CHAPTER SIX

PRESENTATION AND DISCUSSION OF EMPIRICAL FINDINGS

6.0 INTRODUCTION

In this chapter, findings are discussed. Data analysis is done through the use of narrative text, tables and figures. The data collected are discussed and their implications for potable water supply governance in the two countries in general and the study cases in particular, are analysed. The chapter begins by looking at the formulation and adoption of the new policies and respondents' perceptions and understanding of the concepts and practices that characterise potable water supply governance in the two countries. To do this, use is made of the multidimensional systems conceptual framework as illustrated in chapter 1. Comparisons of these perceptions with the documented data and management views in and across cases, as well as *vis a vis* international standards are made as discussed in the previous chapters.

The structure of the discussion in this chapter follows both the multidimensional systems theory framework and the classical management conceptual framework outlined in chapter 1. The chapter begins by looking at planning (theoretical, legislative, policy and strategy formulation frameworks). The next main subsection is on organising (potable water supply governance infrastructure and institutional frameworks); followed by a discussion of leading (potable water supply governance policy implementation); and then on controlling (monitoring, evaluation and outcomes); and finally, challenges and prospects for IWRM in the study areas are explored. The classical management process will be used as the major tool for phenomena analysis. Comparisons will be made in a multidimensional systems paradigm in which events and relationships affect each other in a complex environmental setup. Note that this is a continuous process and there is no clear demarcation between each of the successive phases of the process. As observed in chapter 1, managers do not plan on Monday, organise on Tuesday, lead on Wednesday, control on Thursday, and take corrective action on Friday. The model is designed to simplify the complex management and governance process.

The chapter closes with a synthesis of the discussion in the form of an evaluation of the Dublin Principles *vis a vis* the situation in the selected cases.

6.1 PLANNING

The running theme in the previous chapters is that the *raison d'etre* of local governance is empowerment of grassroots in decision-making processes for enlightened and improved service provision. To what extent then 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? To answer this question the origins and adoption of these potable water supply policies have to be interrogated. Generally, planning is about the roadmap to the desired destination, namely the vision, mission, objectives and strategies to reach the desired destination. In this section these issues are addressed by assessing stakeholders' influence on the adoption and formulation of new policies; the level of involvement when the process gets into the moving gear; and stakeholders' perceptions and understanding of the concepts and activities involved.

6.1.1 Formulation and adoption of legislation and policies derived from the IWRM framework

Data from the triangulated sources will be used to assess the roles and contribution of the people in this initial planning stage of the change processes in the governance of potable water supply in Zimbabwe and South Africa.

6.1.1.1 Documentary evidence and websites

The general systems theory discussed in chapter 2 and the multidimensional systems theoretical framework adopted in this study, show that the world has shrunk into a small village where information and events move very fast. What happens at the far end of the globe has a ripple effect at the other side of the world. In a world governed by this multidimensional systems framework, the question is not whether to avoid being affected, but how to react and also influence the whole rapidly changing process. Avoidance amounts to committing suicide. For

survival and progressive development, participants have to be innovative and proactive so that they make their own contribution and shape the procession. Otherwise they perish.

Literature review and documentary analysis have shown that potable water supply for domestic use is a thorny issue the world over. It has been established that unlike other important resources, potable water is not only scarce but extremely sensitive and may quickly turn into a health hazard. As a result, people throughout the world have been trying to come up with better ways of managing and developing sources of the precious commodity since time immemorial. In the modern world it is France and other Western economies which have been found to have 'invented' the new holistic approach (now referred to as IWRM) to the management and development of water resources (see chapter 4). The winds of change have swept through the world with some countries climbing onto the bandwagon blindly.

Importantly, countries in southern Africa have historical forces that demanded widespread reforms in the governance of water resources (see historical discussion on the political circumstances in Zimbabwe and South Africa in chapters 3 and 4). Thus, while the winds of change and reorientation of the water sector were blowing from the West and the international community was demanding restructuring of the water sector in southern Africa, there were also strong forces from within demanding that the water needs of the people in the region be addressed. Thus historical analysis, literature review and documentary evidence locate the origins of water reform in southern Africa, Zimbabwe and South Africa included, on both the international and internal stage working together in a systems framework where inputs had to be processed into outputs and outcomes. In short, Zimbabweans and South Africans had a significant role in the initial stages of embracing the IWRM paradigm albeit they knew little about its existence elsewhere. They were visionary enough to envisage its advantages over the fragmented efforts forced upon them by years of colonialism.

Documentary analysis shows that having laid the foundation for the process of change in the water sector as shown above, the people soon lost the driving seat to international forces in the planning of the change process. It became an imposition from above, especially the second stage of the planning process as illustrated in Figure 6.1. What the local ruling elite did was to embrace

the change processes from the external arena, forgetting and suppressing internal forces that had initiated this reform and previously been in the driving seat.

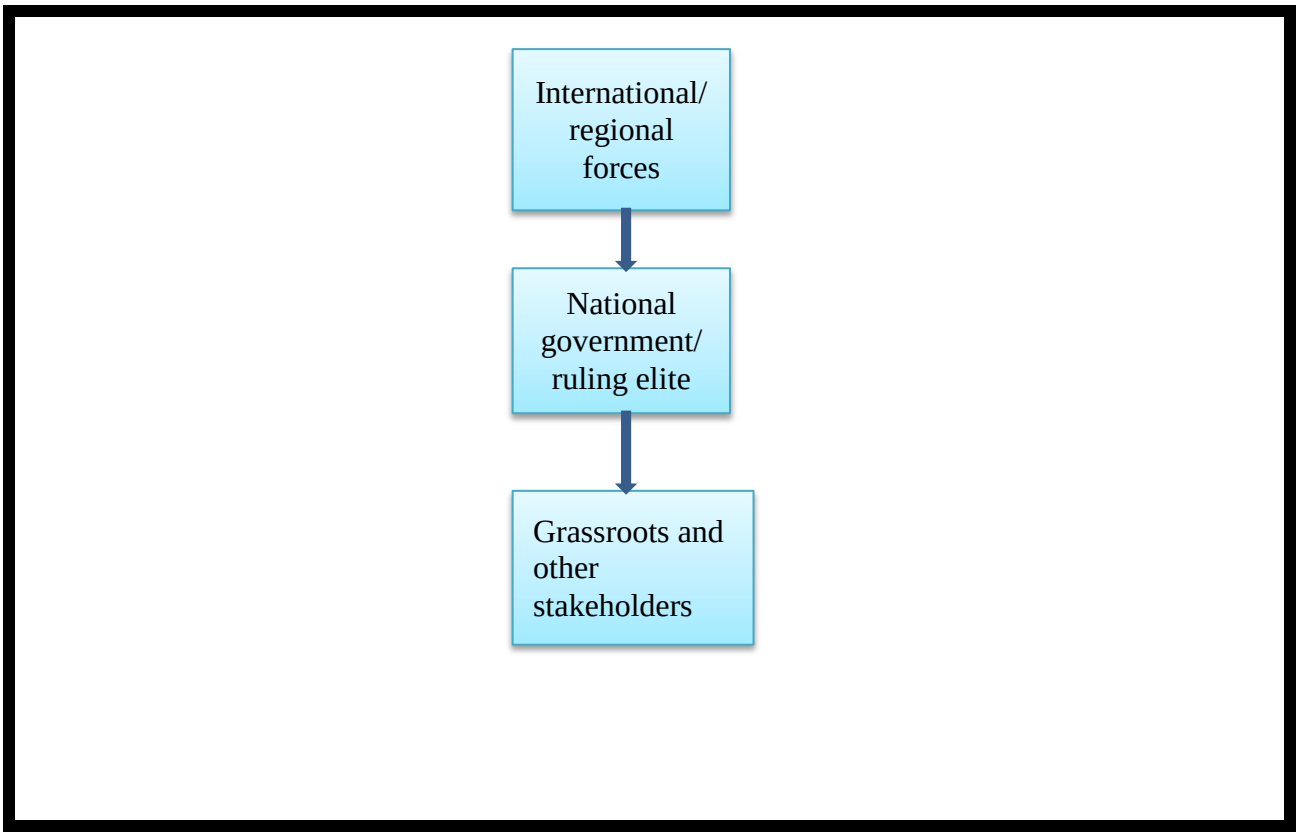

Figure 6.1: Imposition of the change process on the people

(Source: Documentary analysis)

Those municipalities with advanced websites like CTMM have all the attributes of an inclusive participatory potable water management system. Right from the CTMM's overall municipal vision and mission statement to its sectoral vision and mission statements, the reader/visitor senses a strong stakeholder orientation especially at the grassroots level (see the CTMM and Musina visions and mission statements in chapter 5). Indeed, customer delivery charters for all the cases studied have all the ingredients of a participatory, stakeholder-focused service charter. But evidence from the residents' questionnaires shows that all this is not practised; it is just window dressing. Furthermore, considering that websites are highly advanced technological communication channels, they are out of reach for most black residents. Hence the highly appealing websites, policies and postures are nothing more than cosmetic decorations; nothing

more than theory. It is also important to note that all the websites and service charters are in English and Afrikaans, not in the languages of the majority of the residents. This is as good as no communication.

6.1.1.2 Interviews and websites

All the interviews showed that people in both these countries are not fully involved in the planning and decision making process in the adoption of the IWRM paradigm. The city engineer in Masvingo, Mr. T. Gozo, confessed 'Currently there is no direct involvement of locals'. This view was supported by the interviewees in all four study cases. All doubted the feasibility of 'all stakeholders involvement' in the water governance process. Some even said the grassroots level were only worried about getting potable water not how it gets to them.

The only way to involve people, according to the interviewees, was through their councillors and parliamentarians. Thus, from a general point of view, residents were represented indirectly by their councillors. What about the initial stages, the introductory stages of the macro-policies, did the councillors or parliamentarians consult with the people? All interviewees said this was policy from above. The city engineer of Masvingo gave the example of the ZINWA takeover of the governance of potable water supplies in most urban municipalities in Zimbabwe in 2005. He said. 'The ZINWA takeovers were decided at cabinet level. Parliament was against the takeovers. The takeovers were not planned; they were all hostile takeovers'.

When the researcher suggested to the water executives that they could ascertain residents' ideas through meetings, suggestion boxes, surveys, awareness campaigns and training workshops, the reply was that suggestion boxes and meetings were already part of the communication channels with residents. All the municipalities have wards and ward committees led by an appointed or elected councillor. It is the responsibility of the councillors to tape residents' views and bring them for consideration at council or municipal meetings and discussion sessions. Yet, when the decision to adopt IWRM was taken, local authorities claim that they were not consulted. This implies that all other stakeholders (among them those at grassroots level) were not consulted. When the researcher talked of pilot schemes in the Mazowe catchment area in Zimbabwe, they

were still not convinced. They wanted the theory and the philosophy behind the new thinking to be debated among local authorities even before these pilot schemes.

All interviewees thought surveys were quite acceptable but expensive for the municipalities. Interestingly, they all identified consumers as the most important actors in the governance of water resources, yet they did not involve them fully in decision making. As already seen from the above statement by one of the executives, all of them confessed that the new thinking was just given to them by central government without them giving their own input. They all, however, reiterated that the new thinking was progressive and if well handled, is quite promising.

Ward meetings are often held between councillors or any other such authorities and residents (see Appendix 5), but as is evident from the survey questionnaires, this seems far away from serving the desired purpose. Just before commencement of this study, the Musina Local Municipality's Communications Unit, along with Khuvutlu Water, Consulting, Roads and Services (KWCRS) held an information sharing session with community stakeholders at Musina's Nancefield municipal offices. This was to introduce the cost recovery project that is presently taking place in Musina. According to one of the municipal officials, Mr. Dzebu[23]:

> Stakeholders included representatives from Ward Committees, Unions, NGO's, churches, business fraternity, disabled, youth movements, councillors, schools, sector departments, farmers, SANCO, senior citizens forum, taxi associations and other progressive institutions. We wanted to create a collective ownership of the project towards effective and improved service delivery and to ensure community participation on the cost recovery project and other various municipality programmes. Apart from that, our other aim is to create the culture of payment of municipal services by the community and to share the project progress report and outline achievements, challenges and recommended actions (Musina website, accessed 25 March, 2011).

One of the community members who attended the information sharing session said, 'We are very pleased that our municipality involves us in what is happening around us. This is very important as we need to work together to make sure that we develop our community with the same understanding of what is transpiring' (informal talk with Mr. K. Gomo, research assistant).

[23] All speeches by Musina municipal officials were taken from their website.

