

ZAMBIA

Reform of the Water Sector Programme Phase II in Zambia (RWS II)

Final report on development of O&M management models for selected rural piped water schemes in Luapula Province

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RWS II

Reform of the Water Sector Programme Phase II in Zambia

2nd Floor Evexia Office Building
Plot No. 1014 Church Road, Fairview
Private Bag RW 37X
Lusaka, Zambia

Email doreen.mbalo@giz.de

Internet www.giz.de

Responsible on behalf of GFA Consulting Group GmbH

Dijana Delic

Phone +49 40 60306-256

Fax +49 40 60306-259

Email dijana.delic@gfa-group.de

Author

James Gibson, GFA Short Term Expert

Items from named contributors do not necessarily reflect the views of the publisher.

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ABBREVIATIONS

CBM	Community Based Management
CBO	Community Based Organisation
CU	Commercial Utility
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
LA	Local Authority
LpWSC	Luapula Water and Sanitation Company Limited
MoU	Memorandum of Understanding
MWDSEP	Ministry of Water Development, Sanitation and Environmental Protection
NWASCO	National Water and Sanitation Council
O&M	Operation and Maintenance
RWS	Reform Water Sector
SSP	Support Service Provider
ToR	Terms of Reference
WSP	Water Service Provider

1 EXECUTIVE SUMMARY

In Zambia the new regulatory framework from the National Water and Sanitation Council allocates licences for all water supply in any given area to the Commercial Utility responsible for that area. This has the important implication that these utilities must now take on responsibility for water supply in rural villages and rural growth centres, whereas in the past they were only responsible for urban and peri-urban schemes. The regulations also require that the Commercial Utilities sign agreements with any organisation that they delegate the O&M responsibility to.

This change necessitates that the Commercial Utilities develop concepts of how they will ensure that rural water supply services are delivered, and indeed how this may impact on their long-term business model. Between 2020 and 2022 the RWSII programme assisted the Luapula Water and Sanitation Company in developing concepts and tools for them to take on this new O&M responsibility, which now encompasses the whole of the Luapula Province. In specific the programme required the development of

- Management models for O&M of rural piped water schemes.
- Guidelines for the implementation of the new management model.
- Development and signing of Memoranda of Understanding with organisations to whom the O&M responsibility has been delegated.

The starting point for the team assigned to undertake this work was to conduct a review of the experience of others in the delivery of rural water supply. Published documentation and interviews with various actors and organisations active in managing infrastructure and providing services were the main sources of information in the review. The team considered examples that included international, national and local Luapula experience.

Unsurprisingly, the review concluded that the Operation and Maintenance of water supply infrastructure and provision of service in rural areas has been implemented for a number of decades, but still faces many challenges. Primary amongst these was the inadequacy of the collection of user fees (tariffs) in covering the cost of operation and maintenance. Importantly the shortcomings of Community Based Management were also identified and reiterated. Other challenges were identified, but to a large extent could be related back to the lack of resources for operation and maintenance.

An important consideration in the formulation of a way forward was the financial difficulties that Luapula Water and Sanitation Company faces year after year and the fact that rural water supply schemes are seldom, if ever, able to produce a financial surplus. Recognition of this fundamentally weak financial position was a significant consideration in the formulation of possible management models.

The findings of the review were presented at workshops of people and organisations that were project partners or stakeholders in the water supply sector. Following the validation of work done, findings and recommendation made, the group agreed that the most feasible approach was to implement a Hybrid Model that facilitated the use of Community Based Organisations to carry out day-to-day tasks and cover local costs, while ensuring that adequate technical and administrative support be put in place through a Support Service Agent role. This Support Service Agent role

would support the use of existing capacity and resources within the province through engaging any of Local Authorities, Non-Government Organisations, Private Sector Companies, and other organisations that may be already active, or show an interest in the future, in provision of water supply Operation and Maintenance.

The adoption of the model described above does result in a number of other organisations taking up responsibilities that may otherwise fall to the Utility. However, it will still be necessary for Luapula Water to setup systems to manage, regulate and support these organisations. A guideline to implementation of the Hybrid Model was developed to assist the Commercial Utility in this regard. The guideline describes the structures and systems that must be implemented to ensure the adequate functioning of the management model that has been adopted.

The identification of a management model does not in itself solve the fundamental challenges that the Commercial Utility must contend with. It is widely known that Luapula Water and Sanitation Company repeatedly receives poor performance scores and that it is located in perhaps the poorest province in the country. The potential for achieving financial viability and improved technical performance are severely restricted by the context in which they must provide water and sanitation services. It is therefore essential that adequate support be provided to the utility to enable them implement the Management Model as described in the reports and other documents produced as part of the RWSII programme. This support should begin with the development of a thorough understanding of what the practical requirements and steps to be taken must be in putting in place the structures, systems and resources to build the organisational capacity for the current and future context as they take up their licenced responsibility for operation and maintenance of rural water supply schemes.

2 INTRODUCTION

2.1 Background and Context

Under GIZ support to the Government of Republic of Zambia, through the MWDS, the Reform of the Water Sector Phase II aimed to establish important prerequisites for the implementation of prioritized integrated investment packages to improve drinking water and sanitation in rural areas and growth centers. Specifically, the support of RWS II was focussed on the Province of Luapula in Northern Zambia. This being one of the poorest provinces in the country.

A specific requirement of the programme was to consider, and make recommendations on, the Operation and Maintenance of Rural Water Supply Schemes. In particular the project Terms of Reference (ToR) noted the need for „adaptation of institutional arrangements“. An important consideration in this regard is the recent change to the regulatory framework for rural water supply.

In 2018 the national regulator (NWASCO) announced that Commercial Utilities (CUs) would hence forth be licenced for all water services in their respective geographic areas of responsibility. Hence, the CUs would be responsible for the operation and maintenance of urban, peri-urban and rural water supply schemes (Annex 1). However, the details of how such an arrangement/s may work in practice were still to be determined.

The growing trend across the country is that rural water supply infrastructure is being upgraded from a point source level of service (handpumps) to piped water schemes that distribute water to communal taps and private connections within a village.

This change in the regulations gave rise to the requirement in the RWSII project ToR to recommend management models for such small piped water schemes.. Importantly, the ToR noted that rural water supply systems do not have significant tariff raising potential, and hence have doubtful commercial viability. Recognising this, and the overall levels of poverty in Luapula Province, it was noted in the ToR that operational models to be considered should, as far as possible, not overburden the Commercial Utility.

‘A challenge is obviously that rural WSS does not have a high potential for financial viability, and therefore the new models should not overburden the financial and human resources of LpWSC, a CU smaller in size and rather financially weak’.

The „Output 2“ component indicated that the following deliverables where required of the Contractor:

- Situation analysis of Rural WSS in the Luapula Province
- Recommendation of a Management Model for operations & maintenance of five rural water supply schemes.
- Development of a “Work Plan” for implementation of the recommended O&M Model;
- Development of Memoranda of Understanding between stakeholders in the implementation of the recommended Management Model.
- Capacity Building of staff and management of the Luapula Water and Sanitation Company.

2.2 Service Delivery Challenge and Operational Implications

The sustainable operation and maintenance of water supply systems is an international challenge, particularly in poorer under-resourced locations. This is indeed true for Zambia and especially true in the relatively less well-off Luapula Province. This area is one of Zambia's ten provinces and is located in the northern part of the country, it is named after the Luapula River, which, flowing north, marks the border between Zambia and the Democratic Republic of the Congo (DRC). The provincial capital is Mansa and, according to the 2010 Zambian census, the province had a population of 991 927 (7.6 % of the national population). The province is further divided into twelve districts.

Water and sanitation services in the urban and peri-urban areas have historically been the responsibility of Commercial Utilities (CUs) while the operation and maintenance of rural water supplies was carried out by various actors including, Local Authorities, Non-Governmental Organisations (NGOs) and Community-based Organisations (CBOs). The Commercial Utility responsible for Luapula Province is the "Luapula Water and Sanitation Company" (LPWSC).

As is the case in many parts of Africa, water supplies in the Zambian Province of Luapula experience numerous breakdowns and service interruptions caused by a lack of adequate operation and maintenance arrangements and practices. The long-term sustainability of these supplies is clearly at risk unless a more effective model of operation and maintenance is identified and implemented.

Water Service Providers (WSPs) are institutions responsible for the 'day-to-day' provision of water and sanitation services. Operational activities they must manage include – abstraction, treatment, storage, transport. To achieve this WSPs must implement – day to day operational activities, preventative maintenance, repairs to infrastructure, customer management, occupational health and safety programmes as well as monitoring and reporting. In order for these activities to be reliably implemented responsible organisations must have effective management systems, procedures and practices in place. This report summarises the work done over the past 2 years on the RWSII project to develop a rational management model for O&M of rural piped water supply schemes, as the progressively become the responsibility of the Luapula Water and Sanitation Company Commercial Utility.

3 METHODOLOGY

3.1 Aims and Objectives

The aim of this assignment was to develop models and make recommendations on approaches to the financing, managing, and resourcing of the operation and maintenance function for piped water supplies in Luapula Province.

The approach to the assignment included:

- Review and analysis of the theoretical context and framework pertaining to rural water supply O&M
- Collation of lessons and experiences from other countries in Africa, elsewhere in Zambia and in Luapula Province itself
- Identification and discussion on key findings related to water supply O&M sustainability
- Recommendations for an improved O&M model.

Early in the execution of the assignment it became apparent that developing an O&M management model for only the 5 schemes to be rehabilitated under the RWSII programme was too narrow in scope. For LpWSC to support rural water supply schemes in a coherent and sustainable manner they would need to have approach that was applicable to all schemes that they are currently responsible for, and indeed the many many schemes that they will be responsible for in the future. The scale of currently installed water service infrastructure in the province is illustrated below.

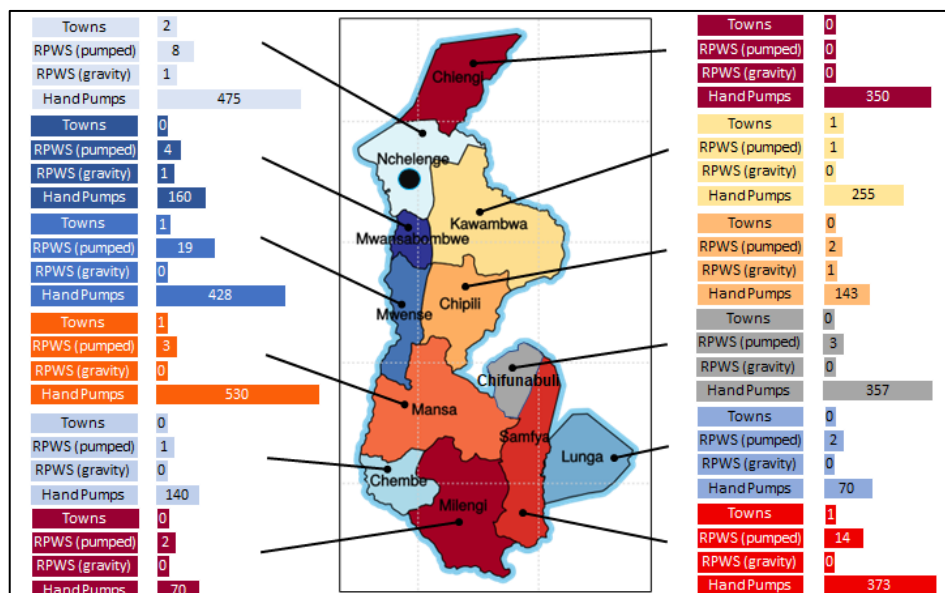


Figure 1: Water Supply Infrastructure in Luapula Province (2020)

During the course of the assignment it soon became apparent during the study and its outcomes on models and approaches to the operation and maintenance of piped water supplies would have broader relevance for sustainable O&M arrangements for the sector across the whole of the country.

3.2 Experience in other Countries

The first task undertaken was to review the experience of others in managing similar rural water supply systems. To understand the achievements and challenges of other a survey was done of international and Zambian experiences, as well as the current arrangements and practices in Luapula Province. The experience was reviewed through interviews and reference to published documentation.

The experience and findings from nine African countries was gathered and reflected on. Importantly this review is representative of a wide range of actors in the sector, including funders, operators and academics. The countries considered also represented a wide range of national economic circumstances, as illustrated below.

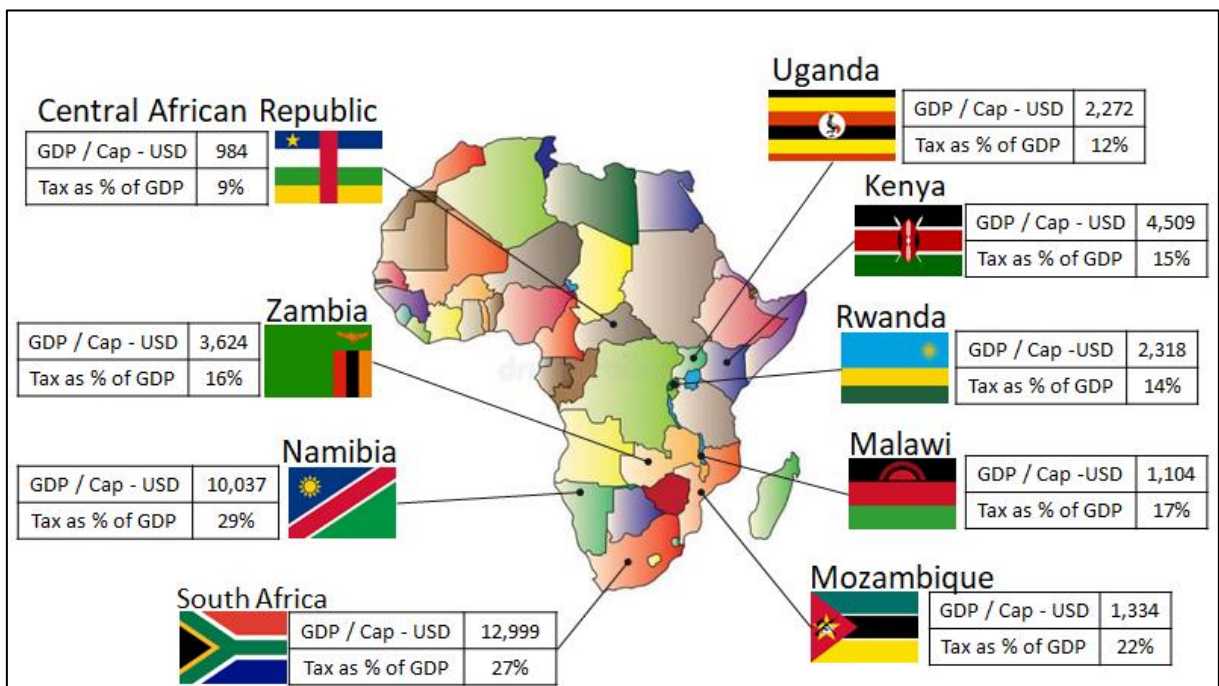


Figure 2: Countries in which the Experience with Rural Water Supply was considered

In Zambia a number of Commercial Utilities have already responded to the new regulations and taken on the responsibility for O&M of rural piped water schemes. Research revealed that there are also a number of NGOs and Private Sector companies providing water services to various communities in different settings. In particular the management arrangements and experience of water supply and sanitation in a refugee camp in the North of Luapula, provided by an international NGO was also considered, as was an arrangement in which a Private Sector service provider was carrying out operations and maintenance activities around Samfya in the east of the province.

Officials from the various organisations were contacted and semi-structured interviews were conducted to elicit the local experience in taking up this important responsibility. In specific, questions and discussions were centred around the operational model being implemented, institutional arrangements, and the basic operational resources required to perform the tasks at hand.

- Infrastructure
- Facilities (Offices, Workshops, Stores, etc.)
- Human Resources
- Vehicles and Equipment
- Spares
- Business Systems and Methods
- Finance and Funding

The areas of operation of the utilities in Zambia that were reviewed are as illustrated below.

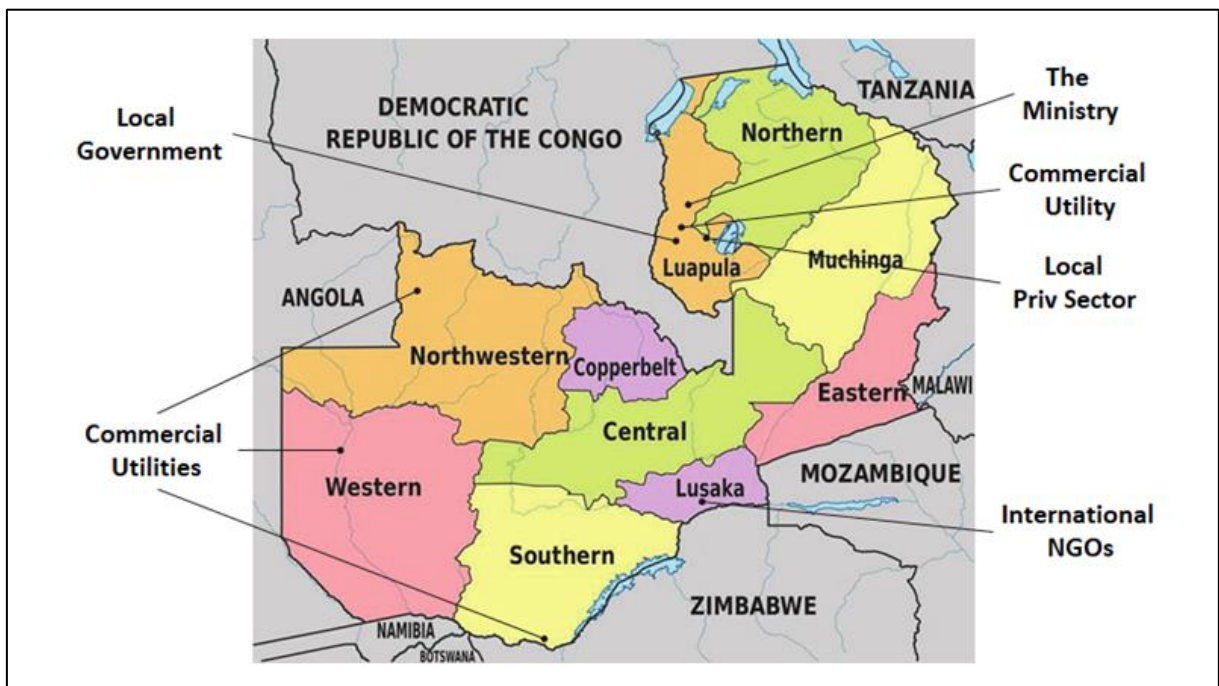


Figure 3: Organisations Contacted and Interviewed in Zambia

In this research it was re-affirmed that there is a vast body of experience that has been generated over decades of work in the rural water supply sector. This research and practice over decades has generated a vast body of knowledge that outlines the experiences, challenges and some success achieved. Notably, most of the reported experience indicates that significant challenges remain albeit that many attempts have been made, and many models tested over the years. As with all such projects, the RWSII assignment was limited in the resources and time available. It is however felt that the extent of the places and experiences referred to both internationally and locally resulted in a representative picture of the management challenges and realities that Luapula Water and Sanitation Company will have to contend with as they respond to the new licence conditions and take up the recently consequent responsibility in supporting rural water supply schemes.

4 OBSERVATIONS AND FINDINGS

In each of the circumstances investigated for this project there is of course a particular context that prevails. It is normal for people in any given context to believe, and feel, that the circumstances and challenges they face are unique. However, Through the data collection and interviews it soon became apparent that there are recurring themes and types of challenge encountered.

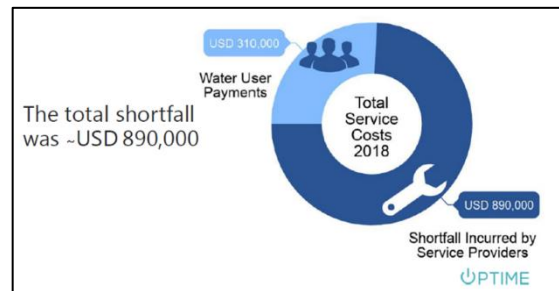


Figure 4: Cost Coverage from Tariffs

Similarly, interviews and observations from CUs, NGOs and the private sector in Zambia elicited some recurring themes. Many of these were the same as those highlighted from the experiences internationally. These recurring themes are noted below:

Cost recovery and financial viability is a challenge - The research done indicated that all of the organisations, projects and agencies and struggled to achieve full cost recovery (OPEX and CAPMANEX). This was particularly true for major maintenance (CAPMANEX). There are many schemes that do continue to provide services with financial contribution from customers only, albeit at low levels of functionality. However when major technical failure occur many of these schemes can stand idle for long periods of time, and indeed many fall into states of complete un-serviceability. Figures published by the UPTIME consortium indicate that their experience is that only 25% of O&M costs are recovered from customer tariffs. Further to this, recent work by Pravdi et al, in which they modelled the full cost of maintenance for rural schemes in Kenya indicated that only 8% of these costs would be recoverable through user charges. Another challenge service providers must accommodate is the availability of alternative sources such as wells, handpumps, rivers and ponds. In the rainy season results the availability of water from these sources results in a loss of income to service providers as people „defect“ to these sources since it has no financial cost to them. Naturally this impacts negatively on the financial viability of the schemes and service provision organisations.

Energy costs represent a high proportion of total costs – Schemes that operate with financing from customer tariffs only, find that energy costs make up a large (majority) of their operating costs. This high proportion of expenditure on energy is to some extent explained by the low levels of, wages paid to scheme operators and other expenditure. Of particular concern is the lack of funding for preventative maintenance related to the electro-mechanical equipment. The desire to install solar powered systems was a repeating theme.

Retaining kiosk operators / vendors is a challenge – In most cases kiosk operators are paid on the basis of a percentage of sales. It was often reported that the level of sales did not support an income that could sustain a person in the job. Hence there is a high turnover of staff, and training of new people needs to be repeated over and over.

Shortage of vehicles and transport limit effectiveness – This is a universally reported challenge, and not only for rural water supply, but for large water utilities as well. The inability of staff to move to remote sites severely inhibits their ability to carry out routine, and ad-hoc, O&M tasks. The nature of rural piped water schemes is that they are in remote locations, and hence transport resources are an especially crucial element for any organisation to be able to carry out the required O&M tasks.

Community Based Management on its own doesn't work – There has been widespread comment on the sustainability of Community Based Management (CBM) over the years. The review undertaken during this project found that in a number of places support had been put in place to work with CBOs. For example, the experience of UPTIME in East Africa is that good performance (+95% reliability) can be achieved through the use of performance based contracts with professional service providers. However the data collected by them indicates that substantial subsidy (+75%) is required to achieve such high levels of performance. Likewise, Access Water 4 Zambia have achieved similarly good performance at rural water supply schemes around Samfya in the Luapula Province, where they have implemented a system of working with community based caretakers, and providing technical support when required to schemes. Academic work undertaken in Malawi (Chowns 2015¹) went into great detail on the cause of failure of CBM. The conclusion of this work also indicated a need for adequate support to be put in place. In some cases schemes are indeed found to continue functioning, at least to some extent, by communities, but they were described in the work by Chowns as „limping“ along. In all cases reviewed it was clear that some support had been provided to these apparently independent CBOs, particularly when major maintenance was required

Some CUs in Zambia have deployed their own staff to run rural schemes – In order to „professionalise rural water supply“, some CUs in Zambia (including LpWSC) have deployed internal staff to work at rural schemes. While this is reported to improve performance, all of those interviewed indicated that this resulted in a financial drain on the utility.

