Hydropolitical Analysis: Situational and Positional Mapping

Second Order Water Scarcity In Southern Africa – R8158: Zambia case study

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THE ZAMBIAN WATER SECTOR

Acronyms

CSO – Central Statistics Office

CU – Commercial Utility

DWA – Department for Water Affairs

GIS – Geographic Information Systems

GPS – Global Positioning System

IWRM – Integrated Water Resource Management

MLGH – Ministry of Local Government and Housing

MoF - Ministry of Finance

MACO - Ministry of Agriculture and Cooperatives

MEWD – Ministry of Energy and Water Development

MDG – Millennium Development Goals

MMD – Movement for Multi party Democracy

NWASCO – National Water and Sanitation Council

NGO – Non Governmental Organisation

PSCAP – Public Service Capacity Building Project

PRSP – Poverty Reduction Strategy Paper

RDC – Resident development Committee

TNDP – Transitional National Development Plan

UNIP – United National Independence Party

WASHE – Water and Sanitation, Health hygiene Education

WRAP – Water Resource Action Programme

ZESCO – Zambia Electricity Supply Corporation

Introduction

This document lays out the thought process so far regarding one of the main outputs of the research i.e. the hydropolitical map for Zambia. The hydropolitical map provides insights into the different actors and actants in the Zambian water sector, the field the actors relate in and their various interactions[1]. The document details the mapping process and utilising three different types of maps that culminate into the hydropolitical map. These are the situational map, positional maps and social arena maps. The first two maps are elaborated on in separate sections of this document and the last map is detailed in a separate document.

During the mapping stages especially in the creation of the situational and positional maps it was noted that some actors and actors have variable levels of influence or recognition at the national and local scale. The national scale is where Geographical Information Systems (GIS) mapping may be more beneficial. The potential contribution of the GIS is expanded on in the section of the hydropolitical map. GIS mapping is also work in progress at this stage of the research project[2].

The mapping process began with the situational map, laying out all the actors and actants in the Zambian water sector. The positional map was then developed using the actors in the situational map. The positional map highlights the positions taken over identified discursive elements. The information from the positional map and the situational map was used to explore some of the silences in the Zambian water sector. The silences do not only cover silent actors or voices but also silent relationships between actors and actants[3]. The silent relationships were extrapolated from the relationship paragraphs that are included in this document following the situational map.

The document concludes with some emerging themes from the situational and positional maps. These emerging themes are distilled from the research so far and constitute some dominant themes in the Zambian water sector. The listed themes are in no way exhaustive but illustrate possible themes to explore in the later stage of the research project.

Mapping

Definitions of maps

Situational maps lay out the major human, non human, discursive and material elements in the research situation of concern and provoke analysis of relations among

[1] An actor is usually understood to be a conscious being while an actant is all encompassing including different autonomous figures and elements in our world. Both terms refer to something that acts or to which an activity is granted based on what it does or its performance. (Callon 1991, Law 1992)
[2] The digitised maps are included in Appendix A at the end of the document.
[3] Silent relationships are relationships that are exposed through the relationship analysis of the situational map. The relationships are not likely to be recognised without the use of the situational map.

them[4]. Situational maps are intended to capture and discuss the messy complexities of the situation in their dense relations and permutations. They intentionally work against the usual simplification so characteristic of scientific work in particular post modern ways.

Social worlds/ arena maps lay out the collective actors and their arenas of commitment framing meso-level interpretations of the situation. Social arena maps offer meso-level interpretations of the situation, engaging collective action and its social organisation and institutional and discursive dimensions.

Positional maps examine the major positions taken (and not taken) in the discourses. Positional maps are not articulated with persons or groups but rather seek to represent the full range of positions on particular issues.

Use of maps in situational analysis

A major use of the maps in situational analysis is opening up the data - interrogating them in fresh ways. The maps are used as analytical tools, each contributing to the final analysis of the situation.

Uses of analysis and applicability

Situational analysis resembles needs assessment but is broader in the sense that it identifies priority problems in a complex situation and also considers the underlying dynamics with a view towards identifying potential points of intervention[5]. It also focuses on capacities and identifies not only current policies and relevant services but current and potential stakeholders as well. From the analysis, the information gathered can be used to facilitate the process of planning systematic, strategic and collaborative responses that successfully address the issues.

Principles of situational analysis

The principles of situational analysis are as follows:[6]

- Ensure a collaborative process
- Enhance capacity
- Maintain joint ownership
- Use existing networks of resources
- Target priority areas
- Build on what is known
- Take a multi-dimensional, multi sectoral approach

Hydropolitical Map

[4] Clarke, A. E. 2003. Situational Analyses: Grounded theory Mapping after the Postmodern Turn. Symbolic Interaction, Volume 26, Number 4, pp 553-576

[5] Williamson, J et. Al. 2004. Conducting a Situation Analysis of Orphans and Vulnerable Children affected by HIV/AIDS - A Framework and Resource Guide. USAID (AFR/SD)

[6] Ibid

A situational analysis should be carried out with a purpose in mind or a main objective for the analysis. We need to identify what the findings from the analysis will be used for. In our research we are attempting to produce among other things a hydropolitical map for Zambia. The map is targeted at different water users, policy makers, project implementers in the water sector and research teams in the sector. This broad target audience may have multiple suitable maps. One solution to address the multiplicity would be to produce different maps for different users and for different scales of use. The multiple maps and scalar dimensions can be ironed out as we continue to debate the content of the hydropolitical map and desired format for the map.

The hydropolitical map being produced is for the benefit of the end user or target audience. As such it would be ideal to ask the target audience what format the map should take, how different maps will be useful, the types of maps the user would like to see and the content of the maps. This process of consultation has been started through the semi-structured interviews carried out with the end users and policy makers regarding the important actors and factors in their situations. The groups interviewed included representatives from government agencies, regulatory organisations, project groups, end users, traditional leaders, water suppliers, Non Governmental Organisations, donor agencies, consultants, companies, community based organisations and political parties. The participants were not directly asked about the contents and format of the hydropolitical map but were asked about the water access situation in their location or field of operation. The data collected in the interviews has been used to draw up the situational and positional maps that are included in this document.

The scalar issues of the map and applicability can be incorporated in different ways. We could have different maps at national level, provincial level, district level and community level. This is attractive because there are some actors that are important in a particular community and not in another. The same argument can be used for importance of different actors and factors in different districts and provinces. The individual and community detail gets diluted as we approach the national level. The use of generic terms becomes more important at national level considering the fact that there are more than 90 districts in Zambia. Temporal scales should also be considered because as the environment changes in different locations, the actors and their influence change. The evolution of actual actors and their influence is also affected by external actors like NGOs and donor agencies.

The complexity of the importance and influence of different actors at different scalar levels or the dilution of effect relates to the field or arena which is chosen for the analysis of the relationships and interaction among the different actors. A field is an open concept that is above all a configuration of objective relations between positions; a system of relationships which is independent of the populations which these relationships define[7]. An arena is a space in which real conflicts between interacting social actors occur around common stakes; it occurs within a local space[8]. The arena concept is applicable at community level given the local level focus. On the national level of analysis, the field concept is more applicable as this level incorporates various

[7] Olivier de Sardan, J. 2005. *Anthropology and Development – Understanding Contemporary Social Change*. London and New York; Zed Books
[8] Ibid

actors with different types of assets and capital that can be used to influence the interactions. Both concepts are useful at different scales in this research. The field in which the different actors interact is currently being developed[9].

The other alternative to the scalar dilemma is to use layering of maps in the GIS fashion. So each district would have community maps that build up to the district and then each district contributes to a province. The provinces would then feed into a national data base[10]. This data base giving the different maps would help identify priority areas and intervention approaches that work. This latter alternative is a technical database that would need training for different users and may not be useful for the end user who is not a researcher, policy maker, project implementer or government official. It would also need information from all communities to create an inclusive database that would require periodic updating.

A GIS based map is not only limited to communities but can be based on a particular water body. Each water body would have to be investigated in turn to establish the different water users and interaction among the users[11]. A digitised map of the different water bodies in Zambia exists and can be used for this purpose. A digitised form of the tribal and land classification boundaries in Zambia also exists. The land and tribal map can be used to highlight areas where traditional rulers are likely to be influential and where customs and beliefs are likely to carry weight. The current land use map of Zambia is outdated. The latest version is from the 1970s. A project team is presently updating the map. The date of completion of the project is not known but is estimated to be in the next two of years[12]. A land use map would be useful in giving ideas of the different competing water uses for different water bodies.

There has also been an ongoing exercise of water point inventory in different districts. The inventory will be used to assess the extent of progress in the water sector regarding the MDGs. The inventory has included GPS data in some districts. The GPS system is being passed around the country through the provincial water engineer's office. The GPS team records whether a water point is in use or not. The water point inventory can be used to give the locations of the water point, type of water point and also the state of the water point. The data should be readily available through the new social indexes that have been introduced in Zambia.

The GIS map would also require a layer showing the population concentrations in various parts of Zambia. A version of this map is currently being sourced. This layer will help in identifying areas where competition for water resources is likely to increase. One area that has already been identified as an area of high competition is the Kafue basin. The basin covers the Kafue River and its tributaries. The Kafue basin supports the mining and industrial activity on the Copperbelt and is also used by large

[9] There are various definitions of the term field, the openness and independence from the populations of the term makes it applicable in this case

[10] The district, provincial and national units are suggested here because these are the current administrative boundaries that are used in Zambia.

[11] This map can be at catchment or sub catchment level. Sub catchment level is more attractive given the localised water competition and water shortages in the central, southern and western parts of Zambia

[12] This is an in-house project under the Ministry of Agriculture and Cooperatives

and small scale farmers in Central and Southern Provinces. The basin also supports a significant proportion of the Zambian population.

The hydropolitical map at the national level of analysis will show the different actors in water access, their role and possibly the capabilities and skills required to fulfil that role. Thoughts on the map continue to evolve.

Situational Map

A situational map giving all the different human and non human actors in a situation; for our purposes access to water for different uses, representation, access modalities, transmission of these access modalities and allocation; can be quite detailed. The map not only identifies the actors but looks at the relationships between the different actors in the analysis. The exploration of relationships makes the map more complex and sometimes messy. This is one of the hindrances in the applicability of situational maps. They appear more suitable for a single case study which may look at water access in a particular community[13]. However, some communities may be similar and generic terms can be used to make the map simpler and more applicable on a wider scale. A situational map can be used by a community to identify the different actors and interaction among the different actors regarding water access for different users in the community. The map can be used to analyse and if necessary improve the water management capability in the community.

In the situational mapping of water access in Zambia, the following map was produced. The map identifies different actors in water access, both human and non human actors. It also identifies the discursive elements and potentially silent or implicated actors. The different actors, discursive elements and related issues are then used to explore the underlying factors in water access. The under lying factors come from; the responses given by the different actors, conclusions from media and written reports and the understanding of the researcher in the given situation. The underlying factors are detailed in the text that follows the map. The text explores the relationships and descriptions of different actors and discursive elements.