The mayor of Musina municipality, Caroline Mahasela has encouraged the people of Musina to take the process of public participation very seriously. As she put it:

> Local Government affects everyone's lives. Our local council here at Musina provides a wide range of services and all community members have the right to form part of the decision making bodies. The Local Government Municipal Management Act puts at the centre of this process the voice of the people. The Act calls for active participation and input from the public in the budgeting process as well as the alignment of the budget to the IDP… in order to ensure public participation in local governance, government has over time put in place various pieces of legislation and policies. The following are some of the legislative and policy provisions aimed at fostering public participation at local government level: The Constitution (1996), Batho Pele (1997), Municipal Structures Act & White Paper on Local Government (1998), Municipal Systems Act (2000), Municipal Finance Management Act (2003), Municipal Property Rates Act (2004), Guidelines for Operation of Ward Committees (2005), National Policy Framework for Public Participation (2007), to name but a few (Musina website, accessed 25 March, 2011).

She says public participation in the decision-making process is essential for moving the community forward.

> However, it is most effective to involve the public in the very early stages of planning. Getting the public involved early in the process requires the municipality to make sure that everyone is on the same page with the necessary background information in order for everyone to be able to engage fully in reaching a decision point (Musina Website, accessed 25 March, 2011).

These are refreshing and encouraging comments from the highest office in the municipality, but there is still much to be done in harnessing stakeholders' involvement in the policy-making process as is evident in the residents' responses to the questionnaire.

6.1.1.3 Questionnaires

Questions 4 and 10 of the residents' questionnaire have some bearing on potable water supply governance planning (see Appendix 3). They measure the extent to which residents are involved in their municipality's decision-making processes. Question 4 measures the frequency of

meetings and relationship between residents and their municipality. Responses for question 4 were as in Table 6.1

Table 6.1: The relationship between residents and their municipality.

(Source: Primary data)

Response	**Harare**		**Masvingo rural**		**Masvingo urban**		**Musina rural**		**Musina urban**		**Tshwane**		**Total**	
We have regular contact	F	%	F	%	F	%	F	%	F	%	F	%	F	%
	10	2	0	0	10	2	2	0.4	18	3.6	59	11.8	99	19.8
We have irregular contact	15	3	0	0	7	1.4	4	0.8	14	2.8	43	8.6	83	16.6
We have annual contact	12	2.4	1	0.2	4	0.8	6	1.2	8	1.6	2	0.4	33	6.6
We have no contact unless there is an incident	63	12.6	49	9.8	26	5.2	37	7.4	7	1.4	12	2.4	194	38.8
Total	**100**	**20**	**50**	**10**	**47**	**9.4**	**49**	**9.8**	**47**	**9.4**	**116**	**23.2**	**409**	**81.8**

Note that Table 6.1 and Table 6.2 only reflect responses by residents; the findings from municipal employees' were measured separately as shown in Figure 6.2 and Figure 6.3. Also note that the anticipated 20 workers (participants) from the CTMM did not take part in the survey. Access to them was initially denied by their front office officials. Access to them was later given by senior public works management on 28 June 2011 (see permission letter in Appendix 4) when the researcher was already compiling this thesis. The 20 workers were thus replaced by an equivalent number of resident respondents.

Question 10 measured reaction when respondents were asked about their contribution to the decision-making process of their municipal potable water supply governance. Responses are shown in Table 6.2.

Table 6.2: Residents' responses on their contribution to the decision-making process of their municipal potable water supply

(Source: Primary data)

Area	**Response**				**Total**	
	Yes		**No**		**Frequency**	**Percentage**
	Frequency	**%age**	**Frequency**	**%age**		
Harare	71	14.2%	29	5.8%	100	20%
Masvingo Urban	6	1.2%	41	8.2%	47	9.4%
Masvingo Rural	1	0.2%	49	9.8%	50	10%
Musina Urban	42	8.4%	5	1%	47	9.4%
Musina Rural	4	0.8%	45	9%	49	9.8%
Tshwane	77	15.4%	39	7.8%	116	23.2%
Total	**201**	**40.2%**	**208**	**41.6%**	**409**	**81.8%**

The two questions asked workers were as follows:

- Are you involved in the management of water supply in your municipality?
- Do you ever attend water supply management meetings?

Although asked differently, the two questions above measured the same information as question 4 and question 10 in the residents' questionnaire; namely whether or not they were involved in any decision-making with regard to the service delivery of potable water. Figure 6.2 shows the relevant responses.

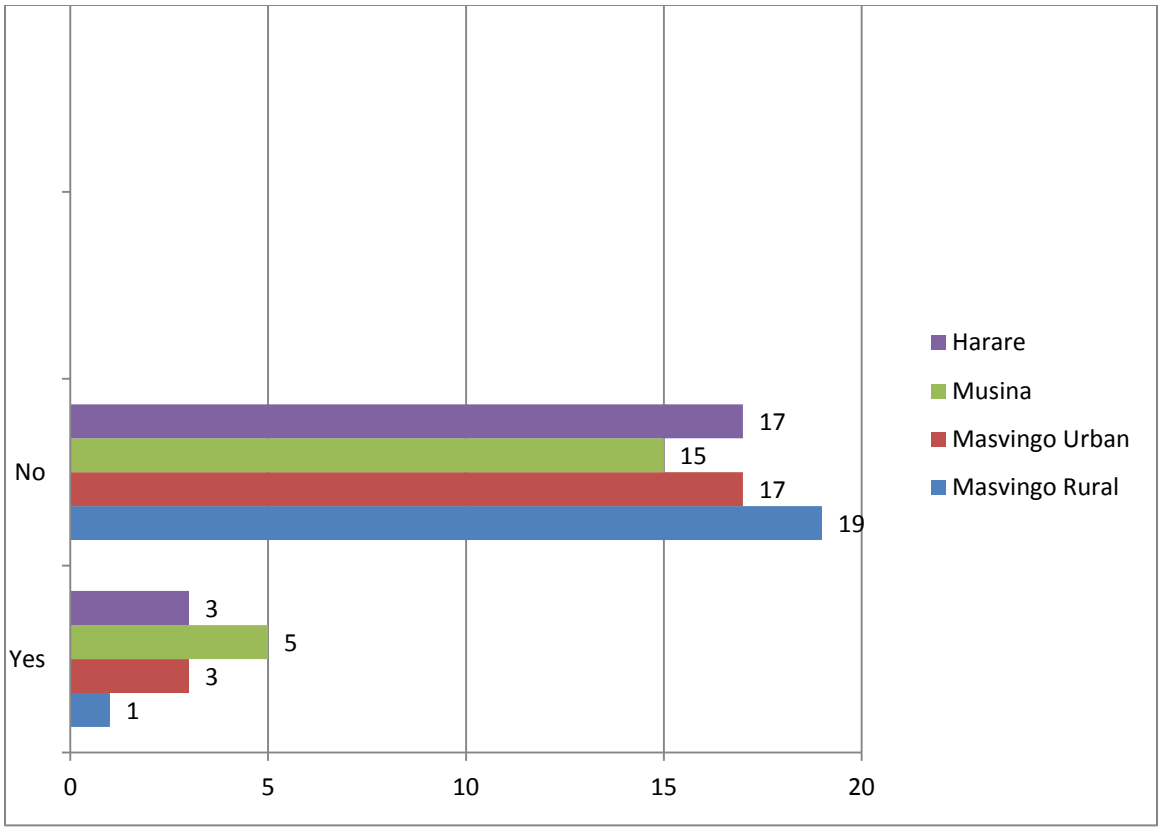

Figure 6.2: Workers involvement in the management of water supply services by case study
(Source: Primary data)

Some sample negative answers to question 10 were as follows:

- No. No one to talk to. Every official says I am not responsible (Musina Rural).
- No. They are inaccessible and unknown to us (Musina Rural).
- No. We are not given the opportunity (Musina Urban).
- No. I have not attended any meetings (Musina Urban).
- No. We are never given the opportunity (Masvingo Rural).
- No. I do not know how to and there is no information available (Masvingo Rural).
- No. Because I don't have the mandate (Masvingo Urban).
- No. I have not attended any meetings to discuss fresh water issues (Tshwane).
- No. We don't even know where and when they hold their meetings (Harare).

Some of those in the affirmative were as good as negative:

- Yes, I do. The only problem is that we do not hold meetings where we can share about how communities can take part in the programme in order to uplift our communities (Musina Urban).
- Yes. We strike but the strike does not have any effect (Musina Rural).
- Yes. Through sector meetings in my area even though we have a representative to lodge our grievances (Tshwane).
- Yes. At times when there is a crisis our community comes together and make suggestions on the best way forward (Masvingo Rural).
- Yes. We have a residents association which carries our views to the council (Masvingo Urban).
- Yes. Through paying of water services fees (Harare).

Figure 6.3 below shows municipal workers' attendance of potable water supply management meetings.

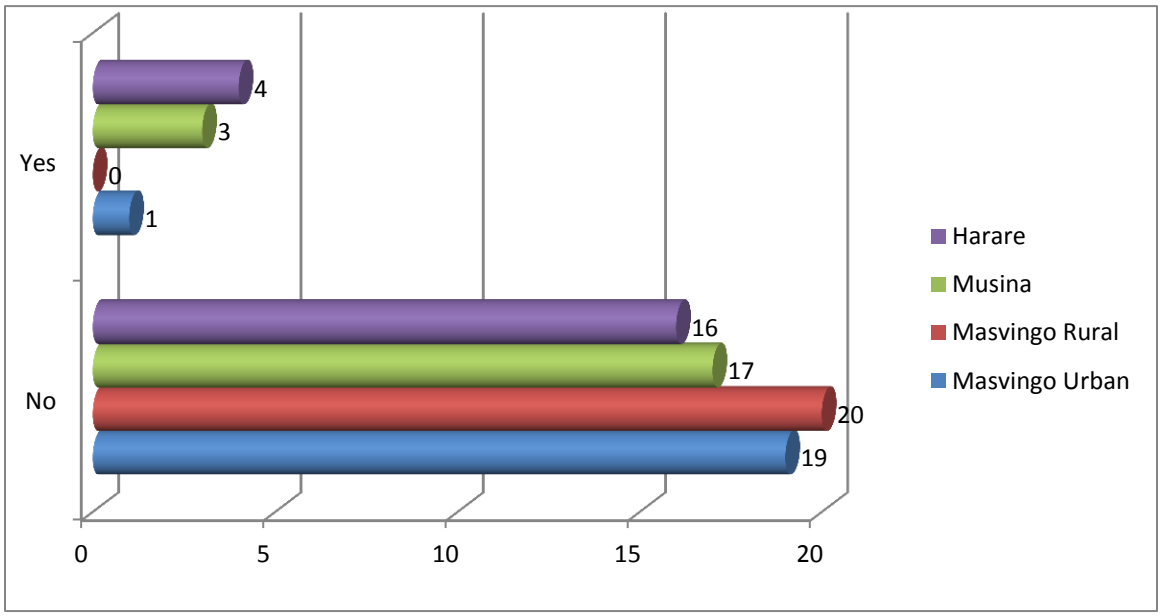

Figure 6.3: Workers' attendance of potable water supply management meetings.
(Source: Primary data)

Thus, answers to questions on involvement in the decision making processes were largely in the negative. Even those in the affirmative were then explained, so that in the final analysis they ended up in the negative. Almost 99% of those from rural areas felt they contributed nothing to decision making processes regarding service delivery of potable water. A significant number of those from South African urban communities felt they made some contribution through their ward meetings, but even here the explanations that followed showed that they did not value their input. As for their Zimbabwean counterparts, the situation was completely different; they indicated that they were never consulted.

The final conclusion is thus that stakeholders, especially those at grassroots level, have been largely sidelined in the formulation and adoption of potable water supply policies in both Zimbabwe and South Africa. They laid the foundation of a pro-grassroots change process, but subsequently lost their grip in the face of international forces once the process began to move forward. The challenge was, and still is, alignment with and adaptation to international forces so that local and national demands for contextualisation and meaningful developments that benefit the people can be realised.

6.1.2 Awareness and understanding of the new macro-potable water supply governance framework

Awareness and understanding of concepts is seen as one of the pillars of involvement and participation in the management and development of potable water supply. The main tools used to measure this were the interview and the questionnaire.

6.1.2.1 Interviews

As explained in chapter 5, interviews were in three main categories. These included the structured formal interviews with municipal water executives; the informal talks with research assistants and selected municipal employees; and indirect talks (through direct research assistants) with translators (referred to as ‘indirect research assistants’ in this study).

The structured interviews revealed that municipal water executives were aware of the international trends and their national/macro-policies and legislative frameworks in the governance of potable water supply. They talked about the IWRM paradigm and its origins and other regional water policy documents like the SADC regional water policy with impressive familiarity. They were also able to name and discuss the legislation governing their national water frameworks including the water, environmental, municipal, and local governance legislation, among others (see chapter 4 for a discussion of these national policy and legislative frameworks). They also outlined their relationship with the national water authorities (ZINWA in Zimbabwe and DWA in South Africa). For example, the Masvingo city engineer, Mr. T. Gozo, observed:

> Although all waters in Zimbabwe belong to the president, it is ZINWA which is responsible for them. All local authorities pay water levies to ZINWA for extracting water from dams and other water bodies. We pay a monthly levy for extracting water from Lake Mutirikwi. We also work closely with our catchment and sub-catchment authorities and colleagues…we belong to the Runde Catchment and Mutirikwi Sub-catchment area---.

