

RESEARCH FINDINGS

Litmus test for integrated resource management of potable water in Zimbabwe and South Africa

A comparative study in four local authorities

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ABSTRACT

This study is a comparative analysis of one of the major pillars (stakeholder participation) of Integrated Water Resource Management (IWRM) induced public policies and services relating to potable water supply in selected cases in Zimbabwe and South Africa. The objectives of the study were to investigate the extent to which the stakeholder participation aspect of the IWRM paradigm has been implemented in each of four case study areas of Harare, Masvingo, Tshwane and Vhembe. Research methods involved both a theoretical review and an empirical study based on case studies, making use of comparative, qualitative, historical and exploratory approaches. The empirical research design was hybrid, although dominated by the descriptive survey approach. The study established that while the framework for a perfect stakeholder participation water management system exists in Zimbabwe and South Africa, the factual situation does not reflect this common belief. The study recommends an integrated systems approach to the management of potable water supply, full involvement of all stakeholders in the management process, intensive and extensive public campaigns, training, lobbying and advocacy. Among other recommendations are the due enforcement of water laws, venturing into entrepreneurial activities, interval reviews and check-ups, and walking the talk.

ORIENTATION AND PROBLEM STATEMENT

One of mankind's biggest global challenges is access to potable water supply; its availability, quality and governance. Currently some 1,5 billion people lack a safe water supply (COHRE, AAAS, SDC and UN-HABITAT 2008:8). This study investigates water sector reforms in Zimbabwe and South Africa with special focus on local potable water supply governance by the municipalities of Harare, Masvingo, Vhembe and Tshwane since the late 1990s.

Potable water supply governance is the range of political, organisational and administrative processes through which communities articulate their interests in the development and management of potable water resources and delivery of potable water services (UNWVLC 2008:16). The way potable water supply governance is handled influences the level of development and progress of the particular community. According to the Global Water Partnership (GWP) (2000:44), poor water supply governance translates to underdevelopment. Conversely, good water supply governance promotes development, progress and a healthy community.

According to the United Nations Educational, Scientific and Cultural Organization (UNESCO) (2006:6), a potable water governance process/system addresses among other things: the formulation and adoption of sustainable legislation, policies and institutions; enforcement and implementation of the adopted public policies and legislation and; the clarification of the roles and responsibilities of all involved stakeholders regarding ownership, administration and management of water resources. Thus, potable water supply governance addresses both public policy and practice regarding potable water supply issues.

For Folifac (2007:10), UNESCO (2006:6), Mulder (2005:1, 58), and Ashton *et al.* (2001:xxvii) southern Africa faces severe and growing challenges in the governance of potable water supply. They indicate a range of factors responsible for this state of affairs, including population growth; the continuous depletion and pollution of water supplies; semi-arid conditions; anticipated trends of climate change in the face of global warming; successive droughts; lack of both administrative and political will; poverty and disparities in income; cultural and racial diversity; and the absence of scientific and technical knowledge. In fact, the southern African region presents a complicated water resources governance scenario. The region has both natural and artificial challenges that intermingle to create an intricate and heterogeneous contextual framework. This framework demands knowledgeable and skilled water resource managers if there is to be long term sustainability of water resources in the region. Some of the technical and specialised issues that require expertise (both traditional/indigenous and contemporary) in handling them include the impact of mining; agricultural activity; global warming; successive droughts; desertification; geological and hydrological issues; urbanisation and industrialisation; bulging population; diversity; and ever changing technology, ways of doing things and worldviews.

To deal with the issue of water management, both Zimbabwe and South Africa adopted the integrated water resources management (IWRM) paradigm in 1998 and formulated new legislation in line with the dictates of the new thinking (see the *National Water Act of South Africa*, 36 of 1998 and the *Water Act of Zimbabwe*, 31 of 1998). A unique feature of the new approach and legislation that distinguishes it from previous legislation and policy frameworks in both countries is the participation of all stakeholders, especially users of water in the decision making process through consultative catchment management

structures at various levels. The IWRM assumption is that by mobilising participation of stakeholders through recognised and legislated institutions the desired water management goals of achieving equitable access to water and sustainable, efficient and effective water use will be achieved.

This study argues that there are serious gaps in southern African water use policies and implementation. The availability of current acceptable and supportive public potable water supply policy and legislation in both Zimbabwe and South Africa indicates the beginning of a commendable process of water services delivery to all stakeholders. This alone is insufficient unless supported by effective systems and processes for effective delivery (Folifac 2007:23). Formulation and adoption of a policy or legislation do not automatically translate to its implementation and/or enforcement (Hall 1992:15). Most African countries have developed plans to reach the Millennium Development Goals (MDGs) on water supply and sanitation (WSS), but these often only exist as documents and are neither country-owned nor actively implemented (Kwabena 2009:2).

