

UNIVERSITY OF KWAZULU-NATAL

**AN ANALYSIS OF REVENUE MANAGEMENT IN WATER AND SANITATION IN
HARRY GWALA AND UGU WATER SERVICES AUTHORITIES**

by

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Doctor of Administration**

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DECLARATION

I, **Nobuhle Pamela NKABANE**, declare that

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ABSTRACT

Local government municipalities in South Africa are beset by poor revenue collection and management and the Harry Gwala and Ugu WSAs are no exception. In this regard, public finance is a decisive and overriding factor in determining the financial viability of municipalities. Failure to collect revenues properly compromises the quality of service delivery, including the provision of water and sanitation. In general, financial viability of urban and rural municipalities differs respectively. This claim is based on the fact that some municipalities are self-sufficient while others remain dependent on national revenue for survival and the revenue base in most rural municipalities is weak and unsustainable, rendering service delivery ineffective and unsatisfactory. Arguably, the transition to democracy has instilled a culture of non-payment and a culture of entitlement even though households are able to pay for service charges. However, 25 years later the government is still providing free services to such individuals. This study intends to conduct an explorative analysis of revenue management of water and sanitation with specific reference to Harry Gwala and Ugu WSAs. The study explored the communication challenges being experienced by both WSAs in the provision of metered services in water and sanitation service delivery. It assessed the challenges relating to the billing system and to the management of revenue collection for water and sanitation in the Harry Gwala and Ugu WSAs. Furthermore, the study investigated the challenges of compliance management for water and sanitation businesses in Harry Gwala and Ugu WSAs. The research approach uses a qualitative research method. Data collection methods were interviews and questionnaires as the primary data collection strategy. Based on the empirical data collected and analysed, the study further developed and introduced a normative model/new conceptual framework on revenue management for water and sanitation service delivery which the researcher has found as being a gap in the literature. The normative model/conceptual framework will contribute to the body of knowledge and reinforce existing theories, which will assist in determining the financial standpoint of rural and urban water services authorities. The study has recommended how best the WSAs can improve water and sanitation revenue inflows to ensure availability and sustainability of revenue sources in order to operate, maintain and refurbish the existing infrastructure to ensure that the future generation is not deprived an access to this precious ecological resource.

LIST OF FIGURES

Figure 1.1: Location of the Harry Gwala DM (Sisonke DM) and Ugu DM in KwaZulu-Natal Province	9
Figure 2.1: Administrative Service Model.....	25
Figure 2.2: Different Types of Water Sector Institutions	35
Figure 2.3: Water and Sanitation Business Cycle.....	39
Figure 2.4: Water and Sanitation Business Cycle.....	42
Figure 2.5: Open system input-output model	43
Figure 2.6: Non-revenue water reduction framework.....	67
Figure 2.7: Revenue Management Business Model	68
Figure 2.8: Revenue enhancement implementation process.....	69
Figure 2.9: Revenue Management Cycle.....	72
Figure 2.10: Financial Sustainability Model.....	74
Figure 2.11: Tripod Methodology.....	75
Figure 2.12: Service Quality and Customer satisfaction	79
Figure 2.13: Conceptualising service quality and customer satisfaction.....	80
Figure 2.14: The five dimensions of the SERVQUAL model.....	83
Figure 3.1: Sustainable Compliance Model.....	94
Figure 3.2: McKinsey 7S Model.....	101
Figure 3.3: Sustainable Customer Centricity Model.....	105
Figure 3.4: Sustainable e-Compliance, Customer Centricity and User Fees Conceptual Framework	110
Figure 4.1: Map of HGDM area of jurisdiction.....	119
Figure 4.2: Map of Ugu area of jurisdiction	120
Figure 5.1 A sample of Harry Gwala Water and Sanitation Tariff Structure 2016/17 Financial Year.....	136
Figure 5.2: A sample of Ugu Water/Sanitation Tariff Structure 2016/17 Financial Year.....	139
Figure 5.3: An example of Harry Gwala WSA Domestic Statement of Account	140
Figure 5.4: An example of Ugu WSA Domestic Statement of Account	141
Figure 5.5: Communication Challenges in Water and Sanitation Service Delivery in Harry Gwala WSA	152
Figure 5.6: Communication Challenges in Water and Sanitation Service Delivery in Ugu WSA	153

Figure 5.7: Challenges in metered service provision in water and sanitation service delivery in the Harry Gwala WSA	161
Figure 5.8: Challenges of the provision of metered services in water and sanitation Service delivery in the Ugu WSA.....	162
Figure 5.9: Trend Line Graph of Harry Gwala WSA water and sanitation income 2016-2018 Financial Year	167
Figure 5.10: Trend Line Graph of Ugu WSAs Water and Sanitation Income for 2015-2018 Financial Years	169
Figure 5.11: Challenges of accurate billing for water and sanitation in Harry Gwala WSA	171
Figure 5.12: Challenges in accurate billing for water and sanitation in Ugu WSA.....	172
Figure 5.13: Harry Gwala WSA Revenue 2018/19 FY	177
Figure 5.14: Ugu WSA Revenue 2018/19 FY	177
Figure 5.15: 2018/19 Revenue Sources	178
Figure 5.16: 2018/19 Revenue Sources	179
Figure 5.17: Capital Budget by Type.....	179
Figure 5.18: Capital Budget by Type.....	180
Figure 5.19: Harry Gwala WSA Revenue Sources – Conditional Grants Allocations.....	181
Figure 5.20: Ugu WSA Revenue Sources – Conditional Grants Allocations.....	181
Figure 5.21: Harry Gwala WSA Capex Budget per Local Municipality.....	182
Figure 5.22: Ugu WSA Capex Budget per Local Municipality.....	182
Figure 5.23: Harry Gwala WSA Municipal Infrastructure Grant Allocation per Local Municipality.....	183
Figure 5.24: Ugu WSA Municipal Infrastructure Grant Allocation per Local Municipality	183
Figure 5.25: Management of revenue collection challenges in order to improve water and sanitation service delivery in Harry Gwala WSA.....	185
Figure 5.26: Management of revenue collection challenges in order to improve water and sanitation service delivery in Ugu WSA.....	186
Figure 5.27: Strategies to improve provision of water and sanitation service delivery in Harry Gwala WSA	189
Figure 5.28: Strategies to improve provision of water and sanitation service delivery in Ugu WSA.....	190
Figure 5.29: Green Drop system assessment overall components.....	196
Figure 5.30: Blue Drop system assessment overall components.....	197

LIST OF TABLES

Table 2.1: Paradigm phases and their periods of dominance.....	27
Table 2.2: Paradigm phases and their period of dominance and emphasis	28
Table 2.3: The variances between Customer satisfaction and Service Quality	79
Table 4.1 Validity, reliability and trustworthiness.....	130
Table 5.1 Classification of process controllers	194

TABLE OF CONTENTS

DECLARATION	i
ACKNOWLEDGEMENTS	ii
ABSTRACT	iii
LIST OF FIGURES	iv
LIST OF TABLES	vi
ACRONYMS	xv
CHAPTER ONE INTRODUCTION AND BACKGROUND OF THE STUDY.....	1
1.1 INTRODUCTION.....	1
1.2 CREATIVITY AND INNOVATIVENESS RELATIVE TO NEW SOURCES OF LOCAL GOVERNMENT REVENUE.....	5
1.3 THE HARRY GWALA DISTRICT MUNICIPALITY/WSA	7
1.4 THE UGU DM/WSA	8
1.5. RATIONALE OF THE STUDY	10
1.6 PROBLEM STATEMENT	11
1.7. OBJECTIVES OF THE STUDY	12
1.8. KEY RESEARCH QUESTIONS	12
1.9 RESEARCH METHODOLOGY	12
1.9.1 Research Purpose.....	12
1.9.2 Research Setting	13
1.9.3 Research Paradigms and Traditions	13
1.9.4 Research Design	14
1.9.5 Target Population	15
1.9.6 Sampling Method	15
1.9.7 Data collection methods and tools.....	15
1.9.8 Data collection instruments	17
1.9.9 Data Analysis.....	17
1.9.10 Validity, Reliability and Trustworthiness.....	18

1.9.11 Ethical issues	18
1.10 SIGNIFICANCE OF THE STUDY	18
1.11 CLARIFICATION OF KEY CONCEPTS	19
1.12. HYPOTHESIS	21
1.13. LIMITATIONS OF THE STUDY	21
1.14 STRUCTURE OF THE DISSERTATION/CHAPTER OUTLINE	22
1.15 CONCLUSION	23
CHAPTER TWO REVENUE MANAGEMENT LITERATURE REVIEW AND THEORETICAL FRAMEWORK.....	24
2.1 INTRODUCTION.....	24
2.2 ADMINISTRATIVE MANAGEMENT SERVICE MODEL AND VIEWS ON GOVERNMENT SERVICES AND THE PARADIGM PHASES IN THE PUBLIC ADMINISTRATION	24
2.2.1 Various Views of Government Services	26
2.2.2 Paradigm Phases of Public Administration	26
2.3 LEGISLATIVE FRAMEWORK	29
2.3.1 The Constitution of the Republic of South Africa of 1996	30
2.3.2 The White Paper on the Transformation of Public Service Delivery of 1997	30
2.3.3 The Division of Revenue Act (DORA)	30
2.3.4 Intergovernmental Fiscal Relations Act, No. 97 of 1997	31
2.3.5 The Local Government Municipal Finance Management Act, No. 56 of 2003	31
2.3.6 The Local Government: Municipal Systems Act 32 of 2000	31
2.3.7 The Water Supply and Sanitation Policy White Paper of 1994	31
2.3.8 The Water Services Act 108 of 1997.....	32
2.3.9 The National Water Act, 36 of 1998	32
2.3.10 The South African National Standards (SANS) Act, No. 241 of 2011	32
2.3.11 Overview of the South African Water Sector and Strategic Overview of the Water Regulatory Framework in South Africa	33

2.4 THE ROLE OF THE WATER SECTOR INSTITUTIONS	33
2.4.1 The Role of Water sector institutions in the Water and Sanitation Business Cycle	35
2.4.2 Progress made to date in relation to water and sanitation service provision.....	36
2.4.3 Cost-Recovery in the Water and Sanitation Business Cycle.....	38
2.5 COST RECOVERY IN SOUTH AFRICA.....	39
2.6 RECENT TRENDS IN MUNICIPAL FINANCE.....	43
2.6.1 Revenue Management Principles	44
2.6.2 Cash Management and Revenue Collection.....	46
2.6.3 Public Financial Management and Revenue Collection.....	46
2.6.4 Challenges which African Countries are Faced with in Relation to Revenue Collection.....	47
2.6.5 Factors which Impact Negatively on Revenue Management	48
2.6.6 Level of Injustice in the Enforcement of Revenue Policies	48
2.7 SOURCES OF GOVERNMENT REVENUE.....	50
2.8 REFLECTION ON THE ATTEMPTS BY LOCAL GOVERNMENT MUNICIPALITIES TO RAISE REVENUE FROM SERVICE CHARGES IN SOUTHERN AFRICA	53
2.9 BENEFIT TAXATION AND USER FEES THEORY	54
2.9.1 Benefit Taxes and User Fees Theoretical Framework.....	55
2.10 DIFFERENT TYPES OF TAXATION	55
2.10.1 Relevance of the Theoretical Framework.....	56
2.11 ADVANTAGES OF BENEFIT TAXES AND USER FEES.....	56
2.12 IMPOSITION OF BURDEN BY USER FEES	56
2.13 TRADITIONAL GOALS OF TAX POLICY.....	57
2.13.1 Economic efficiency.....	57
2.13.2 Accountability	58
2.13.3 Fairness.....	58
2.13.4 Budgetary Flexibility.....	59

2.13.5 Revenue	59
2.13.6 Political viability.....	59
2.14 FACTORS TO CONSIDER WHEN DESIGNING BENEFIT TAXES AND USER FEES.....	60
2.14.1 Feasibility	60
2.14.2 Suitability.....	60
2.15 CRUCIAL ELEMENTS TO CONSIDER IN THE DESIGN OF BENEFIT TAXES AND USER FEES.....	61
2.15.1 Billing, Quality of Services and Communication.....	61
2.16 REFLECTIONS OF THE MUNICIPAL GOVERNMENT EXPENDITURE WITH PARTICULAR REFERENCE TO WATER AND SANITATION SERVICES IN CANADA	61
2.17 A GUIDE TO ENHANCING MUNICIPAL REVENUE – MUNICIPAL REVENUE MANAGEMENT MODEL.....	63
2.17.1 Overview of the Revenue Management Process	64
2.17.2 Packaged Programmes for the Revenue Management Processes.....	64
2.17.3 Municipal Revenue Management Business Model and Revenue Enhancement Process.....	67
2.17.4 The Impact of the Billing System on Revenue Collection Performance.....	69
2.18 FINANCIAL SUSTAINABILITY MODEL	72
2.19 GUIDELINES ON DOMESTIC WATER ACCOUNTS	75
2.20 THE DISCONFIRMATION MODEL AND THE GAP MODEL	77
2.21 SERVQUAL MODEL	81
2.22 STRUCTURAL ALIGNMENT OF THE NATIONAL DEVELOPMENT PLAN AND OTHER LEGISLATIVE FRAMEWORKS IN RELATION TO WATER AND SANITATION SERVICE DELIVERY	84
2.23 OUTCOMES APPROACH TO PERFORMANCE MANAGEMENT IN THE PUBLIC SECTOR.....	85
2.24 SUMMARY	88

CHAPTER THREE SUSTAINABLE MODELS AND FRAMEWORK FOR ENHANCING REVENUE MANAGEMENT IN MUNICIPALITIES AND WSAs.....	90
3.1 INTRODUCTION.....	90
3.1.1 Water and Sanitation Service Delivery Challenges.....	90
3.2 CORPORATE GOVERNANCE IN THE PUBLIC SECTOR.....	92
3.2.2 Compliance and the Benefits of complying	94
3.2.3 Sustainable Compliance and Risk Management	95
3.2.4 Compliance and Relevance with King III principles.....	96
3.2.5 Reflections on Compliance and the Paradigm Shift in King Codes.....	96
3.3 THE CUSTOMER, CLIENT AND CUSTOMER CENTRICITY	97
3.3.1 The Alignment of Customer Centricity Culture with the Strategy, Vision and Values of an Organisation	99
3.3.2 Conceptualisation of the McKinsey 7S Model.....	101
3.3.3 A Model Employee Handbook, Customer Centric Culture Shift Model	103
3.3.4. The Customer Segments for WSAs.....	104
3.3.5. Discovery Skills in the Water and Sanitation Business.....	105
3.3.6 The Channel Design Business Model.....	106
3.3.7 The Customer analytic to measure the Customer Experience.....	106
3.3.8 Customer-centric Sustainability	107
3.3.9 User Fees Conceptual Framework and the WSAs in South Africa.....	108
3.4 CONCLUSION	114
CHAPTER FOUR RESEARCH DESIGN AND METHODOLOGY	116
4.1 INTRODUCTION.....	116
4.2 RESEARCH PURPOSE	116
4.3 RESEARCH SETTING	117
4.4 RESEARCH PARADIGMS AND TRADITIONS.....	120
4.4.1 The Assumptions of the “Interpretivists”	121
4.4.2 The Criteria for Quality “Interpretivists” Research.....	122

4.5 RESEARCH DESIGN	122
4.6 RESEARCH METHODOLOGY	125
4.6.1 Qualitative Research Method	125
4.6.2 The Target Population	126
4.6.3 Accessible population.....	126
4.7.1 Sample size	127
4.8 DATA COLLECTION.....	127
4.8.1 Data collection methods and tools.....	127
3.8.2 Data collection instruments	129
4.9 DATA ANALYSIS IN SOCIAL RESEARCH	129
4.9.1 Eight Steps of Data Analysis	130
4.10 VALIDITY, RELIABILITY AND TRUSTWORTHINESS.....	130
4.11 ETHICAL ISSUES	131
4.12 SUMMARY	133
CHAPTER FIVE DATA PRESENTATION, INTERPRETATION AND ANALYSIS	134
5.1 INTRODUCTION.....	134
5.2 THE LOCAL GOVERNMENT POLICY FRAMEWORK FOR REVENUE MANAGEMENT	135
5.2.1 The Harry Gwala and Ugu WSAs Indigent Policies	144
5.2.3 Enforcement of Revenue Management Mechanisms	144
5.2.4 Unauthorised Consumption	146
5.2.5 Connections and Disconnections.....	147
5.2.6 Prepaid Water Meters	148
5.2.7 Cross-subsidisation.....	149
5.2.8 Handing Over to Private Debt Collection Agencies.....	149
5.2.9 Debt Cancellation/Write-offs	149
5.3 ANALYSIS OF REVENUE MANAGEMENT IN WATER AND SANITATION FACED BY HARRY GWALA AND UGU WSAS	150

5.3.1 An Analysis of the Communication Challenges being Experienced by the Harry Gwala and Ugu WSAs with Regard to their Water and Sanitation Service Delivery....	150
5.3.2 Analysis of the metered services of water and sanitation service delivery in the Harry Gwala and Ugu WSA	158
5.3.3 Installation of Smart Prepaid Meters	159
5.3.4 Water Conservation and Demand Management.....	160
5.3.5 Analysis of the Municipal billing system of water and sanitation in the Harry Gwala and Ugu WSAs	166
5.3.6 Municipal Income and Management of Municipal Revenue: An Analysis of the Harry Gwala and Ugu WSAs	175
5.3.7 Compliance Management and Reporting: An Analysis of the Harry Gwala and Ugu WSAs.....	193
CHAPTER SIX ANALYSIS OF THE FINDINGS	198
6.1 INTRODUCTION.....	198
6.2 ANALYSIS OF THE FINDINGS	198
6.3 INTERPRETATION OF THE FINDINGS	201
6.4 SUMMARY	203
CHAPTER SEVEN CONCLUSION AND RECOMMENDATIONS	204
7.1 INTRODUCTION.....	204
7.2 SUMMARY OF THE FINDINGS.....	207
7.3 CONCLUSIONS.....	208
7.4 RECOMMENDATIONS OF THE STUDY	208
7.5 FINAL REMARKS.....	211
BIBLIOGRAPHY.....	213
ANNEXURES	225
Annexure A: Informed Consent	225
Annexure B: Interview Guide	230
Annexure C: Gatekeepers Letter – Harry Gwala WSA	235

Annexure D: Gatekeepers Letter- Ugu WSA.....	236
Annexure E: Editor’s Certificate.....	237
Annexure F: Ethical Clearance Approval	238
Annexure G: Turnitin Report	239

ACRONYMS

ANC	African National Congress
ASGISA	Accelerated and Shared Growth Initiative for South Africa
CAPEX	Capital Expenditure
CBOs	Community Based Organizations
CMA	Catchment Management Agency
DM	District Municipality
DORA	Division of Revenue Act
GEAR	Growth Economic Accelerated Redistribution
LED	Local Economic Development
LM	Local Municipality
MDGs	Millennium Development Goals
MIIU	Municipal Infrastructure Investment Unit
MTREF	Medium Term Revenue and Expenditure Framework
NDP	National Development Plan
NGO	Non-Governmental Organization
NRW	Non- Revenue Water
RDP	Reconstruction Development Programme
SANS	South African National Standard
SARPA	South African Revenue Protection Association
SDG	Sustainable Development Goals
SOEs	State-owned Enterprises
UKZN	University of KwaZulu-Natal
USAID	United States Agency for International Development
WC/WDM	Water Conservation and Water Demand Management
WSA	Water Services Authority
WSDP	Water Services Development Plan

CHAPTER ONE

INTRODUCTION AND BACKGROUND OF THE STUDY

1.1 INTRODUCTION

The main purpose of the study was to perform an explorative analysis of revenue management of water and sanitation services in the Harry Gwala and Ugu Water Services Authorities (WSAs) in KwaZulu-Natal. Harry Gwala is a rural Municipality and Ugu is a semi-urban Municipality. Finance is usually considered as the overriding factor in determining financial viability for local government, since without sound financial management, local government operations will become unviable (Kanyane, 2011). According to Mazibuko and Fourie (2013), municipal finance refers to municipal government's revenue collection and expenditure decisions. In support of Kanyane (2011), Mazibuko and Fourie (2013) argue that municipalities cannot deliver services to citizens if they do not have sufficient municipal finance generated from taxes, levies, rates and service charges paid by consumers for municipal services. According to Mazibuko and Fourie (2013), national and provincial transfers are not a substitute for the municipality's own revenue. Households, businesses and other institutions which can afford to pay in all Municipalities should pay rates and the full cost of services they receive, with the exception of free basic water, which is 6kl, as per the Harry Gwala Water and Sanitation and Ugu Water Services Municipal by-laws. The Constitution of the Republic of South Africa of 1996 states that national transfers may not compensate municipalities which fail to generate their own revenues in line with their fiscal capacity. Most municipalities are becoming increasingly dependent on national transfers (e.g. Municipal Infrastructure Grant) to fund their capital projects, which is not a sustainable trend because this means that the municipal services are not covering their infrastructure costs. The fiscal capacity of municipalities depends on their fiscal efforts to employ an effective revenue collection and management model.

Service provision to citizenry requires financial sustainability to enable local government institutions to fulfil their constitutional and legislative mandates. In essence, the key sources of revenue for municipalities are the following: equitable shares, grants and locally generated revenue. The state is a driver and facilitator of socio-economic development. The state should therefore have fiscal capacity and the ability to generate revenue and further identify other sources of revenue to fulfil its constitutional mandate. This development incorporates the provision of basic adequate municipal services. Drawing on Asmah-Andoh's (2009) work, Motsoeneng and Hanyane (2013) argue that development seeks to improve the quality of the

lives of citizens and to promote their well-being. This involves the provision of improved equitable access of citizens to the distribution of public resources. Local government should deepen the local democracy and socio-economic development of a particular society. The notion of developmental local government in South Africa is hypothesised on the basis of a developmental state which emphasises popular consultation of citizens in government affairs (Motsoeneng & Hanyane, 2013).

The constitutional framework of South Africa has created multiple spheres of government. These constitute national, provincial and local government; all three of these spheres are interdependent and interrelated (Nealer, 2014). However, each of the spheres mentioned above is distinct in nature and has executive and legislative autonomy as enshrined in the constitution (RSA, 1996). The system of government in South Africa is not federal, but a unitary and decentralised. There is a very clear distinction between political power and administrative accountability. Local government in South Africa depends partially on fiscal transfers from the national sphere of government to render public goods and services, and they have fiscal power to raise property taxes and user charges from those consumers who are eligible to pay such taxes (USAID, 2006).

The unitary decentralised system of government in South Africa should enhance efficiency and promote responsive and accountable local government. However, the capacity of local government to produce positive results within its fiscal power to achieve this has limitations in all developing countries (USAID, 2006). The municipalities in South Africa are beset with poor revenue collection. In this regard, public finance is a decisive and overriding factor in determining the financial viability of municipalities. The failure to collect revenues systematically compromises the quality of service delivery, which includes the provision of quality water services and adequate sanitation to communities. Over the last two decades there have been drastic changes in government operations which resulted in innovations in both organisational structures and systems of government aimed at improving public service delivery. Hence, during the transition from the apartheid era to a democratic South Africa, the adoption of the Constitution of the Republic of South Africa in 1996 aimed at creating and developing decentralised structures consisting of separate, but interrelated and interdependent government spheres at national, provincial and local government levels. South Africa also has large racially segregated municipalities, which added up to 800 in total, prior to being merged into 278 municipalities (Nealer, 2014). This merger of municipalities took place in order to redistribute resources more equitably between rich white municipalities and poor black

municipalities. This move served to alleviate the plight of poor and under-funded municipalities whose residents were incapable of paying rates due to the poverty created by apartheid policies. Kumar, Moodley and Reddy (2003) contextualise statutory reform in local government financing as the process whereby all spheres of government experience change and reappraisal. They further make the point that the apartheid system did not reflect the needs of the broad mass of the South African people; hence parliament reviewed local government legislation to improve systems and processes to ensure effective, efficient and economical service delivery.

Financial resources are a crucial aspect in government as the driver of quality service delivery. In a decentralised country like South Africa, local government has been mandated to provide basic needs to communities within its areas of jurisdiction. Hence section 152 of the Constitution of the Republic of South Africa of 1996 clearly describes the objects of local government which include the injunction to municipalities to adopt, within their financial capacity, an excellent financial management system. In this regard, Nkuma (2011) views public finance as an essential instrument used for the allocation, mobilisation and utilisation of resources in a cost-effective manner to reach development objectives. This should accelerate high levels of social development and economic growth.

From the discussion above, it is clear that public finance forms a key factor in development. However, it is important to note that, for the government to embrace developmental objectives, adequate sources of revenue are a prerequisite. From a local government point of view, there are various sources that are in place to fund their mandates of local spheres of government, such as service charges. Ngwakwe (2012) points out that local government has a larger fiscal capacity, as opposed to provincial government. Furthermore, municipalities generate revenues through property tax and regional turnover levies imposed on businesses, as well as user charges for water, sanitation and electricity. As such, municipalities have their own direct collection agencies and the capacity to collect their own municipal revenues.

Sing (2003), as cited in Reddy, Sing and Moodley (2003), makes the point that local government financing for capital and infrastructural development is almost entirely funded by the national government through both conditional and unconditional grants, and the funds are distributed to local government departments through the national transfer system. Sing further states that a conditional grant is the allocation of funds transferred from one department of government to be distributed to local departments subject to the fulfilment or delivery of a

service. These conditional grants are administered by different departments, such as the Department of Water Affairs, Forestry, and Treasury, and Provincial and Co-operative government (Sing, 2003).

As promulgated in the Intergovernmental Fiscal Review (2000) municipalities are required to apply for financial support for infrastructural projects which they identify to be priorities in their localities. The National Treasury will consider the application, and if they are satisfied with the application, the national transfer of a local support grant will be actioned and the municipal project will be fully funded. The management of fund disbursements will, however, be undertaken by the Treasury Department (Sing, 2003). It is clear that conditional grants are a type of discretionary funding disbursed to local municipalities on the basis of some kind of merit claimed by the municipality.

Then there is the unconditional grant, which is a kind of a constitutional imperative under the principle of equitable sharing of national revenue (Reddy & Yorke, 2003). Reddy and Yorke (2003) point out that there are no prescribed criteria for how unconditional grants should be utilised, but the expectation is that these funds should be used for the provision of basic services, mainly to indigents and for municipally assigned duties. Although there is no prescription for how unconditional grants are to be used, there are rigorous accountability systems set in place by the Treasury to minimise the abuse of these funds. Sing (2003) argues that the formula for allocating funding to municipalities has two major components; i.e. the **I** grant which supports municipalities with limited capacity, for example those with existing infrastructural and developmental backlogs, and the **S** grant which is mainly for supporting all municipalities in their provision of basic services.

From the above discussion, it can be concluded that funding for municipalities is mainly from two sources, which are: internal sources arising from those generated by municipalities through revenue collections of rates and levies from service charges; and funding from the Treasury Department. The latter is the major provider of local government finance and is used mainly for infrastructural development projects, operations and the maintenance of municipal infrastructure.

1.2 CREATIVITY AND INNOVATIVENESS RELATIVE TO NEW SOURCES OF LOCAL GOVERNMENT REVENUE

Section 195(1) of the Constitution of the Republic of South Africa provides for creative and innovative local government through the setting out of the fundamentals of a development-oriented Local Economic Development (LED) scheme (Sing, 2003). Local government institutions are now expected to be innovative in finding ways to stimulate economic development using their powers. The move to increase economic growth in municipalities will bring in additional revenue through increased investments, productivity and so on. This effectively means that the onus on stimulating economic growth and promoting investment is no longer the prerogative of national and provincial governments. The innovativeness must encompass the involvement of community stakeholders, such as members of the business community and residents of respective municipalities with a view to harnessing ideas which prompt investment opportunities that will result in employment-creation and the upliftment of living standards for citizens.

Local government innovativeness and creativity should revolve around creating business opportunities by making available affordable land for the setting up of businesses. This innovation can act as a form of job creation opportunity, and in this way, address the triple challenges of unemployment, inequality and poverty with which the country is faced.

The effective way to promote innovativeness and creativity is for municipal departments to identify and formulate projects which are sustainable, and also viable business projects which will create investment opportunities. Once these projects have been identified, the municipality should draw up a detailed business plan that comprises project specifications, description, project duration, sustainability, the management structure of the project, and the present and future financial needs of the project (Sing, 2003).

Should the Municipal Infrastructure Investment Unit (MIIU) approve the project, funding should be disbursed for the commencement of the project. Thus, municipal authorities are now required to think outside the box and to identify, adopt, and implement investment projects which create development and employment opportunities within their domains. The department of local government, however, emphasises the need to partner with private sector organisations if projects are to be sustainable. Also, as part of this partnership, the private sector can be made to finance municipal debt, and to build, design and manage certain projects (Sing, 2003).

Apart from creating and designing viable and sustainable projects in their domains, Sing (2003) makes the point that municipalities should undertake a paradigm shift in accounting by adopting generally accepted municipal accounting practices in preparing their financial statements, as opposed to the continued use of outmoded provincial ordinances. This issue is complex, and as a result the use of the *Municipal Handbook of Accounting*, which has all the statutory guidelines for generally accepted accounting practices, is recommended. In addition to the above, local government institutions should undertake budgetary reforms which will result in the reduction of adverse variances in income and expenditure. Budgetary reforms should encompass the tight monitoring of expenditure, and the adoption of best practices in budget formulation and implementation.

Innovativeness and creativity can further generate additional revenue for local authorities by adopting new public management principles which have been widely adopted in most developed countries. Keraudren and Mierlo (2007) point out that the new public management principles encapsulate the works of many authors who include Pollitt (1990), Hood (1990), and Wash (1995), as indicated in Pollitt and Bouckaert (2000). The main propositions of this theory are that public institutions can improve revenue generation through the following policy decisions (Keraudren & Mierlo, 2007):

- Commercialise municipal-owned assets. This entails running municipal institutions and providing services along private sector lines which can bring additional revenue to municipalities;
- Privatised certain local government institutions and services which will bring in additional revenues; and
- Expand and enforce the user-pay principle.

Introducing competition in the provision of services so as to bid down prices, and save costs and money which local government institutions can then channel to other high priority projects, should be undertaken together with the outsourcing of certain services to private companies and individuals who can provide them more economically and efficiently. If outsourcing is performed to providers who can supply these services at a better rate, then this becomes a *de facto* source of revenue in that the savings become new revenue available for use in other projects (Keraudren & Mierlo, 2007).

The municipalities must take a proactive approach in formulating policies which make it easier for people to start and to run income-generating projects without asking them to undertake costly and time-consuming bureaucratic procedures which often lead to people becoming frustrated and abandoning such initiatives. To alleviate poverty, the municipality must find the means of helping the indigent population access affordable loans to start projects like small-scale poultry projects, flower cultivation, carpentry, shoe making and other endeavours. People should be encouraged to become self-sufficient entrepreneurs, rather than solely expecting central government to fund municipalities (Keraudren & Mierlo, 2007). As more and more people are assisted to become entrepreneurs, poverty is reduced and many people become eligible to pay for water and sanitation services, which in turn will capacitate municipalities to improve service delivery due to increased revenue inflows.

The second approach according to Keraudren and Mierlo (2007) involves making a calculated move to embark on education campaigns to inculcate a culture of paying for municipal services. Without this culture, municipalities will experience difficulties collecting water and sanitation revenue from income earning residents who in some cases lack patriotism. This strategy must be accompanied by an image-building exercise focused on integrity, accountability, excellent performance, honesty and “corruption-busting” strategies so as to persuade reluctant residents to pay for water and sanitation services. The rationale behind this strategy is the fact that residents complain that they are being forced to pay for poor quality water and sanitation services. Thus, excellent water and sanitation service provision will go a long way towards convincing income earning residents to pay. This increase in the municipality’s income-earning capacity will have a positive effect on water and sanitation service delivery.

1.3 THE HARRY GWALA DISTRICT MUNICIPALITY/WSA

The Harry Gwala District Municipality (DM) falls within the bracket of those municipalities which partially benefited from the merger of municipalities. The Harry Gwala DM was composed of four local municipalities within its area of jurisdiction, and is located in the south of the province of KwaZulu-Natal. It is a Category C municipality which is responsible for water and sanitation services. The Harry Gwala DM has WSA status as stipulated in the Municipal Structures Act. This means that the Harry Gwala DM is responsible for the provision of potable water and adequate sanitation services to its consumers and customers. The municipalities that are being serviced by Harry Gwala District Municipality were Ubuhlebezwe, Umzimkhulu, Ingwe, Greater Kokstad and KwaSani. However, Ingwe and

KwaSani have recently amalgamated in order to form one municipality called Nkosazana Dlamini-Zuma, and now there are only four local municipalities in the Harry Gwala District.

1.4 THE UGU DM/WSA

The Ugu District Municipality (DM) is composed of four local municipalities, namely: Umdoni, uMzumbe, Ray Nkonyeni and Umuziwabantu, which are under its area of jurisdiction. However, the Ray Nkonyeni and Hibiscus Coast municipalities have recently been amalgamated to form a municipality called Ray Nkonyeni, and part of Vulamehlo Municipality has been re-demarcated to Ethekwini Municipality, with the remaining part being re-demarcated to Umdoni Municipality and a smaller portion re-demarcated to Harry Gwala. Ugu DM is a Category C municipality situated in the far south of KwaZulu-Natal Province. It lies south of Durban, bordered by a coastline of 112km. Ugu DM has WSA status, as stipulated in the Municipal Structures Act. This means that the Ugu DM is responsible for the provision of potable water and sanitation services to its consumers and customers. The following towns are situated within the Ugu DM: Harding, Hibberdene, Margate, Pennington, Port Edward, Port Shepstone, Scottburgh/Umzinto North and Southbroom.

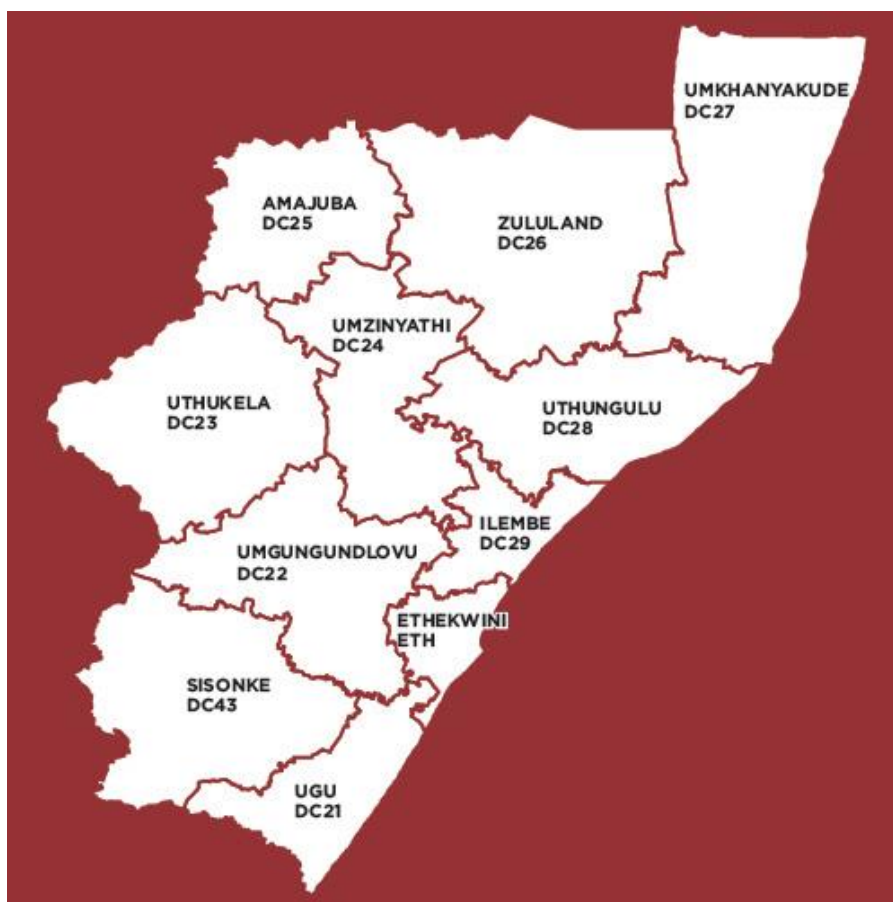


Figure 1.1: Location of the Harry Gwala DM (Sisonke DM) and Ugu DM in KwaZulu-Natal Province

Source: Integrated Development Plan (2015/16)

The municipalities are diverse and operate in distinctive social, demographic and economic spaces. These unique characteristics have a very important impact on municipal performance and the successive strategies required for ensuring a well-functioning local government structure. Within the province of KwaZulu-Natal there are both economically vibrant urban municipalities and sparsely populated rural municipalities.

The Metropolitan Municipalities (Category A) and DMs (Category C) are responsible for water services as stipulated in the Municipal Structures Act or the ministerial authorisations made in terms of the Municipal Structures Act. This means that DMs are responsible for the provision of potable water and sanitation services to their consumers and customers. Since the study is of the Harry Gwala and Ugu DMs, the research will look specifically at the revenue management for service delivery of Water and Sanitation services in the municipalities which fall under these districts.

In South Africa, Section 153 of the Constitution makes provision for the establishment of municipal structures and further obligates municipalities to provide clean water and adequate sanitation to their citizens. In order to achieve this objective, the Water Services Act, No. 108 of 1997 was promulgated to legislate that municipal functions include ensuring water supply and sanitation services for all South Africans. Local government therefore has an obligation to ensure that people within its area of jurisdiction have access to healthy and safe drinking water and good sanitation. The Constitution further states that local government should be democratic and accountable to its citizens by ensuring that their rights and dignity are respected and protected. The Constitution also makes provision for the allocation and collection of revenue.

In essence, there are services which are provided by government departments and public institutions to communities/the public in a direct exchange relationship (Gildenhuys, 2010). The relationship is between the government as the provider of services and the consumer or service user as the buyer. The consumer pays for such services through consumer tariffs, user charges and levies (Gildenhuys, 2010). However, there are common characteristics between consumer tariffs and user charges because payment in both models is made on a benefit-received principle (Gildenhuys, 2010). The focus of this research is on service charges, since one of the Harry Gwala and Ugu DMs' core functions is the provision of good quality drinking

water and suitable sanitation services as guided by the Water Services Act and the Municipal Systems Act.

According to the legislative framework outlined in the Municipal Finance Management Act and in the Municipal Systems Act, a municipality, whether rural or urban, must be able to generate its own revenue. The collection of revenue is pivotal and necessary in order to ensure the financial sustainability of municipalities.

1.5. RATIONALE OF THE STUDY

The study's rationale is based on the fact that some municipalities are self-sufficient, while others remain dependant on national transfers for survival. It becomes difficult for those municipalities which are not self-sufficient to fast-track service delivery in order to fulfil their constitutional mandate. According to Kanyane (2011), seventeen (17) rural municipalities in KwaZulu-Natal are faced with the challenge of weak revenue sources and fail to provide basic services to the communities within their areas of jurisdiction. Kanyane (2011) further argues that local government municipalities should be able to generate revenues in order to fund public services. The Municipal Infrastructure Grant and equitable share should be understood as additional funding (Kanyane, 2011) Thus, water and sanitation service delivery continues to be ineffective and unsatisfactory. In support of Kanyane (2011), other scholars argue that in general the major constraints which result in poor revenue enhancement strategies in rural municipalities are attributable to fruitless municipal business models and radical intervention constraints, namely: lack of community awareness campaigns; poor enforcement and implementation of revenue enhancement and management policies; poor service delivery; and lack of exploration of alternative revenue avenues (Moffat *et al.*, 2017).

The Municipal Infrastructure Grant and equitable share should be understood as additional funding (Kanyane, 2011). It is well known that the transition from an apartheid government to democracy has instilled a culture dependency syndrome even though some households/consumers are able to pay for water and sanitation service charges/user charges.

There is a need to explore the reasons behind the poor performance of rural municipalities. Zivanai *et al.* (2014) highlight the need for a theoretical framework and possible practical solution for cost recovery in service delivery with specific reference to revenue collection and management or service charges. Chikosha and Chiunye (2015) claim that municipalities should revisit financial strategies in order to improve their operations. Furthermore, they argue that

local government municipalities should capacitate their employees, so they can tap into all potential sources of revenue, consult all role players in the planning and implementation of projects and programmes, and improve debtor and creditor management, including the management of cash flow activities; e.g. investment and financing activities (Chiunye & Chikosha, 2015). Drawing on Gordhan's (2012) work, Hanyane and Motsoeneng (2012) state that the culture of non-payment for municipal services contributes negatively to public service delivery sustainability. The current research seeks to explore possible ways in which the Harry Gwala and Ugu DMs can improve their revenue bases in water and sanitation provision, since as WSAs, both municipalities must have a sound revenue base in order to be effective and efficient in service delivery with specific regard to water and sanitation services.

1.6 PROBLEM STATEMENT

In this case, the revenue bases in most rural and semi-urban municipalities, including Harry Gwala and Ugu WSAs, are therefore weak and unsustainable. In most cases there are challenges associated with the communication and provision of metered services being experienced by Harry Gwala and Ugu WSAs in water and sanitation service delivery; to an extent that at distribution points there are no water flow or bulk meters, and some of the consumers of water and sanitation are charged a flat rate because of this. When a water balance report is required, sometimes the volumes are estimated in Harry Gwala and Ugu WSAs. In some cases, there are challenges with regard to accurate billing or the entire billing system in water and sanitation service delivery in Harry Gwala and Ugu WSAs; this extend to the management of revenue collection which would enable these WSAs to improve water and sanitation service delivery and revenue inflows to ensure financial sustainability.

As far as compliance management is concerned, there are some challenges in most WSAs, and Harry Gwala and Ugu are no exception. Thus, service delivery continues to be ineffective and unsatisfactory. Arguably, the transition from an apartheid government to democracy has instilled a culture of non-payment and of entitlement, even though some households/consumers are able to pay for service charges/user charges. This means that during the ushering in of democracy, the majority of households were regarded as belonging to poor communities, and were therefore exempted from paying rates for water and sanitation, amongst other things. Twenty-five years later, however, the South African government is still providing free or subsidised services to such individuals.

1.7. OBJECTIVES OF THE STUDY

The objectives for this study are:

- To explore the communication challenges and provision of metered services being experienced by Harry Gwala and Ugu WSAs in water and sanitation service delivery;
- To assess the challenges in accurate billing for water and sanitation in Harry Gwala and Ugu DMs;
- To determine the management of revenue collection challenges in Harry Gwala and Ugu DMs in order to improve water and sanitation service delivery;
- To investigate the challenges of compliance management by water and sanitation businesses in Harry Gwala and Ugu WSAs; and
- To develop a normative model/conceptual framework for improving revenue management in the WSAs.

1.8. KEY RESEARCH QUESTIONS

The study will attempt to answer the following key questions:

- What communication challenges for the provision of metered services are being experienced by the Harry Gwala and Ugu WSAs in water and sanitation service delivery?
- What are the challenges in accurate billing in water and sanitation in Harry Gwala and Ugu DMs?
- How is the management of revenue collection in Harry Gwala and Ugu DMs contributing to improved water and sanitation service delivery?
- What are the challenges for compliance management of water and sanitation businesses in Harry Gwala and Ugu WSAs?
- What is the normative model/conceptual framework that should be employed in order to improve revenue management in WSAs?

1.9 RESEARCH METHODOLOGY

1.9.1 Research Purpose

The research method employed by the researcher to accomplish the research objectives was a qualitative research approach in order to provide a better understanding of the research problem with the aim of accomplishing the research objectives. The focus of the researcher was the analysis of revenue management for water and sanitation in the Harry Gwala and Ugu WSAs.

Qualitative research is a research method which attempts to collect rich descriptive data in respect of a particular phenomenon with the intention of developing an understanding of what is being observed (Creswell, 2007). On the other hand, quantitative research attempts to collect data in the form of statistics with a sample size of a minimum number of 30 cases (Bertram & Christiansen, 2015).

The researcher decided to use a qualitative research approach since the research topic is sensitive in nature and because there was document analysis of reports from billing sections on revenue collection in the organisations which further intimately touched on and explored the service chargers' perceptions through in-depth interviews, and assessed the performance of the organisations with reference to revenue management of water and sanitation. In addition, this involved the investigation of the challenges of provision of metered services for water and sanitation services, the communication challenges being experienced by consumers in Harry Gwala and Ugu respectively, the challenges in accurate billing for water and sanitation, and determining the challenges for the management of revenue collection in order to improve water and sanitation service delivery, including the problems of compliance management of water and sanitation businesses in Harry Gwala and Ugu WSAs. The data collection methods used were in-depth interviews, observations and document analysis, audio visual materials, instruments, checklists and municipal records.

1.9.2 Research Setting

The research setting is the place where the researcher conducted the study which was suitable and feasible (Maree, 2014). The research was conducted in all four local municipalities in Harry Gwala and Ugu WSAs in KwaZulu-Natal in South Africa. The research setting where the research was conducted were the following areas: Umzimkhulu, Ubuhlebezwe, Nkosazana Dlamini-Zuma and Greater Kokstad, as well as Umdoni, uMzumbe, Ray Nkonyeni and Umuziwabantu.

1.9.3 Research Paradigms and Traditions

According to Bryman (2012), as cited by Plooy-Cilliers (2014), a paradigm is a cluster of beliefs which dictates a particular discipline in what should be studied as a researchable area, how research should be performed, and further providing guidance on how results should be interpreted. In the discipline of social science, paradigms are referred to as research traditions or worldviews (Plooy-Cilliers, 2014).

There are three dominant research paradigms: positivism; interpretivism; and critical realism or constructionism. According to Terre Blanche, Durrheim and Painter (2007) ontology, epistemology and methodology are three dimensions or traditions of research paradigms (Terreblanche, Durrheim & Painter, 2007). Each research paradigm has its own ontology, epistemology and methodology.

Ontology: Specifies the nature of reality that is to be studied and what can be known about it.

Epistemology: Specifies the nature of the relationship between the researcher and what can be known.

Methodology: Specifies how the researcher may go about practically studying whatever they believe can be known.

This study was underpinned by the interpretive research paradigm because the researcher believed that the reality that was studied consists of participants' subjective experiences of the external world. For this reason, the researcher employed an intersubjective or interactional epistemological stance towards that reality in order to accomplish the objectives of the research. The interpretivists research paradigm which was employed by the researcher is generally understood to embody the view that social reality is in a constant state of flux and is dependent on the way in which individuals experience reality internally (Plooy-Cilliers, 2014).

It has been proven by other scholars that the aim of interpretivism is to gain an in-depth understanding of multiple realities and depends on qualitative research (Plooy-Cilliers, 2014). This paradigm is suitable and feasible in both quantitative and qualitative approaches, since the researcher becomes the primary research instrument. (Plooy-Cilliers, 2014)

1.9.4 Research Design

According to Terre Blanche, research design is a strategic framework for action which serves as a bridge between the research question and the execution of the research (Terreblanche, 2007). Other scholars argue that a research design is a formal plan of how the researcher intends to conduct the research (Mouton & Babie, 2007). The research designs which the researcher utilise were explorative, descriptive and case study designs.

1.9.5 Target Population

The population for this study consisted of all consumers and customers living within the Harry Gwala and Ugu WSAs' areas of jurisdiction. However, the researcher was not able to include the entire population, and a sample of 100 participants was therefore drawn upon.

1.9.6 Sampling Method

A non-probability sampling method was employed to select the participants for inclusion in the study since the selection in this method is based on the judgement of the researcher. The researcher employed purposive sampling to select the sample; hence the researcher targeted a specific group with specific characteristics.

Rensburg (2010) defines a sample as “the subset of the population” (Rensburg, 2010). Pascoe also defines sampling as the deliberate selection of the most appropriate participants to be included in a study (Pascoe, 2014).

The sample size refers to the number of element in a sample (Rensburg, 2010). The size of the sample consisted of 10 participants who were interviewed by the researcher per municipality/satellite office or management area, and 10 participants inclusive of officials and political office bearers per WSA. In total the sample size consisted of 50 participants per WSA. From each local municipality, the sample size comprised of: Ward Committees and Community Development workers; Business Sector Traditional Leaders/Councillors; Farmers Association/Rate Payers Association members; Water and Sanitation Community Forums and WSA Officials and political office bearers.

From all these strata, participants were selected using the purposive sampling method as they were deemed to be key decision makers, or at least played pivotal roles in devising innovative and creative ways for how best the Harry Gwala and Ugu WSAs could improve revenue inflows to ensure availability and sustainability of revenue sources without depriving the future generation access to this scarce resource.

1.9.7 Data collection methods and tools

1.9.7.1 Interviews

Interviews were the primary data collection strategy and a natural outgrowth of observation strategies which were employed by the researcher. The researcher used both structured and semi-structured in-depth interviews as a method of collecting data in this study. A semi-

structured in-depth interview is a combination of both structured and unstructured interviews. It defines a line of inquiry which allows the researcher to use basic skills (Creswell, 2007). Creswell (2007) defines a semi-structured interview as a method of corroborating data which emerges from other data sources; it defines the line of inquiry which allows for probing through open-ended questions and clarification answers (Creswell, 2007).

To allow semi-structured in-depth data collection, the questions were populated and given to all participants two weeks prior to in-depth interviews taking place. This ensured that the participants had enough time to scrutinise and reflect on the questions in order to provide profound responses. The in-depth interview questions were delivered with a letter of consent outlining the aims and objectives of the study and guaranteeing the participants' privacy regarding the information provided during the semi structured in-depth data collection process.

1.9.7.2 Focus groups

The researcher interviewed a group of participants to determine their attitudes, behaviour preferences, perceptions and dislikes in relation to revenue management for water and sanitation service delivery. Focus group discussions or interviews are methods used to determine participants' experiences regarding the product and services being investigated (Plooy-Cilliers, 2014). The focus groups consisted of 6 to 12 people and a facilitator gathered for the purpose of expressing views and opinions regarding predetermined open-ended questions relating to a specific phenomenon (Plooy-Cilliers, 2014). The researcher identified question in advance in order to facilitate a discussion on revenue management in water and sanitation services in the Harry Gwala and Ugu DMs.

This method which was employed by the researcher is very cost effective since it allows for the collection of data from a number of participants simultaneously and helps the researcher to determine the questions for follow-up in-depth interviews. The participants were given an opportunity to discuss their experiences with cost recovery in water and sanitation services delivery.

1.9.7.3 Document analysis

The researcher analysed the records of the income/billing sections from Harry Gwala and Ugu WSAs in order to obtain an indication of how many people are indigent, as per the indigent register information, and the number of those capable of paying for water and sanitation

services. The researcher also analysed the billing records versus collection by working with the revenue management teams of the Harry Gwala and Ugu WSAs.

1.9.8 Data collection instruments

- **Interview guides** – The researcher employed semi-structured interviews and interview guides which are necessary in semi-structured interviews. The list of topics and aspects of those topics were outlined in the guide. The researcher raised those questions related to the perception of consumers and customers on cost recovery in water and sanitation service delivery during the course of the interviews. The respondents were asked the same questions but the researcher took into cognisance the educational levels of participants.
- **Cameras** – The researcher also used a visual technique, which is a camera, to take photographs of the interview proceedings. This was useful for reliability and validation as these pictures also documented non-verbal behaviour and communication and could also provide permanent records. According to McMillan & Schumacher (2006), analysis of non-verbal communication is very important in qualitative studies (McMillan & Schumacher, 2006).
- **Tape recorder** – The researcher also used technical equipment, such as a tape recorder, to collect data to ensure that accurate and relatively complete records which would enhance reliability were obtained.

1.9.9 Data Analysis

Data analysis is a research method which identifies patterns in data i.e. recurrent behaviour and object of knowledge; once a pattern is identified it is interpreted in terms of social theory (Nueman, 2007). Creswell (2007) reiterates that data analysis is always an ongoing process which routinely starts prior to the first interview, and that the process of data analysis commences when the process of data collection begins.

The data collected were analysed using a thematic analysis method which made it possible to analyse and interpret factors that hinder effective revenue management in Harry Gwala and Ugu WSAs and the consumers' perception of cost recovery in water and sanitation service delivery, as well as recommendations that were made by participants regarding how best the authorities could improve water and sanitation revenue inflows in Harry Gwala and Ugu WSAs.

1.9.10 Validity, Reliability and Trustworthiness

The researcher ensured accuracy and credibility in the interpretation of data provided by the participants in order for the data to make a worthy contribution to the body of knowledge. The researcher ensured that the research findings are able to be applied to similar situations and deliver similar results. The researcher ensured that there were no flaws in the process of integration which took place between data collection, analysis and the theory generated from the data. Ultimately, the researcher ensured that the data collected did not contradict the findings, since the data should support the findings and interpretation by the researcher.

1.9.11 Ethical issues

The researcher informed the study participants that they would like to audio tape the interviews so as to be able to focus on the interviews without taking notes. The researcher also asked permission to use the following research tools: a tape recorder and camera equipment for the above purpose. Ethical issues, such as respect, confidentiality and informed consent were addressed with participants. The researcher assured the participants that only they would have access to the information shared.

Ethical approval for this research was obtained from the University of KwaZulu-Natal following the submission of the application, and a gatekeeper's letter was received from the offices of the Municipal Manager in Harry Gwala and Ugu WSAs respectively.

These are the ethical considerations which the researcher upheld:

- Confidentiality and anonymity;
- No harm to participants;
- Informed consent; and
- Management of information.

All four of these ethical considerations are discussed in Chapter Four where the research methodology is presented in detail.

1.10 SIGNIFICANCE OF THE STUDY

The recommendations of the study should assist the Harry Gwala and Ugu WSAs to improve revenue collection and management strategies for water and sanitation services. The research

findings may produce a normative model/conceptual framework which can be used by Harry Gwala and Ugu to develop water and sanitation revenue management policies as WSAs in order to improve revenue enhancement strategies, rather than relying on national and provincial government for grants. This study will reinforce existing theories, and enable the role players and stakeholders in water and sanitation businesses and any other civil society organisations, such as Ward Committees, Amakhosi/Traditional Leaders, Councillors, Community Water and Sanitation forums, Community-Based Organisations (CBOs), Non-Governmental Organisations (NGOs) and the general public, to benefit from this research.

1.11 CLARIFICATION OF KEY CONCEPTS

The aim of this section is to provide a definition of key terms that will be used in the research paper for clarification purpose.

Basic water supply service – This means the provision of basic water supply facility/ infrastructure to consumers for 365 days per year, not interrupted for longer than 48 consecutive hours, including awareness campaigns on water conservation, and health and hygiene practices (Department of Water Affairs & Forestry, 2005).

Basic sanitation services – This refers to the provision of a basic adequate sanitation facility which is accessible to a household, including removal of human waste and waste water from the vicinity as well as the promotion of health and hygiene practices (Department of Water Affairs & Forestry, 2005).

Billed authorised consumption – Refers to those components of water consumption which are billed for and thereafter produce revenue. This is also known as revenue water (Department of Water Affairs, 2010).

Conditional grants – are fungible grants transferred from provincial or national government to the municipality for a specific purpose or specific expenditure (UN HABITAT, 2009).

Consumers – Are the users of government services provided at a fee by any government institution (Gildenhuys, 2010).

Cost recovery – This is a process whereby consumers are charged a total or subsidised amount for services rendered, such as water, refuse removal or electricity as an initiative to persuade citizens to pay for service charges (McDonald & Pape, 2002) .

Customer - Anyone who buys goods and pays for services provided by a local government institution is a customer or stakeholder in an organisation. Customers are the ones who provide payment for services rendered (Fen & Lian, 2007).

Customer loyalty – Refers to the allegiance of customers (Mosahab *et al.*, 2010).

Customer satisfaction – This is defined as the difference between expectation and performance, which is a key factor in customers’ desire for future purchases or a willingness to pay (Mosahab *et al.*, 2010)

Equitable Share – Refers to the revenue which has been raised nationally for local government municipalities in order to enable them to provide basic services and perform other constitutional mandates (Local Government Equitable Share Formula Review, 2012).

Free riders – This refers to those people who appear to be able to pay for municipal services but opt for non-compliance (Fjeldstad, 2004).

Indigent – Refers to consumers or households which cannot afford to pay for service charges who receive free basic services from government, protected by indigence policies that have been introduced in South Africa (Fourie & Opperman, 2012).

Intergovernmental transfers – This refers to the source of infrastructure financing (UN HABITAT, 2009).

Integrated Water Resources Management (IWRM) – A philosophy and management strategy aimed at achieving sustainable use of water resources by all stakeholders by adhering to relevant legislation (Schulze *et al.*, 2004)

Municipal borrowing – This refers to monies that municipalities borrow from financial institutions to undertake capital expenditure (UN HABITAT, 2009).

Municipal consumer debt – This refers to monies due to the municipality for the non-payment of service charges or user fees rendered by the municipality which emanate from households, business or government departments (Fourie & Opperman, 2012).

Municipal finance – This refers to revenue and expenditure decisions by municipal government. It also incorporates the sources of revenue of the municipality; e.g. user fees and intergovernmental transfers (UN HABITAT, 2009).

Municipal operating revenue – This is composed of several components which include government grants, service charges, and any other revenue sources (Revenue, 2012/2013).

Municipal Services - refers to the provision of public services to the consumers by the local government institution or municipality within the area of jurisdiction (USAID, 2006).

Non-Revenue Water (NRW) - Refers to those components of system input that are not billed by the WSA and do not produce revenue (Department of Water Affairs, 2010).

Own municipal revenue – This is revenue generated by the municipality from service charges, property tax and any other revenue sources (Fourie & Opperman, 2012).

Public-private partnerships – This refers to the partnerships between government institutions and the private sector in service delivery initiatives (UN HABITAT, 2009).

Rate payers – Are the individuals and households within communities which are charged for the use of public facilities or for consumption of services provided by the municipality (Visser & Erasmus, 2015).

Revenue collection – This is a government function employed to collect monies from service charges as one sources of revenue (Siddle & Koelble, 2012).

Service Quality – Refers to output technical quality, service performance and organisational image (Mosahab *et al.*, 2010).

Tariff – A charge prescribed and approved by the WSA for water and sanitation services (McDonald & Pape, 2002).

Transfers – Are grants transferred from the provincial or national government either for general or specific purposes (UN HABITAT, 2009).

Unconditional grants – Are grants transferred from either provincial or national government to the municipality for general purpose usage (UN HABITAT, 2009).

User charges – These are levies imposed on individuals or households for services rendered by the municipality (Botes *et al.*, 1992).

Water governance – This refers to the rules, processes and practices for how decisions on the management of water resources and services are taken, implemented, monitored and evaluated (Neto *et al.*, 2018)

Water Losses – Refers to the difference between system input and authorised consumption. They can either be the total volume for the whole system or partial systems in the transmission and distribution of water (Department of Water Affairs, 2010).

1.12. HYPOTHESIS

The hypothesis is as follows: Local government has its own revenue base, but in most cases rural municipalities rely on grants from provincial and national government for their operations. As a result, municipalities lack revenue-generating, protection, management and enhancement strategies, and as such non-collection and the dependency syndrome on national and provincial government inhibits water and sanitation service delivery as expected by citizens. The municipalities, in particular the WSAs, cannot meet all the community needs and expectations for rendering quality drinking water and suitable sanitation services.

1.13. LIMITATIONS OF THE STUDY

The main limitation of this study is that it involves the collection of primary qualitative data. The research findings for this study cannot be generalised to larger populations. Some of the participants in the focus groups were not able to communicate in English, although the

interview guide is written in English; the researcher was, however, able to communicate with them in the appropriate indigenous African language.

1.14 STRUCTURE OF THE DISSERTATION/CHAPTER OUTLINE

The research paper consists of seven chapters as structured below:

Chapter 1

Chapter one has provided the introduction, the rationale for the study, and the background and context of the study. Creativity and innovation relative to new sources of local government revenue were discussed together with the problem statement, research objectives, research questions, the significance of the study, a clarification of key concepts, the hypothesis and limitations of the study as well as a chapter outline.

