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Sustaining & Improving the Water Supply & Sanitation Sector – The Public Private Partnership (PPP) Way

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ABSTRACT

Fifty (50) years after independence, Zambia is still grappling with poor water and sanitation provision and remains underdeveloped. This is despite its vantage position of being endowed with a large fresh water resource base and well distributed system of perennial lakes and rivers, coupled with good rainfall patterns. Challenges of poor infrastructure, increased population and urbanisation, lack of sufficient funding, slow technological advancement, among others, continue hindering the provision of safe water and sanitation to expected levels. These have contributed much to the present major barriers to social and economic development facing the country, thereby impeding human development. This paper aims at advancing the need to use PPPs as a source of financing, value addition and as tools for enhanced social and economic development, to ensure sustainable and improved water and sanitation provision. The PPP concept has become one of the preferred options used world over in the delivery of public services such as water and sanitation (Lengwe, 2014). PPPs have been implemented in many industrialised and developing countries as tools for social and economic development (ONG, 2003). Many countries have experienced PPPs in both combined water supply and power and water supply (Fall et al., 2009). Given the changing economic, social and political environment, coupled with globalisation and budget constraints, PPPs have become unavoidable and indeed desirable in many countries worldwide (School of Built & Natural Environment, 2001). The need for PPPs in many countries has therefore been exacerbated by the public sector's recognition of the vital role of modern infrastructure in economic growth, thus accepting PPPs as important avenues for funding major public sector infrastructure projects. Developing countries, Zambia included, could therefore use PPPs as tools to assist in mainstream water at the centre of development, while at the same time, the need to create an enabling environment in terms of policy, legislation and effective institutional framework is paramount in sustaining and improving the water sector.

1.0 Introduction

Indeed, Zambia has just celebrated 50 years of independence, a period that would be considered longer enough for any meaningful social and economic development. Nonetheless, Zambia still remains underdeveloped, though currently ranked as a Lower Middle Income country (World Bank, 2012; Lusaka Times, 2011). This goes without saying that at the time of independence; Zambia's economy was quite buoyant and it should have used this economic soundness to spur enough growth in key sectors of the economy, such as the water and sanitation sector. Comparatively, countries such as North and South Korea, Taiwan, Angola, Namibia, and Botswana to mention but a few which got their independence thereafter, have grown their economies to greater heights. Again, this is not without acknowledging the strides that have been made through the decades by the UNIP, MMD and now the Patriotic Front Governments, towards the attainment of both social and economic independence.

It is a well-known fact that the water sector in Zambia, in particular, the water supply and sanitation sub-sector, has not performed to expectations. This has in turn affected performance in other sectors such as the health, agriculture, mining, manufacturing and education that have critical linkages to the sector (UNDP, 2011). It is also true that the socio-economic success is largely dependent on the provision of adequate and safe water and sanitation services which is paramount to a healthy population, national productivity and wealth creation. The inadequacies in the provision of quality water supply and sanitation impede on human development, and it is a recipe for an unproductive society. The poor performance of this sector has contributed greatly to Zambia's high poverty levels that stagger around 68%, resulting into low levels of social and economic development. Again, this is despite Zambia having a large fresh water resource base with perennial lakes, swamps, rivers and streams. Like many other developing countries, poor water supply and the provision of sanitation services, coupled with low levels of accessibility and service quality, reliability, lack of efficiency, increased population and urbanisation, financial sustainability and viability, environmental sustainability, affordability, insufficient asset base, and low shareholders' value, among others, still remain problematic in the dispensation of water supply and sanitation, not only in Zambia, but also in other developing countries. The call to strengthen and improve this sector and mainstream water at the centre of development is therefore timely. This paper gives a synopsis of Zambia's water resource base and the evolution of the water sector before addressing the major challenges affecting the sector and further proposes the use of Public Private Partnerships (PPPs) as a strategic option that Governments in developing countries can use to mainstream water at the centre of development, Zambia inclusive.

2.0 A look at Zambia's Water Resource Base

Zambia is strategically positioned in as far as the water resource base is concerned. From the statistical point of view, Zambia has a large water resource base with well distributed system of perennial lakes, swamps, rivers, and streams throughout its territory. In particular, there are 5 big lakes (Kariba, Bangweulu, Mweru, Mweru-wa-Ntipa and Tanganyika), four big river basins (Zambezi, Kafue, Luangwa and Luapula/Chambeshi), coupled with favourable rain patterns (Figure 2.1 below refers).