STUDY CASES

Harare in the Harare Metropolitan Province and Pretoria in the Tshwane Metropolitan Municipality are the capital cities of Zimbabwe and South Africa respectively. Masvingo and Vhembe are largely rural municipal entities in Zimbabwe and South Africa respectively. The selection was made in an effort to draw comparisons between metropolitan urban structures of IWRM and those in rural municipal entities, which may well have considerably different demands for effective water governance.

Zimbabwe, urban: The city of Harare in Zimbabwe has an estimated population of 3 500 000 (CHRA website 2010). It is composed of Greater Harare, Chitungwiza, Ruwa and Epworth. The main focus was on Greater Harare with an estimated population of 2 175 000 (Demographia 2010:16). Since the establishment of Harare in 1890 the city's population, industrial and commercial activities have grown rapidly, but this remarkable growth has not been accompanied by corresponding water services infrastructure and professionalism, especially in the post-colonial period (Musemwa 2008:15). The Morton Jaffray Water Works built in 1953 to provide the city with clean water is yet to be upgraded. Harare's two main sources of water (Lake Chivero and Lake Manyame) are seriously polluted by sewage effluent and by industrial and agricultural waste. In May 2005, government's decision to transfer the governance of water resources from the metropolitan municipalities to the Zimbabwe National Water Authority (ZINWA) exacerbated the situation (Musemwa 2008:15). Water borne diseases have been prone to break out sporadically in the city, culminating in the catastrophic cholera outbreaks of 2008-2009 (CHRA Website, accessed 12 November 2010).

Zimbabwe, rural: Masvingo is the central district of the seven districts in Masvingo Province, Zimbabwe. The district comprises the city of Masvingo, Masvingo Rural, Mashava Mine and Renco Mine. The focus here is on Masvingo's City and Masvingo Rural. The district has a population of 400 000 people. The city of Masvingo water works was last upgraded in 1982 (Dube 2002:2). The main source of raw water for Masvingo is Lake Mutirikwi, the biggest lake in the country. This source is vulnerable to pollution from the surrounding

mining and agricultural activities of nearby communities, especially after the sporadic land seizures in the early 2000s. The district is one of the dry areas of Zimbabwe (Dube 2002:1).

South Africa, urban: The city of Tshwane in South Africa had an estimated population of 2 415 000 in 2010 (Demographia 2010:15). It comprised Pretoria, Centurion, Laudium, Eersterust, Akasia, Atteridgeville, Soshanguve, Crocodile River, Ga-Rankuwa, Mabopane, Winterveld, Hammanskraal, Temba and Mamelodi. The main focus was on Pretoria. Tshwane is highly developed. Its municipal council can match that of any in the developed world (UN 2001:27). The city is a water service authority in its area of jurisdiction in terms of the *Water Services Act*, 108 of 1997. It obtains the bulk of its potable water from the regional utility Rand Water, supplemented with boreholes and springs in dolomitic groundwater aquifers and surface water from Rietvlei Dam within the bulk distribution system (Mothopong Consulting 2005:1). The boreholes and springs are located in dolomite rock formations which are known for the tendency to form cracks, ponors and sinkholes. They are at high risk of pollution, and there is high percentage of precipitation recharge to the groundwater of the underground water aquifers. According to Mothopong Consulting (2005:1-10), because of these characteristics, the water sources could be polluted by cemeteries, sewage, industrial and commercial waste, agricultural manure, fertilizers and other chemicals. Thus, although Tshwane is not in the city of Harare's desperate situation, there is indeed an urgent need for finding solutions to the threat of water pollution.

South Africa, rural: Vhembe is one of six district municipalities in the Limpopo Province, situated in the northernmost part of South Africa. It has an estimated population of 1 249 000 (Vhembe Website 2009). Like Masvingo, Vhembe is largely rural, composed of the local municipalities of Musina, Makhado, Mutale and Thulamela. The main focus here was on Musina. The district has a new surface water dam, Nandoni which is intended to supply the whole region with sufficient water, but water sources in the area are still vulnerable to contamination from the mining and agricultural activities in the catchment area.

STATEMENT OF THE PROBLEM

The main problem in all four study areas is limited and undeveloped potable water sources, and the presumed poor potable water supply governance due to ill maintained potable water development, transport, storage, purification, costing and reticulation infrastructure. Together with lack of relevant professional skills, this situation makes it difficult for the authorities concerned to implement the IWRM paradigm as adopted in the two countries' legislative and policy frameworks of the late 1990s. Potable water governance systems determine who gets what water, when and how. This study thus provides comparative answers to the *what*, *when* and *how* of the relationship between public policy formulation and implementation in as far as stakeholder participation is concerned in the development and governance of potable water supply in the selected cases. The question addressed in this study is whether the theory of co-operative water governance, as outlined in the adopted policies and legislation, has been applied in the development and governance of potable water supply in the selected municipalities. How have Zimbabwe and South Africa (as represented by the selected cases) fared in the implementation of the IWRM governance paradigm? What are the reasons for the current state of affairs?