Chapter 2

This chapter will analyse revenue management for water and sanitation in the Harry Gwala and Ugu DMs respectively, as the WSAs responsible for providing quality drinking water and adequate sanitation services to their citizenry. This chapter reviews literature on revenue management. The chapter will first discuss the Administrative Management Service Model and views on government services and the paradigm phases in the Public Administration context, along with relevant legislation on revenue management for water and sanitation services in South Africa. Secondly, the chapter will discuss cost recovery in the water and sanitation business cycle in South Africa. Thirdly the chapter will discuss cost recovery in South Africa in order to reflect on initiatives introduced by the post-apartheid unitary decentralised government system in attempting to urge residents who are eligible to pay for government services to do so. Fourthly, the chapter will discuss revenue management principles, provide a critical discussion on revenue management in general and further look at the sources of government revenue as well as attempts which have been made by local government municipalities to raise revenue from service charges in Southern Africa with specific regard to water and sanitation services. Fifthly, the chapter will present a discussion of benefit taxes and the user fees theoretical framework. Sixthly, the chapter will present a discussion on a guide to enhancing municipal revenue and further critique the revenue enhancement model which was developed by the Municipal Investment Unit (MIU) funded by USAID, and reflect on the financial sustainability model. The chapter will further present a discussion on service quality and customer satisfaction by looking at the Disconfirmation and Gap, as well as SERVQUAL models. The chapter will discuss the structural alignment of the National Development Plan

(NDP) and other legislative frameworks in relation to water and sanitation service delivery, including the Outcomes Approach to Performance Management in the Public Sector.

Chapter 3

This chapter discusses sustainable models and the framework for enhancing revenue management in municipalities and WSAs – the Sustainable e-Compliance, Customer Centricity and User Fees (SCCCUF) Conceptual Framework which has been introduced by the researcher.

Chapter 4

This chapter explores the study's research methodology and research design which were used to accomplish its research objectives.

Chapter 5

This chapter will present and discuss the study's data.

Chapter 6

An analysis of the findings will be discussed in this chapter.

Chapter 7

Conclusions and recommendations of the study are presented in this chapter.

1.15 CONCLUSION

This chapter has discussed the need for the study, its objectives, key research questions, study site, problem statement, rationale and the significance of the study, its hypothesis and the structure of the dissertation. The next chapter covers the study's literature review.

CHAPTER TWO
REVENUE MANAGEMENT LITERATURE REVIEW
AND THEORETICAL FRAMEWORK

2.1 INTRODUCTION

This chapter reviews current literature on revenue management in relation to water and sanitation service delivery. The chapter will first discuss the Administrative Management Service Model and views on government services and the paradigm phases in the Public Administration context, with relevant legislation on revenue management of water and sanitation services in South Africa. The chapter will further discuss cost recovery in South Africa in order to reflect on the initiatives introduced by the post-apartheid government to try and urge residents to pay for government services. Secondly, the chapter will discuss revenue management principles which will unpack relevant legislative requirements for revenue management. Thirdly, the chapter will provide a critical discussion on revenue management in general in order to review the literature on how different scholars defined this, and how they regard the basic principles of the effectiveness of revenue management. Fourthly, the chapter will discuss sources of government revenue and will further examine the attempts that have been made by local government municipalities to raise revenue from service charges with specific reference to water and sanitation services. Fifthly, the chapter will discuss the Benefit Taxes and User Fees Theoretical Framework developed by David Duff, the Guide to Enhancing Municipal Revenue Model, the Financial Sustainability Model, Guidelines on Domestic Water Accounts, the Service Quality and Customer Satisfaction Focusing on Disconfirmation and Gap Model, as well as the SERVQUAL Model. The chapter will also discuss the structural alignment of the NDP and other legislative frameworks in relation to water and sanitation service delivery, including the Outcomes Approach to Performance Management in the Public Sector.

2.2 ADMINISTRATIVE MANAGEMENT SERVICE MODEL AND VIEWS ON GOVERNMENT SERVICES AND THE PARADIGM PHASES IN THE PUBLIC ADMINISTRATION

The first systematic study of Public Administration discovered that the factors which contribute to the origin of Public Administration are human needs, common needs, increasing need for services and the need for better distribution of services aimed at promoting the interests of the people or communities. According to Du Toit and Van Der Wald (2017), an administrative service model is a process whereby four central regulators interact with six administrative

process and five management functions to yield outputs which are products and services rendered to communities (Du Toit & Van Der Waladt, 2017). A recent review of literature on this subject suggests that a functional institution, whether being a government or private institution or Non-Governmental Organisation should employ the Administrative Service Model in order to yield positive or acceptable outputs.

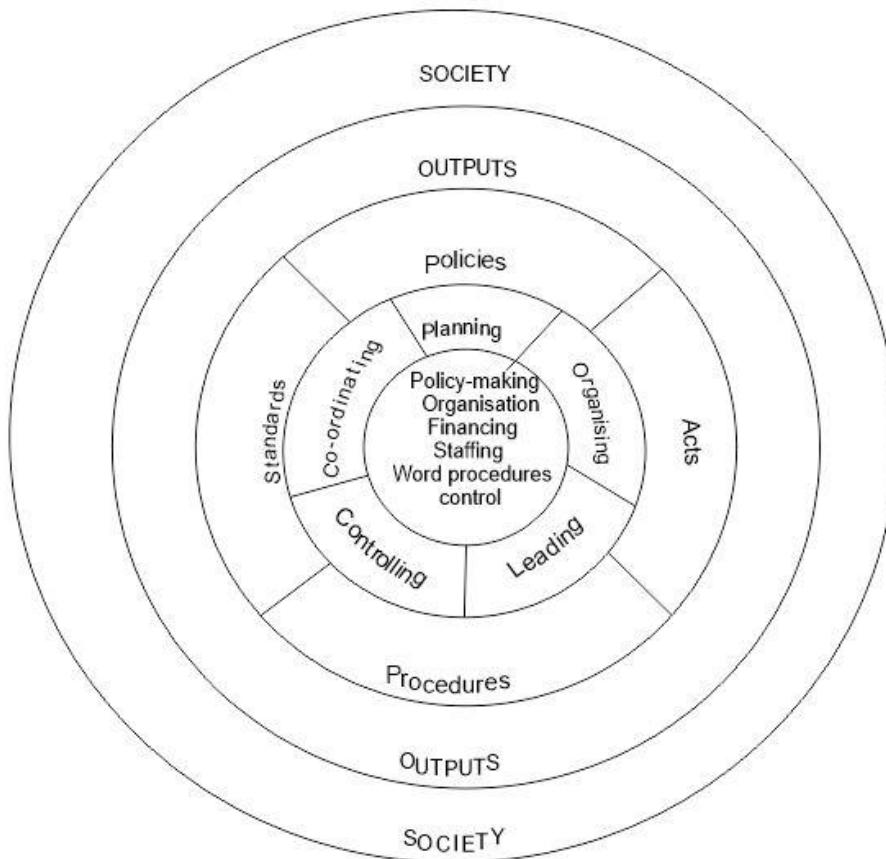


Figure 2.1: Administrative Service Model

Source: Du Toit & Van Der Waladt, 2017

An increasing number of studies have found that the Administrative Service Model places an emphasis on there being two different kinds of public administrative services, which are direct and indirect services (Du Toit & Van Der Waladt, 2017). Direct public administration services are defined as those services which are rendered directly to customers, such as water and sanitation service delivery which benefits each and every household or the whole community of consumers. On the other hand, indirect public administration relates to those service which do not benefit the public directly; these services support public administration, such as the administrative and political wings of a government institution which render services to the public.

2.2.1 Various Views of Government Services

Du Toit and Van Der Waldt (2017), make a point that there are different schools of thought regarding the types of government services which are rendered to communities or the public. The first view is the classical view which was developed during the eighteenth century; its area of focus is on improving the welfare of citizenry (Du Toit & Van Der Waldt, 2017). The second view is the modern view which contains liberal and national elements; this view has a more regulative function (Du Toit & Van Der Waldt, 2017). This second view resonates well with the case of the South African government whereby there are laws and pieces of legislation which the government enforces in communities without overlooking the fact that national identity is maintained.

2.2.1.1 Types of Functions of Modern Governments

The hypothesis regarding the modern government appears to have both maintenance and development functions for the country and its inhabitants. It is therefore crystal clear that public administration cannot be separated from economics; hence government institutions cannot render services to the public if there are no financial resources of fiscal capacity to do so. It is well known that government generates revenue from tax payers; however, there is a need to explore other sources of revenue which are sustainable for the country to be economically healthy. According to Du Toit and Van Der Waldt (2017) the revenues generated from taxpayers determine that the healthier a country is economically, the more people work and earn better salaries (Du Toit & Van Der Waldt, 2017). This resonates well with my conviction which is that the healthier the country's economy the more it is in a better position to provide or render good quality services to communities. It is thus imperative for administrators in government institutions to understand economic matters and implications when taking decisions on issues of service delivery.

2.2.2 Paradigm Phases of Public Administration

The contextualisation of paradigm phases in Public Administration refers to the periods demonstrated by a specific paradigm in respect of appropriate scientific practice of Public Administration (Du Toit & Van Der Waldt, 2017). The history of the development of public administration has had various periods. There has been a drastic paradigm shift which has taken place as far as public administration is concerned. The literature proves that a place where public administration is found is called a Locus of Public Administration (Du Toit & Van Der Waldt, 2017). On the other hand, the literature also proves that the specific aspect which receives particular attention for the study of public administration is called the Focus of Public

Administration (Du Toit & Van Der Waldt, 2017). According to Thornhill (2017), the development of the science of Public Administration has various phases which can be acknowledged. Drawing from Henry (1986), Thornhill (2017) ascertain that a paradigm shift in Public Administration refers to the locus or the focus of the study of the discipline. The hypothesis of locus emphasises where exactly the study of Public Administration should be placed, whether within the discipline of Sociology, Political Science or Social Sciences (Thornhill, 2017). On the other hand, Thornhill (2017) defines focus as the main aim of a study which actually emphasises the promotion of law and order rather than focusing on social constructs (Thornhill, 2017). Other scholars argue that Public Administration in nature is an eclectic science which borrows from other disciplines; it is as science that does not have a well-defined body of knowledge (Thornhill, 2017). Thornhill (2017) makes the point that initially the study of public administration was to give effect to the decisions of government and their developments, but that the emphasis has now changed as has knowledge expanded (Thornhill, 2017).

The table below is drawn from Henry (1992) by Du Toit and Van Der Waldt (2017) in their analysis of the paradigm phases for Public Administration, their periods of dominance as well as their emphasis.

Table 2.1: Paradigm phases and their periods of dominance

Paradigm Phase	Period of Dominance	Emphasis
Political/Administrative Dichotomy	1900-1926	Locus
Principles of Administration	1927-1937	Focus
The Challenges	1938-1950	The Principles of Administration were challenged and questioned
Public Administration as a political science	1950-1970	Locus
Public Administration as management	1956-1970	Focus
Public Administration as Public Administration	1970	Locus

Source: Adapted from Henry (1992:21-45); Du Toit & Van Der Waldt (2017)

Contrarily, Thornhill (2017) identifies three stages of the paradigm phases of Public Administration in its development, and two current paradigm approaches compared to the six phases posited by Du Toit and Van Der Waldt (2017).

Table 2.2: Paradigm phases and their period of dominance and emphasis

Paradigm Phase	Period of Development	Emphasis
Embryonic Stage	Development Stage	The consideration of the administration function to satisfy the common needs of the society with safety and security being the primary focus of the state as a mechanism to protect the country and that it maintains its independence. This stage contributed in the identification of the area of study which later resulted in the modern science of Public Administration
Bureaucratic Stage	Development Stage (After 1945)	Public Administration evolved as a fully-fledged discipline separate from its co- discipline of Political Science and developed its own theoretical framework and refined theories to establish its own body of knowledge. This resulted in the Public Administration theory where discussions of the meaning of government, public institutions, policies, financial matters, organisational structures, public accountability, human resources, and governance take place.
Administration or Management Era	Development Stage	The increase of demands by societies due to urbanisation, technological developments, population density, climate change and higher social expectations, such as demand for potable water and waterborne sewage system/adequate sanitation services, resulted in the establishment of public-private partnerships. This phase accommodated the mix of public and private sector phenomena.
New Public Administration	Current Paradigm (1991)	Redefinition of the era of operation of the public sector, constructive review of the results that would emanate from the epic transformation of South

Initiative/New Public Management		Africa into a democratic state not only in the political arena but in the approaches to deliver services to the society.
Governance	Current Paradigm (To Date)	Implications are that government is not the sole role player in service delivery; the communities should be involved in the public service development initiatives and governance emphasises public-private partnerships.

Source: Researcher

As much as many scholars make the point that in this epoch we are in a governance paradigm phase, drawing on Kamarck (2002) who identifies four models of governance: traditional bureaucratic government; entrepreneurial government; network government; and market government, and Coats (2006) who identifies three models of governance: the orthodox or bureaucratic model; the new public management model; and the public value model, Botha, Brand, Engelbrecht and Eijbergen (2015) combine these classifications of governance models which results in five governance models: the bureaucratic governance model; the new public management as entrepreneurial governance model; the network governance model; the market governance model; and the public value governance model (Botha *et al.*, 2015). The governance theory/models and paradigms resonate well with my conviction, in particular on service delivery of water and sanitation to communities. However, more studies should be conducted which analyse and conceptualise all the governance models identified by Kamarck (2002), Coats (2006) and Botha, Brand, Engelbrecht and Eijbergen (2015) which will actually combine all these models and develop one concept that will include all these characteristics to form a new governance theory which represents the governance state of affairs or paradigm phase of today.

2.3 LEGISLATIVE FRAMEWORK

The South African government has introduced a comprehensive legal framework in relation to revenue management for water and sanitation services. The next section will briefly discuss the Constitution of the Republic of South Africa of 1996, the White Paper on the Transformation of Public Service Delivery of 1997, the Division of Revenue Act, the Intergovernmental Fiscal Relations Act of 1997, the Municipal Finance Management Act of 2003, the Municipal Systems Act of 2000, the Water Services Act of 1997, and the National Water Act of 1998.

2.3.1 The Constitution of the Republic of South Africa of 1996

In terms of the Constitution of the Republic of South Africa of 1996, local government is an independent sphere of government given a status and role to promote constitutional democracy and social economic development. The White Paper on Local Government (1998) establishes the basis for a new developmental government system, and is the sphere of government closest to the communities responsible for eradicating the imbalances of the past. The mandate sanctioned by the constitution urges municipalities to focus on realising developmental outcomes in order to rebuild local communities and environments as the basis for an integrated and democratic society.

The Constitution (Section 153) imposes developmental duties on municipalities in both the planning and budgeting processes. The constitution further makes provision for prioritising the basic needs of communities, and for the promotion of social and economic development; e.g. for the provision of clean potable water and suitable sanitation.

2.3.2 The White Paper on the Transformation of Public Service Delivery of 1997

The foundations of customer care are based on the eight Batho Pele principles as enshrined in the White Paper on the Transformation of the Public Service Act and the KwaZulu-Natal Citizens Charter 2009/14. These principles are: consultation; service standards; access; courtesy; information; openness and transparency; redress; value for money; encouraging innovation and rewarding excellence; service delivery impact; and leadership and strategic direction.

2.3.3 The Division of Revenue Act (DORA)

As enshrined in the Constitution of the Republic of South Africa of 1996, Section 152(1) states that local government is entitled to an equitable share of revenue generated by central or national government. The equitable share is allocated to enable local government to fulfil its constitutional mandate for providing basic services to communities. These transfers are affected in terms of the Division of Revenue Act reviewed annually. The Division of Revenue Act explains the basis for the transfer of such revenue, which is provided equitably amongst national, provincial and local government entities.

2.3.4 Intergovernmental Fiscal Relations Act, No. 97 of 1997

This Act promotes cooperation between the three spheres of government in relation to financial, fiscal and budgetary matters and prescribes how to determine equitable sharing and revenue allocation.

2.3.5 The Local Government Municipal Finance Management Act, No. 56 of 2003

This Act establishes municipal practices rooted in a culture of performance and regular reporting which modernises the way in which municipal finances are managed. The Municipal Finance Management Act makes provision for a performance-based system focusing on outputs and measurable objectives which empowers municipalities to maximise their capacity for service delivery. There are five underlying principles which underpin the Municipal Finance Management Act:

- It promotes sound financial governance by clarifying roles;
- It advocates a strategic approach to budgeting;
- It recommends modernisation of financial management;
- It encourages corporate governance; and
- It promotes sustainability.

2.3.6 The Local Government: Municipal Systems Act 32 of 2000

This is aimed at establishing core principles, mechanisms and processes in order for municipalities to function and give meaning to developmental local government. The Act makes provision for the manner in which municipal powers and functions are exercised and performed in order to promote community participation, planning and performance management. The Act further makes provision for a framework for local public administration and human resource development, service tariffs, credit control and debt policies.

2.3.7 The Water Supply and Sanitation Policy White Paper of 1994

This White Paper sets out the policies for Water and Sanitation services aiming at explaining the developmental approach which guides policy formulation. The White Paper puts forward basic policy principles. It also provides historical background in relation to water supply and sanitation services in South Africa. The White Paper unpacks the institutional framework proposed for water supply and sanitation services. The White Paper makes provision for the standards and guidelines for basic service delivery, and it outlines immediate initiatives which the government is busy implementing.

The policy principles expounded upon in the White Paper are as follows:

- Development should be demand-driven and community-based;
- Basic services are human rights;
- Equitable regional allocation of developmental resources;
- Water has economic value;
- The user pays;
- Integrated development; and
- Environmental integrity.

2.3.8 The Water Services Act 108 of 1997

This makes provision for significant policies to be implemented with respect to institutional frameworks. The main objectives of the Act are to ensure:

- Right of access to basic water supply and basic sanitation;
- A regulatory framework for water services institutions;
- Monitoring of water supply and sanitation;
- Accountability for water services and promotion of effective water resource management and conservation; and
- Financial assistance to water service institutions.

2.3.9 The National Water Act, 36 of 1998

This deals with water resources; i.e. dams, rivers, streams and ground water. It sets out the principles to be adhered to concerning the environmental impact of waste water and pollution.

2.3.10 The South African National Standards (SANS) Act, No. 241 of 2011

This sets out the national norms and standards for water quality and the requirements regarding personnel working in water purification plants or water treatment plants. The objectives of these standards are to protect public health and to ensure that people are provided with good quality drinking water that is of an acceptable standard for human consumption.

2.3.11 Overview of the South African Water Sector and Strategic Overview of the Water Regulatory Framework in South Africa

Water service provision has a social component, as enshrined in the Constitution of the Republic of South Africa of 1996, under the Bill of Rights. However, South Africa is a semi-arid water-stressed country with an average rainfall of about 450mm per annum which is below the world average of 860mm per year. The surface water available in South Africa is 49 200 million m³ per year, and about 4 800 million m³ per year originates from Lesotho. Recent studies reveal that by 2025, nearly 50 percent of the world's population will face water scarcity.

Based on current usage trends it is estimated that in South Africa, water demand will exceed availability of economically utilisable fresh water resources by 2025 unless stringent measures can be employed to address the situation. The strategic overview of the South African water sector seeks to intensify the regulations regarding water supply and sanitation services in South Africa. The regulatory process will ensure sustainable management of the natural environment, social and economic growth and development of the country. The overview of the water sector in South Africa highlights the following challenges: poverty; access to water; impact of the economy on water; reuse of water; water demand management; allocation strategies; impact of water quality; and public participation.

Recent reports reveal that one of the biggest dams in KwaZulu-Natal is currently at 32 percent capacity, and this means that there is a need for the development of water conservation and demand management interventions, initiatives and programmes which seek to address the water shortage challenge.

However, there are various policies which have been developed to address the socio-economic challenges. The RDP was one of the first comprehensive development programmes which the democratic government introduced in 1994. The second policy was the Growth Economic Accelerated Redistribution (GEAR) policy which was developed in 1996 and aimed at creating sustainable growth (Mamobolo, 2014). The government also introduced the Accelerated and Shared Growth Initiative for South Africa (ASGISA) to implement infrastructure programmes, sector investment strategies and skills development (Mamobolo, 2014).

2.4 THE ROLE OF THE WATER SECTOR INSTITUTIONS

The Water Services Act and National Water Act make provision for different types of institutions in the Water Sector (Department of Water Affairs & Forestry, 2005). The Water

Services Act makes provision for the water services institutions. On the other hand; the National Water Act makes provision for the water management institutions (Department of Water Affairs & Forestry, 2005).

As already discussed, a WSA is a municipality that in terms of the Municipal Structures Act or the Municipal Authorization made in terms of the Act, has executive authority over water services within its area of jurisdiction (Department of Water Affairs & Forestry, 2005). This means that the municipality is responsible for providing quality drinking water and adequate sanitation services to its citizenry (Department of Water Affairs & Forestry, 2005). A WSA may carry out the function of water service provider or may enter into a service delivery agreement with another water service provider; e.g. a Water Board (Department of Water Affairs & Forestry, 2005).

A water service provider is responsible for a good quality water supply and adequate sanitation services provided to consumers under a service delivery agreement with the WSA (Department of Water Affairs & Forestry, 2005). The water service provision function may be performed by the municipality or any other public or private body; e.g. a water board, a non-governmental organization, a community-based organization or a private sector company which is contracted by the WSA (Department of Water Affairs & Forestry, 2005). A Water Board is established by the Minister of Water and Sanitation to provide water services to other water service institutions; e.g. a WSA (Department of Water Affairs & Forestry, 2005).

The Catchment Management Agency (CMA) is the institution which is most relevant to WSAs. Since national government is the public trustee of water resources, CMAs are established by the national government to be responsible for water resource management, and to ensure the involvement of communities in such activities (Department of Water Affairs & Forestry, 2005).

Water use associations are water users who undertake water-related activities for their communal benefit (Department of Water Affairs & Forestry, 2005). Water use associations operate within a limited localised area and are tailored for the management of local water resources, specifically for agricultural activities and other rural uses (Department of Water Affairs & Forestry, 2005). The role of water use associations is to operate infrastructure for their members and they may provide bulk water services on behalf of WSAs in order to fulfil the function of bulk water service providers if they have the capacity to do so (Department of Water Affairs & Forestry, 2005).

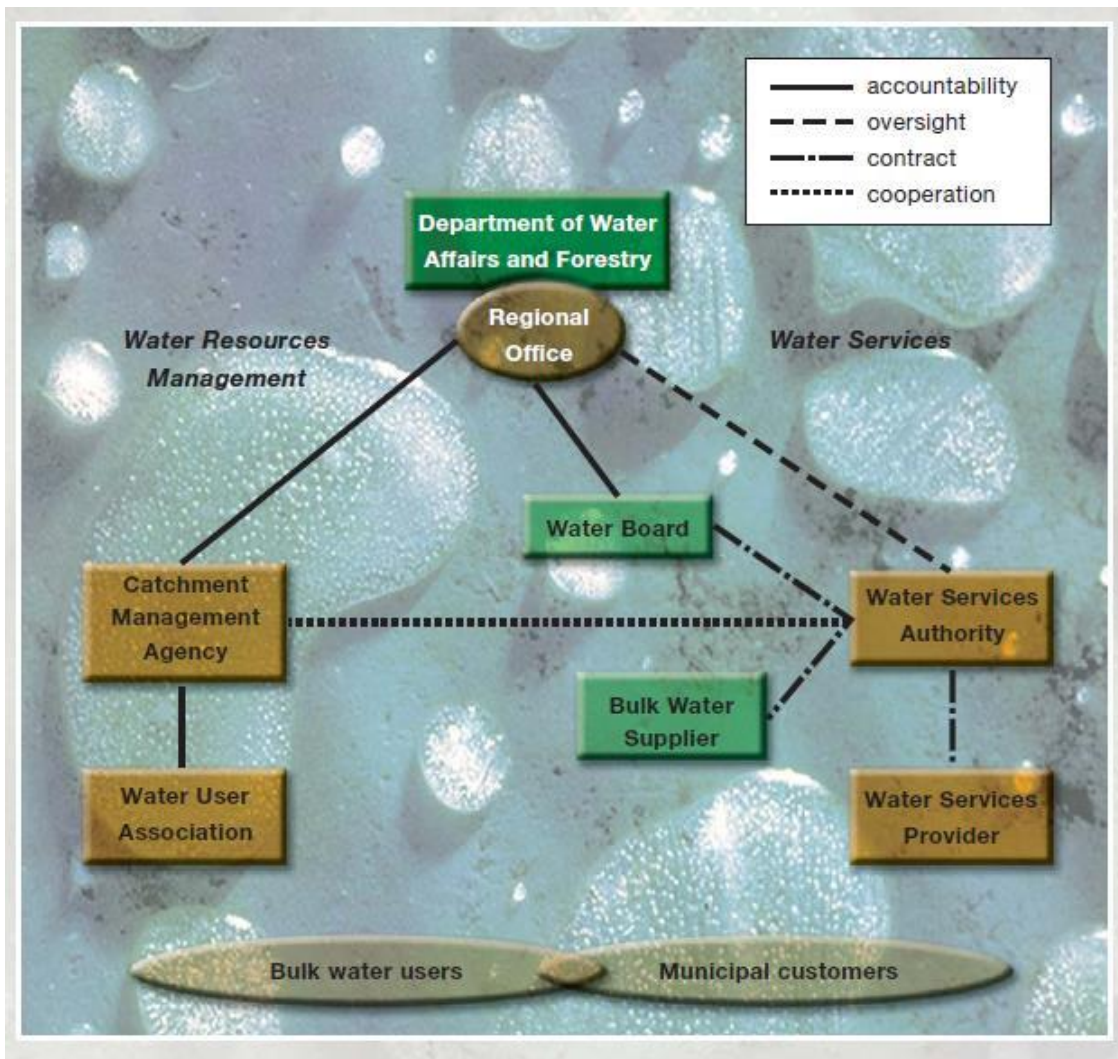


Figure 2.2: Different Types of Water Sector Institutions

Source: Department of Water and Forestry Government Publication (2005:10-13)

2.4.1 The Role of Water sector institutions in the Water and Sanitation Business Cycle

The Department of Water and Sanitation, in conjunction with the Catchment Management Agency, is responsible for the protection, development and control of the use of raw water, inclusive of both ground water and surface water (Department of Water Affairs & Forestry, 2005). This includes development, management and conservation, as well as control of abstraction from the water resource, and also to control the return of effluent including the disposal of waste to the water resource (Department of Water Affairs & Forestry, 2005).

These institutions are monitored by the Minister of Water and Sanitation as the custodian of the national water resource strategy which sets the national objectives for protecting the water resource (Department of Water Affairs & Forestry, 2005).

The main aim of protecting water resources is to:

- Maintain the quality of surface and ground water so that it can be used in a sustainable way;
- Prevention of degradation of rivers; and
- Rehabilitation of rivers (Department of Water Affairs & Forestry, 2005).

The Department of Water and Sanitation develops, maintains and operates inner-basin transfer schemes and storage dams for raw water (Department of Water Affairs & Forestry, 2005). However, any institution may construct and operate a storage dam if it meets all the requirements; e.g. has a licence or authorisation to perform such activity (Department of Water Affairs & Forestry, 2005).

Bulk water service providers and the Water Board are responsible for developing; maintaining and operating abstraction and bulk potable water infrastructure; e.g. water treatment plants and pump stations, reservoirs and distribution pipelines/reticulation infrastructure for potable water from the WSA reservoirs (Department of Water Affairs & Forestry, 2005).

WSAs have both governance and provision functions. The governance function incorporates ensuring access to water and sanitation services, regulating municipal by-laws, creating a Water Services Development Plan (WSDP) and deciding on water service provider mechanisms. On the other hand, the provision function only relates to water service provision to consumers, which is direct delivery. WSAs are also responsible to ensure that municipal infrastructure is developed, operated and maintained (Department of Water Affairs & Forestry, 2005). However, a WSA may perform the functions of a water service provider on its own. WSAs are further responsible for revenue collection, customer relations and the promotion of water conservation, health and hygiene awareness campaigns themselves (Department of Water Affairs & Forestry, 2005). Nonetheless, a WSA may be in a service delivery agreement with a water service provider to carry out all of these functions on behalf of the WSA (Department of Water Affairs & Forestry, 2005). Finally, WSAs are responsible for collection and treatment of sewage, waste water and effluent and may appoint a service provider to carry out these functions on their behalf (Department of Water Affairs & Forestry, 2005).

2.4.2 Progress made to date in relation to water and sanitation service provision

There have been tremendous strides made in relation to water and sanitation service delivery. In South Africa, water is considered as human life and sanitation as human dignity. Chapter 13

of the NDP requires government to build a capable developmental state. Chapter 13 stipulates that it is in the interest of all spheres of government that everyone should have access to high quality basic services (National Development Plan, 2012). There is a high probability that South Africa has achieved the Millennium Development goal target for this indicator. The Millennium Development Goal Report (2014) makes the point that in 2012, the proportion of the world's population with access to quality drinking water was 89 percent, an increase from 76 percent (Pillay & Barron, 2014). The target of halving the proportion of people without access to an improved source had therefore already been achieved in 2010, five years ahead of schedule.

There are more people who have gained access to an improved source of drinking water between 1990 and 2012, out of which there were more people who had gained access to a piped drinking water supply to their premises (Millennium Development Goals, 2013). Since the adoption of Millennium Development Goals, local government has been able to announce some progress made in environmental sustainability. Key developments have been recorded through addressing poverty and inequality by devoted service delivery programmes which targeted basic service delivery of water and sanitation to the poor (Millennium Development Goal Report, 2014).

However, people in rural areas, the poorest of the poor, have less access to both improved water and sanitation services. There were 748 million people still relying on unsafe drinking water sources in 2012, of which 173 million obtained their drinking water straight from rivers, streams or ponds (Pillay & Barron, 2014). Nonetheless, the Department of Water and Sanitation, in partnership with Statistics South Africa, are in the process of developing a monitoring and evaluation system to track this indicator.

The researcher is aware that there is a post-2015 developmental agenda, which is the Sustainable Development Goals (SDGs), aimed at informing a new global development agenda after the Millennium Development Goals came to an end in 2015. These goals are localised to all spheres of government, in particular local government as the sphere closest to the people, and to direct service provision or oversight of private provision of water supply and sanitation services.

2.4.3 Cost-Recovery in the Water and Sanitation Business Cycle

There are costs associated with the protection, development, management and control of the use of raw water which the catchment management agency incurs, in particular when the agency evaluates and issues licences, water resource quality, detects and protects against the unlawful use of the resource, promotes water conservation and manages demand (Department of Water Affairs & Forestry, 2005). Water resource management charges are then recovered by the catchment management agency from users who abstract raw water from rivers, or those that discharge waste water or treated effluent back into rivers (Department of Water Affairs & Forestry, 2005).

In the water and sanitation business there are other costs associated with raw water supply called raw water tariff which include the construction of dams and other infrastructures that are necessary to store and supply raw water from the source, their refurbishment, operation and maintenance, as well as paying back of loans from financial institutions (Department of Water Affairs & Forestry, 2005).

One of the costs in the water and sanitation business cycle is a bulk potable water tariff which is recovered from WSAs by water service providers or water boards involved mainly in the construction of abstraction works and their operation and maintenance, bulk water treatment plants, reservoirs, pump stations and pipelines for abstracting and purifying raw water in order for it to be ready for human consumption and distributed to municipal reservoirs (Department of Water Affairs & Forestry, 2005).

Other costs in the water and sanitation business cycle which are associated with municipal water supply are the municipal water tariff which includes the reticulation of water to consumers, purchasing of bulk potable water from institutions responsible for abstraction, the construction of the municipal water supply infrastructure, the paying back of loans to financial institutions, operation and maintenance, as well as billing and meter-reading (Department of Water Affairs & Forestry, 2005). The municipal water tariff, which includes the bulk water tariff, is recovered from the consumer by WSAs (Department of Water Affairs & Forestry, 2005).

Moreover, there are costs associated with municipal sewage collection and treatment in the water and sanitation business cycle (Department of Water Affairs & Forestry, 2005). These costs are mainly for the construction of sewerage collection and treatment infrastructure,

paying the water resource management charges associated with discharging treated effluent back into rivers, the emptying of septic tanks and treating effluent, the operation, maintenance and refurbishment of waste water treatment plants, the promotion of health and hygiene awareness, monitoring health impacts and evaluation of the effectiveness of sanitation promotion, and creating an enabling environment for the construction of household and public toilet facilities (Department of Water Affairs & Forestry, 2005). This cost is called the municipal sanitation tariff which is recovered by the WSA from consumers, and includes the water resource management charge applicable for discharging effluent. In other municipalities, this tariff is usually included in the municipal water tariff (Department of Water Affairs & Forestry, 2005).

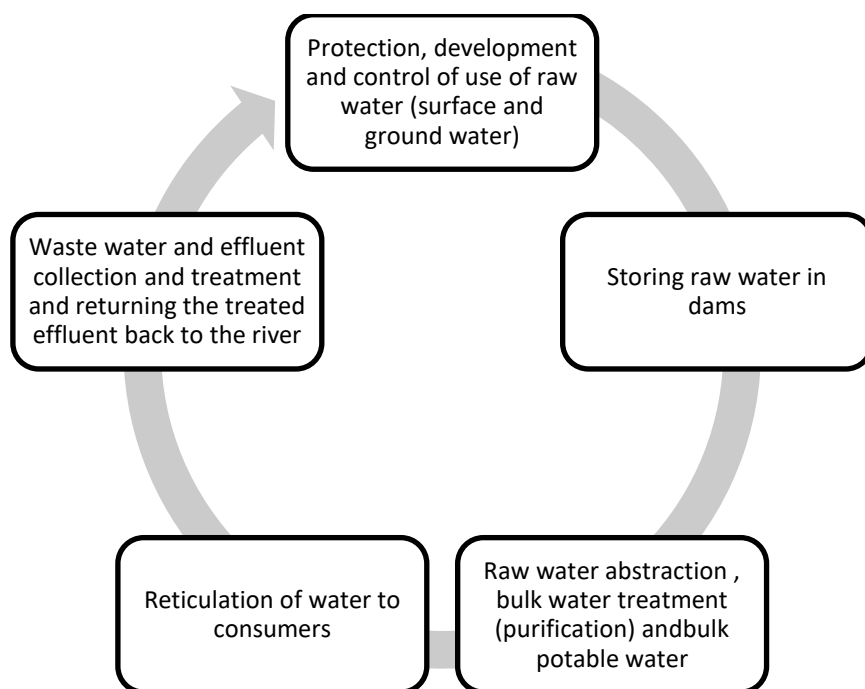


Figure 2.3: Water and Sanitation Business Cycle

Source: Department of Water and Forestry – Government Publication 2005: 14

2.5 COST RECOVERY IN SOUTH AFRICA

There are several initiatives which have been launched urging residents to pay for municipal services, and various studies have been conducted on why rural municipalities have a weak revenue base or are not financially viable (Kanyane, 2011). The Masakhane campaign became the first cost-recovery initiative introduced by government during the democratic dispensation. Its objective was to urge communities to pay for service charges. It is unfortunate that the campaign did not produce positive outcomes, since there was a decline in the payment for municipal services.

It is important to note that the non-payment for service charges is not a new phenomenon. This culture originated from the call by the African National Congress (ANC) during the apartheid era to make the country ungovernable by mobilising the mass democratic movements to boycott user fees (McDonald & Pape, 2002). The ANC mobilised mass democratic movements and civic society to rebel against the apartheid government by boycotting payment for service charges which then resulted in the subsidisation of municipal services (McDonald & Pape, 2002).

McDonald and Pape (2002) believe that cost recovery has a negative impact on poor communities and on the image of a democratic South Africa. McDonald and Pape's arguments resonate well with this study which in the end recommends distinguishing between those who can pay and those who cannot. My study acknowledges the importance of indigence policies which have been introduced in South Africa with the aim of protecting the poorest of the poor households.

Cost recovery in relation to revenue management of water and sanitation is imperative because it ensures effective and efficient water and sanitation service delivery, as well as sustainable financial viability. According to McDonald and Pape (2002) cost recovery is a process whereby consumers are charged a total or subsidised fee for the services rendered by government institutions. These services are water, refuse removal and electricity as an initiative to persuade citizens to pay for service charges which was introduced in the democratic dispensation in South Africa to cover operating and maintenance costs. Cost recovery in this sense presents itself as a mechanism to root out subsidised practices for municipal water and sanitation services to consumers who are eligible to pay such service charges. It ensures the recovery of if not of all, then at least a certain portion, of the costs associated with water and sanitation services rendered by local government municipalities. Diverging from the long-standing situation of the state subsidising services, consumers in South Africa are now expected to pay service charges in full (McDonald & Pape, 2002).

McDonald and Pape (2002) make the point that, for cost recovery to be effective, volumetric terms should be applied to measure consumption and a flat rate applied where there are no devices to measure water consumption, for example in non-metered areas where the municipality provides water and a water-borne sewerage system. Cost recovery may be achieved by charging the end users the production costs and long-term operating and

maintenance costs of the water and sanitation services rendered. The other aspect raised by McDonald and Pape (2002) focuses on the introduction of in-house connections and prepaid meters as cost recovery mechanisms, whether this is for water or electricity provision, whereby the consumer pays prior to consumption. However, block tariffs have been introduced in many countries, and in South Africa, as a determination to make consumption more affordable, or even free, to those who cannot afford to pay for service charges; e.g. those who are indigent.

McDonald and Pape (2002) acknowledge the need for cost recovery to be effective by highlighting the necessity of recording and reporting on debt in order to determine the amount of total debt owed to the state, the amount paid and the bad debt being written off. In terms of the fiscal arguments, the single most significant reason given for cost recovery is the need to balance the books, which is also a matter of good fiscal practice. Further, McDonald and Pape (2002) argue that South Africans pay less for water provision per kilolitre than many other countries. However, many low-income households find themselves in arrears for service charges such as water and electricity (McDonald & Pape, 2002). This means that there is a need to make essential services like water and sanitation more affordable to the working class in order to address the culture of non-payment crisis in South Africa, especially within rural municipalities.

For the cost recovery policy to be effective, it is imperative for service providers, e.g. WSAs or government institutions, to measure the consumption of service rendered in every household accurately and on a regular basis, and they must be able to collect monies due. For services which can be measured in volumetric terms, such as water and water borne sewerage system provision, the measurement is easy with the use of sophisticated volumetric devices like meters which measure the number of litres consumed by individual households (McDonald & Pape, 2002).

According to Gildenhuis (2010) there is no logic in imposing tax on such services, for which the net revenue after collection cost, is more or less zero. It is therefore reasonable that water and sanitation revenue collection costs should be kept as low as possible. Gildenhuis (2010) claims that effective administration is important in cost recovery, which should include an effective postal and payment system, as well as stringent measures to persuade consumers to pay for service charges or bills. Municipal water and sanitation levies and service charges are impacted by municipal billing mechanisms, since they are related to the metering data captured into the system. For an effective and efficient billing system the data captured should be free

from errors to ensure that once the bill has been received by customers, that there should be fewer or no grievances at all against such bills.

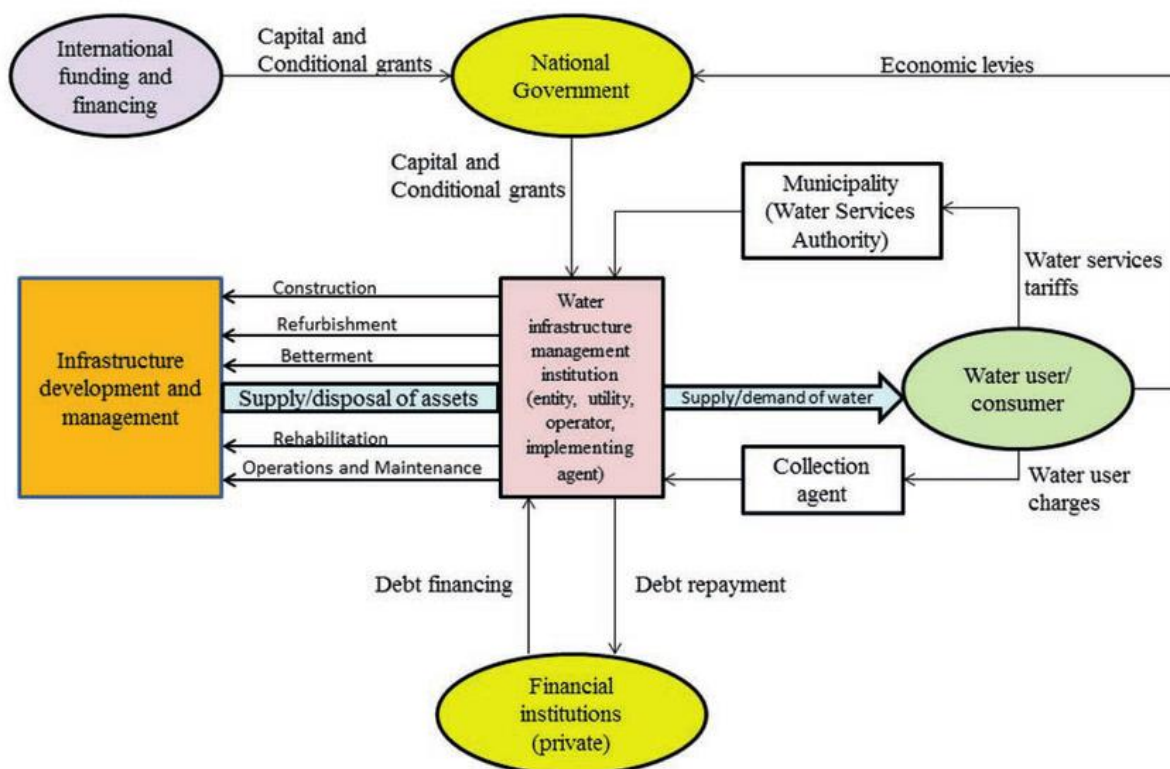


Figure 2.4: Water and Sanitation Business Cycle

Source: Department of Water and Forestry – Government Publication, 2005: 14

According to the National Treasury (2011), all municipalities are required to recover monies for the services which have been provided to citizens. Common forms of enforcement are service cut offs, including disconnections and restrictions, and evictions. Another form of enforcement is penalties for overdue payment of water and sanitation service charges which have a potential to motivate customers to adhere to the culture of obeying democratic laws, credit control policies and deadlines. These stringent measures are politically sensitive and may be expensive, which is why the government has introduced the prepaid meter system. This involves a device which not only measures consumption, but also obligates the consumer to pay for services in advance (McDonald & Pape, 2002). A pre-paid meter system is a decisive cost recovery mechanism which can be employed as an effective and efficient revenue management model for water and sanitation charges, since it allows for the payment of services in advance and does not allow any form of default by consumers; however, this model is prone to vandalism. Furthermore, the prepaid meter system requires no overt stringent measures to apply in order to enforce the payment of water and sanitation service charges.

Cost recovery for municipal services has not always been a policy for either central or local government in South Africa (McDonald & Pape, 2002). During the democratic dispensation in the mid-1990s, cost recovery was an overt policy objective. However, rural municipalities are still far from meeting this policy objective due to their inability to raise their own revenues, and consequently the grants from national and provincial government are understood to constitute additional packages. Rural municipalities are thus highly dependent on equitable share from national and provincial government (Kanyane, 2011).

Cost recovery theory is supposed to be an open system input-output model where there is a degree of openness and interaction with the environment. This is a process whereby the needs of communities are taken care of by government authorities. The government should be able to provide communities with adequate resources, such as the provision of quality drinking water and adequate sanitation services; in return communities should cooperate and pay for local government municipal services which will then result in good images for municipalities and customer satisfaction.

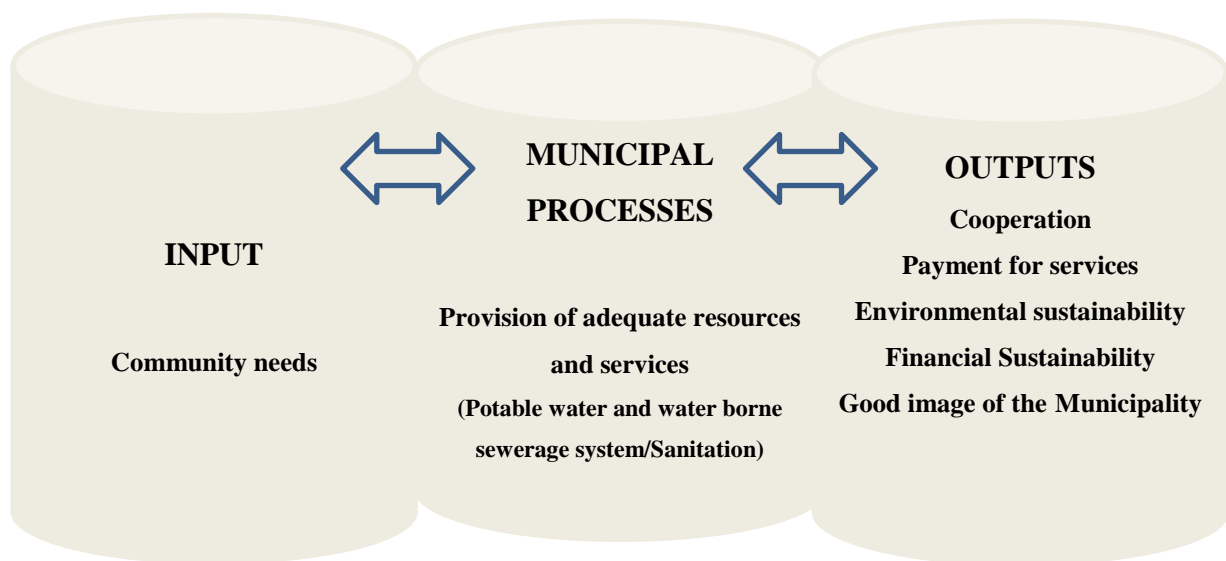


Figure 2.5: Open system input-output model

Source: Researcher

2.6 RECENT TRENDS IN MUNICIPAL FINANCE

Local government institutions are required to pay for expenditure in order to meet the demands of local citizens for service delivery initiatives and infrastructure. There are other new trends in financial management which incorporate accountability and transparency at local government level. However, one of the most significant trends in municipal finance is fiscal

decentralisation, aimed at complementing local government finance by transferring fiscal responsibility from central to local government, to finance developmental programmes and services (UN HABITAT, 2009).

Since the year 1980, 75 countries have implemented decentralisation policies to ensure effective and efficient service delivery and address poverty and inequality (Ingram & Hong, 2008). In many countries, decentralisation meant that national and provincial governments had transferred responsibilities to local government institutions.

The general idea is to establish overall fiscal decentralisation whereby provincial or national government passes budgetary authority to local government institutions in order to be able to make taxation and spending decisions. The main purpose of this is to speed up service delivery and ensure the provision of services in an effective and efficient manner. According to UN HABITAT (2009), taxation is not a part of decentralisation. Ebel and Vaillancourt (2001) make the point that the aim is to shift debt burden onto municipalities by reducing transfers and directing responsibilities to local government institutions by central government (Ebel & Vaillancourt, 2001).

Unfunded mandates require local government to provide public services which puts more pressure on the finances of municipalities. The one-size-fits-all approach, when it comes to financing of water and sanitation services and infrastructure by local government, does not work. There is a need for central government to treat municipalities differently because metropolitan and urban municipalities have greater fiscal capacity than rural municipalities. It is also imperative for local government institutions to raise their own revenue from water and sanitation services, and engage in prudent and transparent financial management processes.

2.6.1 Revenue Management Principles

The Constitution of 1996 grants municipalities considerable income-generating powers, but subjects such powers to national legislation and regulation. This notion is backed by Cooperative Government and Traditional Affairs which empowers municipalities to levy and recover levies, taxes, fees and tariffs and prescribes the procedures for doing accordingly (Bekink, 2008). Section 229 of the Constitution makes the provision that municipalities are empowered to impose taxes. A researcher in the field of constitutional and local government law, Bekink (2008), makes the claim that a tariff is a continuing charge or fee for a service which has been rendered and is to be executed on a continuing basis; e.g. for potable water and

water-borne sewage systems or adequate sanitation services. Moreover, it has been proven that user fees are an important source of municipal own revenue and that a cost recovery theory or model for such charges is imperative. According to Fourie and Opperman (2012), the most important policy principles which should guide municipalities in drafting their tariff policies are: payment in proportion to the amount consumed; full payment of service costs; affordability; ability to pay; fairness and transparency; local determination of tariff levels; consistent tariff enforcement; and ensuring local economies are competitive (Fourie & Opperman, 2012). According to Bekink (2008), municipalities have been always dependent on financial income generated from fees, service or user charges, as well as on various tariff obligations (Bekink, 2008). Municipal revenue has its origins in municipal administration, and the local governance system, in as far as municipal water and sanitation services are concerned. In order to create an excellent model for taxation, it is necessary for authorities to establish the principles of taxation and little attention has been paid to this by local government authorities. Fourie and Opperman (2012) have tabled key policy principles which should guide municipalities in the design of tariff policies and taxation models but very few of these have so far been implemented.

Municipal taxation powers are also limited, in that they may not unreasonably prejudice national economic policies and activities (Fourie & Opperman, 2012). Fourie and Opperman (2012) further emphasise that systems of municipal finance must be based on the following principles in order to meet the objectives of the local government as set out in Chapter Seven of the constitution, namely: revenue adequacy and certainty; sustainability; effective and efficient resource use; accountability; transparency and good governance; equity and distribution; development and investment; and macroeconomic management (Fourie & Opperman, 2012). According to the Municipal Systems Act of 2000, Section 11, municipalities should exercise legislative or executive authority by imposing and recovering rates, taxes, levies, duties, service fees and surcharges on fees. This should include setting or developing and implementing water and sanitation tariffs, rates and taxes, indigent support, customer care, as well as debt collection policies. Section 74 of the Municipal Systems Act further makes provision for service charges, stating that a municipality should adopt and implement a tariff policy on the levying of fees for the services provided by the municipality. As enshrined in the Municipal Systems Act, Section 75 of 2000, the municipal council should adopt municipal by-laws to give effect to the implementation and enforcement of its tariff policy.

The National Treasury points out that revenue management and sound revenue enhancement strategies are critical functions of the chief financial officer to ensure effective systems for efficient collection of municipal monies due in respect of own revenue; e.g. service charges (Fourie & Opperman, 2012).

2.6.2 Cash Management and Revenue Collection

Visser and Erasmus (2015) define revenue collection as one of the terms to describe cash management procedures and practices within the public-sector environment. Drawing on Allan's (1993) views, Visser and Erasmus (2015) claim that revenue collection administration entails improved revenue flow, improved cash management, greater interest earnings on investments, equal treatment of taxpayers, greater budgetary control and the ability to complete projects timeously, improved credit-worthiness, reduction in borrowing costs and increased compliance with local tax and revenue laws (Visser & Erasmus, 2015). In support of Erasmus, Siddle and Koelble (2012) look at revenue collection from a different angle. Siddle and Koelble (2012) point out that revenue collection is a fiscal decentralisation process whereby revenues of the national government, and the power to raise revenues from local sources, are transferred to subnational governments. Siddle and Koelble (2012) further highlight two dimensions of decentralisation, namely: the authority to raise revenues and revenue sharing. Revenue management is one of the key factors and components of public financial management. According to Ngwenya and Majam (2011), public financial management entails a decision-making process on key areas where financial resources are needed for the fulfilment of government programmes, identification of revenue collection strategies, the collection, safeguarding and utilisation of those resources, as well as the control of all financial management processes within a given time-frame. Ngwenya and Majam (2011) further state that the National Treasury provides subsidies in the form of grants during the annual financial budget in order for municipalities to be able to fulfil their constitutional mandates of providing adequate services to citizens.

2.6.3 Public Financial Management and Revenue Collection

Ngwenya and Majam (2011) maintain that public financial management involves the government generating and allocating resources based on the priorities and utilisation of such resources effectively and efficiency to meet the needs and demands of citizens. Moeti (2014) reminds us that local governments are required, through their constitutional establishment, to render services to citizens residing within their municipal boundaries and jurisdiction, and that substantial amounts of financial resources are required in one form or another (own revenue,

equitable grants etc.). Drawing on Jones and Pendlebury (1992) ideas, Chiunye and Chikosa (2015) point out that local authorities should provide goods and services to citizens and that those services should be charged for. Moeti (2014) further makes the claim that local government, unlike other spheres of government, is expected to raise over 90 percent of its own revenue in order to render the required services. Moeti (2014) points out that public financial management deals with the management of the money of citizens assigned to government through taxation.

Substantial funds are derived from service charges paid by consumers for public goods and services provided, such as water and sanitation. Municipalities should be self-sufficient and able to generate their own revenue to be able to provide uninterrupted services rather than depending on national and provincial government subsidies. However, the economic status of urban municipalities may differ from rural municipalities. The effective way to ensure that municipalities maintain healthy cash inflow and outflow is to have sound revenue enhancement strategies which seek to ensure that all service users or consumers of public services pay for public services, in particular water and sanitation services.

2.6.4 Challenges which African Countries are Faced with in Relation to Revenue Collection

According to Zivanai *et al.* (2014), there is a need for a sound revenue collection system for the proper running of local government. The challenges which African countries are faced with include: inefficient revenue collection systems where large amounts are left uncollected whilst those that are collected are sometimes inappropriately managed (Zivanai *et al.*, 2014). Ramphele (2008), in support of Zivanai, points out that municipalities should have sustainable revenue sources in order to be financially sustainable (Ramphele, 2008). According to Ramphele (2008), as cited in Chiunye and Chikosha (2015), financial viability refers to the municipalities' ability to generate sufficient income in order to meet operating expenses, allowing growth while maintaining service delivery levels and debt commitments.

According to Denhere *et al.* (2012), municipalities should be financially independent, meaning that they should be able to generate their revenue from taxes and service charges in order to be responsive to the needs of their residents. Residents should be responsible for paying for services rendered by municipalities. In support of Denhere *et al.* (2012), municipalities may levy and recover all fees, charges or tariffs as far as any service rendered by them is concerned as long as such tariffs are approved by the municipal council through the adoption of the tariff

policy and model by the majority of the councillors for implementation (Pauw *et al.*, 2017). This then implies that the municipality may generate its own revenues to ensure financial sustainability of the institution through cost recovery and interest on any outstanding amount from service users or debtors. Denhere *et al.* (2012) suggest that revenue for local authorities can be improved by employing a sound communication strategy; the provision of metered services and fixing of faulty meters; accurate billing; debt and credit management; and that the more services are improved and made affordable, the more residents will be willing to pay for these as rendered by municipalities. On the other hand, Pauw *et al.* (2017) suggest that revenue for local authorities can be improved by employing the principles and requirements of tariff policy: payment in proportion to amount consumed; ability to pay; fairness; transparency; tariffs must reflect costs of service; financial sustainability; full payment of service costs; affordability; local determination of tariff levels; consistent tariff enforcement; ensuring local economies are competitive; and the optimal utilisation of resources.

2.6.5 Factors which Impact Negatively on Revenue Management

Kanyane (2011) highlights some of the factors which impact negatively on revenue management. These obstacles are: poor quality of service delivery; poor perception of government systems; and inadequate capitalisation, which has greatly affected the revenue management in local government authorities. The revenue base is faced with a culture of non-payment for service charges, manipulation of supply chain processes, and the authorities' failure to be accountable to citizens.

Ali, Fjeldstad and Sjurson (2014) make the claim that there is a huge variance which exists between and within poor communities that has a negative impact on revenue collection and management. On the contrary, Fjeldstad (2004) argues that reluctance or non-compliance with payment for service charges is not related to inability to pay, but instead emanates from the way citizens perceive the authorities. Along the same line of thought, Kibassa (2011) argues that willingness to pay is associated with the quality of services provided to ensure community-managed cost recovery. Kibassa (2011) further claims that service efficiency is the direct outcome of appropriate and institutionalised management which networks with different stakeholders and considers their ability and willingness to take responsibility.

2.6.6 Level of Injustice in the Enforcement of Revenue Policies

Margreet and Boelens (2014) investigated the level of injustices and inequalities which emanate from the enforcement of revenue policies. Margreet and Boelens (2014) make the case

that there is a need to re-evaluate the water user groups and communities targeted, incorporated or excluded by the dominant water policies and governance cultures, which may result in popular participation and decision-making through user platform negotiations, as well as by granting autonomy to user groups. The autonomy granted to user groups allows these groups to devise and apply their own water rules which address a form of cultural recognition of all sectors in the community as legitimate water actors that will result in redressing historical injustices and inequalities (Margreet & Boelens, 2014).

It has been pointed out that injustices in water-related matters may sometimes produce open conflict with people who feel unjustly treated and who actively protest to demonstrate their frustration and anger. For instance, this can be seen in the cases of resistance against the introduction of water privatisation policies. On the other hand, some injustices never produce open disputes but instead involve silent suffering (Margreet & Boelens, 2014).

It is important to note that sometimes the officials of municipalities fail to consult the communities during the development, adoption and implementation stages of water policies and by-laws. The communities are expected only to rubber stamp policies that have been developed by bureaucracies and authorities, which results in frustration, anger and resistance, which then causes water injustices. The researcher has found water injustices to be extremely relevant to the study, since they specifically focus on revenue management in service delivery related to water and sanitation, bearing in mind that the Harry Gwala and Ugu District municipalities are also WSAs.

The major difference between the current study and other related studies which have been conducted is that other studies look at cost recovery in general, but this study has employed user fees theory to examine cost recovery, specifically for water and sanitation services in the Harry Gwala and Ugu WSAs, where their core function is the provision of good quality drinking water and suitable sanitation services.

If the inability to collect sufficient revenue can be addressed, this should have a positive impact in terms of the economic viability of the Harry Gwala and Ugu WSAs. The revenue can be generated by recovering operating and maintenance costs of water and sanitation services which will enable maintenance and refurbishing of the existing infrastructure. This will further result in improved water and sanitation service delivery in the entire Harry Gwala and Ugu WSAs. The Harry Gwala and Ugu WSAs could have strong sustainable revenue sources, and

if this is forthcoming, they will be able to eliminate water and sanitation backlogs and provide services to those citizens who cannot access basic water and sanitation services.

2.7 SOURCES OF GOVERNMENT REVENUE

An analysis of the sources of government revenue is central to this study, and it is imperative to analyse the performance of the various sources of municipal revenue. According to Dirie (2005), municipal revenue management is fundamental in the running of municipal finances and in sustainability. Local taxation goes beyond generating revenue to fund local services, since it is of profound constitutional importance in its devolution of autonomy from the centre (Kingdom, 1991). According to Botes *et al.* (1992), there are various but limited sources of local government revenue due to the diverse needs of the inhabitants of these areas. A recent study by Pauw *et al.* (2017) supports this notion by pointing out that there should be a strong emphasis by South African municipalities on handling revenues, since the most revenues they receive are from their own sources. Should municipalities fail to collect revenues promptly on a monthly basis, municipalities will not be in a position to spend the approved allocations in their municipal budgets to sustain service delivery to their communities. However, local authorities do not have enough money or financial capacity to meet all the citizens' needs.

In essence, communities understand their needs as well as the services that they would like municipalities to render in their respective areas. All financial transactions need to be accountable to citizens so as to ensure transparency, and to strengthen accountability in local government which is then required to exercise its power by imposing taxes in order to secure revenue to enable municipalities to meet the costs involved in water and sanitation service delivery mechanisms. In most developing countries, autonomous revenue collection has become a popular reform employed to improve revenue inflows. The Harry Gwala and Ugu WSAs also need to explore alternative own revenue collection and management strategies to generate income from service charges, in particular for water and sanitation services as WSAs.

Siddle and Koelble (2012) argue that it is essential for municipalities to optimise their revenue collection processes in order to perform their functions. Siddle and Koelble (2012) further argue that most municipalities are perceived to be hard-pressed for revenue due to the inability and unwillingness of municipalities to collect revenues. Siddle and Koelble (2012) make the claim that in 2007, local municipalities were owed a total of R56.2 billion, and in 2009 this figure reached R62.3 billion, which was supposed to have been collected from rates and service charges.

The Municipal Systems Act (Sections 74 & 96) requires that each and every municipality should adopt and implement a tariff policy in levying consumers for municipal services, and they should adopt, maintain and implement a credit control and debt collection policy. The Municipal Systems Act (Section 75) makes provision for municipal councils to adopt by-laws in order to give effect to the implementation and enforcement of their tariff policies. The Municipal Systems Act (Section 98) states that municipal councils must adopt by-laws in order to give effect to credit and debt collection policies, including their implementation and enforcement.

On the other hand, according to the Analysis of Local Government Revenue and Expenditure (2012/13), local government in South Africa is commonly self-financing, with 73.4 percent of operational revenues obtained from own revenue collection during the years 2003/4 to 2008/9 respectively, and with intergovernmental fiscal transfers contributing 26.6 percent. However, due to socio-economic challenges across the country, other municipalities have limited or weak revenue sources, which then makes them dependant on intergovernmental transfers which bridge these gaps by ensuring that all municipalities are well-financed to meet their service delivery obligations (Revenue, 2012/13).