Figure 2.1: Map of Zambia indicating Water Resources in terms of Lakes, Swamps, Rivers and Streams

Source: MAGELLAN Geographic – www.maps.com

All in all, the surface water resources are estimated to cover 45, 000 square kilometres (6%) of the total land area and total ground water storage is estimated at 1,740,380 cubic metres, with ground water recharge of 160,080 cubic metres (Table 2.1 refers) (Mac Donald, 1990, cited in Government of the Republic of Zambia, 1994). Nonetheless, like many other developing countries, Zambia has had many challenges in the Water Supply and Sanitation (WSS) sector and related infrastructure (MOFNP, 2008a; MOFNP, 2008b; Government of the Republic of Zambia, 1994 and 2010). This is

despite Zambia's large water base and generating an estimated 100 Km^3 per year of surface water and 49.6 Km^3 per year of annual renewable groundwater potential respectively (DWA/JICA, 1995 cited in Government of the Republic of Zambia, 2010).

Table 2.1: Ground Water Potential in Zambia (All values in millions cubic metres)

	Drainage Basin	Luapula/ Chambeshi	Luangwa	Kafue	Zambezi	Total
1	Basin Area Km^2	194,500	147,500	155,000	256,000	752,000
2	Total Mean Annual Rainfall (mm)	214.1	122.3	149.72	228.69	714.85
3	Ground – water through flow	0.83	1.634	0.96	0.22	3.65
4	Vertical Recharge	41.5	33.02	24.45	64.03	160.08
5	Ground water storage	377.7	242.76	252.06	86.82	1,704.4

Data source: Government of the Republic of Zambia (National Water Policy), 1994, p. 12

The statistics provided above in Table 2.1 leave many wondering why "50 years after independence,' adequate and quality WSS is still farfetched in Zambia, despite it being a basic human requirement or need. The call for strengthening and improving the water sector and mainstreaming water at the centre of development cannot therefore be over emphasised and is timely. In proposing how to strengthen and improve the WSS sector, a synopsis on its evolution, especially as it relates to issues of policy, institutional and legal frameworks, is provided below:

3.0 Evolution of the Water Supply and Sanitation Sector: Policies, Institution, and Legal Framework.

Generally, the water sector has evolved as far back as the 1940s and largely operated under the Water Act of 1949, Chapter 198 of the Laws of Zambia. However, the Act had put more emphasis on Water Resources Management (WRM) as opposed to Water Supply and Sanitation (WSS). Due to many institutions that were involved in the WRM, government was faced with a number of cross – cutting problems in the sector pertaining to institutional coordination and programme implementation (Government of the Republic of Zambia, 1994). This, in a way, affected the performance of the sector. A chronology of the evolution of the WSS sector in Zambia is provided in Appendix A.

As a short term measure, a task force on Social Rehabilitation and Maintenance (SRM) was formed to address the WSS activities (Government of the Republic of Zambia, 1994). From a long-term perspective, the Programme Coordinating Unit (PCU) was established and given the mandate to spearhead the reorganisation of the WSS sector in line with the adopted seven (7) Water Supply and Sanitation (WSS) sector principles (Government of the Republic of Zambia, 1994) (Appendix B

refers). The Water Resources Development and Management (WRDM) largely operated under the Ministry of Energy and Water Development (MEWD), in particular, the Department of Water Affairs (DWA) whereas the WSS sub-sector initially operated under the Local Authorities (LAs) but then bestowed on the MEWD before reverting back to LAs under the Ministry of Local Government and Housing (MLGH). Despite these interventions, the provision of water and sanitation still remained problematic and in short supply.