On whether the catchment management systems were effective, none of the executives interviewed would commit themselves. For example, the Masvingo city engineer said 'This is a complex issue. Effectiveness depends on several issues, among them resources availability, relationships, calibre of the involved actors, politics' …

Reading between the lines, it seems the water executives felt that the catchment management approach was not ideal for managing potable water supply. None of them said this openly, but the researcher sensed that they felt they would perform better without the catchment management system. Their major worry was the demarcation of catchments and sub-catchments (see the discussion on catchment and sub-catchment boundaries in chapter 4). This theme will be explored further under organisational and institutional arrangements in 6.2 below.

None of the assistant researchers were aware of the IWRM paradigm and related concepts. Some of them failed to mention pieces of water legislation beyond the water acts. What this means is that other than the potable water managers and chief executives in local authorities, people are not involved in the management of potable water supply, even employees in these local

authorities as already revealed in 6.1.1 above. Thus potable water governance is still done in the traditional management approach where a selected few make decisions for the rest, despite a legislative and policy framework that talks otherwise in both Zimbabwe and South Africa. An opportunity (prospect) presents itself in the form of supportive legislative and policy framework, but the challenge is dismantling the traditional and long established ways of doing things.

6.1.2.2 Questionnaires

Several questions dealt with the awareness and understanding of the involved concepts issue, among them questions 3, 5, 7, 9 and 12 (see Appendix 3). Question 3 measured residents' knowledge of the authority responsible for their water supply. Responses were as in Table 6.4. The majority of residents knew the authority responsible for water provision. Almost all South African respondents identified local authorities/municipalities as the suppliers of their potable water, whereas in Zimbabwe respondents were unsure. For example, in Harare, 46% of the 100 residents who completed the questionnaire thought their service provider was ZINWA; the national water authority which took over the management of potable water supply in most major cities in 2005 and only returned it to the municipalities in 2010. Yet ZINWA, like DWAF in South Africa, is the umbrella authority, the overseer of water resource management in the country.

Table 6.3: Residents' knowledge of the authority that supplies their potable water
(Source: Primary data)

Area	**Authority**				**Total**
	Municipality/ council	Council and ZINWA/DWAF	NGOs, chiefs and private	ZINWA/ DWAF	
Harare	40	14	-	46	**100**
Msvo U	35	7	-	5	**47**
Msvo R	15	10	23	2	**50**
Mus U	47	-	-	-	**47**
Mus R	45	-	4	-	**49**
Tshwane	116	-	-	-	**116**
Total	**268**	**31**	**27**	**53**	**409**

In Masvingo Urban, potable water supply services were not taken from the municipality. This difference is also explicit in residents' responses to question 3. Most responses from residents of Masvingo Urban correctly identified the municipality as their sole supplier of potable water. These slight differences between cases have a bearing on their involvement in the management of potable water supply. Although it has been already shown in all the case studies that residents' involvement is minimal, the potential for involvement is obviously higher among those who identified the authority correctly than among those who were unaware of who is responsible for supplying them with potable water.

It is also important to note that NGOs play a significant role in helping rural communities obtain access to fresh water in Zimbabwean rural communities. NGOs have been sinking community boreholes and helping homesteads to construct protected wells (see Figure 6.4).

Figure 6.4: An NGO sponsored protected household well in Masvingo Rural
(Photograph: A. Ndora)

In fact, although ZINWA is the overseer of water supply in Zimbabwe, it has no control over the quality and sources of water used in most rural communities where water supply is as shown in Figure 3.4; Figure 3.19; Figure 5.8; and Figure 6.4. Hence the role of NGOs that have stepped in to ensure that rural people have access to fresh water. This explains why a significant number (46%) of rural respondents in Zimbabwean study cases identified NGOs, chiefs and private individuals as their suppliers of potable water.

Unlike in South Africa, potable water supply in rural Zimbabwe is still largely private and communal. As a result, ZINWA and the rural district councils are very remote in the minds of residents when it comes to the provision of water services. They are far more aware of the NGOs which help them sink communal boreholes and protected homestead wells than ZINWA or the rural district councils.

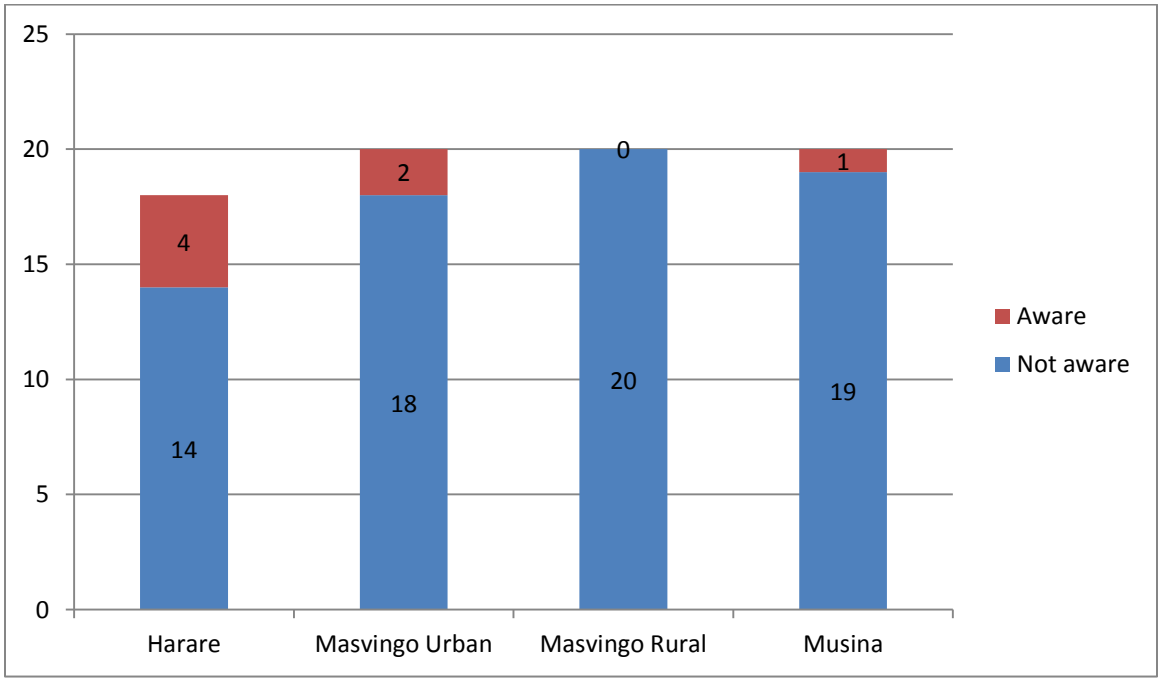

Figure 6.5: Municipal employees' awareness of water and related legislation
(Source: Primary data)

Almost all employees in municipalities and district councils said they were unaware of any legislation on potable water supply governance in their communities or country. See Figure 6.5.

Figure 6.6 portrays municipal employees' awareness of IWRM. The picture portrayed is similar to that of workers' legislation awareness discussed above.

Indeed, only officials and professionals in the municipal and district water supply departments were aware of the IWRM paradigm. If municipalities have not yet made their employees aware of the legislation and policies governing potable water supply in the country, then it follows that they have not yet made their residents aware of such legislation either, because communication with residents is usually done via municipal employees.

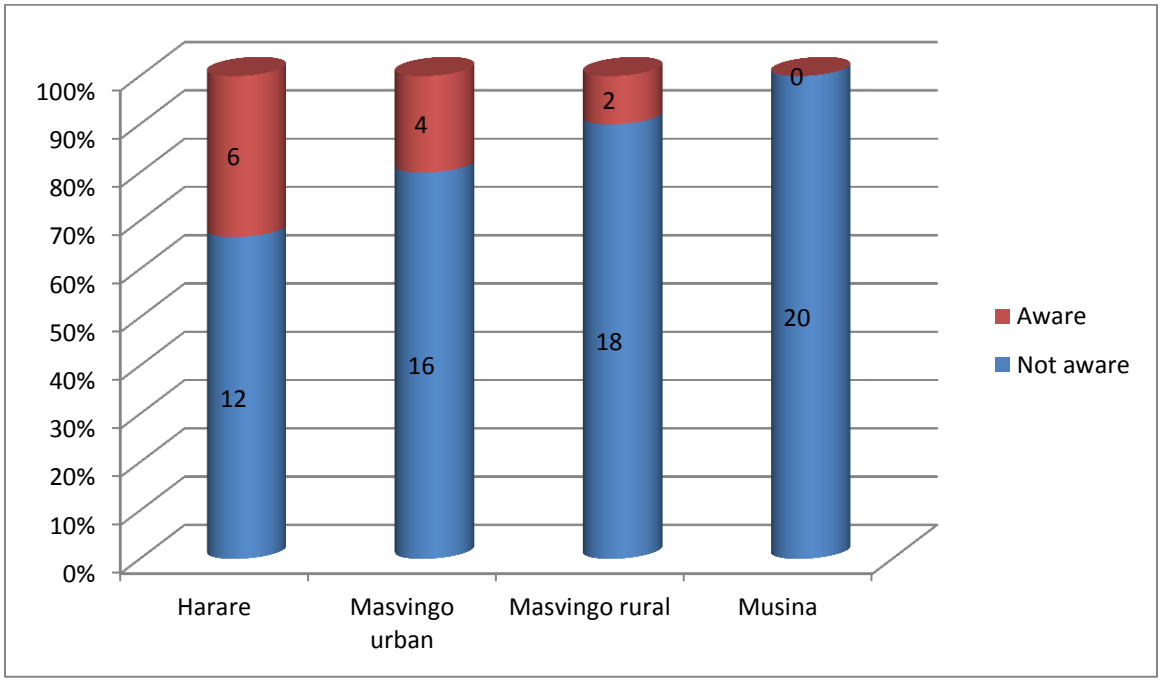

Figure 6.6: Municipal employees' awareness of IWRM.

(Source: Primary data)

Question 9 in the residents' questionnaire addressed the conceptual and core argument of IWRM: Who is the most important actor in potable water supply governance? Answers were as shown in table 6.4 which shows a very traditional view of the provision of services to the public, especially in traditional Western capitalist society. Perhaps this is due to the influence of the colonial and apartheid experiences in the region in which the public servant was regarded as more important than the black majority he/she served.

Table 6.4 shows that the most residents thought the provider of the service, a leader or their representative was more important than the consumers themselves. This dovetails well with the Western traditional view or colonial mentality where people at grassroots level and other consumers are conditioned to see leaders and service providers as more important than other stakeholders. This is in direct contradiction to the IWRM philosophy that sees stakeholders, especially grassroots consumers as more important than any other group. The view is also at variance with the deep rooted African view summarised in the Shona phrase: *Ishe vanhu* (there is no king without people). Even the traditional *ubuntu/unhu* philosophy in terms of which one should revere the person beside you more than the oneself, the leader exists for the people.

Table 6.4: Residents' perception of the most important actor in potable water supply governance in their communities

(Source: Primary data)

Area		**Identified actor**				**Total**
	Municipality/ Rural Council	Government/ ZINWA/ DWAF	Chiefs/ Councillors/ Committees	NGOs	Residents/ Stakeholders/ Beneficiaries	
Harare	40	24	12	-	24	**100**
Msvo U	21	4	7	-	15	**47**
Msvo R	2	3	20	23	2	**50**
Mus U	37	-	10	-	-	**47**
Mus R	12	-	35	-	2	**49**
Tshwane	69	-	41	-	6	**116**
Total	**181**	**31**	**125**	**23**	**49**	**409**

Question 10 in the residents' questionnaire touched on the catchment management issue. All South Africans could not identify both the catchment and sub-catchment in which they live. In Zimbabwe only a very small number was able to identify either the catchment or sub-catchment. Residents' responses were as in Figure 6.7.

Thus, all the municipalities studied were found lacking in terms of advocacy or enlightening residents and other stakeholders about the new IWRM framework adopted by the municipalities. Despite the infrastructural and technological sophistication and advancement (as in the case of Tshwane), this study established that people were still not aware of the new developments. Again this finding adds to the already established conclusion in 6.1.1 above: people in general are not involved in the planning of potable water supply governance in their localities. The challenge is thus co-opting these people into the whole planning process for the betterment of governance, human life and long-term development.