Siddle and Koelble (2012) argue that South African local government is often known to be largely self-financing. This is due to the fact that the bulk of municipal financial resources are raised from own revenue sources such as taxes and service charges. According to Siddle and Koelble (2012) imbalances between available revenue sources and expenditure needs require that municipalities' own sources of revenue should be supplemented by intergovernmental transfers. Siddle and Koelble (2012) further argue that fiscal transfers will continue to play a significant role in the redistribution of resources.

Drawing on Falleti's (2005) work, Siddle and Koelble (2012) make the point that the delegating of taxing authorities to subnational governments which lack the capacity to collect taxes can result in serious constraints and in increased dependency of local governments on transfers from central government.

However, in South Africa the National Fiscal Framework is designed to raise municipalities' accountability to residents. Hence municipalities, in collecting their substantial revenues from service charges and property rates, should ensure that service users are satisfied with the kind

of services they receive from municipalities. Excellent water and sanitation service quality may result in willingness to pay for water and sanitation service charges by the consumers and customers.

Gildenhuis (2010) argues that the Power Authority Theory confirms the democratic principle that the ultimate power over taxation rests with registered voters-cum-tax payers to pay tax and the ultimate authority to impose tax rests with the legislature. According to Moeti (2014), government must develop a sound revenue strategy and must be able to raise revenue in order to fulfil its constitutional mandate to provide goods and services to its citizens. Moeti (2014) further points out that municipalities are dependent on effective revenue and debt collection practices to sustain the expenditure associated with institutional functioning and service delivery. Tax is a common source of revenue for government to generate income in order to provide goods and services to its citizens. According to Nsingo (2014), tax is a due or levy paid to the state by citizens and business organisations in order to facilitate the work of government.

According to Smith, as cited in Nsingo (2014), there are three fundamental principles of taxation, namely: efficiency; equity and simplicity; and low administration costs. Nsingo defines efficient characteristics as a tax system designed to minimise cost or losses to the paying individual. Those affected should endure the least possible loss. The system should seek to achieve economic improvement where it is possible to make at least one person better off without making anyone else worse off (Nsingo, 2014). According to Pauw *et al.* (2014), there are various types of tax, namely: income tax; consumption tax; property tax; user charges; nominal levies; consumer tariffs; sundry charges; bilateral and multilateral aid; and donor agencies.

For the purposes of this study, the focus is on user charges since the study is an explorative analysis of revenue management in the Harry Gwala and Ugu WSAs, with specific reference to water and sanitation service delivery. According to Moeti (2014), user charges have direct *quid pro quo*; these are charges imposed on individuals in communities for the use of public facilities or for the consumption of goods and services rendered by the state and levied on the basis of the cost of providing such services which may amount to their total cost or only part of their cost.

According to Bird and Slack (1993), as cited in UN HABITAT (2009), a user fee is a charge levied per unit of output received (UN HABITAT, 2009). Subsequently, Bird and Tsiopoulos

(1997) make the point that charges lead to efficiency in two ways: they provide the public sector with information on how much service users are willing to pay, and enable citizens to value the services from the public sector (Bird & Tsiopoulos, 1997) The authors further argue that under-pricing for a service may result in overconsumption of such a service.

Fourie and Opperman (2012) make the claim that service charges (user charges) are charges directly related to the provision of electricity, water and sanitation or sewerage services, as well as refuse removal, and that service charges constitute the largest portion of municipalities' gross revenue. In support of Fourie and Opperman (2012), Pauw, Van Der Linde, Fourie and Visser (2017) make the claim that municipalities provide the above-mentioned major services to domestic, commercial and industrial and any other organisations within their area of jurisdiction, for which service charges or tariffs are levied (Pauw *et al.*, 2017)

Moeti (2014) makes the claim that user charges are amounts of monies imposed on individuals for the use of specific public services, and that such services in the process should not be exhausted but remain available to be used by other users on the payment of the prescribed user charges. Gildenhuis (2010) reiterates that these services should not disappear in consumption and that it is imperative that such public services are properly maintained in order to always be available to any individual who wishes to make use of them and should not, in any event, be completely depleted.

2.8 REFLECTION ON THE ATTEMPTS BY LOCAL GOVERNMENT MUNICIPALITIES TO RAISE REVENUE FROM SERVICE CHARGES IN SOUTHERN AFRICA

According to Fjeldstad and Heggstad (2011), cost recovery charging systems are the best mechanism for matching supply and demand of public services, where there is a connection between the amount which has been charged and the consumption of public goods and services rendered to citizens. Service charges should play a pivotal role in local government finance. Drawing on Fjeldstad *et al.* (2005), and Bahl and Smoke (2005), Fjeldstad and Heggstad (2012) make the point that service charges for water and sewerage are major sources of revenue in urban areas in Southern Africa, particularly in Namibia and South Africa. However, service charges can impose a burden on lower income consumers of public goods and services. Service charges can also prevent access to public services by poorer communities (Fjeldstad & Heggstad, 2012; McDonald & Pape, 2002).

On the other hand, Fjeldstad (2011) and McDonald and Pape (2002) make the claim that exempted service users may over-consume public services, and it may sometimes be difficult to identify consumers who qualify for free services based on their inability to pay. Fjeldstad (2011) further reiterates that improved service delivery is a priority for most governments in Africa, especially in the poorest of countries.

In South Africa, the policy obliges municipalities to provide all water consumers with 6 000 litres of water free of charge, although middle- and high-income households may benefit more from this dispensation compared to low-income households. In Namibia, tariffs are not determined by the approved tariff policy. These experiences show that there are constraints on service charges and cost recovery, since in most rural areas there are no prepaid water meters and municipalities have not yet upgraded water schemes and still use communal standpipes (Fjeldstad & Heggstad, 2012).

Fjeldstad and Heggstad (2012) highlight three dimensions of trust which affect revenue collection mechanisms in Southern Africa which are major constraints on service charges and cost recovery: “Trust in local government to use revenues to provide expected services”, “Trust in local government to establish fair procedures for revenue collection”, and “Trust in other citizens to pay their share”.

2.9 BENEFIT TAXATION AND USER FEES THEORY

This section critically discusses the theoretical framework for the study, which is based on the Benefit Taxes and User Fees theory. It is important to point out that the study will specifically concentrate on the latter (User Fees). This theory is employed because the study analysed revenue management of water and sanitation in the Harry Gwala and Ugu WSAs in order to improve revenue management and enable the municipality to finance the operation and maintenance of infrastructure which supplies water and sanitation services. The author has found Duff’s Benefit Taxes and User Fees (2004) theory more relevant and employable in this study than other theories because it outlines various categories of government levies, and the application of this theory is exemplified in how the Ontario Government employs this theory to enhance revenue management for water and sanitation.

The writer acknowledges that there might possibly be other theories of taxation apart from those which are mentioned here, but chooses to adopt Duff’s Benefit Taxes and User Fees

taxation theory as indicated above. Since this theory was developed recently there is a high possibility that Duff might have developed it from the preceding theories.

The section will first present a discussion on the Benefit Taxes and User Fees theoretical framework, drawing largely on the experiences of Ontario in Canada. Secondly, the section will summarise the different types of taxation, followed by the traditional goals of tax policy. Thirdly, the section will provide a discussion of factors and elements which should be considered in the design of the Benefit Taxes and User Fees framework. The section will conclude by providing reflections on the municipal government expenditure in the Canadian example and offer a critique of the model which is employed in Canada.

2.9.1 Benefit Taxes and User Fees Theoretical Framework

According to David Duff (2004), benefit taxes and user fees are mandatory levies imposed on individuals and households who benefit from public goods and services. To distinguish between the benefit taxes and user fees, the former (benefit taxes) is a compulsory levy imposed on individuals or institutions who benefit from government services, while the latter (user fees) is a levy imposed on individuals and households based on the consumption of government goods and services rendered (Duff, 2004). Consequently, Duff (2004) argues that both benefit taxes and user fees are forms of benefit taxation, but the difference is that the latter (user fees) can be measured.

The following section will distinguish between various classifications of government levies: general taxes, tax benefits and user fees as propounded by Duff.

2.10 DIFFERENT TYPES OF TAXATION

General taxes: Refers to the provincial taxes on income, retail sales and corporations.

Benefit taxes: Refers to levies imposed on assets e.g. on municipal property and property development (real estate), as well as on gasoline and diesel; the revenue generated from gasoline and diesel is used to operate, refurbish and maintain roads and highways.

User Fees: Refers to service charges for water and sewerage services, and the collection and disposal of solid waste; the fees are based on volumetric rates or consumption. "User fees", as opposed to general benefit taxes, are more relevant to this study as described in the introduction.

2.10.1 Relevance of the Theoretical Framework

Despite the fact that Duff's theory is derived from a completely different context, most of its prescriptions are relevant to the context of the Harry Gwala and Ugu WSAs. Duff's theory is particularly relevant and employable in this study because it outlines various categories of government/municipal levies which enhance revenue collection and management. The preceding statement attests to the fact that at present there is not sufficient revenue income to maintain and refurbish existing infrastructure in the Harry Gwala and Ugu WSAs. Hence, the research seeks to analyse revenue management for water and sanitation service delivery in the Harry Gwala and Ugu WSAs in a bid to explore ways of generating or collecting and managing more revenue from service charges or user fees.

Duff employs both Benefit Taxes and User Fees theory, but for the purpose of this study the researcher will employ User Fees theory because the research focused on revenue management with specific reference to water supply and collection and treatment of sewerage or sanitation services.

2.11 ADVANTAGES OF BENEFIT TAXES AND USER FEES

Duff (2004) further outlines the advantages of Benefit Taxes and User Fees as follows:

Benefit Taxes and User Fees advance economic efficiency by ensuring that scarce resources are allocated to their most highly valued users in both the public and private sectors. Benefit Taxes and User Fees are a more efficient way to raise government revenues than general taxes. These levies also enhance the accountability of the public sector, making it more responsive to differing preferences and changes in the demand for public goods and services. These charges embody a basic principle of fairness, since tax payers pay only for those publicly provided goods and services which they use (Duff, 2004).

2.12 IMPOSITION OF BURDEN BY USER FEES

User fees can impose more of a burden on less wealthy individuals and households than on the wealthiest individuals and households. Policy-makers should consider heterogeneity in terms of affluence in tax imposition to ensure that it does not compromise the principle of fairness. Furthermore, policy-makers should involve rate payers in price determination and tariff development to ensure a rational decision-making process. Accountability cannot be effective and efficient if this is not taken into cognisance, and can result in jeopardising transparency

which is one of the eight Batho Pele principles enshrined in the White paper on the Transformation of Public Service Delivery of 1997.

2.13 TRADITIONAL GOALS OF TAX POLICY

Duff (2004) outlines eight traditional goals of tax policy that can be employed and which impact positively on government revenue. For the purposes of this research, the researcher discusses only six goals which were considered more relevant to this study.

The context in which Duff argues for these goals is based on a modern market economy and the emphasis is on allocation and distribution (not provision of public goods and services) of economic resources. Economic theory suggests that “Public provision financed by compulsory taxation is essential for efficiency reasons to prevent the undersupply that would result, under private provision from free riders who could enjoy the goods or service without contributing to its cost”, (Duff, 2004).

Duff (2004) states that Benefit Taxes and User Fees may impose a burden on less affluent individuals and that this would contradict the purpose of public provision. However, this statement is not relevant to this study because the Harry Gwala and Ugu WSAs already make provision to protect the less affluent.

2.13.1 Economic efficiency

According to Duff, (2004) economic efficiency is one of the fundamental traditional goals of tax policy. In order to measure the value of this principle one has to determine the basis of happiness which then results in willingness to pay by the consumers of public goods and services. Duff reiterates that if the levies imposed on consumers are priced properly, such levies can promote economic efficiency (Duff, 2004).

A contrary view is that this traditional goal emphasises a psychological dimension as a prerequisite for economic efficiency. This is psycho-economic efficiency since it has both a psychological and an economical component. Economic efficiency is measured on the basis of happiness from consumers of public goods and services which enhances willingness to pay due to the quality of services being provided by the government, which results in customer satisfaction. Customer satisfaction for services and goods provided informs the customer or consumer’s willingness to pay for services rendered and levies collected which promotes economic efficiency.

2.13.2 Accountability

Benefit Tax and User Fees promote participatory decision-making by both citizens and legislative representatives. The authorities and administrators are obliged to adhere to these decisions, and this further promotes consumer satisfaction (Duff, 2004). Bird and Tsiopoulos, as cited in Duff (2004), point out that individual responses to Benefit Taxes and User Fees can provide public managers with vital information about what they should be doing and how. Duff (2004) argues that these levies should result in client-responsive management. In support of Duff (2004), the Water Research Commission (2010) stipulates that debt write-off are imperative for the debt management of municipalities which helps to minimise the costs where attempts have been made to recover irrecoverable debts (Water Research Commission, 2010).

Likewise, Duff (2004), Gildenhuis, (2010) and Moeti (2014) argue that public responsibility and accountability is a requirement for democratic financial management. The elected political representatives are directly accountable to the public and should be held responsible for the collection, safeguarding and effective and efficient spending of public monies. Even if the executive is directly responsible for the mismanagement of public funds, the legislature has an oversight role to play and is obliged to account to the public for any maladministration which may occur (Gildenhuis, 2010; Moeti 2014).

Duff agrees with Gildenhuis, because in democratic countries like South Africa accountability is one of the traditional cornerstones of democracy, and consultation is paramount in service delivery. Popular participation in decision-making occurs when voters/citizens and legislative representatives are involved jointly in the decision-making process. The citizens are asked what they really expect from government and how best the public institutions can live up to or exceed their expectations. Accountability, transparency and consultation are the pillars of democracy which promote ownership by rate payers, and citizens in general, for any decision that affects them.

2.13.3 Fairness

Fairness is one of the traditional goals of tax policy. According to Duff (2004), fairness represents horizontal equity determined by income, consumption or wealth, meaning that tax payers with similar levels of economic wellbeing and consumption are obliged to pay similar taxes. Duff further argues that taxes should be designed to maximise utility.

The idea of fairness in taxation is also supported by Gildenhuis in his theory of taxation. According to Gildenhuis (2010), fairness is conceived as horizontal equity, which is also called justice, and which emphasises equal treatment for tax payers in equal economic circumstances. Equal tax should not be arbitrary in nature or discriminatory in practical application (Gildenhuis, 2010). In essence, tax payers in identical economic circumstances should be taxed the same amount; tax should reflect the ability to pay for those who bear its burden, or the tax burden should be matched by the benefits which taxpayers enjoy. Moreover, Gildenhuis (2010) argues that in general taxes which take a higher effective percentage are unfair.

2.13.4 Budgetary Flexibility

According to Duff (2004), relying on earmarked Benefit Taxes and User Fees can result in limited scope in fiscal policy for stabilisation purposes. When the revenues from Benefit Taxes and User Fees are earmarked for the service delivery expenditures from which they are derived, this may limit flexibility in terms of government expenditure decisions.

In essence, this argument on earmarking resonates very well with this study, and the situation in the Harry Gwala and Ugu WSAs makes me agree with Duff (2004), who argues that if authorities earmark revenues which will be collected from Benefit Taxes and User Fees to fund specific programmes, this can result in limited scope for the implementation of fiscal policy with regard to stabilisation. Earmarking may greatly affect municipalities which have a weak revenue base and that affected by a culture of non-payment, such as the Harry Gwala and Ugu WSAs which generates less revenue than is expected after billing for water and sanitation services.

2.13.5 Revenue

According to Duff (2004), increased reliance on Benefit Taxes and User Fees has reduced transfers from national and provincial government to the municipalities in Ontario since they are able to generate their own revenue and have become financially independent (Duff, 2004). It is imperative for WSAs to increase their reliance on User Fees from water and sanitation in order to root out a dependency syndrome on national and provincial government.

2.13.6 Political viability

According to Duff (2004), employing Bird and Tsiopoulos's ideas, there may be challenges if the authorities wish to introduce new or increased Benefit Taxes and User Fees, especially in

cases where goods and services were formerly provided without charge. These levies may be seen as “just another tax”.

It is imperative for the authorities to ensure that communities are consulted during the development of water and sanitation tariff policies in their adoption, amendment and implementation stages. Revenue policies should be formulated in collegiality with communities, not by forcing them to rubber stamp what has been developed by bureaucrats. Taking communities for granted normally results in frustration, anger and resistance, and can be viewed as a form of injustice, since new levies or increases in levies may impose financial strain on less affluent households or individuals compared to those that are more affluent (Margreet & Boelens, 2014).

2.14 FACTORS TO CONSIDER WHEN DESIGNING BENEFIT TAXES AND USER FEES

2.14.1 Feasibility

The feasibility of Benefit Taxes and User Fees depends on two factors. Firstly, policy makers should be able to identify beneficiaries of public goods and services where these taxes should be imposed (Duff, 2004); and secondly, there must be an assessment of the affluence of those beneficiaries to see if it is possible to charge them.

This argument resonates well with this study, since it can apply to the revenue management of water and sanitation in the Harry Gwala and Ugu WSAs. One of the additional objectives of the study was to analyse the capacity of the selected WSAs to collect revenue, and the availability of revenue policies and an indigent register/policy to ensure that there is no form of injustice inflicted on less affluent individuals and households.

2.14.2 Suitability

Suitability is one of the factors which policy-makers should look at when imposing Benefit Taxes and User Fees on specific beneficiaries of public goods and services (Duff, 2004). If the public good does not have private characteristics, and only entails public characteristics, then only the beneficiaries who can afford to pay for public goods and services should be charged without depriving those beneficiaries who cannot afford to pay for public services.

This factor reflects an essential element of this study; the Harry Gwala and Ugu WSAs database reveals that there are individuals who are unable to pay for municipal services because of

unemployment and poverty. The study caters for the indigent and also takes into cognisance indigent management and support. This move ensures that these individuals and households are not deprived of access to municipal services in the Harry Gwala and Ugu WSAs, in particular with regard to water and sanitation. As far as the legislative requirements for indigent support is concerned, Section 74(2) of the Municipal Systems Act makes provision for tariff policies to reflect that poor households must have access to at least basic services through direct or indirect methods of subsidisation of tariffs for poor households.

2.15 CRUCIAL ELEMENTS TO CONSIDER IN THE DESIGN OF BENEFIT TAXES AND USER FEES

Billing, quality of service and communication are identified by Duff (2004) as crucial elements which should be considered in the design and implementation of Benefit Taxes and User Fees. Within these elements there are also sub-elements namely: feasibility; suitability; and appropriateness.

2.15.1 Billing, Quality of Services and Communication

According to Duff (2004), for Benefit Taxes and User Fees to be effective it is crucial to consider the feasibility and suitability of these levies and also their appropriateness. Similarly, USAID (2006) suggests that revenue for local authorities can be improved and made sustainable by improving communication with consumers; providing metered services and fixing faulty meters; accurate billing; debt and credit management; and the provision of quality and affordable services. More residents will then be willing to pay for services rendered by the municipalities (Denhere *et al.*, 2011).

2.16 REFLECTIONS OF THE MUNICIPAL GOVERNMENT EXPENDITURE WITH PARTICULAR REFERENCE TO WATER AND SANITATION SERVICES IN CANADA

Canadian government programmes and projects rely on Benefit Taxes and User Fees. Based on this notion, it is imperative for South African government to consider specific goods and services which are provided by different spheres of government as well as to consider how those services will be financed. Water and sanitation service provision is the responsibility of the local government in both Canada and South Africa.

The government in Canada invests substantial amounts of municipal government income on water and sewerage services. Benefit Taxes and User Fees play a pivotal role in municipal

public finance in Canada, since local government is able to generate substantial revenues from these levies.

The Canadian government ensures efficiency and effectiveness in the design and application of Benefit Taxes and User Fees. The policy-makers and authorities employ a multi-part tariff structure for supplying water for both domestic and commercial users. Multi-part tariffs include access or connection fees, kilolitres consumed by the water user, and the distance from the water source or water scheme to the location of the user, which will finance the operation and maintenance or refurbishment as well as the expansion or upgrading of the water and sewerage schemes.

As far as the sewerage system is concerned, the multi-part tariff system is employed in the collection and treatment of sewerage for both domestic and commercial users. This lump sum includes connection fees, collection costs and a monthly fee billed to the consumers of such services which is used to finance operating and maintenance fees and pollution and effluent fees applied to commercial/industrial users.

However, less affluent or low-income households are exempted or subsidised by government to ensure that they are not deprived of their right to access water and sanitation services due to their inability to pay.

Duff (2004) recalls that a study conducted in 1996 revealed that 56 percent of Canadian and 40 percent of Ontario municipalities employ separate flat rates for service charges instead of charging consumers based on consumption. Likewise, with the sewerage system, 70 percent of Canadian and 60 percent of Ontario municipalities employ separate flat rates. It has been proven that the flat rate model has resulted in under-pricing of water and sewerage services which is very common in developed countries; however, the general trend is towards volumetric pricing and full cost recovery.

In order to bridge the gap of water under-pricing, as a mitigation measure developed countries have introduced seasonal rates which gained popularity in the United States of America and Australia in the 1960s, but that reforms are moving towards full cost recovery.

In a highly diverse country like South Africa, which is a Third World country faced with high levels of poverty and unemployment, some of the revenue enhancement strategies which are

employed in developed countries would not be feasible in South Africa. Municipalities cannot simply withhold municipal services from those members of society who cannot pay for services in South Africa, and in the Harry Gwala and Ugu WSAs. In terms of the Constitution of the Republic of South Africa, all citizens have a right to have their dignity protected and respected. Revenue enhancement strategies and the execution of debt collection practices should take into account the rights and dignity of citizens.

However, the general trend should be towards volumetric pricing and full cost recovery for middle-income and high-income households without withdrawing access to public services for low-income households. Moreover, it is imperative for policy-makers and public servants to take into account the rights as enshrined in the Constitution, as well as other relevant legislation, when designing revenue policies. Municipalities in South Africa are faced with a culture of non-payment for municipal services, and even consumers who can afford to pay do not comply, so seasonal rates may not be suitable or feasible in the Harry Gwala and Ugu WSAs since both are faced with high levels of poverty and unemployment.

2.17 A GUIDE TO ENHANCING MUNICIPAL REVENUE – MUNICIPAL REVENUE MANAGEMENT MODEL

This guide was funded by the United Nations States Agency for International Development. It was developed by the Municipal Infrastructure Investment Unit with the assistance of the Planning and Development Collaborative International Company (PADCO) as well as Public Service Utilities International (PSU).

The authors claim that the guide presents tools which are well-tested and developed through direct experience in South African municipalities (USAID, 2006). The authors further make the claim that this guide reflects on cost-cutting measures in the reduction of water losses. The authors also emphasise that the guide is not a substitute for revenue management competencies and skills but is intended to supplement competency and to demonstrate innovative mechanisms (USAID, 2006).

The next section will provide a brief overview of the revenue management process, as presented by the guide, for enhancing municipal revenue which was developed by the Municipal Infrastructure Investment Unit (MIIU). The section will further discuss the packaged programmes for revenue management processes, namely: communication; the data extraction and analysis model; debt collection; credit control; indigent management; customer

information audit; data cleaning; customer care; and reduction of water losses. This section presents critical factors for success and crucial learning experiences extracted from intervention on the ground in South African municipalities.

2.17.1 Overview of the Revenue Management Process

It is well known that many municipalities have become unsustainable as they are beset by poor revenue collection/uncollectable consumer debt and service delivery backlogs (USAID, 2006). The Municipal Viability Indaba held in Durban in 2008 resolved that municipalities should employ feasible revenue enhancement turnaround strategies in order to address poor revenue collection which will eventually reduce uncollected consumer debt.

According to USAID, the effective methodology for reducing uncollected consumer debt is proper planning and implementation of effective and integrated revenue enhancement strategies (USAID, 2006). The guide defines revenue enhancement as a process which focusses on a model for holistic improvement of municipal business.

2.17.2 Packaged Programmes for the Revenue Management Processes

The following are packaged programmes for revenue management processes:

- **Communication:** The Constitution of 1996 makes provision for communication with citizens in revenue management process development. This has been given a legal basis in the Municipal Systems Act. In order to implement an effective revenue enhancement strategy, it is imperative to communicate this to the consumers of municipal services for ownership and buy-in. The municipalities should design effective communication strategies which will impact positively on revenue enhancement programmes and initiatives.
- **Data extraction and analysis model:** Municipalities should, from time to time, conduct data extraction and analysis to gain a comprehensive overview of consumer/customer data as well as financial performance. This process not only provides customer information, services and an indication of debt levels, but has the ability to reveal underlying systematic causes of increased debt and provides indicators for strategic interventions.
- **Debt collection:** The main aim of debt collection is to enable municipalities to collect revenue which is due to them, rehabilitate debtors, and ensure that this benefits cash flow.

The challenge that most municipalities are faced with is poor data which hinders effective debt collection mechanisms. The municipalities should ensure that their customer information and account information is correct. Municipalities should apply the appropriate tariff structures and produce accurate meter readings. The existence of customers should be verified and the socio-economic status of customers established in order to implement an effective debt collection model.

- **Credit control:** In South Africa, the municipalities' source of own revenue is derived from service charges. Debt burden is a challenge in most municipalities in South Africa which hinders effective credit control. Effective credit control is aimed at enabling municipalities to obtain payment for services rendered. In terms of Section 78 of the Municipal Finance Management Act, municipalities should adopt, maintain and implement credit control and debt collection policies which do not conflict with rates and tariff policies.
- **Indigent management:** The main aim of indigent management is to enable consumers who are indigent (unable to pay for municipal services) to be exempted from relevant taxes and fees. In terms of the Municipal Systems Act, all municipal councils should adopt and implement a tariff policy and take into account the subsidisation of poor households. In order to do so there should be an indigent grant support policy in place, and an indigent register.
- **Customer information audit:** Customer information audits enable municipalities to discover exactly who municipal customers are and to establish what they are entitled to in terms of municipal service delivery commitments. This is supported by legislation in South Africa. The Municipal Systems Act requires that municipalities should establish a customer management system. The Water Services Act provides for the determination of tariffs for water and sanitation services, and further stipulates that consumers should pay reasonable fees. On the other hand, the Municipal Finance Management Act requires the establishment and the maintenance of a management and information system which records revenue raised and generates accounts and receipts for debtors.
- **Data cleansing:** This process ensures that information on the municipal billing system is accurate and up-to-date. Data cleansing is imperative in municipalities to ensure their financial wellbeing and municipal viability. The main aim is to prevent losses due to

incorrect and inadequate information. The data cleansing process has three stages: desktop data cleansing; returned mail cleansing; and physical field audit surveys.

- **Customer care:** Customer care is a legislative requirement that all municipalities should adhere to. The White Paper on Transforming Public Service Delivery of 1997 adopted eight Batho Pele principles which require all public servants to put people first. Municipalities should have customer relations management strategies and customer service charters in place to ensure the effective implementation of any revenue enhancement strategy.
- **Reduction of water losses:** The NDP calls for a dedicated National Water Conservation and Water Demand Management Programme by 2012, with clear national and local targets for 2017 and 2020. The National Water Resource Strategy emphasises that Water Conservation and Water Demand Management (WC/WDM) should be a priority, and that measures to reconcile demand and supply in order to provide a better life for all through job creation and economic growth should be set in place. The Department of Water and Sanitation in South Africa has developed follow-up programmes and actions by WSAs to sustain efforts and to reduce water losses and non-revenue water supply. The WSAs should implement these actions and programmes in order to contribute to the effective implementation of the revenue enhancement strategy. These programmes and activities will contribute to water use efficiency programmes, to making water services affordable, to ensuring that WSAs remain viable and to the provision of sustainable access to water services for all.

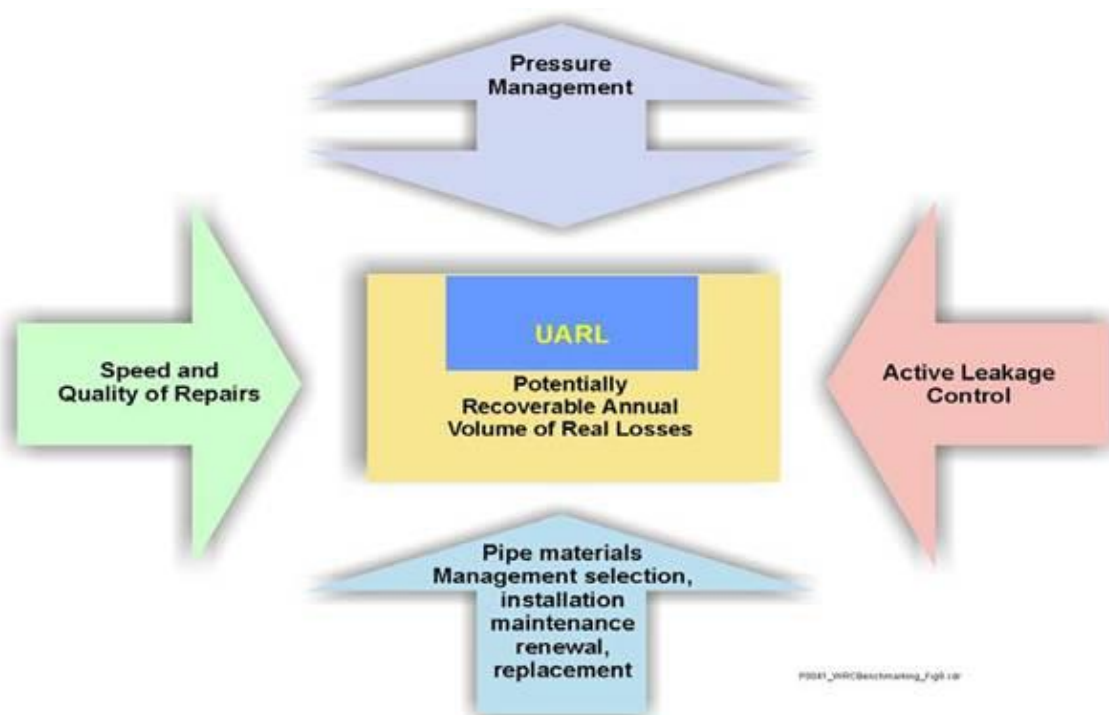


Figure 2.6: Non-revenue water reduction framework

Source: The Harry Gwala Water Conservation and Water Demand Management Strategy, 2015: 85

2.17.3 Municipal Revenue Management Business Model and Revenue Enhancement Process

The guide to enhancing municipal revenue makes the claim that in order to improve the existing municipal business model, municipalities should identify critical elements/root causes which affect municipal revenue performance. The guide highlights the following critical elements for municipal sustainability: communication strategy; provision of metered services; accurate billing; and revenue collection (debt and credit management).

According to USAID, for the ideal municipality intends to maximise revenue collection and reduce inefficiency and cost, as well as diminish uncollected debt, requires the following holistic approach to local government sustainability. However, the above-mentioned elements should be considered for the model to be efficient. The authors make the claim that the following model is simple, but has proved to be difficult for municipalities to implement due to diversity and the political nature and economic status of municipal consumers. It has been proven that some people do not pay for municipal services due to administrative and socio-economic reasons (USAID, 2006).

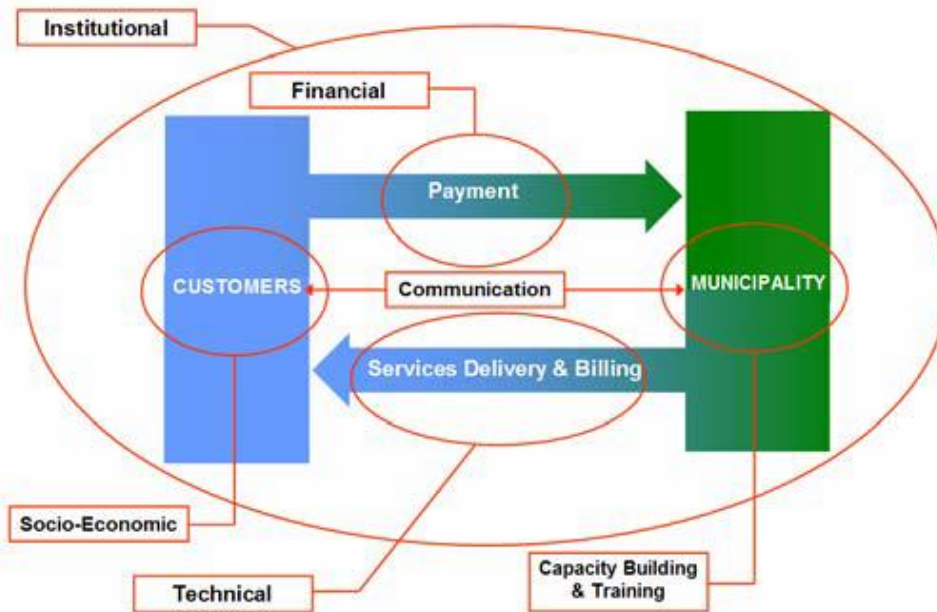


Figure 2.7: Revenue Management Business Model

Source: Adopted from USAID: A Guide to Enhancing Municipal Revenue (2006: 3)

Since this study is an explorative analysis of revenue management for water and sanitation service delivery in the Harry Gwala and Ugu WSAs, the researcher found this Revenue Management Business Model employable, including the Revenue Enhancement Implementation process developed by the Municipal Infrastructure Investment Unit, namely: Phase 1 - Data Extraction and Analysis; Phase 2 - Strategy Development; Phase 3 - Strategy Implementation; and Phase 4 - Operational (USAID, 2006).

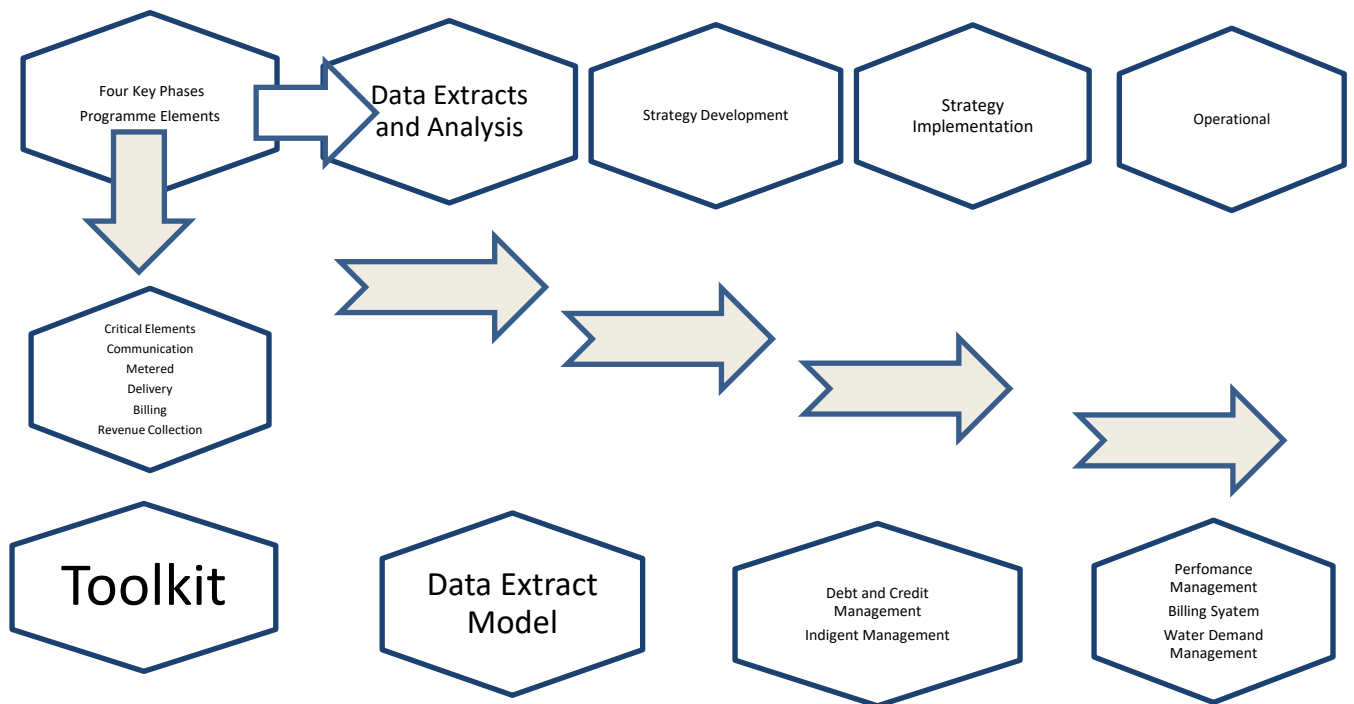


Figure 2.8: Revenue enhancement implementation process

Source: USAID: A Guide to Enhancing Municipal Revenue (2006: 5)

2.17.4 The Impact of the Billing System on Revenue Collection Performance

It is well known that debt collection and service delivery are the greatest challenges which local government municipalities are faced with both in South Africa and in Africa in general. An alarming level of consumer debt exists, and the figure is increasing. It is not only domestic users which owe the government money, but also commercial users that are in arrears, which thus proves that our debt collection practices are inadequate, and that the consequences of non-payment are not clearly understood or addressed.

According to Rao (2012), billing processes play a crucial role in revenue collection for municipalities and public-sector institutions (Rao, 2012). USAID (2005) makes the claim that for an effective billing system which has a positive impact on revenue collection, such a billing system should be based on consumption to be paid for by consumers (USAID, 2006). USAID (2005) further mentions that, in service delivery, billing is the mechanism which drives cash flow and is the source of customer information (USAID, 2006). In support of USAID, Rao (2012) points out that a billing system energises cash flow, and that it is the key source of customer information for those who are consumers of such services (Rao, 2012).

Rao (2012) argues that many countries which have reformed billing processes coupled with strengthened revenue collection processes now enjoy improved revenue performance. Most countries, in particular with regard to the water and sanitation sectors, have proven billing to have performed a key role in revenue collection (Rao, 2012). According to Agrawal (2008), when billing is improved, as well as revenue collection, this results in a swift positive impact on revenue inflows for the institution which provides such services.

Misra and Kingdom (2012) make the claim that meter reading and billing errors should be eliminated by limiting the human handling of consumer data (Misra & Kingdom, 2012). Agrawal (2008) argues that universal adoption of the metering system and spot billing impact positively on revenue performance (Agrawal, 2008). Babel and Rivas (2012) make the point that the Metropolitan Water Works Authority in Bangkok employed new billing systems and collection practices through the installation of meter reading devices with portable printers which resulted in improved revenue inflows and overall financial performance being raised to a sustainable level (Babel & Rivas, 2012). In support of Babel and Rivas (2012), Agrawal (2008) makes the point that improved billing and collection mechanisms have a positive impact on revenue inflows for institutions and may encourage commercial and operational competencies for aiding the expansion and delivery of improved, stable and sustainable services (Agrawal, 2008).

Agrawal (2008) highlights the following key elements which affect billing and revenue collection:

- **Routine exercise** – Water service providers in many countries consider billing and revenue collection as a routine exercise and lack a proactive attitude towards such practices. The focus of water service providers/WSAs is mainly on water services as an engineering task and they tend to ignore finances, billing and collection practices. In the water sector, revenue enhancement through reformed strategies should target full cost recovery and financial sustainability to enable water service providers to improve quality of services and eradicate backlogs.
- **Revenue inadequacy, poor cost recovery and poor services** – A poor billing system and revenue collection practices prevent water service providers/WSAs from recovering costs for operation and maintenance of the infrastructure to ensure that adequate services are provided to consumers. Some of the factors are: inaccurate billing for every unit of water produced; inadequate customer records; inadequate systems and processes; and

unwillingness to pay for services by the customers due to the quality of services which are rendered by water service providers/WSAs.

- **Cost inefficiencies** – Ineffective billing and collection practices results in operational inefficiencies. Water service providers/WSAs are expected to spend resources and time on billing and revenue collection practices; if one of the two functions or initiatives is ineffective this will automatically result in cost inefficiencies.
- **Credit worthiness and bankability** – Poor billing and revenue collection practices which result in operating inefficiency and commercial losses hurt the creditworthiness and “bankability” of water service providers, who should be aware that delivery of quality services and meeting the demands of urbanisation should reduce their dependence on provincial and national government grants. It should be understood that grants cannot be sufficient to cover all costs of improving quality of services to consumers.
- **Consumer accountability** – Billing inefficiencies are the origin of inaccurate bills which are delivered the consumers for water consumption, or to the wrong addresses. Such inaccurate bills result in a lack of willingness to pay for services by consumers because they lose trust in and loyalty to the service providers. These inaccuracies incur cost on the part of service providers due to rectifying processes which require more resources and to consumers who spend resources in lodging a complaint in the first place. The former loses credibility and the latter resorts to complaint mechanisms against water service providers or WSAs.

It has been reported in South Africa that water loss in municipal systems was in the region of 28.8 percent in 2007 of a total municipal system input volume of 4 billion m³ per annum (Department of Water Affairs, 2010). The total annual non-revenue water was estimated at 1.43 billion m³, accounting for 35.8 percent of total municipal system input volume excluding free basic water (Department of Water Affairs, 2010). Subsequently, Kingdom *et al.* (2006) make the claim that developing countries are faced with a challenge of non-revenue water (NRW) due to huge volumes of water lost through water leaks, or not being invoiced to consumers, which impacts negatively on revenue collection (Kingdom *et al.*, 2006). According to Kingdom *et al.* (2006), NRW consists of three components: physical or real losses; commercial losses or apparent losses; and unbilled authorised consumption, which includes water used by services provider for operational purposes, fire fighting and water provided free to consumers (Kingdom *et al.*, 2006).

It is well known that NRW in developing countries is high, and there are no data in place regarding the actual figures in the literature due to inadequate monitoring systems and the lack of a national reporting system for assessing water loss performances by the water service providers. In some cases, those institutions which comply estimate volumes in such a way as to conceal the extent of their own inefficiency. In the Harry Gwala and Ugu WSAs, proactive interventions could take the form of the adoption of a metered billing system, either as a prepaid system or not. In terms of water and sanitation service provision, a successful billing system should ensure that accurate customer billing statements are issued on a monthly basis based on volumetric assessments.

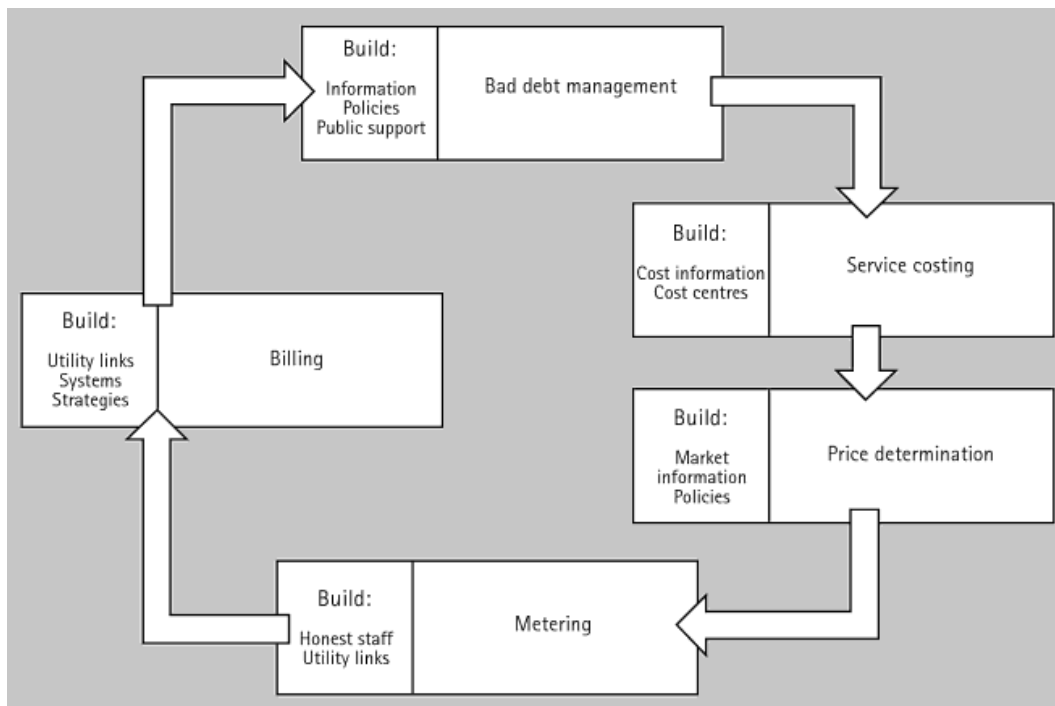


Figure 2.9: Revenue Management Cycle

Source: Adopted from Rao’s GSDRC Helpdesk Research Report (2012: 4)

2.18 FINANCIAL SUSTAINABILITY MODEL

The financial sustainability model is one of the initiatives developed by Ekurhuleni Metropolitan Municipality in Gauteng Province in South Africa which was presented at the Southern Africa Revenue Protection Association (SARPA) Conference in 2010 (Holeni, 29 June 2010). The Ekurhuleni Metropolitan Municipality took a bold step to roll out a comprehensive programme on revenue management and enhancement (Holeni, 29 June 2010). The metropolitan municipality employed a new operating model to enable the municipality to enhance and protect the revenue which had been generated (Holeni, 29 June 2010). The programme involved four different projects, namely:

- Revenue generation;
- Revenue management;
- Revenue protection; and
- Revenue enhancement.

The Ekurhuleni Metropolitan Municipality had to take drastic measures and develop a clear turnaround strategy to respond to the challenges with respect to financial sustainability, unfavourable economic conditions and a high rate of consumer debt (Holeni, 29 June 2010). All these conditions had resulted in the country as a whole facing recession and the operating income of the municipality was inadequate to meet all its financial obligations, including rendering basic services to citizens (Holeni, 29 June 2010). The conditions on the ground necessitated that the municipality employed an unconventional strategic model to secure revenue management and enhancement which would improve the existing situation.

The authorities of the Ekurhuleni Metropolitan Municipality developed and adopted a financial sustainability model which would promote creativity and innovativeness through alternative sources for funding large projects and improved revenue inflows (Holeni, 29 June 2010). Coutinho (2010), as cited in Chiunye and Chikosha(2015), observes that there were other methods which can be employed by local government municipalities to ensure that they continue to be financially viable. He emphasises that there is a need for municipalities to ensure that consumers of services pay for the services rendered.

On the other hand, the UKZN Financing and Development in South Africa Financial Viability Conference held in 2008, as cited in Chiunye and Chikosa (2015), describes financial viability as an overall municipal priority which involves staff and environmental and institutional capacity that enables adequate service delivery (Chiunye & Chikosha, 2015).

Chiunye and Chikosha (2015) highlight the following abilities in order to demonstrate viability:

- Provision of the necessary services and infrastructure to citizens;
- Creation of sustainable local economic development initiatives which are conducive to citizens;
- Possession of necessary institutional capacity to perform municipal functions;

- Budgetary adequacy to manage financial resources and growth of the revenue base; and
- Creation of productive public participation in initialising, planning and executing municipal projects.

According to Chiunye and Chikosha (2015), the financial viability of local authorities in India was secured through the managing of their functional authority through both operational and fiscal decentralisation (Chiunye & Chikosha, 2015).

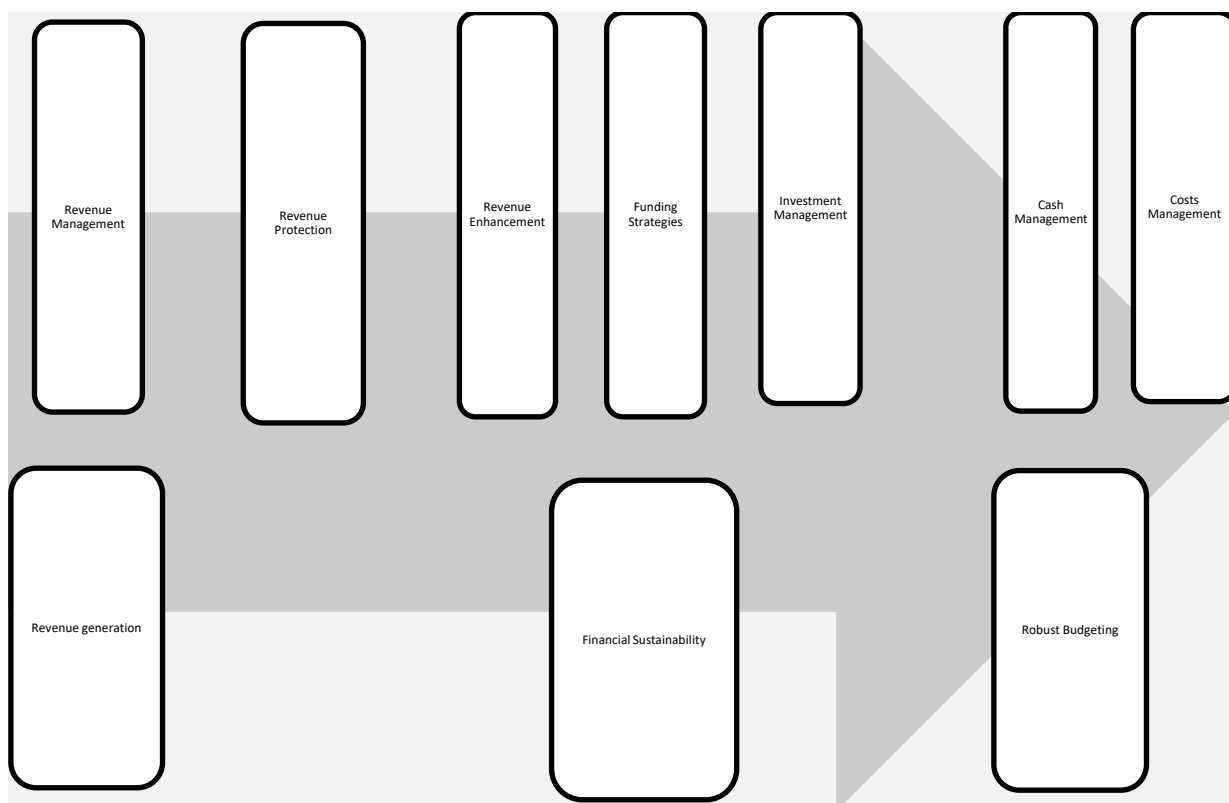


Figure 2.10: Financial Sustainability Model

Source: SARPA Conference (2010)

Ekurhuleni metropolitan municipality had implemented a tripod methodology to ensure the effectiveness and efficiency of its revenue management and enhancement programme. The tripod methodology is a system which enables the integration of products and services rendered by the municipality to its consumers together with the revenue that is generated (Holeni, 29 June 2010). The interaction between consumers and the municipality through the customer care contact centre improves the willingness to pay by consumers, and improves the quality of services which are rendered by the municipality (Holeni, 29 June 2010). There are more payment options which have been created by Ekurhuleni Metropolitan Municipality ranging from physical to electronic channels (Holeni, 29 June 2010).

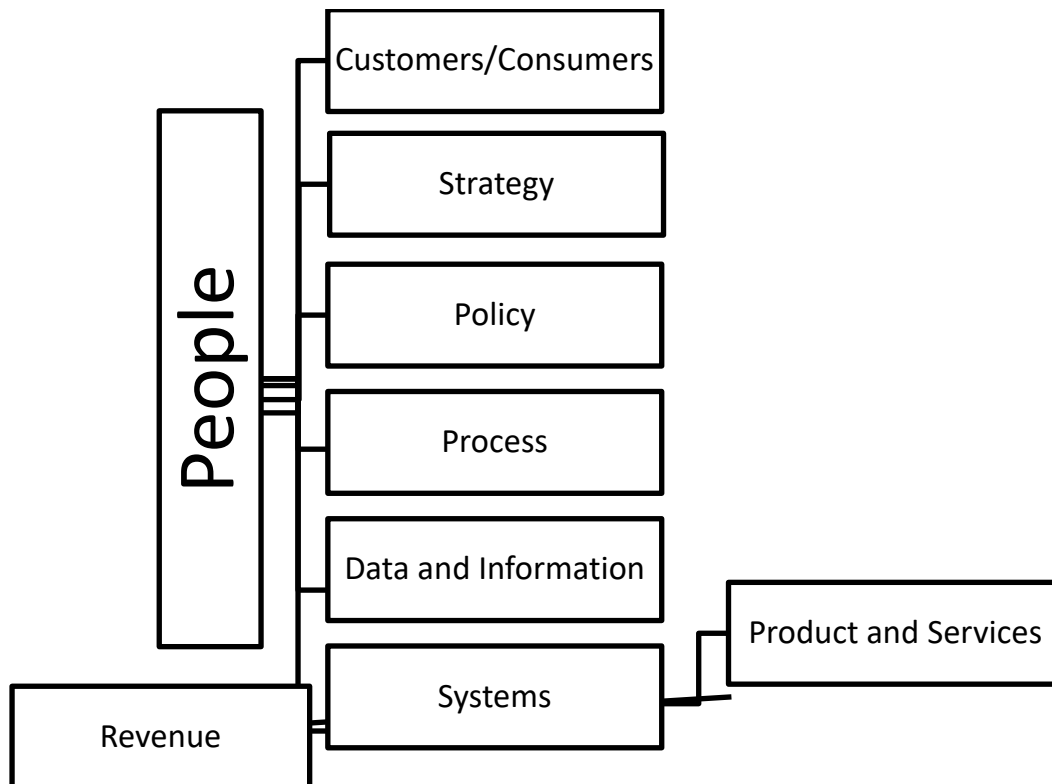


Figure 2.11: Tripod Methodology

Source: SARPA Conference (2010)

The revenue and enhancement programme developed by Ekurhuleni metropolitan Municipality, which is a financial sustainability model, is their medium- to long-term programme which will enable the municipality to achieve financial sustainability and assist in breaking “silos”. The main sources of own revenues in Ekurhuleni Metropolitan Municipality are water, electricity, rates and solid waste. There are other revenue collection centres in Ekurhuleni Metropolitan municipality, these being: the Metropolitan Police and licensing; the fresh produce market; and the Housing Department. However, their financial sustainability model is relevant to the case study of revenue management of water and sanitation in the Harry Gwala and Ugu WSAs, because if this model can be implemented and employed as a matter of best practice it will enable WSAs to produce positive results as far as revenue management is concerned and improve revenue inflows.

2.19 GUIDELINES ON DOMESTIC WATER ACCOUNTS

According to the Financial and Fiscal Commission (2013) the national and provincial spheres of government should ensure that fiscal transfers to rural municipalities are linked to capacity building initiatives and structures assistance that will enable municipalities to generate

revenues. Municipalities should develop revenue enhancement initiatives which are responsive to the broader constraints experienced; e.g. inequality; local dynamics; unemployment; and land tenure issues so as to ensure that revenue collection and management efforts in rural municipalities are maximised (Financial & Fiscal Commission, 2013).

The report to the Water Research Commission developed by Sarah Slabbert Associates in 2010 indicates that the domestic water statements of account issued by WSAs to consumers on a monthly basis are a key interface between local government municipalities and communities. According to the Water Research Commission (2010), municipal accounts should be regarded as unique communications between municipalities and consumers of services, be they domestic or commercial users to whom statements of account are addressed (Slabbert Associates, 2010). An ideal municipal statement of account should offer an opportunity to educate consumers, inform and influence service users to pay for services, and further establish communication which is clear, accurate and user friendly and that will result in effective and efficient customer relations management.

Recent studies by Sarah Slabbert (2010) reveal that many consumers of municipal services in South Africa do not know and cannot articulate how much water they are consuming on a daily or monthly basis. Slabbert (2010) makes a claim that a lack of understanding of statements of account by consumers can impact negatively to both service providers and consumers since it shows: poor awareness of planned and unplanned service interruptions, pay points, free basic water, water quality and water conservation and demand management initiatives, lack of accountability, lack of participation or consultation, and a lack of regulation of water services. Water statements of accounts should not only be regulatory instruments; accounts should also be employed as a tool to make water users or consumers of water services participants to sustainable water service delivery (Slabbert Associates, 2010). Recent studies conducted locally and international shows that consumers of municipal services in developing and developed countries are not able to interpret water statements of account. This notion has been supported by the study conducted by the Water Research Commission in South Africa which reveals that municipal invoices in are not standardised and do not meet regulatory requirements (Slabbert Associates, 2010).

The Water Services Act, No. 32 of 2000 makes provision for WSAs to establish retail water services tariff policies and set water and sanitation tariffs within the framework provided by the Department of Water and Sanitation as the National Regulator of water services in South

Africa. This is supported by the Strategic Framework for Water Services (2003), which is a policy documents that regulates consumers to have the right to information with respect to water consumption, debt collection, credit control, connections and disconnections or enforcement of water services by-laws, credit control procedures and the overall responsibilities of the consumers of water services. The Municipal Systems Act, No. 32 of 2000 regulates WSAs with regard to tariff and service charges to ensure that service users are informed or consulted in any decision-making process in relation to costs incurred in service provision, the reasons for payment of service charges, and how the revenue generated from service charges is utilised or managed.

According to the studies of international best practice and consumer research (Australia Natural Resource Management Ministerial Council, 2006; Electricite de France (EDF) Energy UK, 2009; Garland Utilities, 2008; India Ministry of Urban Development, 2007) a consumer-friendly statement of account should be understood by both literate and illiterate consumers, those who do not understand the language used, and by those consumers with impaired sight. The studies further suggest that other measures should be introduced to enable consumers to understand their statements of account.

The following section will analyse the Disconfirmation, Gap and SERVQUAL models, looking at the customer perspective and service quality in relation to revenue management of water and sanitation service delivery by WSAs.

2.20 THE DISCONFIRMATION MODEL AND THE GAP MODEL

The Disconfirmation model and the Gap model are models which aim to provide a service delivery experience that is better than that which the customer or consumer expects from the service provider (Iacobucci *et al.*, 2001). Iacobucci, Ostrom and Grayson (2001) state that the academic literature maintains that customer satisfaction is a function of the discrepancy between a consumer's prior expectation and their perception regarding the services rendered. Iacobucci, Ostrom and Grayson (2001) note that when the experience of the customer with regard to services rendered by the provider is better than expectations, there is positive disconfirmation. Service quality has also been defined in a similar way to customer satisfaction in that it is a comparative function between customer expectations and actual service performance. The customer satisfaction literature refers to this model as the disconfirmation paradigm, while the service quality literature refers to this model as the Gap paradigm (Iacobucci *et al.*, 2001).

According to Iacobucci, Ostrom, and Grayson (2001), the terms “satisfaction” and “quality” are normally used interchangeably in both the working environment and in academia (Iacobucci *et al.*, 2001). Indeed, if the definitions of both terms are compared, the two appear to be highly similar. Both terms are important concepts in academia, especially to those researchers who are studying consumer evaluations, and to consumer practitioners as a means of creating customer loyalty. It is well-known that there are many studies which have been conducted to examine whether or not quality and satisfaction have dissimilar antecedent foundations, resulting in them being regarded as different, separable constructs (Iacobucci *et al.*, 2001). Most of the researchers in academia have an interest in finding out how these terms differ and, some service quality researchers describe satisfaction as a short-term evaluation of a single service encounter and quality as a long-term evaluation of services (Iacobucci *et al.*, 2001).

On the other hand, some customer-satisfaction researchers describe quality as a component of satisfaction as part of the broader evaluation of services (Iacobucci *et al.*, 2001). Bitner, Booms and Mohr (1994) state that service quality is the consumer’s overall impression of the superiority or inferiority of services provided to consumers (Bitner *et al.*, 1994). Taylor and Cronin (1994) define service quality as an attitude acquired through long-term evaluation by consumers (Taylor & Cronin, 1994). Parasuraman, Zeithaml and Berry (1985) view service quality as the difference between what the consumer expects from the service provider versus performance along quality dimensions (Parasuraman *et al.*, 1985). Roets and Pieters (1997) view service quality as a cognitive discrepancy between experience-based norms and performances related to services rendered (Roets & Pieters, 1997).

Drawing on Oliver (1981), Brady and Robertson (2001), Lovelock, Patterson and Walker (2001), and Fen and Lian (2007), these authors conceptualise the term customer satisfaction as a customer’s feeling of pleasure or disappointment resultant from comparing the service rendered in relation to their expectations.