In an effort to try and respond to the deteriorating service delivery, the sector principle No. 3 was implemented as a strategy aimed at bringing about efficiency and effectiveness in the management of service provision. The Government decided to commercialise (as opposed to privatisation) the provision of water and sanitation services by bringing in private sector principles in the management of public institutions and as a means of securing private sector efficiencies with Government oversight. The main goal of commercialising the water and sanitation service provision was to improve service delivery by way of creating viable limited liability utility companies managed by professionals in order to attract external investment. The local authorities have therefore vested their responsibility of WSS service delivery in the urban and peri-urban areas to privately run Commercial Utilities (CUs) formed as joint ventures among local authorities. While the provision of water and sanitation in Zambia has been commercialised through the use of CUs in all the 11 provinces, the initiative has not yielded much of the desired results, mainly due to the fact that the water utility companies are under capitalised and depend so much on grants or subsidies from the parent ministry and the donor community. The companies have never declared any dividends at all to the shareholders. Many areas across the country still receive none or erratic water supply, sanitation services are poor or none existence in most part of the country and the potential for CUs to expand to new areas are very limited due to budgetary constraints and high capital-intensive nature of the business. Financial impropriate and poor corporate governance have always characterised the operations of these companies (Office of the Auditor General's Reports, 2012 – 2015)

A number of guidelines, policies and Acts have also been put in place as outlined below:

- The National Water Policy, 1994 under the Ministry of Energy and Water Development and as amended by;
- The Water Supply and Sanitation Act, 1997 that regulates water supply and sanitation providers (utility companies) both in terms of operations and tariff setting.
- The National Energy Policy, 2008 under the Ministry of Energy and Water Development that deals with energy issues.
- The PPP policy and Act, 2009 under the Ministry of Finance and National Planning that provides a framework for the implementation of PPPs in Zambia and to promote and facilitate

the implementation of privately financed infrastructure projects and effective delivery of social services.

- The National Water Policy, 2010 under the Ministry of Energy and Water Development and focus more on water resources planning, development, management and utilisation.
- The Water Resources Management Act, 2011 under the Ministry of Energy and Water Development and focus more on land use, irrigation, wetland conservation, climate change and conflict management.

In a research conducted on the usage of PPP Model for increased effectiveness in the Zambian WSS (Lengwe, 2014), respondents were asked to indicate their awareness and sufficiency of the above guidelines, policies and frameworks. Respondents were of the view that the above policies and regulatory frameworks are sufficient, in that they also provide an enabling environment for Private Sector Participation. For instance, the legal and institutional framework is available where the private partners could partner with the local authority in the provision of various services such as water and sanitation up to 49 percent shareholding. The PPP Policy and Act also emphasise Private Sector Participation. However, it was the view of the respondents that room for improvement and further strengthening could be inevitable considering the ever changing environment (Lengwe, 2014).

Despite the above revelations, the WSS sector still faces a lot of challenges that requires formidable strategic interventions, and as a way to mainstream it at the centre of development. Section 4 outlines some of the main challenges associated with the sector in question.

4.0 Water Supply and Sanitation Sector Challenges

A number of challenges continue besieging the water sector and in particular WSS sub-sector. Factors such as inadequate water supply and provision of sanitation services, accessibility and service quality, reliability, lack of efficiency, financial sustainability and viability, environmental sustainability, affordability, insufficient asset base, and low shareholders value, among others, still remain problematic (NWASCO, 2010). These factors are not only peculiar to Zambia but also to other developing countries (Fall et al., 2009; Locussol et al., 2009). Zambia's continued efforts to develop the sector through the use of its own internally generated resources, budget and/or project support through grants and loans and subsequent partial realisation of these factors have not yielded much of the desired levels of social and economic benefits (World Bank, 2011). These in turn have contributed much to the present major barriers to social and economic development facing the urban, peri - urban and rural populations of Zambia thus impeding the human development agenda.

While Government has continuously made substantial efforts to reform the sector by putting in place various policies, institutional and legal frameworks, financing of the sector still remains a big

challenge. Though strides continue to be made by various CUs to improve on service delivery (NWASCO, 2013), inadequate and poor quality water supply and sanitation still remain problematic across the country, despite it being a basic human requirement or need. Going by the statistics provided in the Table 4.1 below, the strategy to vest the WSS in the hands of CUs seems to be working to a certain extent as compared to when the services were directly provided by the Local Councils, though marginal. Nonetheless, the pace of planning, formulation and implementation of the sector strategies and their subsequent monitoring and evaluation have been very slow possibly due to the CUs lack of capacity to maintain both the new and already dilapidated infrastructure, and their inability to devise a formidable financial strategy to enable them open up new investments across the country. While the Government remains committed to ensuring that all Zambians have access to clean WSS services through the construction of additional boreholes and sanitation facilities and rehabilitating existing facilities as reported in the 2015 Budget speech (Times of Zambia, 2014), the WSS still remain farfetched. From the statistics provided in Table 4.1 below, it could be deduced that there is still a long way to go in terms of safe WSS.