RESEARCH QUESTIONS

The following research questions helped in determining the relationship between public policy and/or legislation formulation and adoption on the one hand, and implementation and enforcement of the adopted policies and legislation on the other:

- To what extent are the grassroots and other stakeholders involved in the formulation and adoption of legislation and policies that govern their access to potable water supply services in Zimbabwe and South Africa?
- What are the common and differing perspectives of stakeholders regarding IWRM and its implementation in the governance of potable water supply in the four locations of research?
- What lessons can be learnt from the experiences of the four study locations in their attempts to implement the IWRM paradigm?

PUBLIC MANAGEMENT'S BODY OF KNOWLEDGE

The anticipated major outcome and contribution of this study to the public management body of knowledge is a multidimensional-stakeholder systems theory (see the theoretical framework of the study below). This study will contribute insight into both the debate and practice of public governance in general and potable water governance in particular. It will contribute to the understanding of governance regimes that underlie the provision of potable water to residents of the selected cases in light of the IWRM paradigm. It argues that there are gaps between public policy formulation and implementation regarding water supply in the selected cases. An analysis of the two loci (formulation and adoption versus implementation and enforcement) will determine the gap/gaps between them and thus help in the generation of interdisciplinary literature that will be of use in the body of knowledge on the public management and decision making processes involved in potable water supply governance. Findings of the study will also be used as training material and a basis for further studies and dialogues among communities in the region. In fact, through better understanding of the complexity and dynamics of water sector reforms in both Zimbabwe and South Africa, the study will provide lessons learnt on potentially the most critical issues as a basis for future reforms and practices in the governance of water resources.

RESEARCH METHODS

This study is based on the comparative, systems and interdisciplinary approaches. To meet the demands of this multidimensional framework a variety of research methods and data sources were used to ensure a balanced analysis and evaluation of the problem. The research undertaken included an extensive review of theoretical literature as well as the use of empirical methodology. In addition to geographical and geo-hydrological maps, aerial photos, geographical information systems and other documents available on managing water resources in general and in the study locations specifically, the following sources were

consulted to ensure a balanced review of both primary and secondary sources of relevance. These included government legislation, municipal bylaws, municipal policy documents, workshop reports and minutes, as well as published academic works, academic journals, doctoral theses, Internet sites, magazines and newspapers. The scope of the empirical investigation was limited to the Harare, Masvingo, Tshwane and Vhembe municipalities with a combined population of about 6,3 million people. The empirical studies were conducted as per the following time schedule:

- Masvingo (urban and rural): August to December, 2010;
- Harare: November, 2010 to July, 2011;
- Musina (urban and rural): January to June, 2011; and
- Tshwane: January to June, 2011.

The first phase of the studies focused on potable water governance investigation of available sources in the municipal, national, international, NGO, and professional institutes' archives and libraries, as well as websites dealing with the areas selected for study. This preliminary study helped in shaping the structured and informal interviews, questionnaires and informal discussions that followed. Both the formal structured interviews and informal unstructured interviews on IWRM policies and their implementation in the selected cases were conducted with 25 respondents / interviewees. The 24 interviewees included:

- Masvingo Urban's acting town clerk (1);
- Masvingo Rural's district council chief executive (1);
- Masvingo Urban's housing officer, who doubled as research assistant (1);
- Masvingo Rural's finance director who doubled as research assistant (1);
- heads of water services management/civil engineers responsible for water resources from the municipalities of Masvingo Urban, Masvingo Rural, Harare and Tshwane (4);
- front-office water services officers (1x5);
- Harare's accounting assistant who doubled as research assistant (1);
- DWA executive (1);
- 6 research assistants (not municipal employees), (at least one assistant from each of the study locations); and
- 3 assistants who translated the questionnaire from English into Tshivenda, Isizulu and Setswana).

In the formal structured interviews, a set of questions was prepared to serve as a guide to stimulate discussion in the structured interviews. Interviewees were given an option to either participate or decline participation. None of them declined to do so, although interest and commitment were not pitched at the same level. For example, South African front office staff seemed reluctant to participate (possibly for security reasons), let alone give the researcher and his assistants access to their superiors. In addition, time constraints also played a role in the case of senior executives, notably in Tshwane and Harare, who had very busy schedules. Nonetheless, exercising great patience and diplomacy and with the unwavering support of his research assistants, the researcher managed to forge a significant degree of cooperation.

Two questionnaires (one for municipal and rural district council workers; and the other for residents) to investigate the level of understanding and perception of consumers on water services and the IWRM philosophy were also distributed to:

- 100 individuals from households in Greater Harare;
- 20 municipal workers in Greater Harare;
- 100 individuals from households in Masvingo (50 in Masvingo Urban and 50 in Masvingo Rural);
- 20 municipal workers in Masvingo Urban and 20 Masvingo Rural district workers;
- 120 individuals from households in Pretoria who were handed questionnaires while frequenting the Church Square open space and banking halls in the city centre;
- 100 individuals from households in Vhembe (50 in Musina Urban and 50 in Musina Rural); and
- 20 municipal workers in Musina.

This made a total of 500 sampled questionnaire respondents.