The map identifies the actors and the discursive elements but gives no indication of the potential influence or clout of each actor. The influence of the actor and particular role can hopefully be drawn out from the paragraphs that follow the map. It is hoped that we can then identify the various actors and the significance of the role they play in water access. The situational map is followed by the positional map using the discursive and related elements that are identified in it.

[13] This hindrance does not mean that situational maps cannot be used for multi-site research. There are linkages that can be established in multi-sited research. These linkages contribute to the richness of the research going beyond mere comparative studies. The translocal linkages should be established along with interconnections between them and other bundles of relationships that are part of the research. (Hannerz, 2003 and Marcus, 1995)

Individual Human Elements/ Actors
Users
Suppliers
Facilitators
Policy Makers
Traditional rulers
Regulators
Legislators
Political Party Chairmen

Non Human Elements/ Actors
Infrastructure
Reports
International drives
Policy documents
Development aid
Poverty Reduction Strategy Prog.
Sector reform
Customs
Law

Collective Human Elements/ Actors
Water User Groups
Resident Development Committees
Irrigation Scheme Committees
Water Scheme Committees
Rural water Committees
Donor Agencies
NGOs
Financial Institutions
Academics
Government Agencies
Consultants
Local authorities
Commercial Utilities
Companies
ZESCO

Implicated/ Silent Actors/ Actants
Poor
Low political clout
Remote residents
Vulnerable
Residents of areas with failed projects
Terminally ill residents

Discursive Constructions, Individual and/ or Collective
Vulnerable
Poor
Rural
Urban
Peri-urban
Socio-economic status

Key events in Situation
WRAP –Water Act Revision
Water Sector Reform
Department restructuring DWA
Commercialisation of water departments
Power supply shortages

Political Economic Elements
Water projects
National water policy
Valued citizens
Multiparty politics
Financial resources
Sector investment
Ability to pay

Discursive Constructions/ Non human
Concepts of development
Commercialisation
Community participation
Sustainability
Service Delivery
Water Conservation
Project Commitment and Contribution

Temporal Elements
History of service provision
History of colonisation
History of party administration
History of project support
History of project sustainability
History of civil society organisation
Land tenure

Social Cultural Symbols
Symbolism of water
Symbolism of agriculture
Traditional tribal beliefs
Water rights

Major Issues/ Debates
Willingness and ability to pay
Involvement of private sector
Public Fund investment in sector
Including the poor
Cross subsidisation
Limits of regulation
Urban/ rural divide
Maintenance
Sustainability
Skills and capabilities
Prioritisation of Uses
Water Demand Management
Sanitation link

Related issues
Public service provision
Service Expectations
MDGs
Poverty Reduction Strategy
IWRM
Donor support
Funding bottlenecks
Corruption/ Accountability
Leadership
Governance
Customary vs. Common law
Water And Sanitation Health and hygiene Education (WASHE)

Relationship Exploration

The following section explores the relationship between different actors and actants identified in the situational map. The relationships contribute to the understanding of the actors and actants in the given situation and also bring out some silences in the relationships between different elements.

Infrastructure

The choice of infrastructure is mainly based on a technical decision by the project leader. The project leader in this case can be an engineering firm, government department or an NGO team. The choice of infrastructure is also dependant on the availability, location and price of the infrastructure. The technical bias means that sometimes infrastructure is imposed on the community. Some infrastructure that is used in the rural areas like the India mark II pump is usually promoted through government agencies[14]. It is not clear whether the government bases its choice on technology applicability or cost effectiveness. In the urban and peri-urban areas the infrastructure is more uniform using the standard pipes and taps. The issue in the urban areas relates to the state of the infrastructure as most of it was installed before 1970. The age of the pipe network and other infrastructure compounded by the fluctuation in pressure of the water supplied has resulted in blocked pipes or burst pipes in some urban areas. Most of the infrastructure in these areas needs replacing and rehabilitating. The other challenge relating to infrastructure in urban areas is extension to newly developed areas. Water treatment capacity is limited just like the reach of water distribution infrastructure[15].

International drives

International drives provide channels of financial resources for water projects[16]. The government agencies need to find a way of internalising the drives. Internalisation of the drives means incorporate them into national plans and strategies. The drives can be used to support home grown ideas and initiatives especially in long term strategies for the water sector. The drives also promote commercialisation of the water sector and encourage community participation in community projects. The international drives also have an effect on the donor support as this is one of the entry points that can be used for donor funds[17].

Development Aid

[14] Interview with DWA officials in Chipata, Eastern province
[15] Interview with Director of Chila Water in Mbala
[16] Interview with DWA official in Lusaka
[17] This is the case for meeting MDGs that are directly funded by some donor agencies

The channelling of development aid affects the impact of the aid and the overall development and poverty reduction. Development aid is being reorganised to make it more effective. There are on going debates on whether the aid should be channelled through projects or through national budgets, incorporating the idea of supporting poverty reduction strategies[18]. Aid in the water sector is also uncoordinated though a team has been set up comprising most Donors and NGOs in the water sector[19]. The team has a task of finding ways of coordinating the aid efforts to achieve maximum impact.

Poverty reduction strategy programme

Poverty reduction is targeted at the poor and improving the economic and living standards of Zambian citizens. The programme highlights the role of water in poverty reduction mainly through improved access to clean and safe domestic water and providing access to water for livelihoods[20]. The strategy also includes the promotion of fishing related activities especially the setting up of fish farms. The PRSP is a home grown effort towards development and is used as a channel to obtain funds for water projects.

Sector reform

The reform in the water sector was sparked by the poor level of service and the lack of investment in the water sector. The reforms were started in the early 1990s. The key objectives of the reform were set out in the National Water Policy[21]. Sector reform is supported by International Financial Institutions and other donors. The reforms include revision of the water act, separation of water supply and resource management and also creation of commercial utilities and autonomous water departments in Local Authorities[22].

Law

Legal documents have been drawn up to regulate the domestic water sector through NWASCO, control the pollution of water bodies through ECZ and control the allocation of water resources through the Water Board[23]. The Water Act is being reviewed by WRAP. Law can be used as a dispute settling instrument but becomes challenging when customary law comes into play. The debate about the use of customary and common law is on going. Customary law is used mainly in traditional land and the rural areas. Common law is used in urban centres and in state land. Officially all land and water is vested in the president but the chief must give consent on matters dealing with traditional land[24]. Land and water are inevitably linked. Budgetary laws in Zambia have been identified as part of the funding bottlenecks by Water Aid in their report produced in 2003[25].

Water User groups

[18] Oxford Policy Management carried out a project funded by DfID looking at poverty reduction through budget support

[19] Interview with Water Aid researcher

[20] Government of the Republic of Zambia. 2003. Poverty Reduction Strategy Programme. Lusaka: Ministry of Finance and National planning

[21] Government of the Republic of Zambia, 1994. National Water Policy. Lusaka: Ministry of Energy and Water Development

[22] Interview with DWA official in Lusaka

[23] Government of the Republic of Zambia, Water Act (1948), Water and Sanitation Act (1997), Water Pollution Control Act (1990). Lusaka: Government printers

[24] Government of the Republic of Zambia, Land Act (1995). Lusaka: Ministry Of Lands

[25] Water Aid. 2004. Getting to the true nature of the Problem: The case of financing rural water supply and sanitation in Zambia's poverty reduction strategy.

Water user groups are found mainly in the rural areas and are based on particular water points or infrastructure. The groups are mainly formed around irrigation infrastructure. The groups are formed by residents using the water point. The group members elect a committee that runs and manages the water infrastructure. The elected committee draws up regulations and guidelines for the rest of the group members to follow[26]. The regulations and guidelines must be agreed on by the majority of the group members. This is a way of communities managing their own resources and sustaining the water projects in their areas. Community participation and the development of skills and capabilities to manage the resources are essential. Water is viewed as a social and economic good by user groups[27]. Informal links and cooperation are made use of in the groups especially because they are based in rural areas where customary law is more applicable.

Resident Development Committees

RDCs are found in peri-urban areas and monitor the operations of water schemes in their areas through water scheme committees. RDC members are elected by community members for a fixed term of office. The RDCs are trained by the Local Authorities in leadership, accounting and dispute settlement[28]. The RDCs play a role in ensuring the willingness to pay for water by carrying out sensitization exercises and mobilising the community members to participate in community projects. RDC members see water mainly as a social good. The RDCs propose development projects in their areas and also ensure community commitment to the projects. RDCs have been used as channels of addressing poor public service delivery and project sustainability[29].

Irrigation scheme committees

Irrigation scheme committees are found in the rural areas and are formed around a completed water project that is handed over to the community. The committees are similar to water user group committees. Irrigation committee members are elected by irrigation scheme members for a fixed term of office. Effective operation of an irrigation scheme requires community participation and commitment from the scheme members[30]. The irrigation scheme committee ensure maintenance of the irrigation infrastructure, which is usually a furrow and the payment of scheme membership fees if applicable. The scheme membership is not always necessary as the schemes are mostly based in areas where customary laws are applied and communal ownership and responsibility is encouraged[31]. Irrigation scheme members view water both as a social and economic good because the water points are usually used for both irrigation and domestic purposes[32].

Water Scheme Committees

Water scheme committees are formed around a water scheme in a particular township or peri-urban area. The committee members are elected from the Resident Development Committee members for a fixed term. The water scheme committee is responsible for appointing water point attendants who regulate access to water points and collect water user fees[33]. The committee ensures maintenance of the infrastructure, sustainability of the

[26] Interview with Water User Group member, Sefula, Western province
[27] Interview with irrigation scheme chairman in Rukuzhye, Eastern Province
[28] Interviews with RDCs in Chipata Township, Lusaka and Linda Township, Lusaka
[29] Interview with peri-urban water coordinator, Lusaka Water and Sewerage Company
[30] Interview with MACO official in Lundazi, Eastern Province
[31] Interview with Vegetable Growers Association, Ngulula, Northern Province
[32] Interview with members of Chonya Village Cooperative, Chonya, Northern Province
[33] Interviews with Water Scheme members in George Township, Lusaka and Chipata Township, Lusaka

project and a good standard of service for the residents. Committee members are trained to carry out minor repairs on the infrastructure. Water scheme committees acknowledge the importance of continued community participation and cooperation in projects. The ability and willingness to pay for water is emphasised by the committees but exceptions are made for poor and vulnerable community members.

Rural Water Committees

Rural water committees are formed when a water project is introduced in a community. The water projects are part of the poverty reduction strategy. The committee is formed around a particular water project, which may have multiple water points. The committee regulates access to the water point and is trained to maintain and carry out minor repairs on the infrastructure. The committee is expected by the community to be living in the water project area. The maintenance and repair of the infrastructure requires community commitment and participation. The community members prevent vandalism and also contribute towards maintenance and repairs through the water fees[34]. Water committees also ensure the poor and vulnerable community members, who may not be able to afford the water user fee, have access to clean and safe domestic water. Rural water committees view water mainly as a social good and the rural base implies customs have an influence on the operations of the committee as do the traditional leaders[35].

Donor Agencies

Donor agencies provide funding for different government programmes and water projects. The agencies support the commercialisation of the water sector and improving the delivery of public services. Donor agencies like JICA have a strong technical focus while others like DfID have shifted their focus to governance and capacity building[36]. Donor funded projects require government contribution towards the project to show commitment to the project[37]. Most donors also encourage community participation in community projects to ensure project sustainability. Donors use international drives as entry points for their funding and may also use NGOs.