Table 4.1: Water Supply and Sanitation for each CU by population and coverage.

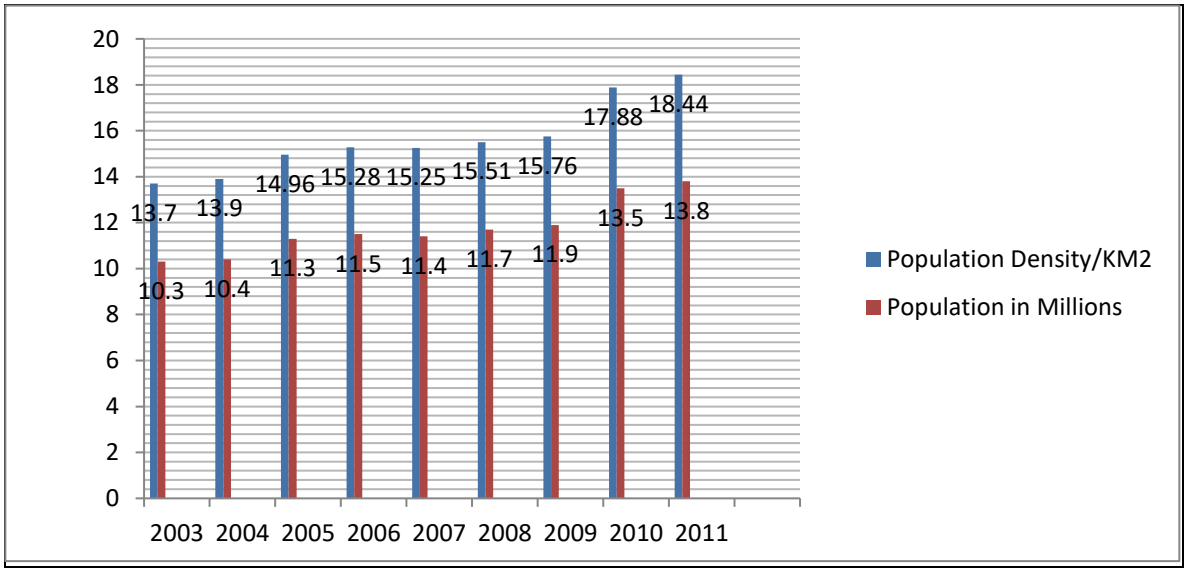
CU	Province	Population in Area 2009/10	Water Supply Coverage 2009/10	Sanitation Coverage 2009/10
Lusaka WSS	Lusaka	1,831,408	70%	19%
Nkana WSS	Copperbelt	685,420	88%	52%
Kafubu WSS	Copperbelt	633,656	86%	59%
Mulonga WSS	Copperbelt	436,249	89%	71%
Lukanga WSS	Central	365,869	66%	27%
Southern WSS	Southern	328,882	89%	58%
Chambeshi WSS	Northern	275,474	63%	32%
North-Western WSS	North Western	223,817	69%	22%
Western WSS	Western	176,477	58%	16%
Eastern WSS	Eastern	217,632	58%	22%
Luapula WSS	Luapula	173,206	19%	0%

Source: UNDP Zambia Human Development Report 2011 as cited from Zambia National Water Supply and Sanitation Council 2010

Arising from Table 4.1 above, it is evident that water and sanitation coverage is still farfetched especially for Luapula province whose water and sanitation coverage is 19 percent and 0 percent respectively. The majority of the population still remains without sufficient sanitation especially those relating to Lusaka, Central, Northern, North Western, and Western and Eastern provinces whose sanitation coverage are below 50 percent.