Since the sustainability of rural piped water schemes will now be integrally linked to the performance and sustainability of the CU whose licence they operate under, the overall performance of the CUs in Zambia was also considered in the formulation of management models.

From the NWASCO annual performance reports it is evident that LpWSC has consistently displayed poor performance. Over the past ten years LpWSC has repeatedly appeared in the bottom two of the performance rankings provided by NWASCO. In the same reports it is indicated that the financial performance of LpWSC is the lowest of all CUs in the country! In the 2020 report their O&M cost coverage rate was just 54%, the lowest of all CUs. The next poorest performer having a score of 81%. Clearly LpWSC is an organisation facing a formidable financial challenge, even considering only the current operations of 6 towns and a few rural piped water schemes.

¹ WaSH Policy Research Digest ISSUE #6, AUGUST 2017: COMMUNITY MANAGEMENT; Detailed Review of a Recent Publication: Rural water supply systems cannot succeed with community management alone; Chowns, E. 2015.

The research on the broader economic circumstances also indicated that Luapula has the highest poverty index in the country. Notably the poorest provinces (Luapula and Western), both have consistently poorly performing CUs as indicated in the annual NWASCO assessments. As noted in figure 2 above, the performance of utilities is often correlated with the per capita income where they operate.

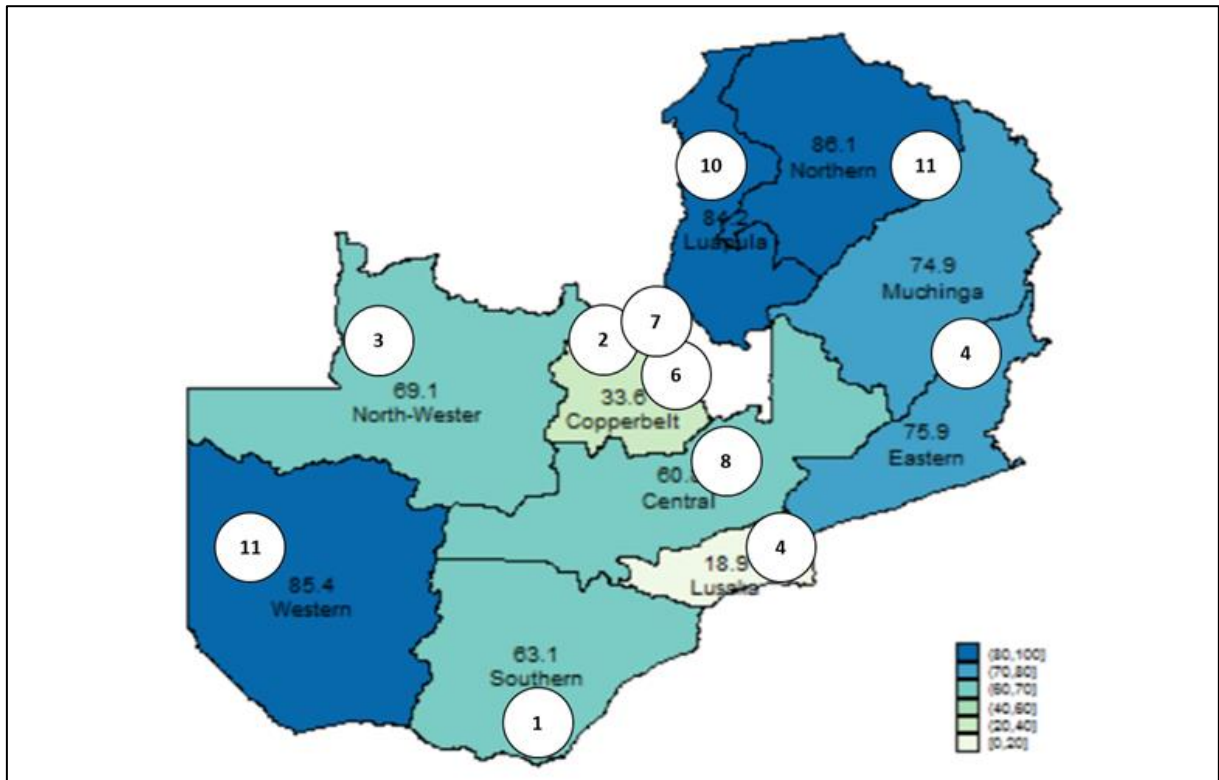


Figure 5: Poverty Map of Zambia with 10-year Average Performance (circled) of Commercial Utilities

This research on the performance and financial circumstances of LpWSC, along with the general state of the financial status of residents in the province, indicate that the organisation is not in a strong position with regard to be taking on further operational responsibilities, particularly where the schemes in question are likely to require financial support rather than be contributors to the cash flow of the organisation. It is evident that some form of financial support will be required to support any management model that is adopted.

Alongside the work being done on developing management models the team working on other aspects of the RWS II project undertook an extensive data collection exercise to inform the development of DWASHE plans. This included collection of data on the level of household income. The distribution of income levels for Mansa District is illustrated in the figure 6 on the next page.

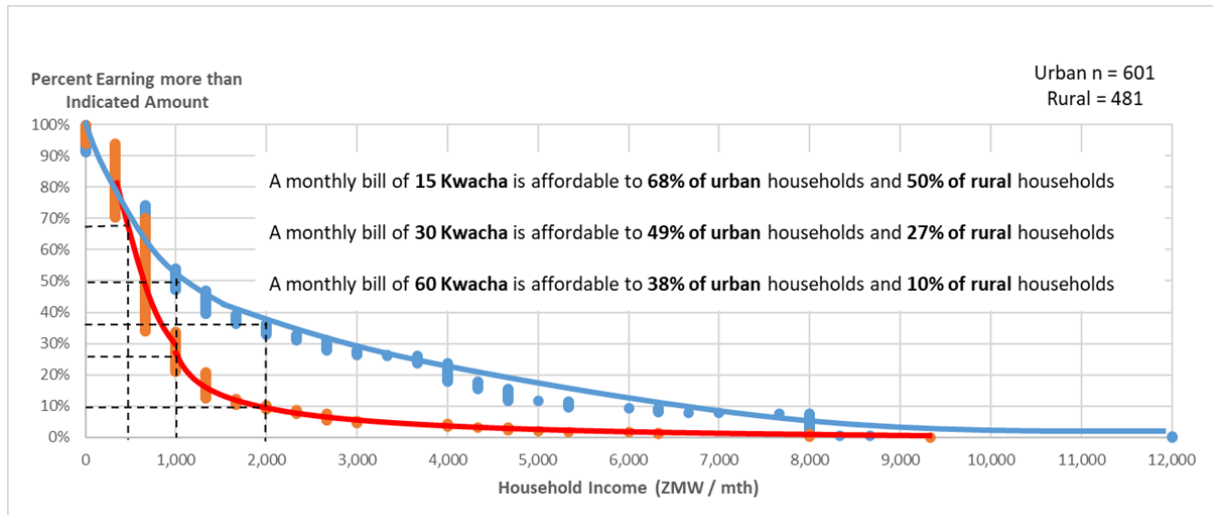


Figure 6: Distribution of Household Income and Affordability of Water Services - Mansa District

The data collected clearly illustrate 1) the much lower level of income in rural areas, and 2) the affordability limits that can be realistically expected from consumers. This reaffirms the statement in the ToR that „*rural water supply service does not have a high potential for financial viability*”.

The observations and findings from the review of international, Zambian national and local Luapula Province experience were carefully considered, shared and debated with a wide range of project partners and stakeholders in the formulation of the model for O&M of rural water supply schemes that now fall within the mandate of LpWSC.

5 VALIDATION OF METHODOLOGY AND FINDINGS

The important observations and findings described above were used in the identification of the three O&M management solutions that were presented for consideration. In a workshop setting (annex 2) a comprehensive report was given of the observations and findings on the experiences of all of the cases considered (fig 2 and 3 above). From the feedback and observations a series of challenges that LpWSC is likely to have to address was developed and presented for discussion.

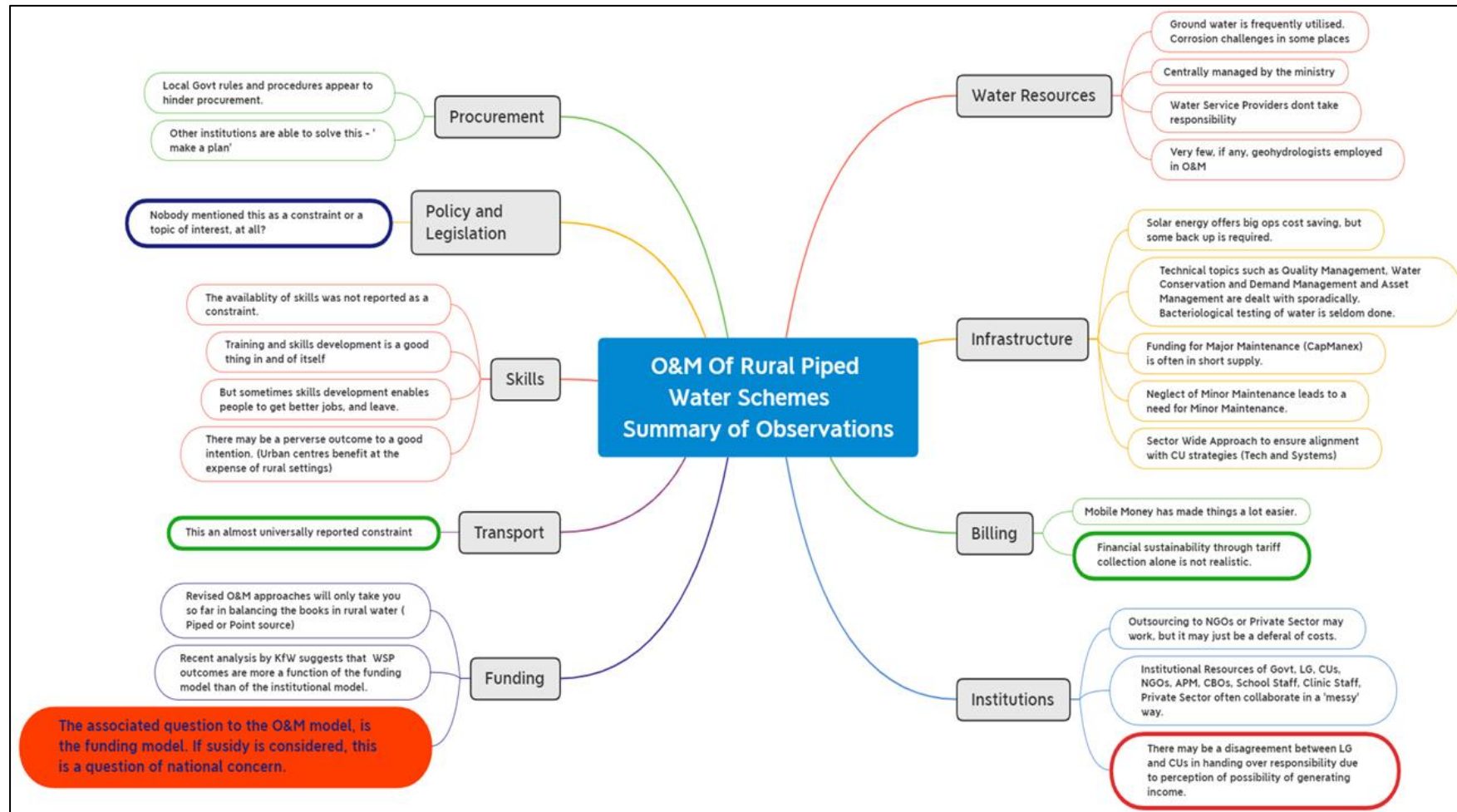


Figure 7: Observations and Findings from Research on O&M Management Models.

These issues were thoroughly debated by the stakeholders present and feedback was given to the team working on the development of the management models

Following this presentation of the findings and consideration of the feedback received, a follow-up workshop took place in which the possible models for management of O&M were the context in which LpWSC operates and must endeavor to provide service.

An important consideration in the development and implementation of any Management Model is recognition that there are multiple service providers and stakeholders already active in supplying water to rural communities. In particular there needs to be consideration of the following types of service providers:

- CBOs
- Local Authorities
- NGOs
- Private sector

The arrangements to be put in place would have to accommodate the following:

1. Luapula Water and Sanitation Company is now mandated to be responsible for province wide provision of water and sanitation services.
2. There are a number of service provision arrangements already in place (as described above)
3. Each of the existing service provision arrangements has their own operational resources e.g., people, vehicles, and finance.
4. The financial vulnerability of LpWSC should not be unnecessarily negatively impacted

Three possible management models were suggested, and one was recommended as having the best chance at being practical and potentially viable.

Table 1: Possible Management Models for O&M of Rural Piped Water Supply Schemes.

O&M Aspects	Option 1	Option 2	Option 3
Description	Full O&M responsibility taken by the CU. All staff employed by CU.	Community based management. All O&M matters dealt with at community level. Support from other agencies (NGOs, CU, and NGOs) on an ad-hoc / emergency	A hybrid of community based responsibility for day to day operations and technical support from either the CU or a willing and adequately resourced NGO
Day to day ops	CU	CBO	CBO
Minor repairs	CU	CBO	CBO
Major repairs	CU	Emergency support from LG, CO, or NGOs	CU / NGO
Billing and credit control	CU with Kiosk Agents	CBO	CBO
New connections	CU	CBO	CU
Spare part provision	CU	CBO	CU / NGO
Technical support *	CU	LG (minimal)	CU / NGO
Provision of fuel	CU	CBO	CBO
Payment for electricity	CU	CBO	CBO

As there is no clear „perfect“ arrangements for a situation were the complex interaction of many factors results in arguments for and against the various permutations of institutional arrangements that may be possible. Arguments for and against the various options were debated as describe below.

Table 2: Consideration of Management Options

Management Option	Pro's	Con's
Commercial Utility takes full responsibility.	<ul style="list-style-type: none"> • Aligned to longer term responsibilities and vision. • Technical expertise available in house. 	<ul style="list-style-type: none"> • Raises day to day cost to the CU (esp. operators salary). • Systems must be integrated (e.g., Billing).
Community takes full operational responsibility.	<ul style="list-style-type: none"> • Aligned to longer term responsibilities and vision. • Technical expertise available in house. 	<ul style="list-style-type: none"> • Results in low level of service. (interruptions). • Infrastructure is not maintained. • Lots of evidence that this has not worked elsewhere.
Community with CU or SSP support.	<ul style="list-style-type: none"> • Costs constrained through local arrangements (e.g., Salaries). • Embedded rationing (energy costs). 	<ul style="list-style-type: none"> • staff may demand salaries aligned with CU permanent staff. • Behavior of local staff and customers not accountable to the CU. • CU may not have resources to provide support.

Considering the findings of the review, and the points made above the participants in the workshop debated the options presented and it was unanimously agreed that there needed to be an arrangement that was a „hybrid of models“ that:

1. Made maximum use of the positive aspects of a community-based approach, such as local people doing local work.
2. Ensured support for the CBOs that would carry out day to day O&M.
3. Allowed various organisations to play a role as a Support Service Provider (SSP) to CBOs
4. Limited the financial demands on LpWSC

The drafting and signing of Memoranda of Understanding was an important component of the project. This task was undertaken in a manner that took into considerations the viewpoints of a wide range of stakeholders. This included LpWSC (the license holder, various potential Support Service Providers, National and Local Government Organisations, including the National Regulator (NWASCO). **A record of meetings and workshops held to inform the development and signing of the MoUs is presented in Annex 4.**

Based on the findings from the research on the experience of others, the O&M management model that flowed from this, and consultation with potential signatories, a template MoU was drafted (annex 5). This document captured the salient points of what would be required to effectively guide and regulate the relationship between LpWSC and the various Support Service Providers (SSPs) and Community Based Organisations (CBOs) that may be engaged in the provision of water supply services. The importance of this at local operational level and also consideration of the national implications for CUs all over the country taking on rural water supply as a result of the new

licencing arrangements was recognised. Considering both the local and national implications, the content of the document, was presented at workshops with stakeholders in both Mansa and Lusaka (annex 6). The MoU template was updated based on the extensive debate and comments made in these workshops.

This resulting draft MoU framework was then shared with NWASCO for their thorough review. This was achieved by making an aural presentation of the draft MoU framework to the NWASCO Team by GFA Counsting Group and sharing the soft copy of the draft MoU framework. Extensive comments and input were made to the draft MoU framework by NWASCO. A bi-lateral meeting between NWASCO and GFA Consulting Group to discuss and agree to the comments and inputs was held following NWASCO's extensive comments and inputs by NWASCO, and this resulted in the revised draft MoU framework which consequently formed a basis of bi-lateral meetings with partner organisations and parties to the MoU, namely: Access Water 4 Zambia Limited, Luapula Water Supply and Sanitation Company Mansa Municipal Council, Mwansabombwe Town Council, and Mwense Town Council. Following the development of the MoUs a number of agreements were signed in November and December 2022.

- Mwansabombwe Rural Growth Centre of Kazembe
- Mwnense Rural Growth Centre of Mulundu
- Access Water for Zambia For 62 villages

Fundamental to the partners signing the MoUs was the achieving of the consensus not only to the content but to the wording of the MoU as well. This, therefore, was attained through bi-lateral meetings between GFA Consulting Group and the Parties to the MoU, thus: Access Water 4 Zambia Limited, Luapula Water Supply and Sanitation Company Mansa Municipal Council, Mwansabombwe Town Council, and Mwense Town Council. In general, therefore, the bi-lateral meetings involved a thorough review of the whole content and context of the revised draft MoU framework, word by word and sentence by sentence, and ultimately providing the content applicable and acceptable by the respective party to the MoU.

These MoUs were subsequently shared with LpWSC for their through comments and inputs prior to their finalization and signing.

6 IMPLEMENTING THE HYBRID O&M MODEL

Given the agreement on adoption of the Hybrid Model it then became necessary for the team to describe what would be required to successfully implement the arrangements necessary to turn this theoretical concept into a working set of procedures and activities for each of the potential participants.

- Luapula Water and Sanitation Company as the license holder, as per the new regulatory framework and possibly also as a Support Service Provider.
- Support Service Providers with systems and staff carrying out technical tasks that require higher skills levels and management tasks such as managing procurement and logistics, monitoring and reporting. The CU could fulfil this role itself, or appoint any one of - a Local Authority, an NGO, or a Private Sector Company.
- Community Based Organisations as the organisations with staff performing day to day operations at the location of the infrastructure.

A further round of on-site interviews, observations and research was undertaken to ascertain the practical implications of applying the „Hybrid Model“ (annex 6). To address this need for a description of what is required in setting up and applying the Hybrid Model two tools were developed.

- A guideline to implementing the model in which the requirements for various procedures are outlined. The suggestions in the guideline do recognize that the scope of work will begin rather small, but could grow to become the dominant set of activities due to the number of rural villages in the province (approximately 1,000 in 2020)
- A template “Memorandum of Understanding” between parties participating in water service provision for any given community or group of communities. In the regulations it is a requirement of NWASCO the the licence holders (CUs) enter into agreements with service providers if they choose to delegate water supply provision to any other organisation. The need for developing such a template and having 2 of such agreements signed (annex 4) was stipulated as a requirement of the project.

The implementation guideline that has been developed provides a roadmap of what is required to put in place the Hybrid Model and for it to function adequately. The guideline recognises that the model was selected to ensure that the burden on financial and other resources is spread across the various actors that may be involved in any given scheme.

While the model places a large part of the operational burden on other organisations such as CBOs, and other organisations that may act as SSPs, there are still many tasks that must be undertaken by LpWSC to ensure that there is adequate monitoring, management and support for all the organisations that may become involved. Importantly, in each circumstance there could be varying combinations of capacity within the local community (CBO) and the organisations providing technical and management support (SSPs). It will be an important task of LpWSC to ensure that each of the MoUs is correctly administered and that the water service outcome is compliant with

the regulatory requirements, In some cases this may require simple monitoring and reporting, but in others active support, and perhaps even contractual discipline may be necessary.

The content of the Guideline Document is illustrated below.

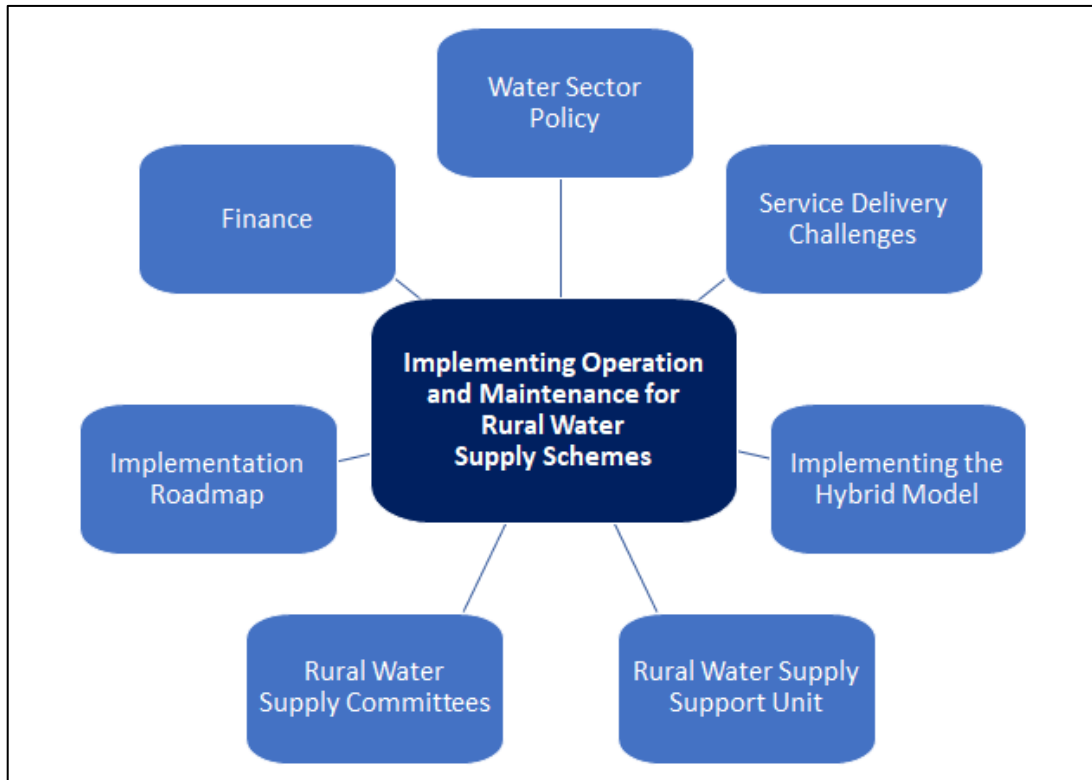


Figure 8: Guideline for Implementing O&M for Rural Water Supply Schemes

For each of the items indicated in the figure above there is a comprehensive discussion on what must be put in place and what activities need to be undertaken. For most of the chapters of the document there are also useful templates such as checklists and reports attached.