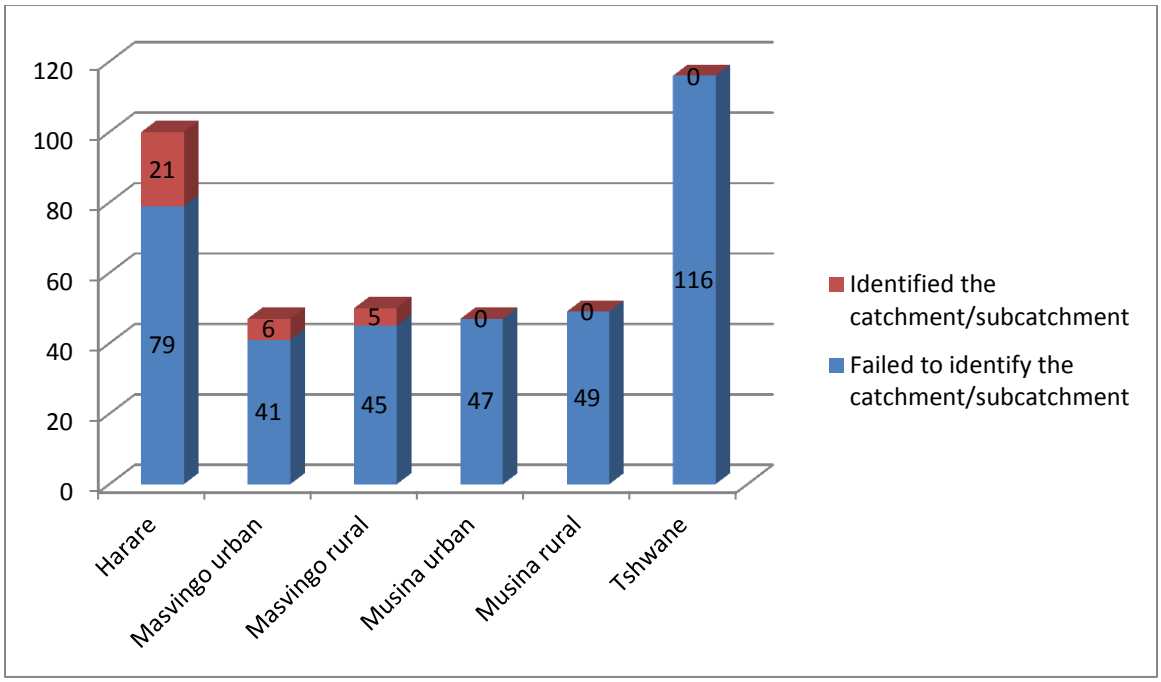

Figure 6.7: Residents' identification of residential catchment/subcatchment area.
(Source: Primary data)

In conclusion to this discussion of the planning section, it is important to note that planning may be top-down (the traditional view); bottom-up (the contemporary view); a mixed-hybrid approach; or any other combination of these as dictated by contextual factors of the setting. From the above discussion the most important factor in ensuring that it is owned by the people concerned, is both exposure and understanding. Otherwise the system will inculcate a 'them/us'

philosophy in which ‘they’ have to plan things for ‘us’ whilst ‘we’ do not even know what is taking place. The much talked about IWRM in southern Africa has a very strong base in the form of internal forces (or push factors) and international pull factors as discussed in 6.1.1, but also faces an uphill task in terms of aligning local and international forces and challenges. The much needed grassroots participation must be co-opted for human capacitation and socio-economic development, as guided by the multi-faceted systems framework adopted for this study (see chapter 1). If planning is the foundation of human effort, then inadequate planning presages a maimed process and ultimately a maimed product (systems thinking: input/processing/output). The studied cases have shown that the planning process does not meet the philosophical underpinnings of IWRM as discussed in chapters 3 and 4, and therefore it is a maimed process which may well not lead the communities concerned to the desired destination.

6.2 ORGANISING

Organising concerns itself with coming up with the desired infrastructure to ensure attainment of set goals. Some of the things to be scrutinised in this stage of the governance process are technology; offices and their occupants; power dynamics; authority; responsibility and accountability; culture and accepted norms and beliefs; rituals; standard behaviour; and codes of conduct, among others. This section will look at how these ingredients of the organising process have been dealt with *vis a vis* IWRM in the study cases so far. Are the systems properly structured to meet the goals of governance in an IWRM setup? What are the institutional and technological arrangements for this purpose? How viable are the institutional arrangements? The section begins by looking at the institutional and technological arrangements before moving on to relevance and accessibility issues.

6.2.1 Institutional and technological frameworks

The institutional framework includes the policy and legislative frameworks, government ministries, local governance structures, surface and ground water (see chapters 2, 3, 4 and 5) and municipal by-laws. These structures, although they have a decentralisation and grassroots flavour, are largely hierarchical with central government (the minister) at the top, followed by a

central authority (ZINWA/DWAF), provincial governance, municipalities and councils in the traditional management style as portrayed in Figure 2.3. Technology focuses on infrastructure (dams and other water sources, water works, water pipes, tanks, etc.), water treatment, information dissemination, level of expertise, websites, billing and payment systems, among others. Data from the triangulated sources will be used to assess some of these frameworks in the studied cases.

6.2.1.1 Documentary evidence

Documentary evidence analysis in previous chapters has already shown that Zimbabwe and South Africa have embraced potable water supply governance institutional reforms in line with the dictates of the IWRM paradigm (see chapters 4 and 5). Central governments in the two countries have introduced new policy and legislative frameworks, some of which include:

- Water Act (Act No. 31 of 1998, Chapter 20: 24 [Zimbabwe]).
- National Water Authority Act (Act No. 11 of 1998, Chapter 20: 25 [Zimbabwe]).
- Water (Catchment Councils) Regulations, Chapter 20: 24, Statutory Instrument 33 of 2000 (Zimbabwe).
- Water (River Systems Declaration) Notice, Chapter 20: 24, Statutory Instrument 34 of 2000 (Zimbabwe).
- Water (Sub-catchment Councils) Regulations, Chapter 20: 24, Statutory Instrument 47 of 2000 (Zimbabwe).
- Water (Waste and Effluent Disposal) Regulations, Chapter 20: 24, Statutory Instrument 274 of 2000 (Zimbabwe).
- Water (Permits) Regulations, Chapter 20: 24, Statutory Instrument 206 of 2001 (Zimbabwe).
- Guidelines for boreholes, groundwater monitoring and groundwater use: September 1999 (Zimbabwe).
- Towards integrated water resources management: Water resources management strategy for Zimbabwe, 2001 (Zimbabwe).
- Constitution of the Republic of South Africa, Act No 108 of 1996 (South Africa).

- White Paper on a National Water Policy for South Africa (South Africa).
- National Water Policy of 1997 (South Africa).
- Water Services Act, Act No 108 of 1997 (South Africa).
- National Water Act, Act No 36 of 1998 (South Africa).
- Municipal Structures Act, Act No 11 of 1998 (South Africa).
- Water and sanitation business: The roles and responsibilities of local government and related institutions, 2001 (South Africa).
- WMA05 Inkomati: Internal strategic perspective, 2004 (South Africa).
- National Water Resources Strategy; 2004 (South Africa).

Documentary evidence has also established the growing worldwide problem of water scarcity and highlighted Zimbabwe and South Africa as among the countries highly affected by the problem of increasing water shortages (see chapter 3). It is also important to note that whereas South Africa seems to be in the water stress category, Zimbabwe is only just in this category (for a full discussion of these concepts and the ambient situation in the two countries (see chapter 3). Importantly there is currently a threat of potable water shortages in both these countries.

Whereas the main immediate source of water (in the urban Zimbabwean communities studied and both those in South Africa) is tap water, the case studies in rural Zimbabwean communities get their water from a variety of sources (rivers, open wells, community boreholes, protected private wells, etc.). For a vivid exposure of these sources refer to discussions in chapters 3 and 5, and especially Figure 3.4; Figure 3.19; and Figure 5.10. The institutional and infrastructural picture of the rural communities in most southern African communities (Masvingo Rural included) is well portrayed by SADC (2005b: iv) when it talks of a number of institutional, technical, economic, social and environmental factors which, to one degree or another, constrain effective management of the region's water resources. These were captured in chapter 3 as follows:

- weak legal and regulatory framework;
- inadequate institutional capacities of national water authorities, and regional or river basin organizations;

- weak policy framework for sustainable development of national water resources;
- poor information acquisition, management and dissemination systems;
- low levels of awareness, education and training with respect to economic, social, environmental and political issues pertaining to water resources development and management;
- lack of effective public participation by all stakeholders particularly women and the poor; and
- inadequate infrastructure that is unable to meet the growing demand for service delivery.

And yet, as already established in chapter 4, water forms part of a broad 'right to life' that underlies rural livelihoods in Zimbabwe. As observed by Nemarundwe (2003: 108) 'Because water is considered *hupenyu* (life), there has been no case of denying another village access to water during drought, although rules of use are enforced more stringently during drought periods'.

For the portrayal of existing stakeholder institutions in water resources management in Zimbabwe, refer to Figure 4.5. This institutional framework is also relevant for South Africa. It has been already established that both countries have come up with a catchment and subcatchment institutional framework in the management of potable water supply (see chapter 4). Both countries have been partitioned into water management areas, the main challenge being the geographical and institutional boundaries of water management bodies, which by and large follow hydrological boundaries. This has proven a complicated issue especially when it comes to cooperative governance between the national, provincial and local spheres of government

Thus in short, documentary evidence establishes that there is no congruence between the new institutional frameworks and the demands of the environmental situation in the studied cases, especially the structuring of the catchment management systems (see chapter 4).

6.2.1.2 Interviews and websites

The interview with Masvingo's city engineer, Mr. T. Gozo, established that the population of the city has by far outgrown the city's potable water supply infrastructure. This is in agreement with

Dube's (2002: 2) findings that potable water supply infrastructure in Masvingo Urban 'can hardly keep pace with the increasing water consumption and demand'. He also established that the costs of installing new infrastructure are ever increasing and are far ahead of affordability. The city engineer is in agreement: 'Council needs at least US$30 million for a project that will bring enough water to the city', he said. This amount is far ahead of what the city of Masvingo can afford. The engineer also confirmed that:

> Currently the city is failing to meet water demand and has been forced to cut water supplies during the night as a demand management exercise. The council is currently supplying 24 mega litres (24 million litres) per day and the city's current demand is at 48 mega litres. We cut water supplies at night when the demand is low, but the plant is still operational pumping water 24 hours to make sure the reserves are full by the time demand is high during the day

Further discussion with the city engineer showed that the reason why demand cannot be met is not the major source of raw water (Lake Mutirikwi), but inadequate infrastructure to draw water from the lake. He revealed that the current city's potable water supply infrastructure was designed by the colonial municipality to serve a maximum of 15 000 people, but it is currently serving over 100 000 residents. Thus, in addition to being outdated, the infrastructure is overstressed. This translates into frequent daily pipe bursts and water cuts.

In Harare the situation was even worse, because both the sewer and water pipes are prone to burst. Informal discussions with the research assistant (Mr. E. Gaviro) established that burst pipes were the norm. As in Masvingo the infrastructure was found to be serving a far larger population than it was designed to serve. Mr. E. Gaviro summarised the infrastructural problems in Harare as follows:

- Population growth in Lake Chivero's urban watershed has outstripped the city's service capacity.
- Poor maintenance of infrastructure has greatly compromised the urban settlement's ability to manage fresh water.
- The growth of high density satellite settlements with weak revenue bases poses funding problems for service provision and development.

- Changes in flow of the Manyame River have resulted in waste water returns being a major component of the Lake's hydrological inflow.
- Last year (2010) new water pipes were laid down in the central business district, Highfield, Mbare, Warren Park, Glen Norah, Glen View, Mabvuku and Tafara, but there are still burst pipes in those areas.
- The sewer system and water reticulation infrastructure in Harare is decrepit and requires complete rehabilitation, which calls for substantial funding from central government, business and industry (Mr. E. Gaviro, informal discussion).

As in the case of the city of Masvingo, Mr. E. Gaviro believes that Harare has enough sources of raw water to meet its needs. What the city lacks is the capacity to purify water to meet the demand because of rapid population growth. He believes the city does not have the financial resources to expand the water treatment works. The situation is worsened by the fact that the equipment needed has to be imported.