The 2010 population statistics released by the Central Statistical Office (CSO) indicates that Zambia's population has increased from 10.3 million in 2003 to 13.8 million in 2011, with an average annual growth rate of 2.8 per cent (Central Statistical Office - Zambia, 2013; Index Mundi, 2012). According to the World Bank (2011), the population is expected to increase further to 15.5 million by 2015. Similarly, the population density indicates an upward trend from 13.7 persons to 18.4 persons per square kilometre for the years from 2003 to 2011 respectively (Figure 4.1 below refers). This is likely to pose more challenges to CUs considering that the already worn out and far stretched infrastructure will not be able to sustain the demand.

Figure 4.1: Zambia's Population Density Verses Population.



Source: Compiled by the Author using available data from the Central Statistics Office of Zambia.

The low GDP per capita, which stands around US$ 1, 540 (2013) (World Bank, 2014), places the country among the world's poor middle income nations. Social indicators continue to decline particularly in measurements of life expectancy at birth (about 50 years) and maternal and infant mortality rate (85 per 1000 live births) (UNDP, 2011). The high growth rate that average 2.8% per annum also makes it difficult for per capita income to increase. With the current GDP and the growth rate that is normally demand linear, the current WSS services will become worse than before, although the situation is still not acceptable by the majority of the population. These indicators continue posing additional challenges to the Zambian water and sanitation sector, and call for strategic options that would assist to remedy these challenges and assist in raising the living standards of the majority population.

Additional statistical figures in terms of accessibility to water and sanitation services indicate that in 2008 for instance, only 60% of the population of Zambia had access to an improved source of water supply and 49% had access to adequate sanitation. In 2010, urban and rural water supply stood at 78% and 46% respectively and urban and rural sanitation stood at 54% and 43% respectively. In urban areas, access to water connections stood at 41% whereas 49% rely on kiosks and standpipes. In relation to sanitation, urban population connected to sewers stood at 29% while 30% are served by septic tanks (NWASCO, 2010). Nonetheless, the Urban and Peri-Urban Water Supply and Sanitation Sector Report 2013 indicates that national urban water and sanitation coverage stand at 83.5%/83.9% and 57.3%/58.7% for 2012 and 2013 respectively (NWASCO, 2014). This shows some improvement as compared to 2010 statistics. However, and in order to enhance economic growth and improve the quality of lives of most Zambians, it is estimated that by 2015, accessibility to reliable safe water and adequate sanitation will stand at 75% and 60% respectively (MOFNP, 2008b). This in itself confirms that access to improved sources of water supply and sanitation still remains a challenge despite having adequate water resources. With the extension of the Millennium Development Goals (MDGs) to Sustainable Development Goals (SDGs), particularly on "Clean Water and Sanitation" we wait to see meaningful improvements in the WSS in Zambia. Based on these challenges, it calls for the need to initiate strategic options such as the PPP to assist in remedying the challenges. This could eventually help to increase effectiveness and efficiency in the provision of water and sanitation services**.**

Comparatively, and arising from the historical geography of water and human settlement in the Southern African Development Corporation (SADC) as captured by McDonald & Ruiters (2005) and as they relate to safe water and sanitation, it is apparent that Malawi, Mozambique, Swaziland and Zambia have the highest proportions of at least 50 percent unserved population without access to safe water, while Lesotho, Malawi and Mozambique have the highest proportions without access to safe sanitation. South Africa and Tanzania stand out with the lowest proportions of unsafe sanitation despite having the highest population. In other words, lack of both unsafe water and sanitation is a common phenomenon across SADC countries with Malawi topping the list (Table 4.2 refers).

Table 4.2: SADC states access to clean water and sanitation

Country	Total Population (millions)		Population Growth rate (%)		% population without access to safe water & sanitation	
	1999	**2015**	**1975-1999**	**1990-2015**	**Safe water 1990-1998**	**Sanitation 1990-1998**
Angola	12.8	20.8	3.0	3.1	32.0	-
Botswana	1.5	1.7	2.9	0.7	10.0	45.0
Lesotho	2.0	2.1	2.1	0.4	38.0	62.0
Malawi	11.0	15.7	3.1	2.2	53.0	97.0
Mozambique	17.9	23.5	2.3	1.7	54.0	66.0
Namibia	1.7	2.3	2.7	1.8	17.0	38.0
South Africa	42.8	44.6	2.1	0.3	13.0	13.0
Swaziland	0.9	1.0	2.9	0.7	50.0	41.0
Tanzania	34.3	49.3	3.1	2.3	34.0	14.0
Zambia	10.2	14.8	3.0	2.3	62.0	29.0
Zimbabwe	12.4	16.4	3.0	1.7	21.0	48.0
DRC	49.6	84.0	3.2	3.3	32.0	-