Identifying content and Drafting of the MoU made extensive reference to examples from other contexts. This included the examples provided by the world bank and other multi-lateral funding agencies. Local examples of service level agreements were also referred to, as were examples of contracts with private sector service providers. The challenge in developing the MoU template was one of ensuring that the content of any contract (MoU) would be sufficient to be meaningful, while not creating a document that was over complicated. In drafting the document there was a repeating requirement to phrase the clauses as measurable contractual obligations rather than simple guidelines.

Recognising that putting in place binding clauses in a context where there was little or no experience of operating under conditions regulated by a contract also elicited a number of issues that required attention. While a contract that is not binding is ineffectual, there was also a desire to create circumstances in which breach and ultimate failure of the agreement due to **naivete** of what might transpire rather than real lack of performance was avoided. The solution to this lay in inserting a trial period of 3 years into the contractual terms. Hence, the general theme of the Template MoU is one of focusing on ensuring reliable service to customers and disputes being resolved through negotiation rather than contestation.

7 WAY FORWARD

Crucial to ensuring the successful provision of water supply services to rural communities is the development of capacity within LpWSC to undertake their role as the License Holder. This will require them to develop organisational structures, systems, and procedures to fulfill roles of contract administration, monitoring and reporting, technical, administrative and management support to Community based Organisations and Support Service Providers.

While the Hybrid Model does leave a significant amount of operational responsibility with communities, this should not be allowed to become simply another mode of abdication. It is clear that CBOs are unlikely to be able to provide water supply services at the level and standards required by the regulations from NWASCO, in fact far from it.

It is therefore imperative that the capacity of CUs be developed to play the support role that will inevitably be required of them. The awarding of province wide licenses to the CUs, and the consequent responsibility for O&M that follows must be supplemented by adequate support and resourcing. It is noted in the NWASCO annual scorecard (2020) that 6 of 11 CUs cannot yet cover their current O&M costs from revenues, and LpWSC is the worst performer at 54%. Giving such financially unstable CUs an ever-growing responsibility for rural water supply schemes that are inherently loss making in and of themselves can only make matters worse. In this regard LpWSC is especially vulnerable. Expecting LpWSC to “trade its way out” of the current circumstances of weak finances and poor performance is not realistic.

It is therefore recommended that a comprehensive support programme be put in place to enable LpWSC to implement the structures, systems and procedures as described in the “*Guide to Implementing Operation and Maintenance for Rural Water Supply Schemes*” which has been developed as part of the RWS II programme

An important first step will be to develop a roadmap for the roll-out of LpWSC taking on responsibility for rural water supply. Such a roadmap must consider the requirement for organisational structures, systems and resources as they relate to, the current scale of responsibility (few rural piped water supply schemes), to a situation where this type of technology and the related logistical challenge are the dominant aspects of the O&M challenge. This new responsibility will require them to build capacity in not only technical aspects of service provision but crucially, also contract administration for dealing with Support Service Providers, and community development in supporting and managing the participation of Community Based Organisations.

While the management model and guidelines for implementation have been developed and validated, the practicalities of implementation should now be identified through development of a detailed and realistic business plan (template in annex 7) that identifies the objectives, activities and resources required to achieve the goals of LpWSC over time. There must be careful consideration of the context that prevails in each of the districts where rural water supply schemes will be incorporated into the LpWSC O&M management model. It is only once the practical implications of objectives, activities and resources is understood that the necessary support mechanisms and instruments can be developed and put in place.

Following the development of a comprehensive business plan and the identification of the changes required and development needed within LpWSC steps can be taken, programmes formulated and financial support identified for the Organisational Development required. It is anticipated that support will be required primarily in the setting up of systems within the utility that assist them in their roles as managing the activities and performance of Support Service Providers, supporting Community Based Organisations, and providing direct technical support wherever they take on that role. All of these responsibilities and tasks that flow from them will require people with skills that are currently in short supply within the organisation. This will result in a need for recruitment of new staff and the associated resources (office equipment, transport facilities, etc) required for them to perform their assigned tasks. This organisational development required will inevitably require the commitment of funding for the foreseeable future. Therefore, an important part of the support provided should be in the way of assisting LpWSC to continually seek financial support through the development of strong motivations to be presented to potential funders, including national government departments, as well as development partners both nationally and internationally.

8 CONCLUSION

The research and review of international, national, and local experiences in delivering rural water supply services that was carried out under the RWSII programme has enabled the development of an understanding of the challenges that must be addressed by LpWSC now that they have been licensed for water supply across the whole province. The scope and scale of rural service provision was quantified and the systemic challenges of poverty in the area and the lack of inherently viable business propositions have been highlighted.

Based on the identified challenges and an appreciation of the resources to-hand, a recommendation of adopting a Hybrid Model for the management of O&M at rural piped water schemes was made at a workshop of stakeholders and interested parties. The Hybrid Model was adopted as it struck a balance between maximizing the best parts of community involvement and sharing of responsibility with more technically capable and financially sound organisations.

In making the decision the group did consider the inherently weak financial circumstances prevailing in the water sector in Luapula, where many households have low incomes and find piped water service to be expensive. Implementation of the Hybrid Model will certainly not provide a miraculous turnaround in the fortunes of LpWSC nor rural water supply schemes, but it does provide a mechanism to optimize the use of the limited resources that are available. It is however clear that adequate financial subsidy would be required to make a success any model for the management of O&M of rural water supply schemes. The adoption of a Hybrid Model will to some extent limit the financial extent of the subsidy required while still engendering a sense of community ownership, responsibility and financial contribution.

This recommendation did consider the longer-term development of the scope and scale of responsibility as infrastructure is implemented and services are rolled to ever more rural communities. Importantly, the Hybrid model also provides an opportunity for the participation of Local Authorities, NGOs and Private Sector Operators, that bring invaluable resources in the form of finance, skilled people and crucial equipment to the sector.

To assist in implementation of the Hybrid Model a guideline of what must be put in place by LpWSC was also developed, this includes a template MoU for agreements between LpWSC (the Licensee), Support Service Providers (typically LAs, NGOs, Private Sector Companies), and Communities that will benefit from the rural water supply scheme, and also play an important role in carrying out day-to-day operational activities.

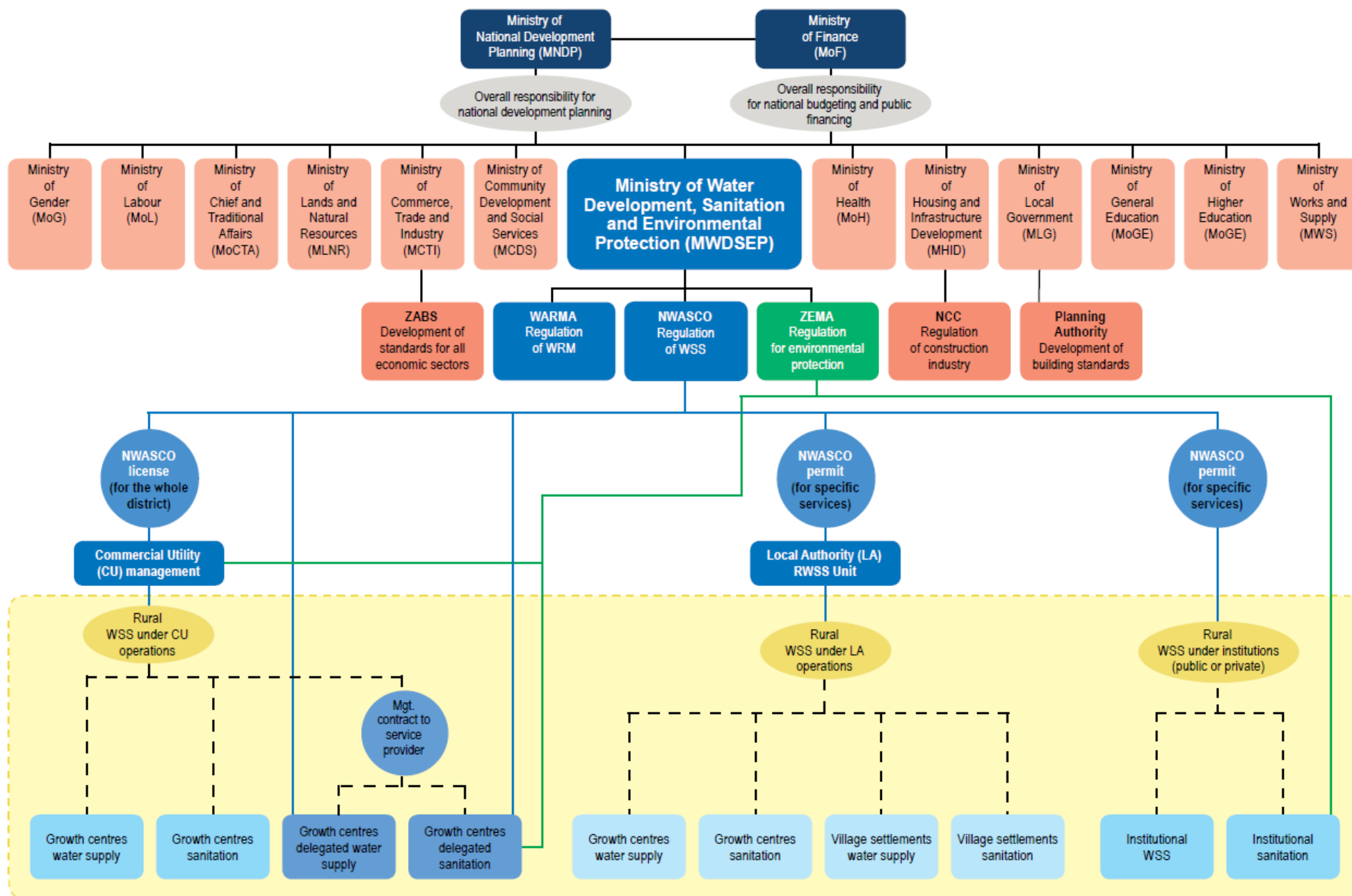
The implications of making LpWSC the licensee for the whole province (urban, peri-urban, rural) are significant. In the long-run this will impact on the very nature of the organisation as it must adapt from the current responsibility of operating and maintaining 6 towns, and a few rural water supply schemes, to running many rural schemes (approximately 1,000), an ever-growing number of rural growth centers, and a few towns.

This transition will not be without challenges. It is therefore essential that adequate support be provided to LpWSC in implementing the structures, systems, and procedures to be able to adequately fulfil this new extended mandate that they now have.

ANNEXES

Annex 1: The New Regulatory Framework

Figure 5: Recommended organisational arrangements for regulation of rural water supply and sanitation services



Annex 2: Workshop 1: Presentation of Research on O&M Models



Luapula Piped Water Scheme O&M Models

Validation Workshop in Luapula, and Online
18 September 2020



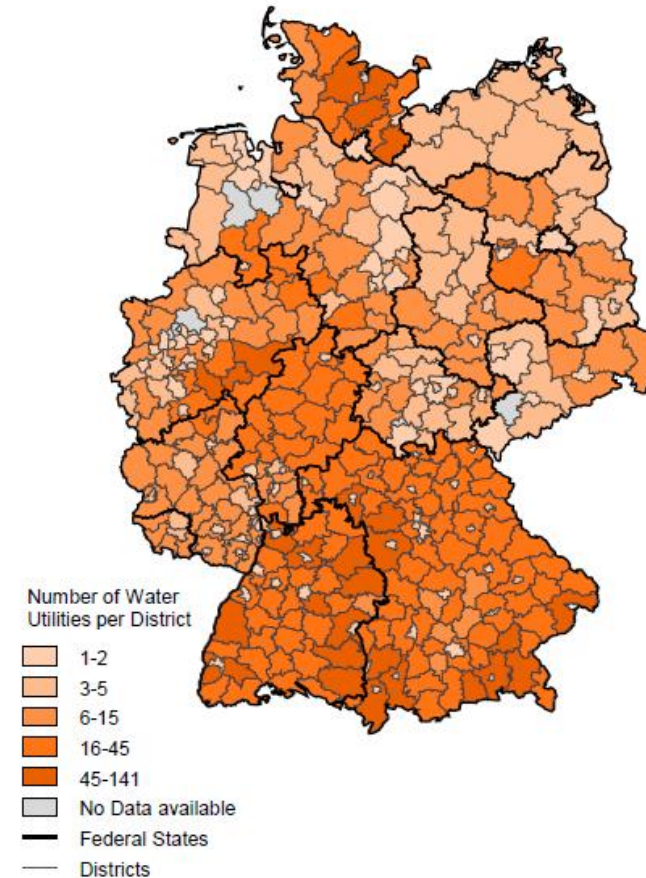
Implemented by

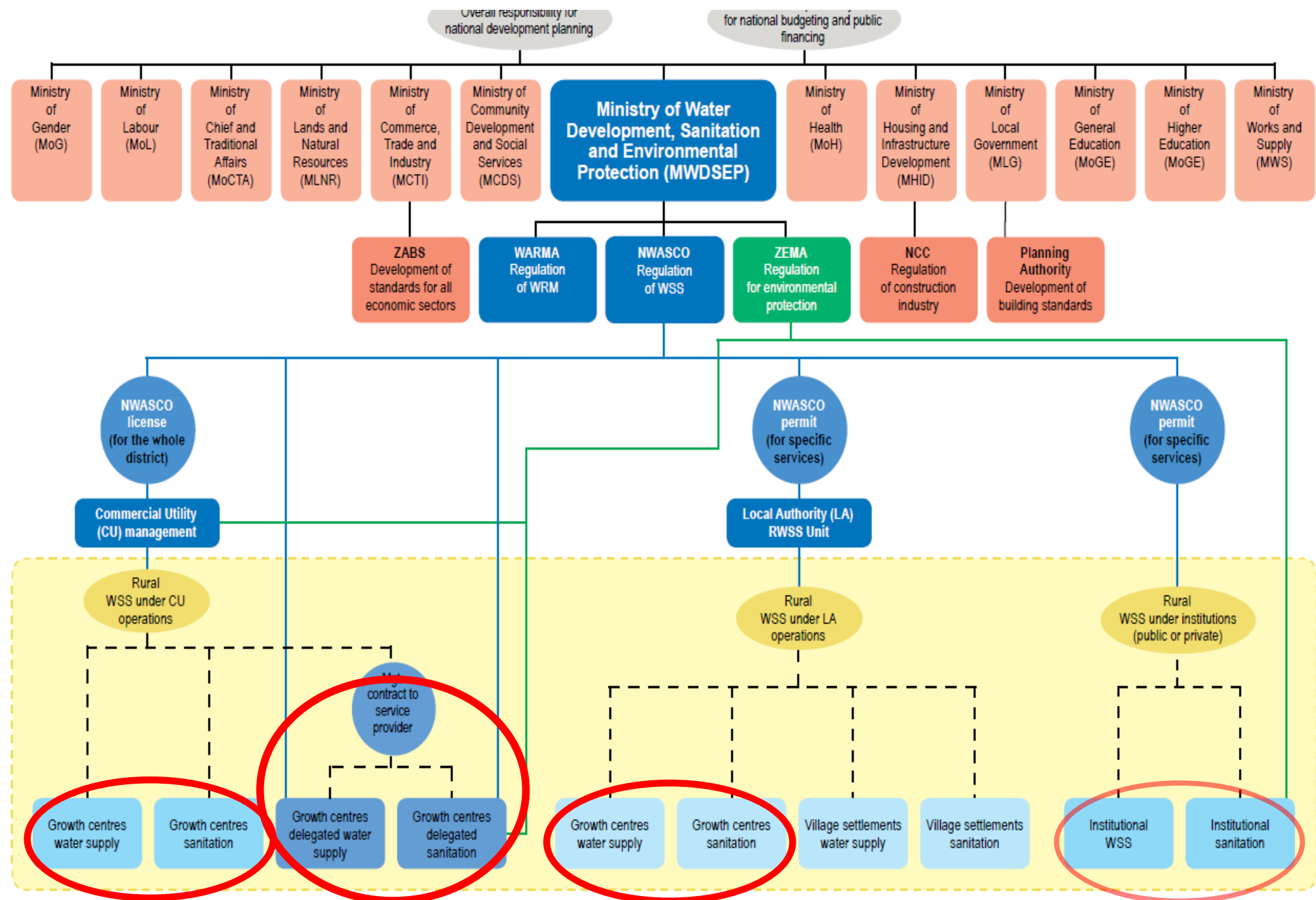
giz Deutsche Gesellschaft
für Internationale
Zusammenarbeit (GIZ) GmbH



Introduction

- ▶ Southern Germany is characterized by a large number of small supply systems
- ▶ Deficits in compliance with rules and regulations are suspected/reported
- ▶ Insufficient investment in renewal of systems
- ▶ UniBwM realized several projects to support small systems on behalf of the Bavarian Government
 - trenchless pipe laying
 - particle elimination by ultrafiltration
 - self assessment tools
 - ...





Purpose

- Give feedback to interviewees.
- Validation of the observations.
- Check if there are any gaps in information.
- Identify any specific topics cases that should be considered.

Contents

- Framework of our analysis
- Approach adopted
- International Observations
- Zambian Observation
- Summary of Observations
- Recommendations
- Group Discussions
- Report Back from Groups

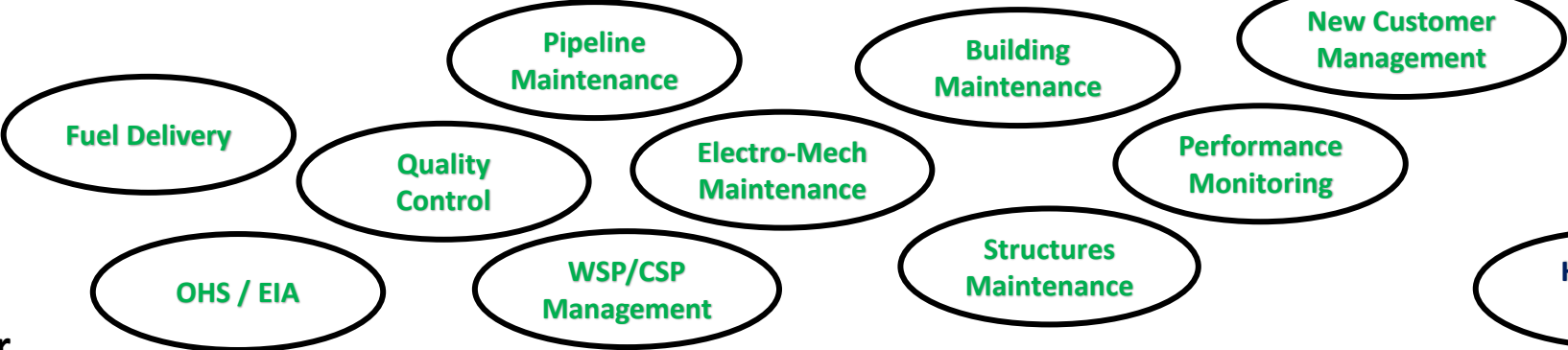
Business Processes

Operational Support

Engineering Support

Administrative Support

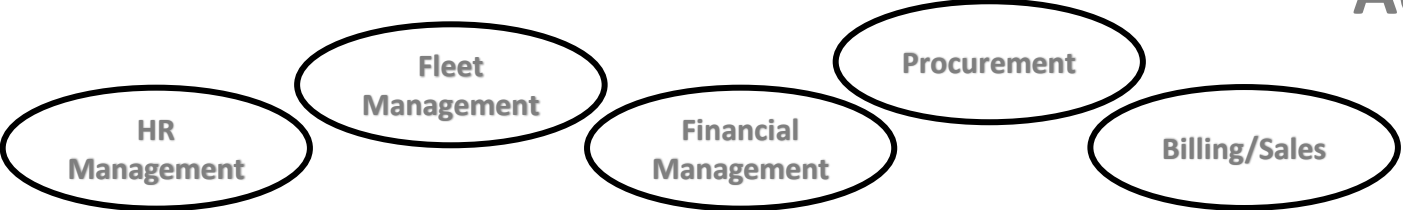
Potable Water



Sewerage



FSM



Building Blocks of Water Services (IRC – Triple S)