According to Ms. K. Nhongo, a social worker with the Celebration Ministries in Harare (personal face to face interview, 3 October 2011), poor water supplies in the city of Harare have pushed almost every resident in the Harare metropolitan area into sinking boreholes in their yards. She however expressed concern over the issue of pollution from nearby cemeteries and agricultural activity. Although groundwater quality in the Harare catchment area has been found to be largely of good quality (Bee Pee Groundwater Consulting, 2010: 7) due to the largely alluvial sandy soils, she remained sceptical. She argued:

> The 2008 - 2009 cholera outbreak has its origins in groundwater. Harare had run dry for several weeks. People fetched water from family wells, most of which were well protected. Of course, the majority depended on drainage streams and unprotected shallow wells. But the first cholera death cases were witnessed among those who fetched water from protected family wells. There was this scenario where one family would ask people to pay for water fetched from their well and another family allowed people to get water from their well for free as in our culture we do not deny people water. The first cholera death occurred among those who got free water from this other family and people suspected poisoning by the family that asked for payment for water from their well. The case involved the police and thus members of the suspected family were arrested and kept in custody for two days. They were only released after several other deaths and

> hospital tests which confirmed that the deaths were not a result of poisoning but cholera…

She also questioned the expertise of the city of Harare plumbers and technicians who could not locate the ageing burst pipes under ground. She claimed that some underground pipe bursts were allowed to leak for several months without the problem being rectified because the plumbers kept digging at the wrong points, using a random trial and error approach to identify where the pipeline needed repair. Yet the Municipality of Harare has good underground and geological maps. She thus concluded that 'our problem is mainly a water management problem not a water supply problem!'

When compared to the Zimbabwean situation, water pipes and drainage systems in South Africa, especially those in Tshwane, were found to be technologically advanced and well maintained. Of course, there were also complaints of burst pipes there as well, but not at the same rate as in Zimbabwe.

South African websites were found to be highly advanced and educative. Zimbabwean websites are still under construction. However, most municipal inhabitants in both countries lack computer skills to use the Internet so the enlightening information in the websites is as good as nothing because it does not reach audience. Websites are not promoting communication; there is still a long way to go before Africans (especially the elderly) gain access to these modern technologies due to limited skills and lack of financial and other resources. In most cases, only the academics and professionals are using the internet gainfully. Otherwise at the moment they risk being white elephants.

6.2.1.3 Questionnaires

Questions 6 and 10 in the residents' questionnaire touched on institutional issues.

Question 10 has already been discussed above. Most respondents did not know their catchment / subcatchment.

Question 6 addressed the issue of respondents' perception of a successful or ideal fresh water management system. Unedited sample answers were as follows:

- Periodical checks must be done following plans with an integrated water resources management approach. Re-creating your own environment by involving the surrounding community (Masvingo Urban).
- Provides clean water to its clients without any uncontrolled water cuts (Harare).
- Constant supply of clean, fresh, treated water always (Musina Rural).
- It is the one where there is regular maintenance of dam, pipes, purification plant and taps. On the contrary: no purification plant and tapes, hence the outcry of shortage for water (Musina Rural).
- Fresh water management system is the management of water supply from the source/dam/river through the clean pipes that are constantly monitored to the purification system with all chemicals in correct proportions, then to all the citizens with the reliable metres for measuring purposes (Tshwane).
- It is managing water in such a way that our communities are able to use water all the time. We have resources but the problem is we do not know how to manage the supply of water. (Musina Urban).
- Plant and equipment must be accessed at the catchment point. Treatment and holding tanks must also be built and be well protected (Masvingo Urban).
- It should have two way communication with the public and this is not evident in our area. The system should include up to date infrastructure and chemicals to avoid illness (Masvingo Urban).
- Raw water pumped from source, settling tanks, filtration process, chlorination process, to end user with excess chlorine meeting WHO standards (Harare).
- It does not cut water supplies (Harare).
- It should be a continuous supply of fresh water throughout the year but in our rural area it is not the case since we get water from wells especially in dry season (Masvingo Rural).

Thus institutions identified by questionnaire respondents circulated around the immediate water systems like dams, pipes, water treatment processes, rivers and so on.

From the above it is concluded that the institutional framework is understood for the most part at two levels. These are the soft level (such as cultural, legal, policies and legislative framework) and the hard level (infrastructural and technical frameworks). Residents were more conscious of the hard level than the soft level. This is understandable because the hard level is the most visible. It has already been established that their involvement in the soft aspects of potable water governance is minimal or close to nothing.

Whereas both countries have impressive policy and legislative frameworks, Zimbabwean infrastructure (the hard institutional framework) was in a sorry state. Raw water sources (lakes and dams) were adequate but the conversion to processed fresh water for human consumption was in a deplorable state. Frequent water pipe bursts in the city of Masvingo; water and sewage pipe bursts in Harare; frequent water cuts in both Harare and Masvingo Urban; and unprotected water sources in Masvingo Rural, were found to be the norm.

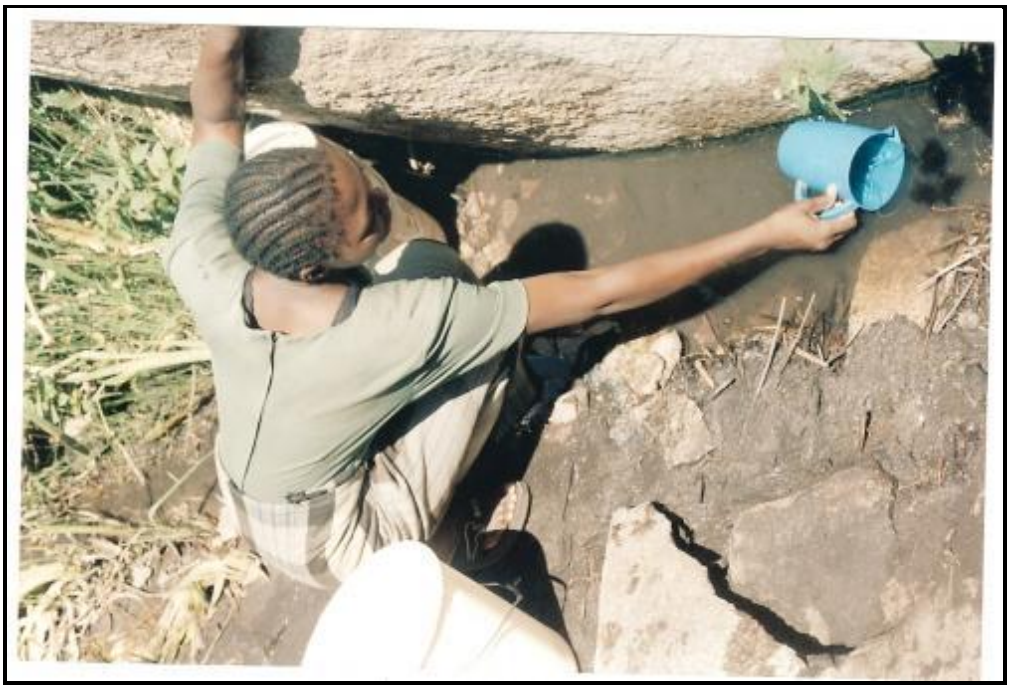

Figure 6.8: Fetching water for domestic use during water supply interruptions, Mabvuku, Harare.

(Source: CHRA website, accessed 18 March, 2011)

The same problems were experienced in South Africa but not at the same alarming rate as in Zimbabwe. Musina respondents, especially rural respondents talked of a high rate of water cuts and supply interruptions but pipe bursts were not as frequent as in Zimbabwe. All respondents in Harare, Masvingo Urban and Musina complained of potable water supply interruptions. In most cases these interruptions are not adequately explained to residents, especially in Zimbabwe where cases were reported of up to five consecutive days without potable water.

Figure 6:9 shows proportional water interruptions by case study.

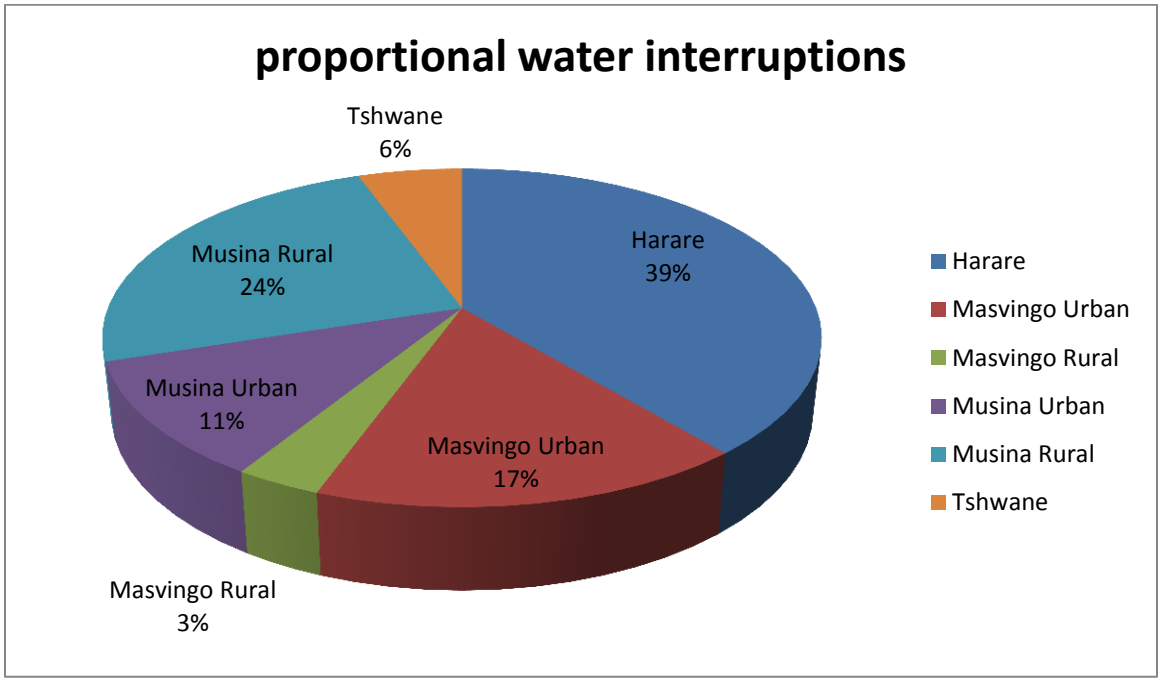

Figure 6.9: Proportional water supply interruptions by case study

(Source: Primary data)

Masvingo Rural does not have a piped water supply system; they depend on wells, boreholes and rivers, and 'no authority tampers with their access to water'. Hence residents in the rural areas nave their own particular problems of interruptions and water supply cuts as evidenced in their responses to question 2 on the quality of public drinking water in the residents' questionnaire:

- Sometimes boreholes are broken hence we get water from unprotected wells.

- The water is not enough as sometimes the well runs dry. Also the well is not protected on top of being too far away from our homestead.
- The public water sources are not covered making them more vulnerable to contamination, especially those used for drinking purposes.
- Tap water is safer than the water obtained from the elephant pump used by the local community. The borehole used by the local community is always out of order. The elephant pump currently being used is not safe at all. It is open to abuse. Children often throw litter into the well.
- One borehole for the whole village is not enough.
- Water from the well has bad smell.

For Musina Rural some of the responses to question 2 of the residents' questionnaire were as follows:

- The water is not safe for human consumption.
- I am not satisfied because the water we drink is salty and sometimes it is cut without any warning.
- We fetch water far away from our houses and that water is not clean, it is salty.
- I am not happy because sometimes we drink salty water which is not good for our health.
- I am not happy because in our area there is lack of water. We use to buy the water and sometimes we are not able to contribute the money.
- I am not happy because our water is not clean.
- I am not happy because water is not available everyday.
- I am not happy because the water we are drinking we fetch it far away from our home and the water is not clean.
- There is a lack of water supply in my home area.
- Water comes after a long time and when there is a municipality votes.

For Musina Urban some of the responses to question 2 in the residents' questionnaire were as follows:

- Purification of water should be frequent. Other parts of our town are supplied water at intervals which is poor supply.
- We do not get water all the time. Sometimes we can spend the whole week without water in our area.
- The water supply is poor. Water itself comes out reddish in colour with suspect materials. Some hours we go without water.
- The local municipality must extend the capacity of water purification plant to suit the demands of the present population.
- The only problem is that we do not get water regularly.

For Harare complaints were largely about irregular water supplies, billing and the quality of the water which they said has a bad odour. And for Masvingo Urban, the water quality was satisfactory, but there were complaints of persistent water cuts and billing which they felt was not done properly. Those in Tshwane simply complained of water interruptions.