The following table identifies the number of elements which distinguish service quality from customer satisfaction:

Table 2.3: The variances between Customer satisfaction and Service Quality

Service Quality	Customer Satisfaction
Quality judgement is specific	Can result from any dimension either quality-related or not
Quality expectations are based on ideals or perception of excellence	Can be formed by non-quality issues; e.g. needs, perception of fairness or equity
Fewer conceptual antecedents	More conceptual antecedents
Does not require experience with the service/provider	Requires experience with the service/provider

Source: Compiled from various sources (Taylor, 1993; Oliver, 1993; Rust and Oliver, 1994; Spreng and Mackoy, 1996; Choi *et al.*, 2004; Grace and O' Cass, 2005).

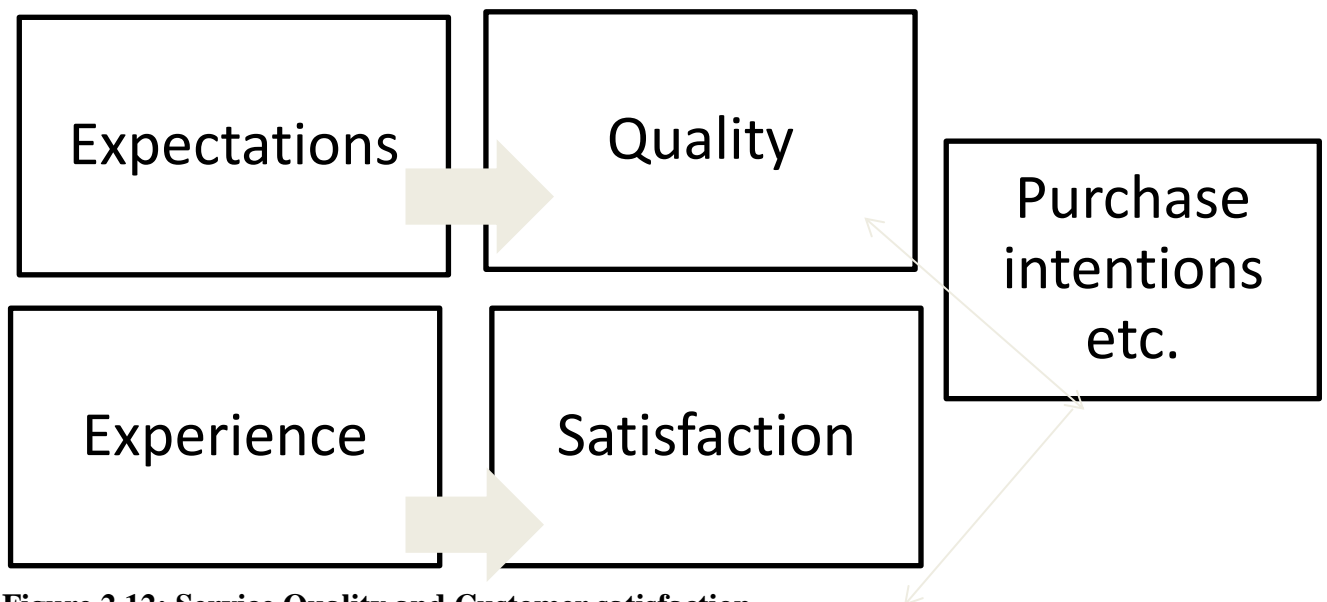


Figure 2.12: Service Quality and Customer satisfaction

Source: Iacobucci *et al.* (2001: 280)

Some scholars may argue that quality and satisfaction can be distinguished if one hypothesises a situation whereby a high-quality service or product may result in customer satisfaction (Iacobucci *et al.*, 2001). Since Harry Gwala and Ugu municipalities are WSA institutions responsible for the provision of water and sanitation services to their consumers, one may argue that provision of quality drinking water and decent sanitation services to consumers may result in customer satisfaction and improved willingness to pay, which will then impact positively on revenue collection. However, the service provider should be able to know the expectations of consumers and adhere to the service level standards of the institution.

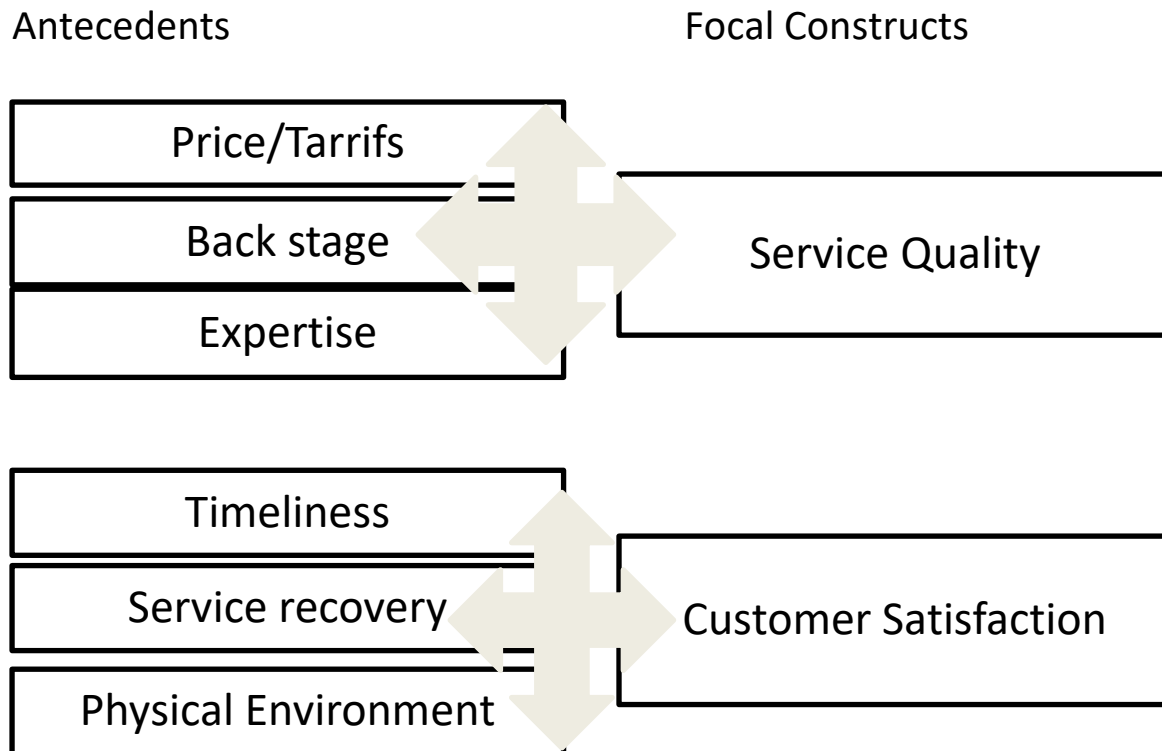


Figure 2.13: Conceptualising service quality and customer satisfaction

Source: Iacobucci *et al.* (2001: 295)

According to Iacobucci, Ostrom, and Grayson (2001), in a study which was conducted pursuing the consumer voice (Iacobucci *et al.*, 2001) there is no difference between quality and satisfaction from disconfirmation, keeping promises, and customisation, empathy, friendliness, or purchase intentions. The literature provides evidence that quality and satisfaction are hypothesising judgements of expectations versus experiences as an antecedent and purchase intentions as a consequence (Iacobucci *et al.*, 2001). From the customer perspective, the purchase characteristics of price, backstage as well as expertise are the causal antecedents which affect perceptions of service quality. Moreover, from the customer perspective, the purchase characteristics of timeliness, service recovery and physical environment are likely to affect the judgement and perceptions of customer satisfaction (Iacobucci *et al.*, 2001).

Quality factors are those factors which are in the control of the service provider, The Harry Gwala and Ugu WSAs are responsible for the provision of quality drinking water and adequate sanitation services to their citizenry. Both develop and adopt tariffs and designs, and develop the flow chart for service delivery, including behind-the-scenes systems and are responsible for recruitment and appointment of qualified personnel to deal with policy design and implementation, and monitoring and evaluation. Satisfaction factors, on the other hand, are

those factors which impact on the experiential aspect of the consumer. The customer's service experience is impacted positively or negatively by the turnaround time of the service provider when a service is requested, the turnaround time between any service interruption and its resumption, as well as the physical environment of the service institution.

However, the difference between satisfaction and quality reflects the service provider versus customer concerns; WSAs and consumers in this case. When WSAs provide high quality service and consumers experience good quality service they may automatically become satisfied, and this improves their willingness to pay for services rendered. If we characterise quality within the domain of the service provider and satisfaction within the domain of the evaluative reaction of the customer before or after receiving a service, this would offer a clear basis for dissimilarity. On the other hand, quality programmes involving total quality management would focus on improving the service provider's controllable aspects of the service delivery of potable/quality drinking water and sanitation services to consumers.

It is well known that customers are key stakeholders in the water and sanitation business and their satisfaction should be a priority in the management of WSAs.

2.21 SERVQUAL MODEL

The SERVQUAL model stipulates that staff satisfaction and service quality are drivers of customer satisfaction by doing things efficiently (Maddern *et al.*, 2007). Drawing on Voss *et al.* (2004), Vilares and Coehlo (2003) and Van Der Weile (2002), Maddern, Maull, Smart and Baker (2007) point out that providing excellent service quality is imperative as a key business requirement for corporate profitability and survival (Maddern *et al.*, 2007). Ruyter (1997) points out that quality and satisfaction are indices of an organisation's economic status (Ruyter, 1997). Drawing on Caruana (2002), Mosahab, Mahamad and Ramayah (2010) argue that service loyalty is one of the key structures in service marketing, because of its final effect on customers' repeated purchases (Mosahab *et al.*, 2010). They further argue that those loyal customers in any organisation who purchase repeatedly are considered as the base for any business (Mosahab *et al.*, 2010). On the other hand, Parasuraman, Zeith and Berry (1985), who are the originators of SERVQUAL model, argue that services are totally different to goods (Parasuraman *et al.*, 1985):

- Services by nature are intangible;
- Services are heterogeneous; and

- Both production and consumption of services are inseparable.

Parasuraman, Zeithaml and Berry (1985) developed an instrument for measuring service quality which is a SERVQUAL model which has become very popular in academia. According to Mosahab, Mahamad and Ramayah (2010), there have been attempts to divide service quality into process quality and output quality, although this suggestion lacks detail (Mosahab *et al.*, 2010). For this reason, Parasuraman, Zeithaml and Berry (1996) combined the ten dimensions of service quality and applied these to a fivefold dimensional base to produce a tool for testing service quality which is known as the SERVQUAL model (Parasuraman *et al.* 1996). In their research papers they emphasise that SERVQUAL is a lasting and reliable tool/scale for determining service quality (Parasuraman *et al.*, 1994). They further point out that the SERVQUAL model is applicable to a broad spectrum of service spheres (Parasuraman *et al.*, 1994).

According to Mosahab, Mahamad, and Ramayah (2010), service is becoming an increasingly large portion of the offerings of many organisations, regionally, nationally and globally, and is well-considered as a tool for generating revenue streams (Mosahab *et al.*, 2010). This thus means that today's business services require reliable tools to measure, assess and improve the quality of their services (Mosahab *et al.*, 2010). Avkiran (1994) developed a model consisting of four dimensions, namely: personnel contact; reliability; communication; and access to services (Avkiran, 1994). Subsequently, Othman and Owen (2001) developed another model consisting of six dimensions called CARTER, which is an acronym for Complaint, Assurance, Reliability, Tangibles, Empathy and Responsiveness (Othman & Owen, 2001).

The original study by Parasuraman introduced ten dimensions for the SERVQUAL model which were later refined and reduced to five dimensions. The original ten dimensions were: tangibles; reliability; responsiveness; competence; courtesy; credibility; security; access; communication; and understanding the customer (Parasuraman *et al.*, 1988). There is yet another model which was developed by Cronin and Taylor (1992), cited in Jain *et al.*(2004), which is called SERVPERF.

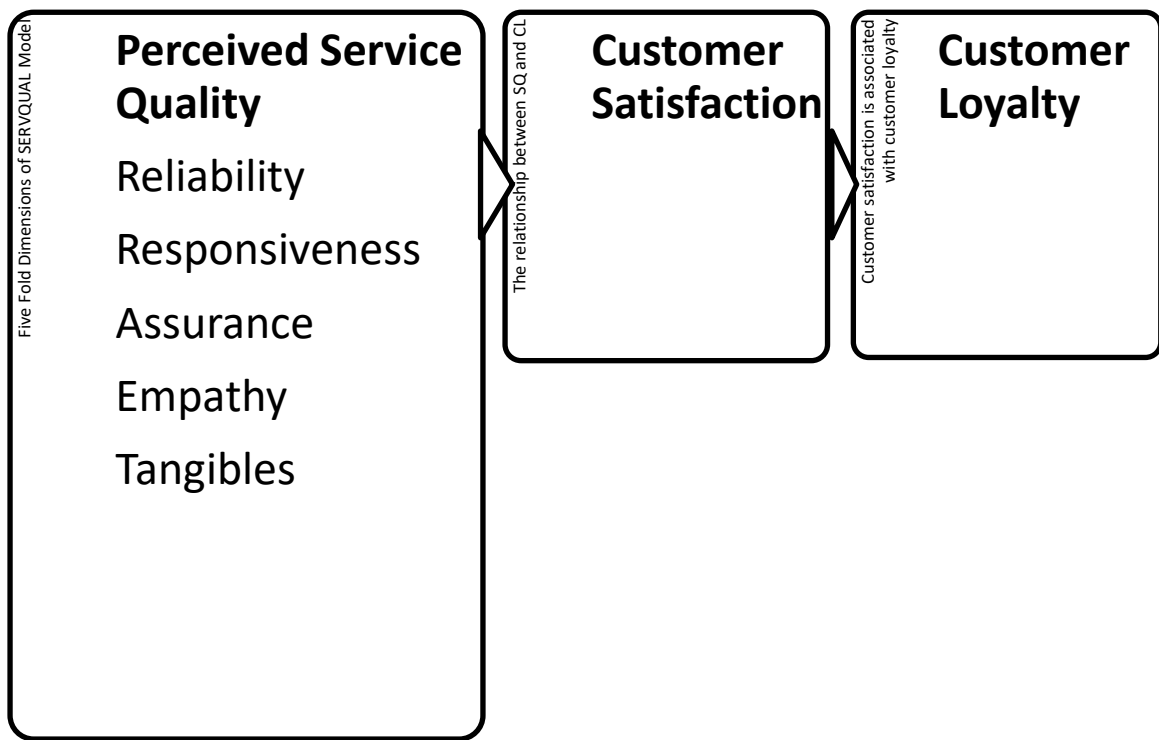


Figure 2.14: The five dimensions of the SERVQUAL model

Source: Mosahab *et al.* (2010: 204)

The whole idea of service quality as a concept is to satisfy customers by providing quality services. It is therefore imperative to measure service quality in order to determine whether the services are good or bad, or to determine whether customers are satisfied with the quality of services or not. According to Haywood (1998), there are three components of service quality called the 3 Ps, namely:

- Physical facilities;
- Personnel behaviour; and
- Professionalism (Haywood, 1988).

The SERVQUAL model by Parasuraman has been proven by most researchers in academia to be the most suitable scale to measure the quality of services provided to customers by service providers. The researcher has found this model to be employable in the Harry Gwala and Ugu WSAs to measure the water and sanitation service quality provided to their consumers by these WSAs. The SERVQUAL model has been proven as the best evaluation methodology which is both consistent and reliable (Brown *et al.*, 1993). The way in which this model has been presented by different researchers makes it clear to me that the SERVQUAL model best fits the investigation of ratepayers' perceptions of cost recovery in water and sanitation service

delivery in the Harry Gwala and Ugu WSAs from the customer/consumer perspective. This was one of the key objectives of this research.

The five dimensions of SERVQUAL are:

- **Reliability** – This relates to the ability of WSA personnel to perform the promised service diligently and accurately which will result in customer satisfaction and willingness to pay for service charges;
- **Responsiveness** – This refers to a willingness to help customers timeously and to provide speedy service which adheres to the turnaround time stipulated by service level standards;
- **Assurance** – This relates to the level of knowledge, competence and professionalism of the WSAs' personnel and their ability to restore public confidence in these institutions;
- **Empathy** – This refers to the understanding of the vision and mission of WSAs, and to the upholding of a set of ethical values by the institution for conducting themselves ethically; and
- **Tangibility** – This relates to the appearance of the physical facility of the WSAs' equipment, the working environment and the appearance of their personnel, especially at contact centres/customer care centres.

2.22 STRUCTURAL ALIGNMENT OF THE NATIONAL DEVELOPMENT PLAN AND OTHER LEGISLATIVE FRAMEWORKS IN RELATION TO WATER AND SANITATION SERVICE DELIVERY

According to Atkinson (2013), the National Planning Commission of South Africa located in the office of the Presidency was established in 2010 in order to identify sectors of the economy which could be boosted to alleviate the unemployment crisis in the country (Atkinson, 2013). In the second quarter of 2013, it was reported that the unemployment rate in South Africa was 25.6 percent (StatsSA, 2013 cited in Atkinson, 2013).

Pillay (2009) argues that there is an alarming skills deficit figure at senior management levels in the South African public sector. Pillay (2009) further argues that this situation places a high premium on ensuring that training and skills development of senior management is as effective as possible by comparison to the lower ranks.

The National Infrastructure Plan seeks to transform the economic landscape, whilst simultaneously creating a significant number of new jobs and strengthening the delivery of

basic services. The national infrastructure plan is also trying to respond to the socio-economic challenges of poverty, unemployment and inequality. The plan also highlights 18 strategic integrated projects as catalyst projects which can fast-track development and growth aligned to three cross-cutting areas: human settlement; planning; and skills development.

For the purposes of this research, the discussion focuses on SIP 18: water and sanitation. The national infrastructure plan outlines a ten-year plan to address the estimated backlog of 1.4m water service provisions and 2.1m adequate sanitation services in order to meet social needs and ensure economic growth. As stipulated in the national infrastructure plan, the focus will include rehabilitation and upgrading of existing infrastructure, improved management of water infrastructure as well as the provision of new infrastructure.

There is a desire to change and build a state which is capable and developmental, which requires strategic interventions by authorities and bureaucrats to identify the root causes of the current unsatisfactory state of affairs and facilitate the policy-making process which will result in the development of programmes that are responsive to these challenges.

One of the strategic interventions is to monitor the implementation of the NDP in all spheres of government, in both state-owned enterprises and public service institutions. The National Planning Commission proposed fundamental steps to be taken to enable the achievement of the set objectives of the NDP. The National Planning Commission emphasised the need for high quality public service, improving and maintaining infrastructure, and professionalization of public services in order to build a capable and developmental state. The emphasis put forward in Chapter 13 of the NDP is on recruitment and promotion on the basis of merit and potential rather than connections and political allegiances. The state should appoint highly skilled people in the public sector in order to achieve the set objectives of the NDP.

2.23 OUTCOMES APPROACH TO PERFORMANCE MANAGEMENT IN THE PUBLIC SECTOR

The Constitution of 1996 under the Bill of Rights stipulates that everyone has the right to basic education, including adult basic education and further education. Section 29 further states that the state, through reasonable measures, must make education progressively available and accessible to all citizens.

Former president, Nelson Mandela, once said, “Education is the only weapon we can use to change the world” (Mandela, 2009). The socio-economic challenges which the country is faced with can only be addressed by skills development and the academic development of citizens. The success of the public service is largely dependent upon the requisite skills, experience and expertise being present within the state (Mollo, 2013).

The National Planning Commission targeted key areas to transform the state into one which is capable and developmental. These are to:

- Stabilise the political administrative interface – Separation of roles between politicians and administration. Politicians make policies and administration is responsible for the day-to-day operations;
- Make the public service and local government a career of choice – Appointments based on experience, merit and expertise. Promote professional skills and specialist technical skills;
- Improve relations between the three spheres of government. Improve inter-governmental relations; and
- Ensure stability in state-owned enterprise boards to ensure that these enterprises deliver as expected.

Tshishonga (2014) argues that human resource development and management are critical in redressing the legacy of apartheid, service delivery backlogs and expediting the implementation of development policies (Tshishonga, 2014). Tshishonga (2014) further argues that skills shortages and deficiencies have a detrimental effect on the delivery of basic services such as water and sanitation (Tshishonga, 2014).

This then implies that human capital management is fundamental to ensure that the objectives set in the NDP are achieved. Human capital management is an integrated, strategic and deliberate activity performed by both public and private sector organisations as a model for attracting, selecting, training, developing, retaining, promoting and deploying employees (Rooyen, 2011).

According to Ployhart (2014), organisational leaders endorse the notion that employees are their most important assets. In essence, such characterisation is the idea that collective human capital in the workforce represents an economic resource for organisations in the sense that it generates future income streams (Ployhart, 2014) Drawing on Barney (1991), Becker and

Gerhart (1996), and Lado and Wilson (1994), Ployhart (2014) argues that this perspective is echoed in a growing body of scholarly work in strategy and strategic human resource management which examines firm-level human capital as a type of resource from which organisations can potentially derive competitive advantage (Ployhart, 2014).

Likewise, Ployhart (2014), drawing on journals like the *Harvard Business Review*, argues that managers should be held accountable within organisations for how they contribute to overall workforce value, and not just for costs or for immediately positive effects on profitability, but also for their contributions to longer-term productivity. Ployhart (2014) further maintains that short-term performance outcomes are important, but organisations also benefit from information on how managers manage organisations' human capital resource for the future.

Kooij (2013) argues that human resource practices focus on employee wellbeing and performance. Human resource practices, whether labelled as high performance or high commitment human resource practices, result in heightening performance through increased discretionary effort by providing opportunities to participate, and by enhancing skills and motivation.

Furthermore, Kooij (2013) points out that the ability, motivation and opportunity model of performance proposes that an individual's performance is a function of their abilities, motivation and opportunity to contribute. In order to ensure effective and efficient performance management, organisations should differentiate the "general" human resource practices which they offer to employees in different age groups (Kooij, 2013). Human resource practitioners should offer their aging employees the opportunity to benefit from job-enrichment human resource practices, because these policies are also important for both aging workers' wellbeing and their performance, and further ensure that aging workers have challenging jobs which make full use of their training, knowledge and skills.

Pillay (2008) makes the point that there is a necessity to develop pragmatic programmes which are effective and relevant to the functioning of departments and the provision of information, training, tools and support as a retention strategy. Pillay (2008) further argues that the aim of human resource development is to secure effective and efficient service delivery by appropriately training employees. Another fundamental point made by Pillay (2008) is the need for managers to implement policies which will increase productivity in terms of effective, efficient and responsive delivery of services.

According to the World Public Sector Report, as cited in Pillay (2008), there are critical aspects which are significant for the improvement of public sector human resource management: a public service that is non-partisan; professional and focused on merit; an agency exercising strategic leadership and monitoring a system of decentralised management; emphasis and focus on result-oriented management approaches; tough anti-corruption rules and regulations; legislative provisions and professional norms which facilitate openness and transparency; and systems and skills which provide high-level and ongoing communication through global technologies.

Moreover, drawing on Carsten and Thornhill's (2000) work, Pillay *et al.* (2008) claim that the new public management approach was introduced to attain reform goals as follows: hands-on professional management in the public sector; a shift to greater competition in the public sector; explicit standards or measures of performance management; greater emphasis on output controls; a shift to desegregation of units in the public sector; emphasis on private sector styles of management; and greater discipline and economy in resource use.

2.24 SUMMARY

The chapter first discussed the Administrative Management Service Model and views on government services and the paradigm phases in the Public Administration context. The chapter dealt with the legislative framework, role of water sector institutions in the water and sanitation business cycle, and progress made to date in relation to water and sanitation provision and cost recovery in South Africa as a mechanism which was employed by the post-apartheid government in South Africa to try and urge residents to pay for service charges.

The chapter reflected on Revenue Management Principles in general. The chapter further highlighted the sources of government revenue and provided a reflection on the attempts by local government to raise revenues in Southern Africa. All these aspects have been discussed in detail. The chapter further dealt with the theoretical framework drawn from Benefit Taxes and User Fees theory. The chapter specifically concentrated on the User Fees theory, which will be employed in the study that will be assessing revenue management of water and sanitation service delivery in the Harry Gwala and Ugu WSAs.

The chapter further distinguished between Benefit Taxes and User Fees, and finally reflected on the traditional goals of tax policy, the role of Benefit Taxes and User Fees, the design of

such taxes and municipal government expenditure, with specific reference to water and sanitation services. All these aspects have been discussed in detail. It is important to point out that the researcher found Benefit Taxes and User Fees theory relevant and employable in the explorative analysis of revenue management of water and sanitation service delivery in the Harry Gwala and Ugu WSAs.

The chapter summarised the discussion on the guide to enhancing municipal revenue, the impact of the billing system in revenue collection and the financial sustainability business model.

The chapter further presented a discussion on service quality and customer satisfaction looking at Disconfirmation and Gap, as well as SERVQUAL, models. To this end, the chapter summarised the discussion on structural alignment of the NDP and other legislative frameworks in relation to water and sanitation service delivery, including the Outcomes Approach to Performance Management in the public sector.

CHAPTER THREE

SUSTAINABLE MODELS AND FRAMEWORK FOR ENHANCING REVENUE MANAGEMENT IN MUNICIPALITIES AND WSAs

3.1 INTRODUCTION

This chapter discusses the new conceptual framework of the study that has been introduced by the researcher which will be employed to accomplish the research objectives. The conceptual framework is drawn from the following models: the Wide Enterprise Risk Management Model; the Customer Centric Culture Shift Model; Cost Recovery Theory; Gramsci's Theory of Hegemony; the Stakeholder Management Theory; the Financial Sustainability Model; Classical Economic Theory; Subsidiary Principle; the Theory of Sustainable Development; and Benefit Taxes and User Fees Theory which underpin the conceptual framework. The Sustainable e-Compliance, Customer Centricity and User Fees Conceptual Framework is employed in the study as an analysis of revenue management in water and sanitation service delivery with particular reference to Harry Gwala and Ugu WSAs; this seeks to improve revenue collection and management in order to finance the operation and maintenance of infrastructure utilised by the WSAs.

The WSAs need to continue to supply water and sanitation services to the communities without depriving future generations access to a precious scarce resource, whilst also remaining sustainable and financially viable. The Chapter argues for the introduction of a Sustainable e-Compliance, Customer Centricity and User Fees Conceptual Framework which look at revenue management of water and sanitation service delivery holistically by incorporating e-compliance, customer centricity and critical consumption as well as taxation and user fees.

3.1.1 Water and Sanitation Service Delivery Challenges

Based on the current Southern African challenges of meeting water demand and sanitation service delivery as far as revenue management is concerned, the chapter will encapsulate a discussion on how this precious resource can be used more sustainable, promoting collaboration and integration within the water sector to ensure sustainable e-compliance, customer centricity and effective revenue management through innovation in improved sustainable development. Revenue Collection and Management refers to the compulsory imposed contributions by the local authorities to the service users (Zivanai *et al.*, 2014). Recent studies reveal that the management of municipal services in South Africa has been an ongoing dilemma for the new government led by the African National Congress because of a culture of

entitlement and non-payment of services as a new social paradigm for service delivery (Ruiters, 2007). According to Kanyane (2011), seventeen (17) rural municipalities in KwaZulu-Natal are faced with the challenge of weak revenue sources and are failing to provide basic services to the communities in their areas of jurisdiction (Kanyane, 2011). In support of Kanyane (2011), USAID (2006) highlights some of the reasons for poor debt collection by local authorities: lack of political will to enforce policies; poor skills and capacities; and little integration and coordination (USAID, 2006).

The challenges of water and sanitation service delivery in the WSAs can be addressed through employing good governance principles, efficient institutions with balanced regulation and enforcement of policies, stakeholder and community engagement, and employing effective information and communication technology solution to engage with both internal and external customer bases for improved service delivery, which will then improve revenue inflows. There are several **theories of taxation** which exist in public economics. At all levels of government there is a need for each to generate revenues from different sources in order to finance public sector expenditure.

It is also imperative to point out that the theories of taxation were developed in the early eighteenth and nineteenth century by John Stuard Mills (1871), Knut Wicksell (1896) and Erick Lindahl (1919). Benefit-based theory was developed by Mills, and Purely Ability-based theory was developed by Wicksell and Lindahl (Weinzierl, 2014). Again in 2014, Luis Razo developed the Voluntary-based theory of taxation (Razo, 2014).

The researcher strongly believes that it is imperative to introduce a Sustainable e-Compliance, Customer Centricity and User Fees Conceptual framework which will look at revenue management of water and sanitation service delivery holistically by incorporating e-compliance, customer centricity and mindful consumption, as well as taxation or user fees that will further align the customer or consumer self-interests and business self-interests in serving the mutual interests of both the WSAs and the consumers or customers so as to ensure effective and efficient revenue management in WSAs.

Some scholars have made the claim that the world water crisis is a crisis emanates from governance (Swatuk, 2010) Swatuk (2010) draws this conviction from Nzimakwe (2009) where he relates water challenges to poor governance (Nzimakwe, 2009).

In support of Nzimakwe (2009) and Swatuk (2010), Van Koppen and Schreiner (2014) argue that Integrated Water Resource Management has three pillars, as stipulated in the South African National Water Act, No. 36 of 1998, namely economic efficiency, environmental sustainability and equity (Koppen & Schreiner, 2014). Currently there are no sustainability strategies and solutions in place for WSAs as far as revenue management is concerned. The generic sustainability strategies that are in place do not directly focus on sustainable compliance, customer centricity and user fees as ways of enhancing revenue management for WSAs. These generic sustainability strategies do not recognise the looming threats arising from global over consumption of natural resources, in particular the scarce water resource, and do not take a holistic approach of addressing non-compliance matters, customer centricity, free riding, and a culture of non-payment and of entitlement by the consumers of water and sanitation services for WSAs.

This argument resonates very well with Swatuk (2010), reiterating that sustainable, efficient and equitable water resource management can be achieved through water governance principles (Swatuk, 2010). Nothing has yet been said about e- compliance, customer centricity and user fees in water and sanitation service delivery as far as revenue mobilisation and management by WSAs are concerned. There is a great need to address these flaws and for pooling together by enabling participation through good governance for improved water and sanitation service delivery by WSAs.

3.2 CORPORATE GOVERNANCE IN THE PUBLIC SECTOR

Corporate governance is considered as one of the most important processes in the successful running of businesses. Good governance is supported as the benefits of ethical leadership and well-run organisations accrue to everyone. Swatuk (2010) defines governance as the template which includes extensive public participation and consultation which is supported by transparent decision making from the authorities (Swatuk, 2010). It increases stakeholder confidence and lowers the cost to capital.

The role of the municipal council is to lead the organisation through the discharge of its responsibilities in relation to strategic direction, policy approval, oversight and accountability such that the good governance outcomes of an ethical culture, good performance, effective control and legitimacy with stakeholders are achieved by these organizations. The King Code provides the principles and recommended practices which should assist municipal authorities and organisations to attain good governance outcomes.

The corporate governance in the public sector is affected by both the political representatives and the administration which is accountable to the political wing of governance. Corporate governance in the public sector is driven by policies, legislations and regulations which are seen to be less effective as per the Auditor General's reports (Wixley & Everingham, 2010). It is therefore imperative to employ corporate governance principles in water and sanitation business within WSAs.

The study is an analysis of revenue management in Water and Sanitation Service Delivery with particular reference to Harry Gwala and Ugu WSAs. Municipalities are subjected to the Municipal Finance Management Act (MFMA) of 2003, which requires them to prepare budgets, annual reports and financial statements for reporting purposes to their municipal councils and the Auditor General. To ensure sustainable compliance of municipalities to the relevant pieces of legislations, policies and regulations, the MFMA, which deals with financial matters, should be applied in conjunction with the Municipal Systems Act. The MFMA requires internal audit and audit committee functions to ensure effective governance in local government municipalities. Municipalities in South Africa should ensure sustainable compliance with all the pieces of legislation, policies, and standards as a way of strengthening corporate governance beyond the statutory requirements of the MFMA and the King Codes as per the General Accepted Compliance Practice Framework (GACP) of the Compliance Institute of Southern Africa (2013).

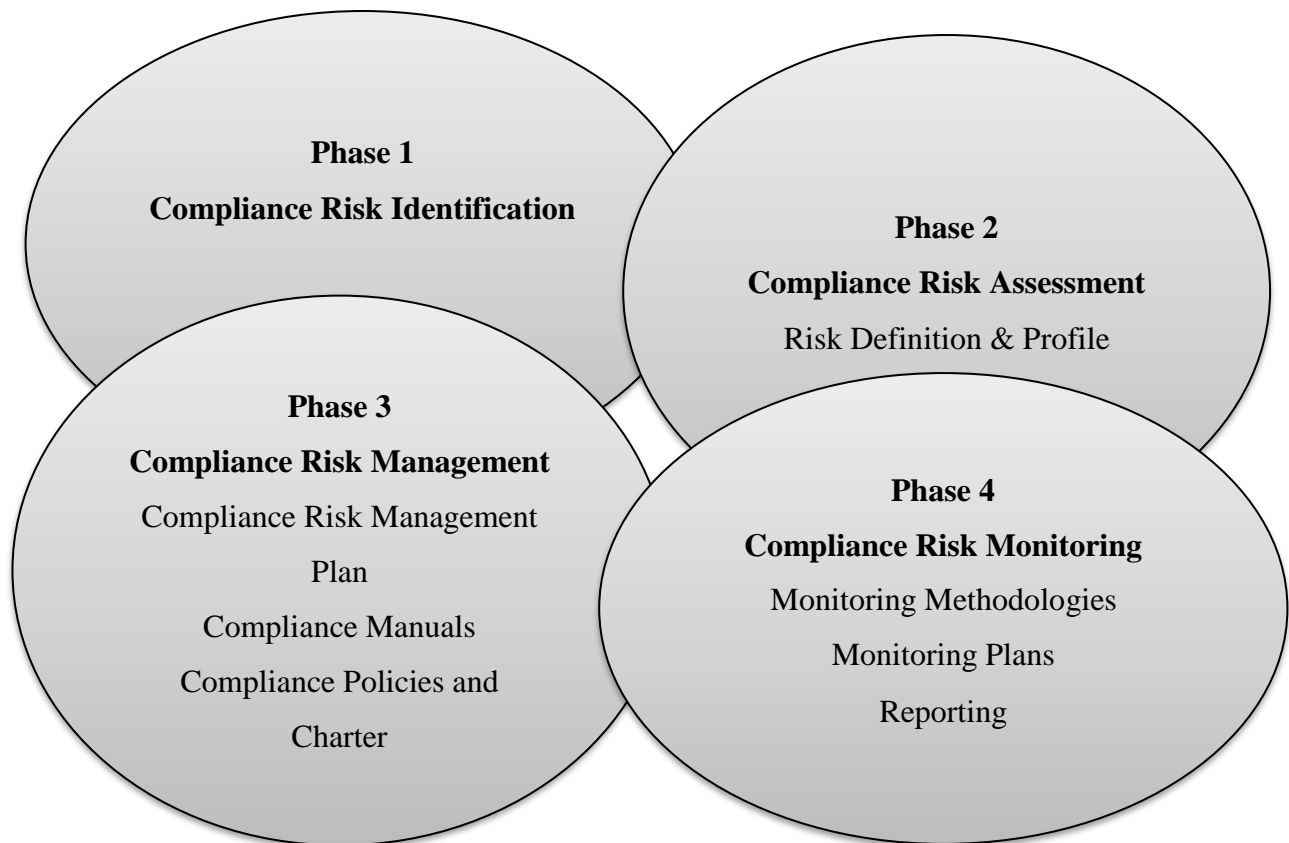


Figure 3.1: Sustainable Compliance Model

Source: Researcher

3.2.2 Compliance and the Benefits of complying

According to the General Accepted Compliance Practice Framework, complying with the regulatory universal requirements is a necessity for an organisation to meet the regulatory requirements which apply to the nature of business in which it operates. Further, complying is beneficial for an organisation in the sense that:

- It leads to good business practices which eventually result in customer satisfaction and confidence in an organization;
- It prevents the risks associated with reputational damage;
- It maintains the highest level standards of integrity;
- It promotes honest and transparency in dealing with customers;
- It ensures the provision of quality services;
- It ensure that actions are in the best interest of the customers/consumers;
- It promotes employee ethical conduct and good business ethics; and

It enhances organisational reputation and sustainability (Compliance Institute of Southern Africa, 2013).

3.2.3 Sustainable Compliance and Risk Management

Enterprise Wide Risk Management forms a critical part of any entity's strategic management. This is the process whereby an entity both methodically and intuitively addresses the risk attached to their activities with the goal of achieving sustained benefit within each activity and across a portfolio of activities. Enterprise Wide Risk Management (EWRM) is therefore recognised as an integral part of sound organisational management and is being promoted internationally and in South Africa as good business practice applicable to both the public and private sectors. The underlying premise of enterprise risk management is that every entity exists to provide value for its stakeholders. All entities face uncertainty, and the challenge for management is to determine how much uncertainty to accept as it strives to grow stakeholder value. Uncertainty presents both risk and opportunity with the potential to either erode or enhance value (Compliance Institute of Southern Africa, 2013).

EWRM enables management to effectively deal with uncertainty and associated risk and opportunity, enhancing capacity to build value. Value is maximised when management sets strategies and objectives to strike an optimal balance between growth and return goals and related risks, and efficiently and effectively deploys resources in pursuit of an entity's objectives. The framework provides a basis for management to effectively deal with the uncertainty of associated risk and opportunity, thereby enhancing its capacity to build value. The following factors require consideration when integrating EWRM into organisational decision-making structures:

- Aligning risk management with objectives at all levels of an organisation;
- Introducing risk management components into existing strategic planning and operational practices;
- Including risk management as part of employees' performance appraisals; and
- Continuously improving control and accountability systems and processes to take into account risk management and its results.

EWRM specifically addresses the structures, processes and standards implemented to manage risks on an enterprise-wide basis in a consistent manner. These standards further address specific responsibilities and accountabilities for the EWRM process, and the reporting of risks

and incidences at various levels within the organisations, with Harry Gwala and Ugu WSAs being no exception. Current trends in good corporate governance have given special prominence to the process of EWRM, and reputable businesses are required to demonstrate that they comply with expected risk management standards. This means that Harry Gwala and Ugu WSAs must ensure that the processes of risk management receive special attention throughout the organisations, and that all levels of management know, understand and comply with the EWRM framework.

3.2.4 Compliance and Relevance with King III principles

One of the King III Commission principles requires the management of institutions to reduce risk and ensure organisational sustainability. Strict compliance with the relevant pieces of legislation, such as municipal by-laws, tariff and credit control policies, rules and regulations and the creation of a data base for residential zones, including areas or persons qualifying for free basic water and sanitation services, will be achieved through the capacitation of the Audit and Risk committee accompanied by consistent application of consequences. Thus, in keeping with the King III and King IV Commission requirements on transparency and accountability, proper identification of the indigent population accompanied by regular updates to the indigent register, will ensure that those who can afford to pay for water and sanitation services do so to prevent corruption and revenue leakages, and thereby ensure sustainability.

3.2.5 Reflections on Compliance and the Paradigm Shift in King Codes

As propounded by the Institute of Directors in Southern Africa to transform the corporate governance in South Africa and internationally, there has been a paradigm shift or reform in terms of King codes. The main argument is that the introduction of King IV as far as the corporate governance landscape is concerned in South Africa, with reference to compliance with King III and King IV, is that the fundamental principles of King III do not change. It will be built on the content of King III code and all the listed companies will be at liberty to continue following the King III code principles (Wixley & Everingham, 2010). However, the King IV code of cooperative governance is simplified and allows ease of interpretation as well as access. The King IV code will ensure that there is a balance power and that decision-making is objective through the constitution of boards (Wixley & Everingham, 2010). This approach then emphasises an outcomes-based approach envisaged by the principles of King IV code which will then permit flexibility in applying this model.

There have been tremendous strides which have been made to promote adherence to the principles of good corporate governance in South Africa, and WSAs are no exception. According to the Corporative Governance Review (2012), visible good corporative governance in principle and practice is also critical for South Africa in order to attract global investors (Calkoen, 2012). The King IV paradigm is more innovative because it uses technology, meaning that all the companies and entities including employees in South African companies should keep abreast of new technological developments and legislative imperatives in order to implement King IV effectively and efficiently (Wixley & Everingham, 2010). The main difference is that the King IV Code emphasises that the drafting process is planned to be consultative in nature, whereby the submission of written comments on the results reflects a true inclusivity process. King IV ensures that the implementation of its principles is overseen by shareholders and institutional investors who will be actively involved in the voting process and engaging in decision-making processes to ensure proper effective compliance (Wixley & Everingham, 2010). On the other hand, King III deals with compliance to legislation, rules and regulations which are the responsibility of boards to ensure compliance with all applicable rules and regulations. Furthermore, King III puts emphasis on responsible corporate citizenship as an ethical responsibility between the company and the society in which it operates (Wixley & Everingham, 2010).

The King IV Code advances the democratic principles of a developmental state by emphasising the importance of collaboration between society and the authorities in entities of the private and public sectors. Finally, the code provides policy proposals and reforms for enhancing good cooperative governance in South Africa.

3.3 THE CUSTOMER, CLIENT AND CUSTOMER CENTRICITY

Customer and client are words that can be used interchangeable. The word client can also mean customer. According to the *American Heritage Dictionary*, a customer is someone who buys goods and services from an organization, and whereby a client is someone who receives professional services. Client focus and customer centricity are two very different concepts. Client focus is a component of a customer-centric organisation, but it definitely is not the only component required in modern business. Whilst client focus is often viewed with the typical “the customer is always right” attitude, it is in fact a far simpler concept, and one which does not bear severe inherent costs.

Customer-centricity is knowing your client, not focusing on every client simply by default. Customer focus is effective, but for the right reasons, at the right time, and with the right client. Behaviours which are typical in client focus are handing out discounts, spending substantial amounts on marketing to general clients, accepting refunds, and going the extra mile for every client you meet. Customer-centricity is knowing who to do this for, when, why and how, whilst not breaking the bank.

According to Dumitrescu (2007), customer focus is an element of the relationship between an organisation and its customers. Customer focus must lead to something meaningful, which requires sacrifices and is one of the steps necessary in order to become customer-centric. Dumitrescu (2007) further argues that customer focus involves putting people first into the heart of a business by making customers part of the culture in order to become customer-centric. There are principles which are highlighted to ensure effective customer-centricity in an organisation namely: there should be an employee responsible for relationship development who is a good communicator and a champion of the customer-centricity approach (Dumitrescu, 2007).

In public sector institutions in South Africa, government authorities have made tremendous strides progress as far as customer-centricity is concerned, but there is more that should be done to improve the current state of affairs in order to reach a state where one can really say an organisation is customer-centric. The Harry Gwala and Ugu WSAs are responsible for providing quality drinking water and adequate sanitation services to the communities within their areas of jurisdiction.

There are Customer Services Units at Ugu and Harry Gwala WSAs with good policies and strategies, as well as a customer services charter, but both are still struggling with effective implementation, monitoring and evaluation, a shortage of staff at their call/contact centres and inadequate technical staff. The other challenge is a lack of commitment, dedication and patriotism amongst employees; customer service is one man's show and other departments within the organization are not committed to it. The WSAs are trying by all means to deliver good quality services to consumers and customers, but still lack capacity in terms of human capital, as well as financial resources to be able to satisfy customers. Skills deficit is also a challenge.

Fader (2012) highlights four principles that are fundamental in customer centricity which have an impact on customers in his analogue of a coffee shop, namely: processes; procedures; daily decisions; and customer service. Fader (2012) further reflects on the “how” aspect; how it happens, stating that “it’s all about putting customers at the Centre of all your business decisions by SEE opportunities to make it better for customers, OWN the opportunities and DO something to it to take action on the opportunity”. Claiming that an ideal organisation will recruit customer-centric employees, since customer-centricity is key for any organisation, organisations should be concerned about customers, and should be able to bring all of their management team on board, have a proper relationship or connection with customers and build a customer movement in order to be customer-centric (Fader, 2012).

3.3.1 The Alignment of Customer Centricity Culture with the Strategy, Vision and Values of an Organisation

The **vision of Harry Gwala WSA** is: “By 2030 Harry Gwala DM will be a leading water services provider in the KZN Province with its communities benefitting from a vibrant agriculture and tourism sector”. Its **mission** is: “Working together with its communities and stakeholders, Harry Gwala will ensure the provision of clean drinkable uninterrupted water services and proper sanitation facilities and strive to improve its agriculture and tourism sectors to enhance human dignity.

The WSA’s **core values** are: transparency, accountability, consultation, commitment and honesty. Its strategic objectives are to ensure the improved coverage, quality, efficiency, and sustainability of water and sanitation services in all urban and rural communities within its area of jurisdiction.

The **vision of Ugu WSA** is: “A place where everyone benefits equally from socio-economic opportunities and services”, with its **mission** being: “To provide quality drinking water and access to sanitation. Create an enabling environment for social and economic development. Ensure community participation and coordinate public and private players”.

The key services of WSAs include the billing of customers in order to collect revenue. Over the past three years, both Harry Gwala and Ugu WSAs have experienced an increase in total book debt due to the challenges experienced in the implementation of their revenue management systems. Whilst there has been a global decline in economic activities, which has affected the municipality’s collection rate, there has also been resistance from customers/

consumers to pay for services charges for water and sanitation due to a lack of confidence in the accuracy of the billing system. The Harry Gwala and Ugu WSAs have also not contained their expansion in direct proportion to growth in their revenue base and collections. Some of the water and sanitation infrastructure challenges include: ageing reticulation pipes, no assets management and maintenance plan, including the shortage of a maintenance team, poor work ethics and organisational culture, rain causing soil to soften, shifting and breaking of pipes which makes their identification underground difficult, the unavailability of a maintenance budget, a lack of proper dissemination of information if there are to be service interruptions to consumers/customers.

The following underlying factors have also contributed to the increase in total book debt and unbalanced cash flows for these WSAs:

- Increase in non-revenue water due to leakages and illegal connections;
- There are free riders, the majority of consumers are not used to the culture of paying for water and sanitation services and have free access to free basic standpipes and therefore have no pressure to honour their monthly bills;
- Lack of relevant data in the debtor database to facilitate collection of billed amounts;
- Inaccurate billing systems;
- The municipalities have not been verifying the indigent status of beneficiaries over the past three years; and
- Inaccurate meter reading, unreadable and inaccessible meters.

Both the Harry Gwala and Ugu WSAs are technology driven because their focus is on capacitation of the employees on technical skills for them to be able to render good quality services to the communities in their areas of jurisdiction. These WSAs are committed to the provision of quality basic services to their communities and look forward to achieving a customer-centric culture. The area of focus is now to implement bulk regional water supply schemes and a locally based rural sanitation plan. The WSAs have good policies, plans and strategies but are faced with skills deficits and shortages in human capital, as well as financial resources for them to fulfil their constitutional mandate of providing basic services and changing the lives of the citizens from ill-being to wellbeing. There is no turnaround strategy in place to reverse the tides aimed against achieving an effective customer-centric culture.

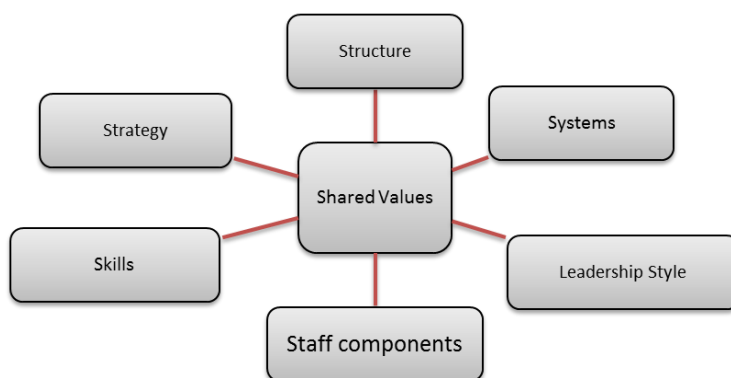
The next section will discuss various models which can assist in the revenue management of water and sanitation service delivery.

3.3.2 Conceptualisation of the McKinsey 7S Model

The McKinsey 7S model is a tool which analyses firm's organisational design by looking at 7 key internal elements, which are: strategy; structure; systems; shared values; style; staff; and skills, in order to identify if they are effectively aligned and allow organisations to achieve their objectives (Jurevicius, 2013). The McKinsey 7S Model was developed in the 1980s by McKinsey consultants, Tom Peters, Robert Waterman and Julien Philips, with the help of Richard Pascale and Anthony G Athos (Jurevicius, 2013).

The model connects the seven areas listed and divides them into soft Ss and hard Ss, with all elements being interconnected and interdependent. Strategy, structure and systems are hard systems, with skills, staff and style being soft systems, which all connect to shared values that create a sustained competitive advantage (Jurevicius, 2013). In support of Jurevicius (2013), Bhattacharjee, Muller and Roggenhofer (2016) highlight elements which can result in leading and governing customer-centric organisations: setting up a dedicated customer experience organisation; establishing c-suit engagement; fitting the customer experience team into the organisational fabric; modelling specific behaviours; fostering understanding and commitment amongst employees and managers; reinforcing new behaviours through formal mechanisms; and developing capabilities and skills (Bhattacharjee *et al.*, 2016).

Hard Ss



Soft Ss

Figure 3.2: McKinsey 7S Model

Source: Adapted from Jurevicius (2013)

The model ensures that all parts of the organisation work in harmony and its aim is to improve the performance of the company, examine the likely effects of future changes within the organisation, align departments and processes during an acquisition or merger, and further determines how best the organisation can actually implement a proposed strategy (Jurevicius, 2013). The elements within the model are consistency and congruency, aligned to the shared values in Harry Gwala and Ugu WSAs, whereas others are not. There is room for improvement to ensure that all elements are prioritised and aligned in order to achieve a customer-centric culture.

The Harry Gwala WSA has a complex matrix structure with about 350 employees and its organisational structure consists of about 820 total positions. Harry Gwala WSA has five (5) departments within the organisation. The Harry Gwala WSA has the following departments, namely: water and sanitation services; finance; corporate services; economic and social; and infrastructure services which are all accountable to the Municipal Manager.

On the other hand, Ugu WSA has a complex matrix structure with about 900 employees and has four (4) departments within the organisation. All these departments have various directorates or sections. The main challenge is that customer service is an individual role centralised in the water and sanitation services department in the Harry Gwala WSA and customer care is centralised in the Corporate Services Department in Ugu, and all these departments work in silos. The water services department is mainly responsible for operation and maintenance of existing infrastructure, water governance and customer services as well as planning and designing in the Harry Gwala WSA.

There is lack of proper coordination and communication within the departments in both the Harry Gwala and Ugu Water Services Departments. There is also a lack of effective systems and controls to run these organisation; for instance, infrastructure is deteriorating and aging and most of the processes are operated using manual systems. Information and Communication Technology, Human Resources, Financial and Archives or knowledge management systems are still a challenge, including monitoring and evaluation of projects implemented by the Harry Gwala and Ugu WSAs.

The core values of the both the organisations are transparency, accountability, honesty, consultation and commitment. Nzimakwe (2014) contends that other organisations in the public sector are now having values like Ubuntu, or “humanity” (Nzimakwe, 2014). There are

still challenges, however; hence the Harry Gwala and Ugu WSAs lack financial and human capital, and need to address skills shortages in order to stick to the core values of these organisations. The style of leadership is more democratic, but is often a chaotic management style; the labour component is represented by shop steward councils in the local labour forums where critical decisions are taken in the presence of political leadership and management representation.

The majority of the employees are affiliated with one labour union. The staff/labour component lacks technical skills and capabilities, and there are no refresher courses organised or coordinated by Human Resources. Skills audit forms are distributed annually to employees, but there are no plans in place to assist employees to acquire technical skills. This then makes the broader community and customers/consumers view employees as incompetent, and lacking in patriotism, commitment and dedication. The organisations then rely on consultants to perform most of the technical functions. There are staff shortages in the Harry Gwala and Ugu WSAs which hinder effective achievement of the set objectives, since most technical vacancies are not filled due to the fiscal capacity of the WSAs.

The strategy, systems and skills shortages need to be taken into cognisance and be properly aligned to the organisations' core values and objectives. Other elements like organisational structure should be aligned as well since this would otherwise hinder the organisation in working effectively. Rewards and staff motivation mechanisms should be adapted to ensure service excellence and customer satisfaction which will result in effective customer centric-culture.

3.3.3 A Model Employee Handbook, Customer Centric Culture Shift Model

O'Sullivan (2010) points out that there are 10 commandments for customer service excellence: positive and helpful attitude; values; passion for service; going the extra mile; being a world class listener; best advice and best value; doing what you say you are going to do; staying in constant contact; importance and uniqueness; and treating customers as you would like to be treated. A model employee handbook, Customer Centric Culture Shift is a model which puts customers at the centre of most decisions, policies and discussions; a shift from being product- and sales- to be more customer-focused.

It is a culture which is aligned to the wants and needs of customers, thereby aiming to achieve true customer-centricity. The Customer Centric Culture Shift model resonates very well with

my research organisations, which are public sector institutions, the Harry Gwala and Ugu DMs with WSA status. Customer Centric Culture Shift is a shift which places customers at the centre of most decisions, discussions and policies; a shift from product and sales to being customer focused. It is a strong culture which is aligned with the wants and needs of customers set for true customer-centricity by using judgement in all situations. It is a model which aligns actions to rewards with desired results.

The Harry Gwala and Ugu WSAs should be more concerned with the wants and needs of their customers or service users within their areas of jurisdiction by providing good quality water and adequate sanitation facilities. This can be done through the promotion of a culture of customer-centricity to the municipal employees, political leadership and management and by promoting innovation in the delivery of public services (Nzimakwe, 2015).

3.3.4. The Customer Segments for WSAs

Every organisation has the responsibility to identify primary customer segments depending on the nature of business; some primary customers are the end-users or customers of the product or service (Simons, 2014) The primary customer segments for Harry Gwala and Ugu WSAs are not only those which generate the most revenue for the municipality, but those who can unlock the most value for these organisations. In this case, the primary customers are end users/ consumers of water and sanitation services which involve indigent communities and domestic, including commercial, users which are those that are capable of paying for water and sanitation service delivery. These customer segments value good quality drinking water and adequate water and sanitation service delivery by the Harry Gwala and Ugu WSAs. These customers are only concerned about their dedicated service relationship with the WSA.

The operating model is that of a dedicated service relationship and good quality service delivery since customers are looking for an ongoing, deeply embedded service relationship with their WSAs to provide reliable good quality drinking water and adequate sanitation services. These customers cannot survive without these services being provided. Ideally, the operating model should be interactive and collaborative to allow customers to play an active role in co-creating the future. Due to the capacity of both Harry Gwala and Ugu, both WSAs are not doing enough in terms of reorienting the existing business models to match the current challenges so that they can safely say they are ready for the future demands in the water and sanitation business.

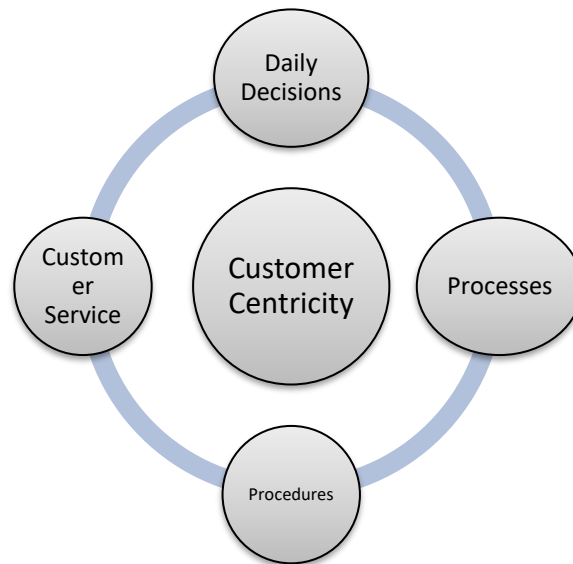


Figure 3.3: Sustainable Customer Centricity Model

Source: Researcher

3.3.5. Discovery Skills in the Water and Sanitation Business

According to Harvard Business School, there are five discovery skills which distinguish great innovators in organisations, namely: associating; questioning; observing; networking; and experimenting. The discovery skill which the researcher concentrates on is observing the water and sanitation business as far as customer-centricity is concerned, which includes: the consumers of water and sanitation, both indigent and paying consumers; technical skills for municipal employees; service level standards; and the technology which is utilised by the Harry Gwala and Ugu WSAs for monitoring water levels in the distribution system and for complaints management.

- What are the customer segments of water and sanitation in Harry Gwala and Ugu WSAs?
- Do municipal employees have relevant technical skills and competencies to perform water and sanitation service delivery functions?
- How good is the quality of service?
- Which technology is being utilised for water level monitoring in reservoirs, leak detection and complaints management?
- What is the turnaround time to respond to consumer complaints on water and sanitation service delivery and how effective is such response?
- Are there any clear programmes to promote sustainable compliance, customer-centricity and user fees in place?

For these organisations to be customer-centric and to ensure growth and development, the authorities should employ discovery skills to measure the performance of their organisations, in order to develop a turnaround strategy which will ensure that they are in line with the best practices of corporate governance.

3.3.6 The Channel Design Business Model

Channel design looks at different customer's touch points for service delivery. There is a single channel view whereby the customers walk in to request services or lodge queries and complaints. The common model nowadays is the Omni Channel Business Model whereby the experience should be the same whether the customer walks in, utilises a website, phones the contact centre or sends an email, all these touch points should be congruent and seamlessly integrated.

According to Maechler, Neher and Park (2016), there are six critical actions in managing the customer experience journey: identifying the nature of the journeys customers take; understanding how customers navigate across touchpoints; anticipating customer needs; desires; and expectations; understanding what is working and what is not; setting up priorities for important gaps and opportunities; and fixing root cause and redesigning the journey for a better end-to-end experience (Maechler *et al.*, 2016). Organisations should integrate channel experiences into one brand in a manner where customers don't realise that they are touching different points as far as customer experience is concerned. Harry Gwala and Ugu WSAs are organised to deliver customer-centricity because they are aligned with organisational strategy, objectives and values. However, there is a limitation in terms of the implementation, monitoring and evaluation of the achievement of set objectives. The channel of delivery is the Omni Channel Business model which is employed in Harry Gwala and Ugu WSAs.

3.3.7 The Customer analytic to measure the Customer Experience

According to Nelsen (2015), there are six factors for ensuring that an effective customer experience program is built, namely: strong leadership; vision and clarity; engagement and collaboration; listening and learning; alignment and action; and patience and commitment. The customer analytics which are employed by Harry Gwala and Ugu WSAs to measure the lifetime value and customer experience is the use of Big Data. The Harry Gwala WSA does not engage in the human experience, or value customer satisfaction surveys as an important aspect in measuring the customer experience.

The Harry Gwala and Ugu WSAs are making decisions without considering the effects those decisions will have on their consumers. The other challenge as far as customer-centricity and customer experience is concerned is that there is fragmentation in the institutions; hence the departments are working in silos – people working to different agendas with no incentives to work together. Finally, is a lack of leadership and inability to translate customer experience into commercial benefits which compromises effective customer experience. According to Nzimakwe (2010), this can also be promoted by using marketing as a tool to enhance public service provision (Nzimakwe, 2010).

3.3.8 Customer-centric Sustainability

Harry Gwala and Ugu WSAs do not look at customer-centric sustainability holistically. Both WSAs generally look at people as consumers of water and sanitation in isolation, the revenue enhancement (profit) in isolation, and the planet in isolation, as far as water and sanitation service delivery is concerned. The concept of customer-centric sustainability is not taken into cognisance by these WSAs. Drawing on Berns *et al.* (2009), Sheth *et al.* (2011) make the claim that many studies have revealed that there are no clear initiatives and programmes on sustainability which have been developed by these organisations. On the other hand, Hoffman and Woody (2008) make the claim that the organisations are more concerned about issues of environment sustainability, and that such initiatives are only compliance-driven, rather than being primarily strategic in nature. Hoffman and Woody (2008) further suggest that their initiatives concerning environmental sustainability lack long-term perspective (Hoffman & Woody, 2008).

The three Ps interpretation of sustainability are: planet; people; and profit; and the three sustainability dimensions are environmental; social; and economic (Sheth *et al.*, 2011). Since Customer-centric Sustainability refers to the consumption impact of marketing actions on the environmental, personal and economic wellbeing of the consumer, the social dimension should look at the impact of consumption on personal wellbeing of consumers as far as water and sanitation service delivery is concerned; i.e. individual and family wellbeing or quality of life and the welfare of the community. The environmental dimension should look at the impact of consumption of water, which is a scarce natural resource, on the environment, in this case the contamination and pollution associated with this natural resource as far as water and sanitation service delivery is concerned. The economic dimension should look at the impact of consumption on the economic wellbeing of consumers associated with affordability for

consumers to pay for the water and sanitation service delivery, debt burden, indigence and work-life balance.