NGOs

NGOs working the water sector target remote residents, the vulnerable and poor residents. These are usually the groups that are not reached by the government resources and machinery. Most NGOs see water as a social good and encourage communities to participate in water projects in their areas. The NGOs have mandates and criterion that project areas must meet before a project commences in the area[38]. One of the criteria is community contribution towards the project costs. The NGOs target their projects in areas where populations are concentrated to ensure maximum benefit from their projects. NGOs have started placing emphasis on capacity building in communities to ensure project sustainability. NGO personnel would like to see increased investment in the water sector using public funds and increased efforts to meet the MDGs[39]. NGOs are advised to apply the WASHE concept in their projects.

Financial Institutions

[34] Interview with District Water Engineer in Mongu, Western Province
[35] Interview with village headman in Mongu, Western Province
[36] Interview with JICA water engineer and discussion with DfID member of staff
[37] Interview with WRAP publicity officer
[38] Interviews with CARE and World Vision development project staff
[39] Interview with researcher at Water Aid and CARE International staff

International Financial Institutions support the water sector reform and provide some funding from the Water Resource Action Programme (WRAP) and water projects. WRAP has an institutional and legal framework focus in the water sector reforms[40]. International Financial Institutions encourage community participation and community contributions to projects in their areas. This is an effort to improve project sustainability and build community capacity. Financial Institutions view water mainly as an economic good and are more likely to support projects where residents show an ability to pay[41]. The institutions are also in support of the commercialisation of the water sector. International campaigns like MDGs can be used as a channel to obtain funds from International Financial Institutions. Unfortunately the drives place more emphasis on supply side water management than on governance issues in the water projects.

Academics

Academics sometimes play the role of consultants in the water sector reform. Academics have been part of the WRAP team and support other government programmes in various ways. Academics would like to see more investment in the water sector and support ideas of water conservation, water demand management and project sustainability[42]. Academics are also playing a role in internalising international campaigns like IWRM. They do however have a theoretical and technical bias.

Government Agencies

Government agencies are part of the water sector reform process and participated in the formulation of the National Water Policy. Government agencies view water, both as a social and economic good. The agencies are involved in promoting the view of water as an economic good through the commercialisation of the water departments in local authorities and the creation of commercial utilities. They are also involved in promoting agriculture as a business as opposed to a survival tool[43]. Personnel in the government agencies would like to see more investment in the water sector and improved service delivery. The personnel play a role in community projects and support the idea of community contribution to projects in their areas. Unfortunately some government agencies lack resources and skilled personnel to provide an efficient service to the citizens.[44]

Consultants

Consultants continue to play a role in the reforms of the water sector. The reports produced by consultants identify gaps in the water sector especially in service delivery and skills and capabilities required in the sector. Consultants support the commercialisation of the water departments and proposed the creation of commercial utilities[45]. Consultants continue to provide support to the commercial utilities especially in management roles. Consultants also propose solutions, identify problems in the water sector but are influenced by their funding organisations. Their proposals are also not always taken on board by policy makers and government ministries. Consultants are also some times used as scapegoats when projects go wrong.

[40] WRAP objectives (Accessible on http://www.zambia-water.org.zm/wrap.htm)
[41] Interview with rural water sector programme coordinator
[42] Interviews with Dr. Z Phiri (WRAP team leader) and Prof. I. Nyambe (GWP Zambia)
[43] Interviews with DWA officials, Lusaka, MACO officials, Livingstone, MACO officials, Kasama
[44] Local level positions like the District Water Engineer are vacant in some districts
[45] Discussion with GKW, consultants in the water sector usually working with GTZ

Commercial Utilities

Commercial utilities have taken over the water supply and sewerage services in most urban centres. The manpower being used in the utilities, with the exception of management, was seconded from the water departments in the Local Authorities. The idea of commercial utilities was born from the National Water Policy and the need to improve water supply and sanitation service delivery. The utilities emphasise the ability to pay for services and are focused on cost return[46]. Some utilities have tried to incorporate the poor using water kiosks but most leave the poor out of their operations. The utilities are encouraged to exploit cross subsidisation by pairing larger towns with smaller towns[47]. The larger towns usually have more economic potential and a larger client base.

Local Authorities

Water departments in local authorities have historically provided domestic water for the urban and peri-urban residents. The standard of service deteriorated over the last couple of decades mainly because of subsidised water rates, poor investment in the water sector and lack of maintenance resulting from the weak financial base of the authorities[48]. Commercialisation has been introduced in all water departments under a directive from the Ministry of Local Government and Housing[49]. The move has been welcomed by the water department employees especially in towns where commercial utilities have been created. Most water departments ration the water supply to the communities because of the limited water treatment capacity. The departments also find servicing the poor a challenge and most departments lack trained and skilled man power to ensure a high standard of service. The boundaries of Local Authorities date back to the colonial days in most cases resulting in some authorities have a very poor economic potential. Local authorities in larger towns are introducing Resident Development Committees (RDCs) in peri-urban areas and townships. The RDCs help propose development projects in their areas. Another link with the community is provided through WASHE, which the Local Authorities coordinate.

Companies

Some companies like Nakambala sugar and Kaleya holdings, provide domestic water to their employees at subsidised rates[50]. The companies usually have the financial resources and trained staff to provide a high standard of service at the subsidised rate. The companies obtain water rights and licences to supply the water from the relevant authorities especially that water is used in their core company activities. This dual use of the water implies the companies view water as both a social and an economic good.

ZESCO

The national electricity supply company, ZESCO, is a water user through the hydro electric power stations and involved in water supply. Water is an economic good for ZESCO. Water suppliers mainly use power from ZESCO to drive their pumps. ZESCO has been experiencing some problems with vandals and theft of power lines and transformer oil[51]. Some parts of the country especially Lusaka, have been experiencing

[46] Interview with Director at Southern Water and Sewerage Company, Livingstone
[47] Interview with Technical Director of North Western Water and Sewerage Company
[48] Interview with Director of Water Department, Kabwe, Central Province
[49] Interview with Manager of Water Department in Lundazi, Eastern Province
[50] NWASCO. 2003. Annual Report. Lusaka: NWASCO
[51] Local media reports of vandalism on ZESCO substations

power cuts because of overloaded transformers. The power cuts result in water supply interruptions unless the supplier has back up generators or is not connected to the main grid. The power cuts affect the level of service provided to the end water user[52].

Poor

The poor usually include the vulnerable groups. The rural poor are dependant on NGOs and donor funded projects for their water supply. The urban poor are more dependant on cross subsidisation for affordable water supply[53]. The poor see water as a means of survival for their livelihoods and domestic use. Water is viewed more as a social good that should not be paid for as they are accustomed to using traditional water sources like hand dug wells, springs and streams[54]. In most cases the poor live outside the monetarised economy and are not able to pay for services.

Remote Residents

Remote residents feel helpless unless they attract the attention of an NGO or government project in their area. The attraction is sometimes because of a disease outbreak or a visit by government or Local Authority staff. The traditional leader can also petition the government to help his people[55]. Residents living in remote areas usually depend on traditional sources of water like hand dug wells, rivers, springs and streams. In most cases the water is assumed to be of good quality especially if it appears clear. Remote residents usually have low political clout since their MPs rarely visit these remote areas. A visit is usually paid just before election time to secure votes in the areas[56].

Residents of Areas with failed projects

Residents of areas with failed projects are usually left feeling vulnerable and neglected. New water projects are difficult to secure in these areas mainly because failed projects are attributed to lack of community commitment or unwillingness to pay for services provided[57]. Skills and capabilities are usually the root of the project failure but there is less chance of these being developed in the event of a failed project. Some projects have failed in the past because of lack of ownership and lack of community participation[58]. Unfortunately with limited financial resources, areas with failed projects are placed at the bottom of the list. In some cases the areas are considered a waste of resources.

Descriptions of discursive elements

This section gives a description of the discursive elements identified in the situational map. No relationships have been explored in this section. The paragraphs contribute to the understanding of the discursive elements in the given situation.

Low political clout

Those of low political clout are silent voices that rarely get any attention unless NGOs go to their area. The citizens with low political clout are usually found in remote sparsely populated areas. The other areas, usually urban and closer to Lusaka, are prioritised when

[52] Interview with Director of Water department in Mansa, Luapula Province
[53] Interview with Engineering Director, Chipata Water and Sewerage Company, Chipata, Eastern Province
[54] Interview with Village Development Committee Chairman in Chulu Ngoma, Mbala, Northern province
[55] Interview with tour guide operator Mukuni Village, Livingstone
[56] Interview with World Vision project team, Kawambwa, Luapula Province
[57] Interview with Provincial Water Engineer, Copperbelt province
[58] Interview with Community Development staff, Chipata District Council, Eastern Province

it comes to government resources. Some residents in the low politically influential areas feel they are unlikely to get any water projects in their area unless they have the ruling party as the representation in their areas[59].

Vulnerable

The vulnerable are not only difficult to identify in their places of residence but their incorporation in community projects is also challenging. The other problem is the term "vulnerable" is misused in some cases because it is seen as a term that needs to be included in community projects[60]. The definition of vulnerable varies according to the location and user of the term but amongst the most important defining characteristics are age, sex, ethnicity and residence in remote locations[61]. In the Zambian water sector vulnerable groups within communities include orphans, old people, retirees and terminally ill residents. There are some areas where communities living in remote areas are considered vulnerable especially in the drought prone southern and western provinces.

Terminally ill residents

These residents have a higher demand for safe and clean domestic water but are not healthy enough to demand the resources or have access to them[62]. These residents usually have reduced immune systems and are at greater risk of catching water borne diseases.

Political Economic Elements

Water projects

The financial resources to carry out water projects are limited so priority is given to areas with higher population concentrations that will benefit more from the projects[63]. The process for selecting the areas where the projects are based does not seem coordinated or transparent.

National Water Policy (NWP)

The NWP looks at the reform of the Zambian water sector[64]. The policy attempts to bring together all the different water uses and find a way in which all uses can be included in resource management and development. The policy announces several objectives including the separation of water supply and water resource management. The reforms do not seem to moving according to plan. An in-house review of the policy has been carried out after 10 years of the document being promulgated[65].

Valued citizens

These are usually the more visible citizens found in the urban and peri-urban areas. The urban areas are the places where educated people live and also the places that have financial resources to pay for services. As such the urban areas are more likely to get

[59] Interview with UNIP youth chairman, Lusaka
[60] Focus group discussion with RDC members in Natuseko, Kabwe and Chipata Township, Lusaka
[61] NGOs working the water sector usually use these defining characteristics of vulnerable groups.
[62] Interview with Environmental Health Technician, Mansa, Luapula Province
[63] Interview with District Water Engineer Mongu, Western Province
[64] Government of the Republic of Zambia, 1994. National Water Policy. Ministry of Energy and Water Development
[65] In house review was done under Public Service Capacity Building Project, PSCAP. The review was completed in 2004. The completed report on the findings has not been released.

investment because they are considered more able to return costs[66]. The peri-urban areas benefit from their proximity to urban centres.