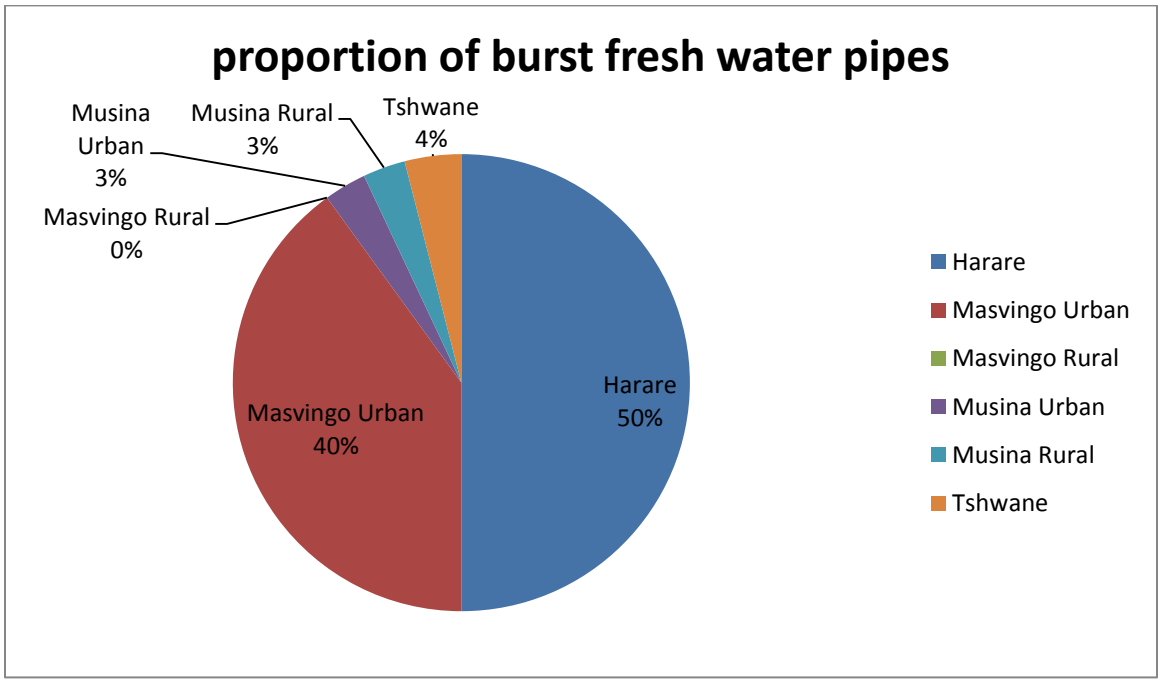

Figure 6.10: Proportion of burst fresh water supply pipes by case study

(Source: Primary data)

Respondents from all study cases where there was tapped water felt that the frequent interruptions were not effectively communicated. On rare occasions the city of Masvingo apparently announces interruptions through loud speakers and in the local newspapers (*Masvingo Mirror* and *Masvingo Star*). But for the most part, residents simply find themselves without fresh water. From experience they have learnt to keep containers of fresh water in case there is a water cut, but this is inadequate because sometimes the interruption last longer than a day. Harare sometimes announces such interruptions in national newspapers (*The Herald, The Sunday Mail, The Daily News,* etc.) and the national radio or TV, but in most cases the interruptions occur without prior warning. This is partly because most water supply interruptions are due to burst pipes. Tshwane and Musina communicate through their websites, the print media and national radio and TV. However, as noted above, in most cases such communication is worth little because most residents do not have access to the internet and the print media.

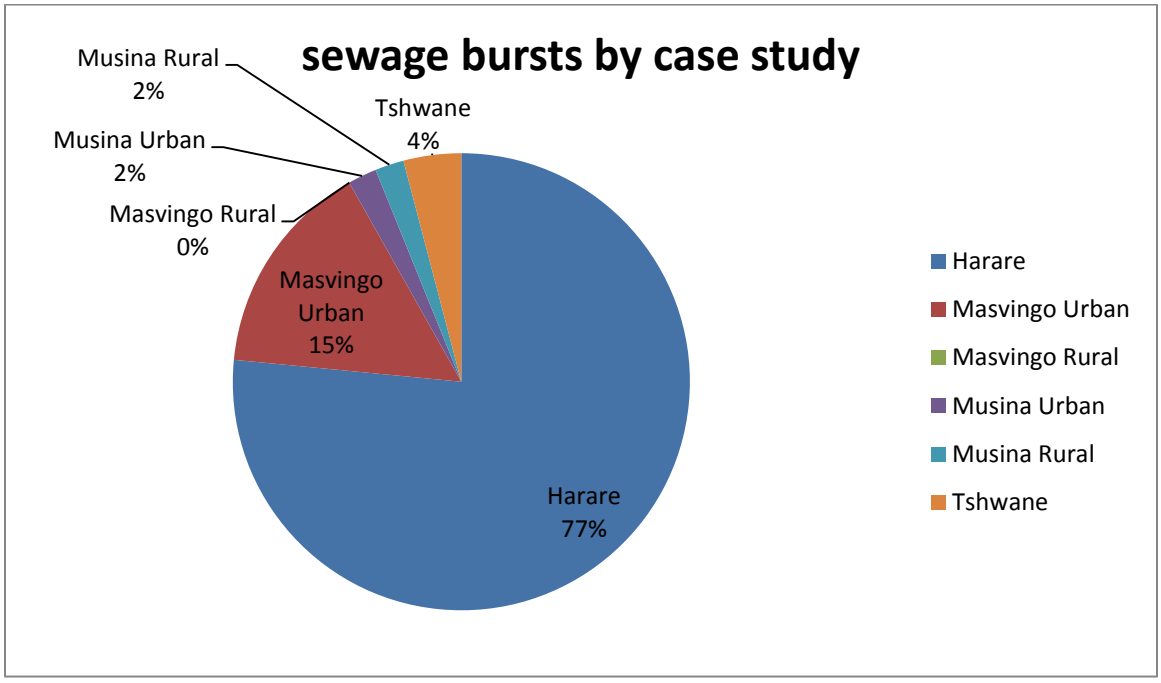

Figure 6.11: Sewage bursts by case study

(Source: Primary data)

As shown above, Harare has an extra burden of sewage bursts.

Municipal workers were also asked about the quality of municipal potable water and whether they were happy about its management by the municipality. Responses to the quality question were as in Figure 6.13. It is interesting that only Masvingo Urban workers overwhelmingly thought that they were getting or supplying quality water to their consumers (see Figure 6.14). in contrast the majority of Harare, Masvingo Rural and Musina workers said they were unhappy with potable water governance in their respective municipalities. Tshwane workers did not participate because access to them was initially denied.

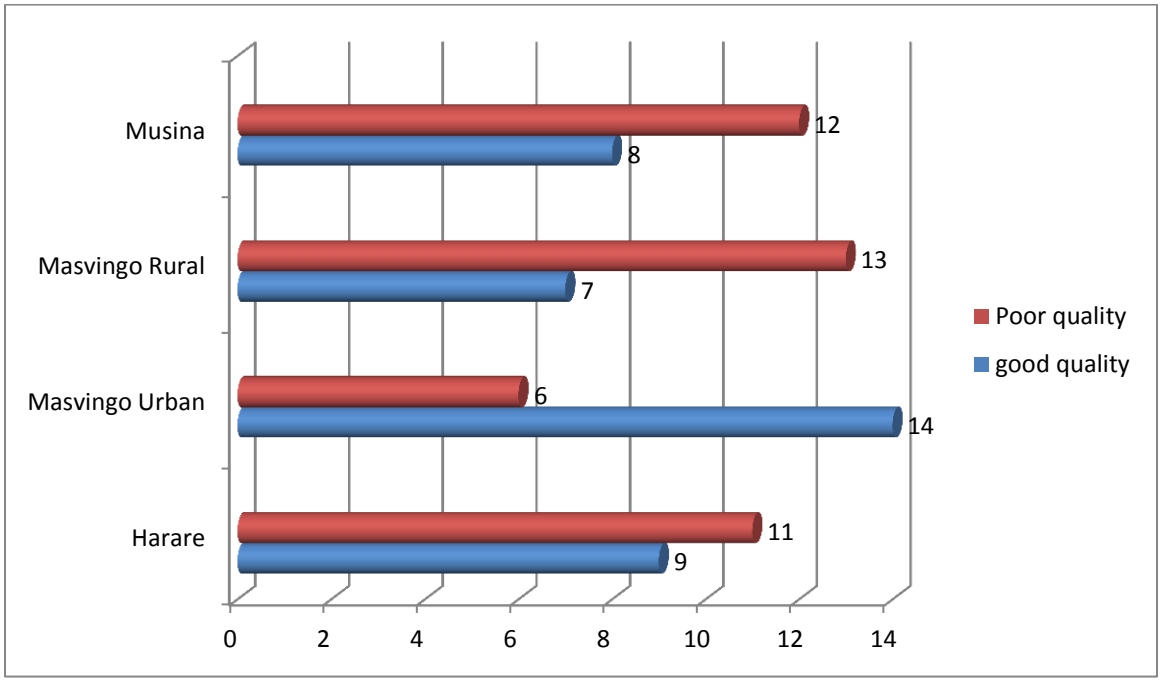

Figure 6.12: Workers' perception of municipal/council potable water status

(Source: Primary data)

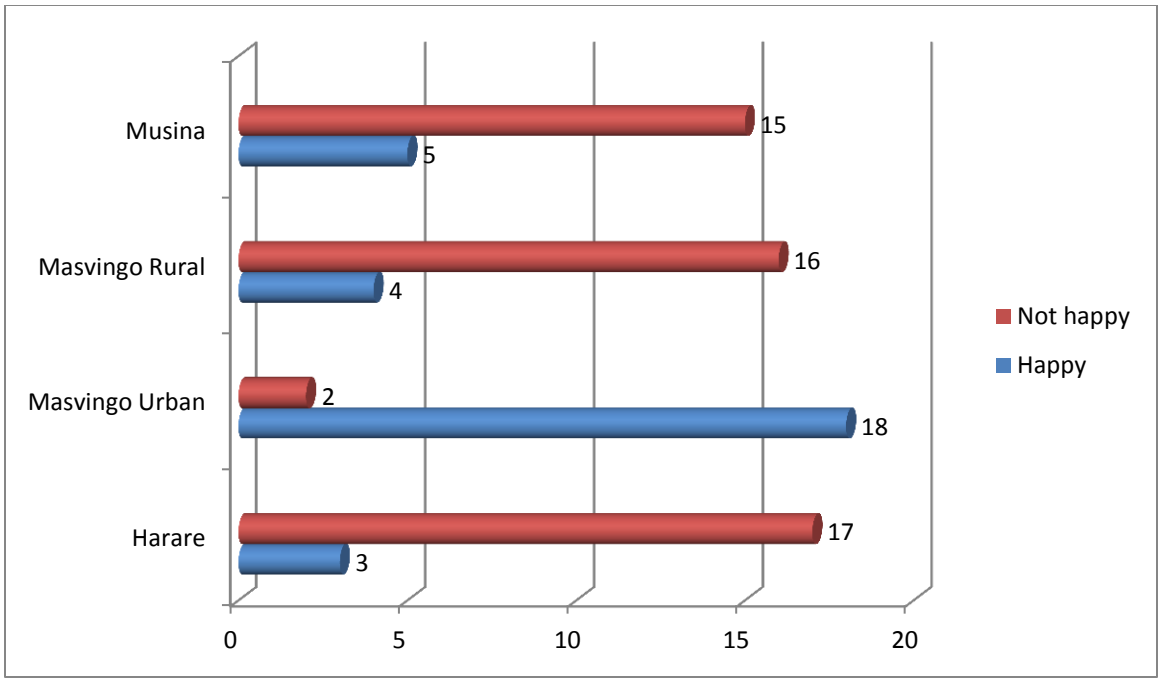

Figure 6.13: Workers' satisfaction with council potable water supply management
(Source: Primary data)

In conclusion to this subsection the foregoing shows that residents are not actively involved in developments in the governance of potable water supply services; things go ahead and are done on their behalf without their input. Even the councillor and ward committee systems do not seem to be actively effective in carrying information to and from residents. Their linkage role is weak and thus they are largely window dressers. Therefore, the much vaunted IWRM governance framework is yet to be implemented in the selected case studies.

6.2.2 Relevance and accessibility of potable water supply institutions and infrastructure

As already shown above, all respondents in the urban centres and Musina Rural have access to piped water. It has already been established that in all the studied cases there are interruptions in the potable water supply process; sometimes people are denied access to fresh water.

In Harare, Masvingo Urban and Tshwane all respondents had taps within their homes or in their yards. In Musina Rural most of the people depend on communal taps and boreholes. It has been established that Masvingo Rural residents depend on a wide assortment of water sources (rivers,

unprotected public and private wells, protected private wells, communal/public boreholes, communal/public taps and private taps). In both rural areas (Masvingo and Musina), the communal source was seen as being distant for most residents. If the fresh water source was not within the house or homestead, the person responsible for water was either a woman or child.

Due to pipe bursts and water interruptions, access to tap water was not always assured. During water cuts residents often depend on risky and potentially polluted sources even in urban centres (see Figure 6.9). Due to agricultural and mining activities, cemeteries, poor sanitation and toilet facilities in the peri-urban and nearby shanty communities, and also in dolomitic areas (e.g. Tshwane), there is a high probability that these alternative sources are polluted if not poisoned (see chapters 1, 3 and 5). In Masvingo Rural, the Shona tradition says *mvura haina n'anga* (water is so pure that it does not cause any illness that would require the attention of a diviner or a spiritual healer).