Finally, the revenue management approach to sustainable compliance, customer centricity and user fees should produce positive results if it is employed by the WSAs since it aligns customer self-interest and the business self-interest in serving the mutual interests of both, and thus the consumers of water and sanitation services. The new Conceptual Framework on Sustainable e-Compliance, Customer-centricity and User Fees provides a fruitful avenue for converting sustainability as a pressing concern for the WSAs into an opportunity to ensure that the water and sanitation businesses are both financially viable and sustainable, which will then assist in improving revenue inflows for the WSAs.

Looking at the three-lenses model of sustainability, which is desirability, viability and feasibility, it can be argued that growth targets for the financial year of 2018/19 cannot be met, although customers are at the centre and emotionally connected to WSAs due to the drought which is severe in KwaZulu-Natal. However, there are stringent measures which have been imposed, such as restrictions and traditional ways of water harvesting from rain, and educational programmes on water conservation, health and hygiene and demand management, as well as water use efficiency, need reinforcement, monitoring and evaluation so as to ensure their effectiveness.

3.3.9 User Fees Conceptual Framework and the WSAs in South Africa

In a highly diverse country like South Africa, with high levels of poverty and unemployment, some of the revenue enhancement strategies employed in developed countries would not be feasible. The municipality cannot simply withhold municipal services from those members of society who cannot pay for services in South Africa and in the Harry Gwala and Ugu WSAs. In terms of the Constitution of the Republic of South Africa, all citizens have a right to have their dignity protected and respected. Revenue enhancement strategies and execution of debt collection practices should thus take into account the rights and dignity of citizens.

However, the general trend should be towards volumetric pricing and full cost recovery for middle-income and high-income households, without withdrawing access to public services for the low-income households. Moreover, it is imperative for policy-makers and public servants to take into account the rights as enshrined in the Constitution, as well as other relevant legislation, when designing revenue policies. Municipalities are faced with a culture of non-

payment for municipal services; even those consumers who can afford to pay do not comply, and seasonal rates may not be suitable and feasible in the Harry Gwala and Ugu WSAs since both are faced with high levels of poverty, inequality and unemployment.

It is feasible for Harry Gwala and Ugu WSAs to employ a multi-part tariff structure for supplying water to both domestic and commercial users of such service which should include: access or connection fee; kilolitres consumed by water users; and distance from the water source or water scheme to the location of the user, which will finance the operation and maintenance or refurbishment as well as expansion or upgrading of the water scheme or infrastructure.

Similarly, it is feasible to employ a multi-part tariff system on the collection and treatment of sewerage for both domestic and commercial users, where the lump sum includes connection fee and collection cost, and the monthly fee billed to the consumer for such service should be used to finance operating and maintenance fees and pollution and effluent fees applied to commercial users. Based on Duff's argument, water services and sewerage systems have significant private characteristics. The government in Canada invests substantial amounts of municipal government expenditure in such services. Benefit taxes and user fees play a pivotal role in municipal public finance in Canada, and local government is able to generate substantial revenues from these levies (Duff, 2004)

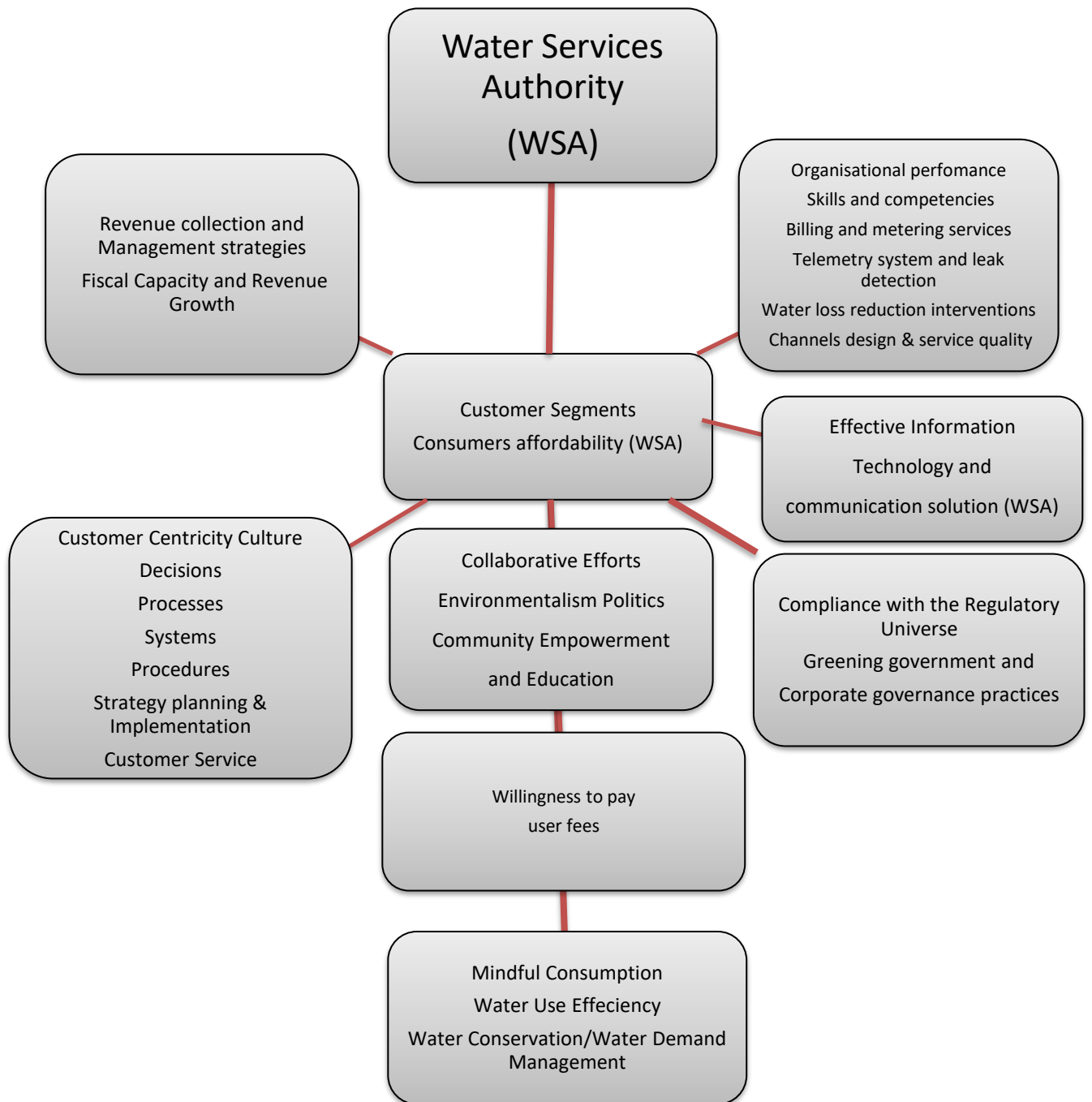


Figure 3.4: Sustainable e-Compliance, Customer Centricity and User Fees Conceptual Framework

Source: Researcher

The Sustainable e-Compliance, Customer Centricity and User Fees conceptual framework demonstrates a correlation between nature and human relationship, as indicated in Figure 3.4. It describes environmental politics as way of reinforcing mechanisms of natural resource sustainability. According to Jordan and O’Riordan (2014), humans relate to nature in three different ways: by putting science first; by designing with nature; and by giving way to Gaia, which symbolises human life within the total life – maintaining creation (Jordan & O’Riordan, 2014) Drawing on the views of the psychologist, Abraham Maslow, Jordan and O’Riordan (2014) point out that throughout the history of modern environmentalism, public concerns for the environment blossom as societies become wealthier (Jordan & O’Riordan, 2014).

Water is an ecological resource which can be consumed and may not be available in the near future if it is not taken care of. Hey (2014) argues that water resource management will become a critical feature of the politics of sustainability in the near future, and the by 2050 the water shortage will increase to 2 billion people from 135 million people (Hey, 2014). In support of Hey (2014), Mekonnen and Hoekstra (2016) make the claim that 4 billion people of the World population are experiencing severe water scarcity, which means that the situation is becoming worse than the findings of previous studies predicted (Mekonnen & Hoekstra, 2016).

Likewise, the Department of Water and Sanitation in South Africa is taking into cognisance the importance of Water Conservation and Demand Management in the context of managing a scarce resource, which in this case is water. However, to ensure effective and efficient implementation of water conservation and demand management initiatives requires a paradigm shift, innovative and creative best practices, regulatory requirements and exchange programmes, and collaborative efforts with sector partners and the private sector which will produce the best models, and theories or frameworks on how best to conserve this scarce water resource that will result in sustainability.

Amongst the critical features of politics for the sustainability of water resource management should be those focus on the contamination and pollution of surface and ground water, their sources and the implications thereof. Hiscock’s (2014) conviction is that should there be changes in the ground water quality, whether from direct or indirect influences, also derives from human activities (Hiscock, 2014). Hiscock further makes the claim that direct influences are as a result of natural or artificial substances in the ground water, whereas indirect influences are as a result of human interference with physical, biochemical and hydrological processes (Hiscock, 2014). This requires an approach or a paradigm shift whereby there is a balance

between a systems change and an organisational change; it should not be all about the authorities. The conceptual framework emphasises the significance of human intelligence. Political order is fundamental to ascertain how much the mixed system of political mobilisation of the communities to comply with water regulations and pay for water services, whilst recognising the human rights of not depriving the service users access to water, should cost.

However, this requires intensive social engagement through community education and participation. WSAs should start negotiating an ownership model, inclusive of the operation and maintenance model, for water and sanitation service delivery projects and programmes and establishing project handover protocols. The revenue collection and management of water and sanitation service delivery programme should have both social and technical components, whereby the assets or infrastructure should be operated and maintained by the revenue generated from the tariffs collected from the communities or service users as means of cost recovery. A model similar to this has been implemented in Botswana by JG Afrika in partnership with local firm initiatives in the rural areas of Habu Village and has resulted in a reliable water supply and more water security measures in other areas of Botswana (Water Institute of Southern Africa, 2017).

The conceptual framework makes it clear that WSAs do not stand alone; and there are both political and administrative wings within the WSAs. The political component should take a lead as an effective governance system to spread the word to communities on issues of revenue enhancement and management. The water monitors and community water and sanitation forums should also play a critical role on issues of revenue enhancement and management and provide technical training in the basic operation and maintenance of infrastructure.

To ensure that tariffs are more affordable to communities, the infrastructure should be powered by solar energy, and the infrastructure should be easily operated and maintained by local water user associations, especially in rural areas which will eventually cut overall costs for the operation and maintenance of the infrastructure. The consumers and citizens are co-owners of their human rights, and the responsibility of ensuring mindful consumption and sustainability lies with consumers or end users of water and sanitation services and WSAs as means of ensuring collaborative efforts to devise innovative ways for effective water resource management and sustainability, especially during drought seasons or disasters (Nkabane & Nzimakwe, 2017).

Sustainable e-compliance, customer-centricity and the user fees conceptual framework are a holistic revenue management and integrated water management approach for WSAs; these are the medium to long-term model which will enable WSAs to achieve financial sustainability and assist in breaking “silos” by ensuring collaborative efforts between the service users/ customers and local government authorities as the providers of water and sanitation services. It is well known that water scarcity is a growing concern globally, but what is not known is how it has developed. Kummu *et al.* (2016) analysed water scarcity using the concepts of *shortage*, which relates to the impacts due to low availability per capita, and *stress*, which relates to impacts due to high consumption relative to availability (Kummu *et al.*, 2016). The Organisation for Economic Co-Operation and Development (OECD) released 12 principles in 2015 on water governance which are clustered under three main drivers: ability to generate trust and engagement; efficiency; and effectiveness that focuses on water resources and water services in order to address water challenges (Neto *et al.*, 2018). Kummu *et al.* (2016) make a claim that water shortages are due to increased population growth, climate change and changing water consumption behaviours which will make it more difficult to keep water consumption at sustainable levels in the near future (Kummu *et al.*, 2016).

Since the Sustainable Development Goals were approved in 2015, laying the basis for a people-centred approach, as well as partnerships with both the public and private sectors which will enable the availability and sustainability of water and sanitation service delivery for all, there is a need for a paradigm shift that will focus on new practices, policies and financial mechanisms which are sustainable. This resonates very well with Hillel (2004), where he defines Water Use Efficiency and Water Conservation as economic criteria for efficiency where there is a financial return on money which has been invested during the installation and operation of the water supply and its delivery system or infrastructure to provide water to communities (Hillel, 2004). Hillel’s point is that the cost should be recovered for the installation, operation and maintenance of water and sanitation infrastructure from the service users, whether they be domestic or commercial users or consumers. The effective implementation of this model would result in it as an enabler for economic growth and sustainable development, which would then turn into inclusivity, creativity, innovation and sustainability. The model addresses fragmentation into a more coordinated systems approach, since it incorporates community interventions and empowerment initiatives in order to create more caring organisations. The people-centred approach emphasised by the Sustainable Development Goals resonates well with Gramsci’s theory of Hegemony or ideological domination, where Gramsci defines it as a class alliance system whereby a hegemonic class

exercises political power over the poorest of the poor (Bates, 1975). Gramsci's theory of hegemony emphasises voluntary change by civil society, how a society consents to oppression and what mechanisms can be employed to enable the society to free itself, and who is then responsible for the emancipation and domination of the society. Gramsci reiterates that there is a need for intellectual and moral leadership in the process of forging a new class (Valeriano, 1982). Gramsci's theory of hegemony was meant to stand the test of time. He was not a theorist who was preoccupied with creating political theories; his main concern was to change his world (Cox, 1983). The premise that underpins Gramsci's theory of hegemony was that society cannot be ruled by force, but also by good ideas, and that dictatorship is not the sole form of political rule but there is also hegemony that is a concept which emphasises political leadership that is driven by the consent of the led. The main idea of the theory of hegemony by Gramsci is to actually address all those challenges which this research paper also agrees with in terms of its convictions.

The main source of own revenue in Harry Gwala and Ugu WSAs is from water and sanitation services. Harry Gwala District and Ugu DMs may employ this model as a matter of best practice. It will enable these WSAs to produce positive results as far as revenue management is concerned in relation to water and sanitation service delivery, ensure creative and innovative ways of revenue management, water resource management and sustainability, and the improvement of revenue inflows.

3.4 CONCLUSION

The chapter dealt with various models that have been introduced to contribute to the body of knowledge within the Sustainable e-Compliance, Customer Centricity and User Fees (SCCCUF) conceptual framework. The conceptual framework has been employed because the study is an explorative analysis of Revenue Management of Water and Sanitation Service Delivery with particular reference to Harry Gwala and Ugu WSAs.

The chapter discussed and reflected on Corporate Governance in the public sector, compliance and the benefits of complying, sustainable compliance and risk management, compliance and relevance with King III principles, and the paradigm shift in King Codes. The chapter further reflected on the customer, client and customer-centricity, the alignment of a customer-centric culture to the strategy, vision and values of an organisation, the conceptualisation of the McKinsey 7s model, a model Employee Handbook, Customer Centric Culture Shift Model, the customer segments for WSAs, discovery skills in water and sanitation businesses, the channel

designs, the customer analytic to measure customer experience and customer-centric sustainability. To this end, the chapter has encapsulated a discussion on User Fees and WSAs in South Africa with particular reference to Harry Gwala and Ugu WSAs.

The SCCCUF framework and mindful consumption of water and sanitation services provides a fruitful avenue for ensuring sustainability, as a pressing concern for the WSAs, into an opportunity to ensure that these water and sanitation businesses are both financially viable and sustainable, which will also assist in improving revenue inflows and revenue management for the WSAs. It is important to point out that revenue management and protection is the flip side of Water Conservation and Water Demand Management. Higher customer satisfaction and a compliance approach to the regulatory universe can result in willingness to pay for water and sanitation services by consumers, together with mindful consumption of the scarce resource which is water, and lead to higher revenue growth for the WSAs. All these aspects have been discussed in detail. It is important to point out that the researcher found the new conceptual SCCCUF framework more relevant and employable in the explorative analysis of revenue management for water and sanitation service delivery in both Harry Gwala and Ugu WSAs.

CHAPTER FOUR

RESEARCH DESIGN AND METHODOLOGY

4.1 INTRODUCTION

This chapter describes the research methodology and design which was used to accomplish the research objectives. First, this chapter will provide a brief background on the purpose of the research. Secondly, the chapter will outline the research setting, paradigms and traditions as well as the research design. Thirdly, the chapter will declare the research methodology that was employed to accomplish the research objectives, which will include a definition of the target population for the research. Fourthly, the chapter will highlight the sampling methods and sample size for the research. The chapter will conclude by discussing data collection methods, tools and instruments that were used to collect data, data analysis, validity, reliability and trustworthiness, ethical issues and presents a detailed research schedule.

4.2 RESEARCH PURPOSE

The researcher carried out a study on an explorative analysis of revenue management of water and sanitation service delivery in the Harry Gwala and Ugu WSAs. The study employed a qualitative case study approach to data collection and analysis. The research problem informing this methodology was the fact that most rural municipalities, including the Harry Gwala and Ugu WSAs, have a very weak revenue base and end up depending on provincial and national transfers to fund constitutional mandates. In this qualitative research, the focus of the researcher was on an explorative analysis of revenue management of water and sanitation service delivery in the Harry Gwala and Ugu WSAs and to explore the communication challenges being experienced by the customers and consumers in water and sanitation service delivery. It was also the researcher's intention to investigate challenges to the provision of metered services in water and sanitation service delivery in these WSA municipalities, to assess the challenges in accurate billing for water and sanitation, and to determine the management of revenue collection challenges in order to improve water and sanitation service delivery. The researcher also investigated the challenges of compliance management for water and sanitation businesses in the Harry Gwala and Ugu WSAs. The researcher further developed a normative model/ conceptual framework for improving revenue management in these WSAs.

Qualitative research attempts to collect rich descriptive data in respect of a particular phenomenon with the intention of developing an understanding of what is being observed (Creswell, 2007). According to Mouton and Marias, as cited by Rensburg (2010), a qualitative

approach is an approach in which the procedures are formalised and explicated in not so strict a manner, but in which the scope is less defined in nature and in which the researcher does their investigation in a more philosophical way (Rensburg, 2010).

The researcher decided to employ a qualitative research approach because the research topic is sensitive in nature, since there has been documentary analysis of reports from the income/billing section on revenue management of water and sanitation services in the organisations, and the research further explores the ratepayers' perceptions through in-depth interviews, and assesses the performance of the organisation with reference to revenue management for water and sanitation. The methods which were used were in-depth interviews, focus group discussions, observations and document analysis of the existing literature including journal articles, National Treasury data sets, annual reports from Harry Gwala and Ugu WSAs and other official correspondence and pieces of legislation relating to water and sanitation provision looked at in the Southern African perspective.

However, the research was underpinned by the principles of action research. Action research refers to a process whereby practitioners create new ideas with the aim of how best the practice can be improved; researchers thus become knowledge creators and this process results in theoretical sustainability (McNiff & Whitehead, 2006). According to McNiff and Whitehead (2006), action research is value-laden in a sense that it is normally conducted by researchers who are trying to live in the direction of commitments and the values which inspire their lives.

Likewise, Reason and Bradbury (2001) argue that knowledge is gained through the process of action to action. Action research is participatory in nature, democratic and more concerned about developing practical knowledge in quest of a worthwhile human purpose, grounded in a participatory worldview, which mostly emerges in this dispensation (Reason & Bradbury, 2001). Action research brings together action and reflections, and theory and practice, in a participatory process in order to develop practical solutions for matters of pressing concern to the people and to communities.

4.3 RESEARCH SETTING

Research setting is the place where the researcher conducts a study which is both suitable and feasible (Maree, 2014). In South Africa there are 278 municipalities, and two WSAs were selected for this case study. The research was conducted in all four satellite offices in the Harry Gwala and Ugu WSA respectively. Both WSAs comprise four local municipalities under their

areas of jurisdiction and are located in the South of the province of KwaZulu-Natal. The Harry Gwala DM (DC43) is located in the South West of the KwaZulu-Natal province. Its population is sparsely spread throughout an area of 11, 127, 9 square kilometres. The Harry Gwala DM forms part of the border between the KwaZulu-Natal and Eastern Cape provinces. However, the two municipalities of Ingwe and KwaSani have recently been amalgamated. The district was previously called Sisonke DM. The municipalities which are serviced by this district are Umzimkhulu, Ubuhlebezwe, Greater Kokstad and Dr Nkosazana Dlamini-Zuma.

The Ugu DM is composed of four local municipalities, namely: Umdoni, uMzumbe, Ray Nkonyeni and Umuziwabantu which are under its area of jurisdiction. However, Ray Nkonyeni and Hibiscus Coast municipalities have recently been amalgamated to form a municipality called Ray Nkonyeni, and part of Vulamehlo had been re-demarcated to Ethekwini municipality, with the remaining part being re-demarcated to Umdoni municipality. Ugu is the Category C municipality situated in the far south of KwaZulu-Natal province. It lies south of Durban, bordered by a coastline of 112km.

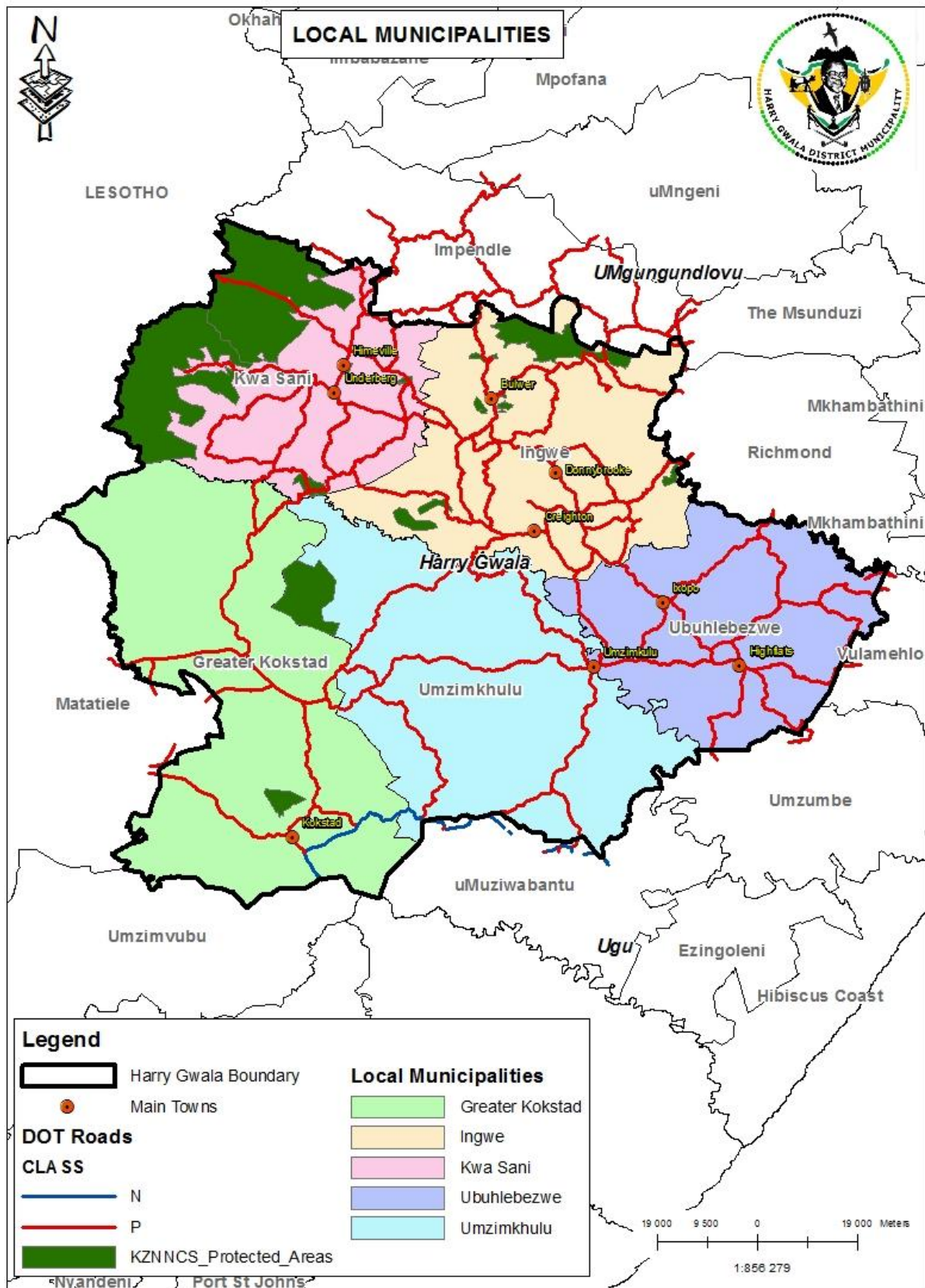


Figure 4.1: Map of HGDM area of jurisdiction

Source: Harry Gwala DM’s Annual report (2017)

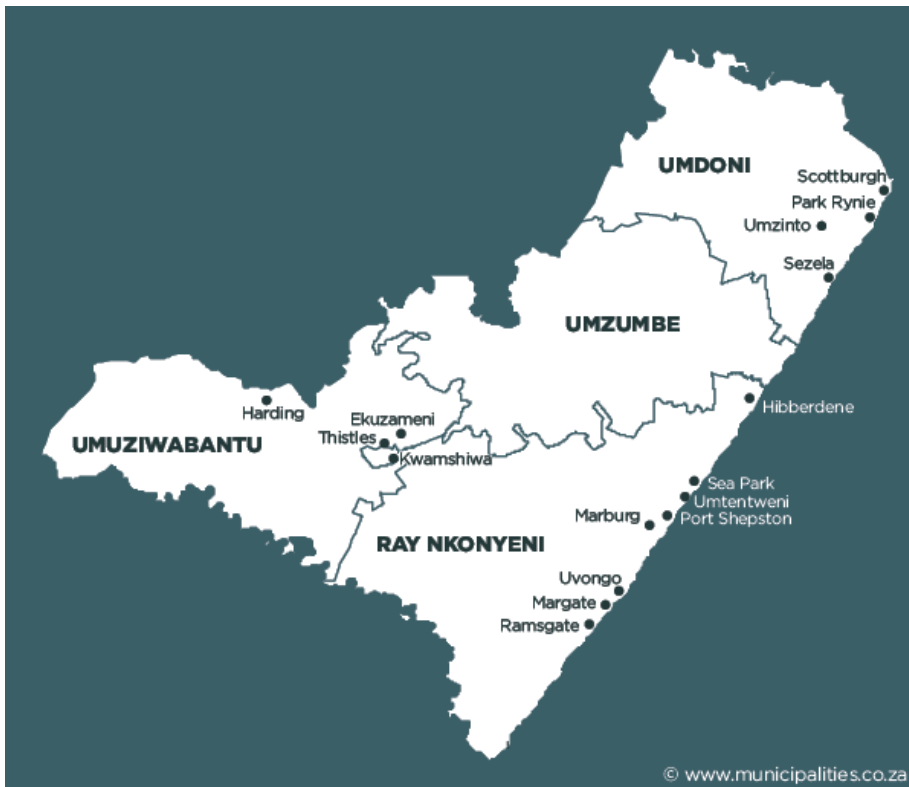


Figure 4.2: Map of Ugu area of jurisdiction

Source: <https://www.localgovernment.co.za>

4.4 RESEARCH PARADIGMS AND TRADITIONS

According to Bryman (2012), as cited by Plooy-Cilliers (2014), a paradigm is a cluster of beliefs and dictates in a particular discipline which determine what should be studied as a researchable area, and how research should be done while further providing guidance on how its results should be interpreted. In the discipline of social science, a paradigm is referred to as a cluster of research traditions or worldviews.

However, there are three dominant research paradigms: positivism; interpretivism; and critical realism or constructionism. According to Terreblanche (2007), ontology, epistemology and methodology are the three dimensions or traditions of research paradigms (Terreblanche, *et al.*, 2007). Each research paradigm has its own ontology, epistemology and methodology.

Ontology: Specifies the nature of reality that is to be studied and what can be known about it.

Epistemology: Specifies the nature of the relationship between the researcher and what can be known.

Methodology: Specifies how the researcher may go about practically studying whatever they believe can be known.

This study was underpinned by an interpretive research paradigm because the researcher believed that the reality that was being studied consisted of participants' subjective experiences of the external world. For this reason, the researcher employed an intersubjective or interactional epistemological stance towards that reality in order to accomplish the objectives of the research. The qualitative research methodology which was employed by the researcher involved interviews and participant observation. These are both characteristics of the interpretive approach.

The interpretivist research paradigm which was employed by the researcher is generally understood as an approach that embodies the view that social reality is in a constant state of flux, and dependent on the way in which individuals experience reality internally. It has been proven by other scholars that the aim of interpretivists is to gain an in-depth understanding of multiple realities through qualitative research (Plooy-Cilliers, 2014). According to Bertram and Christiansen (2015), the interpretive paradigm evolved as a response to positivism and post-positivism. In this case, qualitative research can be described as a strategy which emphasises words rather than numbers in the collection and analysis of data. The "interpretivist" paradigm is suitable for this study because its main objective is to study reality and to use methods which are sensitive to the context that will help to gain an in-depth understanding (Plooy-Cilliers, 2014). This paradigm is suitable and feasible in qualitative approach, since the researcher becomes the primary research instrument and the participants teach the researcher about their lives. Modes of data collection include in-depth interviews, focus group discussions, observations and document analysis.

4.4.1 The Assumptions of the "Interpretivists"

According to Bertram and Christiansen (2015) the main purpose of social research and education research is to understand the meaning which informs the behaviour of humans (Bertram & Christiansen, 2015). Drawing on Guba and Lincoln's (1994) work, Bertram and Christiansen (2015) point out that the "interpretivists" hold the belief that there is no single reality about the social world but rather a set of realities which are historical, local, specific and non generalisable (Bertram & Christiansen, 2015).

The researcher made interpretations with the purpose of understanding human behaviour, attitudes, perceptions and beliefs in relation to cost recovery in water and sanitation service delivery in the Harry Gwala and Ugu WSAs. This means that the meaning can only be understood within the context of the interaction between the researcher and the rate payers/service users of water and sanitation in the Harry Gwala and Ugu DMs respectively. The interpretive approach places a strong emphasis on naturalistic research (Bertram & Christiansen, 2015). This then implies that the researcher had to engage the situation from the viewpoint of the participants. For example, the researcher had to attempt to understand the rate payers/service users' perceptions of cost recovery in water and sanitation service delivery in the Harry Gwala and Ugu WSAs. However, this understanding was not acquired without taking into account the larger cultural, social and political context since "interpretivist" research is underpinned by the idea that people's behaviour is context-dependent (Bertram & Christiansen, 2015).

4.4.2 The Criteria for Quality "Interpretivists" Research

In the interpretivist research paradigm, the data should be authentic and should reflect the experiences of the respondents or participants (Bertram & Christiansen, 2015). Ultimately, the interpretive research paradigm allowed the researcher to demonstrate the trustworthiness of how she analysed the data and reached the conclusions of the research. However, the researcher could only draw conclusions from the limited number of respondents which were part of the study. The research findings cannot, therefore, be generalised but they can prompt enquiry within different contexts.

4.5 RESEARCH DESIGN

According to Terreblanche (2007), a research design is a strategic framework for action which serves as a bridge between the research question and the execution of the research. Other scholars argue that a research design is a formal plan of how the researcher intends to conduct the research (Mouton & Babie, 2007). Bertram and Christiansen (2015) make the point that a research design is a plan of action on how the researcher will systematically collect and analyse the data in order to answer the research questions.

The researcher utilised three designs, namely: explorative; descriptive; and case study design to explore: why the Harry Gwala and Ugu WSAs are not financially viable; to analyse the revenue management of water and sanitation services in these WSAs; to explore the communication challenges being experienced by these WSAs with regard to water and

sanitation service delivery; to investigate challenges of the provision of metered services in water and sanitation service delivery; to assess the challenges in accurate billing for water and sanitation; and to determine the management of the revenue collection and compliance management challenges in the Harry Gwala and Ugu WSAs in order to improve water and sanitation service delivery.

A case study can be regarded as an exploration or in-depth analysis which is bounded by time and/or place, using a single, or multiple cases, over a period of time (Fouche, 2010). Welman (2005) makes the point that a case study helps in understanding the uniqueness and idiosyncratic nature of a particular case in all its complexity (Welman *et al.*, 2005).

A case study is a qualitative research methodology of inquiry which studies a unit of analysis in a real-life context (Welman & Kruger, 1999). In support of Welman and Kruger (1999), Bertram and Christiansen (2015) hypothesise that a case study as a style of research which is often used in the “interpretivist” paradigm, which may involve a combination of both quantitative and qualitative enquiry (Bertram & Christiansen, 2015). Drawing on Rule and John’s (2011) work, Bertram and Christiansen (2015) assert that a case study is a systematic and in-depth study of one particular case in its context which aims to describe what is it like to be in that particular situation. In this case, a unit of analysis refers to the empirical analysis of data from the Harry Gwala and Ugu WSAs. In support of Welman, Strydom and Bezuidenhout (2014) define a case study as a thick and detailed description of a social phenomenon which exists within a real-world context (Strydom & Bezuidenhout, 2014). The case study recounts a real-life situation by rigorously describing the scenario in which the phenomenon occurs. The case study method allows for a deep exploration within the natural context and experience of a participant. Moreover, it is viewed as a method to give a voice to ordinary people (Strydom & Bezuidenhout, 2014). A case study is generally descriptive in nature, and can also be used to generate claims for further verification (Bertram & Christiansen, 2015).

Pfiffner (1940) and Johnson (2002), as cited in Mazibuko and Fourie (2013), define a case study as an intensive investigation of an individual unit; e.g. group, individual person, or event which affects developmental factors in relation to a specific context (Mazibuko & Fourie, 2013). The aim of the case study is to represent the case authentically in order to discover symbolic realities which amplify the unique voice of those whose experience in, and perspective of the world are unknown, neglected or suppressed (Strydom & Bezuidenhout, 2014).

Explorative studies are used to make preliminary investigation into relatively unknown areas of research and also to generate speculative insights, new questions and hypotheses (Terreblanche, 2007). An explorative study involves a rigorous description of the case within its broader context in an attempt to understand the nature of the case (Strydom & Bezuidenhout, 2014). Likewise, this approach is typical when a researcher examines a new interest or when the subject of study itself is relatively new.

Descriptive studies are used in many social scientific studies to describe situations and events. The researcher observes and then describes what was observed. This process of observation is careful and deliberate, such that the description reflects the real nature of a phenomenon (Mouton & Babie, 2007). The phenomenon in this study was the revenue management for the provision of water and sanitation services in the Harry Gwala and Ugu DMs.

In this qualitative research, the researcher chose an explorative design as the main design and a case study approach in order to obtain an in-depth understanding of the state of affairs with reference to revenue management of water and sanitation in the selected WSAs and to further describe the perception of rate payers regarding cost recovery in water and sanitation service delivery, utilising interpretation of the transcripts from the interviews.

The strength of case study research is that results are more easily understood by a wide audience, including non-academics (Cohen *et al.*, 2011). This exercise assisted the researcher in communicating the research findings even to those participants who are non-academics; e.g. some of the traditional leaders and members of the community water and sanitation forums. The results of the case study are very clear, immediately intelligible; and speak for themselves, which prevents any distortion of the findings (Cohen *et al.*, 2011). The case study captures unique features which might otherwise be lost in larger scale data, since the researcher conducted the study on a relatively small population; i.e. the Harry Gwala and Ugu WSAs in this case. The case study results are strong on “reality: because they provide insights into other, similar situations and cases (Cohen *et al.*, 2011). Since the researcher was the only one conducting this study, it demonstrated that this paradigm can indeed be undertaken by a single researcher, which can also be regarded as a strength. However, every approach has its own weaknesses. In case study research, results may not be generalised except where other researchers see their application (Cohen *et al.*, 2011). Some of the weaknesses of the case study are that results are not easily open to cross-checking; hence they may be selective, subjective

and prone to problems of observer bias, despite attempts made to address this problem. (Cohen *et al.*, 2011).

4.6 RESEARCH METHODOLOGY

Research is described as a process of looking for answers to find the solution to a problem, which contributes to the body of knowledge in order to understand a phenomenon, situation or behaviour (Plooy-Cilliers *et al.*, 2014) The researcher conducted the study to analyse the revenue management of funds collected for water and sanitation services in the Harry Gwala and Ugu WSAs, and to understand why these WSAs are not financially viable by looking at the issue from a customer and service quality perspective in order to establish customer perceptions in relation to cost recovery in water and sanitation service delivery. This case study drew on a sample of hundred (100) participants from the population, inclusive of municipal officials and political office bearers from the Harry Gwala and Ugu DMs respectively. Research methodology is the term used to describe methods, tools, procedures and techniques which are utilised during the research process to find answers to the research problem (Welman *et al.*, 2005).

4.6.1 Qualitative Research Method

Qualitative research involves a holistic investigation executed in a natural situation. It has been a norm that a good researcher is one who uses mixed methods. However for the benefit of this study, the researcher employed a qualitative research approach. The researcher tried to study all the elements that were present within their particular context. The researcher is the primary data collection instrument in this type of research. The main characteristic of qualitative research is that it is conducted in natural, not laboratory settings. The researcher was the key instrument in the process of data collection. Instead of relying on a single data source, the researcher gathered data from multiple sources. This research methodology allowed the researcher to ask broad questions and to collect verbal data from participants who were selected with a purpose in mind, and to analyse reports from the budget and income sections in the Harry Gwala and Ugu WSAs. The researcher's interest was to understand the phenomenon of revenue management for water and sanitation service delivery in the selected WSAs. The researcher wanted to investigate this researchable area from the participants' viewpoint and qualitative research is interpretive – it is in the form of inquiry in which the researcher makes an interpretation about what they see, hear and understand (Creswell, 2007 as cited in Alpaslan, 2010). However, due to the nature of the study, this research paper also contains figures since the study was assessing the revenue management of water and sanitation service delivery.

4.6.2 The Target Population

A population is the entire group of persons or objects which the researcher is interested in investigating (Rensburg, 2010). Terreblanche further describes population as the larger pool from which our sampling elements are drawn, and to which we wish to generalise our findings (Terreblanche, 2007). Theoretically speaking, population encompasses all the elements which make up our units of analysis.

The population for this study consisted of all consumers and customers living within the Harry Gwala and Ugu WSA areas of jurisdiction. However, the researcher was not able to include the entire population, and a sample was drawn from this population.

4.6.3 Accessible population

The accessible population for this study were ward committees and community development workers; business sector representatives; traditional leaders/councillors; the farmers' association; rate payers association members; water and sanitation community forums and WSA officials and political office bearers of at the Harry Gwala and Ugu WSAs. Accessible population refers to the elements chosen to be included in a sample based on a list of characteristics (Pascoe, 2014).

4.7 SAMPLING METHOD

Sampling involves making decisions about which people, settings or behaviour to include in a study. The researcher should decide how many people or objects to include in the study (Bertram & Christiansen, 2015). The non-probability sampling method was employed to select the participants for inclusion in this study, since the selection in this method is based on the judgement of the researcher. The researcher employed purposive sampling to select the sample, hence the researcher was targeting a specific group with specific characteristics.

Rensburg (2010) defines a sample as a subset of the population (Rensburg, 2010). Sampling is the process of selecting a subset of people or social phenomena to be studied from the larger universe to which they belong (Pyne, 2004). Pascoe also defines sampling as the deliberate selection of the most appropriate participants to be included in a study (Pascoe, 2014).

Purposive sampling has been defined as an acceptable kind of sampling for a special situation, and further allows the judgment of an expert in selecting cases with a specific purpose in mind. It is also a powerful technique with a wide application beyond social research (Nueman, 2007).

Purposive sampling is used in special situations where the sampling is done with a specific purpose in mind (Creswell, 2007). Purposive sampling is entirely based upon the judgment of the researcher.

4.7.1 Sample size

The sample size refers to the number of elements in a sample (Rensburg, 2010). The researcher considered the purpose, the design, the size of the population and the sample size for the study. The size of the sample consisted of (10) participants who were interviewed by the researcher from each local municipality, which thus gave a total sample size of (50) participants, including WSA officials and political office bearers in each selected WSA. The Harry Gwala and Ugu WSAs each have four local municipalities/satellite offices under their areas of jurisdiction. Each sector was represented by participants from each and every local municipality, and all of them were purposively selected to participate in the study since they are key role-players in the water and sanitation services business, either as consumers or as staff of the WSAs.

The participants were selected using purposive sampling as they were deemed to be key decision-makers or play pivotal roles in shaping decisions on how best the Harry Gwala and Ugu WSAs can improve revenue inflows as far as revenue collection and management for water and sanitation services is concerned.

4.8 DATA COLLECTION

The method of data collection is described in the following sub-sections:

4.8.1 Data collection methods and tools

(a) Interviews

Interviews were the primary data collection strategy and a natural outgrowth of observation strategies which were employed by the researcher. The researcher used semi-structured in-depth interviews as a method of collecting data in this study. A semi-structured in-depth interview is a combination of structured and unstructured interviews. It defines the line of inquiry which allows the researcher to use basic interviewing skills (Creswell, 2007). A semi-structured interview is a method of corroborating data which emerges from other data sources; it defines the line of inquiry which allows for probing through the use of open-ended questions that seek clarification in answers (Creswell, 2007).

To allow semi-structured in-depth data collection, the questions were given to all participants two weeks prior to the in-depth interviews taking place. This ensured that the participants had enough time to scrutinise and reflect on the questions in order to provide considered responses. Semi-structured in-depth interviews explored and examined the factors which hinder effective revenue management of the water and sanitation service delivery in the Harry Gwala and Ugu WSAs. All the ten participants were interviewed to share their perceptions of cost-recovery in water and sanitation service delivery, and their experiences of the phenomenon. The in-depth interview questions were issued together with a letter of consent outlining the aims and objectives of the study, and guarantees that the participant's privacy would be respected and that the information provided during semi-structured in-depth interviews would be treated as confidential.

(b) Focus groups

The researcher interviewed a group of participants to determine their attitudes, behaviour preferences, perceptions, likes and dislikes in relation to revenue management for water and sanitation service delivery. Focus group discussions or interviews are methods used to determine participants' experiences regarding products and services (Plooy-Cilliers *et al.*, 2014). Focus groups consist of 6 to 12 people gathered for the purpose of expressing their views and opinions regarding predetermined open-ended questions related to a specific phenomenon (Plooy-Cilliers *et al.*, 2014) The group is coordinated by a facilitator. The researcher identified questions in advance in order to facilitate a discussion on revenue collection and management of water and sanitation service delivery in the Harry Gwala and Ugu WSAs. This exercise was done in an unstructured way to enable the participants to express their views and opinions about the topic and to allow a free exchange of ideas between the selected participants.

This method is very cost-effective since it allows for the collection of data from a number of participants simultaneously and helps the researcher to determine questions which can be used in the follow up in-depth interviews. The participants were given an opportunity to discuss their experiences in relation to cost recovery and revenue management for water and sanitation service delivery. Focus groups are also a very useful data collection method, since they allow a researcher to interact with a number of participants and share with them some of the consequences of non-payment for service charges which may result in developing creative and innovative solutions to the problem and to improved revenue inflows at the WSAs.

(c) Collecting Secondary Data: Document analysis

The researcher made use of secondary data from public databases and government publications. The researcher also analysed the records and reports from the income/billing sections of the Harry Gwala and Ugu WSAs in order to gain an indication of how many people are indigent as per the indigent register information, and the number of those who are capable of paying for water and sanitation services, inclusive of an analysis of the revenue which was generated for three consecutive financial years. The researcher also analysed the billing records versus collection by working with the revenue management teams in the income sections of the respective WSAs.

3.8.2 Data collection instruments

- **Interview guides** – The researcher employed semi-structured interviews and interview guides. The complete list of topics and aspects of those topics were outlined in the guides. The researcher raised those questions related to the perception of consumers and customers concerning cost recovery in water and sanitation service delivery. The respondents were asked the same questions but the researcher took cognisance of the educational levels of participants by altering vocabulary slightly to cater for different levels of comprehension.
- **Cameras** – The researcher also used a visual technique, which was a camera to take photographs of the proceedings. This is useful for reliability and validation, as a camera also documents non-verbal behaviour and communication, and can provide permanent records. Analysis of non-verbal communication is very important in qualitative studies (McMillan & Schumacher, 2006).
- **Tape recorders** – The researcher also used technical equipment, such as a tape recorder, to collect data to ensure that they provided accurate and relatively complete records which would enhance reliability.

4.9 DATA ANALYSIS IN SOCIAL RESEARCH

Data analysis in social research identifies patterns or recurrent behaviour in data. Once a pattern is identified it is interpreted in terms of social theory (Nueman, 2007). On the other hand, one scholar defines data analysis as the process of bringing order, structure and meaning to data (De Vos, 2005). Creswell states that data analysis is always an ongoing process which routinely starts prior to the first interview and that the process of data analysis commences when the process of data collection begins.

The data collected was analysed using thematic analysis which made it possible to analyse and interpret factors which hinder effective revenue management of funds obtained from water and sanitation provision in the Harry Gwala and Ugu WSAs, and the rate payers perception of the cost recovery in water and sanitation service delivery, as well as recommendations made by participants of how best the authorities can improve water and sanitation revenue inflows for the selected WSAs. Thematic analysis is a popular model of analysis in qualitative research. The researcher analysed the recurring themes extrapolated from the data collected from the participants.

4.9.1 Eight Steps of Data Analysis

These are the eight steps which the researcher followed when analysing the data:

- The researcher carefully transcribed (wrote word for word) all the audio-taped interviews and made notes of ideas that were prompted by this process;
- The researcher selected one of the document sources which seemed to be the most interesting and then interrogated this, taking notes on the significance of the information;
- The researcher made a list of all the topics and put similar topics into columns which could be grouped into major topics;
- The researcher took the list of topics and assigned an abbreviation to each topic;
- The researcher found the most descriptive wording for her topics and turned them into themes. (Codes helped to reduce the total list of themes into groupings of topics that are related to each other). The researcher also drew lines between identified categories to show interrelationships;
- The researcher made a final decision on the abbreviation for each theme;
- The researcher used the cut and paste method to assemble the data belonging to each theme in one place to facilitate preliminary analysis; and
- The researcher recorded the existing data and started on interpreting and reporting the research findings (Alpaslan, 2010; Creswell, 2007).

4.10 VALIDITY, RELIABILITY AND TRUSTWORTHINESS

Table 4.1 Validity, reliability and trustworthiness

Credibility	The researcher ensured accuracy in the interpretation of data provided by the participants. The researcher spent a good deal
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	of time with the participants in order to gain insight into the phenomenon and to ensure credibility as well as to make a worthy contribution to the existing body of knowledge.
Transferability	The researcher ensured that the research findings were able to be applied to similar situations and that this would deliver similar results.
Dependability	The researcher ensured that there were no flaws in the process of integration which takes place between data collection, analysis and the theory generated from the data.
Confirmability	At the end the researcher had seen to it that the data collected did not contradict the findings. The data should support the findings and interpretation of the researcher.

Source: Researcher

4.11 ETHICAL ISSUES

The researcher informed the participants that she would like to audio tape the interviews so as to be able to focus on the these without taking notes. She also asked permission to use the following research tools: tape recorder; stills camera; and video recording equipment for the above purpose. Ethical issues, such as respect, confidentiality and informed consent were addressed.

The researcher assured the participants that only she would have access to the information which they have shared in terms of their consent forms.

Ethical approval for this research was granted by the University of KwaZulu-Natal and gatekeeper's letters from the offices of the Municipal Manager in the Harry Gwala and Ugu WSAs were obtained.

These are the ethical considerations which the researcher upheld:

- **Confidentiality and Anonymity**

According to Creswell (2007), anonymity means that the researcher will not reveal the identity of study respondents; their identities are protected from disclosure and they will remain unknown. The researcher adhered to the ethical considerations as proposed by Creswell by not revealing any identities of the participants in this study. Creswell (2007) further explains that

confidentiality means that the researcher can match names with responses; for example, in a face-to-face interview, but ensures that no-one else will have access to the identity of the respondents. Confidentiality should only be assured if it can genuinely be maintained. It is not enough to state that material will be confidential without taking concrete steps to ensure that this in fact will be the case (Creswell, 2007).

- **Confidentiality**

De Vos (2005) views confidentiality as a continuation of privacy which refers to the agreements between people which limit access by others to private information (De Vos, 2005). The researcher ensured anonymity by giving the participants pseudonyms and told them that only the researcher would have information about any of the participants and no one else.

- **No harm to participants**

According to Neuman (2007), harm is an injury which is caused by a person. Social research should never in any instances cause harm, whether physical or mental, to study participants. The researcher ensured that the focus group interviews were conducted in conducive environments. The researcher further ensured that there was no act of physical or psychological harm to participants, for example emotional stress, discomfort or embarrassment, in any way.

- **Informed consent**

The researcher gave participants a form to fill in to confirm that they consented voluntarily to participate in the study. Obtaining informed consent implies that all possible information on the goal of the investigation, the procedures which will be followed during the investigation, any possible advantages, disadvantages or dangers to which respondents may be exposed, as well as the credibility of the researcher, are declared to the potential subject or their legal representatives prior to them signing the informed consent form (Alpaslan, 2010).

- **Management of information**

Management of information involves collection and management of information from one or more sources, including both electronic and physical information. Management of information entails organising, retrieving, acquiring, securing and maintaining information. The more sensitive the information, the greater the need to remind the researcher and all concerned with the gathering of information to treat this as extremely confidential during and after the research process (De Vos, 2005).

The information the participants shared with the researcher was stored in a safe place where no-one else had access but the researcher, who treated the information with respect. The researcher ensured that the tapes, notes and transcripts of all recordings were kept safe in a lockable cabinet to which only the researcher had access. The participants were ensured of privacy and anonymity. The tape recordings and notes identifying the participants were erased at the end of the study for the participants' own protection.

4.12 SUMMARY

The chapter dealt with research methodology and designs, including research paradigms and traditions. Details were declared regarding the target population, sampling, data collection and analysis techniques, validity, reliability and trustworthiness as well as ethical considerations regarding the data. All of these aspects were discussed in detail. The chapter dealt with the research methodology on the study of revenue management for water and sanitation service delivery in Harry Gwala and Ugu WSAs. The research design which underpinned the research study were explorative, descriptive and case study designs to collect and analyse the data in order to answer the research questions, including research paradigms and traditions, and has been discussed in detail. Reliability, validity and trustworthiness as well as ethical considerations have likewise been discussed in detail.

CHAPTER FIVE

DATA PRESENTATION, INTERPRETATION AND ANALYSIS

5.1 INTRODUCTION

The chapter presents the data collected from focus group discussions in a form of semi-structured interviews and a municipal document review as discussed in the previous chapter on research methodology. The data analysis was informed by the revenue management in water and sanitation and cost recovery as presented in Chapter Two, as well as the sustainable models and framework theoretical implementations for enhancing revenue management in municipalities and WSAs as discussed in Chapter Three.

The range of data presented in this chapter is themed under four headings: communication; metered services; billing systems; revenue management and compliance management. These categories are not exclusive in terms of content as there is an overlapping of themes; however, the categories are still legitimate because they are an attempt to make sense of the data. There is also a fifth category which is called “other” because the content is related to revenue management of water and sanitation but does not readily fall into any of the other categories. It is also important to note that the data presented in this chapter has been collected from four focus groups in the district, inclusive of internal staff where the researcher wished to obtain a service provider point of view as part of the data collection process. The focus groups were convened in the following regions: Dr Nkosazana Dlamini-Zuma, Greater Kokstad, Umzimkhulu and Ubuhlebezwe Umdoni, uMzumbe, Ray Nkonyeni and Umuziwabantu Local Municipalities and satellite offices or management areas within the Harry Gwala and Ugu areas of jurisdiction.

Interviews were the primary data collection means and a natural outgrowth of observation strategies which were employed by the researcher during the data collection process. After the researcher transcribed the recorded interviews she employed NVIVO computer software for qualitative data analysis to manage, handle sort and organise volumes of data and prepare diagrams.

This qualitative data analysis was applied to textual analysis of data which was collected through focus group interviews. This repeated the data analysis and the interpretation over and over again, applying a hermeneutic approach in order to obtain a deeper understanding of the meaning of the data collected.

The chapter will first provide an overview of the Local Policy Framework for revenue management and discuss an analysis of the communication challenges being experienced by the Harry Gwala and Ugu WSAs in their water and sanitation service delivery. Secondly, the chapter presents an analysis of metered services for water and sanitation service delivery in the Harry Gwala and Ugu WSAs. Thirdly, the chapter presents an analysis of the municipal billing systems for water and sanitation in the Harry Gwala and Ugu WSAs. The chapter will also discuss municipal income and management of municipal revenue, as well as compliance management as far as regulation is concerned, in the Harry Gwala and Ugu WSAs.

5.2 THE LOCAL GOVERNMENT POLICY FRAMEWORK FOR REVENUE MANAGEMENT

This section outlines the various pieces of legislation which Harry Gwala and Ugu Water Services Policies have put in place for revenue management and provision of free basic water and sanitation service to indigent communities. As was presented in Chapter Two, cost recovery is informed by the Constitution (RSA, 1996), The Municipal Systems Act, No. 32 of 2000, and the Municipal Structures Act, No. 117 of 1998. The policies and water services by-laws of Harry Gwala and Ugu WSAs are drawn from these pieces of legislation in order to develop and enforce policies which are relevant in their contexts. The pieces of legislation which guide revenue management and free basic water and sanitation provision includes the following policies: credit control and debt collection; indigent policy; tariff policy; and free basic water and sanitation policy. All of the above-mentioned policies are mechanism for revenue management in water and sanitation service delivery for the Harry Gwala and Ugu WSAs.

Harry Gwala Tariff Structure



Harry Gwala District Municipality
PUBLIC NOTICE
 Issued in terms of the Local Government Municipal Systems Act, Act 32/2000
TARIFF SCHEDULE IN RESPECT OF THE 2016/17 FINANCIAL YEAR

(ALL TARIFFS ARE EXCLUSIVE OF VAT)

Consumption Increments in R per Kl	0-6	7-20	21-40	41-100	101-200	201+	
Domestic (Metered)	R 0.00	R 7.16	R 11.93	R 13.91	R 23.06	R 26.24	
Umzimkhulu	R 70.24	R 70.24	R 70.24	R 70.24	R 70.24	R 70.24	
Fairview	R 70.24	R 70.24	R 70.24	R 70.24	R 70.24	R 70.24	
Consumption Increments in R per Kl	0-100	101-200	201-300	301-400	401-500	500+	
Commercial & Industrial	R 10.34	R 13.91	R 23.06	R 24.65	R 26.24	R 27.83	
Consumption Increments in R per Kl	0-6	7-100	101-200	201-300	301-400	401-500	501+
Public Service & Government institutions	R 10.34	R 10.34	R 13.91	R 23.06	R 24.65	R 26.24	R 27.83
Educational Institutions	R 10.34	R 10.34	R 13.91	R 13.91	R 13.91	R 13.91	R 13.91
Agricultural	R 10.34	R 10.34	R 13.91	R 23.06	R 24.65	R 26.24	R 27.83
Geriatric Institutions, Religious organizations, NGOs and recreational facilities	R 0.00	R 10.34	R 13.91	R 23.06	R 24.65	R 26.24	R 26.24
Commercial & Industrial	R 10.34	R 10.34	R 13.91	R 23.06	R 24.65	R 26.24	R 27.83
Road Tanker delivery of water & Static tank hire in the capacity of the road tanker / tank	2500 l.	5000l.	7500 l.	10000 l	Del. charge		
Road tanker delivery	R1749.46	R2385.54	R2783.12	R3339.75	R 318.07		
Static tank hire per month	R 159.03	R 397.59	R 556.62	R 795.18	R 318.07		
Misc. Water related tariffs given in service pipe diameter	15 mm	20 mm	50 mm	110 mm	+100 mm		
Deposit per meter	R 954.22	R 1192.77	R 1590.35	R 2385.54	R3 180.71		

New water meter	R 954.22	R 1351.80	R 1669.87	R2 783.12	R3 975.89		
Disconnections	R 477.10	R 636.14	R 1192.77	R 1590.35	R 1987.95		
Reconnections	R 477.10	R 636.14	R 1192.77	R 1590.35	R 1987.95		
Meter testing	R 159.03	R 238.55	R 318.07	R 397.59	R 477.10		
Penalty i.r.o. Tampering & illegal connections	R 2465.05	R 3419.27	R 4532.52	R 6361.43	R 8746.97		
Property development costs i.r.o. water and sanitation delivery reticulation given in number of subdivisions Per Sub-Division	1 Site	2-5 Sites	5-10 Sites	11-20+ sites			
Clearance certificate	R 147.26	R 147.26	R 147.26	R 147.26			
Sanitation costs given in terms of water consumption	0-200	201+					
Water borne systems	R 5.56	R 7.16					
Shayamoya Bongweni & Fairview	R 54.63	R 54.63					
Static sanitation systems given per load	Per Load	Transport per Km					
Conservancy tank clearance on site	R 333.98	R 10.34					
Septic tank clearance on site	R 1033.74	R 10.34					
Disposal into municipal reticulation system	R 333.98	R 10.34					
Misc. sanitation related tariffs given in service pipe diameter	Up to 600	Up to 1200	1200 mm +				
New connections	R 3180.71	R 3975.90	R 5566.25				
Disconnect / Reconnection	R 795.18	R 1192.77	R 1590.35				

Figure 5.1 A sample of Harry Gwala Water and Sanitation Tariff Structure 2016/17 Financial Year

UGU DISTRICT MUNICIPALITY

Page 1 of 1

Ugu District Municipality

CUSTOMER CARE DEPARTMENT
 PO BOX 33 Port Shepstone 4240
 96 Marine Drive, Osilo Beach
 Fax : 039-688 5871
 E-Mail : enquiries@ugu.gov.za
 Website : www.ugu.gov.za
 Vat Reg No : 4890103288
 Toll Free : 0800 092 837

Your Bill Details

TAX INVOICE/STATEMENT

Month	Bill Date	Account	Invoice no	Vat Number	Guarantee	Deposit
August	31/08/2018					100

Your account at a glance

Reference address [REDACTED] No of Days: 32 No of Units: 1

Service from 01/08/2018 To 31/08/2018 Daily Usage: 1


Date	Details	Debit	Credit	Balance
01/08/2018	Balance Brought Forward	1,230.75		1,230.75
20/08/2018	Payment for Services		700.00	530.75
21/08/2018	Water & Sanitation			
21/08/2018	Water Basic - Sub Economy	117.23		647.98
21/08/2018	Free Water Basic (Free Water) Subsidy 6.4		82.69	565.29
21/08/2018	17 KL (Start:758 End:775)	219.64		784.93
Step	0,039 KI 12.27		19.57	
Step	99,999,999 KI 22.05		12.92	
Step	0,051 KI 20.6		23.21	
21/08/2018	Units 1	191.11		976.04
21/08/2018	Sanitation - Charge Per Kilolitre	68.34		1,044.38
	Vat raised @15.00 (* VAT Exempted)			77.04
	Balance Amount			1,121.42

Meter Number	Read Date	Previous Reading	Read Date	Current Reading	Usage
140007965	17/07/2018	758	18/08/2018	775	17


Payment Due Date On 30/09/2018

Kindly note that we are experiencing challenges in importing account payments, thus payment may not reflect on your January statement. Should that be the case, please pay the difference between the balance due and such amount previously paid. We apologise for any inconvenience and are working towards resolving the issue.

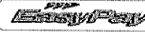
REMITTANCE ADVICE This stub must accompany all payments



We deliver, whatever it takes
Allocation code 0968




10046990



>>>>91 870 010 046 998

Date :
Ref : 10046990



Ugu District Municipality
Account Number : [REDACTED]
Branch : 632005
Depositor : [REDACTED]

AMOUNT DUE	1,121.42
-------------------	-----------------

Figure 5.4: An example of Ugu WSA Domestic Statement of Account

From the findings presented in Figure 5.3 and Figure 5.4 and the focus group discussions which were held in Harry Gwala and Ugu WSAs, it is evident that there is a challenge in the WSAs' statements of accounts and billing system. This evidence causes the researcher to argue that there is a necessity for the WSAs to consider standardising the consumer's statement of account for both domestic and commercial users to meet all the minimum standards as prescribed by the Water Research Commission (WRC). There is a necessity, then, for the Harry Gwala and Ugu WSAs to employ the minimum standards as prescribed by the WRC as a model to develop water statements of account which are provided to consumers of water and sanitation.