Institutions

Govt, NGOs, CBOs, Govt Org's, Priv

Regulation

Infrastructure

creation
utilisation
disposal

Water Res

Finance

T / T / T

Policy & Legislation

Water Sector

Institutions

Regulation

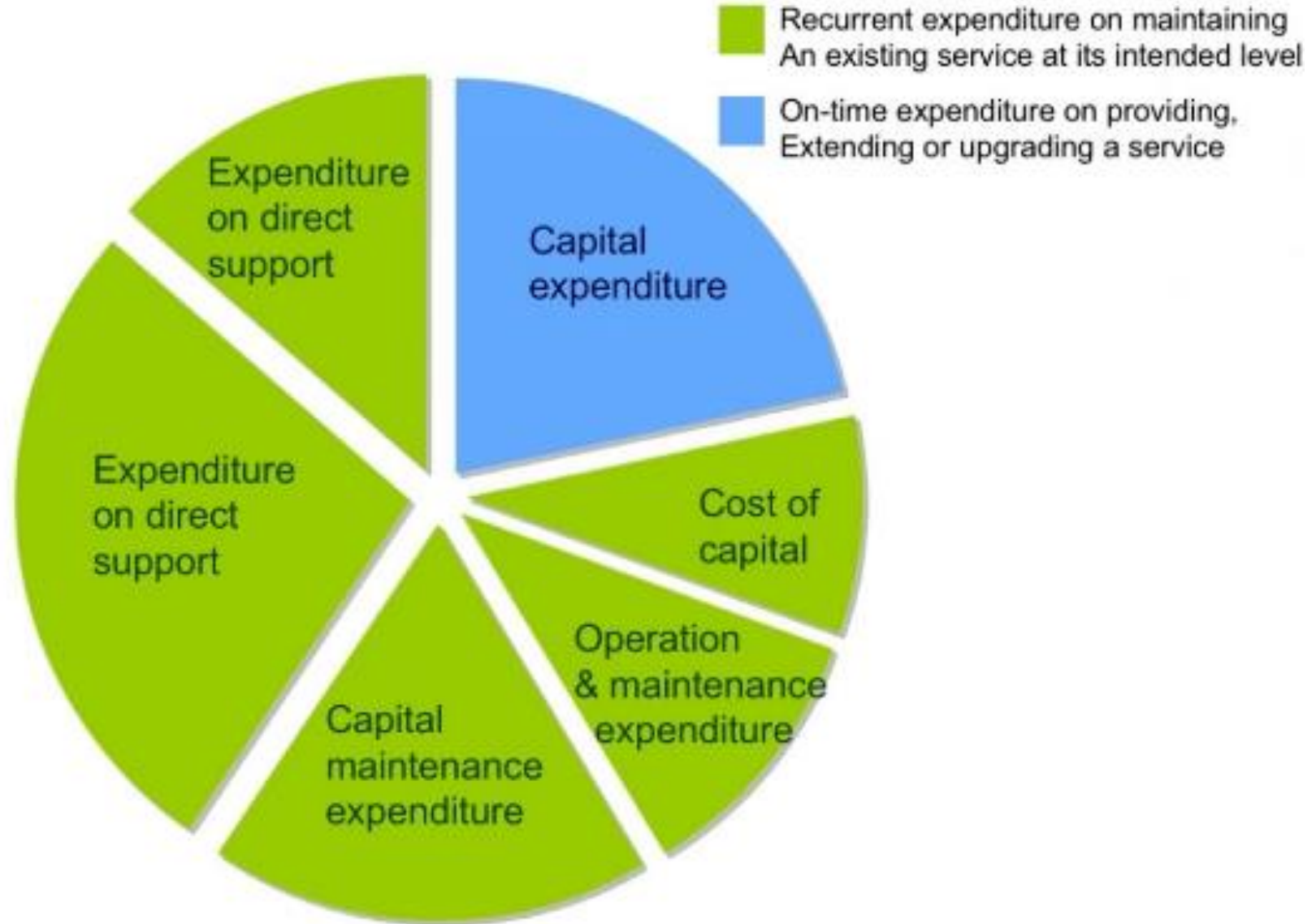
Finance

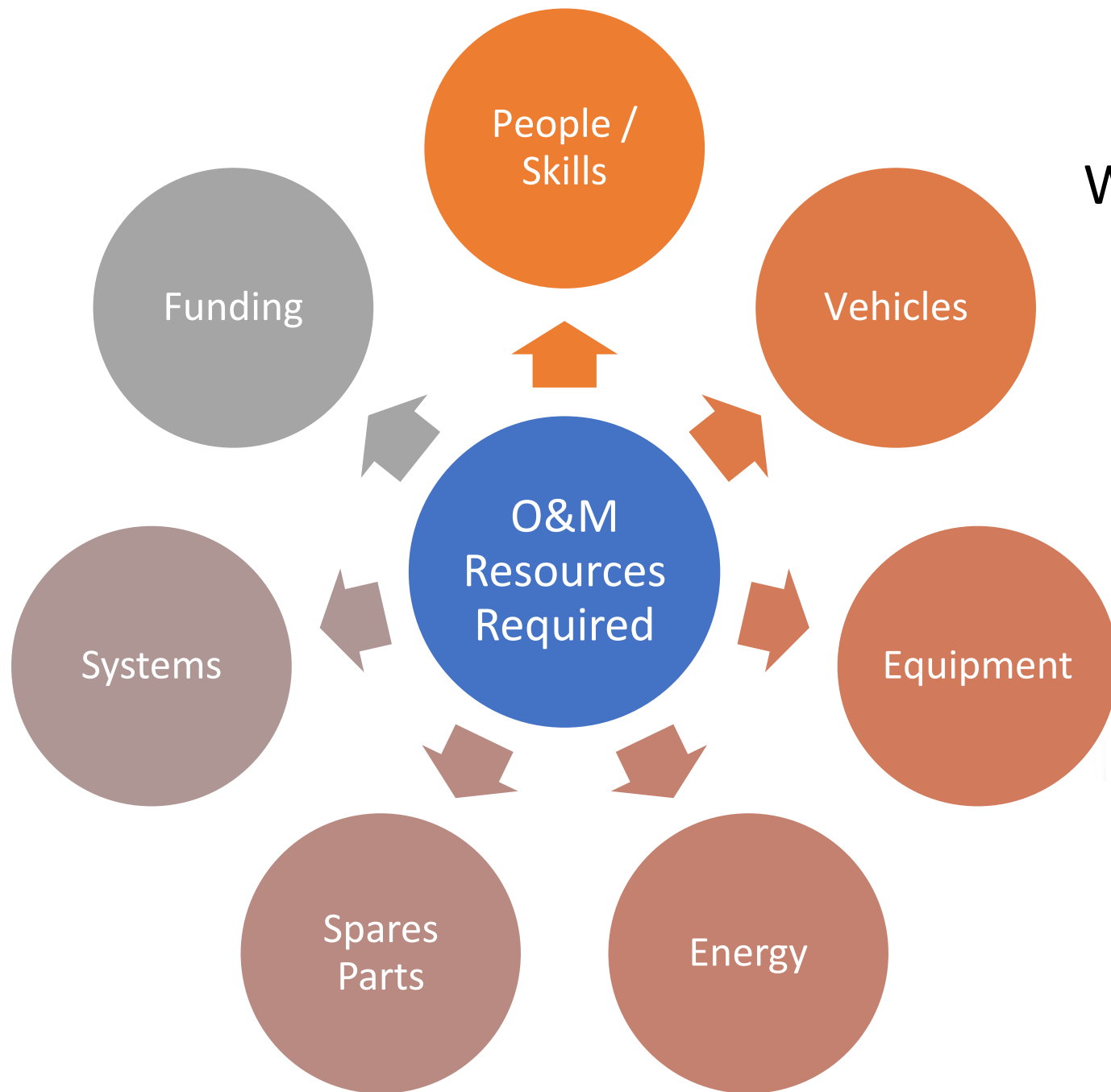
Water Resources

Policy and
Legislation

Infrastructure

Funding of the Sector (IRC – washcost)

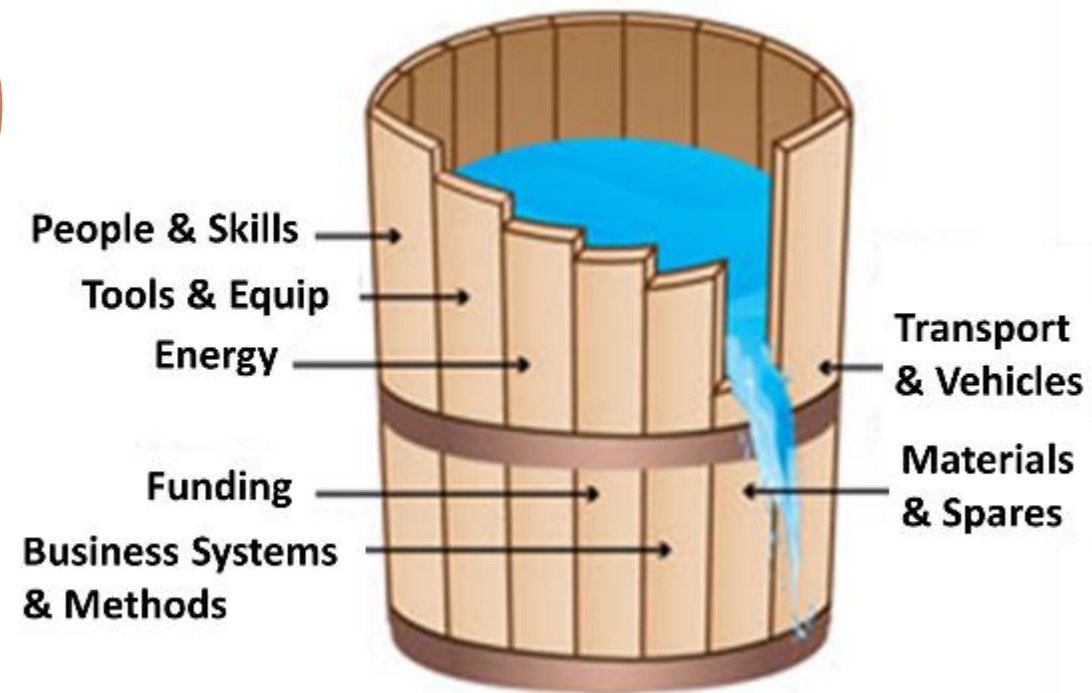




What are the limiting factors for effective O&M of PWS?

Liebig's Law

Yield is governed by the least available resource



Infrastructure Under Consideration

There are currently 5 PWS under consideration.

This is relatively small scale, but in the long run there will be many many more.

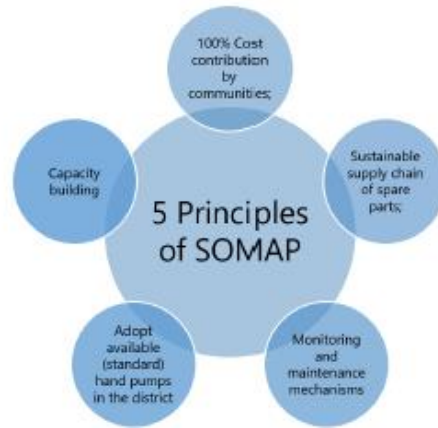
Getting a workable model is important,

Sector Wide Approach is needed on technology, systems, etc.

What about handpumps?

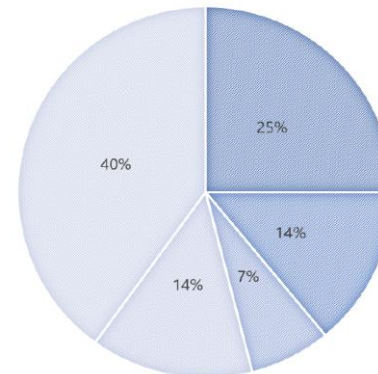
They also require technical support

People 'pay' all of the pumping and distribution cost.



HANDPUMP DOWNTIME

■ < 1 week ■ 2 weeks ■ 3 weeks ■ 4 weeks ■ > 4 weeks



Project Terms of Reference states...

A challenge is obviously that rural WSS does not have a high potential for financial viability, and therefore the new models should not overburden the financial and human resources of LpWSC, a CU smaller in size and rather financially weak.

The financial challenges of rural water service provision is a recurring theme in the sector.

We have to ask how far tariffs can take us?

In a recent KfW publication that compared many sites all over the world, ... the author notes that the outcome of water services delivery is more a function of the financial arrangements than it is of the institutional arrangements

Country Experience Considered

Central African Republic

GDP / Cap - USD	984
Tax as % of GDP	9%



Uganda



GDP / Cap - USD	2,272
Tax as % of GDP	12%

Kenya



GDP / Cap - USD	4,509
Tax as % of GDP	15%

Rwanda



GDP / Cap -USD	2,318
Tax as % of GDP	14%

Malawi



GDP / Cap -USD	1,104
Tax as % of GDP	17%

Zambia



GDP / Cap - USD	3,624
Tax as % of GDP	16%

Namibia



GDP / Cap - USD	10,037
Tax as % of GDP	29%

South Africa

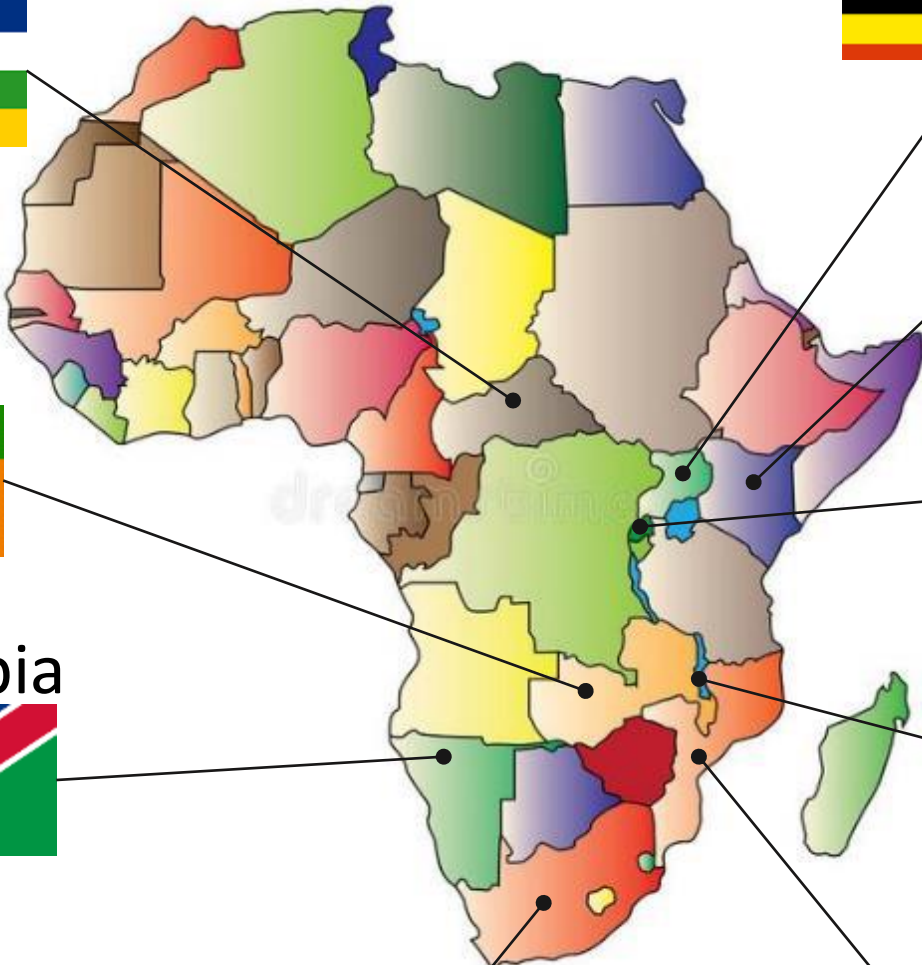


GDP / Cap - USD	12,999
Tax as % of GDP	27%

Mozambique



GDP / Cap - USD	1,334
Tax as % of GDP	22%



Uganda

- Private Operators prior to 2016.
- NWSC has grown from 20 large towns in 2015 to include hundreds of small schemes within areas under the jurisdiction of the Umbrellas.
- ‘Umbrella Organisations’ created as utilities and take over Piped Water Schemes.
- Most ‘viable’ schemes were ‘cherry picked’?
- The utilities deploy own staff for day to day operations.
- Vendors dispense water and collect tariffs and retain 50%.

What if the service has no fundamentally viable trading proposition?



Challenges reported by Umbrella staff:

- Tariffs don't cover repair and maintenance costs (day to day ops only)
- Transport is a challenge
- Energy costs are high (there are few solar schemes)
- Kiosk vendors lack financial management skills
- People make use of alternative sources.
- Capacity of staff to undertake O&M tasks

Rwanda

- There are approximately 300 schemes
- 40 Private Operators do all O&M of rural Piped Water Schemes.
- Performance is regulated and tariffs are set by the Rural Utilities Regulatory Authority (RURA).
- Operators manage to address all technical issues.
- Nationwide tariffs are set , one for gravity schemes and one for pumped schemes.
- These tariffs do not represent the cost difference!
- Most bills are paid !!
- Major Maintenance is not funded by POs
- **None of the POs reported a profit in the first quarter of 2020!**

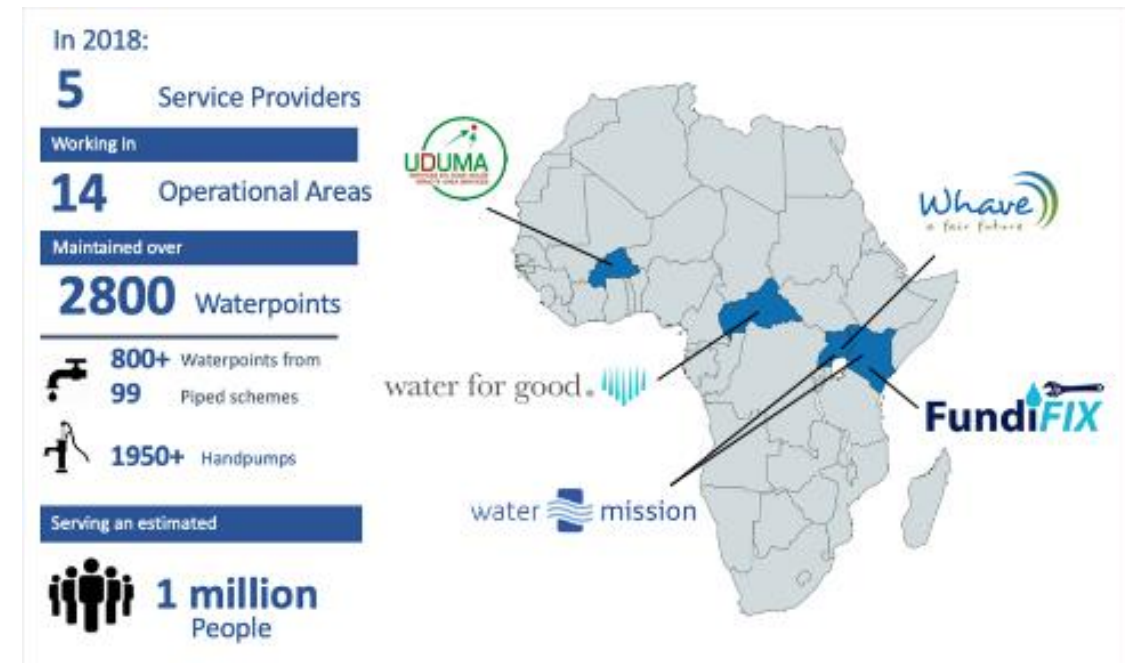
2017 tariffs (excluding VAT) are given in the table below with some increases applied subsequently.

Water system	Tariff per m3 for private supply		Tariff per jerrican	
	RWF/m3	US cents/m3	RWF	US cents
Gravity	287	32	7	0.7
Electricity pumping	731	79	17	1.8
Diesel Pumping	921	100	21	2.2
Turbo	689	75	16	1.7
Complex System	597	64	14	1.5

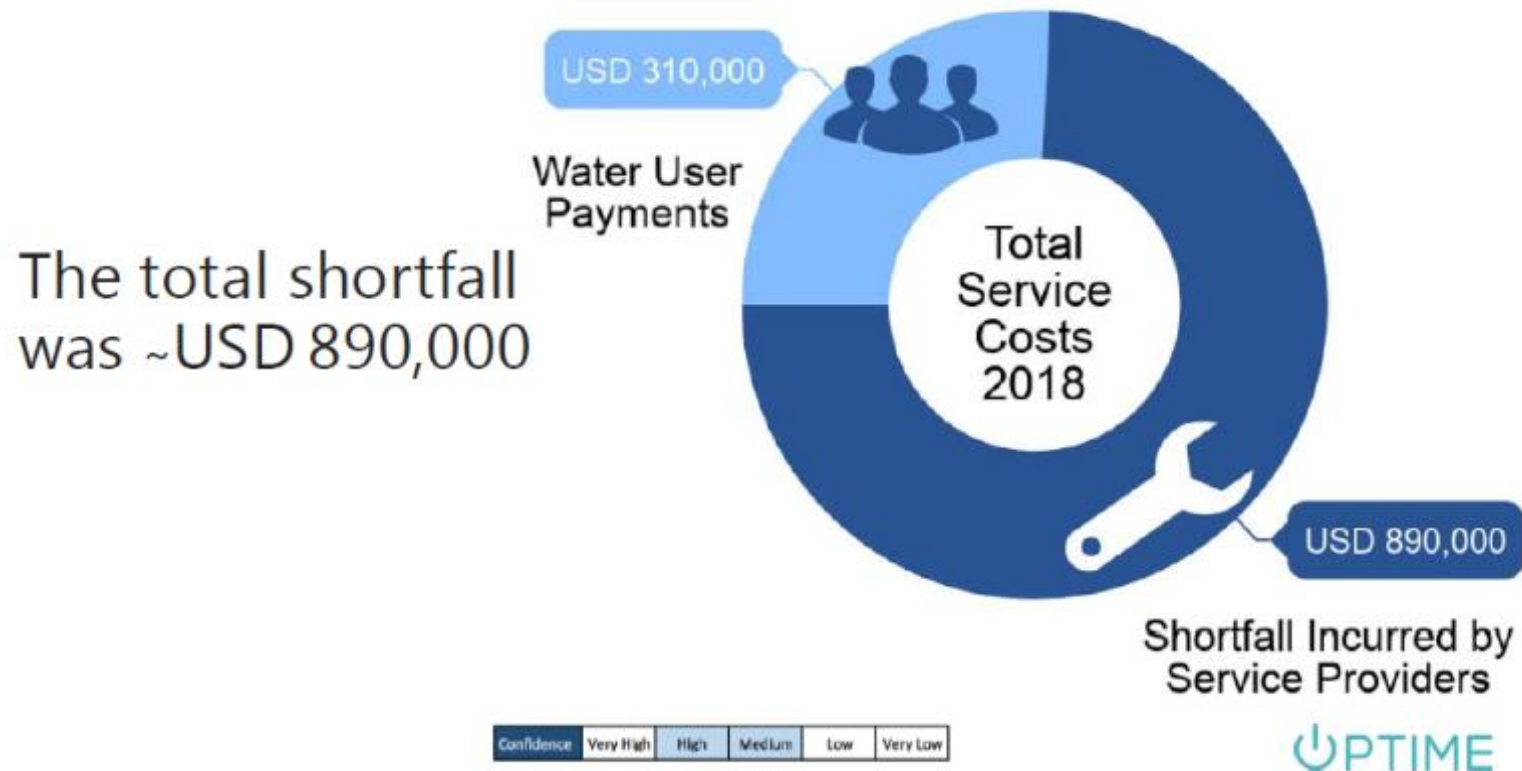
Note: there are currently 920 RWF to a US\$.

Kenya / Uganda / Central African Republic

- The participating firms provide maintenance support on community infrastructure.
- Performance based contracts with local communities.
 - Routine maintenance.
 - On demand repairs.
- There has not been universal uptake by communities.



- There is a significant financial shortfall (75%), which is currently funded through donor support.
- Other resources are not reported as being constraints.



Malawi

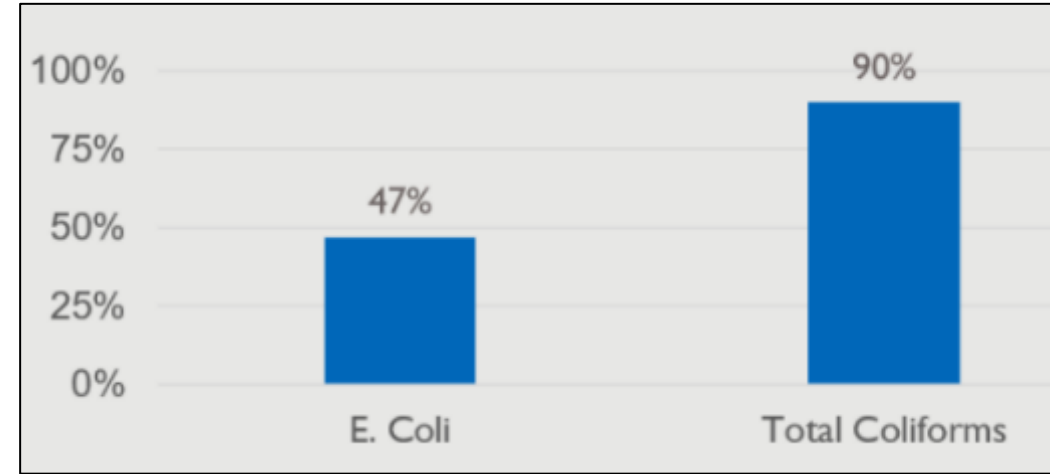
(Chowns Report – Academic paper on effectiveness of Community Management)

- CBM enables rural water supply to ‘limp along’, with functionality of around 70%.
- Users do not fully value the health benefits of clean water.
- More attention needed on:
 - professionalization,
 - upward accountability
 - centralization.
- Research shows ‘top-down’ performance discipline is key in effective service delivery.
- ‘local ownership’ can be a convenient fig-leaf for abdication of responsibility by those with power and resources

- Alternative post-community management framework:
 - Increased funding for recurrent costs;
 - Increased professionalization;
 - Maintenance and repair by area mechanics rather than users;
 - Closer supervision, inspection and audit of installations.