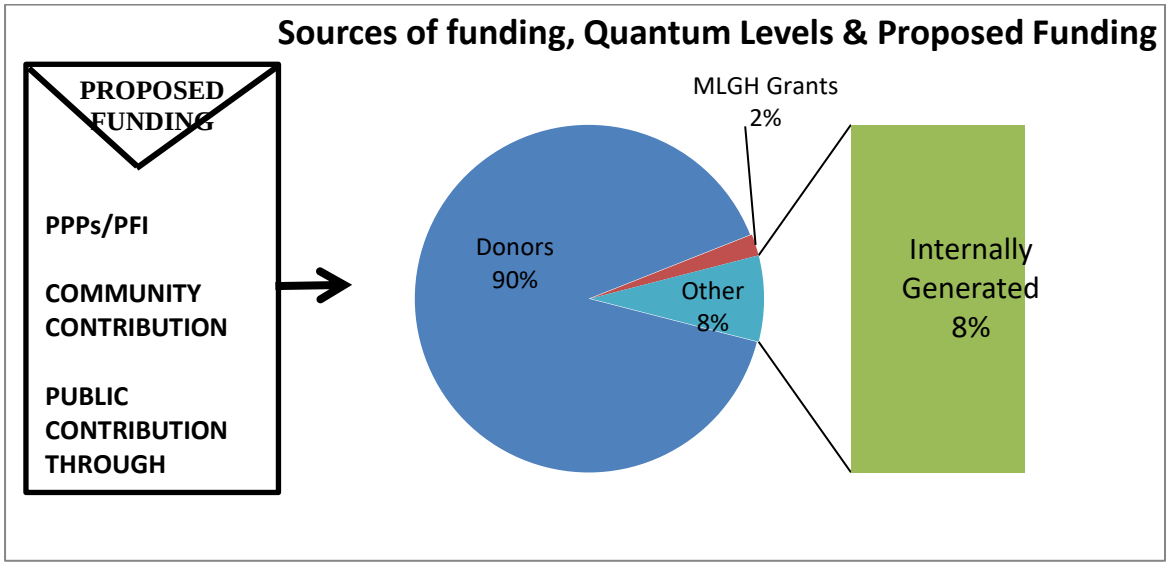
(-)= Not available
Source: UNDP (2000, pp. 170-71; 2001, pp155 - 156

Again, the above data is an indication that much more needs to be done by Governments in developing countries to mainstream water at the centre of development with the major challenge being financing.

4.1 Financing

The major challenge that has inhibited the performance of the water supply and sanitation sector has been poor financing. Historically, the financing of the water and sanitation sector has been predominantly through budget/project support, donor support and internally generated. However, the major source of financing has been through grants and loans from mostly cooperating partners such as Germany, African Development Bank, Denmark, Japan and World Bank (Zambia Daily Mail Limited, 2013; Zambia Daily Mail Limited, 2012; JICA, 2012). Government grants and funds generated internally by respective CUs have been very minimal and have not assisted much to sustain the sector. Figure 4.2 below depicts both the current sources and levels of financing and proposed sources of financing. The proposed financing would replace the donor financed portion that could be used if available on other public service delivery interventions. For this paper, the focus is on Public Private Partnerships (PPPs)

Figure 4.25: Main Sources and Proposed of funding for Zambia's Water and Sanitation Sector



Source: Developed by the writer from data provided.

5.0 How would Governments in developing countries mainstream water at the centre of development?

Water supply and sanitation should be seen as a critical developmental aspect for Governments in developing countries and should be mainstreamed as part of the developmental agenda. In order to do so, Governments need to devise sustainable interventions towards boosting the provision of safe water supply and sanitation and to act as a prerequisite to developing other sectors of the economy. It is a forgone conclusion that other major sectors of the economy have linkages to the water supply and sanitation such as health, education, agriculture, manufacturing and mining. Other than adequate provision of safe water and sanitation, quality, accessibility, sustainability and affordability issues, and adequate financing of the sector are paramount. Whilst various models have been put forward to try and sustain and improve the sector, there is need to introduce sustainable models that would assist in the enhancement of infrastructure development; improvement of information technology and bring in sound management principles, including the work culture. One such model is the PPP, and for this paper, it has been proposed as an alternative strategic option that would assist in addressing the above challenges.