According to the Water Services Act, No. 108 of 1997, and the Municipal Systems Act, No. 32 of 2000, WSAs are mandated to develop water services tariff policies and set tariffs within the framework which is provided by the Department of Water and Sanitation as the National Regulator.

Due to a gap that was identified by the sector, the WRC (2008) developed a guideline which sets standards for the domestic water accounts with the aim of enhancing customer understanding of reading water statements of account which will result in creating awareness, participation and accountability as far as water services are concerned (Slabbert Associates, 2010). The WRC had to develop an EMI tool based on the regulatory principles, local and international best practices, and the consumer friendly plain English Handbook used by US Government in order to evaluate and compare municipal statements of account based on international and local regulation and best practices, and thereafter the minimum key standards for water statements of account were set (Slabbert Associates, 2010).

The Harry Gwala WSA's water statement of account does not meet the minimum standards as set by the WRC. To some extent, Ugu WSA's water statement of account does meet the minimum standards, because the key information required by the minimum standards has been captured on the statement; for instance the statement displays the information which allows the consumer to compare their consumption with the previous month include the date of the meter reading, whereas this important information is not displayed on the statement of account of the Harry Gwala WSA. The omissions are on consumer education and multiple pay points options; hence, there is no consumer educational message and payment options on the statements for both WSAs.

The Consumer Protection Act, No. 68 of 2008 stipulates that such statements should be clear and accessible to ordinary consumers; names and addresses should be clear, and a clear description of the goods and services supplied, their unit price, including quantities or volumes of goods or services used, with communication being in a language which the consumer will understand. According to the Municipal Systems Act, No. 32 of 2000, the National Credit Act, No. 34 of 2005, and the VAT Act, No. 89 of 1991, statements of account should comply with regulations, have integrity and a clear tariff structure, readings should be correct, accurate and transparent, should include all information promoting water use efficiency, unnecessary information which could confuse the customer should be removed, and where estimate readings has been taken, these should be indicated but should not be for more than (2) two consecutive months. The National Credit Act states that the opening balance and the current balance should be clear, including amounts overdue, and a toll-free number where customers can lodge complaints should clarity be needed. On the other hand, the Strategic Framework of Water Services indicates that information on the water statements should be clear and written in plain

language. Respondents pointed to incidences of inaccurate billing that exist in Harry Gwala and Ugu WSAs for water and sanitation services. Respondents further pointed out that:

We do not receive water statements in most areas in Kokstad. People are not aware that we should pay for water...we know that a flat rate is 160 rands here but sometimes people get invoices that are more than what we are expecting. The time the meter readers were reading they were estimating volumes if the meters are not exposed to the surface. I think the solution will be a flat rate and it should be consistent not to say this month is 160 the following month is 460 rands.

The communities in Kokstad were not paying for water for years...The time water was managed by the local municipality, the municipality used to shut down or disconnect water if the consumer doesn't pay and people tried their level best to comply...when Harry Gwala took over people were not getting statements for 4 to 5 years and after some few years they received statements indicating that they owe 16 000 rands...And people complained...I think consistency is very important here 'cause if you get a statement of 160 rands and pay the following month you get a statement of 460 rands which is a problem and now they decide not to pay. The statement of accounts should be clear because there are two figures that appear on the statements and the meter readers that issue statements say that one of the figures should be ignored. For me I think prepaid water meters is a solution because it will cover both indigent and non-indigent.

Billing is very crazy here because the officials estimate the volumes. The basic service is 400 rands whether you are at home in that particular month or not even if there is no water you pay. Once you don't pay they disconnect you and you pay what the municipality says you must pay before you are reconnected. We don't even see this free 6kl.

Here at Umdoni there are meters installed in households but the municipal officials don't come to read meters...the billing system is not consistent you get the statement for one month and you don't get for six months...you phone the call centre and you have to wait for hours...the people are not clued up about the Ugu billing system...there is a challenge when it comes to the billing and when you ask the municipal officials

they say we are paying an estimate and we don't know how they determine that estimate.

It's because of the inaccurate billing...Only the two of us staying in the house and I was told I'm owing 4 000 rands, and there is no way...So I decided not to pay at all.

5.2.1 The Harry Gwala and Ugu WSAs Indigent Policies

The Harry Gwala WSA and Ugu WSA Indigent Policies have been developed and are in their implementation stage; consumer apply to the WSA for indigent status and once the consumers meet all the minimum requirements, indigent status is granted so those citizens/households which are unable to pay for the basic services are not deprived of the basic necessities of life, thereby reducing the gap between those who attain indigent status and those that can afford to pay for services (Harry Gwala WSA Indigent Management Policy, 2018; Ugu WSA Indigent Support Policy, n.d.). The issue of affordability is also a core aspect of tariff and indigent policies. The Harry Gwala WSA Tariff Policy (2018) outlines that one of the objectives of the policy is to ensure that municipal services are “financially sustainable, affordable and equitable” whilst the Indigent Policy (2018) emphasises that the municipality aims to promote equitable sharing of services. Furthermore, the Ugu Indigent Support Policy's objectives are to ensure the provision of basic services and provide guidelines and procedures for subsidisation of service charges, setting rates and tariffs which will balance the economic viability of continued service delivery (Ugu WSA Indigent Support Policy, n.d.).

We do have a culture of entitlement cause some of the consumers are not paying due to the fact that they are indigent but they are not responding to indigent support programme, they are unemployment and the population on Harry Gwala WSA is more dominated by consumers that are not employed. We only rely on revenue collection from Kokstad town and Extension 7, Government departments and business or commercial users.

We do have indigent management policy and it is reviewed annually including the register. We last reviewed both documents in 2018.

5.2.3 Enforcement of Revenue Management Mechanisms

The WSAs should put in place effective and efficient revenue management, water and sanitation by-laws, credit control and billing mechanisms. However, if there are no proper

sustainable revenue collection, enhancement, protection and management strategies in place all the above-mentioned policies would be fruitless. This means that proper implementation of Water Services policies is fundamental to ensure the viability and sustainability of the WSAs. Effective and efficient revenue management strategies in water and sanitation should include: integrated water resource management; effective customer service or consumer contact centres; intensive community empowerment and education on mindful consumption and water use efficiency; organisational performance and compliance; disconnections from water and sanitation service; installation of prepaid meters and an effective billing system; fines for unauthorised consumption or overconsumption; cross subsidisation; handing over of free riders and non-payers to private collection agencies or legal teams; and an implementable water conservation and water demand management strategy.

We are improving in terms revenue management because we are now not collecting less than 4 million per month.

We do have an accurate billing system because we are using an electronic e-Venus billing system, however we do have challenges of incorrect billing that is why we are now in a process of installing meter reading devices so that we ensure that the water consumption of the households are exactly as what has been consumed and the WSA provides accurate billing to our consumers.

We also use the post office as the mechanism to deliver the statements of account as enforced by the ACT; however, we also employ hand delivery to government departments and the municipalities and further fax or send emails to those consumers that have requested so.

We do receive complaints related to billing, sometimes we don't get accurate meter readings, we have complaints related to fluctuations in consumptions it might be water leaks or the meter is leaking and we do necessary adjustment only if the consumer has reported...The consumer has to fix the leak and report with all the supporting documents from the plumbers that has done the repairs and we then monitor the consumption within the period of three months.

We need to enforce consumers to apply for indigence so that we can increase and improve our share from equitable share, we were giving all the household 6kl now we

only provide only the indigent consumers with 6kl and the applications are coming and the indigent register is increasing.

For now we don't have supervisors of the meter readers but we check the readings before capturing, check the deviation reports and verify the readings from the meter readers before we run the final billing.

5.2.4 Unauthorised Consumption

The Water Services by-laws stipulate that WSAs have a responsibility to regulate water and sanitation services through: key regulatory tools – a set of water and sanitation by-laws – promulgated and gazetted to develop strategies to implement or enforce by-laws.

Illegal water connections are getting out of control, are costing municipalities money, and result in non-revenue water and water losses. In line with delivering on the Constitutional mandate of the provision of clean and adequate water services to all, the WSAs should review and gazette Water Services by-laws in order to improve the reliability of water systems and to ensure that water reaches all communities within their areas of jurisdiction.

Amongst the responsibilities of the WSA is to enforce the by-laws as far as water service provision is concerned; the water and sanitation bylaws should stipulate that:

- (1) No person shall interfere or tamper with the Municipal Infrastructure for the Provision of Water Services;
- (2) No person other than the municipality shall manage, operate or maintain infrastructure through which water services are provided; and
- (3) No person other than the municipality shall effect a connection to infrastructure through which water services are provided.

The municipal by laws should further stipulate that if a person contravenes subsections within this clause, the municipality may:

- (a) By written notice require a person to cease or rectify the damage; or
- (b) If it is of the opinion that the situation is a matter of urgency, without prior notice prevent or rectify the change, damage or interference.

The WSAs should also embark on a programme of enforcing by-laws by disconnecting unauthorised water services in all affected areas and strengthen awareness campaigns in order to improve water supply, reduce unauthorised consumption and generate more revenue.

5.2.5 Connections and Disconnections

Disconnection from the water supply system is a punitive measure which is employed for free riders and non-payers of water and sanitation user fees. This process involves sending notices stating an intention to disconnect consumers who have not paid their user fees from the water supply system (McDonald & Pape, 2002). Disconnections to water supply are a mechanism which is employed to enforce water and sanitation by-laws by WSAs.

The Harry Gwala and Ugu WSAs hardly enforce water services by-laws because the recently reviewed/amended bylaws could not be gazetted. However, the WSAs have budgeted for the analysis, interpretation, translation and gazetting of water services by-laws for the financial year 2018/19. Nonetheless, the Harry Gwala and Ugu WSAs disconnect water supply to commercial/business consumers with outstanding bills and the bills are handed over to the municipal legal team.

On defaulters we check those that are owing the WSA more than 90 days, issue notices to those affected consumers giving them a period of 14 days to respond; if they don't respond we disconnect hence our meters don't allow us to restrict. Within the period of 14 days the consumer reports to the offices to make arrangements and she/he have to pay reconnection fee and the debt whether in full or in portions.

We do credit control and restrict services if it is the residential property to 6kl due to constitutional requirement that says water is life, although we don't hand over we utilise our municipal legal team to issue notices or warning letters to the defaulters/consumers and disconnect industrial or commercial users.

For now our focus is on the business community, we don't have any other strategies to incentivise the consumers to pay for water and sanitation debt. If the consumer doesn't pay we disconnect them to water supply and if the consumers default their accounts, we hand over their water accounts to the legal team.

Sometimes the council grants amnesty to the affected communities if the consumers owe the WSA very high consumer debts or give a certain percentage of discount especially on households or domestic users of water and sanitation.

The next section discusses smart prepaid meters as a mechanism for enforcing revenue management in water and sanitation service delivery.

5.2.6 Prepaid Water Meters

According to Fjeldstad (2004) and McDonald and Pape (2002), a prepaid meter is a device which is utilised to measure the consumption of water or electricity to ensure effective billing and oblige the consumer to pay in advance or before consumption of the service provided. The advantage of the utilisation of prepaid meters is that it has less management and administration required from the WSAs, such as preparation of statement of accounts and postage, and enables low-income consumers to budget properly for their consumption, promotes mindful consumption awareness creation, and further prevents the consumers from being in municipal debt. The system also does not deprive indigent consumers access to the service. Once the service provider or WSAs collect the revenue in advance, this enables the generation of proactive not reactive routine operation and maintenance costs. According to Gibbs (2010), Fjeldstad (2004), Ruiters (2007) and Alence (2002), prepaid metering systems do not require any punitive measures unless there are consumers who have tampered with the infrastructure or connected illegally to the system.

Harry Gwala WSA has started piloting prepaid water meters installation in various areas within its area of jurisdiction. However, the technical team and the service provider appointed have not yet activated the smart prepaid water meters. Ugu's WSA attempted to install prepaid water meters, but had to remove prepaid water meters and install conventional ones due to the fact that the service provider piloting the project of installing the solution failed the WSA. It was not clear how the system worked, functional requirements were not met and it was very difficult to create awareness in order to disseminate information to communities.

We identify faulty meters on monthly basis by checking on meter sheets from the meter readers and send the list to water services department, we also have external temporal plumbers that assist with the installation of faulty meters.

As we have finalised the installation of Prepaid Water Meters of 412 of the 931 meters in Fairview, the Launch for programme has been planned and conducted on the 15 March 2017 as part of the National Water Week Programme but we are still busy with the activation and installation of the water prepaid water meter management devices.

We have concluded fixing the faulty meters as per the list that was received from the Finance Department in December 2016. We are now working on the new list that was received in February 2017.

5.2.7 Cross-subsidisation

The Municipal Structures Act of 2000 makes provision for WSAs to cross-subsidise service provision through the use of surcharges. The only way for WSAs in South Africa to recover costs for free basic services like water and sanitation service delivery is through cross-subsidisation.

5.2.8 Handing Over to Private Debt Collection Agencies

Effective implementation of revenue management mechanisms and strategies involve various stakeholders. Some of these stakeholders are legal firms and private debt collection agencies. Private debt collection agencies handle cases of defaulters or consumers who have failed to pay their user fees. The Harry Gwala and Ugu WSAs hand over defaulters or non-paying consumers to the municipal legal team, not private debt collection agencies.

At the meantime we have a team of legal experts who are focusing on consumers that are owing us 90 days and more, the team has recently been appointed. We were once handed over by a consumer to the private debt collection defence team that took the WSA to the court arguing that he was not receiving the statements and complaining about the incorrect billing system.

5.2.9 Debt Cancellation/Write-offs

The Debt Write-off Policy document mainly provides a framework or a guideline for regulating the cancellation of consumer/customer debt which cannot be recovered by the WSA for the municipality. As much as the Constitution of South Africa makes provision for free basic services through its Indigent Policy, with the collection of outstanding consumer/customer debt through the Credit Control and Debt Collection Policy as discussed above, municipalities and various WSAs continue to face circumstances requiring the writing-off of irrecoverable debt.

We did write offs in Bhongweni, Ibisi and Fairview where we were flat rating, consumers were reluctant to pay due to the fact that even those that qualify as indigent are not accommodated in a flat rate...we are now changing from flat rate to consumption base but now the infrastructure couldn't allow us to pilot the project because 80 percent of the meters are faulty and rusty and aging and some we can't even locate them; we opted to default rate of 10kl per consumer per month until the meters have been replaced...Again with the deceased the council took a resolution to do write offs of all the deceased and we will do the write off of all the consumers who qualifies as indigent.

As Ugu we haven't had any debt cancellation for about eight years, but what we are deciding to do now is to make a submission to the council to do debt cancellation in particular at Harding, Muziwabantu local municipality since people are failing to pay for basic charges hence there is drought around the area.

The Debt cancellation or write off policy has been developed in compliance with the Local Government Municipal Finance Management Act of 2003, and the Local Government Municipal Systems Act of 2003. Ideally, The Debt Cancellation or Write-off Policy prescribe that there has to be evidence that the debt has become irrecoverable. The debt cancellation or write-off policy addresses concerns relating to equity and affordability.

5.3 ANALYSIS OF REVENUE MANAGEMENT IN WATER AND SANITATION FACED BY HARRY GWALA AND UGU WSAS

The following section discusses the challenges which are faced by Harry Gwala and Ugu WSAs in revenue management for water and sanitation service delivery looking at various variables.

5.3.1 An Analysis of the Communication Challenges being Experienced by the Harry Gwala and Ugu WSAs with Regard to their Water and Sanitation Service Delivery

According to the focus group discussions, it is crystal clear that communication is a challenge in these WSAs. There is a communication challenge to the extent that even internal departments or sections are not communicating properly and end up being seen as working in silos. External stakeholder's coordination and relations management are also challenges, in particular when it comes to the water and sanitation service users. The SERVQUAL model which was developed

by Parasuraman has been accepted as being the most suitable scale to measure the quality of services provided to customers by a service provider. There is a necessity, then, for the Harry Gwala and Ugu WSAs to employ this model to measure water and sanitation services quality provided to consumers.

According to different authors and academics, the SERVQUAL model has been proven as the best evaluation methodology which is both consistent and reliable (Brown *et al.*, 1993). The way in which this model has been presented by different researchers makes it clear to me that the SERVQUAL model best fits the investigation of ratepayers' perceptions of cost recovery/ revenue collection and management of water and sanitation service delivery in the Harry Gwala and Ugu WSAs from the customer/consumer's perspective, and this was one of the key objectives of this research.

The Disconfirmation model and the Gap model are models which reflect experiences that are better than what the customer or consumer expected from the service provider (Iacobucci *et al.*, 2001). Iacobucci, Ostrom and Grayson (2001) state that academic literature supports the view that customer satisfaction is a function of the discrepancy between a consumer's prior expectation and their perception regarding the services rendered. This means that the services rendered by the WSAs to the consumers should be of a high quality. If there are any service interruptions, the consumers should be informed on time of such interruptions, as well as being informed of any interim measures or arrangements to be put in place until uninterrupted service is restored.

Employing the SERVQUAL, and Disconfirmation and Gap models will enable the Harry Gwala and Ugu WSAs to address the communication challenges as highlighted in Figure 5.5 and Figure 5.6. The diagrams encapsulate the communication challenges experienced in water and sanitation service delivery in the Harry Gwala WSA (Figure 5.5) focusing on stakeholders' communication challenges, internal communication challenges and residents or consumer/ customer perspective communication challenges and Figure 5.6, as reflecting on Ugu WSA respectively.

Communication Challenges in Water and Sanitation Service Delivery in Harry Gwala WSA

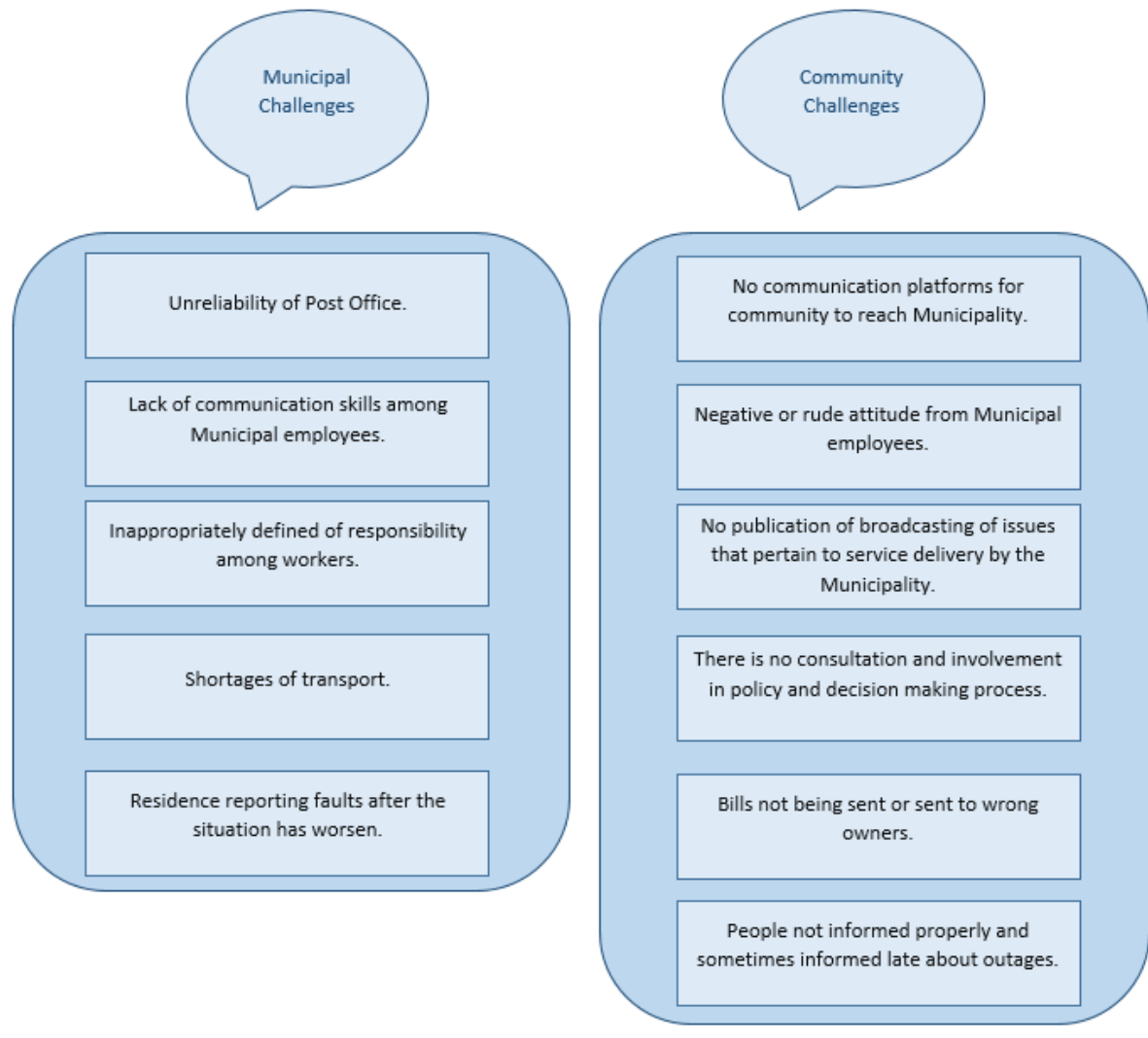


Figure 5.5: Communication Challenges in Water and Sanitation Service Delivery in Harry Gwala WSA

Source: Researcher

Communication Challenges in Water and Sanitation Service Delivery in Ugu WSA

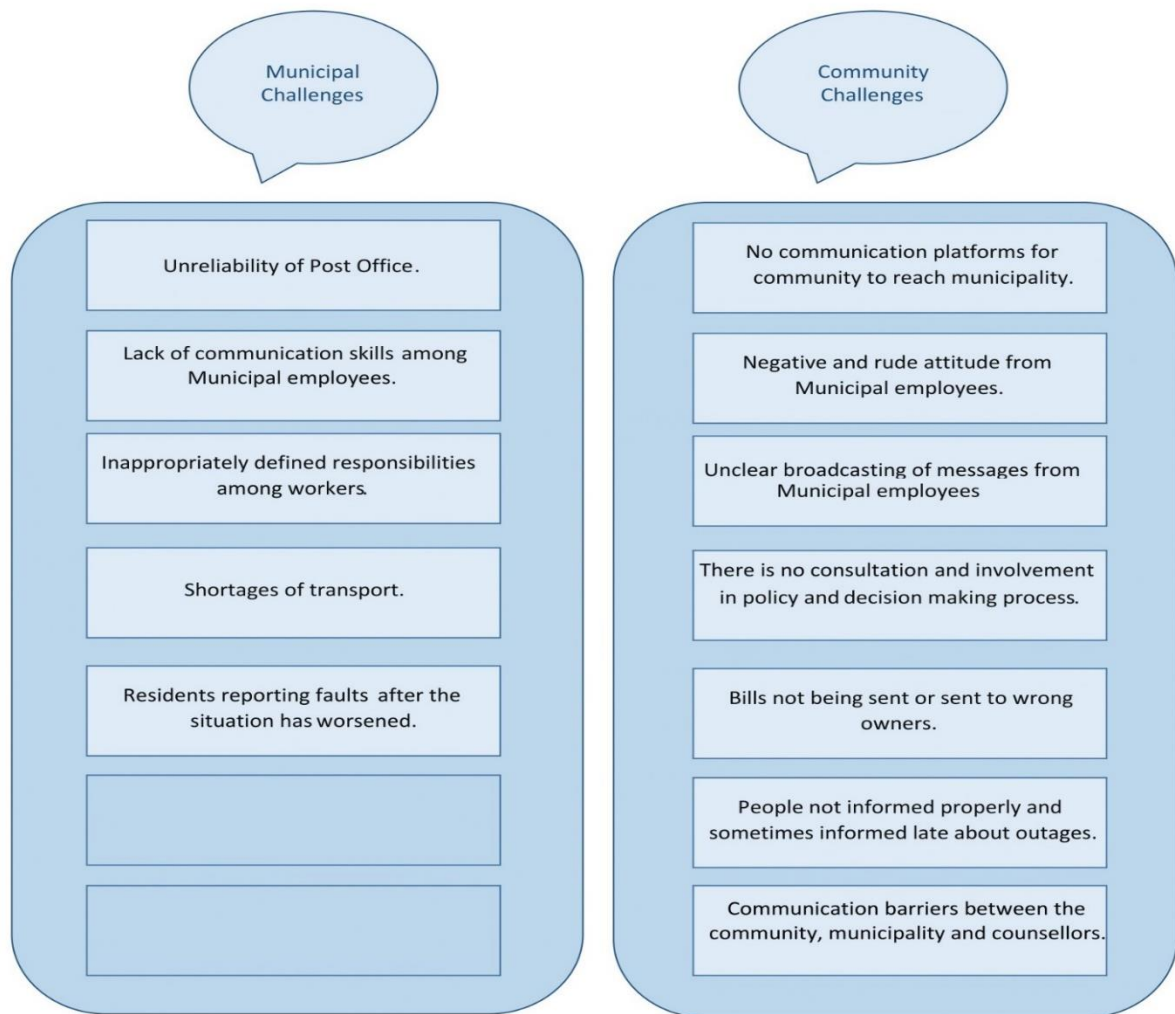


Figure 5.6: Communication Challenges in Water and Sanitation Service Delivery in Ugu WSA

Source: Researcher

From the findings presented in Figure 5.5 and Figure 5.6, it is apparent that the Harry Gwala and Ugu WSAs are facing communication challenges from three perspectives, namely: municipal/ internal challenges and customer/external challenges. There are also communication challenges between contracted service providers of water and sanitation and municipal employees. Respondents pointed to incidences of poor communication existing between contractors/external service providers for water and sanitation services and the community as evidenced by delayed responses to queries or concerns. Respondents further

pointed out that “some challenges are as a result of poor contractor project management and monitoring by the WSA and lack of collaborative mechanisms”. These stakeholder challenges inadvertently affect water and sanitation provision as they lead to resident dissatisfaction which further leads to resistance to pay for water and sanitation services.

Apart from the stakeholder communication challenges the findings further point to the existence of internal communication challenges within the WSAs. According to some respondents, communication challenges emanate from a lack of collaboration between the municipalities’ departments. This view is reinforced by another finding which points to the existence of fragmented planning amongst the various complementary departments because of poor data sharing between departments. This might be interpreted to mean that there is lack of unity and cohesion when it comes to communicating issues concerning water and sanitation provision. The other internal communication challenge which emanated from the findings is a cluster of issues related to lack of training of staff in effective communication methods. Thus, poor communication, poor data-sharing, lack of collaboration and lack of training for effective communication, and failure to communicate timeously all lead to a lack of transparency among and within departments, leading in turn to resident dissatisfaction with service delivery and ultimately to resistance to pay for water and sanitation services and service delivery protests.

The most major communication challenge which emerged from the study’s findings is poor WSA-to-resident communication. From the findings presented in Figure 5.5 and 5.6 it is apparent that the Harry Gwala and Ugu WSAs are being affected by communication challenges in water and sanitation service delivery from the perspective of residents. Respondents pointed out that residents were facing difficulties accessing the municipality concerning service delivery issues. Respondents pointed out that, “in most cases it is difficult to access the municipality due to the unreliable telephone service, inaccessible payment system, and an inaccessible inquiry system or customer contact centre. This problem of inaccessibility to the municipality enquiry system extends to the rural areas”.

The respondents pointed out the existence of poor communication between the municipality and rural dwellers regarding provision of water and sanitation services. Furthermore, respondents pointed out that “the poor communication is hindering residents who receive monthly statements that are not congruent with actual water usage or consumption”. Another finding pertained to the fact that there is lack of communication on water rationing in the form of advance warnings or water cut schedules. In cases where information about water cuts and/or

water provisioning was given, respondents pointed out that “these water rationing schedules were rarely adhered to”. Evidence of this finding can be found in the following quote from respondents: “...in our communities we lack information, usually we are not informed that at a certain time there will be no water. As a result, in terms of customer care services, we are not informed and the service is average. As a result, we even come to the offices for clarity and request water hence we are not informed that there will be a shutdown or service interruption”.

Further evidence of poor communication can be found in this quote from respondents: “It is important for the municipality to communicate with the public. I think the community members would have a better understanding of matters if they were informed beforehand that water is going to be closed off and for how long. The time scheduled must be followed because it has happened that the municipality placed a notice informing the community that water is going to be opened at a particular time. The problem is that we don’t communicate about the issue early enough. We wait instead until the situation becomes critical and this causes a lot of damage”.

Further evidence of poor communication between the departments within Harry Gwala WSA can be found in this quote from its internal technical team: “For instance you will find that with the issue of sewerage. The relevant unit has not declared or detected that there might be a sewer spillage or blockage that should receive attention at the highest level. As matters stand we fix the reticulation pipe today and tomorrow another one leaks. So, I think that communication must be monitored very closely and be improved”. In fact, all these issues revolve around communication problems.

The following is an additional quote from respondents which shows the concerns of respondents regarding poor communication:

When there is a service interruption of water, the information is not communicated to us as to why there is no water. There are questions amongst members of the community, about how long the water service interruption will take, and why there is no water. We normally experience ineffectiveness, many people keep wondering what’s going on...Water supply has been shut down but we do not know what the problem is that causes the water service interruption. When will the water tanker truck arrive to deliver water? Often when the water tanker truck comes it cannot meet the demand to deliver to the whole community as expected.

Lastly the following quote from respondents shows that the problem of poor communication between the municipality and the residents is acute: “Whatever policy they are trying to implement, we should be involved. They should have meetings with the community or distribute pamphlets door-to-door to inform us about restrictions and water shutdowns”.

Furthermore, respondents pointed to the existence of several barriers to communication, such as bad employee attitude to residents or communities or service users, as well as a lack of community education initiatives. However, the findings on residents-municipality communication seem to be balanced in the sense that both the municipality and residents are to blame for the poor communication status which currently exists. There were respondents who pointed out that in some cases, residents take a long time to report burst water and sewer pipes or leakages and spillages to the WSA, resulting in delayed remedies in attending to such complaints of burst water and sewerage pipes, blockages and spillages.

These findings are contrary to the provisions of the Municipal Systems Act, No. 32 of 2000 which stipulates that:

...a municipality must, within its financial and administrative capacity —

- (a) Establish a sound customer management system that aims to create a positive and reciprocal relationship between persons liable for these payments and the municipality, and where applicable, a service provider
- (b) Establish mechanisms for users of services and ratepayers to give feedback to the municipality or other service provider regarding the quality of the services and the performance of the service provider;
- (c) Provide accessible mechanisms for dealing with complaints from such persons, together with prompt replies and corrective action by the municipality;
- (d) Provide mechanisms to monitor the response time and efficiency.

In trying to shape the public sector and to address the challenges which the South African government is faced within the public sector, the African National Congress, in 2012 in Bloemfontein, adopted the NDP in its elective conference, and the South African government adopted it as its own economic and socioeconomic development strategy for the country, which is also known as Vision 2030.

For the purposes of this paper, the discussion will be guided by Chapter 13 of the NDP: Building a capable and developmental state. The main argument that is apparent in NDP's Chapter 13 as propounded by the National Planning Commission is to transform the public sector into a more capable, more professional and more responsive body to serve the needs of the citizens. The National Planning Commission has made policy proposals to unlock opportunities, tackle major challenges and to put the country on the right path for building a state which is capable of promoting the key national objectives of alleviating poverty and reducing inequality.

5.3.1.1. Evaluation of the NDP in Relation to Communication Challenges in the Harry Gwala and Ugu WSAs

The strength of the NDP is that it provides a comprehensive long-term vision for the country and aims to ensure that it builds a professional public service and a capable developmental state in order to realise the vision for 2030. The National Planning Commission (2011) presented a balanced view and covered all significant aspects. The Commission further recommended drastic corrective measures and policy proposals; the plan is clear and convincing that the set goals and objectives of the NDP will be achieved. However, the preamble is not a true reflection of what is happening on the ground. South Africa is still faced with triple challenges and uneven performance in all spheres of government, and it is also a developing country which is very far from reaching a situation wherein every citizen is satisfied with the services rendered by the public sector.

Chapter 13 contains significant and progressive proposals. Firstly, the chapter advances the democratic principles of a developmental state by emphasising the importance of collaborative efforts between society and the authorities in government. The chapter further provides policy proposals on how best public service can be transformed to be protected from narrow selfish political interference in procurement and appointment of public servants. Finally, the chapter provides policy proposals and reforms on professionalising the public service and state-owned enterprises (SOEs) to be responsive to the needs of citizens.

Likewise, the Organization for Economic Cooperation and Development Public Management Policy (OECDPMP) Brief No. 7 states that provision of public service involves public trust. Citizens expect public servants to serve the public interests with fairness and to manage public resources properly on a daily basis. The OECDPMP further argues that reliable public service inspires public trust and a favourable environment. The OECDPMP concludes by stating that

public service ethics are a pre-requisite to underpin public trust and public service which are the cornerstones of good governance. In support of the OECDPMP, Moeti (2014) proposed that in the field of financial management, essential values in public-sector ethics are honesty and probity. Moeti further states that ethical failure in the public sector is caused by lack of honesty and probity. As argued by Moeti (2014), public representatives and public servants should have commitments towards the following:

- Providing optimal service delivery;
- The valuing of impartiality or fairness;
- Putting people first (*Batho Pele*);
- Strengthening established institutions; legislation and systems and processes; and
- The introduction of additional arrangements where weaknesses are discovered.

5.3.2 Analysis of the metered services of water and sanitation service delivery in the Harry Gwala and Ugu WSA

This section of the metered services analysis unpacks the meter and leaks audit including the meter repairs which have been made by the Harry Gwala and Ugu WSAs. This section of the chapter further highlights the impact that the fixing of faulty meters will have in the Harry Gwala and Ugu WSAs.

5.3.2.1 Bulk Flow Meters inlets and outlets

The Harry Gwala and Ugu WSAs have limited or no bulk meters in some of the Water and Waste Water Treatment Works which makes it difficult to access meter readings for water balance information in order to manage water losses and non-revenue water within the WSAs. However, the water balance information is being populated and submitted to the Department of Water and Sanitation in some cases using estimated volumes.

5.2.2.2 Meter and Leaks Audit and Repairs

The WSAs have embarked on a campaign of auditing meters and leaks in areas under their jurisdiction. The main aim was to try and minimise water losses or save water, as it has been noticed that water consumed is more than the expected consumption. The aim is to establish a status quo and apply remedial measures based on the findings of an audit. In the Ugu WSA the meter audit was completed in 2017, but it was not conducted for the whole district due to insufficient financial resources. In Harry Gwala, the meter audit was conducted during the 2015/16 financial year. However, the audit couldn't cover all the areas within the district.

According to the findings of the meter audit, leak and meter fixing will help in reducing water losses which may cause the following:

- Irregular supply of water for consumption;
- Unforeseen water interruptions;
- Shortage of water in the system; and
- Fixing faulty, non-working and missing meters will help to identify how much water is lost in the distribution network system.

5.2.2.3 Meter Audit and Repairs

The municipal records indicate that all non-working meters/faulty meters are to be replaced with smart meters which are designed to provide a limited amount of water (Harry Gwala Meter Audit Report, 2016).

Consumer can then make use of the coupon sale arrangement to top up on their supply. The report further indicates that the following social issues have been dealt with before the project of the installation of smart meters was implemented:

- Issuing of notices to the consumers informing them about the meter audit, meter fixing and smart meters installation initiative; and
- Consumer engagement with the transformation that is taking place.

According to municipal records, a meter leak audit that was done in all households within the two water supply systems. The service provider which was appointed couldn't complete the project due to financial constraints at the Harry Gwala WSA. In Ugu, the household meter leak audit was done in 2017, but the whole district was not covered due to financial constraints.

As far as reduction of water losses for the 2016/2017 financial year, the following actions were put in place:

5.3.3 Installation of Smart Prepaid Meters

The Harry Gwala WSA has finalised the installation of Smart Prepaid Water Meters for 412 of the 931 meters in Fairview; the launch for programme was planned and conducted on the 15

March 2017 as part of the National Water Week Programme. The WSA is in the process of installing more prepaid water meters within the district.

5.3.4 Water Conservation and Demand Management

Water conservation and demand management are fundamental strategies for promoting water use efficiency, and are consistent with relevant pieces of legislation, such as the National Water Act, No. 36 of 1998 which emphasises effective and efficient management of water resources.

Through the Leak Detection programme that the Harry Gwala WSA has started in October 2016, 145 of the 186 leaks identified had been fixed through the Operation Valithontsi programme. There has been an improvement in our storage tanks in terms of water levels and this shows that the WSA is saving a lot of water which was wasted in all of our areas... We are still busy benchmarking with other WSAs on leak detection initiatives.

Ugu WSA has embarked on pressure management, leak management, war on leaks and water saving and water use efficiency programmes for Water Conservation and Demand Management as programmes for Water Conservation and Water Demand Management.

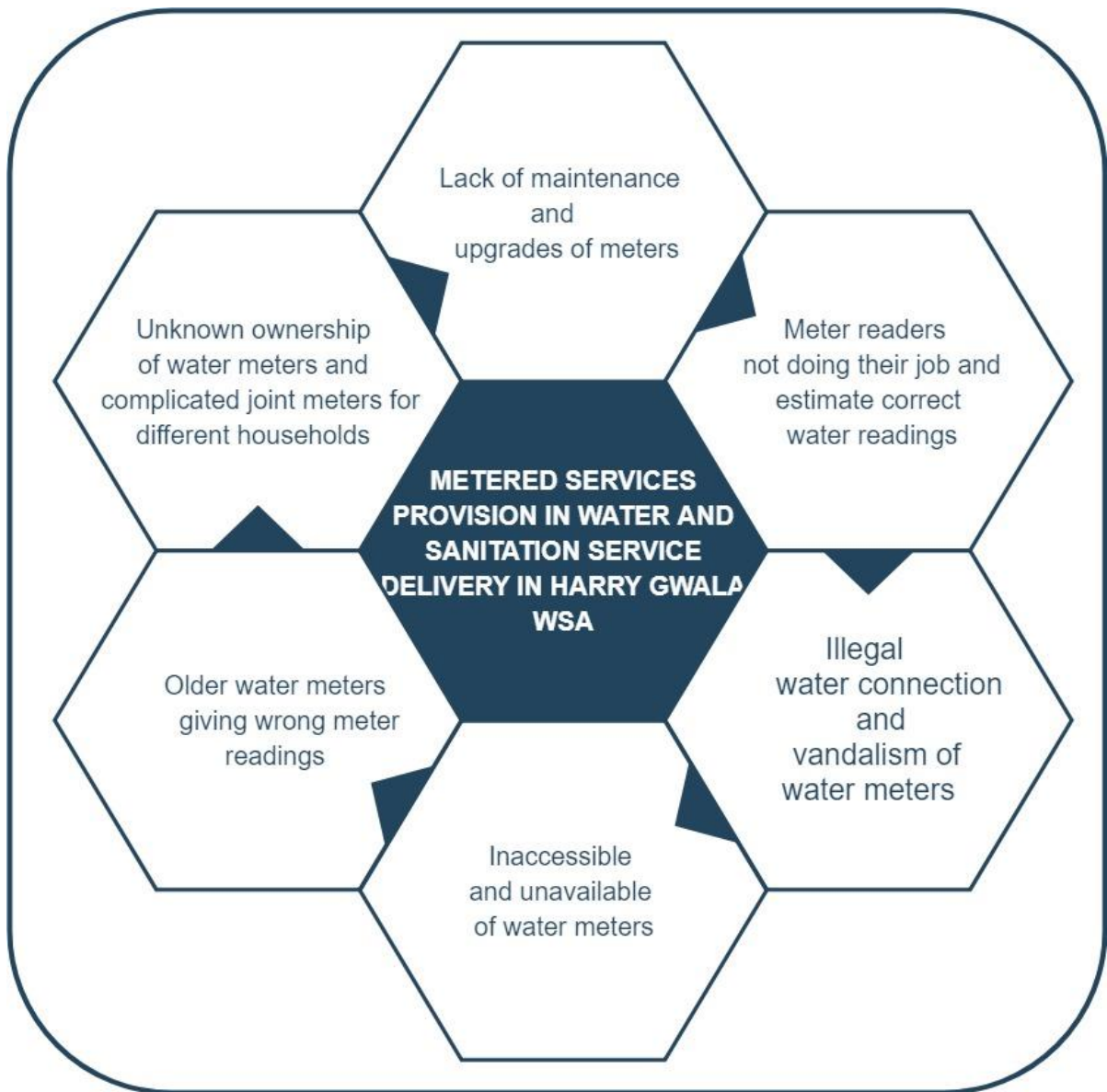


Figure 5.7: Challenges in metered service provision in water and sanitation service delivery in the Harry Gwala WSA

Source: Researcher

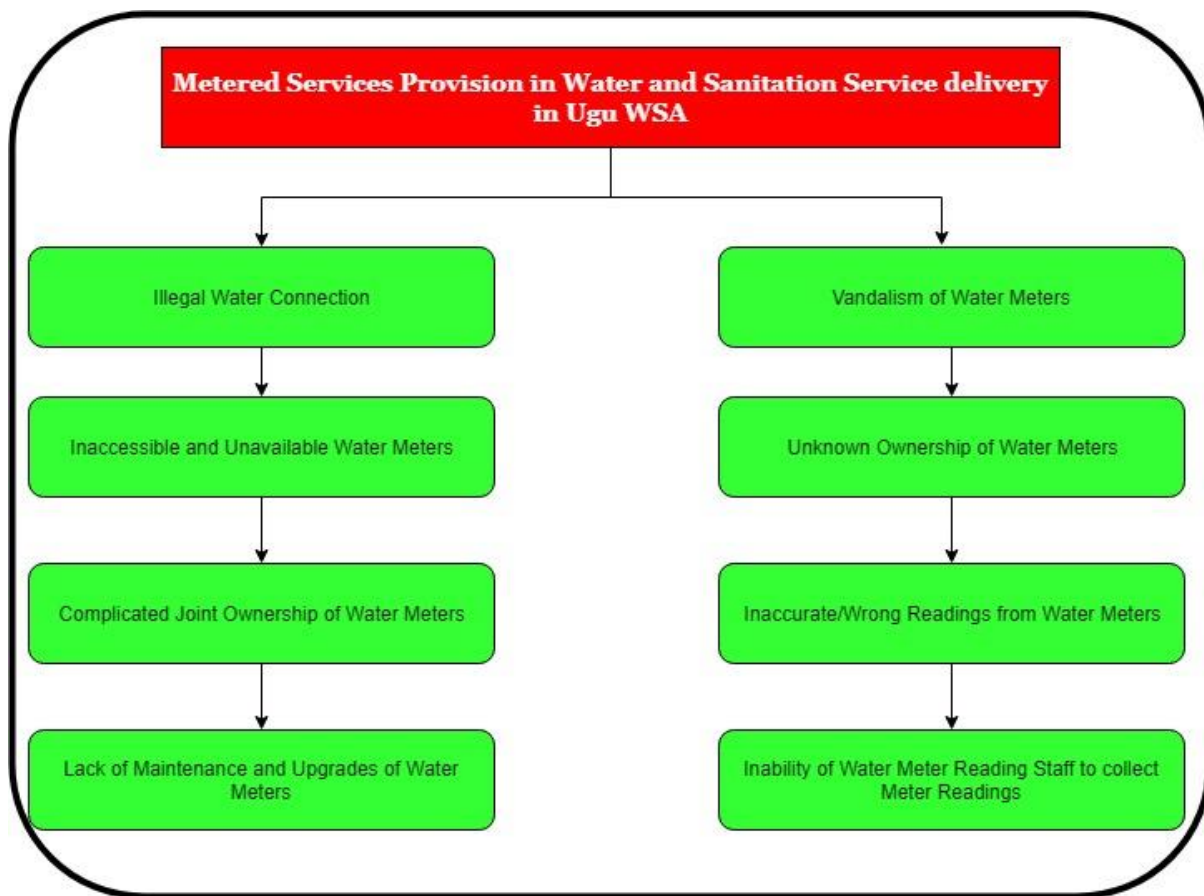


Figure 5.8: Challenges of the provision of metered services in water and sanitation Service delivery in the Ugu WSA

Source: Researcher

From the findings presented in Figure 5.7 and Figure 5.8, it is evident that the WSAs are facing several challenges which militating against their ability to provide metered services in water and sanitation service delivery. Respondents pointed out that the provision of metered water and sanitation services is being affected by the following challenges:

The uneven and discriminate distribution of water and sanitation services, whereby the water and sanitation infrastructure in some residential areas is not metered. For example, there are areas in the municipality where there are communal standpipes which makes it a challenge to provide individual meters as these communal standpipes are not metered. Thus, in terms of revenue generation through the provision of metered water services, this is highly impracticable unless the WSAs embark on a programme to install individual water taps or yard connections which would make it possible to provide metered services. Delayed commissioning of additional water and sanitation projects might be interpreted to mean that the meters cannot be

installed until the new water and sanitation projects have been officially completed and commissioned.

From the findings in Figure 5.7 and Figure 5.8 it can be deduced that the installation is being hampered by drought-induced water deficiencies. Respondents pointed out that the current and ever declining water levels have been caused by the twin effects of declining rainfall, as well as the prolonged effects of the drought. This might have created uncertainty and hesitation to invest in water and sewerage meters. Evidence of this finding can be found in the following quote:

Recently we were faced with severe drought, then maybe from now onwards or moving forward some of the things will change and water sources may change and water levels may increase. Then it is important to employ cost-recovery concepts in our WSA in order to enhance municipal revenue. Through our understanding of how the WSA operates, we know that the water is not always enough, because in most places there has been a drought.

From the findings it can be deduced that the installation of water meters in the WSAs is being hampered by vandalism of municipal infrastructure, amongst other things, which by extension complicates the provision of water and sewerage meters. From the findings presented in Figure 5.7 and Figure 5.8 one can see that the WSAs are facing challenges related to the issue of backlogs in the provision of water and sewerage infrastructure to potential recipients of municipal services who are illegally accessing these services. This is also hampering the revenue generation initiatives which include the installation of water and sanitation meters. The following quote from respondents demonstrates the nature of the challenge:

The problem is that the backlog is too much and will not be able to be covered overnight. The municipality will not be able to address the backlogs because the district is very vast and all the rural communities demand water and sanitation service delivery. When reporting water and sanitation-related challenges/issues; they tell us that water cannot be supplied to the community because the engine is faulty. This is all because the technical team/plumbers and relevant officials cannot come to check and verify whether the engine is really faulty or not. When a pipe bursts, then it should be rectified as soon as possible. Providing water should not have any challenges or interruptions

and the municipality should be effective and efficient. There are many communities that need water and there are few water tanker delivery trucks.

From the findings presented in Figure 5.7 and Figure 5.8 one can deduce that the evident lack of a proper maintenance plan of water and sewerage infrastructure has complicated the ability of the WSAs to provide water and sanitation services. Evidence of this finding can be found in the following quotes: “The water service provider is responsible for good quality water supply and adequate sanitation services to consumers under the service delivery agreement by the WSA” (Department of Water Affairs & Forestry, 2005); and

There are still problems that need to be addressed; treated and purified potable water has to reach people who stay in rural areas as there are still people who rely on spring water supply. The challenge is that residents are not aware of where situations like these must be reported. If you look at our ward there are leaking taps and the challenge is that some taps are broken which makes it problematic since people cannot fetch water properly and there are severe water use inefficiencies. Children play with taps and as a result they become broken and if that happens we really don't know where to report this issue.

This is the evidence that there is still a lack of coordination between the WSAs and the community. Repairs will result in minimising the amount of water losses and water use inefficiencies, and the community will not have a problem in accessing water. “The standard of service does not satisfy our needs as the communities and it is very upsetting that when we report to the municipality they delay a lot”.

The above finding further confirms the findings on poor communication that were identified above. Additionally, the above quote further demonstrates that the service level standard has declined.

From the findings presented in Figure 5.7 and 5.8 respondents alluded to the inadequate provision of both household and public toilets which has been substituted by the provision of shared tap water and ablution facilities, which is making it difficult to provide metered services, further leading to an inability to generate additional revenue from installation of water meters as well as employment of the user-pay principle system.

Also, the research findings presented in Figure 5.7 and Figure 5.8 demonstrate that the WSAs are being affected by a crippling skills deficit in as far as water and sanitation service delivery is concerned. The following quotes from respondents validate this finding:

On the other hand, if employed personnel are not trained, this might cause damage that cannot be paid for. The municipal officials always come to check when we have reported and take notes but there is no action taken. What is painful is that they don't address the problem and we are not getting any feedback. These are the things that make the community not want to pay for water bills. Improving the quality of services makes people to see the need to pay for the services.

The other finding which is related to lack of skills is the issue of staff incompetence. In the words of respondents, staff incompetence is related to prolonged delays in attending to customer complaints leading to a lack of trust. Evidence for this finding can be obtained from the following quote:

The communities are supposed to trust customer care hence the staff should be capable of resolving problems. Sometimes you find that the problem is not about operation and maintenance but the problem is finance-related. The challenge that we face is that when we report finance related queries the officials at the customer care call centre take a long time to resolve customer complaints or to attend those queries...the said part is that if your query is billing related, they don't have responses.

The following quotes further provide evidence of staff incompetence:

Because when the municipal officials arrive and find a water leak, they say they are not in a position to fix the leaking pipe and community members end up not being sure which job should be fixed by municipal officials. On water tanker delivery, there might be complaints and outcry in the communities but at least if you let them know the days when the water will be delivered they can make necessary arrangements and get containers to store water on the day of delivery by water tanker.

We are not happy about the standard of service delivery in Umzumbe, when you go to apply for water connection it takes years and years for the municipality to attend to your request even if you have already paid the connection fee...This results in people

deciding to connect illegally on the water network. The water that we get from the streams are not of good standard for human consumption that's why we decide to connect without any authorisation by the municipality because we don't want to get sick. We end up connecting from our neighbours by ourselves because we want water...Here at Ray Nkonyeni we only see that there is no water when opening the tap without being informed as the communities and it normally takes about 2 to 3 days without being attended to which is a problem.

5.3.5 Analysis of the Municipal billing system of water and sanitation in the Harry Gwala and Ugu WSAs

According to McDonald and Pape (2002) and Kanyane (2011), local government in South Africa is faced with the culture of entitlement and non-payment for service charges by municipal service users which emanates from various factors. Harry Gwala and Ugu WSAs are no exception. The WSAs are facing challenges related to billing and collection as far as revenue collection and management is concerned. The WSAs have insufficient meter readers to effectively read domestic and commercial water meters. This predicament affects the speed of processing the statements of accounts and results in what is termed inaccurate billing. The WSAs are struggling to recover costs for water and sanitation service delivery and are dependent on national and provincial fiscal transfers for survival.

The following section outlines the state of affairs of Harry Gwala and Ugu WSAs as far as income for water and sanitation service delivery is concerned.

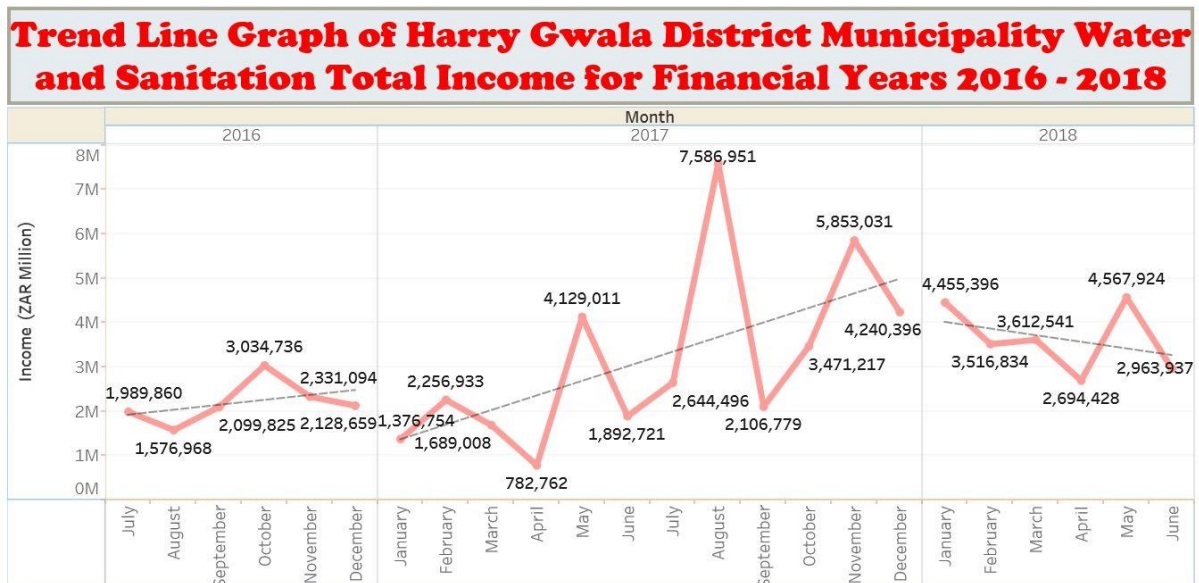


Figure 5.9: Trend Line Graph of Harry Gwala WSA water and sanitation income 2016-2018 Financial Year

Source: Researcher

Figure 5.9 presents a trend line graph of the Harry Gwala WSA’s water and sanitation annual income (2016-2018). Harry Gwala WSA has both urban and rural streams of revenues. Harry Gwala WSA collects the most from urban streams, in particular from the Greater Kokstad local municipality. In 2016, during the months from July total revenue generated rose from approximately R1 576 968 million to almost R2.7 million. By the month of August 2017, the trend line graph shows a drastic increase of nearly three times what was generated from the water and sanitation services in July 2017. Regrettably revenues dropped from the peak of R7 586 951 in September 2017 to almost R3 million in June 2018. This was a phenomenal drop in terms of revenue collection and management. The revenue generated then increased from R1 576 968 to R3 034 736 in October 2016, before dropping to below R1 million in April 2017, meaning the WSA only managed to generate R782 762 in April 2017. From May 2017, there was a sluggish increase in total revenues compared to the drop for the month of April 2017. Since then revenue inflows have been, falling especially from the month of August 2017 from R758 695 to R2 963 937 in June 2018. The overall trend shows serious fluctuations in the revenues marked by more downward variations than upward trends.

The findings as presented in Figure 5.9 show a worrying downward trend in revenues which points to serious management shortcomings in terms of revenue generation and inefficiencies in the revenue generation and management systems. This finding might be interpreted to mean that the WSA collection and management system might be ineffective due to lack of adequate

manpower to engage in revenue generation, enhancement, protection and management. As alluded to by a majority of respondents, there is not enough competent manpower dedicated to both revenue generation and management as well as to attending to breakdowns and other issues. The other factor which respondents alluded to as causing lower revenue generation from water and sanitation has something to do with faulty meters which do not give accurate meter readings, and ultimately result in lower revenue generation. This finding is supported by the following quote:

We have to have enough staff, which, at the moment, is not as we wish. A small number of staff that is on the ground deal with the challenges and the break downs...But if it is happening in the late hours, we are supposed to have officials on standby...We are trying as municipality but struggling financially to fill all the vacant positions so that we can have a lot of people on standby.

To minimize the use of people on standby and overtime which is costly, we are somehow trying to restrict people from work overtime and encourage them to working during normal working hours in this WSA...The issue of budget goes as far and results in lack of resources to use like tools and equipment or material and we are trying to save on the amount of budget that we have as the operation maintenance team.

For us to authorise rural communities to have legal yard connections, the first step would be to assess the capacity of the water and waste water infrastructure or treatment works before we can allow for more yard connections in rural areas and in towns for future development...Normally with the faulty meters we receive the list of faulty meters from the finance department...In some cases the consumers advise us of any faulty meters that are not functioning properly.

The consumers report to us if there is a leak at a certain water meter or, normally it is reported that the meter is not working...We attend to those meters as we receive the list but there are challenges as well around the human capital but we have to attend to these faulty meters as reported.

Imagine if you have calls from three separate areas that are 3 kilometres apart. How do you respond very quickly? Remember that area of 90 square kilometres has maybe one

plumber that is allocated to that particular area. So, it is very difficult for that particular plumber to reach everyone in those areas...To be honest our area is very vast.

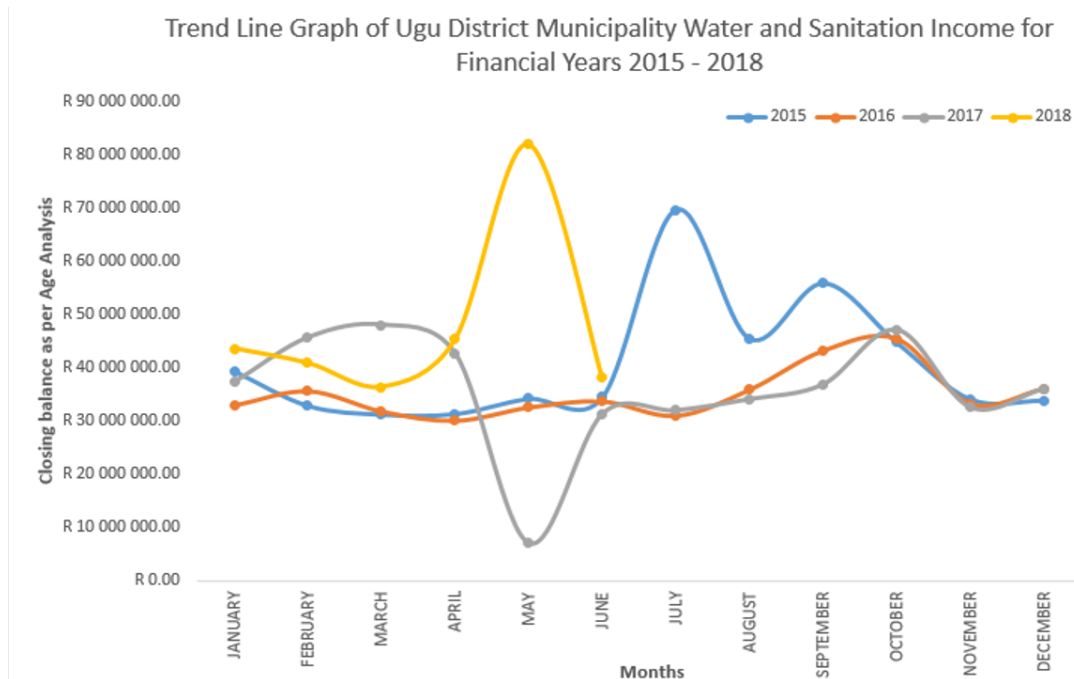


Figure 5.10: Trend Line Graph of Ugu WSAs Water and Sanitation Income for 2015-2018 Financial Years

Source: Researcher

Figure 5.10 presents a trend line graph of the Ugu WSA's water and sanitation annual income (2015-2018 financial years). For the purposes of this research study, the analyses will start from 2016 to 2018. Ugu WSA has both urban and rural stream of revenues. Ugu WSA collects the most from urban streams where there are also industries, in particular from Ray Nkonyeni local municipality. In 2016 in the months from January to February, total revenue or billing and adjustment for the month generated rose from approximately R32 991 200 to almost R36 million. By the months of August to October 2016 the trend line graph shows a drastic increase of nearly 10 percent in what was generated from water and sanitation services. Regrettably revenues dropped from a peak of R45 432 540 in October 2016 to almost R33 million in November 2016. This was a phenomenal drop of 12 percent. Again, in April 2017, the revenue generated then dropped from R42 545 303 to R7 097 586 for the month of May 2017. Again, in the month of October 2017 the billing and adjustment revenues rose to R47 072 251. Before dropping to R38 million in June 2018, the WSA only managed to generate R82 201 340 in May 2018 which is almost double the amount generated in January, which was 43 627 042. The

overall trend shows serious fluctuations in the WSAs' revenues, marked by more downward variations than upward trends.

The findings as presented in Figure 5.10 show a worrying downward trend in revenues which points to serious management shortcomings in terms of revenue generation and inefficiencies in the revenue generation and management systems at the Ugu WSA. This finding might be interpreted to mean that the WSA's collection and management system might be ineffective due to lack of adequate manpower to engage in revenue generation, enhancement, protection and management. As alluded to by a majority of respondents, there is not enough competent manpower dedicated to both revenue generation and management as well as to attending to breakdowns and other issues. The other factor which respondents alluded to as causing lower revenue generation from water and sanitation has something to do with faulty meters which do not give accurate meter readings and ultimately generate lower revenue.