Multiparty politics

The multi-party political environment which is rather immature in Zambia means the politicians from opposing parties usually end up shooting down good ideas on development and inciting citizens not to pay for water if water projects were carried out in their areas[67]. The politicians insist the water projects are carried out using grants as opposed to loans[68]. Politicians also make empty promises like installation of water infrastructure and improvement of service delivery during election time[69].

Financial resources

Government has limited financial resources for all development and other national programmes. Water is not very high on the government priority list when compared to competing sectors like health and education[70].

Sector investment

Investment in the water sector has always been poor. The dilapidated infrastructure in the urban and peri-urban areas is evidence of this poor investment[71]. Rates of return in the water sector are also low making it more oriented to public fund investment.

Ability to pay

The ability to pay affects most water supply infrastructure and the sustainability of water projects in different areas. In some places the ability to pay is actually confused with the willingness to pay. When a water project is handed over to the community, the community is prepared to pay but after the project has been in operation for a while the willingness to pay reduces and the reality of the ability to pay kicks in[72].

Discursive Constructions/ Non human

Concepts of development

Water projects are classified under development activities in the areas where they are carried out. Citizens believe they have a right to development and the benefits that come with it[73]. The water projects also fall under the right to sustainable livelihoods[74]. The sustainable livelihood approach goes beyond domestic water. Communities also believe safe water sources are a condition to get services and trained manpower in their areas for schools, medical centres etc.

Commercialisation

[66] Water Aid. 2004. Getting to the true nature of the Problem: The case of financing rural water supply and sanitation in Zambia's poverty reduction strategy.
[67] Interview with MMD publicity secretary Kitwe, Copperbelt Province
[68] Interview with field officer George Township, Lusaka
[69] Interview with community development officer, Matero, Lusaka
[70] Government of the Republic of Zambia. 2003. Poverty Reduction Strategy Paper and Transitional National Development Plan. Lusaka: Ministry of Finance and National Planning
[71] Coopers and Lybrand. 1988. Reorganisation Study of the Water and Sanitation Sector in Zambia – Final Report. Sponsored by GTZ, UNDP, World Bank. For Ministry of Decentralisation
[72] Interview with CBE in Linda, Lusaka and Filed officer George Township, Lusaka
[73] Interview with Village development committee Chulu Ngoma, Mbala, Northern province
[74] Interview with MACO officials, Chipata, Eastern province and Livingstone, Southern province

Commercialisation brings improved service provision and the opportunity for internal investment in the water sector[75]. Commercialisation also implies the ability for effective management of utilities and ability to hire skilled personnel[76]. Commercialisation also means a bottom line focus and cost return. Unless cross subsidisation can be achieved commercialisation is not pro poor.

Community participation

Communities are empowered to participate in projects and actually propose projects for their areas. This is part of a demand driven approach to community projects and development[77]. It also goes towards project sustainability, especially water projects. Community participation is not always achieved in some projects as the community ends up being consulted but not taking part in the decision making[78].

Sustainability

Sustainability is an issue in water projects carried out in rural areas and peri-urban areas. In the past some infrastructure that has been installed breaks down within the first couple of years[79]. Measures have been taken to increase sustainability of projects by community participation in projects and community contributions to projects[80].

Service Delivery

The reforms in the water sector were to help improve the level of service delivery. This was mainly in the domestic water supply. Service delivery improvement would need an overhaul of water distribution systems in some parts of the country. Another requirement would be the expansion of water treatment plants[81].

Water Conservation

The meters being installed in urban areas are a way of encouraging water conservation[82]. Metering was initiated in the more affluent neighbourhoods taking advantage of the individual connections that exist there. The metering was also a move away from fixed monthly water bills and towards paying for the actual quantities of water used. The less affluent townships usually have communal taps that are metered to account for water but control over the amounts used is a collective responsibility. The limited treatment capacity of water plants makes water conservation essential in urban areas. It also helps in keeping costs down and assisting in demand side water management.

Project Commitment and Contribution

The project contribution from the community amounts to 10 to 15% of the total project costs[83]. The contribution shows community commitment to the project and goes towards ensuring project sustainability. On a national level the government also contributes 10% to donor funded projects and programmes[84].

[75] This belief is held by some donor agencies and MLGH personnel particularly in relation to urban water supply
[76] Interview with CU personnel in Ndola, Solwezi, Livingstone, Chipata and Lusaka
[77] Interview with project team leader at CARE International and ZAMSIF personnel in Lusaka
[78] Interview with Irrigation scheme chairman, Rukuzye and Sefula water user group
[79] Interview with village headman in Chulu Ngoma, Mbala, Northern Province
[80] Focus group discussions with RDC members in Kaputula and Katondo, Kabwe, Central Province
[81] Interviews with CU and water department personnel in Kabwe, Mbala, Solwezi and Kasama
[82] Interview with CU personnel in Chipata and Solwezi
[83] Interview with project team at CARE International and ZAMSIF personnel, Lusaka
[84] Interview with publicity officer, WRAP, Lusaka

Temporal Elements

History of service provision

Service provision in the domestic water sector has always been poor especially considering the subsidised rates paid in the past since the 1970s. The poor standard of service was recognised in the late 1980s[85]. Once the water sector reforms were started, a National Water Policy was created in 1994. The government made a commitment to improve service delivery in all urban areas.

History of colonisation

The history of colonisation has had an impact on the development of infrastructure especially in the rural areas. During the colonial years and just after independence, investment in the water sector was restricted to the urban areas. Unfortunately some of the treatment plants that were built in the 1950s were poorly maintained and the populations they were built for have been surpassed[86].

History of party administration

The sections in the one party era had a communal tap in some peri-urban areas[87]. The access to the tap was regulated by the party chairman. This was a type of autocratic rule that gave the party chairman quite a lot of powers[88]. Under the multi-party system the section party leaders have less control and there are more water points in the sections as long as the residents are able to pay.

History of project support

Donors are shifting support from direct project support towards budget support. This is in response to an ongoing debate on the most efficient way or effective way of using donor funds[89]. Donor funds were channelled through projects to prevent the redirection of funds by the government. However the system of direct project support meant some programmes and projects that were prioritised by the government would not receive funding[90]. Budget support still links to project support but government will have more control over prioritising projects.

History of project sustainability

It has been noticed that some projects do not complete their life cycle. This may be due to the ownership of the project or the acceptance of the project by the community[91]. Some communities feel projects are imposed on them and as a result do not maintain the infrastructure. Other communities feel they are entitled to water and other social goods and should not pay for them as they are the responsibility of the government[92]. Communities are now being encouraged to participate in projects and also make a contribution towards the project costs.

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[85] Coopers and Lybrand. 1988. Reorganisation Study of the Water and Sanitation Sector in Zambia – Final Report. Sponsored by GTZ, UNDP, World Bank. For Ministry of Decentralisation

[86] Interview with water department personnel in Kabwe and Lundazi

[87] A section was made up of 25 households and was headed by a section chairman

[88] Interview with MMD publicity officer, Kitwe and UNIP youth chairman, Lusaka

[89] Oxford Policy Management carried out a project funded by DfID looking at poverty reduction through budget support

[90] Discussion with Ministry of Finance personnel

[91] Interview with project teams at CARE international and World Vision and Interviews with community development officers in Lusaka and Chipata

[92] Interview with District Officer in Mansa, Luapula province

History of civil society organisation

Civil society in Zambia is generally weak and unorganised. As the communities get more involved in projects and propose projects for their communities civil society wakes up and begins to hold local authorities and water suppliers accountable for a good level of service provision [93] . There are also some communities where community based enterprises have been set up to manage the water supply to a community. In other communities resident development committees elect water committees to manage the water supply. In such communities the local authority has effectively been replaced as a water supplier. The media has also played a role in informing citizens especially about their rights and the organisation of civil society[94].

Land tenure

Land tenure affects the investment in water infrastructure. This is similar to tenancy in some urban and peri-urban areas. Long term land tenure and tenancy encourages investment in water supply infrastructure, maintenance of infrastructure and participation in community projects[95]. There are different classifications of land in Zambia; state land, reserve land and trust land. According to the Land Act (1995) all land is vested in the President. However when dealing with trust land or traditional land, the traditional leader in the area must be consulted and give consent to any decisions. State land can have a 99 year lease while traditional land usually has a lower tenure. The tenure for traditional land is understood to be 14 years but this is officially the right of occupancy that can be granted by a traditional leader. Traditional land usually applies customary law which varies according to the tribe. Traditional land can be converted into state land once title is given through the commissioner of lands.

Social Cultural Symbols

Representation of water

These are usually non consumptive uses of water. Water is viewed by most citizens as a social good which they are entitled to. Most citizens equate water to life itself. Even though the urban and peri-urban residents accept they should pay for treated water, there is still a general feeling that water rates should be subsidised[96]. In most rural areas there is a consensus that water should not be paid for as it is a God given gift and there is so much of it everywhere[97]. The gift from God is a Christian view which is predominant in the rural areas and urban areas because Christianity is a wide spread religion in Zambia

Representation of agriculture

Small scale agriculture is being promoted as a business and no longer as a survival tool[98]. More irrigation schemes are being set up and broken down infrastructure is also being rehabilitated[99]. This move of changing the way people look at agriculture is part of the strategy to ensure food sufficiency in Zambia and poverty reduction.

[93] Increased civil activity in towns with CUs has been reported in local media e.g. water watch groups
[94] Radio and TV programmes have discussions on water issues
[95] Discussion with MACO officials in Lusaka and RDC members in Lusaka
[96] Interviews with general public members in Lusaka, Chipata and Kabwe
[97] Interviews with general public in Mungwi, Mongu and Livingstone
[98] Interview with small scale farmers in Lwabwe, Kasama
[99] Interviews with MACO officials in Kasama and Chipata

Traditional tribal beliefs

Traditional beliefs vary according to tribes in Zambia. Some tribes have sacred springs that mere public members cannot approach[100]. Only divine members of the tribe can approach the sites. The water bodies are also seen by some tribes as cleansing places. Some sacrificial ceremonies are performed near water bodies. Some parts of the Zambezi River especially near the Victoria Falls are considered places of rest for past traditional leaders[101].

Water rights

These are obtained from the Water Board under MEWD. Water rights are issued for impounding[102] of water or use of surface waters above a minimum stipulated amount. The minimum amount is stipulated by the Water Board and is given as 500 cubic meters annually. Water rights can be issued for a period of up to 20 years[103]. The process of water rights application is being decentralised through the provincial water affairs offices. The provincial personnel will also help in monitoring activities for the board which is currently understaffed. This is pilot project which will be rolled out over a two year period based on the success of the pilot. Currently the Water Board carries out and monitors the allocation of water rights centrally from Lusaka.

Major Issues/ Debates

Willingness and Ability to Pay

The willingness to pay as compared to the ability to pay is still being debated especially in urban and peri-urban areas. The management in some commercial utilities feel residents are just not willing to pay for water as they are accustomed to getting subsidised services[104]. Other utilities like electricity which are not essentials are promptly paid for. A reason for this behaviour may be one cannot draw electricity from one's neighbour.