5.1 Using PPP as a strategic option to strengthen and improve water supply and sanitation.

As indicated in sub-paragraph 4.1 above, the bigger portion of financing is from the donor community and therefore acts as a bigger challenge in terms of financing. In order to sustain and improve the sector and mainstream water at the centre of development, it is proposed that the PPP model be used as an alternative strategic option, mainly to provide financing and assist in improving the sector's

efficiency and effectiveness. In other words, the PPP concept has become one of the preferred options used world over in the delivery of public services such as water and sanitation (Lengwe, 2014). In the Zambian perspective, the PPP is defined as an arrangement between public and private sectors with clear agreement on shared objectives for the delivery of public infrastructure and/or public service, by the private sector that would otherwise would have been provided through traditional public sector procurement (PPP Policy and the Act, 2009). Whereas various definitions have been cited by various scholars (ACCA, 2012; Nisar, 2007; Ahadzi 2004; Ghobadian et al., 2004; Li 2003), it could be deduced therefrom that a PPP is a strategic option that provides some form of symbiotic relationship between the public and private sectors in the delivery of high quality sustainable public services (Lengwe, 2014).

Given the changing economic, social and political environment, coupled with globalisation and budget constraints, PPPs have become unavoidable and indeed desirable in many countries world-wide (School of Built and Natural Environment, 2011). The PPP concept has been dissected and debated from different angles by various scholars (ACCA, 2012; Mouraviev & Kakabadse, 2012; Ball, 2011; Fall et al., 2009, p. 7; Nisar, 2007; Ghobadian et al., 2004; Li, 2003; ONG, 2003) and a number of developed and/or developing countries worldwide have used or planned to use this concept in a way they see beneficial. Their quest to enhance public service delivery, especially when it comes to factors that enhance Value for Money (VFM) and risk sharing and/or transfer, makes the PPP concept a preferred option. While it is reported that PPP is a relatively new and developing concept (Sciulli, 2008; Ghobadian et al., 2004), PPPs have existed for many decades in both developed and developing countries such as Europe and the United States of America (USA) (ACCA, 2012; Ghobadian et al., 2004, p. 1; Li, 2003), Western and Central Africa (Fall et al., 2009, p. 7, Li, 2003), and Asian countries (ACCA, 2012; Li, 2003). In particular, PPPs including Public Finance Initiatives (PFIs) (though at times used interchangeably) with European, Western and Central African countries, date as far back as the nineteenth century (Fall et al., 2009; Ghobadian et al., 2004), an indication that PPPs are a common phenomenon worldwide. PPP models include among others Concession Contracts; Lease Contracts, Management Contracts and Service Contracts. They can also take the form of Build Operate and Transfer (BOT); Build Own, Operate and Transfer (BOOT); Build Transfer and Operate (BTO), Design, Build, Own, Operate and Transfer (DBOOT) especially those required in a green field kind of setup. It is also reported that in many developed and developing countries, there has been a move towards increased reliance on PPPs for infrastructure development in a bid to overcome broad public sector constraints in relation to either a lack of public capital and/or a lack of public sector capacity, resources and specialised expertise to develop, manage and operate infrastructure assets (School of Built and Natural Environment, 2011). They are commonly used to accelerate economic growth, development and infrastructure delivery, and to achieve quality service

delivery and good governance. With PPPs, sufficient capital would be injected in the sector; the asset base would be beefed up leading to improved efficiencies; improved water reticulation; production, storage and supply and quality of water. More innovative activities would be initiated leading to increased confidence; increased customer base and market share, and ultimately, increased revenue. The scope of operations would be expanded leading to more jobs created thereby widening the tax base, increased disposable income and ultimately the social and economic development.