The residents' questionnaire was translated into local languages to ensure effective communication, because some of them could not communicate effectively in English. Interestingly very few respondents opted for the local language questionnaire. Although this might have affected the quality of their responses it was to the advantage of the researcher who otherwise would have had to rely largely on translators in order to analyse the responses. Translators were used for the South African local languages. The English and Shona versions were compiled by the researcher himself.

Comprehensive field notes were documented throughout the visiting and discussion periods. The researcher moved from case to case for the entire empirical and field study period. It is however important to note that the distribution and collection of questionnaires in Musina and Tshwane was done solely by the designated research assistants who were also responsible for identifying the translators of the questionnaires into local languages.

ETHICAL CONSIDERATIONS

As is standard practice in the research fraternity, there were some ethical issues taken into account. The study made use of an introductory letter from the NWU School of Basic Sciences VTC and an introductory and consent letter from the researcher. This ensured that the participants understood the objectives of the study, while assuring the respondent that the researcher treated the responses provided as strictly confidential. Also, in light of the fact that water management facilities are, as a rule, national key point localities, the researcher gave the assurance that a concerted effort would be made not to disclose any information of a sensitive nature. Where interviewees indicated that a specific comment should not be used in the study, the researcher respected the request of the informant. The researcher also indicated that once the study was completed, a report of the findings would be provided to each municipality that contributed to the project. In addition, a feedback symposium involving academics, municipal authorities, government policy makers and other stakeholders would be held in Masvingo, Zimbabwe, jointly hosted by the city of Masvingo and the Zimbabwe Open University. Although the first session of the symposium would centre on findings from this study, other presenters and researchers would give their input on the theme: *Local authorities: Water to the people, for the people, and by the people*. Special invitations would be sent to participating municipalities and an appeal would be

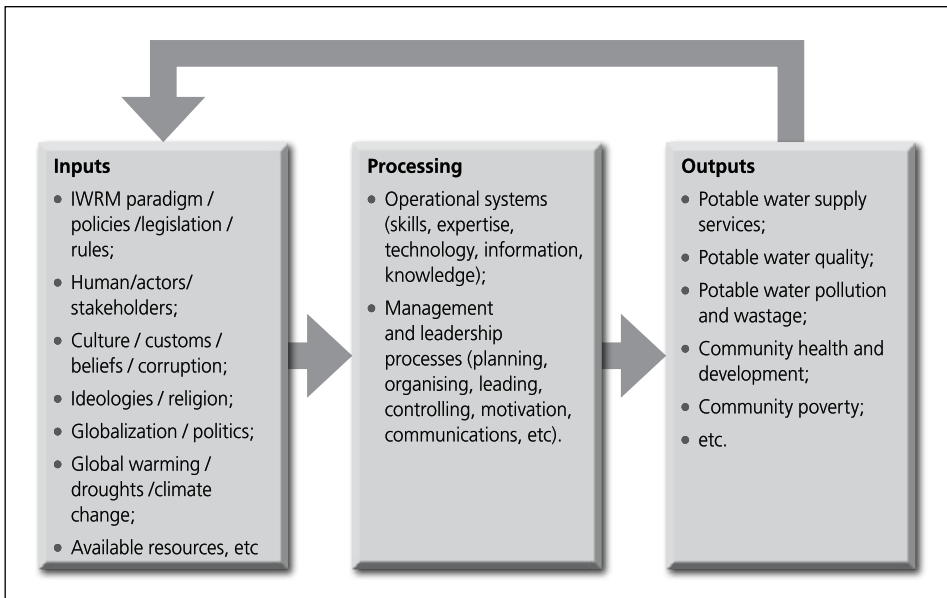
made to other local authorities and stakeholders in the region and beyond to participate in the symposium.

THEORETICAL FRAMEWORK

The study was based on what the researcher calls a multidimensional-stakeholder systems theory derived from the IWRM paradigm and the systems theory. Inputs, processes and their resultant outputs were observed, analysed and compared across the spectrum of four selected case studies. Figure 1 summarises the theoretical framework for this comparative study.

The argument in this study is that the world is a system with layers of subsystems. Whatever happens in any of the subsystems affects the others. However, the impact of such incidents depends on local systems' preparedness and settings within the broader world system. The internal (country) and external (regional, continental and international) subsystems have to be manipulated and well aligned to absorb any shocks that might arise in communities' survival strategies in the global village.

Figure 1 A multidimensional systems theory



FINDINGS AND CONCLUSIONS

This study established that while the framework for a perfect stakeholder participation water management system exists in Zimbabwe and South Africa, the factual situation does not reflect this. The reform process has not taken off as expected owing to a combination of factors ranging from conflicting policies and weak institutional linkages, to insufficient funding. Thus, the effectiveness of the new system has been found wanting in as far as

implementation is concerned. It has been established that IWRM in southern Africa has a very strong base in the form of internal push factors and international pull factors, but also faces an uphill task in terms of aligning local and international forces, thereby coopting the much needed grassroots participation for human capacitation and socio-economic development as guided by the IWRM framework. All the municipalities studied fell short in terms of advocacy and enlightening residents and other stakeholders about the new IWRM framework adopted by the municipalities. Despite considerable infrastructural and technological challenges, this study established that people are still virtually unaware of the new developments. Stakeholders, especially the grassroots level have been largely sidelined in the formulation and adoption of potable water supply policies in both Zimbabwe and South Africa.