Involvement of Private Sector

Involving the private sector in water supply is an on going debate because of the level of service private companies may be able to provide and the potential investment that private companies may bring[105]. There is a counter argument of water being more of a social good and private companies not being easy to regulate.

Public Fund Investment in Sector

Public funds are more oriented to water sector investment than private funds. Water is a social good and not entirely an economic good. As such the returns from water supply provision would be lower than other commercial enterprises. The low returns would inhibit the attraction of private investment in the water sector[106].

Including the poor

[100] Interviews with village headman in Chulu Ngoma and reported by MACO officials in Kasama
[101] Interview with tour guide, Mukuni village, Livingstone
[102] Storage of water in reservoirs
[103] Interview with secretary of the Water Board, Lusaka
[104] Interview with CU personnel in Chipata, Livingstone and Ndola
[105] Discussion with MLGH official
[106] Ibid

The poor are expected to be a subsidised group making use of either cross subsidisation in commercial utilities or public funds for the rural areas[107]. The poor in urban and peri-urban areas sometimes end up paying accumulatively more for water than their more affluent counterparts[108]. The cost returns in water supply to the poor is not feasible.

Cross subsidisation

Cross subsidisation is still being worked out in the commercial utilities. None of them seem to have found a way of exploiting cross subsidisation. This may be because most users appear to be in the middle consumption bracket[109]. To make the most of cross subsidisation, there has to be a significant number of users in the higher consumption bracket. The higher bracket is the group that pays the actual cost of supplying their water.

Limits of regulation

Regulation in the domestic water sector is still in its infancy under NWASCO that has been in existence for just over four years. The regulator is still finding its feet in enforcing regulation in the water sector. NWASCO issues licences for water suppliers and also monitors their performance using set targets that are reviewed annually[110]. NWASCO only deals with the supply side and not the disposal side of water and sewerage. The effluent discharge is under the Environmental Council of Zambia.

Urban/ rural divide

The urban and rural divide affects the decisions made in the water sector. At the moment the divide has an adverse affect on the sector. The rural water sector is in disarray compared to the urban water sector[111]. The urban sector has historically been serviced by local authorities and more recently the commercial utilities. The rural sector is dependent on NGOs, donor funding and government projects that are not well co-ordinated and are affected by funding bottlenecks[112].

Maintenance

The maintenance of infrastructure is an issue for water projects especially in rural and peri-urban areas. After a project is handed over to the community, trained personnel who are members of the water committee, are responsible for maintenance and repairs[113]. These residents are trained to carry out minor repairs but depend on the collection of the water user fees to raise funds for the repairs. Unfortunately if the water fees are not collected the repairs cannot be carried out effectively.

Skills and capabilities

Skills and capabilities are essential in the right mix to run water committees and manage water project infrastructure. Capabilities are not well developed in most villages and peri-urban areas[114]. This affects the sustainability of projects. The skills and capabilities are passed on by NGO staff and line ministry staff.

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[107] Discussion with Rural Water Sector Project Team under MLGH

[108] Calculated costs for on the spot water payments in Mongu workout higher than rates paid by urban residents.

[109] Interviews with CU personnel in Solwezi and Livingstone

[110] Interview with NWASCO personnel, Lusaka

[111] Discussion with MLGH official

[112] Water Aid. 2004. Getting to the true nature of the Problem: The case of financing rural water supply and sanitation in Zambia's poverty reduction strategy.

[113] Interview with RDCs in Lusaka and Rural water committees in Mongu and Mbala

[114] Discussions with Community Development Officers in Mansa, Kawambwa, Mbala and Chipata

Prioritisation of Uses
As demand on particular water resources like the Kafue River increase there are plans to prioritise water uses to assist in the allocation of the resources[115]. Domestic water use has priority and thereafter the allocation will be based on the most efficient use of water with emphasis on economic benefits.

Water Demand Management
The supply side management has to be accompanied by demand side water management. Demand side water management encourages community water management and water conservation [116] . The latter is more engineering oriented while the demand side management is more socially oriented.

Sanitation link
The link between sanitation and water supply usually results in more emphasis being placed on water supply and not sanitation[117]. The two are inevitably linked especially when looking at health matters. All commercial utilities are water and sewerage companies yet investment is only placed in water supply and not improving the sewerage services[118]. In rural areas most residents use pit latrines. Pit latrines are also used in some peri-urban areas along side soak aways.

Related issues
Public service provision
Public funds are limited and generally public services in Zambia are of low standard. Water and sanitation does not always have priority for allocation of public funds especially when placed against other key sectors like health and education[119]. Investment in public services has historically been almost non existent. This is one of the reasons for commercialising the water sector.

Service Expectations
Domestic water users expect a good standard of service from water suppliers. These expectations are not always possible for the water suppliers to meet. The water suppliers have targets set by the national domestic water regulator[120]. Most commercial utilities usually fail to meet all their targets[121].

MDGs
MDGs are international targets to reduce the number of people with no access to clean and safe water. In Zambia this accounts for 36% of the population, majority of this number actually live in the rural areas[122]. The MDGs have had a positive effect on the

[115] Water Resources Demand document drawn up by WRAP team
[116] Nyambe I. et al. 2002. Water Demand Management in Zambia – Towards Promotion and Adoption-Final Report. South Africa Country Office: IUCN
[117] Interview with Environmental Health Technician, Mansa, Luapula province
[118] Interview with general public members in Kapata Township, Chipata, Eastern province
[119] Government of the Republic of Zambia. 2003. Poverty Reduction Strategy Paper and Transitional National Development Plan. Lusaka: Ministry of Finance and National Planning
[120] NWASCO. 2001. Domestic Water Supply Guidelines. Lusaka: NWASCO
[121] NWASCO2002-2003. Annual Reports. Lusaka: NWASCO
[122] CSO. 2000. National Population and Housing Census. Lusaka: CSO

rural water sector in Zambia even though the solutions provided are engineering focused. The strategy is to increase the number of water points in the rural areas[123]. Unfortunately as more boreholes are drilled others break down or go out of use.

Poverty Reduction Strategy

The poverty reduction strategies are home grown plans for poverty reduction. Water plays an important role in the Zambian poverty reduction strategy[124]. Water resources are to be used in agriculture promotion and fishing activities to improve livelihoods. Water also plays a role in the tourism industry, which is also getting a lot of attention[125]. The water resources will also be exploited by creating multi purpose water points in the rural areas[126]. Multi purpose water points are usually in the form of dams that can be used for fishing, recreation and to draw water for domestic use, irrigation and watering livestock.

IWRM

IWRM is not a well spread idea in Zambia[127]. No group appears to be championing the international drive. DCI in Northern Province is applying it in some project areas and reports the idea has been welcomed by rural water users[128]. Water aid has also incorporated IWRM in some water projects in the southern province[129]. The GWP is one of the organisations promoting the idea through their local office in Zambia. The idea is to have a holistic approach to water resource management at the local level.

Donor support

Donor support has been uncoordinated in the past and the entry points for the aid seem numerous. The donor aid comes in through projects, NGOs, government budgets or directly through communities. The numerous entry points make accountability difficult[130]. A group has been set up headed by water aid to coordinate donor aid in the water sector[131].

Funding bottlenecks

Water aid reported some bottle necks in the Zambian water sector. The report showed below 13% of budget allocated funds had actually been released in 2003. The bottlenecks involve the budget process from central government and also budget proposals from provincial and district personnel[132]. There is also the chance that the money that is allocated is not actually available. Another reason may be that it is easier to get funds for water projects as compared to other development projects that seem obscure to the donors. So water may be used as a selling point to get funds which are diverted to other activities[133].

[123] Interview with provincial water engineers in Kasama and Mansa
[124] Government of the Republic of Zambia. 2003. Poverty Reduction Strategy Paper. Lusaka: Ministry of Finance and National Planning
[125] Visit Zambia 2005 Campaign by National tourist Board
[126] Interview with MACO official, Livingstone
[127] Interview with DWA official, Lusaka
[128] Interview with water manager for DCI, Kasama
[129] Interview with researcher with Water Aid, Lusaka
[130] Discussion with Ministry of Finance personnel
[131] Interview with researcher with Water Aid, Lusaka
[132] Water Aid. 2004. Getting to the true nature of the Problem: The case of financing rural water supply and sanitation in Zambia's poverty reduction strategy.
[133] Discussion with Ministry of Finance personnel

Corruption/ Accountability
Corruption and accountability go hand in hand in the Zambian water sector. There was a report from the Ministry of Finance that stated only K40 million out of K600 million released for Lusaka water projects could be accounted for. This is a figure of less than 10%. Only 2 boreholes out of a planned 30 were drilled using the funds released for this purpose[134].

Leadership
Leadership issues are highlighted and more important in rural areas where traditional leaders are involved in the selection of the water committee in their areas[135]. If a traditional leader and his council of indunas do not accept a project then even the subjects are not likely to accept the project. Leadership also plays a role in water committees that are formed once a water project is completed and handed over to the community.

Customary vs. Common law
Customary law is applicable at the local level especially in rural areas while common law is applicable on the national level and urban areas. The traditional land applies customary laws whereas the state land applies common law. Traditional land can be converted to state land through title that is consented to by the chief or traditional leader[136]. The two types of law are not always compatible and it does not help that customary law varies according to tribe.

Water and Sanitation Health and hygiene Education (WASHE)
This approach integrates water and sanitation, health, hygiene and education. The approach is championed by the health and education line ministries[137]. It is used mainly in rural areas to carry out community projects. DWASHE teams exist at district level and VWASHE teams exist at village level.

Governance
The right systems and institutions need to be in place for effective water resource management to take place. Governance encompasses most of the discursive items listed above. Governance can be defined as the traditions and institutions by which authority is exercised for the common good. This includes (i) the process by which those in authority are selected, monitored and replaced, (ii) the capacity to effectively manage resources and implement sound policies, and (iii) the respect of citizens and the state for the institutions that govern economic and social interactions among them.[138] This definition is inclined towards the concept of the state. It does however convey the general meaning of governance that covers the rules, procedures and practices affecting how powers are exercised. Governance can be explored at different levels, from the grass roots to the national levels.

[134] Speech delivered on national TV by Deputy Minister for Finance and National Planning, June 2004
[135] Interviews with general public members in Mongu, Livingstone and Mbala
[136] Interview with Prof Mvunga expert in Zambian Land law
[137] Interview with DWASHE teams in Lundazi, Chipata and Mbala
[138] Governance group of World Bank Institute, part of The World Bank Group

Positional Map

Ideally the positional map should give the positions taken by different actors regarding different discursive elements but the position should not be directly linked or identified with any particular actor. The map should also show what silences can be picked up from the positions taken. From the silences we can highlight the issues that are being addressed and debated and the ones that are being overlooked for various reasons.

The positional map helps identify the actors that have more influence or more clout than others using the positions on the discursive elements. It is possible to point out what voices can be heard even though the voices are not ideally supposed to be identified with a particular actor. The positions taken also help assess the impact that discourse has on the decisions being made and actions found in the situation. However, the map has connotations of attempting to be objective in a rather subjective situation.