Mozambique (Review of USAID SCIP Activity)

- Functionality was between around 50%.
- 60% of water points had significant 'repair' issues.
- 12% of water points never got repaired.
- Water quality was poor, but is perceived to be safe!



- 30% of households used secondary sources.
- 80% of water points were 'well managed' by community committees.
- Tariff recovery was insufficient (60% pay for water.)
 - Feeling was that tariffs were inappropriate
 - (see SA example later)



USAID Water and Development

KEY TAKEAWAYS

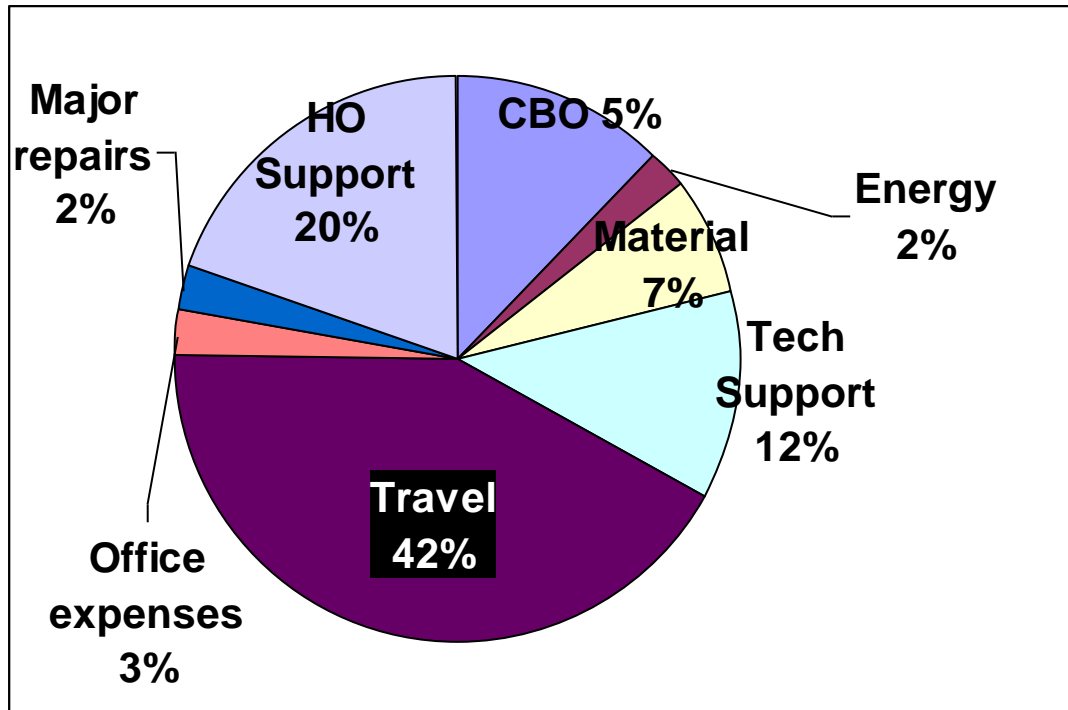
- Take into account that self-supply and community-based management generally fail to deliver sustained services without professionalized maintenance support.
- Think beyond the community level – service authorities and national government play an important role in the sustained delivery of rural water services.
- Design interventions to build capacity of community organizations, government, and other service providers for ongoing service delivery beyond first-time access to drinking water.

Namibia

- People use 'shonas' during rainy season.
- Wealthy livestock owners keep pumps running in dry season, and allow community use.



- The vast distances between schemes results in huge travel costs.
- Available budget is far less than what is required



Kavango

Budget	= US\$ 990k
ABC	= US\$ 2,285k

South Africa

- After 1994 Community based management was advocated.
- ‘Support Service Agent’ concept placed in legislation.
- Rapid roll out of infrastructure to address apartheid racial backlogs.

- ‘Free Basic Services’ (unconditional grant) introduced around 2001.

- Municipalities received large amounts of money.

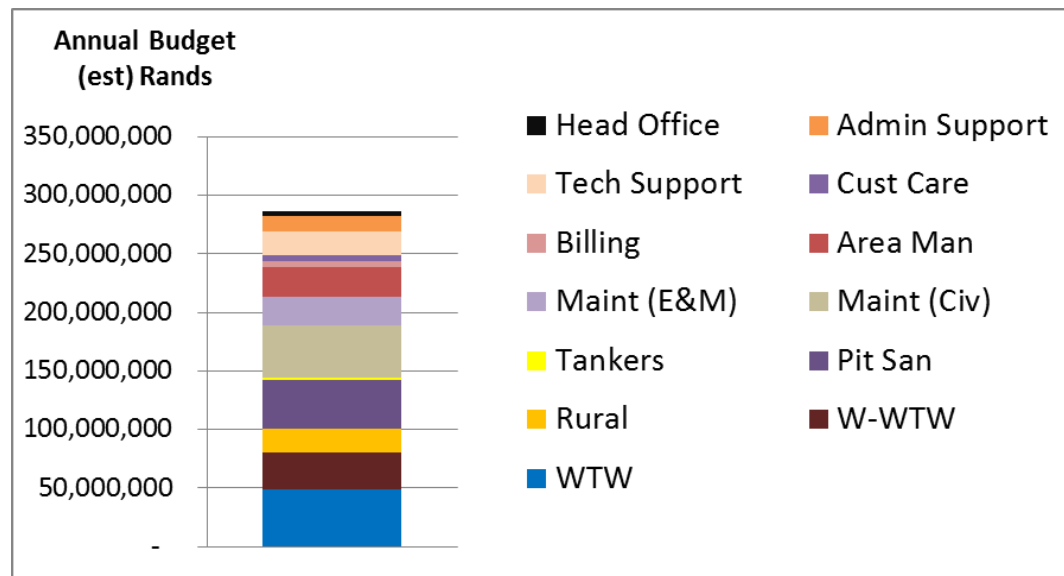
Table W1.23 Amounts per basic service allocated through the local government equitable share, 2019/20				
	Allocation per household below affordability threshold (R per month)			Total allocation per service (R million)
	Operations	Maintenance	Total	
Energy	78.73	8.75	87.48	10.6
Water	121.39	13.49	134.87	16.3
Sanitation	91.19	10.13	101.32	12.2
Refuse removal	76.44	8.49	84.94	10.3
Total basic services	367.75	40.86	408.61	49.5
Source: National Treasury				

- SSAs were implemented in a number of the rural areas. Very good compliance with level of service norms and standards.
- Rural Municipalities receive the majority of their funding for Water Services (60% – 95%).

Municipalities gradually decided to take over and run water services themselves.

Some don't allocate the full amount of the subsidy to Water Service. They are still municipalities after all.

Warning... FBS has created a new set of challenges. Be careful to not make mistakes that cannot be undone.



Even with substantial subsidy the available funding may not be sufficient.

Nature of the infrastructure and geography matter

!! A Lot !!

- **Total estimate cost** = **R286m / yr**
- **E-share (for water and san)** = **R172m / yr (from DORA)**
- **Tariff collection** = **R48m / yr (AFS 2014)**

Urban schemes can have very different cost drivers

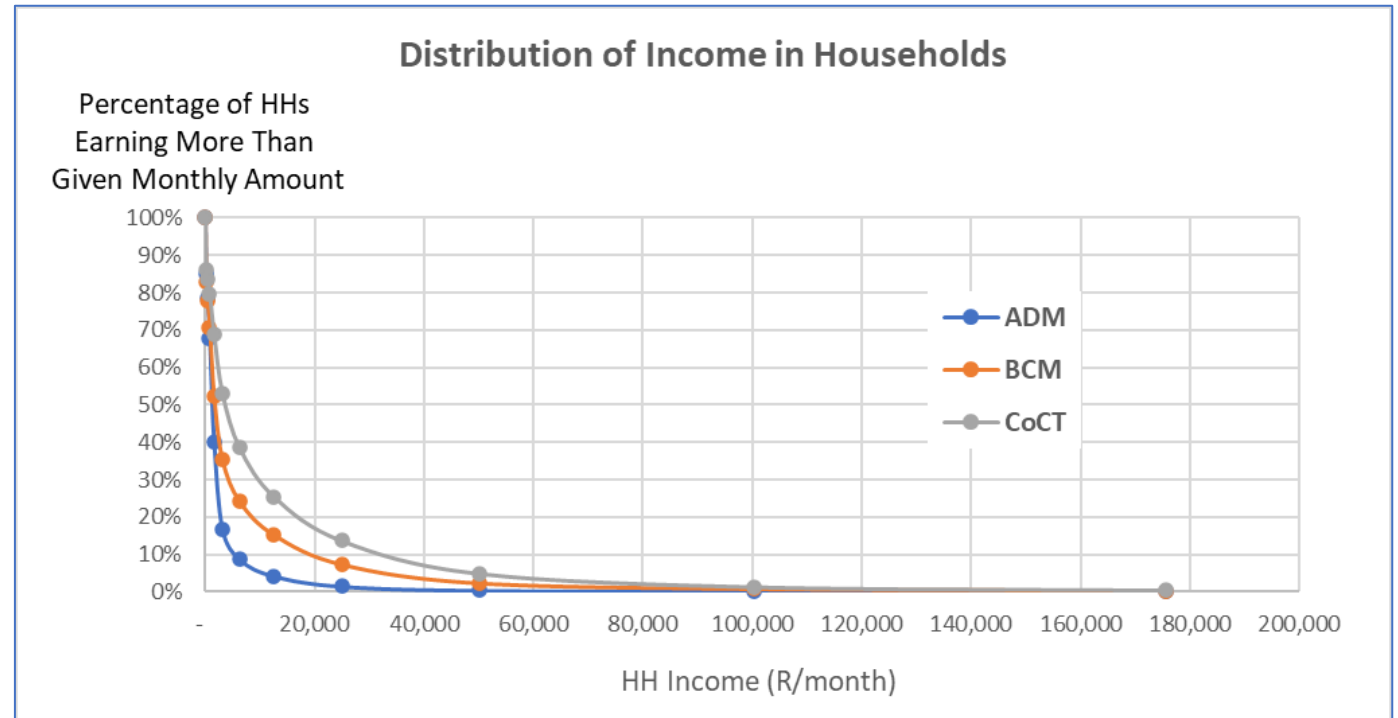
- Recent study found that tariffs are unaffordable by a huge percentage of rural population.

Tariff and Affordability Model for Amathole District Municipality					
Projected Revenue =	33,361,825	O&M Grant/Transfer =	263,686,000	Total Income =	297,047,825
% of HH that Cannot Afford =	93%	Unpaid for Water =	92%	Income / HH / yr =	1,249

Counterintuitively –

The model suggests that more money will be collected if tariffs are reduced !

The reason is that more households are brought into the net faster than the amount on the bill drops.



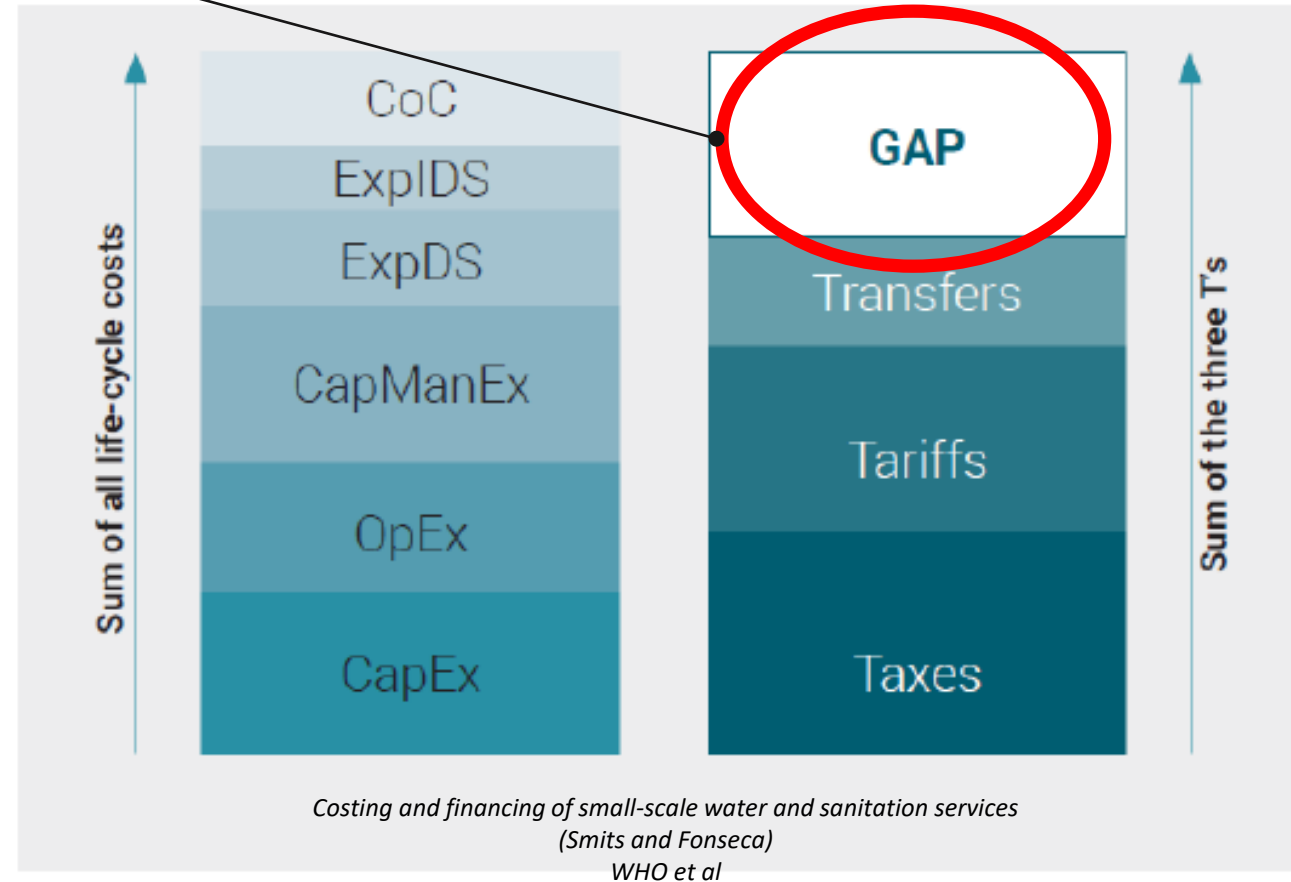
- No mechanisms for measurement, billing and collection in rural areas.
- Unsurprisingly there is resistance when attempts are made to implement billing.
- Initial Level of Service was 25 l/c/d at 200m.
- Many many households have implemented private connections and consequently demand has grown dramatically, outstripping capacity of the infrastructure.
- Rural water service reliability is a constant concern for the public and politicians.
- Officials complain that they do not get enough budget to do O&M.

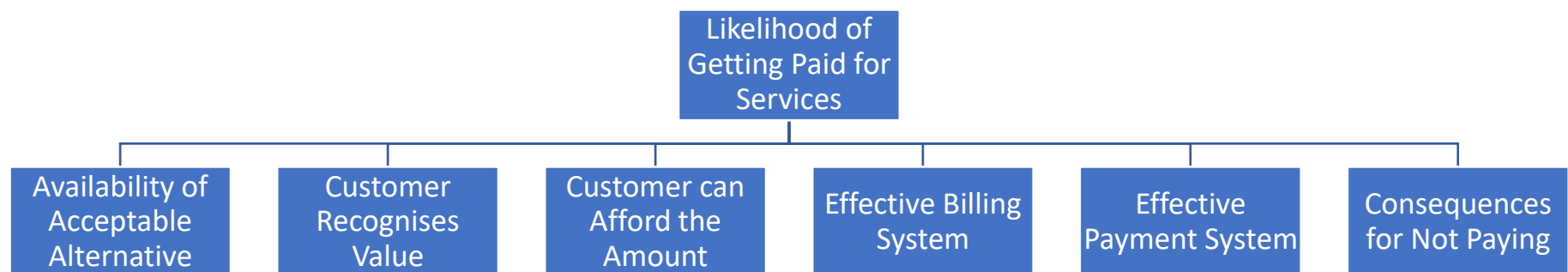
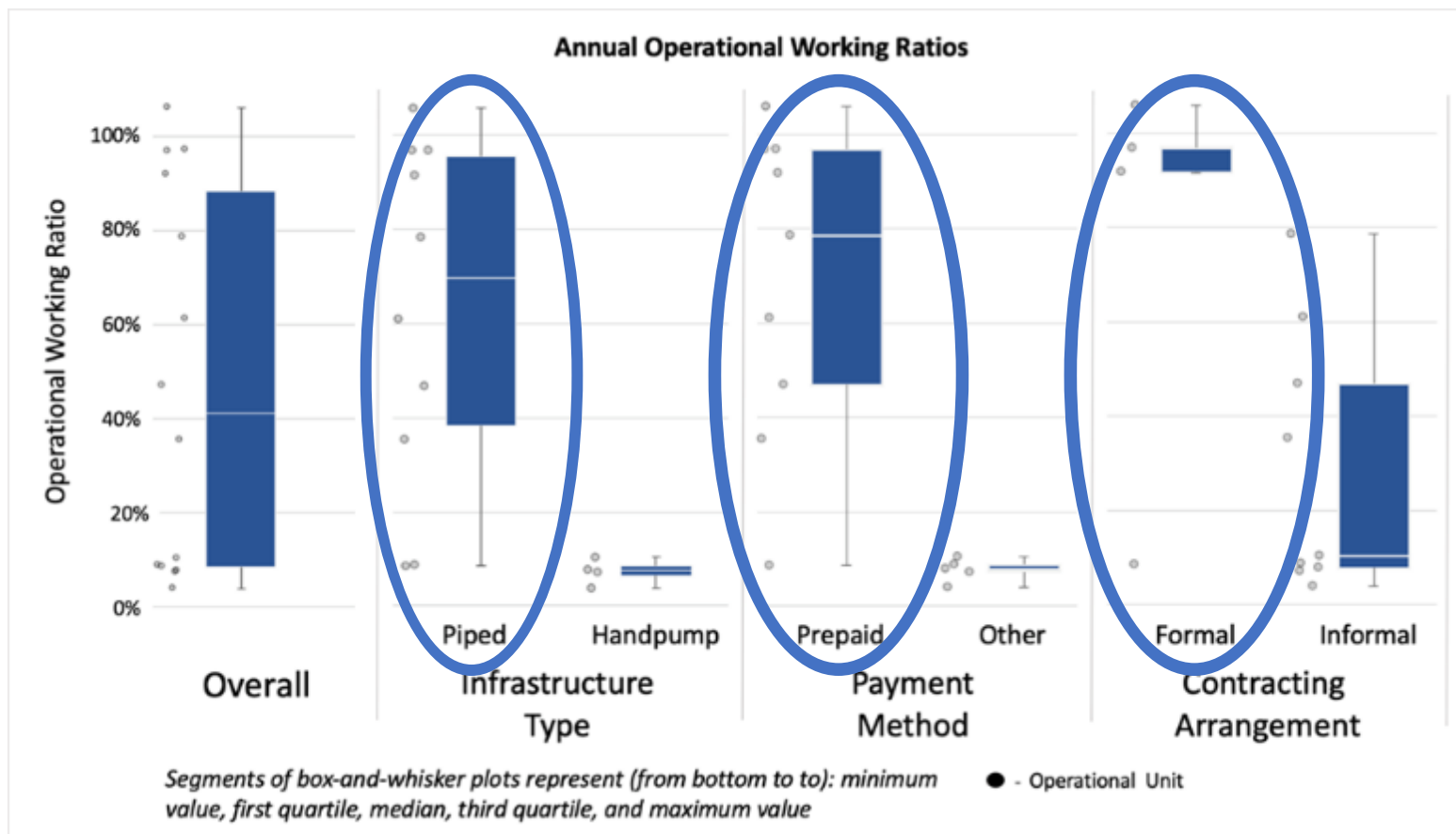
Identifying where the gap lies is crucial.

Specific need may not be a focus of funders.
(own treasury or development partners)

It is often difficult to find funding for
Major maintenance (CapManEx)

What if the service has no fundamentally
viable trading proposition?