Due to pipe bursts and water interruptions, access to tap water was by no means always assured. During water cuts, residents depended on risky and potentially polluted sources of water even in urban centres. Due to agricultural and mining activity, cemeteries, poor sanitation and the absence of toilet facilities in the peri-urban areas and nearby shanty communities, pollution is a very real danger. Added to this, the dolomitic character in some areas provides another source of pollution.

The findings of the study will now be used to answer the research questions. The conclusions are categorised into foundational and thematic conclusions and then overall conclusion.

Foundational conclusion

Potable water is a public and common pool resource: It is thus difficult to exclude members of a given community from having access to water. In most African customary water laws, water from natural resources is communal property and private ownership of such water is not recognised. Because they are vulnerable, common pool resources are subject to problems of congestion, overuse, pollution and potential destruction unless harvesting or use limits are devised and enforced (Ostrom 1990:2). In the modern world common pool resources may be owned by national governments, local governments, municipalities or district councils as public goods; by communal groups as common property resources; or by private companies as private goods. When owned by no one, common pool resources are used as open access resources. Most common pool resources are governed by common property regimes which are arrangements different from either private or state administration. They are based on self-management by a local community. This self-management approach to the governance of common pool resources is comparable to the IWRM philosophy.

Thematic conclusions

Potable water not readily available and therefore not accessible: Potable water resources are believed to be scarce and not evenly distributed in the global village. Zimbabwe and South Africa are categorised as water scarce and water stressed cases respectively. The implication is that currently there is limited accessibility to potable water supply in both countries. Whereas the water scarce situation of Zimbabwe implies that potable water sources are available but not developed to meet human consumption needs, the South

African stress situation implies that potable water sources are insufficient to meet the country's requirements even if fully developed. Following this line of argument, it is thus established that in Zimbabwe potable water sources are available but not accessible; and in South Africa the sources are not even readily available. The final conclusion on this line of thought is that potable water accessibility is limited in both countries. Secondly it was established that potable water accessibility was not evenly distributed across rural and urban centres in both countries. There were also frequent pipe bursts, especially in the Zimbabwean test cases, where the infrastructure is obsolete and overloaded. Furthermore, piped water is not available in Zimbabwean rural communities. In South Africa piped water is available but largely inaccessible because the systems were frequently dry due to water cuts and interruptions of water supplies. The main challenge is therefore neither water stress nor scarcity. The major problem is centred on the governance of potable water supply and the attitude of the authorities! Water stress and scarcity are symptoms of poor governance of public and natural resources. In conclusion therefore this study establishes that there is a shortage of water supply, albeit in different proportions due to contextual factors, in all the studied cases. This water shortage was found to be the result of poor governance. Thus, water shortages and increasing pollution are to a large extent socially and politically induced challenges.

Exclusion of people at the grassroots level and other stakeholders in the planning and formulation of policy: Analysis of data from the triangulated sources established that people across the board in both Zimbabwe and South Africa had a significant role in the initial stages of embracing the IWRM paradigm albeit they knew very little about its existence elsewhere. They were visionary enough to envisage its superiority to the fragmented approaches forced upon them by years of colonialism. It was those at the grassroots who put pressure on those in power to provide a more equitable and participatory approach to potable water supply governance and distribution. They were thus a push factor in the adoption of the IWRM framework. Globalisation played an equally important role. Developments in France and other Western countries pointed the way ahead and were used by the wealthy overseas donors as benchmarks and standards for accessing financial, equipment and technological aid. A combination of these push and pull factors laid the foundation for the change process. Nonetheless, these forces were not properly meshed and thus local stakeholders (especially those at the grassroots) were soon sidelined in the formulation and adoption of the new policy framework. Having laid the foundation for the change process in the water sector, the people soon lost the initiative to international forces in the planning of the change process. This is how the change process became an imposition from above. What the local ruling elite did was to embrace the change processes from the external forces, (along with the very useful funding) forgetting and suppressing internal forces that had previously been at the forefront of reform. The final conclusion is thus that stakeholders, especially at the grassroots, have been largely sidelined in the formulation and adoption of potable water supply policies in both Zimbabwe and South Africa. They laid the foundation for a pro-grassroots change process, but lost the initiative to powerful international forces once the reform process took off. The opportunity for pro-grassroots forces of change in the potable water supply governance was lost. The challenge was, and still is, an alignment with and adaptation of international forces to local and national demands for contextualisation and meaningful development that benefit the people. Due to the diversity of water related activities, the

complexity of the geohydrological environment and the deteriorating physical environment, the function of the water service providers in the respective municipal areas now calls for specialised skills and knowledge.