From the Government of the Republic of Zambia perspective, the enactment of the PPP policy and Act of 2009 is an acknowledgement and endorsement of the need to use the PPP as a financing strategy. Based on the 2015 Budget speech and as reported in the Times of Zambia (2014), there is need to extend the use of PPPs as an alternative forms of financing to other critical sectors of the economy such as water and sanitation other than just using it to finance the tertiary education infrastructure. In this way, economic activities would be increased thereby contributing sufficiently to the growth of GDP per capital.

6.0 Conclusion

Based on the above revelations, it is evident enough that despite efforts made by Government and Donors at large, improved water supply and sanitation still remain a pipe dream to the majority of the population, not only in Zambia, but also in other developing countries as well. This has normally culminated into high poverty levels and high incidences of water-borne diseases such as diarrhoea and dysentery. The demand for additional capital injection continues haunting Governments in developing countries. ONG (2003) suggests that a possible way forward in situations of this nature is to positively promote development of new relationships between the Government, the private sector, mainstream financial institutions, and the local community. This would help bring about greater efficiencies in reducing the cost associated with providing this service, and ultimately give greater value to those desiring better water supply and sanitation. The writer therefore asserts that by employing a PPP strategy, developing countries can mainstream water at the centre of development due to the benefits that come with it such as improved efficiency and effectiveness. Financing to the sector would substantially improve, thereby ensuring sufficient capitalisation of the sector, leading to high level maintainability of existing infrastructure, enhancement in technology, and enhanced staff technical skills. With the sound management principles that come with private sector operations (as opposed to public sector work culture), it is expected that the water supply and sanitation sector would be sustained and improved to levels acceptable and befitting Governments in developing countries. The challenges currently being faced in the sector would possibly be minimised substantially, considering the benefits that come with the PPP.

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Appendix A: Chronology of the evolution of the water supply and sanitation sector in Zambia.

Year	Event
1976	The DWA proposed a "Zambian National Water Authority" to be responsible for both WSS as well as WRM.
1984	Attempts to recognise the WSS failed despite recommendations from the National Conference on "Zambian Plan of Action for WSS" held by the International Drinking Water Supply and Sanitation Decade (IDWSSD) Secretariat.
1985	Zambia Industrial Mining Corporation (ZIMCO) issued a report called: "Proposed National Water Authority", again proposing the establishment of one authority to manage both the WSS and WRM.
1986	Cabinet Office instructed by Government to hold a high level meeting to discuss the establishment of the proposed authority and to include the set-up of a regulator for WSS and a National Water and Sewerage Company.
1991	With a change in Government that introduced general public service reforms and the liberalisation of the economy thus creating a conducive environment for water sector reforms. A workshop on the water sector policy was also held
1993	Government launched a comprehensive water sector reforms and established the Programme Coordinating Unit (PCU) tasked with the responsibility of steer the implementation of the sector reforms.
1994	MEWD through the National Water Policy Development Initiative developed the National Water Policy as a framework for future development of the water sector. This included the Seven Sector Principles adopted by government.
1994	Cabinet decision to set up a regulator NWASCO to be responsible to the MEWD and in line with the Seven Sector Principles, an institutional set – up be done for the water sector (See Figure 1.2 below)
1997	New Water Supply and Sanitation Act No.28 passed superseding the 1949 Water Act.
2010	MEWD developed the National Water Policy to embrace modern principles of water resources management and endeavours to deal with the daunting challenges of poverty reduction.

Source: NWASCO Report – 2010.

Appendix B: Seven sector Principles from the National Water Policy 1994 and 2010 as adopted by Government

The mandate given to the PCU included undertaking: Sector policy reforms; clarification of sector responsibilities; sector organisational reforms; framework for planning, project development and operation and maintenance; and proposal for institutional strengthening. The PCU mandate was guided by the seven WSS sector principles adopted by Government and included the following:
Principle 1: Separation of water resources functions from water supply and sanitation.
Principle 2: Separation of the regulatory functions and executive functions within the water supply and sanitation sector.
Principle 3: Devolution of authority to local authorities and private sector.
Principle 4: Achievement of full cost recovery for the water supply and sanitation services through user charges in the long run.
Principle 5: Human resource development leading to more effective institutions.
Principle 6: Technology appropriate to local conditions, and
Principle 7: Increased GRZ spending priority and budget spending to the sector.

Source: National Water Policy 1994, p. 28 and 2010, p.15