**Local
Government**

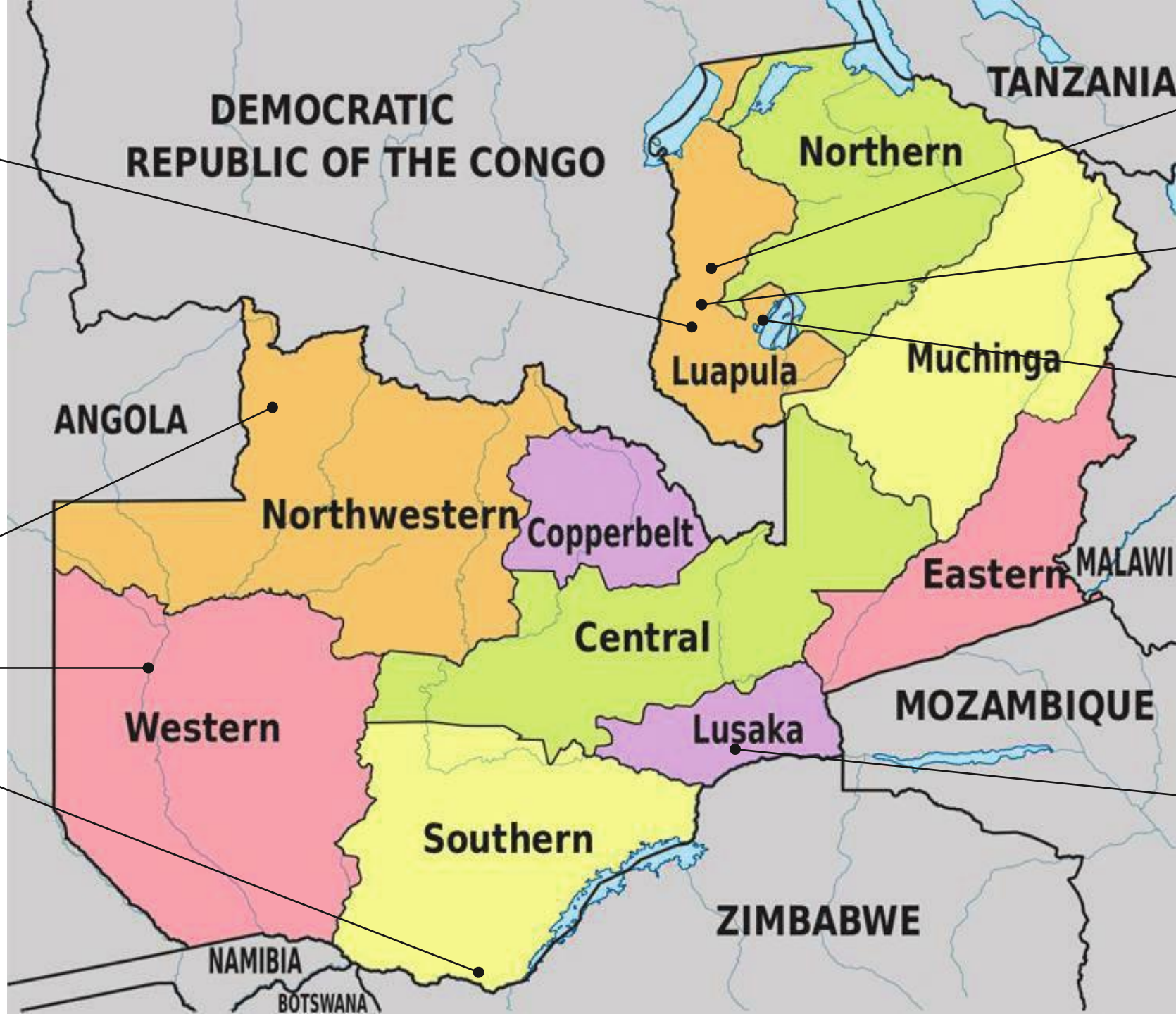
**The
Ministry**

**Commercial
Utility**

**Local
NGO**

**Commercial
Utilities**

**International
NGOs**



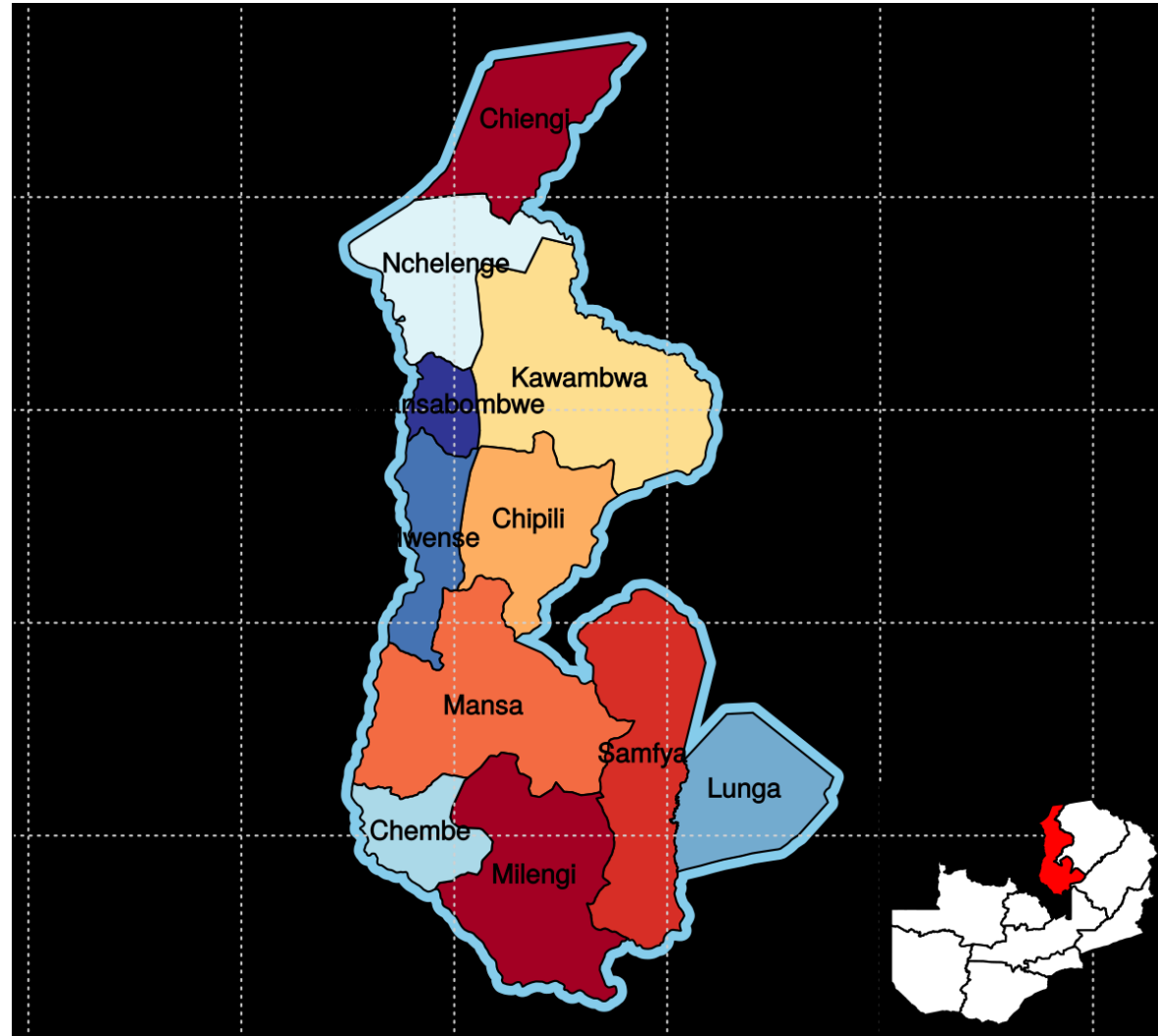
Zambia

- Full O&M cost recovery is the aim (policy ?).
- SOMAP shops don't all run well.
- Some communities are managing to keep PWS schemes running ('limping')
 - Challenges are capital expansion.
 - Major maintenance.
 - Solar power is dramatically reducing electricity costs, but backup power is needed.
 - Continuity of supply is not as desired.
 - Water quality is sampled sporadically.
 - Water Resource Management is not a responsibility of the operators.
- Commercial utilities have deployed their own staff, subsidising from existing tariff base.
 - Refugee communities have very limited ability to pay.
 - NGOs have used Community Based Operators (Cost saving ?).
 - Some success with prepaid meters - Improved cash flow – systems of 'dispensing credit' required.
 - Some CUs have good IT based billing systems. Soft copy bills – cellphone distribution – cellphone payments.

- NGOs have implemented an approach similar to 'Uptime' and 'SSAs' described earlier.
 - Also see less than 100% uptake by communities.
 - Day to day ops cost is covered. Management is subsidised.
- Vendors resign often, job is not lucrative enough (also said about APMs).
- There needs to be financial viability throughout the value chain.
- LA may be reluctant to hand over schemes as they generate cash flow.
- Corrosivity of water pH = 4. This caused failure of 42% of handpumps.
- Lightning damage to submersible pumps.

Number of Water Supply Schemes in Luapula Province											
District	Urban			Rural							
	Main Town Schemes	Peri Urban Schemes		Pt Supply	Growth Node or Rural Piped Water Schemes						
				Hand Pumps	Surface Water				Borehole Water		
		Elec	Elec		Fuel		Elec	Fuel	Solar	Gravity	Elec
Chiengge	0			350							
Nchelenge	2			475	2	0	0	1	0	3	3
Mwansabombwe	0			160	0	0	0	0	4	0	0
Kawambwa	1			255	0	0	0	0	0	0	1
Mwense	1			428	1	0	0	0	14	0	4
Chipili	0			143	0	0	0	1	2	0	0
Mansa	1			530	0	0	0	0	0	0	3
Samfya	1			373	0	0	0	0	0	0	14
Chembe	0			140	0	0	0	0	1	0	0
Milenge	0			429	0	0	0	0	1	0	1
Chifunabuli	0			357	1	0	1	0	0	0	1
Lunga	0			70	0	0	0	0	0	0	2
Total	6			3710	4	0	1	2	22	3	29

Map of distribution of Infrastructure in Luapula



Luapula Water and Sanitation (NWASCO 2019)

Credit control is problematic

Continuity of supply is good

Quality Management is good

Financial Viability is the lowest of all CUs
(by far)

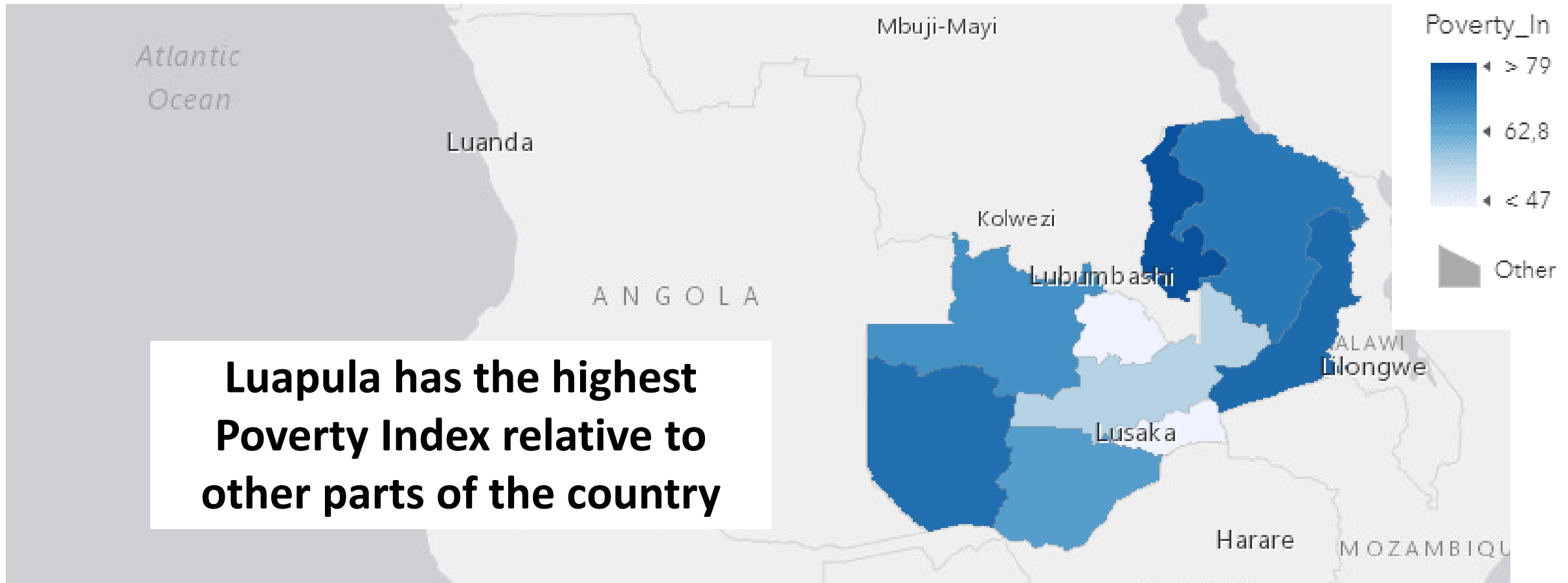
Table 3: Overview of Sector Performance

CU	NRW [%]	Trend	Water Quality compliance	Trend	Metering Ratio [%]	Trend	Water Service Coverage [%]	Trend	Sanitation Coverage [%]	Trend	Hours of Supply	Trend	Staff Efficiency	Trend	Collection Efficiency [%]	Trend	O+M Cost Coverage by Collection [%]	Trend
LWSC	47	↓	A	↑	70	↑	87.5	↑	69.9	↑	16	↓	0.56	↓	81.6	↑	102	↓
NWSC	49	↓	B	↓	90	↑	98.0	↑	79.7	↑	17	↓	0.50	↓	77.1	↑	94	↓
KWSC	75	↓	B	↓	69	↓	83.5	↑	81.4	↑	21	↑	0.53	↓	59.9	↓	81	↓
MWSC	38	↑	A	↑	86	→	97.0	↑	80.8	↑	16	↓	0.46	↓	88.8	↑	101	↓
LGWSC	53	↓	A	→	82	↑	83.7	↑	54.6	↑	17	↓	0.67	↓	85.1	↓	94	↓
SWSC	41	↑	A	→	77	↑	95.3	↑	86.0	↑	19	↓	0.57	↓	94.6	↑	102	↑
CHWSC	37	↑	A	↑	96	↑	79.3	↓	60.7	↑	13	↓	0.79	↑	100.6	↑	83	↑
NWWSC	26	↑	A	→	100	→	81.7	↓	15.7	↓	17	↑	0.64	↑	109.3	↑	106	↑
WWSC	54	↑	D	→	92	↑	44.7	↓	20.1	↓	15	→	0.61	↓	102.2	↑	108	↑
EWSC	43	↓	A	→	100	→	87.1	↑	32.0	↓	20	→	0.82	↓	100.9	↑	84	↓
LPWSC	77	↑	A	→	100	→	49.9	↑	33.9	↑	19	↓	1.33	↓	75.5	↓	54	↓
Average	52(w)	↓	N/A		81(w)	↑	86(w)	↑	66(w)	↑	18(w)	→	0.56(w)	↓	82(w)	↑	96(w)	↓
Benchmark	25		95		100		80		80		18		0.4		85		100	

Zambia Poverty 2010

Last updated 5 years ago | 9 Records

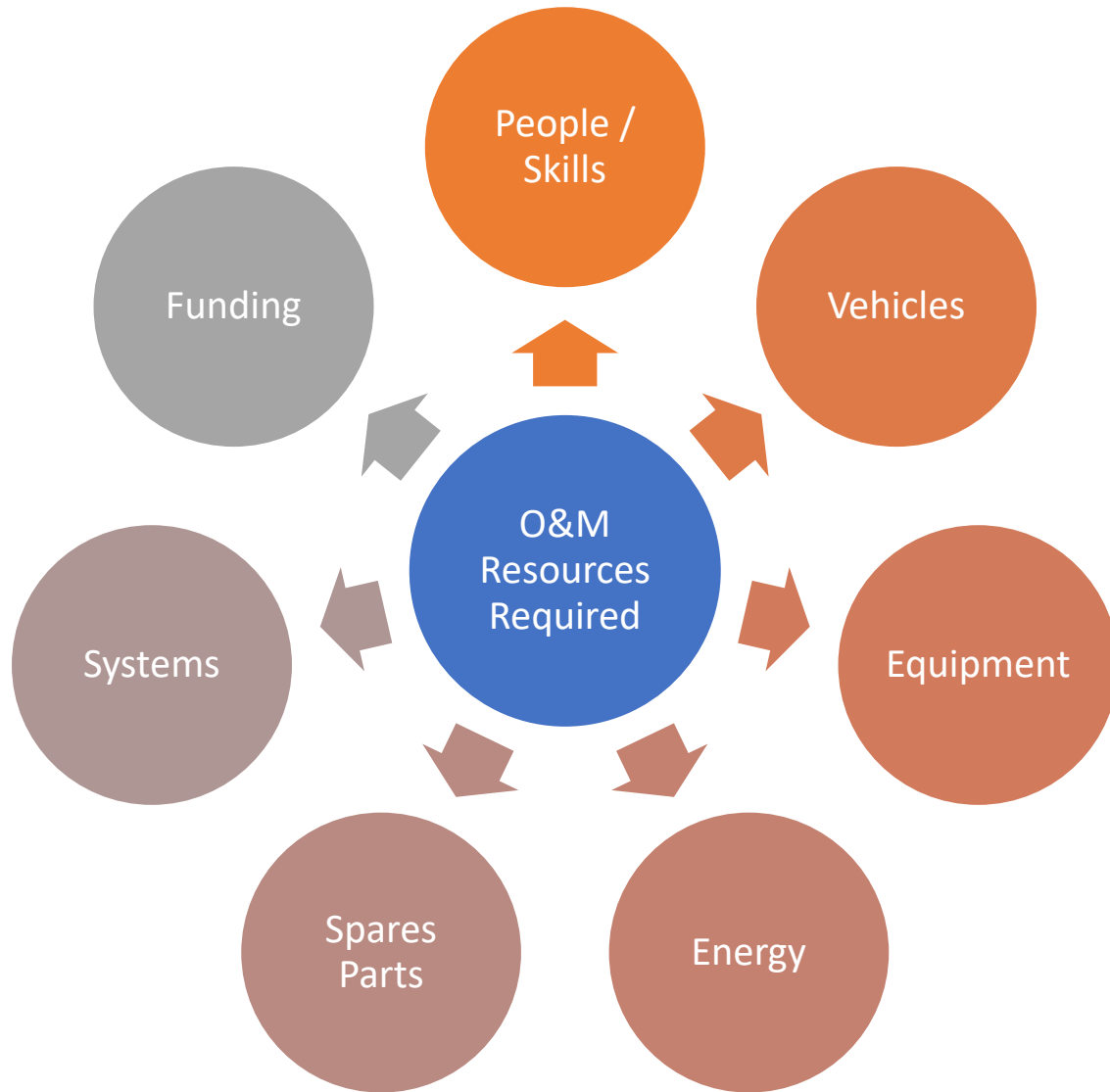
**Luapula has the highest
Poverty Index relative to
other parts of the country**



Does CU performance follow poverty levels

Luapula	80.2	54
North East	72.5	
Eastern	74.9	
Lusaka	34.4	102
Central	55.7	
Copperbelt	39.7	
Southern	66	102
Western	74.1	
North Western	68.4	94

Returning to the O&M Resource Requirements Framework



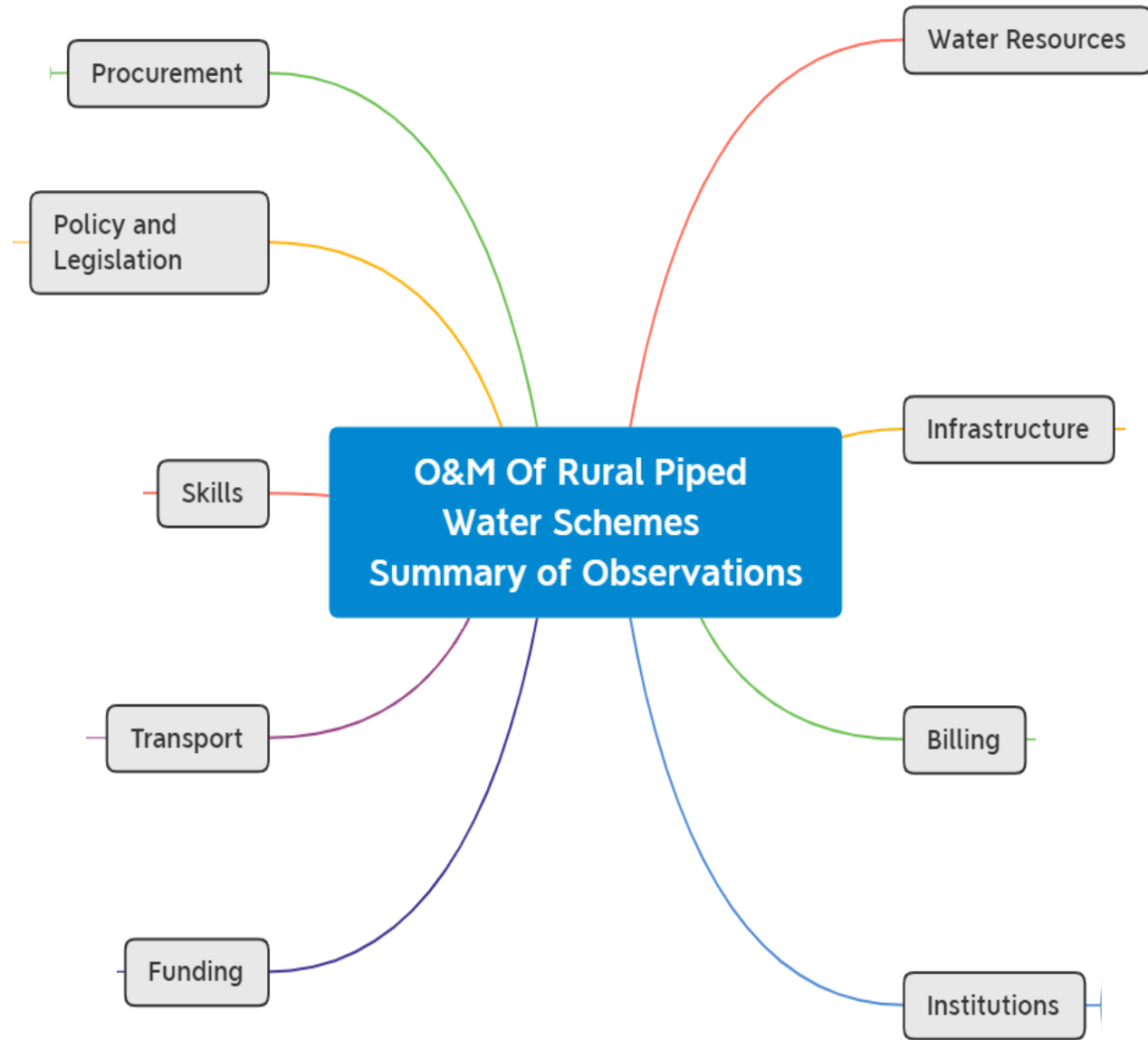
LuWSC already operates technologically complex infrastructure that is far more challenging than the small piped water schemes that are being developed

They do face challenges on each of the basic resources, but after all, they are providing services !!

Introduction of solar and prepaid technology will require development of skills and systems.

Funding the operations of the company are extremely challenging.

Opportunity to realise sufficient funding through enhancement of revenue collect is very limited



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Registered offices
Bonn and Eschborn

Friedrich-Ebert-Allee 36 + 40
53113 Bonn, Germany
T +49 228 44 60 - 0
F +49 228 44 60 - 17 66

E info@giz.de
I www.giz.de

Dag-Hammarskjöld-Weg 1 - 5
65760 Eschborn, Germany
T +49 61 96 79 - 0
F +49 61 96 79 - 11 15



Objectives of these Group Discussions

- Give feedback to interviewees.
- Validation of the observations.
- Check if there are any gaps in information.
- Identify any specific topics cases that should be considered.



Group Discussions

Considering what we have heard today, and your experience in the sector...

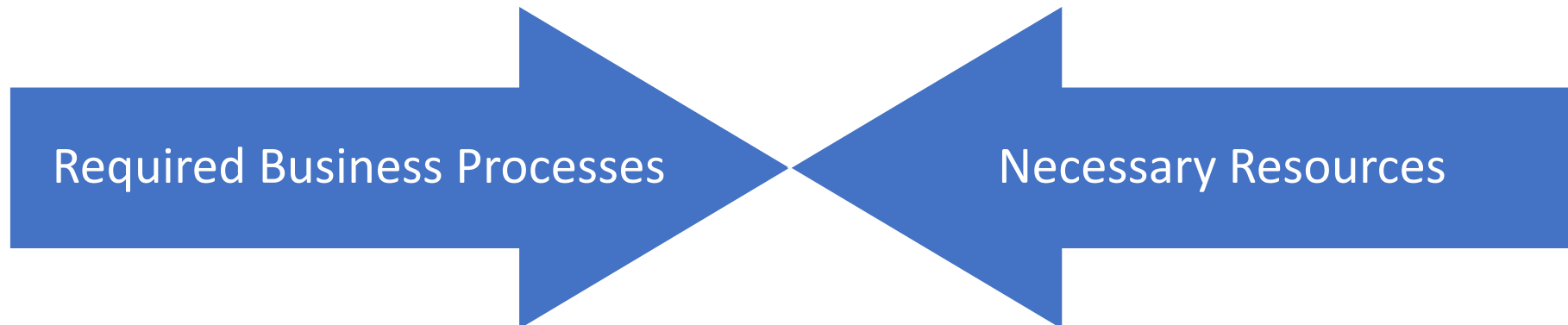
How do we 'solve the equation' of ...