Weak policy and institutional framework: It has been established that both countries forming part of this study have adopted the IWRM framework and have formulated policies and legislation in line with the new approach. The major problem with the new policy and institutional framework, however, is that it is highly fragmented. This has also blurred issues of accountability, answerability and responsibility. For example in Zimbabwe ZINWA is supposed to be the central authority that facilitates water supply to municipalities, councils and other local authorities. Nevertheless, from 2005 to 2009 it took over the management of potable water supply to consumers in most major urban centres. This move has caused confusion and more problems for the consumer. There are also issues of fragmented legislation, ministries and other administrative institutions. For example in Zimbabwe water legislation include the *Water Act, 1998*, the *Zimbabwe National Water Authority Act, 1998*, the *Natural Resources Act, 1941*. In South Africa there is the *National Water Act, 1998*, the *Water Services Act, 1997*, the *Municipal Systems Act, 2000* and the *Municipal Structures Act, 1998*. This has translated into a lack of coordination and uniformity in areas of responsibility. As a result, there is a considerable overlap of institutional mandates. For example, the *Natural Resources Act, 1941* in Zimbabwe provides for the construction of works to prevent soil erosion and promote the conservation of soil and water resources, and as observed by Patel (2002:15), with reference to water development and usage, it reflects several potential conflicts of an administrative nature vis-à-vis the provisions of the *Water Act, 1998*. In both countries it has been a complex task to address co-operative governance between the national, provincial and local spheres of government. It has been established that the geographical and institutional boundaries of water management bodies by and large follow hydrological boundaries without taking political and administrative boundaries into consideration. This has tended to split communities. Thus, clear-cut jurisdictional responsibilities between the catchment and sub-catchment councils, water user boards, water point committees and rural district councils, still need to be clarified. The city of Tshwane whose jurisdiction area cuts across two provinces, is a case in point. In the final analysis, while the framework for a perfect water management system seems to exist in Zimbabwe and South Africa, the factual situation does not reflect this. There is confusion and lack of proper coordination amongst the different authorities and institutions that have a bearing on the management and development of water resources.

Lack of motivation and training: Residents of the municipal areas that were under review are not even aware of the term IWRM. If they are to participate fully in the programme they have to be educated about its ramifications. The new water programme was destined to fail because the leaders in Zimbabwe were not committed to its implementation beyond the political mileage it would give them. IWRM was apparently embraced to impress the overseas donor community and get the much needed financial support. When political survival was threatened nobody seemed to care, and in practice all the good intentions were jettisoned. The leaders still speak in eloquent but meaningless terms of IWRM, but they themselves have no idea what it is all about. Currently there is neither training nor motivation to ensure professional and active implementation of IWRM. The biggest challenge is thus the attitude of the political leaders. Even in the early days (when the reforms were introduced),

ZANU PF politicians seemed obsessed with politics and tried to grab every opportunity to turn community gatherings into political rallies. South African leaders seem a bit more motivated and committed, but are guilty of taking people for granted. Here too, this study established that people are unaware of IWRM and the catchment management system, at least in the studied cases. The leaders would do well to undergo some training and get motivated themselves so that enthusiasm and commitment filters down to other stakeholders and the general masses.

A technocratic approach to potable water resources management is still dominant: It has been established that the majority of grassroots stakeholders are ignorant of the IWRM conceptual framework and related concepts. Most questionnaire respondents believed that potable water supply authorities are more important than consumers, a belief that is apparently also held by the water sector authorities themselves. They talked about IWRM, demonstrated that they understood what it is all about, but their attitude was clearly still aligned to the traditional way of performing. In fact, IWRM appears to exist in theory but not in practice. Even some of the research assistants became aware of IWRM by their participation in this study. Prior to their respective roles in this data collection exercise, they knew nothing about IWRM. Most grassroots respondents felt that government and municipalities were not doing enough to ensure availability and accessibility of potable water to all residents. They were not concerned that they were not involved in the public decision-making process, but they were worried that authorities were not doing enough to ensure that sufficient potable water is effectively delivered. Even their solution to the problem was based on a technocratic worldview. They suggested that the government should provide financial resources for the construction of more (and bigger) dams; the drilling of additional boreholes; laying of new water pipes; identifying water leaks; providing purification chemicals, and so forth. Whilst all this is indeed required, even in the new framework, the problem is the emphasis on the technical matter at the expense of the crux of the issue – managing the existing systems and infrastructure efficiently. Stakeholders and the authorities seem unconcerned about soft issues of governance (such as their involvement, integration of water governance to the whole development effort and water demand management). Authorities and residents of the municipal areas should also come up with strategies of utilising potable water more sparingly and wisely. Treated and reticulated water should not be used for flushing toilets.