The positional maps have some draw backs in that some positions taken by actors are personal and not necessarily the same as those of an organisation or institution, which the actor operates in[139]. Unless the positions are shown to be explicitly personal, it is not easy to differentiate the two in an interview scenario. Further the actors in an organisation may have different positions, which are influenced by their location i.e. rural or urban. The positional maps are also influenced by the researcher's personal conclusions and opinions even though this may openly be kept to a minimum. Outside influence and rhetoric is also difficult to sift through. Including all positions proves to be challenging with a large selection of interviewees, thus in some cases only common positions are given. These draw backs do not mean the tool cannot be useful but show some limitations of its use and also point towards the benefits of using more than one type of map and a team effort in the final analysis.

The positional map of Zambia's water sector depicts the positions taken by different actors on the earlier identified discursive elements and related issues. The positions come from interview data, local and international media reports, general debates and discussions, academic material and observations at sites. They are not limited to the ones summarised below. The list given is by no means exhaustive. Even though ideally each position should not be directly linked to a particular group, it was useful during the exercise to divide the different participants into groups and set up a check list to ensure the position of each group is included. The groups are given in the situational map.

[139] The positions may be personal to the interviewee

Issue	**Positions**	**Manifestation**
Vulnerable	Difficult to identify in a particular community Subjective concept usually specific to location Need help in form of free services or income support Term has potential to be misused in some communities Usually refers to orphans, widows and aged	Lack of local translation for the term compounds the position that vulnerability is seen as an abstract term imported from NGO and Donor discourse. Some communities understand the term must be included in all project proposals whether the group is identified or not.
Poor	Subjective concept as definition varies Cost return not feasible Challenge to incorporate for water suppliers Should have low cost and low maintenance technology Can benefit from cross subsidisation in urban areas Usually need public funds for provision of services	Poor people can be found in any township though undoubtedly the peri-urban areas and rural areas have higher concentration than the urban areas. Job losses make it temporary in some cases. Figures show that about 75% of the Zambians live below the poverty line and about 50% in abject poverty. Target group for most NGOs.
Rural	Sparse populations which are difficult to target Lower living standards than urban areas Low cost technology used for ease of maintenance Require sustainable community managed schemes Benefit from multi-purpose water points Potential recipients of public funds Usually have alternative water points for livelihoods Likely to have strong traditional and cultural roots Historically ignored in development activities	Development in the colonial era and just after independence was concentrated in the urban centres where population density was higher. Investment is higher in the urban centres relating to the ability to pay and cost return. Rural to urban migration still continues. Majority of the migrants end up in peri-urban areas or shanty townships on the periphery of the urban centres. The peri-urban areas become densely populated even though some of them have no basic services since they are termed illegal.
Urban	Dense populations Higher living standards Large volumes of water use related to living standards Ability and willingness to pay for water Economies of scale for water supply can be applied High cost technology usually demanded More market oriented than rural areas Have potential to attract investment	Economic activity puts the urban areas at an advantage compared to rural areas. The urban areas attract investment and residents have the ability to pay for services. The dense populations in the urban areas also have louder voices given their education and exposure to international media. Decision makers also reside in urban areas and thus their decisions directly affect them and their neighbours. Citizens in the urban areas have more value and potential.

	Water tariff usually high	
Peri-urban	Dense populations related to urban centre proximity Mixed range of living standards High potential of ability to pay for services Medium cost technology Economies of scale can be applied Likely to be unwilling to pay for services Require community managed water schemes Community participation in projects is important High chance of ground water contamination from pit latrines	Peri-urban areas usually form the overspill from urban centres. The proximity to urban centres means the peri-urban areas can benefit from access to the services in urban areas. Service providers have decided to engage RDCs in collection of service fees with an incentive of contributing towards community funds. The community funds are supposed to be used for development activities proposed and supported by the community. Sanitation is usually a problem in most peri-urban areas because of the high density of populations and lack of sewage treatment systems.
Socio-economic status	Low socio-economic status should have access to public funds High socio economic status should operate on market principle Mixture of status in some peri-urban and urban areas Dependant on international classifications Indicator of ability and willingness to pay for services	Commercial utilities have been created in urban centres while rural and peri-urban water supply is dependent on NGO activity and donor aid. It is difficult to classify areas according to socio economic status as more people are migrating from one area to another and people have different attractions and reasons for living in a particular area.
Concepts of development	Access to clean and safe water essential for development and to attract trained staff for schools, hospitals etc Communities must propose development projects Individual water tap as symbol of development Citizens have a right to development Development gives citizens choices	Different infrastructure and resources applied in urban areas as compared to rural and peri-urban areas. Most schools and health centres in rural areas are not manned by skilled staff because of the lack of services in the areas and lack of incentives for trained manpower to live and work in the outposts. Most residents prefer tap water because of the ease of collecting water from taps.
Commercialisation	Necessary for improving service delivery Attracts essential investment for water sector Pro-urban water supply Leaves out poor and vulnerable	CUs still find it challenging to provide services to the poor because of the focus on cost return. Employee morale is increased in CU setting and residents testify to the improved service delivery. Investment is still hindered by the fact that

	Potential to improve accountability Brings about institutional reorganisation Results in increased tariffs	CUs cannot borrow money on the market because of ownership criteria.
Community participation	Potential for capacity building Form of community empowerment Increases citizen responsibility State passing the buck Reorganises civil society	Community management has failed in some resource poor communities. In other communities the idea has been welcomed and is doing well. The groups passing on skills and building capability feel they are making a difference even though the actual capacity may be difficult to measure.
Sustainability	Essential for resource poor state Requires community participation Essential for project to have positive impact Too much responsibility for some communities Needs further assessment and measurement	The limited national resources, financial and human, mean that effectiveness and efficiency in the use of resources are important. The state does not have money to throw at solution finding so approaches and solutions must be well thought out to ensure maximum and lasting benefit.
Service Delivery	Historically poor If improved increases willingness to pay Better in commercial entities Can be improved using various approaches Government should not be involved	One of the main reasons for water sector reform and formulation of the National Water Policy was poor service delivery. Most residents say they are willing to pay for services that they get at an acceptable standard.
Water Conservation	Essential in urban areas given the limited water treatment capacity Imposed in peri-urban and low cost urban areas Community requires sensitization regarding concept Necessary in drought prone areas Can be demand and supply driven Related to quality and quantity of water resources	Urban centres have water meters that have been installed to encourage water conservation. The peri-urban areas and some urban areas have rationed water supply. Water conservation can partly counter water shortages but water suppliers also need to focus on their high amounts of unaccounted water in the urban centres.
Project Commitment and Contribution	Addresses issues around project ownership Necessity for donor funded projects Too high for some communities Biased towards more affluent residents	The underlying principle applied here is communities treasure projects and appreciate them more if they can see the contribution they made to the project. The contribution also shows that the community accept the project and

	Amount varies according to donor or NGO	support it giving better chances of project sustainability.
Willingness and ability to pay	Difficult to measure in some places but necessary before project or investment is undertaken Subjective concept depending on location Smoke screen for attitude of some community members Fluid concept as personal circumstances can change Usually generalised for entire communities	When water projects are suggested in communities, most members say they are willing to pay for the water and have the ability to pay. These sentiments changeover time. Residents pay for utilities like electricity but fail to pay for water. Domestic water is seen as a social good and entitlement that should be subsidised in most communities.
Involvement of private sector	Potential to provide much needed investment Water is both a social and economic good Likely to benefit more affluent areas Potential to improve service delivery Returns in water sector expected to be low Can be considered once commercialisation is complete	Private sector would be focused on cost returns unless providing a subsidised service for their employees. The social value of water has a potential to be overlooked. The low returns mean most local companies may not be able to compete leaving the water supply in the hands of international companies.
Public Fund investment in sector	Suitable for rural areas Benefits poor and less affluent areas Water not a priority in government projects Limited national resources Increases dependency on State	MLGH has a mandate to provide safe and clean drinking water for all the citizens. Human right to water is implicitly recognised. The human right to water is not explicitly cited by the Government as they are convinced they would not be able to honour their responsibility to all citizens.
Including the poor	Challenge for CUs and other water suppliers MLGH sanctioned discourse Requires low cost technology and subsidisation Necessary to meet MDGs NGOs play a crucial role Rural water supply programme must be effective	A Devolution Trust Fund has been set up by NWASCO and Kiosks have been piloted in some peri-urban areas. The kiosks offer a low cost technology and direct water sales. A team has also been formed under MLGH looking at a strategy for rural water supply.
Cross subsidisation	Consultant sanctioned discourse Difficult to exploit Smaller towns likely to benefit more Minimum numbers not ascertained	Emphasised in consultant reports but CUs find it difficult to internalise or exploit the concept. Most large towns think the cross subsidisation will have an adverse effect on their operations. It is uneconomical to set up a CU in a small rural

	Likely to benefit less affluent community members Requires significant number of high volume water users	town and these are the towns that are usually linked with large towns to create a provincial CU.
Limits of regulation	Too many licensing bodies in water sector Only one licensed water provider for each town NWASCO teeth not tested Loss of vision by regulator	Water suppliers need licences from NWASCO, Water Board and Environmental Council of Zambia. The licences are for different aspects of the water supply and sewage treatment. Targets are set for the suppliers but the targets are rather flexible.
Urban/ rural divide	Widening gap especially in service delivery Rural water supply in need of new strategy Urban focus for investment because of cost return Debated classification of rural area	Disparities in organisation of the water sector and problem solving leave the rural water sector in disarray. There are also some towns that are classified as rural but have the facilities of an urban centre and vice versa.
Maintenance	Related to ownership of project and infrastructure Essential for all projects and requires resources Requires increased community participation Increases citizen responsibility Government failing its citizens Related to project sustainability	Disparities in project life cycles in different parts of the country. The projects are usually in rural and peri-urban areas where community participation in projects is encouraged and sustainability is important. In urban areas maintenance of infrastructure is mainly the responsibility of the water supplier.
Skills and capabilities	Lacking in most CUs especially at management level Usually apparent but not real i.e. not long term Difficult to measure in some organisations Essential for community managed schemes Implementers play key role in passing on skills	Disparities in performance of water committees and CUs. The secondment of all former council employees to CUs has an adverse effect on performance and service delivery in urban centres. Management has been changed several times in some CUs.
Prioritisation of Uses	Domestic water is a primary use Enhances allocative efficiency Applicable to water bodies with high competition User pays principle	To be included in WRAP recommendations especially for Kafue basin. The Kafue basin has the highest demand for water resources in Zambia and industrial activity has impact on water quality in the river.
Water Demand Management	Encourages community participation Complements supply driven solutions	Documents are available on research carried out on demand management but the concept does not seem to have been

	Encourages water conservation Pre-emptive approach	internalised by the water suppliers and the end users. The metering exercise in the urban centres and sensitization exercises do contribute to demand management.
Sanitation link	Water supply closely linked to sanitation Sanitation is usually forgotten because of water focus Related to public health Emphasised in peri-urban areas due to high density Space is required to minimise contamination chances Soak ways and pit latrines must be well designed	More resources allocated to water than sanitation even though the link between water and sanitation is highlighted in all projects and studies. The link also encourages an integrated approach to water management. Most residents design and build their own soak ways and pit latrines. An improved ventilated pit latrine has been piloted in some areas
Poverty Reduction Strategy	Home grown initiative to retarget donor aid for maximum impact Prioritisation of projects according to local ideas Donors still have control on fund allocation Places health and education above water sector Potential to improve coordination of donor aid	Documents available but programme differs from activity on the ground. The difference between the plans and action is usually blamed on the funding mechanisms that are available for the projects under poverty reduction and the support given to the activities by the donors. Even though government sets its priorities, the financiers may not agree.
IWRM	International discourse Lack of funds to ensure implementation Low uptake Piloted in Northern province by DCI and in Southern Province by Water Aid Potential for holistic resource management	Only at pilot stage though GWP is looking at internalisation. This is an international campaign which has potential to improve water management in Zambia especially that Zambia has a considerable amount of shared water resources.
Donor support	Uncoordinated Too many conditions Conditions sometimes unfeasible Conditions affect project implementation Numerous entry points that affect accountability Debate to refocus and coordinate Competition for particular areas and sectors	Current international debate to reorganise aid and make it more effective. A team has been set up in Zambia involving most stakeholders in the water sector. the team includes water Aid, DANNIDA, DfID and other donor organisations working along side government ministries relating to water i.e. MLGH and MEWD. Competition exists among donor organisations regarding visibility and projects supported.
Funding bottlenecks	Budget procedure related	Erratic release of project funds by relevant ministry i.e.

