsiders to set up an alternative agenda. For example it is curious that the repairing "tender" that was given did not take account of the variation in repair requirements. By agreeing to a flat fee of $300 the borehole committee lost the trust of the members. This jeopardized the rules that were in place. Clearly this was a case where the interests of some stakeholders took precedence over the general interests of the wider public. It could also be that the new borehole committee lacked legitimacy as it was not rooted in the social fabric (Cleaver, 2002). This could be the reason why the rules could not survive the crisis of confidence despite the elaborate arrangements. Besides, the fact that the members could hardly be said to be a community since they did not have a common history and a longer association, and as such did shared any values and norms outside the interest to acquire a residential stand, made it difficult for them to rely on the community spirit that could be relied on to exercise social control over its membership. In Mabvuku the existence of alternative water sources undermined the prospects of institutional rules - there was no incentive to cooperate, Vhevha and Manzungu (2008) made a similar observation –they found that co-operation over borehole repair and maintenance in Guruve district in Zimbabwe was dependent on water availability.

It is also worth pointing out that the recognition of social capital by the Zimbabwean state in the provision of domestic water supply in urban areas is perhaps opportunistic. The Zimbabwean state has, until recently, prided itself in providing basic socials services, which explains the 99% water coverage in urban areas. (Even in the

rural areas the state, with the help of donors, had invested heavily in water and sanitation). Such conjecture is given credibility by Operation Murambatsvina where shacks in urban areas were demolished in favour of orderly settlement patterns (Tabaijuka, 2005). Against this background, and the fact that the Zimbabwean economy remains in a poor state, it comes as a surprise that individuals and communities in urban areas are expected to fend for themselves with the state playing the observer status. But this role came with a high price tag –the alternative arrangements, while showing a lot of resilience on the part of the residents, were not leading to sustainable water service outcomes. As found by Manzungu et al (in press) both the quantity and quality of the water was compromised. Thus no amount of social capital could substitute the fundamentals of water supply:

Improving governance through involving consumers in decision-making can improve transparency and accountability, but can rarely deal effectively with issues of financing, access, and operational management. The assumption that communities are the sole solution to water management problems is flawed…The state remains, in many instances, the best vehicle through which consumers' interests can be balanced. This is particularly the case in developing countries where the assumption that cooperatives will provide services has led to dual access standards (Bakker, 2008).

Echoing the same point Cleaver (2005) warns of the danger of assuming that individuals can use network connections and participation to move out of disadvantaged positions. She further warns that this can lead to a situation where individuals are held responsible for their own deficit in social capital and marginalization. In other words the answer to improving effectiveness of water supply does not always lie with the correct organizational form (Bakker, 2008) because the issues confronting the poor are less to do with low capabilities (Douglass, 1992), and more to do with missing important assets or pervasive poverty (Cleaver, 2005).

6. Conclusions

The analysis undertaken in this paper regarding the prospects for collective provision and management of domestic water in Zimbabwean urban areas was informed by a very simple fact. The general water shortage of water in urban areas, particularly in Harare, Zimbabwe's largest metropolis, as a result of the breakdown of the formal system, had resulted and was resulting in a major catastrophe. The reliance on unsafe alternative water sources was instrumental in causing major outbreaks of waterborne diseases. This situation had resulted in some form of collective action that would exploit social capital for the good of residents. It was, however, shown that, social capital and institutional design, was not succeeding, at least to the extent that was originally envisaged. No desirable and sustainable water service outcomes were being obtained. Thus prospects of social capital are considerably diminished if social capital is seen as absolving the state of its responsibilities and assuming that the poor can help themselves. Jaglin (2002) puts it succintly:

In urban areas where there is masss poverty, a substantial deficit in infrastructure and a largely informal economy, participation of the poor (or social capital) seems to reflect a compromise between the ambition to provide universal access to water and the principle of cost recovery. Although it undoubtedly helps to expand service provision and sometimes instigates technical or commercial innovation, participation (or social capital) is not a miracle solution: there is a considerable risk that the systems it produces, lacking stability and often resulting in inequalities, will lock particular districts or settlements within urban areas into sub-standard systems of service provision which will be difficult to upgrade (Jaglin, 2002).

Thus the emerging collective action models in the provision and management of domestic water should not be seen as an alternative to state-led investment in the water sector. We have argued that while there is some merit in collective action arrangements or community-based management of urban water supply it is important not to see social capital as the miracle which will provide goods and services pertaining to water supply (Jaglin, 2002). The key, however, is to search and understand where social capital may be relevant. The paper concludes that while collective action seemed desirable and was being attempted, its operationalisation proved to be a challenge. This underlines the need to identify the conditions under this may work. Understanding the physical and social context of social capital, as well as defining the role of the state, is critical if the benefits of collective action, in the form of sustainable water service outcomes for the residents, are to be realized.