In South Africa, there is also the free water threshold as required by legislation. For example, Tshwane municipality has a policy to provide all households that are connected to the water system with a quantity of 'free basic water'. As per the Water Services Act (Act No 108 of 1997) this amounts to 6000 litres per household per month. This means that those who are not connected to the water system are not catered for. Further analysis shows that a high proportion of urban formal residents do not know that they are entitled to receive free basic water.

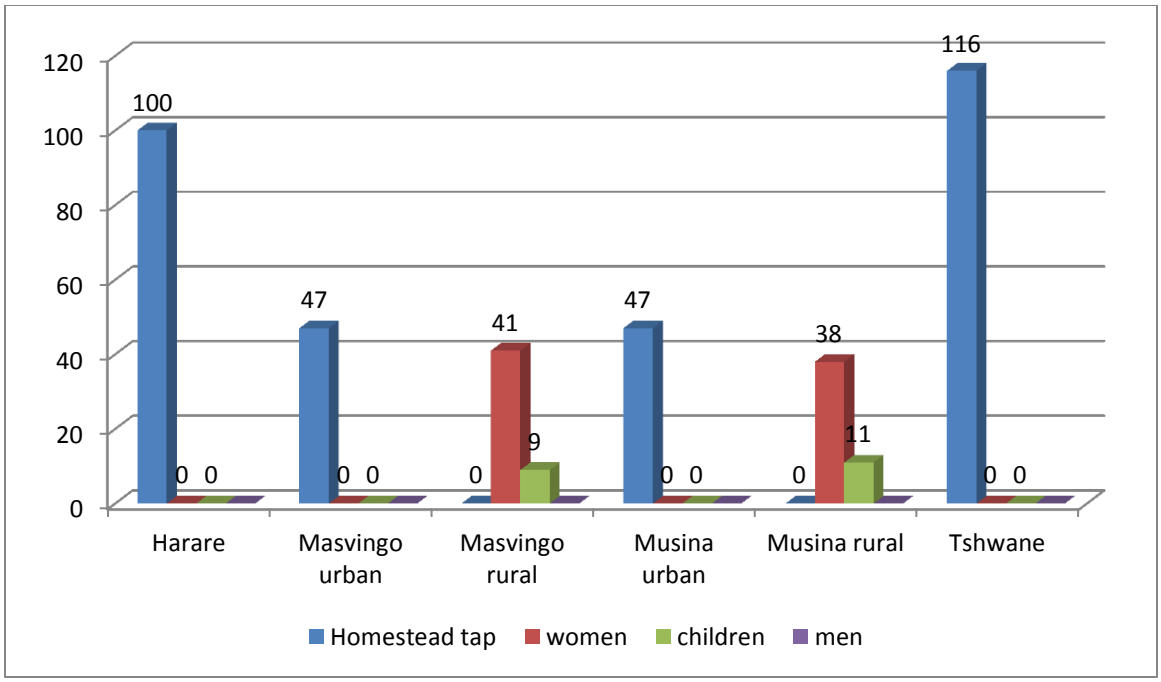

Figure 6.14: Responsibility for fetching water in the homestead

(Source: Primary data)

Figure 6.15, based on responses to question 8 in the residents' questionnaire, shows that women and children in Masvingo Rural and Musina Rural shoulder the responsibility of fetching water for the homestead. Figure 1.5; Figure 3.18; Figure 5.10; and Figure 6.9 show that during water cuts or disasters, as in the 2008 - 2009 cholera outbreak in Harare, women were again responsible for ensuring that there was water available in the house. Thus Figure 6.15 portrays the ideal situation in urban areas (water available in the home), but if there is no piped water in the home (i.e. during water interruptions or disconnections), it is the women and children who fetch water often from distant places.

Thus people may have variable access to potable water depending on their residential area. This access is not however assured because disconnections and interruptions are an ever present threat to residents' access to potable water for their domestic use.

As for the soft institutional framework, it has already been established that residents are not actively involved in their maintenance and development. Thus, although these institutional and infrastructural frameworks seem congruent with the dictates of IWRM to someone who is

observing from afar, a close analysis suggests that there is need for realignment and adaptation to the demands of IWRM framework. Otherwise, as far as residents are concerned, they mean nothing and are irrelevant to their everyday lives.

By way of closing this subsection, the following observation was made on the Musina residents' questionnaire. It neatly summarises the institutional arrangement and relationships in all the case studies: 'Our government should try to be serious with water supply. Water is to be clean and accessible to all. Water is life. If contaminated it means death is invited to our communities'.

6.2.3 Potable water quality

In addition to frequent water cuts and low pressure flows, all residents questionnaire respondents in Harare and Musina Rural said that the quality of the tap water was very poor. They complained that the water smelt bad; sometimes contains visible organic or inorganic substances; and is usually dark in colour.

6.3 LEADING

Leading is about influencing behaviour and attracting followers towards the attainment of desired goals. The contemporary thinking sees leadership as a process of creating buy-ins without exerting force. People follow you because they understand and identify with your mission and vision. Some of the things to be looked at in the leading process are communication, advocacy, mobilisation, motivation and training. This section will look at some of these processes and the extent to which they have been used to ensure that IWRM is well implemented in the study cases.

6.3.1 Communication, advocacy and mobilisation

Communication is about shared meanings between and across participants. The process is built up of six main components, namely sender, encoding, channel, decoding, noise and recipient. Any mismatch in any of these components would compromise the communication process and thus make participants fail to generate shared meanings. Without getting into what each of these

components is all about, this study focuses on the concept of shared meaning and its implication for the adoption and implementation of the IWRM framework in the governance of potable water supply in Zimbabwe and South Africa as represented by the selected cases.

Advocacy is about the promotion and marketing of a cause. It involves awareness campaigns and enlightening stakeholders and beneficiaries of the cause and its importance to them. Advocacy thus helps the blind to see what has been beyond his/her vicinity so that he/she fully participates and works towards the attainment of the cause or desired goal. In the case of IWRM, this would mean full participation and coordination of beneficiaries, stakeholders and resources towards the management and development of water resources for the benefit of everyone involved.

Mobilisation is making resources and everyone involved, including the reluctant, ready to stand by and support the chosen cause.

Discussions in the previous sections show that the communication aspect has been weak in the implementation of IWRM governance framework in all the study cases. To start with almost all respondents claimed this was the first time they had heard about IWRM. Most could not identify legislation governing water resources in their countries. Nor could they identify their own catchments/ sub-catchments. Even municipal and council workers could not talk of IWRM and the catchment/ sub-catchment systems with confidence. These simple things are clear proof not only of poor communication, but lack of communication between the authorities on the one hand, and stakeholders and beneficiaries of the new system on the other. Whereas discussions with municipal potable water supply executives showed that they fully understood the demands of IWRM, that was not the case with the executives' subordinates or residents.

It has already been established that when the winds of water management change blew across southern Africa the momentum (prospect) for the occasion was already there. What was required was putting Kurt Lewin's three forces model into motion, namely unfreezing, moving and refreezing. This would have meant completely dismantling the status quo, construction of new structures supportive of and aligned to the development of the progressive new system, and then helping the new structures and ways of doing things to stabilise through commitment,

appreciation and reinforcement. People were and are still ready for change. What is required is simply harnessing the opportunity through proper communication and mobilisation of available resources. Obviously, if people do not know where they are going (as shown by their failure to identify the catchment area in which they reside) then you are taking them nowhere.

Structures for community mobilisation are already there in the form of the ward system and so forth. What is required is just to make them work through proper communication and awareness campaigns. Respondents said:

- There is need to educate people about water and the responsible people whom they can address their grievances to. We need copies of the legislation on the governance of water (Masvingo Urban).
- People know what is best for them and their environment. They need to be consulted on matters that concern them. Ownership of water management must be given to the people themselves to ensure extraordinary development (Harare).
- Individuals and NGOs should also be involved in the management of water resources. The government should ensure that it has fully decentralised the running of the water institutions to communities and fully empower them (Masvingo Rural);
- *Kana vachivhara mvura ngavagare vapa vanhu notice nguva dzose.* (They should give people notice whenever they cut water supplies) (Masvingo Rural).
- The government must intervene, make sure that the relevant department is educating its community on how people should use water profitably… the department of water affairs should also educate communities in as far as usage of water is concerned (Musina Rural);

What these people are saying is that there is no communication taking place between communities and their respective authorities. They are ready to work with the authorities but they seem oblivious of the residents and just keep on doing things that affect them without consultation.

It is important to note that according to the CTMM authorities, as represented by the CTMM Water and Sanitation educational head (Ms. M. D. Monageng) in an unstructured formal

interview (29 September 2011) on the management of potable water in the CTMM, there is fruitful communication between the water department and the consumers. She said they reach stakeholders, especially grassroots consumers, through awareness campaigns, competitions, awards, youth training sessions, among other activities. She strongly believes that their approach is effective because consumers seem to be implementing what the municipality teaches them. For example, consumers always report leakages, pipe bursts and potable water abuses through toll free calls, suggestion boxes and emails. She argued that this is clear demonstration that the CTMM work with all stakeholders in the governance of potable water.

According to authorities in the other participating municipalities, they too had launched similar initiatives. However, they did not have overwhelming evidence of this as in the case of the CTMM, where the researcher was shown reports by consumers and award certificates for winning schools and individuals.

Importantly, however, consumers themselves (as per questionnaire respondents) believed across the board that there was no effective communication between them and their potable water supply authorities. Judging by consumers' perceptions it is thus evident that none of the participating municipalities were doing enough in the area of advocacy, communicating and mobilising people and their resources in the governance of potable water supply.

6.3.2 Motivation and training

Whenever new systems are introduced there is need for motivating and training people on how to work with the new systems. In water management systems this would mean a series of community meetings, discussion forums and pilot projects. There were indeed some pilot projects in Mazowe and Mupfure sub-catchment areas in Zimbabwe and in the Olifants and Inkomati catchments in South Africa. There was also some form of stakeholder consultation before the full implementation of the programmes in South Africa (see chapter 4). But beyond this, nothing seems to have happened. The above sections show that people are not even aware of the term IWRM. If they are to participate in the programmes, they first have to be educated about them. The training sessions, competitions and awards in the CTMM were simply on efficient use of potable water, not the IWRM paradigm as adopted by the authorities.

As seen in chapter 4, the Zimbabwean programme started with high momentum and extensive support from donors. With the rapid deterioration of the political environment soon after take-off and the subsequent withdrawal of financial assistance, the zeal that characterised the programme in its initial stages disappeared. It has been established that although change was an outcome of both internal and external forces, in this instance external forces took the driving seat such that when external donors withdrew there was no one to lead the procession. Even the issues of training and motivation were engineered and led from outside and thus stopped abruptly after donor funds were withdrawn.

It is therefore important to note that the programme was doomed to failure right from the start because the political leadership was apparently not committed to it beyond their political mileage. Swatuk (2008: 1) observes that water governance in southern Africa, especially since the advent of colonialism, has always been an area of political contestation (see chapter 4). It was just embraced to impress the donor community and gain the much needed financial support. When political survival was threatened, nobody seemed to care and in practice everything was thrown into the dustbin. The leadership still speaks of IWRM but these are high sounding words that mean nothing because in addition to the leadership's lack of internal motivation, they have no idea what it is all about. Currently there is neither training nor motivation to ensure professional implementation of IWRM. The biggest challenge is the political leadership's attitude. Even in the early days ZANU PF politicians were obsessed with politics, such that they grabbed every opportunity to divert all community gatherings into political rallies (see chapter 4).

The South African political leadership seems somewhat more motivated and committed but is taking people for granted. Despite what is in the media, websites, and academic fora, this study has established that people are unaware of IWRM and the catchment management systems, at least in the study cases. Thus the leadership needs some dosage of motivation and training themselves so that the process cascades down to other stakeholders and the general masses.

In both the Zimbabwean and South African cases academics seem to be carried away by the impressive-sounding policy and legislative framework; they forget to make the journey down to practice. As argued in chapters 1 and 4, sound and progressive policies might be there, but this does not necessarily mean implementation. Without implementation, policies and good intentions are worth nothing.

6.4 CONTROLLING

Controlling is about monitoring progress, evaluation, assessing outcomes and correction of deviation. Controlling ensures that people are on the right track. This is done by deciding on the ideal level of performance, measuring actual performance and comparing it with the desired level (IPMZ, 1996: 84). Thus the process involves performance evaluation and correcting deviations to ensure optimum performance. In public governance the process may include performance and progress feedback meetings; reports; assessment workshops; public projects; cross-catchment exchange visits; cross-regional exchange visits; cross-national exchange visits, and so forth.