- Business processes required to...
- Deliver an acceptable service...
- With the resources available...
- In the context that prevails?

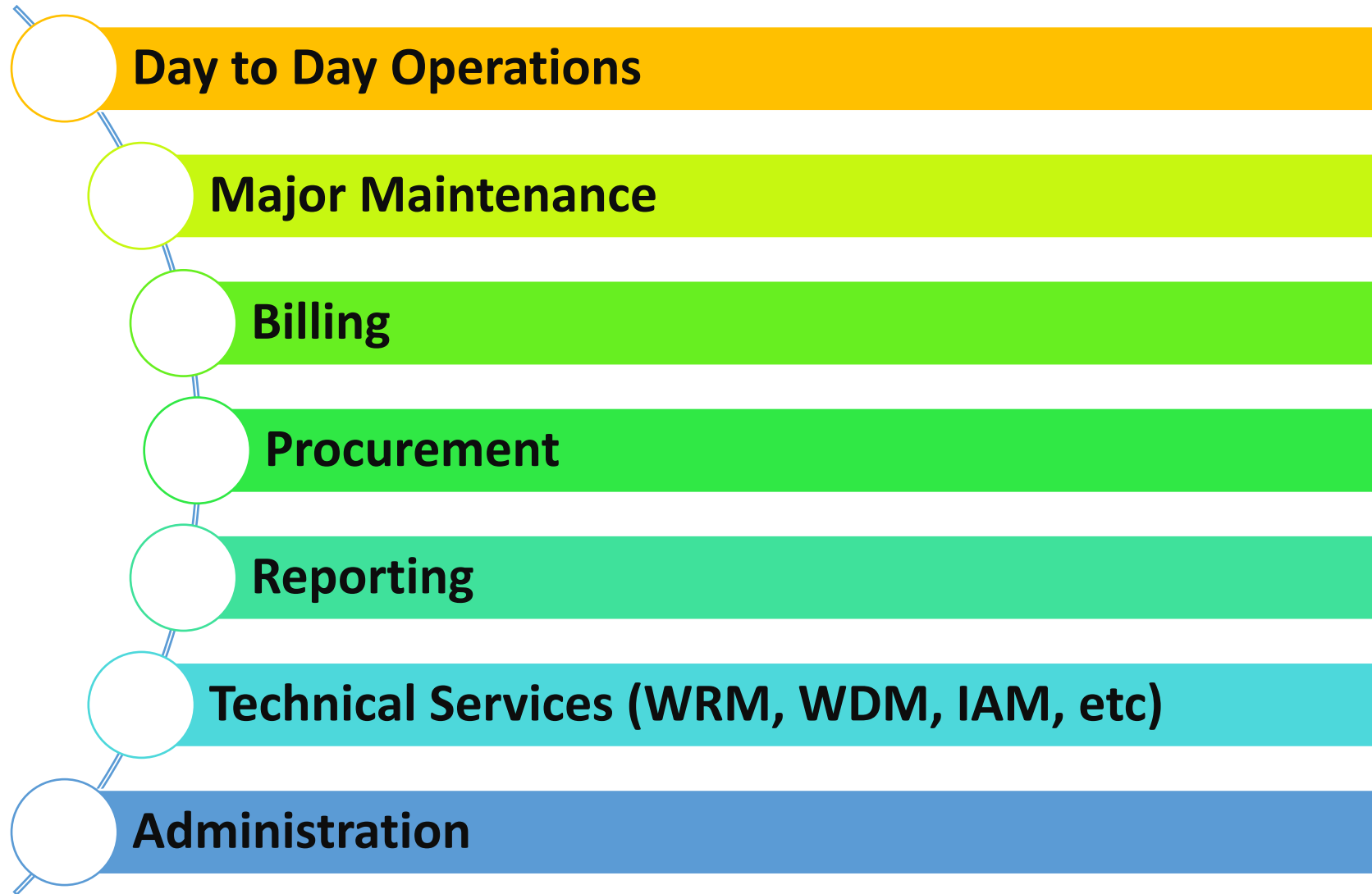
What are the biggest:-

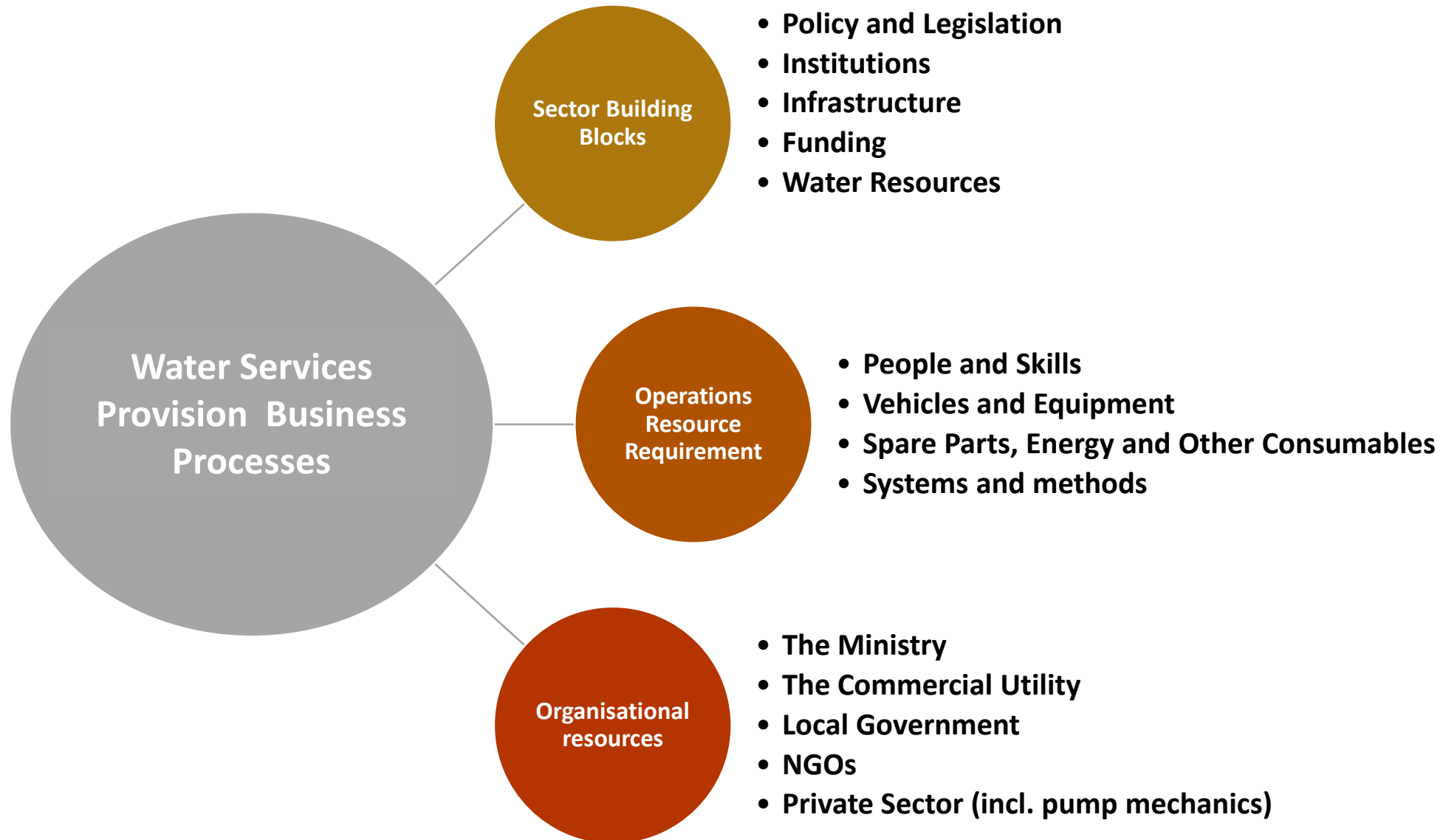
- Risks
- Opportunities

What actions can be identified here and now?



Processes to Consider





Group Discussions

Considering what we have heard today, and your experience in the sector...

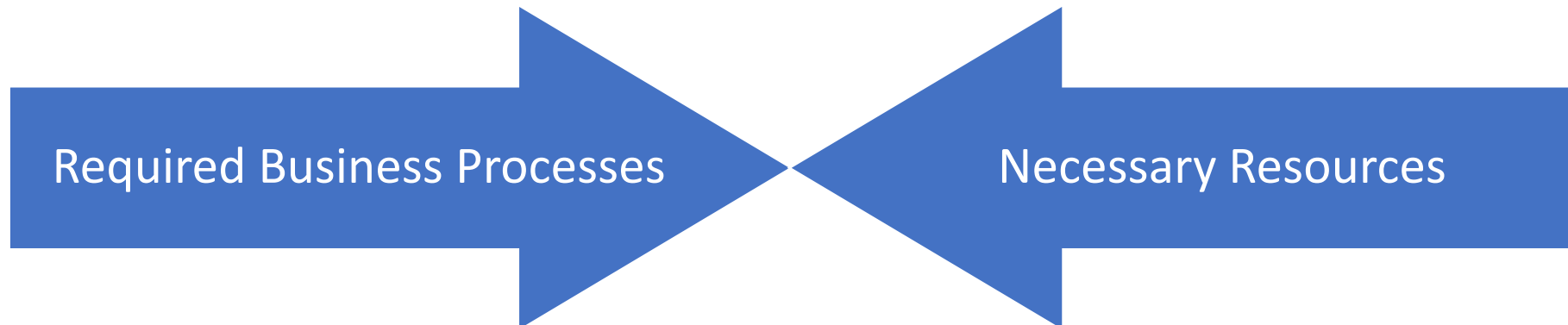
How do we 'solve the equation' of ...

- Business processes required to...
- Deliver an acceptable service...
- With the resources available...
- In the context that prevails?

What are the biggest:-

- Risks
- Opportunities

What actions can be identified here and now?



Presentation

from

Each Group

The Ratio of Resource vs Challenge Matters



Our resources



The challenge



Dominate in the field

Good Strategy & Tactics

Guerrilla Tactics

Objectives of these Group Discussions

- Give feedback to interviewees.
- Validation of the observations.
- Check if there are any gaps in information.
- Identify any specific topics cases that should be considered.

Group Discussions

Considering what we have heard today, and your experience in the sector...

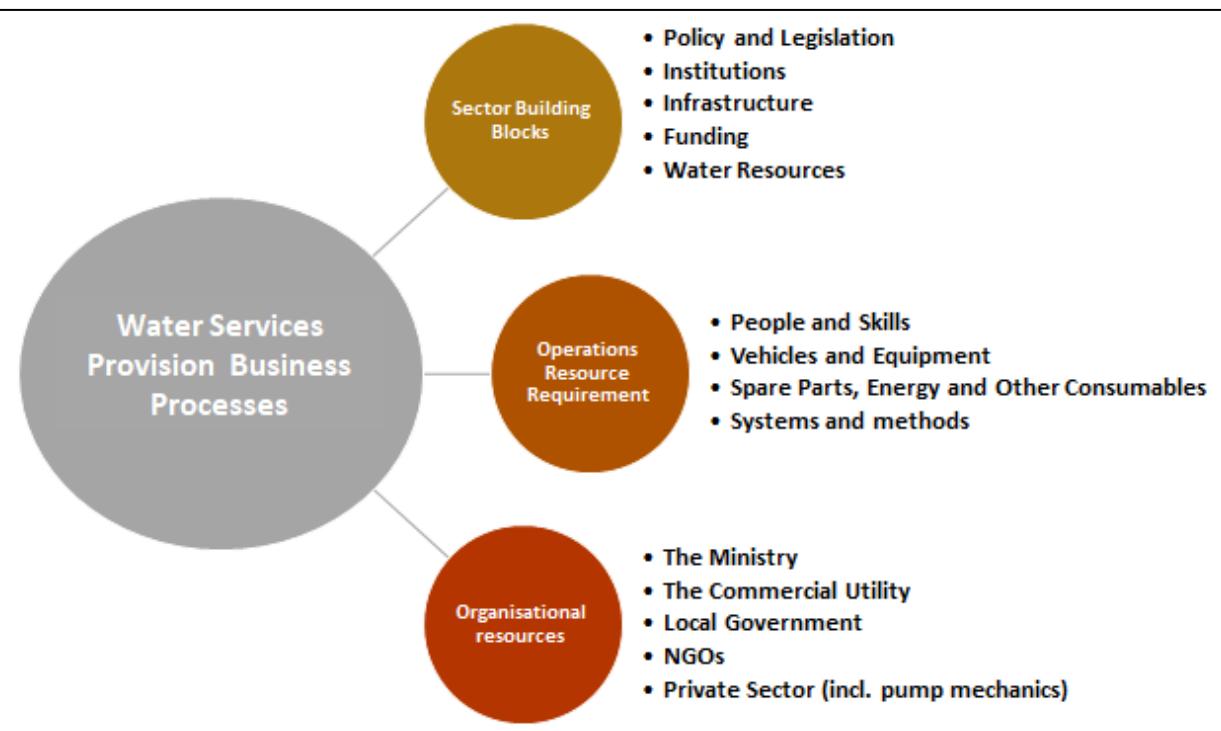
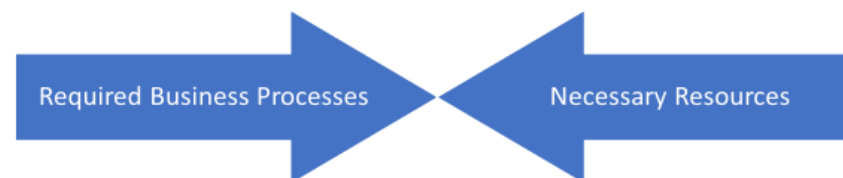
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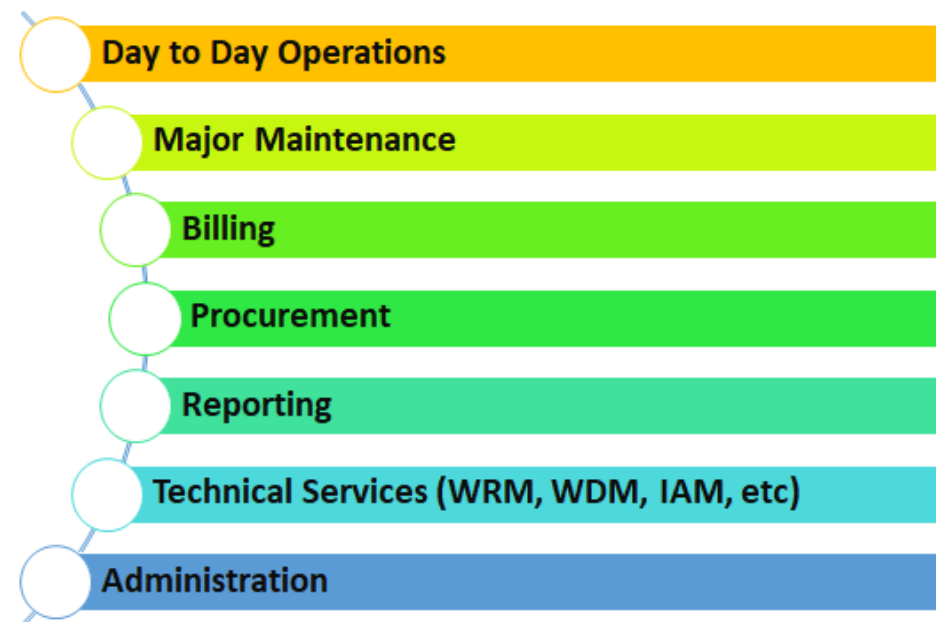
What are the biggest:-

- Risks
- Opportunities

What actions can be identified here and now?



Processes to Consider



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- Address
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- T +49 61 96 79-0
- F +49 61 96 79-11 15
-
- E info@giz.de
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E info@giz.de
I www.giz.de

Dag-Hammarskjöld-Weg 1 - 5
65760 Eschborn, Germany
T +49 61 96 79 - 0
F +49 61 96 79 - 11 15

GIZ WORKSHOP GROUP SESSION

GROUP 4

ACCEPTABLE SERVICE DELIVERY:

- CLEAN & SAFE WATER
- AVAILABLE
- AFFORDABLE
- ACCESSIBLE (INCLUSIVE)

SERVICE DELIVERY PROCESSES

- DAY TO DAY OPERATIONS (PRODUCTION & DISTRIBUTION)
 - SUFFICIENT PRODUCTION CAPACITY
 - EFFICIENT & RELIABLE DISTRIBUTION NETWORK
 -
 -

MAJOR MAINTENANCE

- PREPARING A MAINTENANCE PLAN
- SUPPLIES OF MATERIALS + SPARE PARTS FOR MTCE

BILLING

- POST PAID: +00
 - 100% METER READING
 - TIMELY DISTRIBUTION OF BILLS TO CUSTOMERS
 - CUSTOMER ENGAGEMENT
 - INCENTIVISE CUSTOMERS TO PAY ON TIME
- PREPAID:
 - FUNCTIONAL PREPAID METERS
 - HAVING RELIABLE PAYMENT PLATFORMS
 - CUSTOMER ENGAGEMENT

PROCUREMENT

- PROCUREMENT GUIDELINES:
- TRAINING ~~IN~~ PR IN PROCUREMENT PROCESSES.
-

REPORTING

- CLEAR & EFFECTIVE REPORTING MECHANISMS
-

TECHNICAL SERVICES

- INTEGRATE NRM INTO WATER SUPPLY (COMPLIANCE WITH WATER ACT)
- PLANNED EXPANSION PROGRAMME
-

ADMINISTRATION

- STAFFING LEVELS & RETENTION
- ~~DEVELOPMENT~~ DEVELOPMENT OF LOCAL CAPACITIES
- REMUNERATION FOR STAFF & CONTRACTORS

RISKS

- VANDALISM
- THEFTS OF INFRASTRUCTURE COMPONENTS
- INSUFFICIENT TO HANDLE MAJOR MTCB WORKS
- LOW INCOME OF LOCALS TO SUFFICIENT
- AVAILABILITY ~~OF~~ ~~THE~~ ALTERNATIVE OPTIONS

OPPORTUNITIES

- POPULATION GROWTH
- INCREASED COMMUNITY AWARENESS
-

BENEFITS OF CLEAN
WATER AVAILABLE

REQUIRED BUS. PROCESSES

DAY TO DAY OPERATIONS

MAJOR MAINTENANCE

BILLING.

NECESSARY RESOURCES

- CAPITAL INVESTMENT FOR
THE OPERATIONS IN GROWTH
CENTRES FOR THE C.U.

- STRENGTHEN THE C.U.
TO SENSITISE THE COMM.

- TARIFF COSTS SHOULD
COVER THE MAJOR
MAINTENANCE

- CREATE CO-OPERATIVES
AT THE LOCAL LEVEL WHO
WILL BE RUNNING THE WATER
SCHEMES. FOR LUMP SUM WATER
(C.U) ATTACH A TECH.

PERSON TO OVERSEE ALL
THE SMALL WATER SCHEMES
PAYMENTS SHOULD BE
MADE TO THE CO-OP

IF A BOREHOLE BREAKS
DOWN, THE SAME MONEY CAN
BE USED FOR MAINTENANCE

PRE-PAID BILLING
SYSTEM (AUTOMATIC)
OF AN AGREED AMOUNT
OF E.G. K20.

ENGAGE A TECHNICIAN
AT THE GROWTH CENTRE
TO REPORT PROBLEMS &
CHALLENGES (TOP UP OF WATER)

REQUIRED BN2
REQUIRED BUS
PROCESSES

PROCUREMENT TO
BE HANDLED CENTRALLY
BY THE CU AND
DISTRIBUTED TO THE
GROWTH CENTRES WHEN
NEED ARISES.

REQUIRED
NECESSARY
RESOURCES

SPARE PARTS
CHEMICALS
PUMPS, PIPES, TANKS
ANY OTHER REQUIREMENTS

RISKS

CREATION OF CO-OPS.

- BREED CORRUPTION

CAPITAL INVESTMENT AT THE GROWTH CENTRES

DO CUSTOMERS WANT CLEAN WATER? CU'S MAY SPEND WHERE THERE IS NO DEMAND OR USE OF QUALITY WATER? (SENSITISE THEM BY)

BILLING - AUTOMATED

PEOPLE MAY NOT HAVE CREDIT TO CALL IF THEY DO NOT AUTOMATE IT

PROCUREMENT TO BE HANDLED BY THE CU WOULD POSSE A RISK OF MISAPPLICATION OF MISMANAGEMENT OF FUNDS

OPPORTUNITIES

CREATION OF CO-OPS

TO RUN THE SWSS IN THE GROWTH CENTRES.

SENSITISE THE COMM ON HEALTH RISKS OF DRINKING UNTREATED WATER AND BENEFITS OF USING OTHER WATER WHICH IS UNTREATED FOR THEIR GARDENING, WASHING, ETC.

PROVIDE AN AUTOMATED BILLING SYSTEM FOR PREPAID METERS.

- FOR THOSE WHO NEED MORE UNITS CAN REQUEST THROUGH THE CONTACT PERSON ON THE GROUND.

CU WOULD HAVE GENERATED PART OF MONEY FROM THE PREPAID METERS RECEIVED ANNUALLY. ALSO TO MANAGE THE PROCUREMENT PROCESSES

DEVELOPMENT OF AN ASSET MGT PLAN & AN OSM DOCUMENT.

Dismiss

Jim Gibson, Yulia Titova, Kalusha Sakala, Mwape Bwalya, Iris Wilhelm

Jim Gibson, Yulia Titova, Kalusha Sakala, Mwape Bwalya, Iris Wilhelm

YT



Wilhelm, Iris GIZ ZM

×



YT Titova, Yulia 2:39 PM
We are, Iris will be presenting

 Mwape (Guest) joined the meeting.

Kambole, Sankwe 2:40 PM

 Bwalya, Mwape GIZ ZM left the meeting.



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Dismiss

Meeting chat



That is for Group 4 and 3 respectively

SK Kambole, Sankwe 2:39 PM
@Yulia Are our Virtual Participants ready to report back now?

YT Titova, Yulia 2:39 PM
We are, Iris will be presenting

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SK Kambole, Sankwe 2:40 PM
👍

Bwalya, Mwape GIZ ZM left the meeting.