Low use of websites: South African websites are highly advanced and educative. Zimbabwean websites are still under construction. It is important to note that most municipal inhabitants in both countries have no Internet; the majority do not have financial resources to use the Internet. As a result the available information on the websites is useless because it does not reach the majority of its audience. This being so, websites are currently not promoting communication; there is still a long way to go before Africans, (especially the elderly, who have not had the opportunity to gain access to these modern technologies, and are more set in their ways), are able to access information on the Internet because of financial and other resources limitations. In most cases, only academics and professionals are using the Internet gainfully. This study established that whilst actual use of municipal websites and the Internet would have positive and improved utilisation of natural resources (in this case potable water), the majority of municipal residents neither have access to the Internet nor the ability to use it.

Divergent perspectives: government versus stakeholders: It seems some government officials treat water as a political tool whereas those at the grassroots level see it as a necessity. This results in political interference. In a bid to retain popularity (and thus votes), politicians aim to keep the price of water as low as possible. In Zimbabwe politicians have frustrated the implementation of the pricing policy. The outcome of this is that water service provision has suffered because municipalities cannot afford to maintain high standards of water service delivery. Commercial defaulters of payment for water permits are being protected against disconnection through the influence of politicians. This has resulted in lack of enforcement of the new policy framework.

Economic disability and weak financial base: As far as utilisation of resources is concerned, potable water included, Africa suffers from economic disability. High poverty levels mean failure to implement the new policies simply because they require some financial investment. Zimbabwe depended heavily on the donor community for financial assistance to implement the new policy framework. When they withdrew for political reasons the project came to standstill. The interviews with potable water executives in Harare and Masvingo revealed that the municipalities did not have money to improve infrastructure or organise residents and stakeholder workshops. For example, Mr T. Gozo and Mr R. Murimoga reported that Masvingo Municipality's 2010 total revenue base did not exceed US\$10 million, yet the water infrastructure rehabilitation and upgrading to meet 2010 requirements was estimated at more than US\$30 million.

The gap between policies and practice: The major purpose of this study was to build a multi-stakeholder systems' theoretical framework that would help in bridging the gap between policy and practice in potable water governance in the two countries as represented by the selected cases. The study established that policy and practice were moving in parallel directions in the studied municipalities, especially those in Zimbabwe. With the deterioration of the political climate in Zimbabwe, public policy became merely decorative. Residents' and workers' questionnaires revealed that water authorities simply made unilateral decisions without involving their more junior colleagues. Thus, policy and practice moved in opposite directions. The major argument in this study was that policy makers should blend global push factors and internal pull factors to ensure that water reforms benefit their constituent population. The complex multi-stakeholder systems theory requires an in-depth evaluation of the situation so as to come up with the best fit taking cognisance of the fact that whatever happens on any of the angles of the multifaceted system has profound effects on the total system. Thus the management and governance systems so developed should not only be proactive but should also be based on a thorough analysis and understanding of the entire system.

CONCLUSION

The overall conclusion of this study is that there is minimal participation of stakeholders in the governance of potable water supply in both countries. It can, therefore, be concluded that the demands of IWRM in the two countries, as represented by the selected case studies, are not properly adhered to and therefore not implemented as per the much talked about framework. This study found that the major excuse for not adhering to the dictates of the

adopted policy (IWRM) and the ambient legislative framework was found to be unavailability of resources. Despite the resources excuse, it was established that in all the selected study cases government and local authorities are not fully committed to the change processes for political reasons (especially in Zimbabwe). In the final analysis, this study thus agrees with the claim that it is not simply lack of resources that is preventing the implementation of the new holistic approach to water governance (IWRM), but poor mobilisation and mismanagement of the available resources. The main challenge is neither water stress nor scarcity of water. The problem lies at the door of those responsible for the governance of potable water supply. Water stress and scarcity are symptoms of the overall poor governance of natural resources that are, after all public property.

RECOMMENDATIONS

Based on the discussion of findings and conclusions above, this study provided a wide range of recommendations. These are as outlined below.

Water laws must be enforced: This study established that there is lack of enforcement of water laws. As observed by Kwabena (2009:2), Africa is suffering from the disease of public policy implementation failure. To cure this, Kwabena recommends strengthening of operational mechanisms in areas where arrangements have not yet been properly set in place and refinement of public strategies and policies where these are needed. But this must be done only insofar as they sharpen the high-level commitments that have already been made. Thus, if laws that govern potable water supply are to have any meaningful impact they must not only be subjected to refinement – they must also be adhered to. Otherwise they are mere decorations.

Build partnerships and avail incentives that will draw investment for the construction of the required infrastructure and technology: It has been established that potable water is not readily available and therefore not always accessible to residents. The major reason for this state of affairs has been traditionally identified as scarce resources. This study suggests a number of strategies to deal with the meagre resources issue. Municipalities should engage with other stakeholders such as the business community, international organisations and NGOs, among others. The business community may, for example, be prepared to take on the task of constructing the required infrastructure if offered the incentive of collecting rent/rates from users for some period (for instance 10 years) before handing over the project to the authorities on a BOT or (build-operate-transfer) strategy. Alternatively, to give another example, business organisations could be exempted from paying taxes. There may also be twinning arrangements with other cities that have advanced economies. Such arrangements will come with human and technology transfer arrangements that benefit both sides. International humanitarian organisations and NGOs may also be mobilised and encouraged to work with the people at the grassroots in empowerment programmes and infrastructure development. For example, a good opportunity arose at the time of the 2008 – 2009 cholera outbreak in Harare when humanitarian organisations were mobilised into assisting in the improvement of the ageing and obsolete water infrastructure.