Billing is very crazy here because the officials estimate the volumes of water consumption. The basic service is 400 rands whether you are at home in that particular month or not even if there is no water you pay. Once you don't pay they disconnect you and you pay what the municipality says you must pay before you are reconnected. We don't even see this free 6kl.

Here at Umzumbe people are complaining about billing system of both water and electricity and at home we decided to ignore the statement of account and stopped paying for water.

I think people don't pay for water because they are unemployed and there are a lot of thugs around the community of Umzumbe due to the fact that they are jobless...CDW's only earn 600 rands and the connection fee is very expensive now we don't afford to pay for water.

The municipal officials only estimate the meter readings, meters are not read even if I was not around for a month but the monthly statement is always the same. Imagine I stay alone at home and I have a static tank at home but the municipality overcharge us.

There is a high rate of unemployment and the families are dependent to us as pensioners...There are leaking pipes everywhere and we are told that you will be

responsible to pay for the leaks and now we owe 50 000 rands per household at Gamalakhe.

The problem is that even if there is no one the statement will come with the same amount worse cause I stay alone...if the meter readers see the big house they estimate the number of people that may be staying in the household and bill you estimated volumes...I have my Jojo tank and I use rain water trying to conserve water...If you go to query your account the municipal officials deal with you accordingly and says just pay; there is no customer care at all.

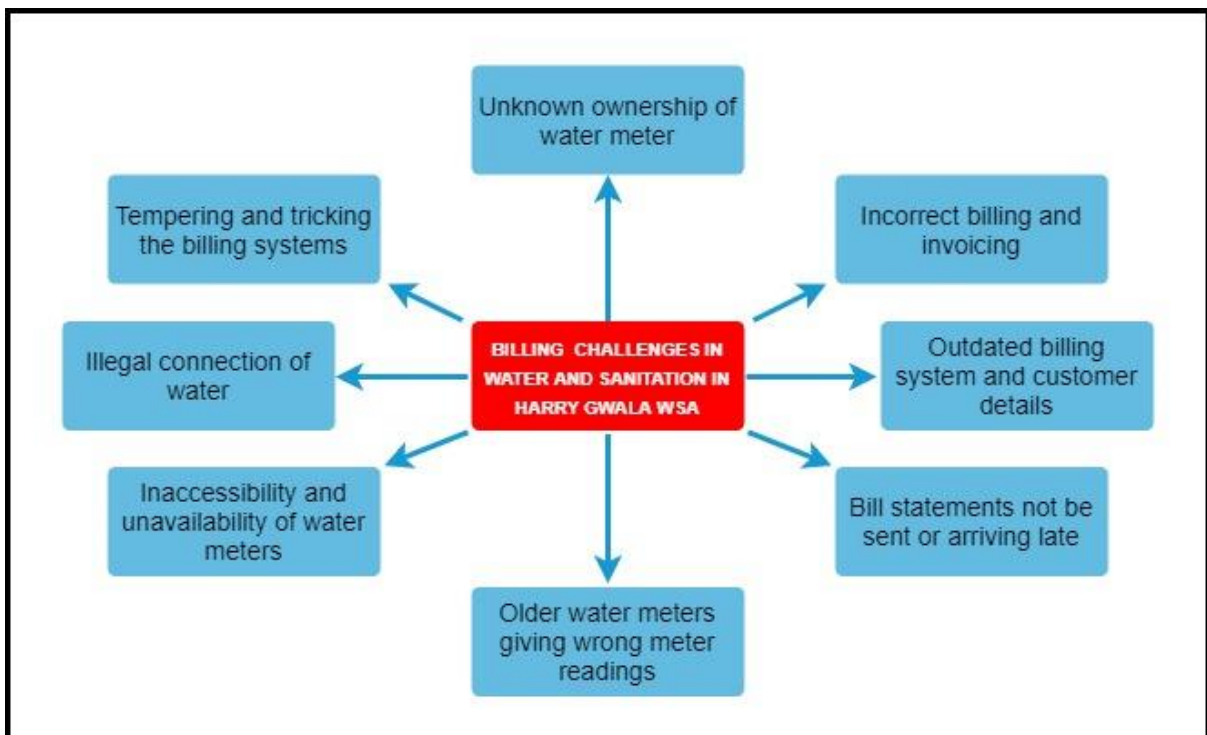


Figure 5.11: Challenges of accurate billing for water and sanitation in Harry Gwala WSA

Source: Researcher

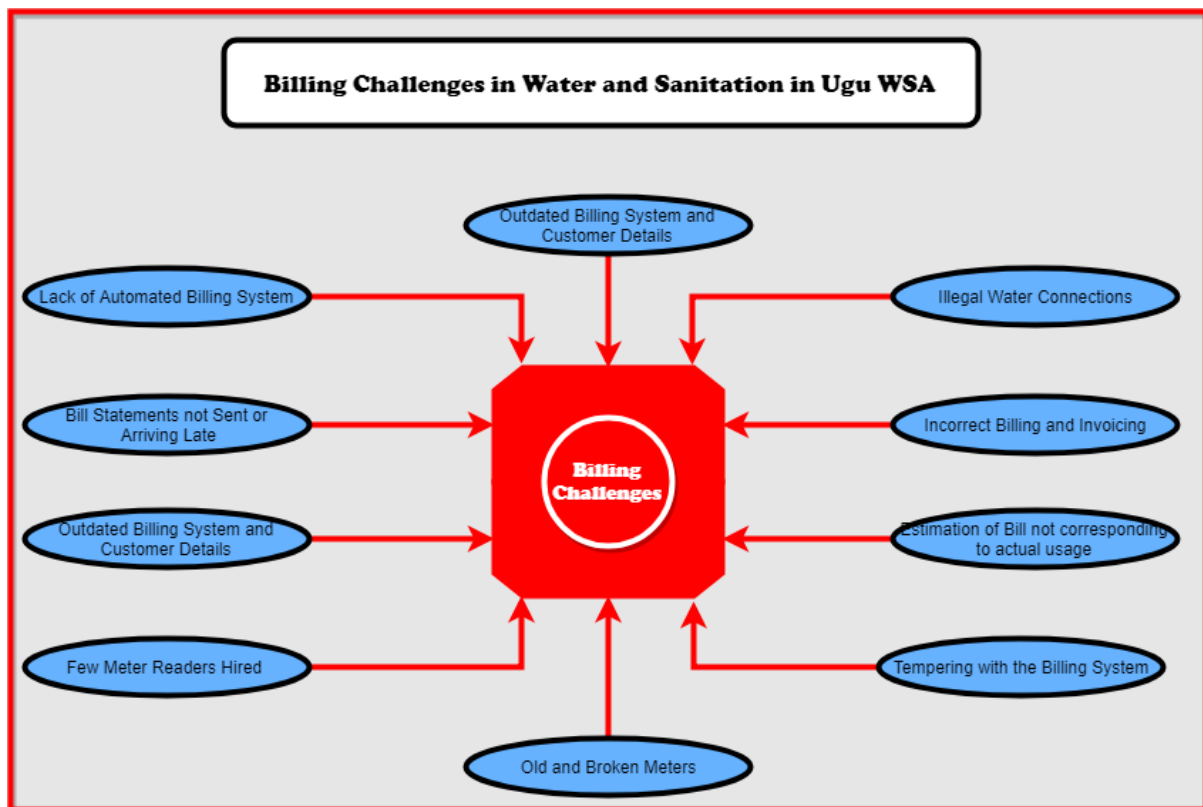


Figure 5.12: Challenges in accurate billing for water and sanitation in Ugu WSA

Source: Researcher

The findings presented in Figure 5.11 and 5.12 demonstrate that the Harry Gwala and Ugu WSAs are facing several challenges related to accurate billing for potable water and sanitation. According to respondents, the unavailability of an automated billing system is hindering the accuracy of the billing provided. According to respondents, this lack of automation has led to the WSAs relying more on estimated bills, which has led to customer dissatisfaction because in most cases there are allegations of inflated bills which are not congruent with actual usage. Thus, one of the most prominent challenges facing the WSAs as per the study's findings is the problem of an unreliable and inaccurate billing system feeding incorrect accounting information to customers. According to respondents, the problem of bill estimation leads to inaccuracies in the billing systems, which leads to incorrect invoicing and billing. The net effect of this is resident disgruntlement and anger leading to resistance to pay and ultimately causing a decline in revenue inflows.

This finding is supported by the following quote from one respondent:

The billing system doesn't satisfy us as the consumers, because you find that my neighbour has more people in her house staying who are using water and you have

fewer people staying with you only to find that you are billed more than your neighbour. So that raises a lot of questions and makes you wonder how this thing happens. You then assume that maybe the person responsible for meter reading just estimated the volume and writes what he/she likes. The meter readers do come to read but the problem that we experience ourselves as the communities is that we do not understand how the municipality charges us for water and sanitation services. It is very unfair to customers who pay and in the informal settlements they don't pay for water and us here we are expected to pay. They even waste water because they don't pay for water at all. They leave the taps open, squirting just anyhow. They do not pay for water, so how should you then pay for water for other people while there are people who do not pay at all?"

Another finding from this, as depicted in Figure 5.11 and Figure 5.12 is the challenge associated with the inaccessibility of water meters:

The meters are totally inaccessible and water services are still invoicing and billing water. But there is a huge issue with wrong invoicing, when people sell the properties, the water is not cleared when the property is sold. The only thing that I can say is that things are messed up by the meter readers, you may find out that some meters are underneath the surface and how do they read them. I think they just estimate and write anything. There people who live in townships are able to rob the meters in so many ways. So comparing your meter with your neighbour may not be a solution to the problem. Some by-pass the meters. You may disconnect the meter, and connect the pipe to wash and do everything and reconnect the meter afterwards. Those who have a vast experience with the meters, they just make it to face in the opposite direction for it not to be able to read, it then makes it difficult to recover the water that had been used after it has been reconnected properly.

The issue here is that people are not aware that they should pay for water. They are aware of the municipal services only. So, it creates a problem where water would be consumed free without it being paid for. There are no statements that are being issued. So people know nothing, because they don't know that they have to pay, some communities want the municipality to write off their debts and also to fix all the challenges that are there in the existing metering system. The people they can't afford to pay. The bills that are posted to people get to them after 2 or 3 months and they are so shocked with the bill. The municipality is trying its level best but now people have

difficulty in paying for services since they are depending on social grants for survival. The communities have heard that in some areas the amnesty programme was implemented by the municipality. I think that those are some of those reasons why people are not willing to pay.

Another finding depicted in Figure 5.11 and Figure 5.12 relates to the challenge of vandalism of municipal billing infrastructure for water and sanitation, which is then exacerbated by the delays in fixing broken infrastructure due to staff ineffectiveness. This finding is confirmed by the following quote:

In villages when you get there you see a lot of illegal connections but the communities will tell you that this is their water and these are not illegal connections. Now everyone has a tap in the yard but people are not aware that they have connected illegally. If you talk about illegal water connections, they tell you that they are going to destroy/vandalise the scheme by cutting, exposing and damaging those pipes/reticulation.

There are illegal connections in our areas which I think were forced by the programmes introduced by the government. People are forced to do illegal connections because the water they are getting they have to travel hundreds of metres away. At the time when the water is opened as per the restriction schedule some are not at home. The main reason that makes communities to connect water illegally in their homes it is because they need water right in their homes. If there is someone who has a yard connection they cannot walk 200m radius to a communal stand pipe to fetch water. Those are some of the core reasons that make communities mostly in rural areas to opt for illegal yard connections.

Perhaps that will assist in water use efficiency as people need water it is important to include metering so that they can control the wastage hence they will have to pay at the end of the day which will then enhance municipal revenue collection. There are informal settlements who have decided to connect illegally. There is a site that has a meter nearby them. But the people who live near have houses built with mud; they fetch water from that meter there. They use their own pipe to fetch water from that meter and disconnect the pipe afterwards...Some of the meters are too close and some have been swapped or put in a different property or yard which makes it difficult for the meter readers to be in a position to say that this meter reading belongs to A or B.

There are very old meters and the communities and households end up not knowing where her/his meter is located. So even if there is a water leak in the meter he/she does not know whether it belongs to him/her or not. The municipality should ensure that each and every household does have her/his designated meter without sharing it with anyone. If one may argue, that perhaps I pay for you. Or alternatively you may pay for me. The service users should have a trust that the reading is a true reflection of what she/he has consumed and there should be no confusion here.

Maybe from a service providers' point of view, there are areas in which there are no meters at all, but it is not necessarily that they do not pay because there are no meters it's just that they don't want to pay. The water is never disconnected, so they always have a continuous supply...So we need to enforce and impose disconnections, and perhaps alternatively impose restrictions; hence there is a flat rate and people are reluctant to pay for water services.

If the engine is faulty one can assume that within a week all that will be solved and the community may have access to water, people may not understand about the faulty engine and how long it takes to fix it and what the processes are that are followed for it to be fixed...It's important for people to be made aware that it's better to inform the community if anything faulty still needs to be purchased...The municipality should inform us that this will take a long time due to the fact that an external service provider will be appointed to come and fix the engine/pumps which may cause delay...All these things if people grasp the thinking and are properly informed, I believe that there will be no problem and that they will understand.

5.3.6 Municipal Income and Management of Municipal Revenue: An Analysis of the Harry Gwala and Ugu WSAs

In terms of section 17 of the Municipal Finance Management Act (MFMA):

An annual budget of a municipality must set out realistically anticipated revenue for the budget year and appropriate expenditure for the budget year under the different votes of the municipality.

According to legislative requirement, and to Section 16 of the MFMA, municipal councils must approve an annual budget for municipalities before the start of each new financial year.

The legislative requirement under Section 52 of the MFMA further stipulates that the mayor of a municipality must provide general political guidance concerning the fiscal and financial affairs of the municipality. For the council to be in a position to provide such political guidance, it is required to take all reasonable steps to ensure that the municipality performs its constitutional and statutory functions within the limits of the municipality's approved budget. The municipal council has to play an oversight role in the implementation of the budget so as to ensure clean financial administration in the form of sound financial management governance, combating any form of fraudulent and corrupt activities and seeking to ensure a favourable audit opinion from the Auditor-General.

The total consolidated budget for the 2018/19 financial year for the Harry Gwala WSA amounts to R751.4 million. This income is derived mainly from Capital and Operational Government Grants and Subsidies (i.e. MIG, WSIG, RBIG and equitable share). This has been allocated as follows to the operational and capital budget: conditional grants are recognised as the revenue that should be spent in accordance to the conditions of such grants.

The total budget for 2018/19 financial year for the Ugu WSA amounts to R 1 115 239 769. The income is derived mainly from its capital budget, which is R254 889 000, and operational budget which is R837 480 000. The surplus budget for Ugu WSA is R22 870 769.

The rural municipalities depend on the national and provincial grants. Our municipality also depends on national and provincial grants, because our revenue for 2018 to 2019 which includes the service charges is R80.3m. The other revenue that we get is from the provincial and national grant...The operational grants and subsidies is R328.8m and the capital grants and subsidies are only 341.9m. That makes 751 million.

Figure 5.13 and Figure 5.14 present the revenue for Harry Gwala and Ugu WSAs as per the discussion above. Ugu WSA has more budget than Harry Gwala WSA. Ugu WSA has more than a billion in budget, and Harry Gwala WSA has close to eight million which gives us a difference of 365 839 769m. From the figures given below, it is evident that Harry Gwala and Ugu WSA are dependent on national and provincial grants for survival. The revenue generated per financial year does not allow these WSAs to execute the constitutional mandates of the provision of basic services to their communities, in particular water and sanitation services. If the national and provincial government do not complement these WSAs, this would mean that

there is no way in which Harry Gwala and Ugu DMs could generate capital and operational budget to provide communities within their areas of jurisdiction with good quality drinking water and adequate sanitation services.

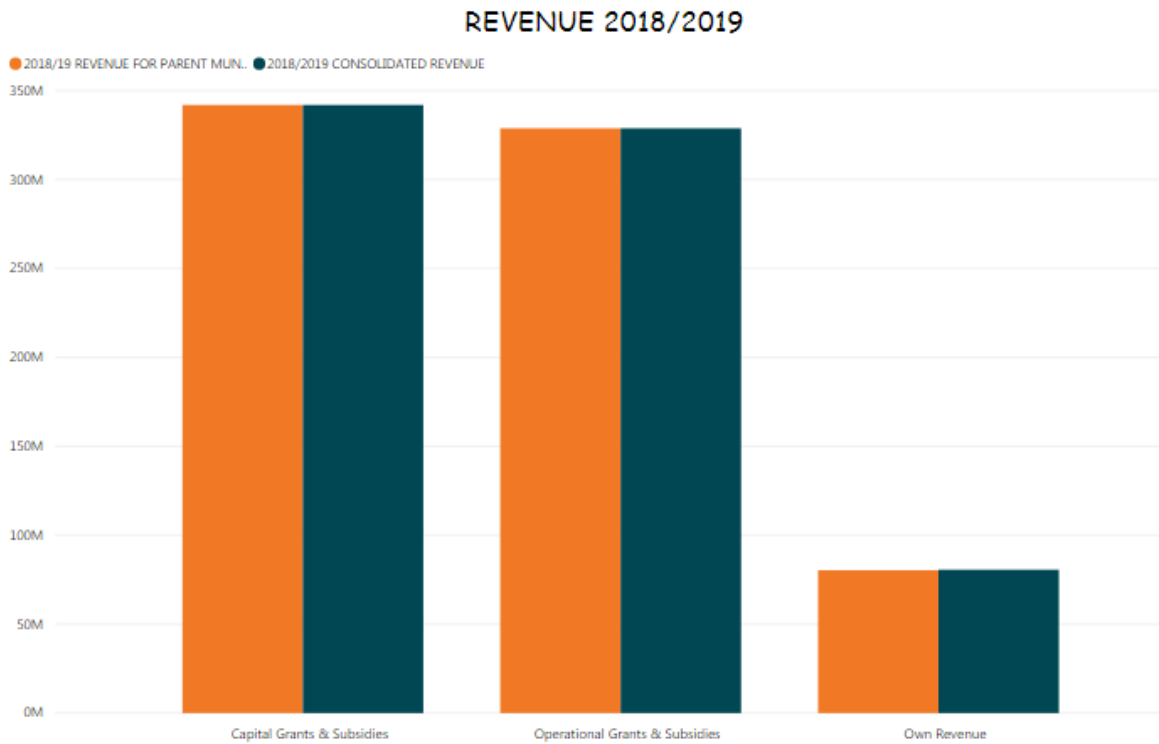


Figure 5.13: Harry Gwala WSA Revenue 2018/19 FY

Source: Harry Gwala WSA: Final Draft Budget Report

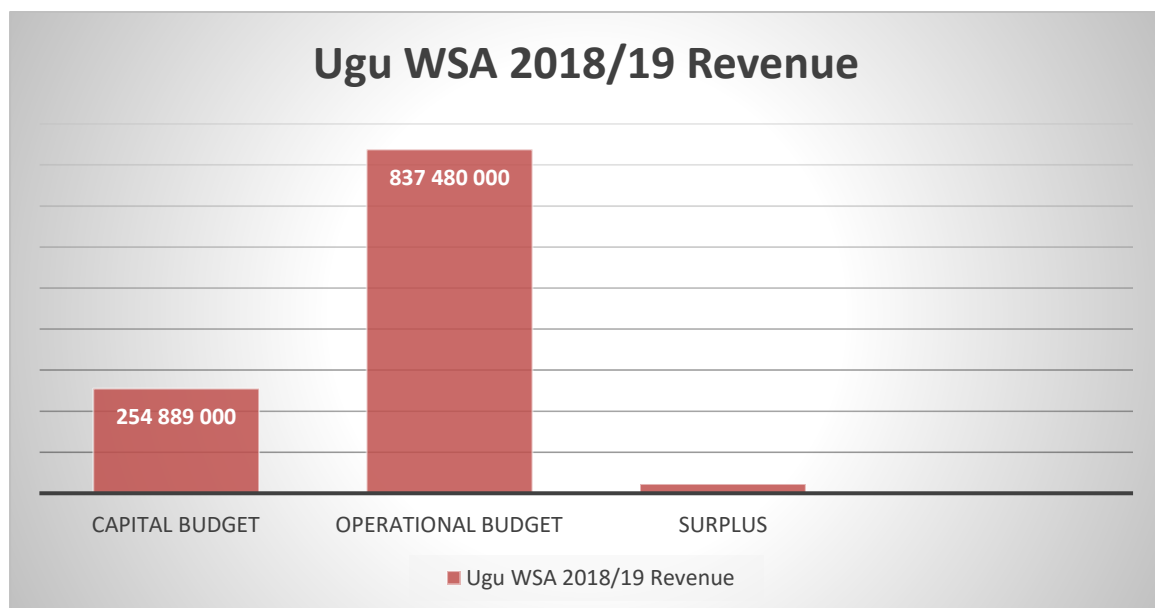


Figure 5.14: Ugu WSA Revenue 2018/19 FY

Source: Ugu WSA: Final Draft Budget Report

For Harry Gwala WSA, its revenue distribution by category consists of capital grants and subsidies at 45 percent, operational grants and subsidies at 44 percent, and finally own revenue which is at 11 percent.

For Ugu WSA, the revenue distribution by category consists of capital grants and subsidies at 22.9 percent, operational grants and subsidies at 75.1 per cent, and finally own revenue or surplus of 2.0 percent.

The water and sanitation tariffs are proposed to increase by 6.8% considering the economic viability of Harry Gwala and Ugu WSAs for the ensuing year. The proposed tariff increase is at 6.8% which is below the inflation rate forecast of 5 percent and 3 percent, as forecasted by the National Treasury.

The following section and figures below presents revenue sources for the Harry Gwala and Ugu WSAs.

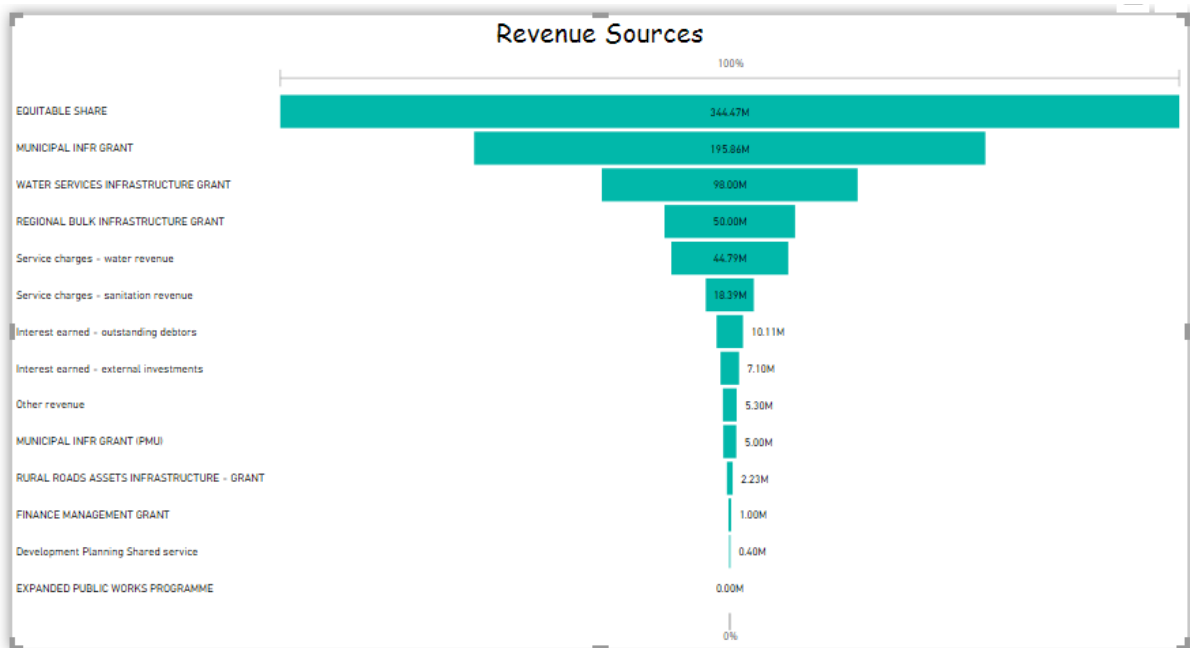


Figure 5.15: 2018/19 Revenue Sources

Source: Harry Gwala DM: Final Draft Budget Report

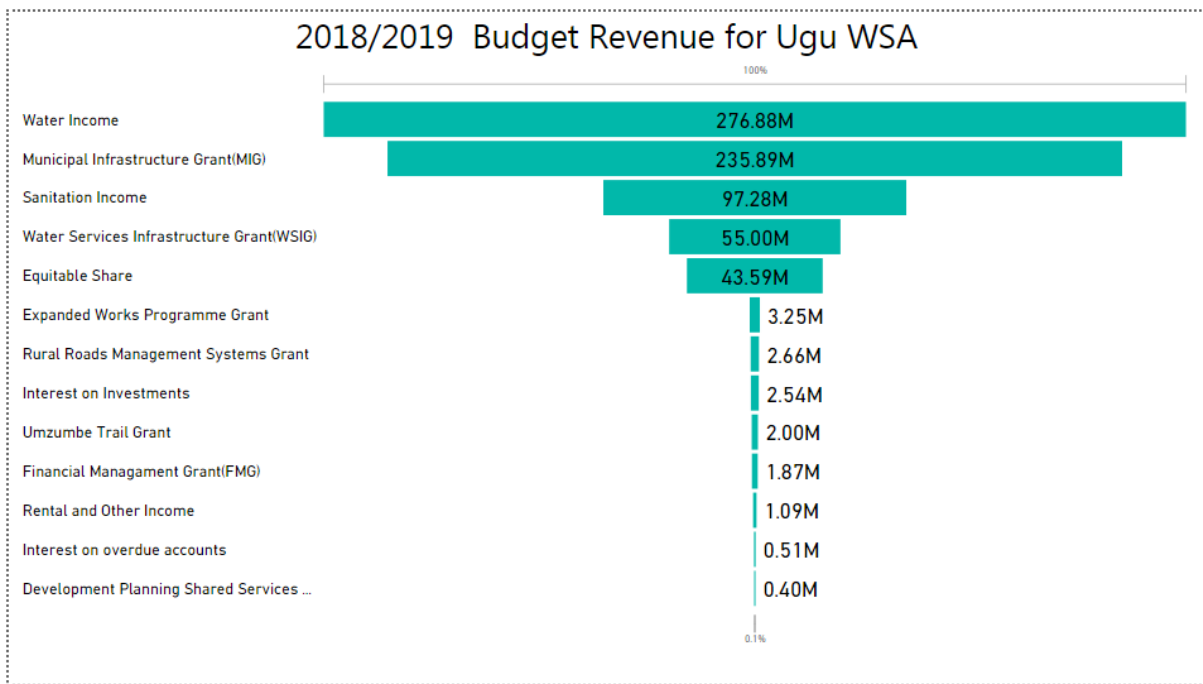


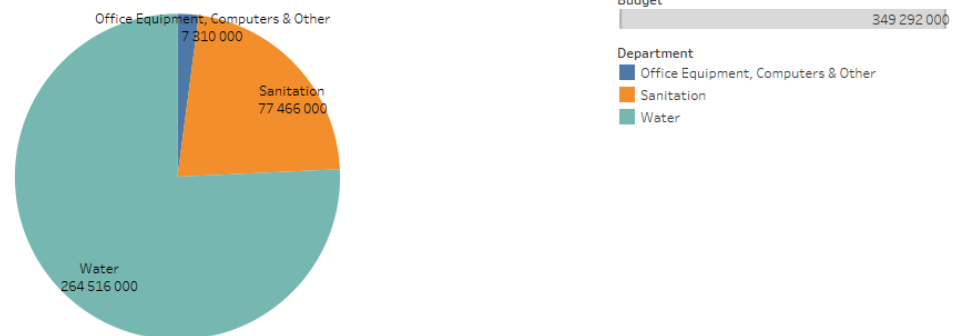
Figure 5.16: 2018/19 Revenue Sources

Source: Ugu DM: Final Draft Budget Report

The following section presents the capital budget by type for Harry Gwala and Ugu WSAs.

Capital expenditure (Capex)

Capital Budget by Type



Department and sum of Budget. Color shows details about Department. Size shows sum of Budget. The marks are labeled by Department and sum of Budget. The view is filtered on Department, which keeps Office Equipment, Computers & Other, Sanitation and Water.

Figure 5.17: Capital Budget by Type

Source: Harry Gwala WSA: Final Draft Budget Report

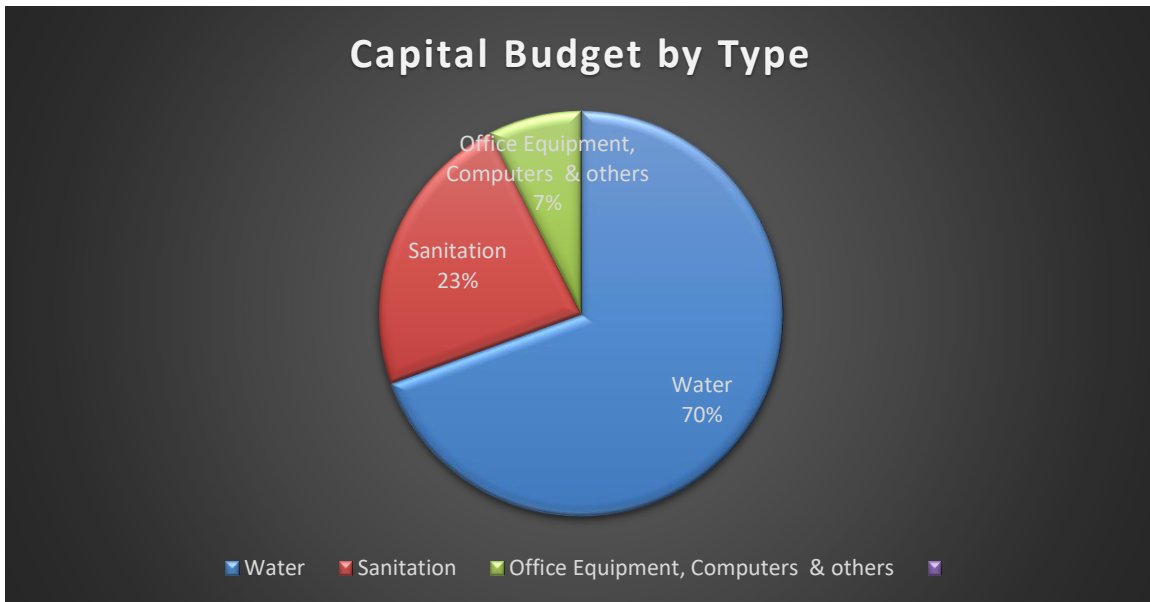


Figure 5.18: Capital Budget by Type

Source: Ugu WSA: Final Draft Budget Report

Figure 5.17 and Figure 5.18 above present the budget summary for the 2018/19 budget year categorised by revenue sources for Harry Gwala and Ugu WSAs. For Harry Gwala WSA, the distribution of the budget summary has the biggest piece of the pie, at 45 percent, coming from capital grants and subsidies, followed by operational grants and subsidies at 44 percent, and the service charges resulting from water and sanitation revenue at 8 percent; there is also interest earned at 2 percent and finally other revenue generated at 1 percent.

For Ugu WSA the distribution of the budget summary sees the biggest piece of the pie, at 22.9 percent coming from capital grants and subsidies, followed by operational grants and subsidies at 75.1 percent, then own revenue or a surplus of 2.0 per cent.

For both WSAs, the biggest piece for capital grants is close to 70 percent, followed by a sanitation services budget sitting at 23 percent and office equipment, computers and others sitting at 7 percent.

Revenue Sources for Harry Gwala and Ugu WSAs: 2018/2019, 2019/20 & 2020/21
CONDITIONAL GRANTS ALLOCATION

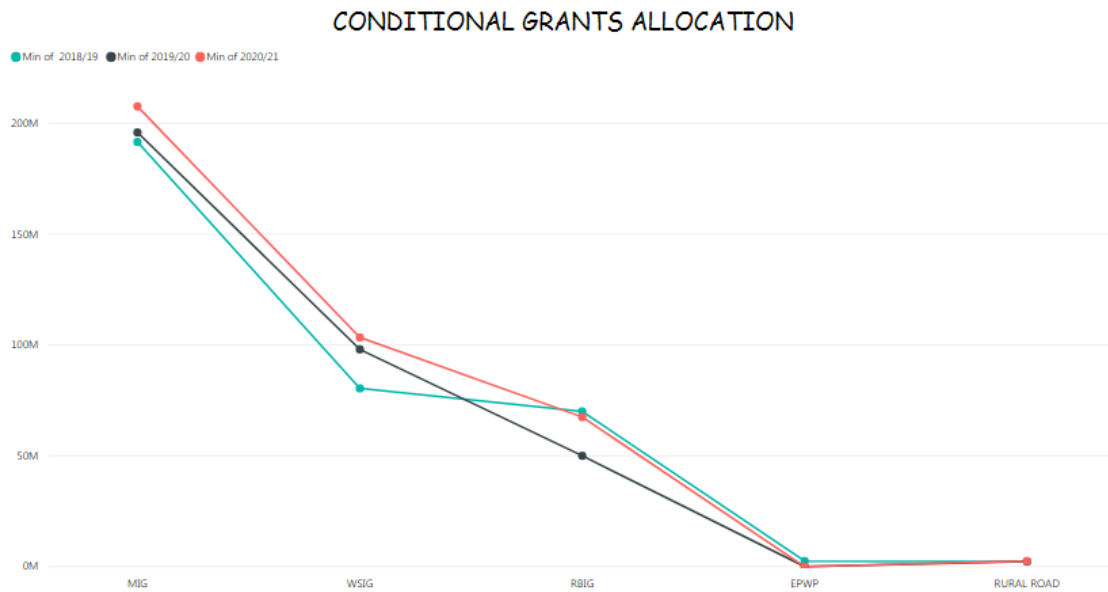


Figure 5.19: Harry Gwala WSA Revenue Sources – Conditional Grants Allocations
 Source: Harry Gwala WSA: Final Draft Budget Report

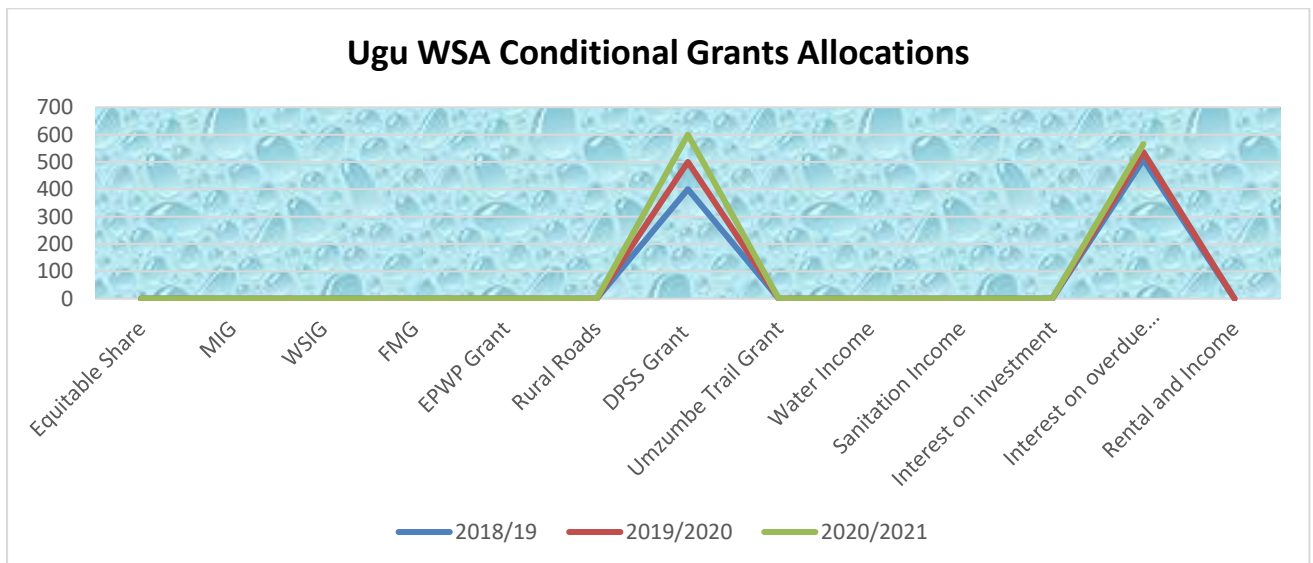


Figure 5.20: Ugu WSA Revenue Sources – Conditional Grants Allocations
 Source: Ugu WSA: Final Draft Budget Report

The section below presents Capex allocations for Harry Gwala and Ugu WSA per management area:

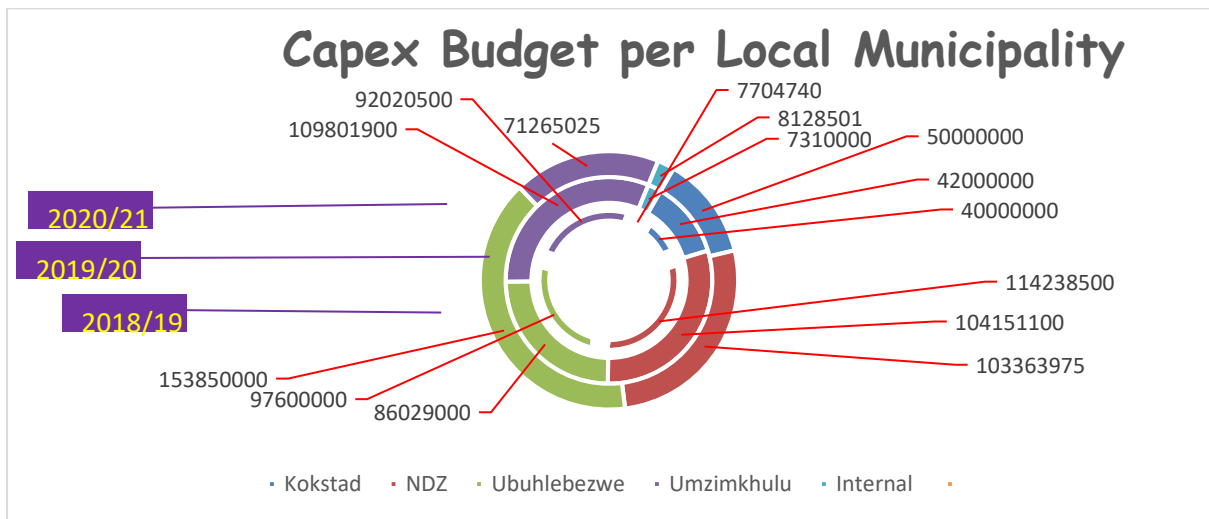


Figure 5.21: Harry Gwala WSA Capex Budget per Local Municipality

Source: Harry Gwala WSA: Final Draft Budget Report

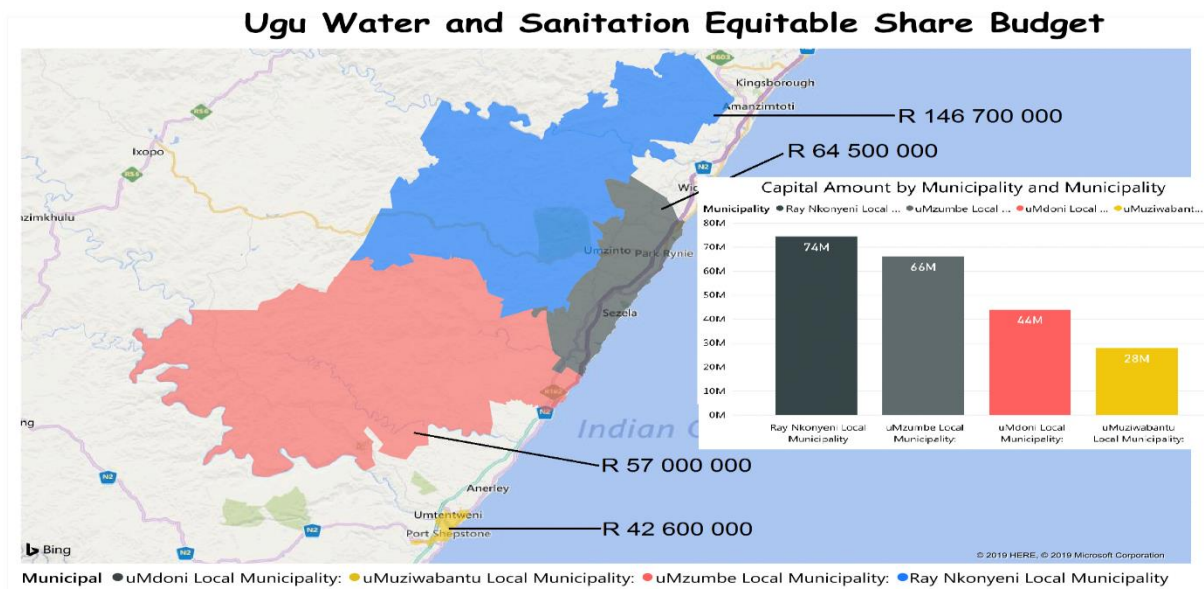


Figure 5.22: Ugu WSA Capex Budget per Local Municipality

Source: Ugu WSA: Final Draft Budget Report

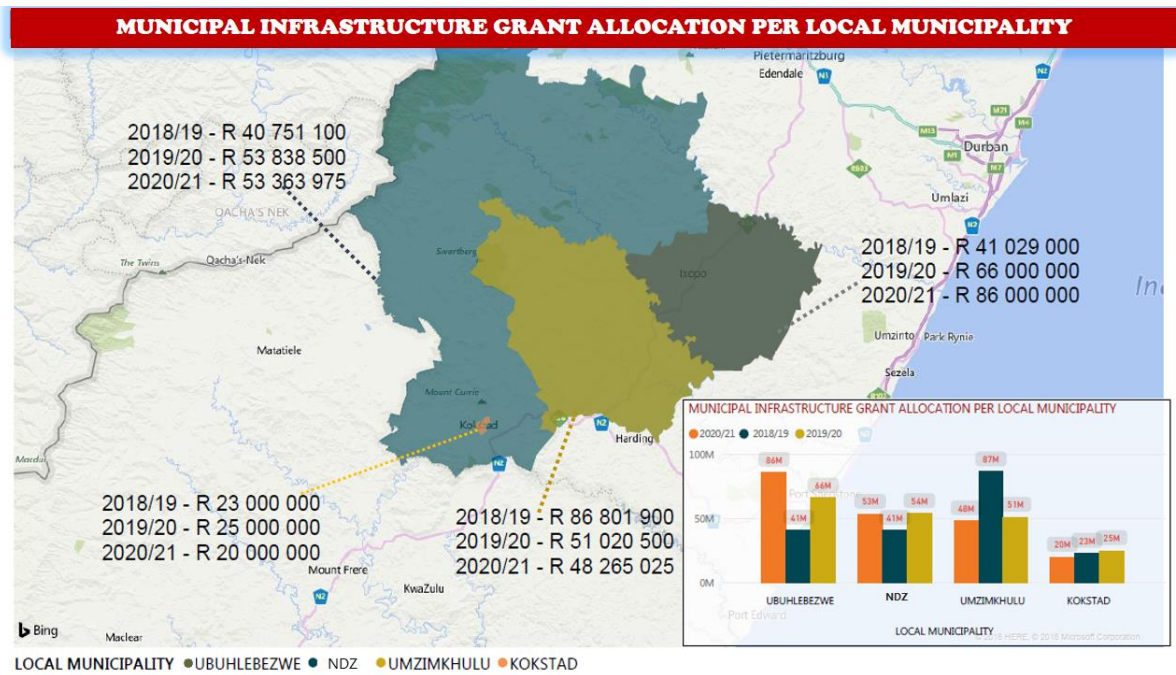


Figure 5.23: Harry Gwala WSA Municipal Infrastructure Grant Allocation per Local Municipality

Source: Harry Gwala WSA: Final Draft Budget Report

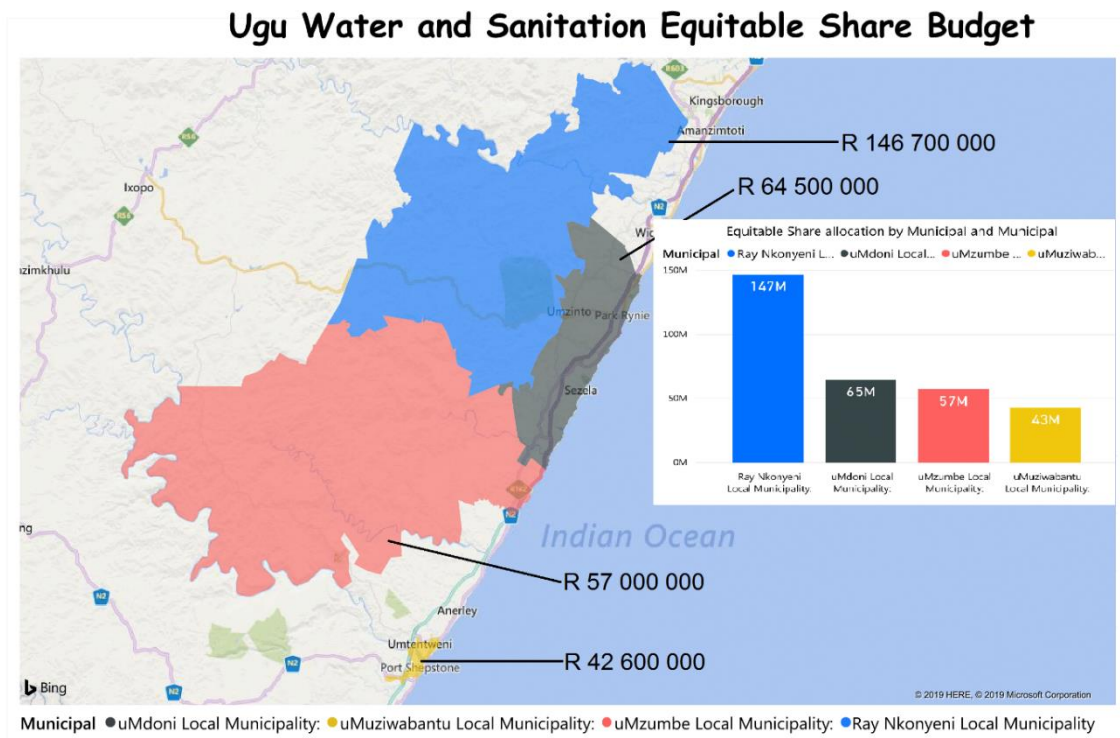


Figure 5.24: Ugu WSA Municipal Infrastructure Grant Allocation per Local Municipality

Source: Ugu WSA: Final Draft Budget Report

The figures above present the budget allocations for Harry Gwala and Ugu WSAs respectively. For Harry Gwala WSA, Umzimkhulu gets the biggest piece of the budget on capital, sitting at R315 million MIG 45 percent, and WSIG R23 million budget allocation, followed by Dr Nkosazana Dlamini Zuma sitting at 30 percent on capital, R215 million on MIG, and R21 million of WSIG budget allocation. The second to last is Ubuhlebezwe sitting at 25 percent on capital, 22 percent on MIG and R17 million of WSIG budget allocation. The one which gets the smallest piece is Kokstad, sitting at 12 percent on capital, 12 percent on MIG and receiving a little more than Ubuhlebezwe, which is R19 million of WSIG budget allocation. There are various factors which are considered during budget allocation processes; this may be based on the needs and demands of the communities, political factors, socio-economic development factors and the population.

On the other hand, for Ugu WSA, Ray Nkonyeni receives the largest piece of the budget in a Municipal Infrastructure Grant, is sitting at R146 700 million which is 54 percent of the budget allocation, followed by Umzumbe sitting at R65 million, which is 24 percent of budget allocation. Second to last is Umzumbe, sitting at R57 million, which is 21 percent of budget allocation. The one that gets the smallest piece is Umziwabantu, sitting at R43 million which is 1 percent budget allocation. There are various factors which are considered during budget allocation processes, these may be based on the needs and demands of communities, political factors, socio-economic development factors and the population.

The following section presents the challenges in relation to revenue management in Harry Gwala and Ugu WSAs.

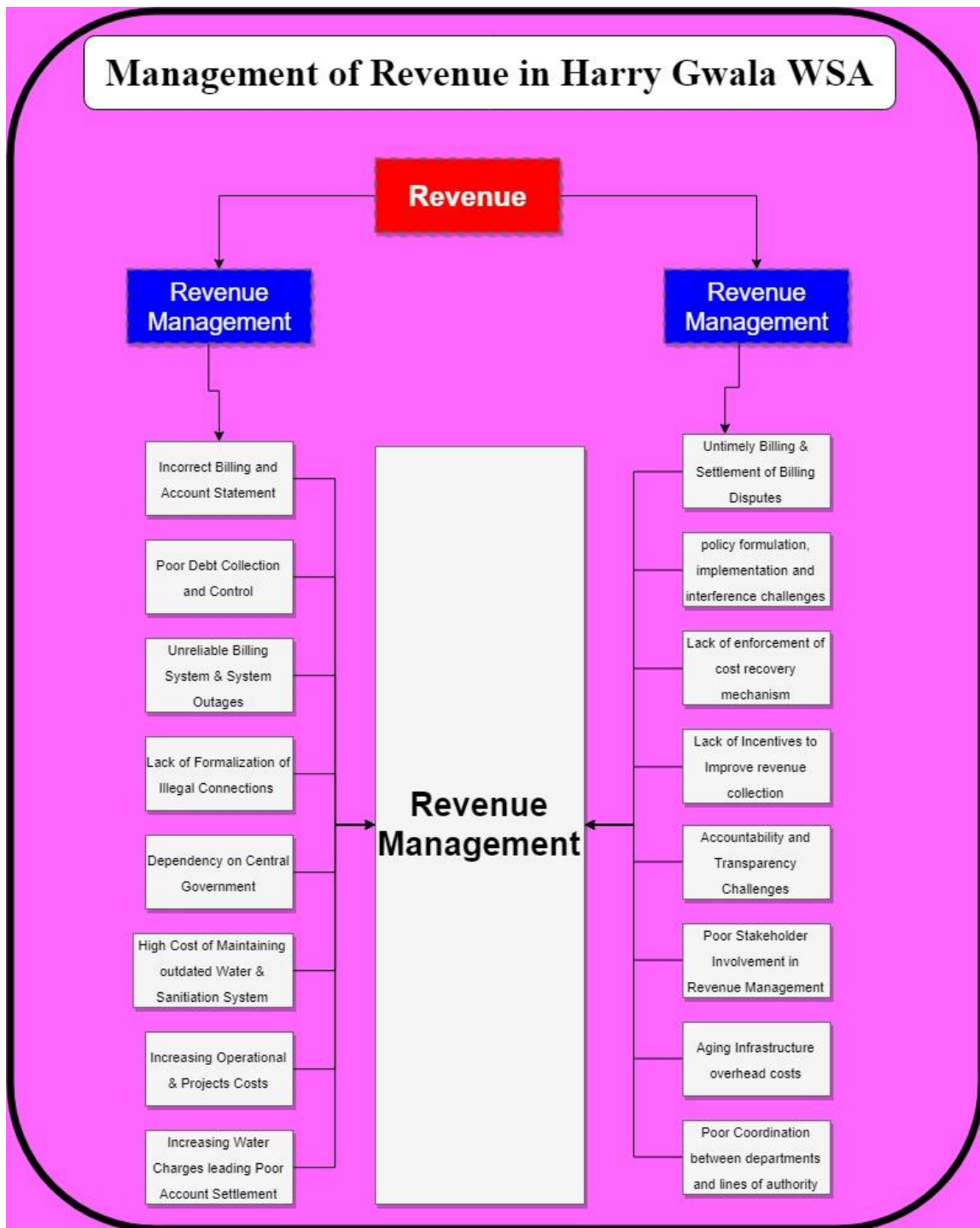


Figure 5.25: Management of revenue collection challenges in order to improve water and sanitation service delivery in Harry Gwala WSA

Source: Researcher

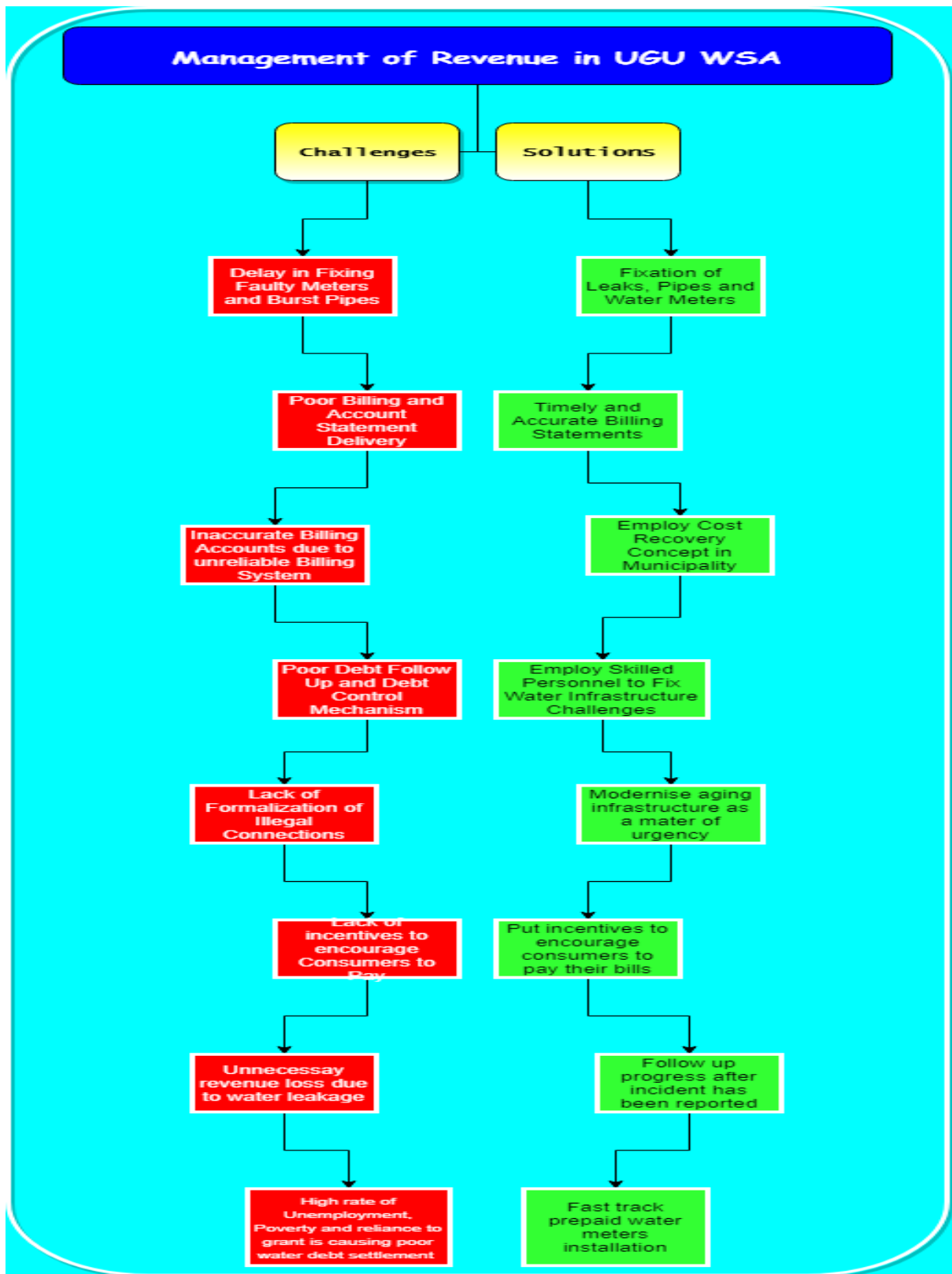


Figure 5.26: Management of revenue collection challenges in order to improve water and sanitation service delivery in Ugu WSA

Source: Researcher

From Figure 5.25 and Figure 5.26 it can be deduced that there are several factors which require attention to improve water and sanitation revenue collection and management. The WSAs' ability to collect adequate revenues from water and sanitation provisioning is hindered by the lack of incentives given to residents to encourage them to foster a payment culture for services provided. Also, the findings presented in Figure 5.25 and Figure 5.26 correspond to similar assertions by respondents between these figures to the effect that the incidences of inaccurate billing systems, coupled with inaccessibility of pay points due to distance or otherwise, together with unreliable billing systems are responsible for crippling management's ability to collect the required levels of revenue from residents. The following quote substantiates the finding that there is the lack of a paying culture amongst some residents.

The main challenge is the issue that we have discussed of cost recovery; people do not pay because they believe that services are free. In some areas now, as the voters we know that there is a demand for water. More than 5 wards per day want water tanker delivery in rural areas. But every time we then get reports from the municipality that there is a challenge in securing the water tankers.

The impact of the non-paying culture in Harry Gwala and Ugu WSAs is best highlighted by the following quote:

If everyone wants to get the services for free, that would end up lowering the revenue collection capacity and impact negatively on those people who need municipal services and this affects the Municipality at the end of the day.

Another finding presented in Figure 5.25 and Figure 5.26 relates to high unemployment affecting the Harry Gwala and Ugu WSAs. There is an increase in the number of indigent consumers within the population which effectively means quite a number of the residents are unable to pay for services rendered due to high poverty levels. This can be interpreted to mean that declining levels of revenue generated by the WSAs are as a result of high unemployment and poverty. As alluded to by residents, the net effect of inefficiencies in terms of revenue collections of sub-economic tariffs being charged, ineffective billing procedures, and poor payment culture is the ever-increasing reliance on government bail outs due to the ever-increasing weakening of the revenue base. Respondents pointed out that sometimes the number of the indigent are exaggerated, resulting in some high-income earners evading the payment of

service charges. The following quote points to respondents' views about actions which need to be undertaken to reduce the number of fake indigents or free riders.

Household profiling is needed to check affordability if they will be able to pay for water services. The WSA must consider installing smart meters/prepaid metered services in order for us to get rid of all these billing related challenges that we have mentioned.

Furthermore, respondents pointed out that lack of formalisation or legalising of illegal connections is resulting in loss of potential revenues for the WSA, hence contributing to a weaker revenue base:

Management of the revenue in water and sanitation is a challenge in Harry Gwala WSA which impacts negatively in improved water and sanitation service delivery. It's important for us to recap and reflect on the issue that the municipality has a weak revenue base. Meaning it doesn't generate enough revenue on the services that are rendered in particular for water and sanitation services.

We have to be proactive, we as different stakeholders and service users. The municipality is making an insufficient contribution because when one calls the office the challenge that one gets is that there is a shortage of municipal vehicles to attend to the complaint or sometimes it is reported that there is a shortage of plumbers to do the work.

The cost recovery is about recovering costs, from all the implemented projects or all the projects that have been done. The cost recovery concept enables an organization to stand up and to be financial independent. According to its monetary and non-monetary resources it should become self-sufficient. Every project will be implemented and finished and also there will be more money that will be recoverable and the municipality will be able to generate revenue and become self-sustainable. This will ensure that there is continuing delivery of services to the people, because there are people who have nothing. There are people who are still waiting for water and sanitation service delivery. Now it's important that all projects provide their own revenue. People can't access water during drought seasons and the municipality doesn't generate revenue in return, moving forward some of the things will change and water levels may increase. Then it

is important to employ cost recovery initiatives in our municipalities in order to enhance municipal revenue.