	Adversely affect project implementation Relate to availability of resources One direction of information flow No feedback to bottom tiers of administration Funds difficult to trace because of numerous entry points	MLGH or Ministry of Finance. Accountability is an issue for most projects especially given the numerous entry points for donor funds. Some times the funds that are allocated for projects are not actually available or are diverted for causes considered more of a priority.
Corruption/ Accountability	Poor accountability for released funds and water revenues Related to billing systems in CUs Related to erratic funding release by MoF and MLGH Contract bidding process not transparent Some water projects have no positive impact	Departmental and media reports usually show lack of accountability for project funds. The lack of transparency in project bidding processes also leaves room for corruption especially in government projects. In some towns like Kabwe, funds released for improving the water supply have had no visible impact.
Leadership	Essential for effective organisations Traditional rulers must be consulted and involved in community projects Hereditary leaders have different attitudes Training to improve skills can be provided Legitimacy and authority varies according to location	Traditional leaders are entry points for most NGO projects. The fact that some leaders are hereditary makes it difficult to remove them if the community chooses. The authority and legitimacy of traditional leaders is sometimes overlooked by project implementers.
Governance	Institutional reorganisation by WRAP Time consuming exercise Less attractive than engineering solutions Essential for maximum project impact Responsibility of project implementers	Championed by donor agencies and NGOs. Most government agencies do not have the capacity to address governance issues in projects. This aspect is usually left to NGOs like CARE International. The NGOs do some times work with line ministry staff at community level.
Customary vs. Common law	Customary law applicable for traditional lands Chief is consulted but president is custodian of land Common law more applicable in urban areas Coded customary law differs from customs Common law applied in times of dispute	There are differing local perspectives on authority and legitimacy of traditional rulers as compared to elected officials. The authority and legitimacy debate is prominent in the rural areas where traditional leaders command more respect.
Water And	Integrated approach from different sectors	Dominant at district level but not provincial level. The

Sanitation Health and hygiene Education (WASHE)	Encourages dialogue Common entry point for projects Encourages community participation Effective at district level and not provincial level Accessible for most communities	WASHE concept started off as an international campaign. Initial funding for the approach was provided by NORAD. The concept is applied in most districts especially by the health sector and community development office of the local authority.
MDGs	Entry point for donor funds Clear milestones Easy to represent in figures Not achievable at current pace of action Supply driven solutions Targets the poor, vulnerable and rural areas	Supported by donors and international financial institutions. There is a current debate in Zambia regarding the ability to meet MDGs given the current course of action. Most stakeholders feel the targets are unachievable without drastic changes to the pace and actions being taken.
Service Expectations	High level of service expected in urban areas where water rates are considered high Low expectations in areas catered for by local authorities Service should be improved before tariff increase Need investment to improve services Improved service does not guarantee willingness to pay	Greater awareness and expressions of demand in urban areas especially that there are visible channels to address concerns in most areas. Concerns from the community are more difficult to address in rural areas unless through the channel of traditional leaders or the DWASHE teams.

Silences

The positions taken on different discursive elements reveal some of the silences in the Zambian water sector. Some issues are dealt with by different government agencies or project groups e.g. the strategy for the rural water sector. However, some issues are not addressed by the responsible bodies or organisations. These overlooked or ignored issues are some the silences within the sector. A variety of reasons exist for not addressing issues such as the lack of human and capital resources or the attitude of those responsible for addressing them. In some cases the government agencies do not employ qualified staff; the staff lacks the capabilities to address particular issues like governance. Some project teams or agencies are not effective in carrying out their duties and overlook issues that they consider unimportant. Morale is generally low in government agencies mainly because of the low rates of pay. Additionally, in some extreme cases the project implementers or facilitators are not bothered to address a particular issue especially if it does not affect them directly. One example of the extreme case is the issue of project contribution, which eliminates some communities from qualifying for water projects in their areas of residence. The actors setting the criterion for qualifying for projects do not reside in the project areas. Therefore the consequences of an area not qualifying for a water project have no effect on these decision makers.

Silences can be drawn out from both the situational map and the positional map. The paragraphs that follow the situational map are the outcome of a relationship exploration among the different actors and actants. The exploration process identifies some relationships that may be hidden. The hidden relationships are in some cases accidental silences that different actors are not aware of. Positional mapping is more likely to reveal the deliberate silences that are not being addressed mainly because of lack of resources or knowledge to address these issues. It is more oriented to deliberate silences because it gives positions that are taken by different actors. Sometimes the deliberate silences are known, not necessarily to the responsible actor or the decision makers, they are just not being addressed.

Silences caused by lack of resources i.e. both human and financial resources include:

- Illegal settlements are not being entitled to service provision
- Access to clean and safe water being essential for development
- Citizens having a right to development
- Commercialisation leaving out poor and vulnerable
- Imposed water conservation in peri-urban areas and low cost areas
- Project commitment and contribution being too high for some communities
- Project commitment and contribution being biased towards more affluent residents
- Challenge for CUs and other water suppliers to include the poor
- Cross subsidisation requiring a significant number of high volume water users
- Skills and capabilities usually being apparent but not real i.e. not long term
- Sanitation usually being forgotten because of water focus
- Donors still having control on fund allocation
- Competition of donor support for particular areas and sectors
- Contract bidding process not being transparent
- Some water projects having no positive impact
- MDGs not being achievable at current pace of action

- Improved service delivery not guaranteeing willingness to pay

Silences resulting from overlooking of issues include:
- Peri-urban having a mixed range of living standards
- Development giving citizens choices
- Improving service delivery using various approaches
- Community participation increasing citizen responsibility
- Sustainability of projects being too much responsibility for some communities
- Willingness to pay and ability to pay being a fluid concept as personal circumstances can change
- Lack of funds to ensure implementation of IWRM
- Donor support conditions sometimes adversely affect project implementation
- Erratic release of funds by Ministry of Finance and Ministry of Local Government and Housing
- Hereditary leaders having different attitudes
- Governance issues being less attractive than engineering solutions

Conclusion

The situational map identified different actors and actants in the Zambian water sector. The different actors have varying levels of influence depending on the field in which they are placed and the different actors that they interact with. In this interaction several themes have emerged from the research. Some of the themes are: vulnerability, commercialisation, willing ness and ability to pay, donor aid, community participation, community level management, citizen responsibility, state dependency, capacity building and multiple water use.

These themes are interrelated and not standalone concepts. The commercialisation of the water sector especially in the urban area, which includes the peri-urban area, cannot be sustainable without a willingness and ability to pay for the water provided. Donor agencies support the commercialisation of the water sector to reduce the dependency on state resources and subsidised services. In the urban areas community level management and community participation are not encouraged through the formation of the Commercial Utilities. The utilities control the distribution of the water resources. The role of the client is to pay their bills on time and conserve water at the point of use by minimising losses through leaking taps and using minimal amounts of water for various activities. However, commercialisation increases citizen responsibility. The clients of the water utilities are able to monitor the operations of the water supplier and voice any dissatisfaction with standards of service. Ideally, the water supplier is held accountable if services are below a user defined acceptable standard. The user pays principle applies to the urban clients that value the safe and clean water provided by the utilities. Payment of bills by the client can symbolise satisfaction of service provided and compounds the value given to the service being provided.

Capacity building is part of the development package that the water projects in the rural and some peri-urban areas are classified as. Capacity building in a community

empowers some vulnerable communities giving them income generating activities and channels for accessing development projects from proposals written by the community. Community participation and community commitment is necessary for the capacity building programmes to have any impact on the development of a particular location. Capacity building also increases citizen responsibility for the development projects in their areas of residence and reduces the levels of dependency on the state. One key issue with the capacity building theme is finding ways of ensuring the capacity is built on the long term and real capacity is developed in a community. Just like willingness to pay differs from ability to pay, there is a difference between the apparent capacity and real capacity built in a community. The real capacity does not only depend on the community but the institutions formed to enable the community make use of the capacity [140]. Project proposals may be submitted but if no feedback is given to the communities in good time the capacity may be wasted and eventually lost.

Community level management is more suitable to the water committees that are set up around water projects in the rural and some peri-urban areas. The responsibility of the citizens in these areas is increased through the local level management of the water supply infrastructure and indirectly, the water resources that the communities use. Some community members are trained in the repair of infrastructure and with the commitment shown by the community through contribution to the project costs, the projects are expected to be sustainable. Donor agencies request a contribution of up to 20% of the project costs from the community. Some vulnerable communities are not able to provide this contribution even if it is requested in the form of materials like sand or crushed stones. The community level management is a move away from central government control of projects and reduces dependency on the state especially for the repair of infrastructure. The community is expected to raise their own resources for minor repairs and not wait for government officials to visit their areas before complaints can be made and addressed. Funding options communicated to the communities for use in instances of major breakdowns.

Commitment from a community can be symbolised in different ways. The willingness and ability to contribute towards project costs shows the community accepts the project and values the contribution the project will make to their lives. Accepting a project and getting involved in the project symbolises ownership of the project. If a community writes its own project proposals this compounds the ownership of the project and also indicates the capacity of the community. Acceptance of a project, ownership and participation by the community ensure the sustainability of the project. The long term sustainability can only be ensured if the community continues to value the contribution the project makes to their lives and livelihoods. Community commitment was introduced by the donor agencies as a symbol of project acceptance and ownership. The commitment was also required to ensure project sustainability. The contribution however excludes some vulnerable communities especially in very remote areas. Citizens in these areas are usually not able to contribute towards projects costs. Field experience shows that community commitment helps in project

[140] Reference is made here to social capital. Social capital can be defined as an instantiated informal norm that promotes cooperation between individuals. (Fukuyama, 1999) Using this definition, trust, networks, civil society etc are associated with social capital. There are ways of contributing to social capital for example through strengthening of social networks which can be recognised by policy makers and development agents.

ownership and sustainability. Some communities are able to show the parts of a project that were contributed by the community and this contribution increases the desire to safeguard particular infrastructure and ensure sustainability. The impact of the community contribution is however not positive in all project areas.