Respect stakeholders; use their brains and world of experience: It has been established that although the grassroots were intimately involved in laying the foundation for change

and improvement of potable water governance in both Zimbabwe and South Africa, they were soon pushed to the periphery of the change process. Yet, these people have a wealth of knowledge that could be used to the benefit of the communal governance process. Marginalising the grassroots to the periphery of common pool resources governance processes stifles their initiative and makes them passive dependants who merely look to government and municipalities to make water available to them. Thus, a multi-dimensional stakeholder involvement approach which ensures that all residents have a say in the management and development of community and municipal potable water resources should be encouraged.

Policy and institutional framework should be simple and boundaries well demarcated to ensure proper coordination: It has been established that policy and institutional frameworks are subject to e.g. a wide range of laws, ministries, ill-defined geographical areas. This is the outcome of confusion, lack of accountability, unnecessary dysfunctional conflict and poor service delivery, among other ills. There is thus a need for a sober and well-defined policy and institutional framework, plus better demarcated geographical responsibility areas according to surface water catchment regions.

Political will, commitment and motivation must be heightened: The political leaders have to understand and identify with the entire process. It has been established in the course of this study that Zimbabwean ruling party politicians did not prioritise the implementation of the new potable water governance framework. Adopting the new framework was no more than a ploy to strengthen their position. When the political environment posed a threat to their positions in government they quickly shelved the reform process for the sake of political survival. This shows lack of commitment and poor appreciation of the importance of the reforms in the potable water governance systems.

Encourage increased advocacy and training: It was established that, people are not even aware of the IWRM governance framework. There is thus an urgent need for communicating the reforms to the people. They also need to be trained in the new systems so that they understand and actively participate in the implementation of the new policy framework.

Invest in changing the mindset of stakeholders: It has been established that people still have a technocratic approach to potable water resources management. There is a need to change this mindset among stakeholders and role players.

Engage women because they are the primary users and managers of water in the homestead: This study showed that it is women who are responsible for ensuring that potable water is available for domestic use. Improving potable water supply systems translates into an improved working environment for women. They must therefore participate in matters that affect them more than they affect others in our society.

Train people to use modern technology: Technology is changing rapidly. The advent of the Internet and websites introduced a potentially easy method of communication. This opportunity is, however, hampered by limited skills in using this new technology. It is thus recommended that training of role players and stakeholders in the utilisation of the current communication and information technology should be undertaken.

Undertake regular reviews and check-ups: To measure municipal progress and success in the implementation of potable water supply reforms there is a need for follow-ups and performance evaluation. Otherwise the introduced IWRM system will gravitate back into the old sectorial and technocratic water management system. Exchange monitoring processes

may be considered. The two countries (Zimbabwe and South Africa) or even municipalities could exchange personnel for monitoring and evaluation purposes. They may simply arrange workshops and symposiums to exchange notes and learn from each other's experiences and challenges. Regional awards may also be considered since the IWRM framework has been embraced at regional and continental level.

Improve professional qualifications of water managers: Water managers have to be professionally qualified to ensure professionalism in the management of potable water supply. Although all water executives interviewed were technically qualified they required some professional qualifications in governance and management. There is also a need to ensure that all management posts are filled as soon as they become vacant.

A collective effort must be made: It has been established that there is a divergence of ideas and impressions between government and other stakeholders. As already seen, the authorities are not walking the talk. Projects and programmes are imposed upon the people rather than undertaken with the people or by the people themselves. There is thus a need for mobilising collective effort to ensure full ownership of the whole water reforms process by all stakeholders and role players.

Walking the talk: This study showed that there is no alignment between policy and practice. Legislation and what policy makers say is one extreme end and practice is at the other. There is no link between the theoretical framework and what is actually happening. There must be an alignment of the two pillars of public policy making and practice in both these countries.

Further studies are required: The study was largely a case and community development study. For such studies to be effective in ensuring improvement in the development endeavour, they have to take a participatory approach so that participants' skills are sharpened during the research process. Participatory approaches, especially in-depth interviews and group discussions, also help both the researcher and the research subjects to create rapport and comprehend fully of what is being communicated. This research tended to be largely a survey in character with some limited participatory characteristics. It is therefore recommended that:

- a more detailed and deeper participatory study be carried out with other major cities and other rural communities in the two countries;
- related comparative studies in other countries in the Southern Africa Development Community (SADC) region be conducted; and
- regional comparative studies (e.g. SADC versus the Economic Community Organisation of West African States [ECOWAS]) be undertaken.

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