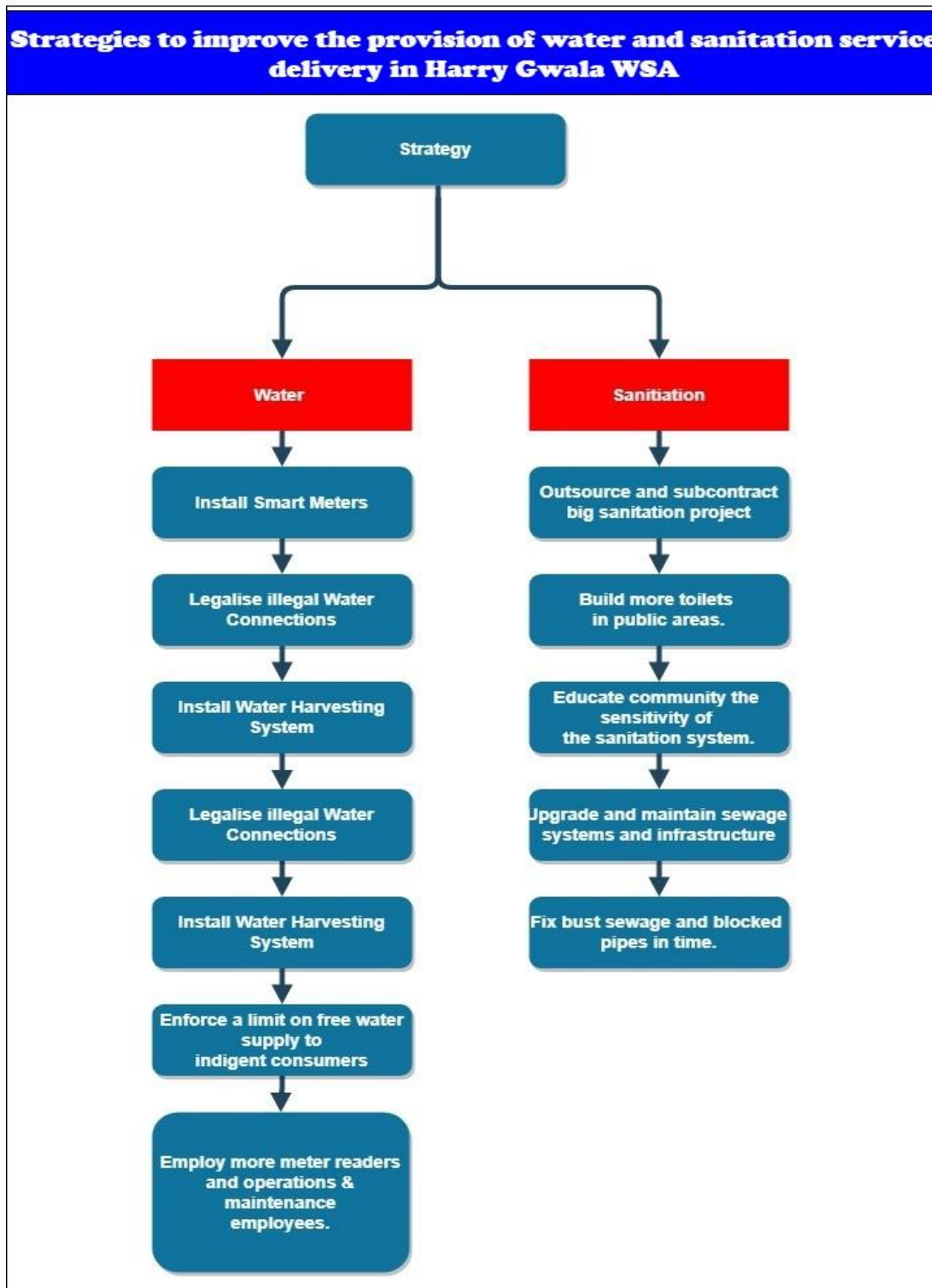


Figure 5.27: Strategies to improve provision of water and sanitation service delivery in Harry Gwala WSA

Source: Researcher

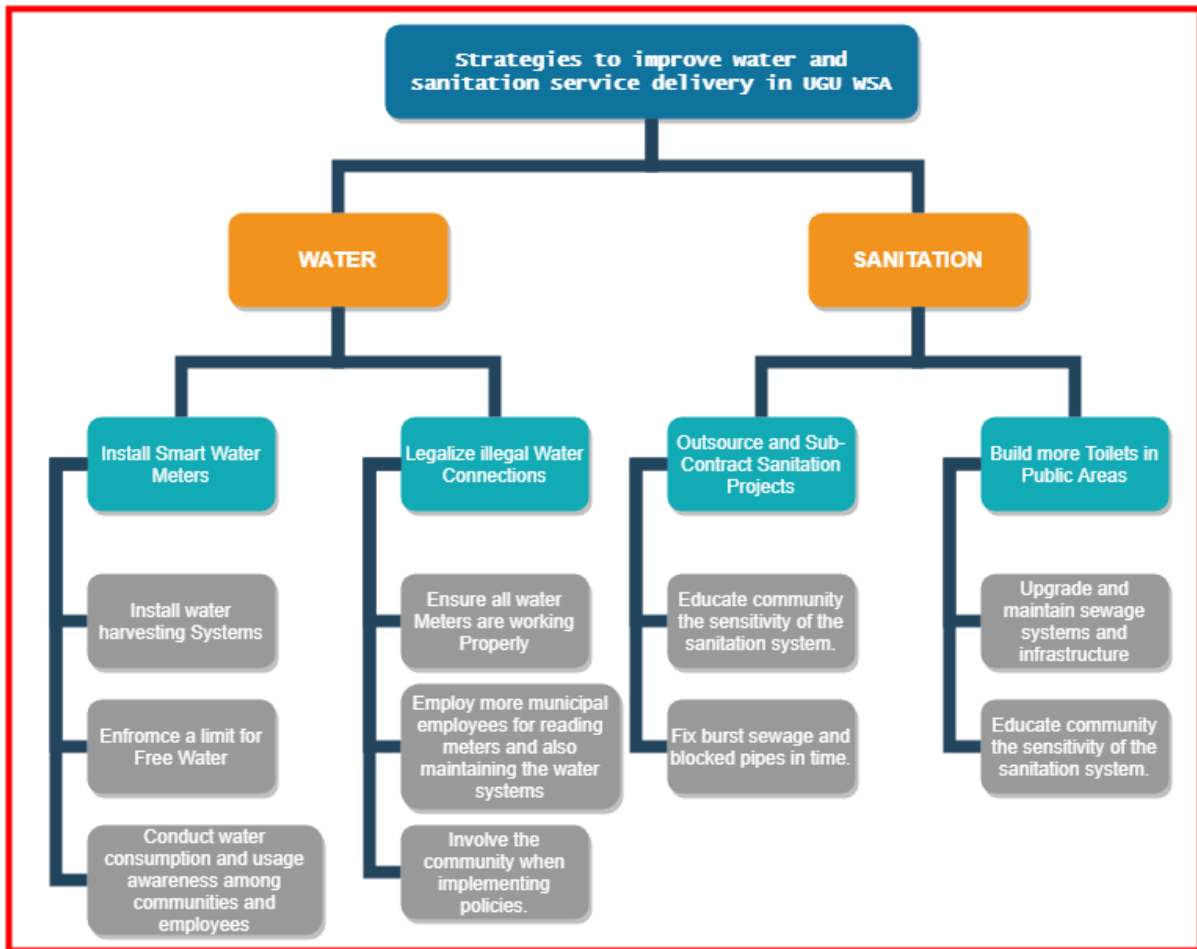


Figure 5.28: Strategies to improve provision of water and sanitation service delivery in Ugu WSA

Source: Researcher

Figure 5.27 and Figure 5.28 above demonstrate that there are several strategies which the WSAs can adopt to improve on the provision of water and sanitation service delivery. One of the findings presented in Figure 5.27 and Figure 5.28 indicates that respondents advocated for the speedy implementation of the installation of smart or prepaid water meters in all potential areas in order to improve revenue collection and revenue generation for the purpose of achieving full cost recovery for services provided by the WSAs. Furthermore, respondents highlighted the need to legalise illegal water and sewer connections for the purposes of earning additional income for the WSA. Some respondents suggested a solution that has to do with mitigating the effects of declining water levels and/or supply from traditional sources such as dams by drilling boreholes and improving water harvesting techniques so as to ensure an uninterrupted supply of water to residents which inadvertently leads to a steady inflow of revenues from continuous supply of water.

Furthermore, respondents encouraged the speedy repair of mechanical breakdowns of pumps with a view to reduce customer complaints about erratic water supply and resistance to paying for water services. The following quote from respondents supports this initiative:

The municipality must come up with a strategy for dealing with problems, make temporary arrangements if the municipal transport/vehicles have a challenge and make alternative means to get the faulty pump or engine fixed, like for instance, the municipality should drill boreholes, including provision for the pipes so that people have access to water. But the municipality delays sometimes to come up with interventions that can help the communities to access water, while the big schemes are being implemented. And the other thing is that sometimes water appears then disappears in springs while money is wasted.

We need to educate communities and to explain that perhaps this thing will affect them in future. Illegal connections impact negatively on a programme by government to save water since water is a scarce resource in South Africa. We need to preach to them that there is drought and a water shortage, so they need to be educated about such things. When the municipality does that, the educational programme will be beneficial to the future generations. The municipality can come up with the system where maybe they would allow the people to convert the illegal connections to be legal. All those who have been employed for community education by the municipality should be able to teach people about water saving because the country is currently recovering from the state of drought. The councillors will appreciate that communities are informed about these issues and the residents may assist other people and the water monitors employed by the municipality should assist in disseminating the information so that all the people will be informed, to be able to care for the water resources. Feasibility studies should be conducted to determine which will cost a lot of money, to abstract water from Umzimkhulu, or to abstract water from Donnybrook because there is a dam...Perhaps it would help if the WSA could strengthen the community educational outreach programmes for the public to know more about the issue because we only believe that the water is our right and that it should be provided by the WSA at all times without any service interruptions. People should be informed about any challenges and constraints in the water sector. The communities should be educated on water recycling programmes for them to understand how effectively they can use such water to respond

to the challenges of water shortages. All people who are involved in the water business I think should be coordinated and they should be united in order to achieve a common goal. For example, the councillors/traditional leaders, community water and sanitation forums, and water monitors should be united and there should be scheduled trainings by the municipality where all these sectors are capacitated together.

Meters are read and the municipal workers know the location of all meters. A suggestion is that the meters are read when any member of the particular household is present. The owner must be able to access the readings for monitoring purposes so that she/he can be satisfied and happy with the bill at the end of the day.

I suggest that the management must come up with a strategy for monitoring the way in which municipal workers are working. To cut costs, the WSA should make use of internal staff rather than relying more on external service providers. To capacitate their skills, perhaps from time to time to have refresher courses.

Do have a water conservation and water demand management strategy, because of the backlog and because of the situation that has been going from bad to worse. We do have a customer centre where all the communities can report to. But it is not working sufficiently because the system that they are using is manual and we have a shortage of staff.

Sometimes you might find that there is a communication breakdown with the people that are supposed to be attending to cases from the community because you would have to provide them with information that you don't have. The WSA has however taken a step further to install an electronic system that would assist us. So, we are trying to improve our call centre system converting the customer complains management system from manual to be electronic in order to avoid the challenges related to communication and handling of consumer complaints.

The reason why people are connecting illegally is because they need a service that is more improved than the current service that we are providing, so obviously we have to make our community to understand that this may come at a cost. Because for them to get a house connection it would cost money. Infrastructure-wise we have to improve

everything and the best way of doing this is to connect them legally to their plot and start charging them. I totally agree with the idea of getting illegal connections legalised.

Regarding the indigent register, we are in the process of developing it and expand to rural areas. We are also data cleansing although we are not doing it fully. We are doing part of it. We are only focusing on the areas where we know it is already made up of indigent consumers. The plan is to put out an advert regarding application for those consumers who really want to apply for indigent status in rural areas. I think with the assistance of the directorate responsible for customer care we will be in a position to disseminate the information to all relevant stakeholders.

5.3.7 Compliance Management and Reporting: An Analysis of the Harry Gwala and Ugu WSAs

The Water Services Act prescribes the legislative duties of WSAs. General Regulation 509 (Regulation 11) mandates a WSA to populate an International Water Association (IWA) Water Balance Report on a monthly basis as per the requirement of the National Regulator. This report is submitted to the Department of Water and Sanitation on a monthly basis. Reports on non-revenue water and water losses are released on an annual basis and submitted to WSAs to develop improvement plans for water loss reduction interventions where their performance is above the national average. Ideally, the water balance information report which is submitted to the Department of Water and Sanitation (DWS) should incorporate water balance information for all rural schemes or systems within its area of jurisdiction.

For water quality compliance monitoring for both Harry Gwala and Ugu WSAs, the Umngeni Water Board is an accredited service provider contracted by both WSAs for monitoring water quality for potable water and effluent in all systems and sites within the Harry Gwala and Ugu area of jurisdiction for health, aesthetics and operational determinants. Umngeni Water Board monitors the water quality by taking samples from the agreed upon sampling points and further sending them to their accredited laboratories, with the analysed results then being sent to Harry Gwala and Ugu WSAs with recommendations on the interventions required. The collected potable water samples are analysed for key water quality indicators and assessed against South African National Standards (SANS 241-1:2015) drinking water standards. On the other hand, the collected wastewater effluent discharges are assessed against relevant effluent standards as prescribed by Department of Water Affairs and Forestry; i.e. General Effluent Standards for Plants >2 ML/d and General Authorisation for Plants <2ML/d. However, the Harry Gwala and

Ugu WSAs also utilise the internal team (process controllers) for operational monitoring programmes which are done onsite to test turbidity and PH (Potential hydrogen).

The DWS, as the national regulator, conducts inspection on the performance of WSAs for both Water Treatment Works and Waste Water Treatment Works. Non-compliance notices are issued by the DWS in terms of Sections 19, 20 and 53 of the National Water Act, No. 36 of 1998, should WSAs fail to take sound measures to prevent pollution of the environment and mitigate effects of the pollution incidents related to operation and maintenance of Waste Water Treatment Works, which results in untreated effluent being discharged into scarce water resources. The WSAs have to develop corrective action plans (CAPs), for which the implementation plans are monitored by the DWS. Both Harry Gwala and Ugu WSAs have been issued with a number of non-compliance notices by the DWS during the 2017/18 financial year.

Amongst the challenges with which WSAs are faced in executing their obligations and constitutional mandate for the provision of good quality drinking water and adequate sanitation services to consumers is that some of the process controllers do not meet the minimum requirements as stipulated in Schedule IV of the Water Services Act, 1997's draft regulations for the classification of water services works and registration of process controllers as per the table below:

Table 5.1 Classification of process controllers

Works Class	Class Process Controller per shift	Class of Process Controller for supervision
E	Class I	Class V
D	Class II	Class V
C	Class III	Class V
B	Class IV	Class V
A	Class IV	Class V

Source: Schedule IV of the Water Services Act, 1997 draft regulations

The WSAs are quite aware of the fact that the supervisors or superintendents should have the classification as per the above table to be in a position to meet the necessary requirements. However, due to financial constraints and fiscal capacity of the institutions, the WSAs end up

appointing employees who do not meet the minimum requirements which then requires the WSAs to embark on radical human capital development programmes.

The Harry Gwala and Ugu Internal Audit Units conduct an audit for all departments within the institutions and produce internal audit draft reports with the details of internal control weaknesses and operational enhancement recommendations, which is then approved by the audit committee. The whole idea of the audit process is to ensure efficient and effective management of water, compliance with legislation, policies and procedures, and to provide reasonable assurances that internal controls are working as intended. The major finding in Harry Gwala WSA was that water and sanitation by-laws were not gazetted and enforced and that there were discrepancies in the service level agreement contract between Harry Gwala and Ugu WSAs for bulk water supply.

According to the KZN Provincial Water Conservation and Water Demand Management Forum Report, the cost of non-revenue water for 2017/18 financial year for Harry Gwala WSA was R36 264 203 and R57 848 296 for Ugu WSA. The report revealed that lost revenue from non-revenue water for the 2017/18 financial year for Harry Gwala was R20 778 294 and R196 818 755 for Ugu WSA. The KZN Provincial Water Conservation and Water Demand Management Forum report provided a 5-year analysis of the required budget in order to address water losses and non-revenue water. For billing improvement requirement budget, Harry Gwala WSA has to solicit funds of R117 215 622 and Ugu WSA R20 994 946 respectively. For leakage reduction an amount of R250 199 204 has been proposed for Harry Gwala WSA and R336 395 308 for Ugu WSA. For Non-Revenue Water Reduction, the proposed required budget for Harry Gwala is R367 414 826 and R357 388 344 for Ugu WSA.

The other Management Incentive-based Regulatory system introduced by the DWS in 2014 is the No Drop system used in Water Use Efficiency and Loss. However, the No Drop assessment is now a standalone 100 percent weighting assessment running parallel with the Blue Drop and Green Drop systems. The Department of Water and Sanitation has developed a 10-year planning framework as a guide to ensure that WSAs achieve specific targets within a 10-year time period. The No Drop audit tool is based on the seven (7) Key Performance Areas (KPA) and sub-criteria of the No Drop system, inclusive of bonus and penalty points being awarded namely: Water Conservation and Demand Management; Asset Management; Technical Skills; Credibility; Compliance and Performance; Local Regulator; and Customer Care.

Other assessment criteria are the Blue Drop and Green Drop systems. The WSAs conduct process audits of both water and waste water treatment works in order to comply with criterion 5 of the Blue Drop and Green Drop programmes as well as the SANS 241:2015 standards test conducted by the DWS. The Green Drop criteria have been designed to assess the entire business of municipal wastewater services to regulate and assess the performance of WSAs. Wastewater treatment still remains the key risk component within the production chain and presents a critical barrier in preventing the pollution of water resources. Basically, wastewater risk abatement planning and implementation is part of Green Drop criteria, which allow the regulator to gain insight into the treatment component of municipal, private and public wastewater treatment businesses. On the other hand, the Blue Drop is an innovation by the National Regulator to regulate all WSAs which is designed and implemented with the objective of safeguarding potable water quality management, aiming to ensure that water is safe for human consumption.

Below are the key components which are looked at by the Regulator during the assessment of the Blue Drop and Green Drop status of WSAs in South Africa:

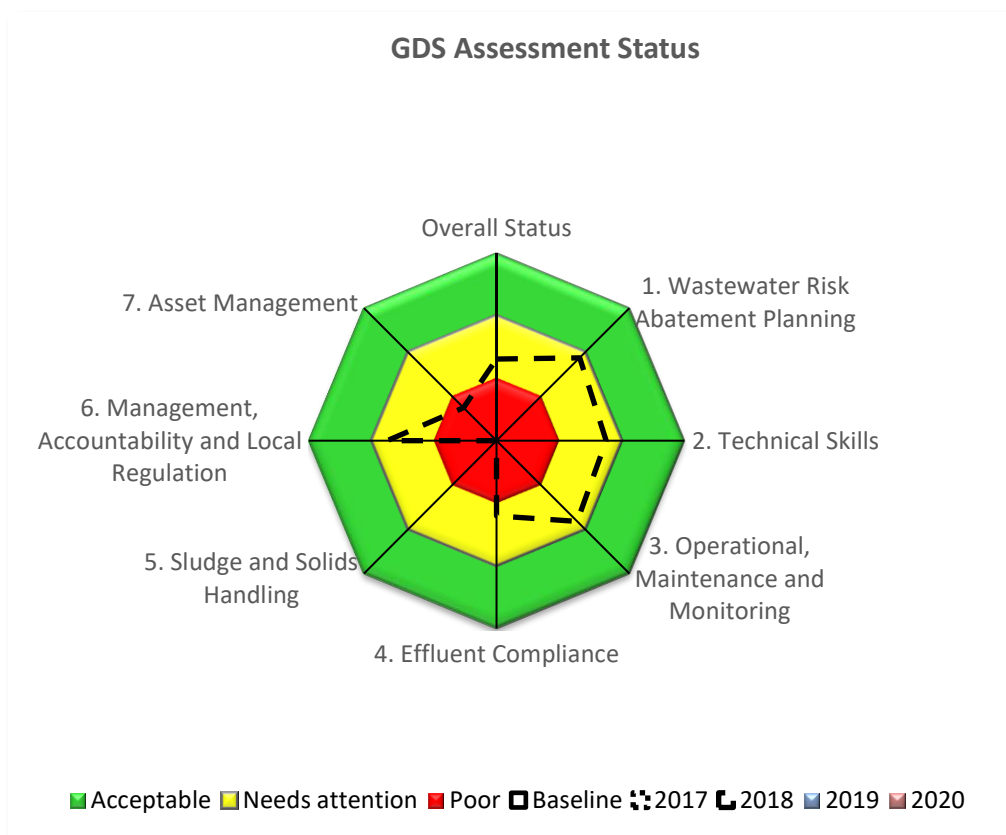


Figure 5.29: Green Drop system assessment overall components

Source: Mock Assessment WRC

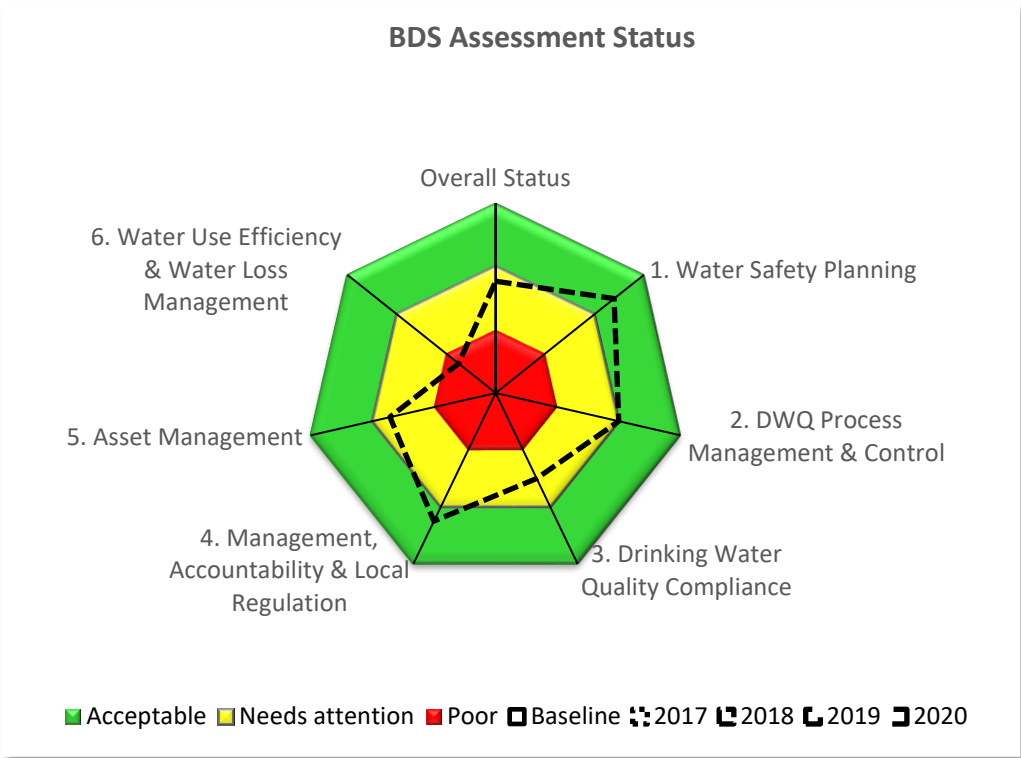


Figure 5.30: Blue Drop system assessment overall components

Source: Mock Assessment WRC

CHAPTER SIX

ANALYSIS OF THE FINDINGS

6.1 INTRODUCTION

The Harry Gwala and Ugu WSAs, just like other rural municipalities, are in a financial quagmire as a result of inefficient revenue collection and management due to the WSAs for the provision of water and sanitation services. The political leadership is not playing an efficient oversight role and there is poor management generally. This chapter discusses the findings of the study and provides an interpretation of the findings.

6.2 ANALYSIS OF THE FINDINGS

The Harry Gwala and Ugu WSAs have been negatively affected by the culture of non-payment and the culture of entitlement on the part of users of water and sanitation. This has resulted in a number of free riders within the WSAs in all eight satellite/management areas or local municipalities. This culture seems to have originated during the days of apartheid when there was mass civil disobedience which was manifested through boycotting, amongst other things, the payment of rates and service charges or user fees. The WSAs have also been affected by the growing proportion of outstanding debts as most eligible debtors are not paying. Lube and Rossouw (2005:780) maintain that one of the most negative aspects crippling municipalities' financial health is the aspect of residents resisting the payment of municipal rates. This concurs with the findings obtained from document analysis and interviews conducted in all eight satellite offices/management areas or local municipalities, and from some of the officials from the Water Services Department, Budget and Treasury and income section of the Finance Department at the Harry Gwala and Ugu WSAs.

The document analysis and the interviews confirmed that the amounts owed to the municipalities have ballooned exponentially over the years. This situation has become so serious that the WSAs are now failing to operate, or refurbish and maintain existing water and sanitation infrastructure. Burst pipes and water leaks are now causing water shortages and increasing dissatisfaction amongst residents. The failure to repair water and sanitation infrastructure in the Harry Gwala and Ugu WSAs has been attributed to lower cash flows from revenue collection and management for water and sanitation services.

The document analysis confirmed that the WSAs have limited or no bulk flow meters in some of the Water Treatment Works (WTWs) which then makes it difficult to have bulk meter

reading records. This also affects the water balance information which monitors non-revenue water and water losses, ending in the WSAs estimating the volumes. There are large numbers of estimated volume figures for consumption.

The KZN Provincial Water Conservation Report for 2016/17 financial year reveals that non-revenue water by volume is sitting at 66.4 percent for Harry Gwala WSA and 26.1 percent at Ugu WSA respectively. This indicates that Harry Gwala is not doing well, because the percentage is considerably higher than the national average of 42.7 percent. Harry Gwala WSA should implement a comprehensive strategy which will reduce real losses to at least 40 percent.

Just like other WSAs which implement the ANC-led government's pro-poor policies, the Harry Gwala and Ugu WSAs provide 6 kilolitres of water free of charge to all indigent households. The policy works in this sense that all households require this minimum amount of water per month. Any water usage above this threshold means that the household should pay for extra usage. This in essence covers the indigent population since they will be provided with a minimum amount of water to survive and, as exempted water and sanitation users; they do not have to pay for such services. At the same time, by limiting the volume, this helps WSAs to save water and also raise revenue when the minimum limit has been exceeded.

Another finding is the inability to generate enough revenue due to an ineffective billing system. Some households with outstanding bills are not being disconnected to enforce payment due to the fact that the reviewed water and sanitation by-laws are not gazetted, which makes it difficult to ensure proper enforcement. This deprives the WSA of much-needed revenue. The WSAs' financial problems are also being caused by the growing population of indigents in the community. An indigent register is in place in the Harry Gwala and Ugu WSAs, although not all those who qualify appear on the register; a huge number of households claim that they qualify to be regarded as indigent. These are poor households with a monthly income below two old age grants. They are therefore unable to pay for municipal service charges like water and sanitation, yet they require water for their day-to-day survival. The income actually received is, however, inadequate to cover all the operational and maintenance costs associated with water and sanitation service provision.

Another finding which resulted in severe service interruptions and customer dissatisfaction due to water leaks, sewage spillages and blockages was that there is no systematic refurbishment and replacement plan in place for ageing infrastructure. This has resulted in the deterioration

of the existing infrastructure. What worsens the situation is that the WSAs utilise a manual system to lodge/capture customer complaints in the complaints register which then becomes difficult for the WSAs to deliver on as expected, or adhere to turnaround times. This has resulted in severe communication challenges and customer relations management difficulties which has resulted in customer dissatisfaction in the Harry Gwala and Ugu WSAs.

The situation is further compounded by the prevailing high unemployment rate in the Harry Gwala and Ugu WSAs. One of the findings was that both Harry Gwala and Ugu have largely rural streams, with only a small percentage living in what can be termed urban streams. There are very few employment opportunities in the Harry and Ugu DMs. The WSAs have very few income-generating projects. This is an issue which the WSAs should look at so as to reduce the indigent population.

The findings in relation to regulation and compliance of the WSAs are that: during the 2013/14 financial year, regulatory performance measurement systems and mock assessment conducted by the Water Research Commission on Blue Drop Systems and Green Drop System risk based tools, as set up by the national regulator to improve the water business practice in local government sphere in order to better business practice with regard to water services delivery in local government and ensure that WSAs comply with national norms and standards, revealed that there was the:

- Failure of the WSAs to provide an approved indigent register that covers the rural communities;
- Failure of the WSAs to display the Customer Care Charter and Batho Pele principles in all Municipal offices (Management Areas) and in other public places;
- Non-visibility and inaccessibility of the customer contact centre;
- Failure of the WSAs to provide a risk management policy;
- Failure of WSAs to provide a tariff model;
- Failure of the WSAs to provide an approved tariff structure and policy;
- Poor calibration monitoring and no operation and maintenance plan in place; and
- There are no flow meters, with volumes being estimated in some treatment works.

The 2013/14 Regulatory Performance Measurement System Assessment focused on three performance areas of the Harry Gwala and Ugu WSAs. The three performance areas were risk

management; billing and revenue generation; and customer care relations management. For the above-mentioned key performance areas, the assessors wanted a portfolio of evidence supporting the fact that the three areas are prioritised by the WSAs.

6.3 INTERPRETATION OF THE FINDINGS

The Harry Gwala and Ugu WSAs should take a proactive approach to reduce the growing indigent population within their domains which is caused by a high rate of unemployment in these areas. The likelihood is that there is a high rate of indigent population in the area because most of the communities are rural streams. A high rate of indigent population is highly unsustainable for the WSAs because it has serious financial implications. This problem needs to be arrested immediately by being creative and innovative on the part of municipal management. This is because it is difficult to expect citizens to pay for services while they have no income. This renders Duffy's user pay principle ineffective, because the service users are largely poor and cannot really afford to pay for water and sanitation services. This makes revenue management impossible. This, coupled with a poor billing system; communication challenges between the water and sanitation service providers and the consumer of water and sanitation services; challenges related to metered services; and compliance management all make the WSAs heavily dependent on financial bailouts or financial transfers or grants from central government. This dependency on the central/national government is in my view not sustainable. An ideal situation would be for WSAs to be largely self-sustaining, meaning that the WSAs should be able to generate and manage revenue for water and sanitation services. However, this is impractical because of a situation beyond the control of most of the rural municipalities. Sadly, the Harry Gwala and Ugu WSAs are now being sustained by budgetary support in the form of grants from provincial and national government.

There is a need for further research to contribute to the existing literature recommendations on how to improve service delivery centres or advising WSAs to lobby government for increased budgetary allocations so as to enable them to fund their obligations fully, which includes water and sanitation service delivery. This argument has numerous supporters because of its obvious simplicity and common-sense approach. The writer is of the view that to always look to central government for more and more financial allocations and bailouts is grossly unfair, as central government is often overstretched in terms of fulfilling its national and international mandates. These mandates are of significance to national wellbeing. Therefore, there is a need for all stakeholders to moderate their expectations from government. This is not to dismiss the popular notion that government should always adjust its allocations to WSAs as and when possible.

The writer recalls the advice: “Give a man a fish and you feed him for a day, teach a man how to fish and you feed him for life”. Based upon this advice the researcher would like to advance a two-pronged strategy to improve service delivery.

The strategy seeks to “conscientise” WSAs on the need to take a proactive approach to reduce unemployment in their areas of jurisdiction by inculcating a spirit of entrepreneurship amongst the citizenry, in particular in the Harry Gwala and Ugu WSAs. This can be done through providing land or places where people are able to sell their wares or operate small businesses, or through launching projects to enable them to earn a living and to be in a position to pay for water and sanitation services so that they do not hide behind the often-cited excuse of being too poor to pay. The WSAs must take a proactive approach by subscribing to policies which make it easier for people to start and run income-generating projects without asking them to undertake costly and time-consuming bureaucratic procedures which often lead to people becoming frustrated and giving up on their dreams (Pretorius & Schurink, 2007:26).

To alleviate poverty, the WSAs must find the means of helping the indigent population to access cheap loans to start projects like small-scale poultry projects, flower cultivation, carpentry, shoe-making, and many others. As more people are assisted to become entrepreneurs, poverty will be reduced and more people will also become eligible to pay for water and sanitation services, which in turn will capacitate municipalities to improve service delivery due to increased revenue inflows.

Further, management should move towards adopting and implementing staff motivation strategies which increase job satisfaction and reduce employee turnover so as to retain experienced and committed skilled staff and prevent service delivery interruptions. Operational and maintenance staff should be capacitated from time to time with technical skills or refresher courses in order for them to be empowered to perform maintenance procedures and to establish early warning signs. Since the Infrastructure Leakage Index (ILI) is at 6.2 percent as per the Department of Water and Sanitation, a maintenance schedule for all existing infrastructure should be put in place, implemented and monitored. The municipal assets register for water and sanitation infrastructure should provide the life expectancy of all infrastructure items, and replacement and refurbishment should be planned and budgeted for in each and every financial year.

According to Pretorius and Schurink (2007), municipal service delivery can be improved through strict implementation of the Integrated Development Plan gazetted by the ANC-led government and through performance management systems; improving intergovernmental relations; acculturation in terms of the *Batho Pele* principles; proper budgetary systems; and policy consistencies.

Lastly, both WSAS were most affected by drought situations. Investing in infrastructure and augmentation of bulk water and reticulation would be a solution to the problem and this would ameliorate the severe effects of drought for the WSAs in the near future.

6.4 SUMMARY

This chapter discussed the findings of the study and provided an interpretation of the findings. The next chapter provides conclusions and recommendations for the study.

CHAPTER SEVEN

CONCLUSION AND RECOMMENDATIONS

7.1 INTRODUCTION

The study has reflected the complexity and ambiguity of revenue collection and management as far as water and sanitation service delivery is concerned. The Sustainable e- Compliance, Customer Centricity and User Fees Revenue Management framework points out several tasks in its implementation, including: community education and empowerment; water use efficiency; politics of environmentalism redesign of the organisation; and resource mobilisation. This understanding of SCCCUF implementation provides an important framework for analysis of cost recovery and revenue management in water and sanitation in the Harry Gwala and Ugu WSAs. Another important theoretical concept which was useful in analysing the revenue management for water and sanitation in Harry Gwala and Ugu WSAs was Gramsci's theory of Hegemony. The theory of hegemony emphasises voluntary change by civil society, how the society consents to oppression, and what mechanisms can be employed to enable the society to free itself, and who then is responsible for the emancipation and domination of the society.

The study found that the implementation process requires human intelligence and human capital development, organisational and fiscal capacity and stakeholders' coordination as well as institutional and policy reforms which impact on the implementation of revenue management in water and sanitation service delivery. The study has demonstrated, by looking at the performance of the Harry Gwala and Ugu WSAs in terms of their ability to recover user fees or generate revenue from water and sanitation service delivery, that it is important to view revenue management for water and sanitation holistically. The study found that before the provincial technical support intervention in WC/WDM, collection of user charges was very low compared to the rate of collection after provincial technical support intervention on WC/WDM. So far, the water conservation and water demand management programme demonstrates that successful cost recovery and revenue management can be achieved with proper political and administrative organisational institutional arrangements. The difference in revenue collection and management may be attributed to the technical support for Water Conservation and Water Demand Management by the DWS in the Province of KwaZulu-Natal which has been brought to all WSAs in the Province.

The implementation process of revenue management mechanisms largely mirrors the bottom-up implementation model. According to Matland (1995), bottom-up implementation models occur at both macro and micro levels (Matland, 1995). In the case of cost recovery and revenue collection and management in South Africa, the macro level provides the general implementation guidelines through the Department of Provincial and Local Government and relevant national legislative frameworks. At the micro level, the Harry Gwala and Ugu WSAs have in place local policy frameworks relevant to their contexts which guide revenue collection and management. Harry Gwala and Ugu WSAs have a working institutional environment for revenue collection and management.

However, successful implementation is being hampered by a lack of technical skills and competencies and insufficient fiscal capacity. This resonates with the claim made by Hogwood (1980) who states that successful policy implementation requires adequate resources (Hogwood, 1980). The other factor which hinders both WSAs to generate and manage revenue from service provision is the fact that the WSAs are faced with contextual factors like high levels of households earning low monthly incomes, which then results in increased numbers of indigent households. Implementation theorists claim that successful implementation of any project or policy requires proper tailoring of the policy objectives to contextual issues (Rossi & Freeman, 1989). The study of revenue management in water and sanitation in Harry Gwala and Ugu WSAs has found that tailoring of the policy objectives to contextual issues is a challenge in general. The challenge emanates from high levels of unemployment within both WSAs, and high levels of low income earning households, which results in cross-subsidisation. Cross subsidisation as discussed in Chapter Five is the other way of recovering the cost of service provision for water and sanitation, in this case to indigent communities and expansion of service provision in ensuring that consumers who cannot afford to pay for service charges are not deprived of access to service provision.

The study also discovered that a culture of entitlement and non-payment is one of the predicaments which the Harry Gwala and Ugu WSAs are facing. Domestic consumers are the highest non-payers recorded in the total municipal consumer debt, followed by industries and finally government departments. The study also found that the municipality is facing challenges of revenue collection from consumers (especially households) considering that a large proportion of households fall within income levels eligible for free basic services (total household income not exceeding R3 500 per month). The equitable share which the South African government has set in place to compensate for free basic service provision is not

sufficient for all households which qualify for indigent status for the Harry Gwala and Ugu WSAs. This finding is also consistent with the literature on cost recovery and revenue management in South African municipalities that unemployment and low-income levels affect consumers' levels of serving basic service debts (Financial & Fiscal Commission, 2013).

The Harry Gwala and Ugu WSAs' implementation of cost recovery and revenue management mechanisms are further hampered by several challenges including: communication; billing and collection; metered services; non-payment; and a culture of entitlement and non-compliance with water and sanitation legislative requirements. The WSAs are also faced with the challenge of reducing their water losses and non-revenue water. This study has demonstrated that policy reform on its own is not sufficient for the successful implementation of revenue management in WSAs. Compliance with water and sanitation legislative requirements; technical skills and competencies; stakeholders' coordination and intensive educational programmes and community empowerment; organisational performance; and fiscal capacity are all important in the implementation of cost recovery and revenue management policies, and by-laws should be set in place, reviewed and enforced by the Harry Gwala and Ugu WSAs.

In conclusion, both WSAs' water supply system should be a priority considering the drought situation which has stricken the Province of KwaZulu-Natal in 2016, and should there be no interventions, the WSAs will be out of water in the near future; hence there is population growth and a lot of development taking place.

There is also a need for augmentation of the water supply schemes and rehabilitation of the water and sewer reticulation network to eliminate all leaks and pipe bursts; this should include the relocation and upgrading of water and sewage pipelines. This intervention may also assist the Harry Gwala and Ugu WSAs to manage water losses and non-revenue water/unaccountable water. During the focus group discussions, one of the protests was that communities are not happy about the quality of services which are rendered by the WSAs, including the turnaround time for complaints lodged in their contact centres. Eliminating leaks and upgrading of pipelines may result in greater customer satisfaction and willingness to pay for municipal services, in particular water and sanitation services both in Harry Gwala and Ugu WSAs.

Upgrading of the sewer network to incorporate future developments and eliminate all sewage spillages and blockages, and pollution to water resources, may also result in heightened levels of customer satisfaction and improved compliance with water services legislation, and may

result in improved revenue inflows for the Harry Gwala and Ugu WSAs because there are domestic and commercial users of water and sanitation services in both WSAs. Installation of an efficient Telemetry System in all schemes of Harry Gwala and Ugu WSAs' primary nodes in order to monitor water levels will result in the improved efficiency and effectiveness of both WSAs.

7.2 SUMMARY OF THE FINDINGS

The findings of the study revealed that there is an urgent necessity to ensure the effectual functionality of the installed and configured electronic customer complaints management systems which are designed to deploy customer service management software components in the call centre environment in the Harry Gwala and Ugu WSAs in order to assist the municipalities to improve their support services to consumers/customers and address communication challenges in water and sanitation service delivery.

The installation of bulk meters in all water treatment works inlets and outlets in the Harry Gwala and Ugu WSAs, and to further ensure that meters are read and data recorded and analysed on a daily basis, can assist in the management of water losses and non-revenue water and further ensure the proper implementation of a water conservation and water demand management strategy for the WSAs. Another approach should be a meter audit which should be undertaken to confirm if all households and commercial users of water and sanitation are metered, and to establish if there are no faulty meters and whether meter readings correspond with the municipal billing database. The WSAs should ensure that the billing system is effective and efficient, and should employ an efficient model whereby consumers are billed according to their actual consumption.

In relation to patriotism, professionalism, commitment and dedicated public servants, one academics, National Planning Commission (NPC) Jam Launch (2011), once said, "If we are to develop and maintain professional people and service-orientated public service we need to ensure that the public service becomes a calling of excellence and a career which should be sought after not for its financial gains and security but because it is the haven for passionate patriots who want to serve all South Africans".

Based on the diagnosis and policy proposals made by the National Planning Commission, the researcher believes that it is prudent and advisable that the Authorities and Senior Managers of WSAs should ensure that there is skills transfer where services are outsourced to consultants

and external service providers of water and sanitation service delivery in order to address existing shortages of technical and specialist professional skills in the public sector, in particular in the Harry Gwala and Ugu WSAs.

Furthermore, there is an urgent necessity to develop pragmatic programmes which are effective and relevant to the functioning of departments and the provision of information, knowledge management, monitoring of policies and strategic plans for implementation processes, and training, tools and support as a retention strategy in order to be responsive to the government call to build a capable and developmental state. The NDP calls for collaborative efforts between consumers of water and sanitation services working together with the authorities of the WSAs in order to address: communication challenges; challenges related to metered services; billing system-related challenges; revenue management challenges; and compliance management-related challenges in order to meaningfully contribute to solutions and be responsive to the needs of the communities.

7.3 CONCLUSIONS

This study has discussed several issues affecting the WSAs' ability to achieve financial sustainability effectively through their revenue management systems. The research study attempted to explain several factors impacting on revenue generation and management in rural and semi-urban WSAs, in particular the Harry Gwala and Ugu WSAs. An attempt was made to discuss several strategies which the WSAs can adopt to enhance their revenue generating and management abilities. An efficient revenue management system contributes significantly to the financial sustainability of local government municipalities and WSAs. The lessons learnt from the Canadian experience can be used to implement the user pay principle, including the guide to enhancing municipal revenue developed by USAID, subject to some modifications, to suit regional and local conditions in the Harry Gwala and Ugu WSAs.

7.4 RECOMMENDATIONS OF THE STUDY

The research makes the following recommendations:

- The WSAs should consider standardising the consumer's statements of account for both domestic and commercial users to meet all the minimum standards as prescribed by the Water Research Commission;
- The WSAs should develop a comprehensive strategy for addressing the problem of free riding in order to improve water and sanitation service delivery and to enhance revenue

collection and management including improving billing and the capacity to follow up non-payment-related cases through by-laws enforcement and handing over to private debt collection agencies;

- The WSAs should take into cognisance all the Management Incentive-based Regulatory systems introduced by DWS and adhere to all the prescribed regulation and legislative requirements;
- The WSAs should conduct an assessment of the state of municipal water and sanitation infrastructure from time to time;
- The WSAs should ensure that tariffs are more affordable to communities, the infrastructure should be powered by solar energy, and the infrastructure should be easily operated and maintained by local water user associations, especially in rural areas which will eventually cut overall costs for the operation and maintenance of the infrastructure;
- WSAs should start negotiating an ownership model, inclusive of the operation and maintenance model, for water and sanitation service delivery projects and programmes and establishing project handover protocols;
- The WSAs should consider the establishment of the revenue management committees that will view revenue and debt not as separate activities, the committee should look at the value chain in an integrated manner. This approach will lead in effective and efficient debt management and revenue management in WSAs;
- The WSAs should consider employing a competent project management team which will ensure effective monitoring of external service providers (consultants and contractors) during the implementation of new water and sanitation projects;
- The WSAs should solicit funds and ensure the implementation of the KZN Provincial Water Conservation and Water Demand Management Forum Report in order to reduce the cost of non-revenue water, in order to address water losses and non-revenue water, for the billing improvement and for the leakage reduction as well as for non-revenue water reduction;
- The WSAs must engage in a comprehensive staff-training programme in order to address skills shortages; this must encompass both elements of on-the-job training and off-the-job training for both technical and office staff. Skills upgrading for technical staff is required in order to be able to attend to all technical problems that require their attention. Similarly, office staff needs to be trained on telephone etiquette;

- The WSAs should ensure that water and sanitation by-laws are reviewed by including the community through outreach programmes, tabled to council for approval and gazetted to ensure effective and efficient enforcement;
- Harry Gwala and Ugu WSAs should review and update the contract for bulk water supply between the two WSAs;
- The WSAs should extend the scope of indigence to rural communities;
- The WSAs should improve the technology relating to their meter readings;
- The WSAs should deactivate smart meters in favour of prepaid in order to improve revenue collection and management;
- The WSAs should establish revenue operating offices in all satellite offices and lobby for the employment of meter reader supervisors;
- The WSAs must undertake motivational strategies in order to make technical and call centre staff actively committed to performing their tasks;
- The WSAs should design and implement a performance-management system in order to make satellite centres/offices/management areas more efficient;
- The WSAs must design both organisation-wide monetary and non-monetary-incentives for all staff in order to boost employee motivation, thereby reducing employee turnover in all categories of employees and improving on employee performance;
- The WSAs should consider and implement a bulk SMS system, utilise a Facebook page, Instagram and WhatsApp group communications to be used as tools to inform residents in advance of any impending water cuts or service disruptions in order to minimise negative perceptions associated with an alleged lack of communication;
- The WSAs should consider conducting meter readings on the first day of every month to avoid confusion associated with the haphazard reading of meters and incorrect billing;
- The WSAs should do away with the policy of outsourcing that doesn't have skills transfer programmes, because most of the outsourced firms lack patriotism in their provision of services. Most of the outsourced firms are very expensive and do not perform quality work. Outsourcing can be substituted by the in-house training of existing employees to provide similar services;
- The WSAs must improve their hiring strategies so as to be able to hire or recruit committed and competent people so that local government can become a career of choice;
- The WSAs' top management should be largely supportive of their subordinates so as to avoid setting junior staff up for failure;

- The WSAs should consider appointing local service providers for the operation and maintenance of water and sanitation infrastructure;
- A comprehensive strategy for eliminating illegal connections should be undertaken. One of the suggested recommendations pertains to the strategy of legitimising the illegal connections so as to expand the WSAs' revenue base;
- The WSAs should undertake a comprehensive communication plan which involves setting up more channels of communication, increasing frequency of participation, conducting public-awareness campaigns, increasing public participation, establishing community partnerships that are centred on harnessing inputs from residents and incorporating them in the decision-making process and further resuscitate community water and sanitation forums;
- Multiple pay points for the water and sanitation service charges which are accessible to as many consumers as possible need to be established; and
- The WSAs should put in place a debtors' list which must be regularly updated in order to capture details of new owners when property ownership changes.

7.5 FINAL REMARKS

The employment of the Sustainable e-Compliance, Customer Centricity and User Fees Conceptual Framework and related financial sustainability models can contribute effectively in revenue management for water and sanitation. This includes adopting proper credit control policies, efficient debt-collection strategies, and embarking on investment proportion strategies. Adoption of some of these strategies will greatly increase the revenue base and propel the WSAs to greater financial sustainability. Due to high population growth and development taking place there is a need to rethink as a valuable material, not as a nuisance product in order to avoid water resource pollution. Another challenge is ageing infrastructure which demands to be refurbished, replaced, upgraded and expanded. There is also a demand to comply with legislative and regulatory requirements; the WSAs have to invest in human capital development, and invest in technological innovations to keep water resources free from contamination, promote sustainable water use efficiency and try to balance supply and demand, employing system-wide models which can impact on cost recovery as well as fostering innovation and beneficial partnerships with communities/stewardship projects. There is a need for further discussion and research in this area so as to further the financial sustainability of WSAs in rural areas, and in the wider world, including exploration of the possibility of outsourcing billing and collection functions to improve revenue inflows in order to impact positively on revenue streams for WSAs.

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ANNEXURES

Annexure A: Informed Consent

UKZN HUMANITIES AND SOCIAL SCIENCES RESEARCH ETHICS COMMITTEE (HSSREC)

APPLICATION FOR ETHICS APPROVAL For research with human participants

Information Sheet and Consent to Participate in Research

Date:

Greetings,

My name is Nobuhle Pamela Nkabane from Harry Gwala District at Umzimkhulu Local Municipality, a student at the University of Kwazulu Natal. My contact number is 076 9849866, email address buhlebuhle0@gmail.com

You are being invited to consider participating in a study that involves research “**An Analysis of Revenue Management in Water and Sanitation in Harry Gwala and Ugu Water Services Authorities**”. The study is expected to include 100 participants in total, 10 in each satellite office/local municipality and 10 officials/political office bearers per WSA. The research will involve interviews. The duration of your participation if you choose to participate and remain in the study is expected to be eight weeks.

The study will not involve any risks and/or discomforts. We hope that the study will create the following benefits: The recommendations of the study will assist Harry Gwala and Ugu WSAs to improve revenue enhancement strategies in order to ensure sustainable water and sanitation service delivery. The research findings may produce a model or conceptual framework which can be used by Harry Gwala and Ugu WSAs to develop revenue policies as the WSAs (WSA) in order to improve revenue enhancement strategies rather than relying on National and Provincial Government for grants. This study will reinforce existing theories, and enable the role players and stakeholders in Public Finance and Water Sector as well as any other civil society organisations, like Farmers Associations, Ward Committees, Councillors, Amakhosi, Community Water and Sanitation forums, CBO’s and NGO’s and the general Public to benefit from this research.

This study has been ethically reviewed and approved by the UKZN Humanities and Social Sciences Research Ethics Committee (approval number: HSS/2086/017D).

In the event of any problems or concerns/questions you may contact the researcher at 083 9491565 or the UKZN Humanities & Social Sciences Research Ethics Committee, contact details as follows:

HUMANITIES & SOCIAL SCIENCES RESEARCH ETHICS ADMINISTRATION

Research Office, Westville Campus

Govan Mbeki Building

Private Bag X 54001

Durban 4000 KwaZulu-Natal, SOUTH AFRICA

Tel: 27 31 2604557- Fax: 27 31 2604609

Email: HSSREC@ukzn.ac.za

Your participation in the study is voluntary and by participating, you are granting the researcher permission to use your responses. You may refuse to participate or withdraw from the study at any time with no negative consequence. There will be no monetary gain from participating in the study. Your anonymity will be maintained by the researcher and the School of Management, I.T. & Governance and your responses will not be used for any purposes outside of this study.

All data, both electronic and hard copy will be securely stored during the study and archived for 5 years. After this time, all data will be destroyed.

If you have any questions or concerns about participating in the study, please contact me or my research supervisor at the numbers listed above.

Sincerely

Nobuhle Pamela Nkabane

--

CONSENT TO PARTICIPATE

I -----have been informed about the study entitled “**An Analysis of Revenue Management in Water and Sanitation in Harry Gwala and Ugu Water Services Authorities**” by Nobuhle Pamela Nkabane.

I understand the purpose and procedures of the study.

I have been given an opportunity to ask questions about the study and have had answers to my satisfaction.

I declare that my participation in this study is entirely voluntary and that I may withdraw at any time without affecting any of the benefits that I usually am entitled to.

I have been informed about any available compensation or medical treatment if injury occurs to me as a result of study-related procedures.

If I have any further questions/concerns or queries related to the study I understand that I may contact the researcher at 076 984 9866.

If I have any questions or concerns about my rights as a study participant, or if I am concerned about an aspect of the study or the researchers then I may contact:

HUMANITIES & SOCIAL SCIENCES RESEARCH ETHICS ADMINISTRATION

Research Office, Westville Campus

Govan Mbeki Building

Private Bag X 54001

Durban

4000

KwaZulu-Natal, SOUTH AFRICA

Tel: 27 31 2604557 - Fax: 27 31 2604609

Email: HSSREC@ukzn.ac.za

Additional consent, where applicable

I hereby provide consent to:

Audio-record my interview /focus group discussion YES /NO

Video-record my interview /focus group discussion YES /NO
Use of my photographs for research purposes YES /NO

Signature of Participant

Date

**Signature of Witness
(Where applicable)**

Date

**Signature of Translator
(Where applicable)**

Date

Annexure B: Interview Guide

Introduction	<p>Let me take this opportunity to thank you all for availing yourselves to be part of the focus group today. My name is Nobuhle Nkabane a researcher from the University of Kwazulu Natal. I would like us to talk about your experiences in water and sanitation service provision as well as revenue management in the Harry Gwala and Ugu WSAs.</p> <p>As you are the beneficiaries of water and sanitation service delivery in the Harry Gwala and Ugu WSAs I would like us to assess the effectiveness of the current systems in order to capture lessons that can be employed in future interventions.</p> <p>The interview should take less than an hour. I will be taping and recording the session because I do not want to miss any of your comments during the proceedings. I will be also taking some notes during the proceedings.</p> <p>All responses during interviews will be kept confidential and only the researcher will have access to these responses. I will ensure that the research report does not identify the participants as respondents</p> <p>Are you willing to participate in this interview?</p> <p>Interviewee: _____</p> <p>Signature: _____</p>
---------------------	--

PART B: Revenue Management and Technical Issues

- Do you think that there are consumers of water and sanitation services who do not pay but can afford to pay?
- Are there any challenges related to communication being experienced by the consumer in relation to water and sanitation?
- Are there any challenges related to billing and metered services in water and sanitation service delivery?
- What should be creative, innovative and sustainable ways that should be employed by WSAS to improve water and sanitation service delivery
- Is there any common outcry by the community that is related revenue management of water and sanitation services?
- What are the future improvements that you can recommend in order to improve service level standards and to enhance revenue collection and management?
- What is the total budget for the Municipality for this financial year?
- Could you please provide me with the breakdown of the sources of revenue?
- Is there any culture of entitlement and dependency from the water and sanitation users to the WSA? If yes what should be done to address the problem?
- In terms of revenue performance, are you declining or improving?
- Do you have flow meters in all your systems or do you estimate volumes?
- Do you have an accurate billing system?

	<ul style="list-style-type: none"> • Does your municipality have an indigent policy and how long has it been reviewed? • Does your municipality have an indigent register and how long has it been since it was last reviewed? • What mechanisms do you employ to deliver statements of accounts? • Are there any challenges related to compliance management of water and sanitation business? • Briefly tell me about your channel design in water and sanitation business. • Do you submit your water balance report to DWS every month? If so are you populating the information internal or do you engage technical support service provider? • How do you monitor the effectiveness of your meter readers? • How do you deal with faulty meters? • How is your performance in GDS/BDS, RPMS and NO Drop • What is the turnaround time to attend to complaints by the operation and maintenance team • What can be done to improve responses to the challenges experienced by the Water and Sanitation Department/WSA? • Do you have a water conservation and demand management strategy and how far are you with the implementation process? • How effective and efficient is your contact centre/customer care and what can be done to improve its performance? • Do you experience complaints related to billing?
--	---

	<ul style="list-style-type: none">• What mechanism does the WSA employs to deal with defaulters?• What are the challenges that you encounter in water and sanitation revenue management?• What are improvement plans that you have to improve revenue management in water and sanitation?
--	---

Annexure C: Gatekeepers Letter – Harry Gwala WSA



HARRY GWALA DISTRICT MUNICIPALITY

"Together We Deliver and Grow"

WATER SERVICES DEPARTMENT

40 Main Street, Private Bag X501, IXOPO 3276

Tel: (039) 834 2485 Fax: (039) 834 1701

Email: nkabanen@harrygwaladm.gov.za

To : The Municipal Manager- Mrs N Dlamini

From : Nobuhle Pamela Nkabane

Date : 29th September 2017

Dear Madam

PERMISSION TO CONDUCT RESEARCH STUDY IN YOUR MUNICIPALITY

I am currently registered with the University of Kwa Zulu Natal for PHD, Doctor of Administration (DAdmin). My student number is 215078684. It is for this reason that I request for your permission to conduct a study in your institution.

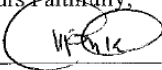
My research title is **"AN ANALYSIS OF REVENUE MANAGEMENT IN WATER AND SANITATION IN HARRY GWALA AND UGU WATER SERVICES AUTHORITIES"** being undertaken under the supervision of Professor Nzimakwe.

The research study will employ qualitative research methodology and shall make use of focus group interviews/discussions with the selected potential participants chosen through purposive sampling as the primary data collection strategy. I am going to adhere to professional and ethical principles and considerations of the research. Should you have any interest in the research findings, I will make the document available for your municipality.

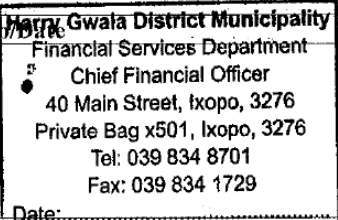
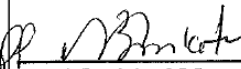
I hope that this research will be beneficial to the municipality since the paper will recommend innovative and creative ways on how the Water Services Authorities can improve water and sanitation revenue inflows to ensure availability and sustainability of revenue sources without depriving the future generations access to the scarce resource.

Your kind assistance in granting me the permission will be highly appreciated.

Yours Faithfully;



Ms Nobuhle Pamela Nkabane

Approved/Not Approved	Stam	
Mrs N Dlamini		
		
The Municipal Manager		Date:

Annexure D: Gatekeepers Letter- Ugu WSA

PO Box 1081

Harding

4680

29 September 2017

The Municipal Manager
MR DD Naidoo
Ugu District Municipality
28 Connor Street
Port Shepstone

Dear Sir

PERMISSION TO CONDUCT RESEARCH STUDY IN YOUR MUNICIPALITY

I am currently registered with the University of Kwa Zulu Natal for PHD, Doctor of Administration (DAdmin). My student number is 215078684. It is for this reason that I request for your permission to conduct a study in your institution.

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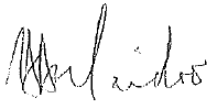
The research study will employ qualitative research methodology and shall make use of focus group interviews/discussions with the selected potential participants chosen through purposive sampling as the primary data collection strategy. I am going to adhere to professional and ethical principles and considerations of the research. Should you have any interest in the research findings, I will make the document available for your municipality.

I hope that this research will be beneficial to the municipality since the paper will recommend innovative and creative ways on how the Water Services Authorities can improve water and sanitation revenue inflows to ensure availability and sustainability of revenue sources without depriving the future generations access to the scarce resource.

Your kind assistance in granting me the permission will be highly appreciated.

Yours Faithfully;

Ms Nobuhle Pamela Nkabane

Approved/Not Approved	Stamp/Date
Mr DD Naidoo 	APPROVED MUNICIPAL MANAGER DATE: 29/09/17 PRINT NAME: DD Naidoo
The Municipal Manager	

Annexure E: Editor's Certificate



Pauline Fogg
54 Grundel Road
Carrington Heights
Durban
4001
074 782 5234

04 April 2019

Letter of Editing

This report serves to state that the thesis submitted by Nobuhle Pamela Nkabane titled 'An Analysis of Revenue Management In Water and Sanitation in Harry Gwala and Ugu Water Services Authorities' has been edited.

The thesis was edited for errors in syntax, grammar, punctuation and the in-text referencing system used.

The edit will be regarded as complete once the necessary changes have been effected and all of the comments addressed.

Thank-you for your business.

A handwritten signature in grey ink that reads "P. Fogg".

Pauline Fogg

Annexure F: Ethical Clearance Approval



18 June 2018

Ms Nobuhle Pamela Nkabana (215078684)
School of Management, IT & Governance
Westville Campus

Dear Ms Nkabana,

Protocol reference number: HSS/2086/017D

New project title: An analysis of Revenue Management in Water and Sanitation in Harry Gwala and Ugu Water Services Authorities

Approval Notification – Amendment Application

This letter serves to notify you that your application and request for an amendment received on 13 June 2018 has now been approved as follows:

- Change in Title

Any alterations to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form; Title of the Project, Location of the Study must be reviewed and approved through an amendment /modification prior to its implementation. In case you have further queries, please quote the above reference number.

PLEASE NOTE: Research data should be securely stored in the discipline/department for a period of 5 years.

The ethical clearance certificate is only valid for period of 3 years from the date of original issue. Thereafter Recertification must be applied for on an annual basis.

Best wishes for the successful completion of your research protocol.

Yours faithfully

Professor Shenuka Singh (Chair)

/ms

Cc Supervisor: Professor Tl Nzimakwe
Cc Acting Academic Leader Research: Professor Isabel Martins
Cc School Administrator: Ms Angela Pearce

Humanities & Social Sciences Research Ethics Committee

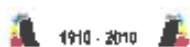
Dr Shenuka Singh (Chair)

Westville Campus, Govan Mbeki Building

Postal Address: Private Bag X64001 Durban 4000

Telephone: +27 (0) 31 260 3307/93504537 Facsimile: +27 (0) 31 260 4606 Email: kmbap@ukzn.ac.za / amymanx@ukzn.ac.za / qob@ukzn.ac.za

Website: www.ukzn.ac.za



110 YEARS OF ACADEMIC EXCELLENCE

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Annexure G: Turnitin Report

Final project

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Springer Nature, 2011

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