Perhaps the starting point in the control process is the Global Water Partnership's thirteen key IWRM change areas. These main change areas are part of a framework divided into the enabling environment, institutional roles and management instruments, as discussed in chapter 4. The enabling environment encompasses policies (setting goals for water use, protection and conservation); legislative framework (defining the rules needed to achieve policies and goals); and financing and incentive structures (allocating financial resources to meet water needs). As already shown above, all these areas have been found to be weak in terms of stakeholders' participation in all the studied cases. Yet, to the distant eye the enabling environment appears sound and impressive, although financing and incentive structures are extremely weak in the Zimbabwean cases, where water pipes are obsolete and overworked, leading to frequent pipe bursts. As for the institutional structure, a great deal is still to be done. The same applies to management instruments like water resources assessment; demand management; social change instruments; economic instruments; and information management for improving knowledge for better water management.

In chapter 4 it was established that not only geographical demarcations of catchments but also the legal, legislative and governance frameworks have been major sources of coordination problems in both countries. Potable water governance issues are found over a plethora of pieces of legislation, ministries and other administrative institutions; they are thus seriously fragmented and bedevilled by lack of coordination and uniformity in areas of responsibility. As a result, there is, to a considerable extent, an overlap of institutional mandates. This has tended to weaken accountability and responsibility. As for geographical jurisdictional boundaries, a great deal is still to be done; there are no clear-cut responsibilities laid down for catchment and sub-catchment councils, water user boards, water point committees, and rural district councils. A case in point is the city of Tshwane, which is demarcated across two provinces (see chapter 5).

Questions 4 and 5 in the residents' questionnaire touched upon issues of control, namely contacts and government behaviour/ performance as far as portable water issues are concerned. Question 4 has already been discussed in 6.1 above. Question 5 measured respondents' perception on whether government was doing enough to ensure availability and accessibility of potable water to the community. Some of the responses were as follows:

- Very little is being done to provide safe water to all people. Most people use their own wells instead of public water facilities in rural areas (Masvingo Rural).
- No, the government is doing nothing (Masvingo Rural).
- I think it is not doing enough because the supply is usually cut off during the night and at times during the day (Masvingo Urban).
- Government is not doing enough since it is not availing funds to expand and upgrade the existing infrastructure and equipment (Masvingo Urban).
- It is doing enough because we are getting clean water, although there is need to drill boreholes to help people when there are water cuts (Masvingo Urban).
- Yes, they have drilled boreholes and at times supply water with bowsers (Masvingo Urban).
- I don't really know what the government is doing because we are being served by the city council (Harare).

- It is not doing enough because there is inadequate supply due to lack of funding of water augmentation schemes (Harare).
- No, because they are not giving us water every time (Musina Rural).
- No, because they supply us with dirty water (Musina Rural).
- No, because the water is brown and has bad smell (Musina Rural).
- Yes, fresh, clean water is available at all times (Musina Urban).
- Yes, because water is always there (Tshwane).

Overall, most rural residents in both countries felt that government was not doing enough, but for different reasons as the above sample comments show. Most respondents in Harare (73%) felt government was not doing enough. In Masvingo Urban, Musina Urban, and Tshwane the picture was different because 32 (68%) in Masvingo Urban; 40 (85%) for Musina Urban; and 105 (91%) in Tshwane, felt that government was doing enough (see Figure 6.17). The implication of the negative answers is that government was not visible to the people and therefore not making follow-ups on the implementation of the IWRM framework. Even the positive answers did not mean that government was monitoring progress of the new governance framework, but was simply acknowledgement that residents were receiving clean water from the municipality. Most respondents talked of reticulation, clean water, chemicals, accessibility and availability of potable water. They made no mention of ward, council or municipal meetings, which according to management interviewees were proof of involvement and follow-up mechanisms. Thus, using data supplied by residents as analysed above, no proper follow-up is taking place in the study case areas.

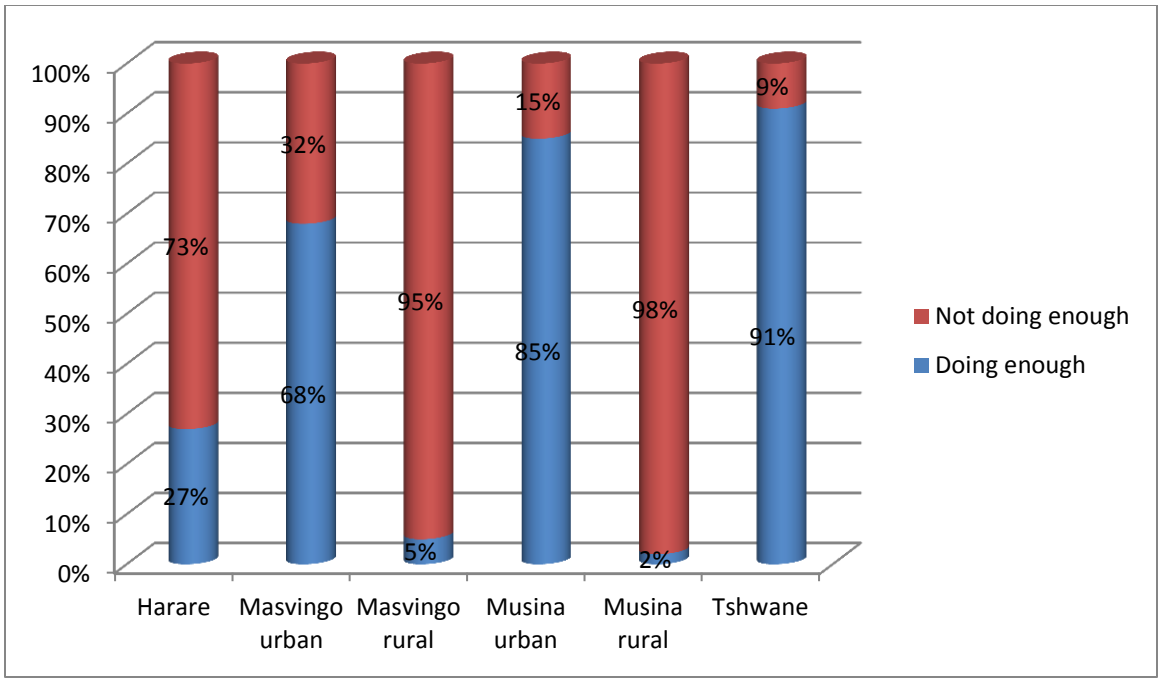

Figure 6.15: Residents' perceptions on whether government is doing enough to ensure that people get adequate fresh water

(Source: Primary data)

Of course, the IWRM conceptual framework as adopted by both South Africa and Zimbabwe has mechanisms for control (the catchment management system, ward system, websites, suggestion boxes, among others) but these are neither fully adapted to the contextual demands of the situation on the ground nor fully utilised, at least in the eyes of the residents. Because of high potable water accessibility in the municipality of Tshwane, residents were largely satisfied (see 6.2.2 above) but this does not mean the governance of potable water supply necessarily complied with the IWRM framework. The Tshwane experience demonstrates Manzungu's (2004: 3) observation that improved governance, rather than stakeholder participation, should be the indicator of democratisation in water resource management, at least in southern Africa.

6.5 MAJOR CHALLENGES FACING IWRM AND POTABLE WATER SUPPLY GOVERNANCE IN THE CASE STUDY AREAS

This section of chapter 6 is merely an overview because most of the issues raised repeat what has been either directly or indirectly discussed in previous chapters and subsections of this chapter.

Firstly, there is the need for proper alignment of international push factors and internal pull factors in the formulation and implementation of water sector reform in both Zimbabwe and South Africa. People have been ready for change in the water sector since the end of white minority rule in both countries but the change processes have not utilised them. As a result water sector reform lacks 'people ownership'.

The second and perhaps most important challenge in terms of public management and governance is that of technological and geohydrological factors that regulate availability, accessibility and usability of potable water in both countries. It has been established that water resources are scarce and are unevenly distributed in the southern Africa region. Also soils in the region range from alluvial sand soils to dolomite rocks with wide cracks that allow free movement of pollutants. This diversity of soils and water distribution requires qualified and experienced human resources to work with the people to ensure that proper strategies and practices are adopted and implemented in the management and development of water resources for the benefit of everyone.

Thirdly, the rapidly growing population, urbanisation, agricultural, industrial and mining activity in the southern Africa region pose a threat to availability, accessibility and quality of potable water resources in the region. This is more acute in the major centres of economic activity; for example in the Gauteng Province, where the City of Tshwane Metropolitan Municipality is situated, and the Harare Metropolitan Province, where the city of Harare is located. To make matters worse these cities are located upstream of the water system drainage in the catchment area and effluent disposal is directly into the raw water reservoirs posing serious threat to both human life and the ecosystem (see Figure 5.40)

The acid and pollutants in the acid mine dam in Figure 6.17 find their way into the Gauteng groundwater and surface water systems resulting in situations shown in Figure 5.40.

Figure 6.16: Acid mine dam in Gauteng

(Source: Google Earth, accessed 29 September 2011)

During rainy seasons the resulting floods carry all the pollutants from human activities and disposals into catchment water systems (see Figure 6.18) resulting in disasters if water treatment and reticulation is below standard as in the case of the 2008 – 2009 cholera outbreak in Harare.

Figure 6.17: River water system pollution in the Gauteng Province

(Source: Google Earth, accessed 29 September 2011)

Fourthly, there is the issue of scarce resources, especially in Zimbabwe where water reforms largely depended on external donor funding. When these funds were withdrawn before sound implementation of the reforms could be made, the change process collapsed. In addition, lack of financial resources in the Harare Metropolitan Municipality translated into poor water treatment and reticulation, resulting in the 2008 - 2009 cholera outbreak in Harare.

Other major challenges include:

- ageing and overused infrastructure (water pipes);
- inexperienced and underqualified human resources;
- lack of political will/ commitment; and
- grassroots poverty.

6.6 THE DUBLIN PRINCIPLES *VIS A VIS* THE SITUATION IN THE STUDIED CASES

Before leaving this chapter it is important to revisit the Dublin Principles as the pillars of the IWRM governance framework. As already shown in chapter 4, IWRM is a process of implementing these principles:

- **Principle 1**: Fresh water is a finite and vulnerable resource, essential to sustain life, development and the environment.
- **Principle 2**: Water development and management should be based on a participatory approach, involving users, planners and policy-makers at all levels.
- **Principle 3**: Women should play a central part in the provision, management and safeguarding of water.
- **Principle 4:** Water has economic value in all its competing uses and should be recognized as an economic good.

This chapter has demonstrated that Zimbabweans and South Africans, as represented by the selected case studies, may not have heard of the Dublin Principles but are fully aware of their conceptual and philosophical underpinnings. Respondents have shown that they are aware that water is not only the major pillar to life and development, but also a finite and vulnerable commodity (Principle 1). They have also shown that water is a common good which is best managed through collective effort with government institutions taking the lead, although at the time of the study, government seemed not committed to this responsibility and common knowledge (Principle 2). The case studies have demonstrated that traditionally, women are at the forefront of water utilisation and management and hence the need for their full participation in the potable water supply public decision-making processes (Principle 3). Respondents were also aware that water is community wealth and thus water has a community (rather than an individual or personal) economic value (Principle 4). Academics have argued that Principle 4 has been controversial and the centre of debate between pro-individualistic and elitist scholars on the one hand and pro-community scholars on the other. In this study there was no ambiguity because all respondents saw water as public wealth which should be made readily available to everyone.

Thus, the Dublin Principles are not an imposition on the people of southern Africa as represented by these study cases, but something which has been with them since time immemorial. Of course, they were and are still denied the opportunity to fully put them into practice because of historical and institutional challenges. The major challenge is thus dismantling these obstacles and building upon this opportunity.

6.7 SUMMARY

This chapter has shown that while the framework for a perfect water management system exists in Zimbabwe and South Africa, the situation on the ground does not reflect this common belief. 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 form of internal forces or push factors and international pull factors, but also faces an uphill task in terms of aligning local and international forces, thereby co-opting the much needed grassroots participation for human capacitation and socio-economic development as guided by the multi-faceted systems framework. All the municipalities that were studied were found lacking in terms of advocacy or enlightening residents and other stakeholders of the new IWRM framework that had been adopted by the municipalities. Despite the infrastructural and technological sophistication and advancement (as in the case of Tshwane), this study established that people are still unaware of the new developments. People at grassroots level and indeed people in general are not involved in the planning of potable water supply governance in their localities. 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. The foundation has been laid for a pro-grassroots change process, but the grip was lost to international forces once the process was in motion.

Because of pipe bursts and water interruptions, access to tap water is not always assured. During water cuts, residents tend to depend on risky, potentially polluted sources, even in urban centres.

Due to agricultural and mining activity, cemeteries, poor sanitation and toilet facilities in the peri-urban areas and nearby shanty communities, and also to the dolomitic character of the soil in some areas (e.g. Tshwane), there is a high probability that these alternative sources are polluted.

The next chapter summarises the study; draws conclusions from the study findings; offers recommendations derived from the conclusions; and highlights some of the limitations of this study and the need for further investigations in this field.