References

Bakker, K. (2008). The Ambiguity of Community: Debating Alternatives to Private-Sector Provision of Urban Water Supply. *Water Alternatives, 1*(2), 236-252.

Banerjee, S., Skilling, H., Foster, V., Briceno, C., Morella, E., & Chfadi, T. (2008). *Urban Water Supply in Southern Africa*. World Bank Report, Paper 12. Washington DC..World Bank.

Bray, D. B. (2012, February 24). *Collection Action and the Role of Community Norms*. Retrieved February 24, 2012 from http://p2pfoundation,net/Collective_Action.Theory

Chanakira, T. (2010, February 29). *Challenging the current community-based management concept of water point in Zimbabwe*. Retrieved February 29, 2012 from http://practicalaction.org

Chitungwiza Metropolis. (2008). In Manzungu, E. (Eds.), *Towards a New Water Creed*: *Governance and Livelihoods in Southern Africa* (pp. 11-24). Harare: Weaver Press.

Cleaver, F. (2002). Reinventing Institutions: Bricolage and the Social Embeddedness of Natural Resource Management. *European Journal of Development Research, 14*(2), 11-30. http://dx.doi.org/10.11080/714000425

Cleaver, F. (2005). The Inequality of Social Capital and the Production of Chronic Poverty. *World Development, 33*(6), 893-906. http://dx.doi.org/10.1016/j.worlddev.2004.09.015

Daily News. (2011, April 18). Water Crisis: A Potential Health Risk.

Daily News. (2011, May 20). Cholera Looms in Harare.

Danida (Danish International Development Assistance). (2006). Water Supply and Sanitation in Low-income Urban Areas. Good Practice Paper. Copenhagen, Denmark. Ministry of Foreign Affairs of Denmark.

Douglass, M. (1992). The Political Economy of Urban Poverty and Environmental Management in Asia: Access, Empowerment and Community Based Alternatives. *Environment and Urbanization, 4*(2). 9-32. http://dx.doi.org/10.1177/095624789200400203

Dube, D., & Swatuk, L. A. (2002). Stakeholder Participation in the New Management Approach: A Case Study of the Save Catchment, Zimbabwe. *Physics and Chemistry of the Earth, 27*, 867-874. http://dx.doi.org/10.1016/S1474-7065(02)00085-2

Fatch, J. J., Manzungu, E., & Mabiza, C. (2010). Problematising and Conceptualizing Local Participation in Transboundary Water Resources Management in the Limpopo River Basin In Zimbabwe. *Physics and Chemistry of the Earth, 35*. http://dx.doi.org/10.1016.l.pce.2010.07.31.

Ferguson, A., & Mulwafu, W. (2008). If Government Failed, How Are We to Succeed? The Importance of History and Context in Present - aay Irrigation Reform in Malawi. In van Koppen, B., Giordano M., Butterworth J. (Eds.) *Community Based Water Law and Water Resource Management Reform in Developing Countries* (pp.211-227). London: CABI.

Global Water Paternship (GWP). (2000). Integrated Water Resources Management, Technical Paper No. 4. Stockholm: Global Water Partnership.

Herald. (2011, April 10). Quandry as UN boreholes Breakdown.

Jaglin, S. (2002). The right to water versus cost recovery: Participation, Urban Water Supply and the Poor in Sub-Saharan Africa. *Environment and Urbanization, 14*, 231-245. http://dx.doi.org/10.1177/095624780201400119

Komakech, H. C, & van der Zaag, P. (2011). Understanding the Emergence and Functioning of River Committees in A Catchment of The Pangani Basin, Tanzania. *Water Alternatives, 4*(2), 197-222. http://dx.doi.org/10.4314/wsa.v37i4.16

Kyessi, A. G. (2003). Community-Based Urban Water Management in Fringe Neighbourhoods: The Case of Dar Es Salaam, Tanzania. *Habitat International, 29*(1), 1-25. http://dx.doi.org/10.1016/SO197-3975(03)00059-6

Mangwanya, L. (2011). *A Study of Individual and Collective Responses to Domestic Water Shortage in the City of Harare, Zimbabwe*. MSc thesis, Harare, Zimbabwe, Centre for Applied Social Sciences, University of Zimbabwe.

Manzungu, E. (2008). *Running Out Of Options?* The Status of Service Delivery in the Harare.

Manzungu, E., Chigomararwa, N., & Mudyazhezha, S. (in press). Availability and Potability of Alternative Domestic Water in an African City: The Case Of Harare, Zimbabwe. *Journal of Environmental Science and Engineering, 6*(4).