Citizen responsibility, specifically the increase, is not directly addressed in Zambia. The concept is addressed as a move away from state dependency. Government officials repeat the message that the Zambian government lacks the financial and material resources to meet the needs of every single Zambian citizen. The citizens need to do something for themselves and the Government will meet them along the way. Repackaging the message of asking not what your country can do for you but what you can do for your country[141]. This is also encouraging citizens to take care of the assets and infrastructure in their areas of residence. Community responsibility results from individual responsibility. This individual responsibility feeds into the community level management of projects and resources that is encouraged by the donor agencies. The increased responsibility is easier to maintain in communities with capacity to support the projects and maintain projects in their areas. The vulnerable communities and community members that do not have such capacity continue to rely on external assistance.

Donor aid and other forms of external assistance play an important role in providing financial and human resources for the rural and peri-urban water sector. These are the target areas for capacity building and poverty reduction. The communities in these areas are expected to show commitment to the projects undertaken in their areas. These are also areas where surface and ground water is accessible to residents and residents feel they are entitled to make use of the resources that are openly at their disposal. Safe sources of drinking water are appreciated but some community members feel there is no need to make any monthly contribution after the infrastructure has been put in place. After a water project is handed over to the community and the project has been running for a few years, the committee rarely continues to be active and some members stop making the nominal contribution for the use of the infrastructure. Projects are welcomed when they are introduced especially since they are packaged as development projects. However, the traditional water sources remain available for use and most residents believe there is no life threatening risks in using these water sources. Residents with a traditional source in closer proximity than a safe water source, revert to using the traditional source for convenience. Donors still maintain control of projects that are funded and compete to fund particular areas and projects within the water sector. The competition is not necessarily for visibility but is sometimes logistical or linked to past relationships developed in an area.

Vulnerability is used in different ways by different actors. In the Zambian water sector it rarely applies to a whole community. Vulnerable communities exist in southern Zambia. The vulnerability is caused by the drought prone area of the country that these communities live in. In western Zambia some communities are vulnerable because of the higher probability of saline water in the groundwater sources. The vulnerability of these communities is known but not addressed effectively. Multi

[141] This does not necessarily mean the end of the state but encourages citizens to help themselves and not depend on outside intervention even though the government is increasingly dependant on outside intervention itself.

purpose water points are installed in the southern part of the country as part of the effort to address the vulnerability of the drought prone areas. Vulnerability is commonly used to attract water projects in different communities. The vulnerability refers to particular members of the community especially the orphans, aged and retirees. These vulnerable groups are used as target group by most donor agencies and NGOs. A community with a significant proportion of these vulnerable groups usually highlights their plight in project proposals. However, vulnerability attracts external assistance but also increases state dependency. Vulnerable groups can be assisted with capacity building to help them cope with their vulnerability. Community participation is hindered by vulnerability.

Themes emerging from the research will continue to be explored and relationships between the different themes analysed. The themes provide supporting knowledge to the more visual mapping outputs. Applicability of the outputs introduces the use of generic actors and issues. This will be done at a later stage. The influence of the different actors and leverage of the actors will also be addressed at a later stage. Influence and leverage depends on the field and arena in which the actors are placed. This dependency introduces some complexity in determining the influence of a particular actor. Both the radical and the liberal approaches to determining the influence of actors will be considered in the next phase of analysis.

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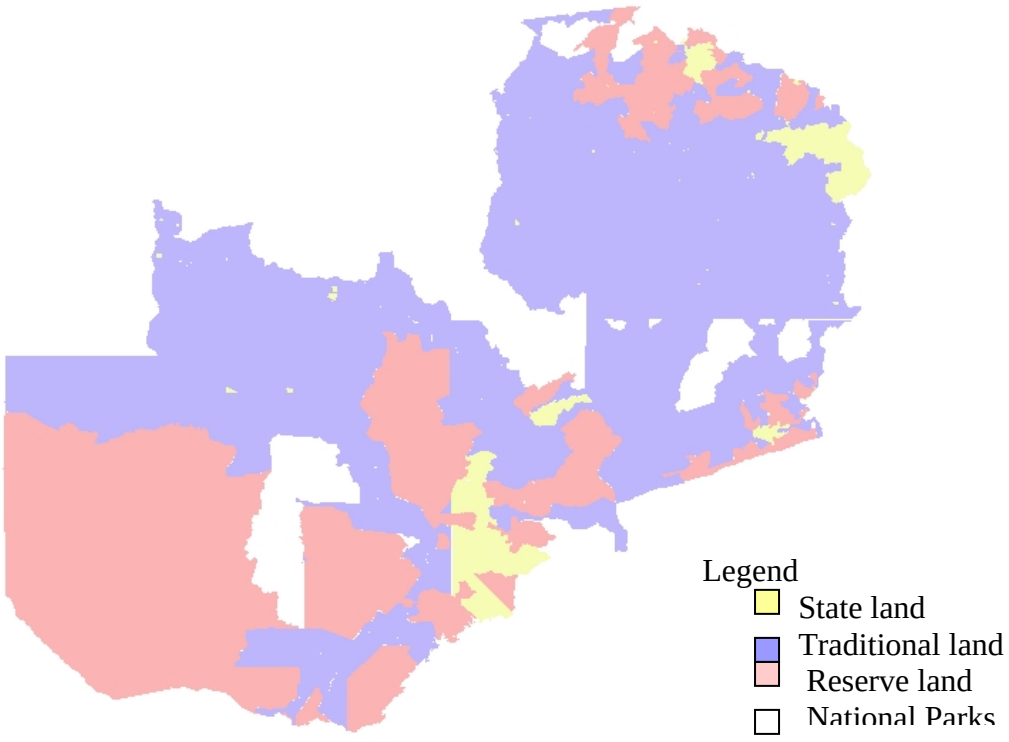
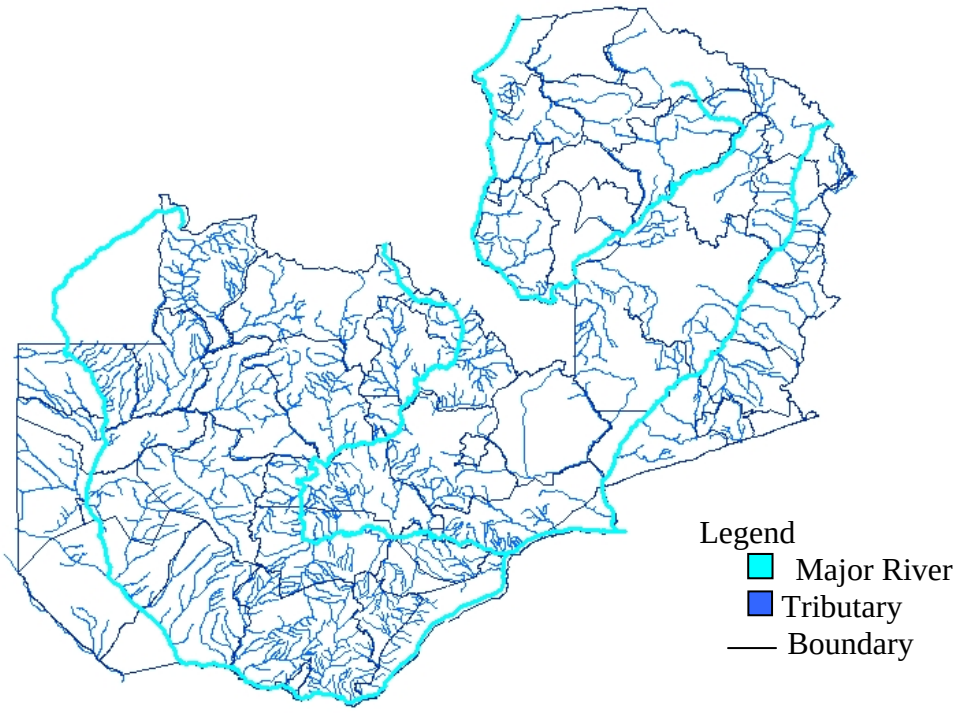
Digitised Maps

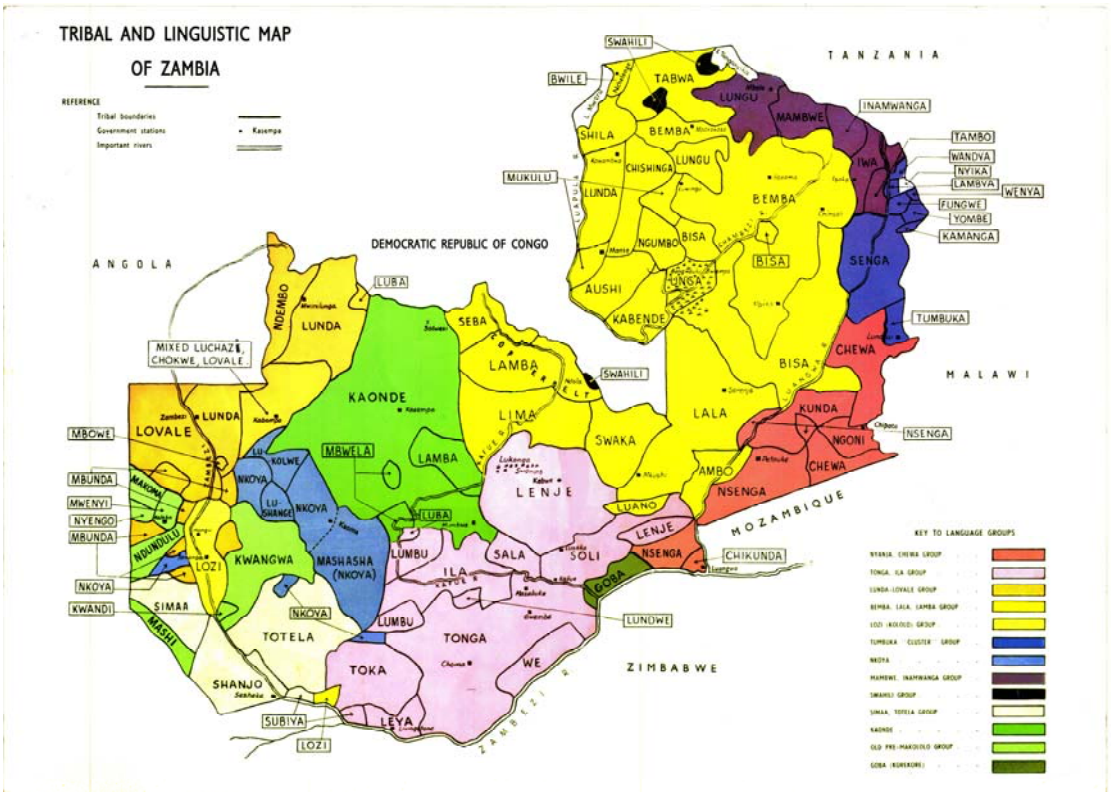
Districts of Zambia



Land classification in Zambia



Main Rivers and Tributaries



Tribal Map