Manzungu, E., & Chioreso, R. (in press). Internalising a Crisis? Household Level Response to Water Scarcity in the City of Harare, Zimbabwe. *Journal of Social Development in Africa*.

Manzungu, E., & Mabiza, C. (2004). Status of water governance in urban areas in Zimbabwe: some preliminary observations from the City of Harare. *Physics and Chemistry of the Earth,* 29, 1167-1172. http://dx.doi.org/10.1016/j.pce.2004.09.003

Manzungu, E., & Machiridza, R. (2005). An Analysis of Water Consumption and Prospects for Implementing Water Demand Management at Household Level in The City Of Harare, Zimbabwe. *Physics and Chemistry of the Earth, 30*, 771-778. http://dx.doi.org/10.1016/j.pce.2005.08.039

Mason, P. R. (2009). Zimbabwe Experiences the Worst Epidemic of Cholera In Africa. *Journal Infect Developing Countries, 3*(2), 148-151. http://dx.doi.org/10.3855/jidc.62

Mitchell, C., Fane, S., Willets, J., Plant, R., & Kazaglis, A. (2007). Costing for Sustainable Outcomes in Urban Water Systems: A Guidebook. Report 35. Salisbury: Coperative Research Centre for Water Quality and Treatment.

Musemwa, M. (2010). From 'sunshine city' to a landscape of disaster: the politics of water, sanitation and disease in Harare, Zimbabwe, 1980-2009. *Journal of Developing Societies, 26*, 165-206. http://dx.doi.org/10.1177/0169796X1002600202

Mwakalila, S. (2007). Residents' Perceptions of Institutional Performance in Water Supply in Dar Es Salaam. *Physics and Chemistry of the Earth, 32*, 1285-1290. http://dx.doi.org/10.1016/j.pce.2007.07.037

Nhapi, I. (2009). The Water Situation In Harare, Zimbabwe: A Policy and Management Problem. *Water Policy, 11*(2), 221-235. http://dx.doi.org/10.2166/wp.2009.018

North, D. (1990). *Institutions, Institutional Change and Economic Performance.* Cambridge: Cambridge University Press.

Ostrom. E. (1990). *Governing the Commons. The Evolution of Institutions for Collective Action.* Cambridge: Cambridge University Press.

Ostrom, E. (1992). *Crafting Institutions for Self Governing Irrigation Systems*. San Francisco: ICS Press.

Putnam R. D. (1993). *Making Democracy Work. Civic Traditions in Modern Italy.* Princeton: Princeton University Press.

Said, M. D., Funke, N., Jacobs, I., Steyn, M., & Nienber, S. (2011). The Case of Cholera Preparedness, Response and Prevention in the SADC Region: A Need for Proactive and Multi-Level Communication and Co-Ordination. *Water SA, 37*(4), 559-546. http://dx.doi.org/10.4314/wsa.v37i4.15

Simango, N. (2010). Assessing the Effectiveness of Maintenance Systems for Community Boreholes in the City Of Harare, Zimbabwe. BSc (Honours) project. Department of t of Soil Science and Agricultural Engineering, University of Zimbabwe.Sunday Mail, 4-10 March, 2012. Typhoid cases continue to rise.

Tabaijuka, A. K. (2005). *Report of the Fact Finding Mission to Zimbabwe to Assess the Scope and Impact of Operation Murambatsvina*. New York. United Nations.

UNDP. (2004). *Water Governance and Poverty Reduction*. New York: UNDP.

UNDP. (2006). *Beyond scarcity: Power, Poverty and the Global Water Crisis*. Human Development Report. New York: UNDP.

Van Koppen, B., Giordano, M., Butterworth, J., & Mapedza, E. (2008). Community Based Water Law and Water Resource Management Reform in Developing Countries: Rationale, Contents And Key Messages. In van Koppen, B., Giordano, M., Butterworth, J. (Eds.), *Community Based Water Law and Water Resource Management Reform in Developing Countries* (pp. 1-11). London: CABI.

Vhevha, I., & Manzungu, E. (2008). A Characterization of Stakeholder Participation and Sustainability of Rural-Based Borehole Facilities in Guruve District. In. Manzungu, E. (Ed.), *Towards a New Water Creed: Water Management, Governance And Livelihoods in Southern Africa* (pp. 53-64). Inwent: Bonn and Weaver Press. Harare.

WHO/UNICEF. (2006). Joint Monitoring Programme for Water Supply and Sanitation. Water For Life: Making It Happen. WHO & Unicef, Washington DC.

Zinyama, L. (1993). The Evolution of the Spatial Structure of Greater Harare, 1890 - 1990. In Zinyama, L., Tevera, D. S., & Cumming S. D. (Eds.), *Harare: The Growth and Problems of the City* (7-31). Harare: University of Zimbabwe Publications.