Type a new message

🔗 📎 🗑️ 📧 📧 📧 📧 📧 📧

1) Feedback o the presentation

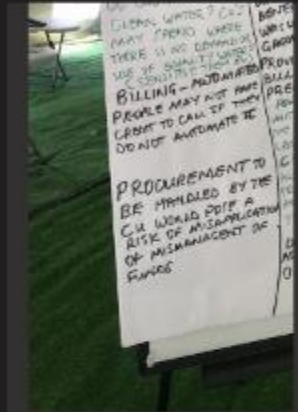
- Presentation opened eyes for the fact that often things are overlooked; there were some surprising findings
 - Diversity of models, e.g. run by LG, utility or community
 - Skills gap for O&M was not considered as a major challenge – important to keep in mind that qualified staff might look for jobs somewhere else
 - Policy on national level – nobody mentioned as an issue
- The need for a sector-wide approach for O&M/management models for water schemes was mentioned often, as it is crucial
 - But how to achieve a sector-wide approach? Experience from other countries: subsidies are key drivers (application of subsidies is difficult if there is no coherent approach)



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👍

Bwalya, Mwape GIZ ZM left the meeting.

Type a new message

🔊 🔇 📶 🚪

2) Financial viability

- **Willingness/propensity of people to pay for WSS**; dilemma of areas with high levels of poverty (there is willingness but no ability to pay); acceptance of introducing a “new service”
- Is financial viability of running water supply schemes in poor, rural “a dream”?
- With limited financial and human capacities/resources water service providers covering rural areas are “fighting fires” – reactive approach, limited to basic maintenance and repairs
- **Procurements**: LG procurement processes are designed to achieve other goals than e.g. procurement systems in a utility or private sector
- **Institutional form** dictates the ability to raise (financial and human) capacities
- Ability to mobilize capacities/resources is an important part – private sector operators are better equipped to do that than local government
- Was is the strategy to mitigate challenges regarding limited/insufficient financial resources? **How to lobby for funding?** Cross-subsidisation? Grants from national level?



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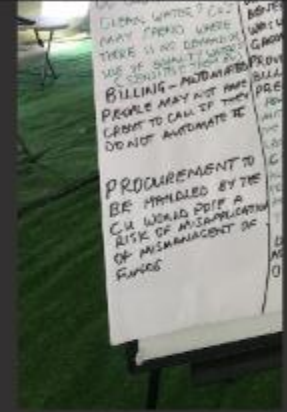
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Dismiss

3) What management models for O&M are possibly viable?

- Community based operators to do basic maintenance work on the ground; small committees for monitoring/oversight
- Employment of CB operators on a part-time basis, remuneration paid locally (not on a monthly full-time salary); no need for full-time employed local operators
- Buy-in from the community needed; this will also contribute to increase people's willingness to pay for the service, if the fees are raised through someone from within the community and not external
- Higher level support through the utility for complicated maintenance works and repairs, e.g. involving (cost-intensive) technology
- Keep billing in place – not rely completely on subsidies

Meeting chat



That is for Group 4 and 3 respectively



Kambole, Sankwe 2:39 PM
@Yulia Are our Virtual Participants ready to report back now?



Titova, Yulia 2:39 PM
We are, Iris will be presenting



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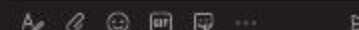


Kambole, Sankwe 2:40 PM



Bwalya, Mwape GIZ ZM left the meeting.

Type a new message



GROUP 1

DAY TO DAY OPERATION

- * AVAILABILITY OF STANDARD OPERATING MAXIMS
- * EXISURE ADHEARANCE TO OPERATING PROCEDURE
- * CREATE MONITORING SYSTEMS

MAJOR MAINTENANCE

- * PLANNED MAINTENANCE
- * DAILY ROUTINES
- * WEEKLY ROUTINES
- * MONTHLY ROUTINES
- * QUARTELY ROUTINES
- * YEARLY ROUTINES

NOTE

MAJOR MAINTENANCE
WORKS TO BE DONE BY
THE CLI

UNPLANNED MAINTENANCE

* THESE ARE UNPLANNED
URGENT WORKS REQUIRED
TO BE DONE.

* SCHEME NEEDS TO
PRESERVE RESOURCES
FOR THESE WORKS

* FOR MINOR WORKS
& LEAK REPAIRS LOCAL
ARTISANS CAN BE
CAPACITY BUILT.

BILLING

* PUTTING UP AN
EFFICIENT & EFFECTIVE
BILLING SYSTEM.

* REDUCED LEAKS
BY DETECTING
ALL WATER CONNECTIONS

* |

PROCEDURE

* STOCKING OF
MATERIALS (CONSUMABLES)
THAT WEAR OUT

QUICKLY

- ENCOURAGE BULK
OR LIKE BUYING
TO SAVE ON COSTS

REPORTING

* SIMPLIFIED REPORTING SYSTEMS

- EXCHANGE COMMUNICATION
WITH CONTACT PERSONS
FOR GROWTH CENTERS

TECHNICAL SERVICES

* CAPACITY BUILDING
ON TECHNICAL SERVICES
ON HOW TO MANAGE
THE SYSTEM.

ADMINISTRATION

- ENHANCE COORDINATION
AMONG STAKE HOLDERS
- PROMOTING AN INTEGRATED
APPROACH TOWARDS THE
MGT OF GROWTH
CENTERS

RISKS

* LUAPULA IS CONSIDERED
THE LIST DEVELOPED
PROVING

* FLOODS (i.e. KASHIBA
AND LUKWESA LAST
SEASON)

3. WILLINGNESS TO
PXT

4. POLITICAL INTERFERENCE

OPPORTUNITIES

* INCREASE IN POPULATION

* URBANISATION

* AVAILABILITY OF
CORPORATE PARTNERS
IN WATER & SANITATION
SECTOR

* AVAILABILITY OF
INSTITUTIONAL & LEGAL
FRAMEWORK

4) GROUP 2

1) DAY TO DAY OPERATIONS

- a) Train and employ an operator to conduct inspections of chlorine, sample taking, checking for leakages.
- b) Availability of tool kits

2) MAJOR MAINTENANCE

- a) Experts to be readily available at district level to shorten the down time period (pumps and pumping specialists, electricians, metal fabricators)

3) Billing

- a) Sensitizing the community on O and M
- b) Making the tariffs affordable
- c) Consider the technological equipment suitable in the aspect of location
- d) Scheme review to be made a routine

4) PROCUREMENT

- a) Legislative procurement reforms to lessen ambiguous processes
- b) Critical materials such as fuel to be procured in advance.

5) REPORTING

- a) Efficiency in reporting and response to the reports.
- b) Brief reporting channels from the end users to the decision makers

6) TECHNICAL SERVICES

- a) Capacity building for the officers in the technical department (short courses)
- b) Resource mobilization

7) ADMINISTRATION

- a) Policy reforms to harmonize management of WASH services with other components

Competing priority areas

b) All WASH activities to fall under one ministry.

RISKS

- Illegal connections
- Vandalism
- Inability to pay for services
- Political interferences

OPPORTUNITIES

- Available human resources
- The sector is attractive to external funders.
- Regulatory and institutional frameworks are in place

Sector Wide Approach

- A strategic framework is required (see SA example)
 - Regulation
 - Funding of 'washcost' using 'TTT'
 - Planning

Annex 3: Workshop 2: Presentation of O&M Models



Luapula Piped Water Scheme O&M Models

Workshop in Luapula, and Online
26 February 2021



Implemented by

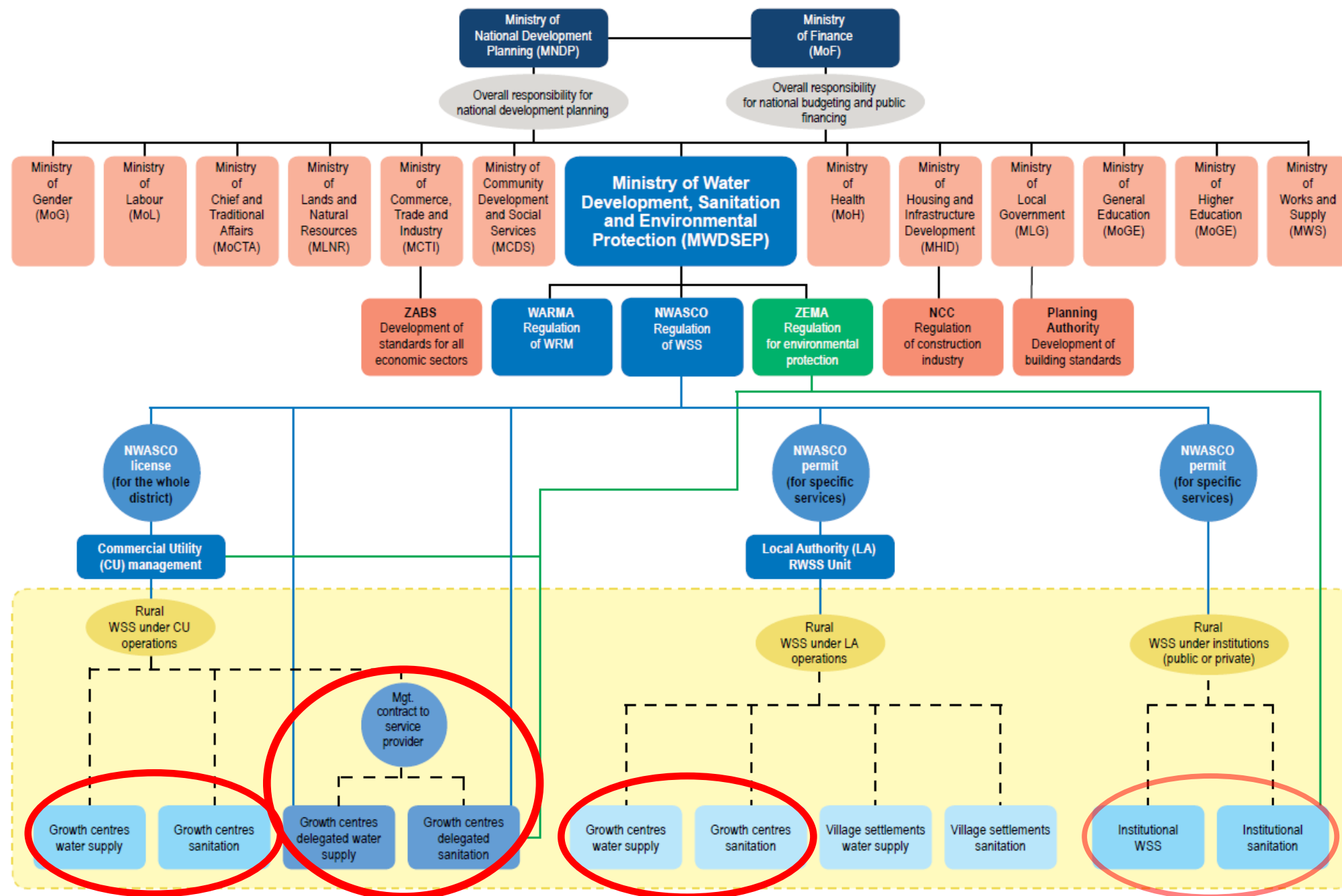
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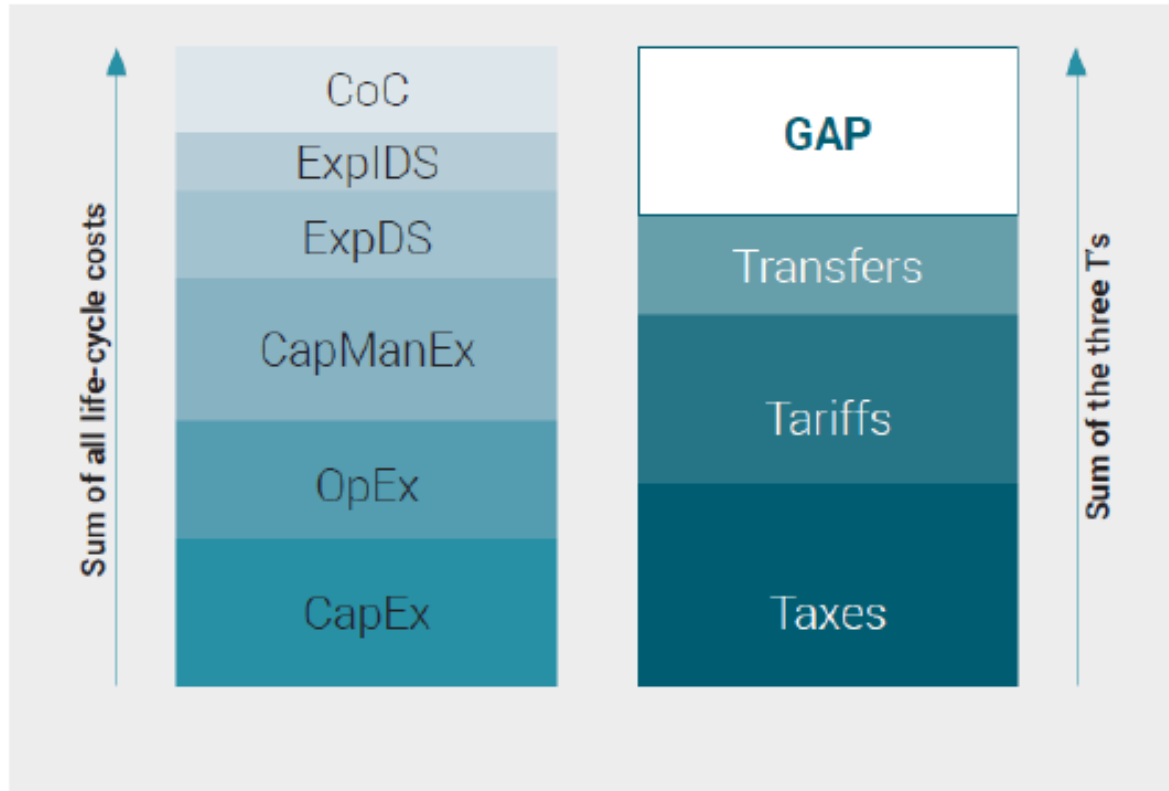
Contents

- Background
- Findings of the Study
 - International Observations
 - Zambian Observation
- Operation and Maintenance Models
- Group Discussions
- Report Back from Groups

Figure 5: Recommended organisational arrangements for regulation of rural water supply and sanitation services



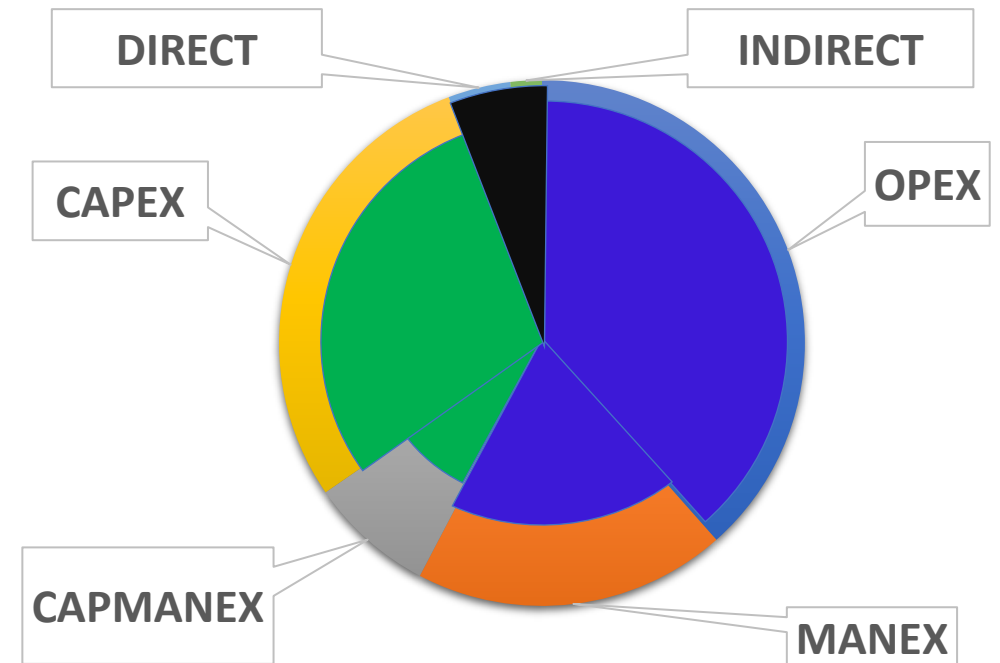
Taking on New Operational Units



*Costing and financing of small-scale water and sanitation services
(Smits and Fonseca)
WHO et al*

Identifying where the gap lies is crucial

- This may not be a focus of funders



Project Terms of Reference states...

'A challenge is obviously that rural WSS does not have a high potential for financial viability, and therefore the new models should not overburden the financial and human resources of LpWSC, a CU smaller in size and rather financially weak'.

The financial challenges of rural water service provision is a recurring theme in the sector.

We have to ask how far tariffs can take us?

In a recent KfW publication that compared many sites all over the world, ... the author notes that the outcome of water services delivery is **more a function of the financial arrangements** than it is of the **institutional arrangements**

Infrastructure Under Consideration

There are currently 5 PWS under consideration.

This is relatively small scale, but in the long run there will be many more.

[What about handpumps]
???



Business Processes

Operational Support

Engineering Support

Administrative Support

Potable Water



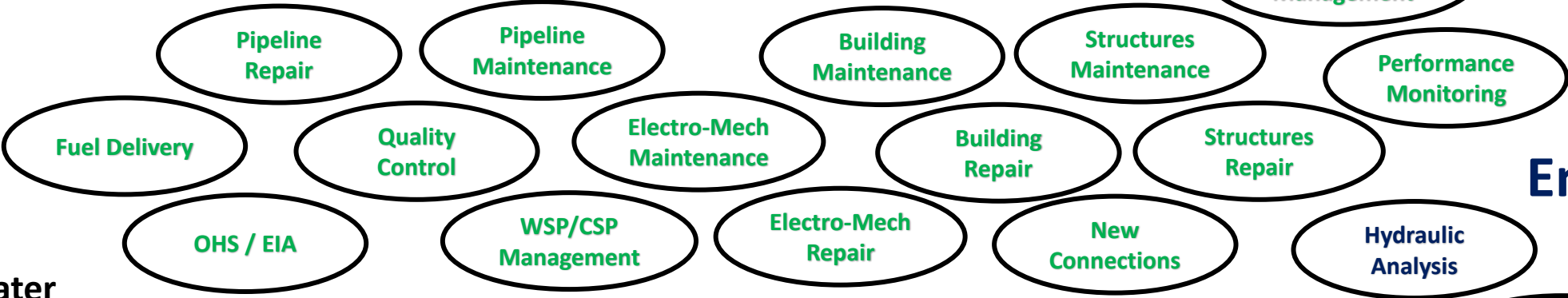
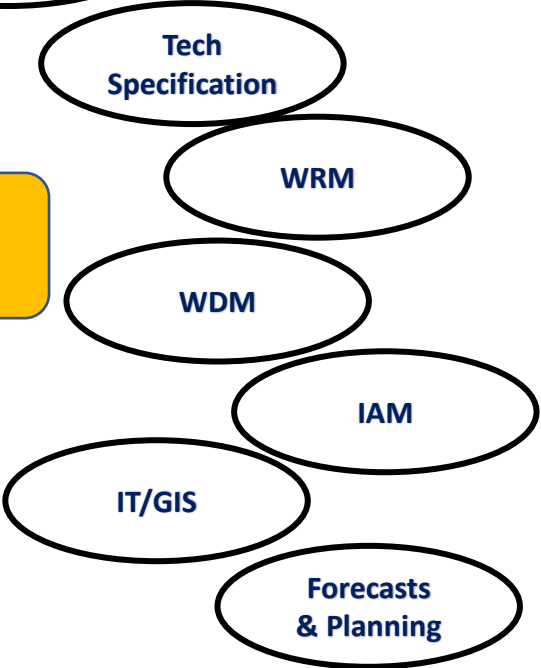
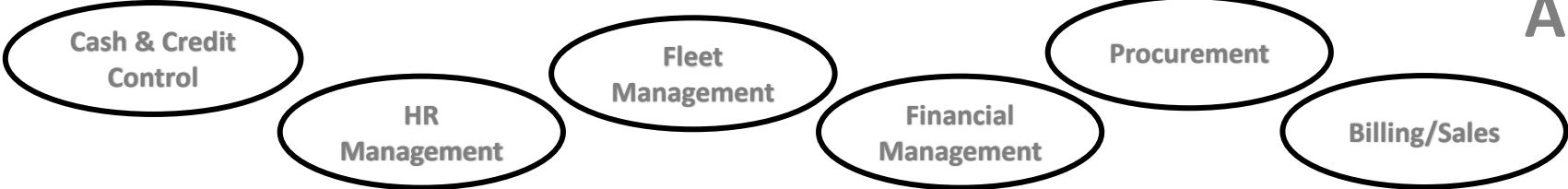
Sewerage



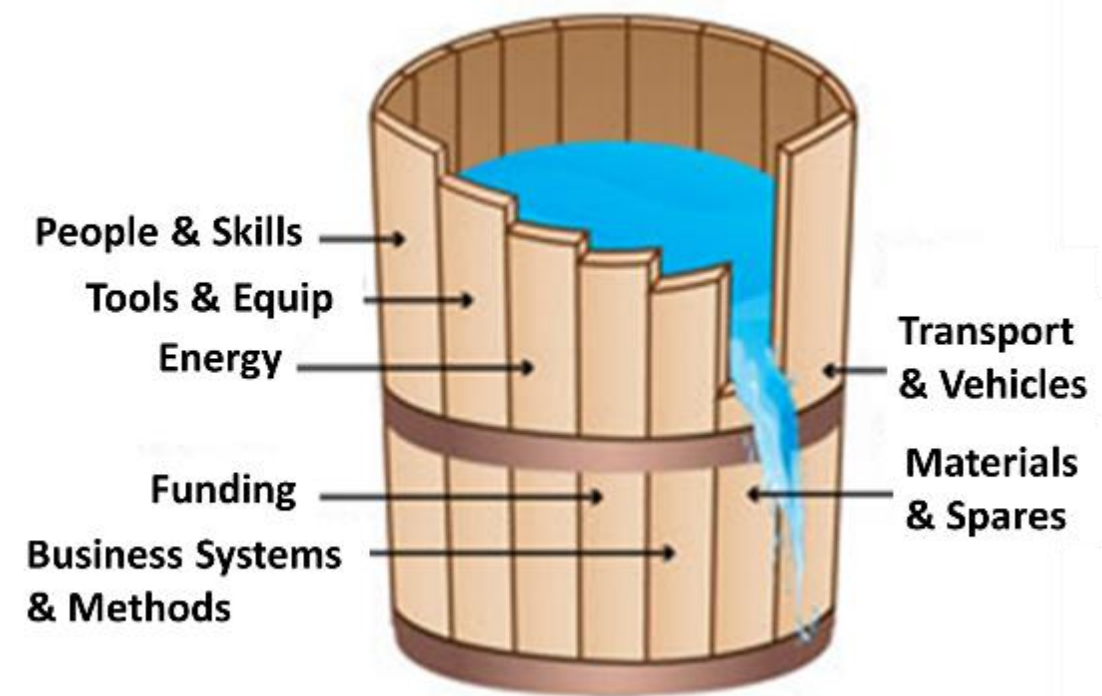
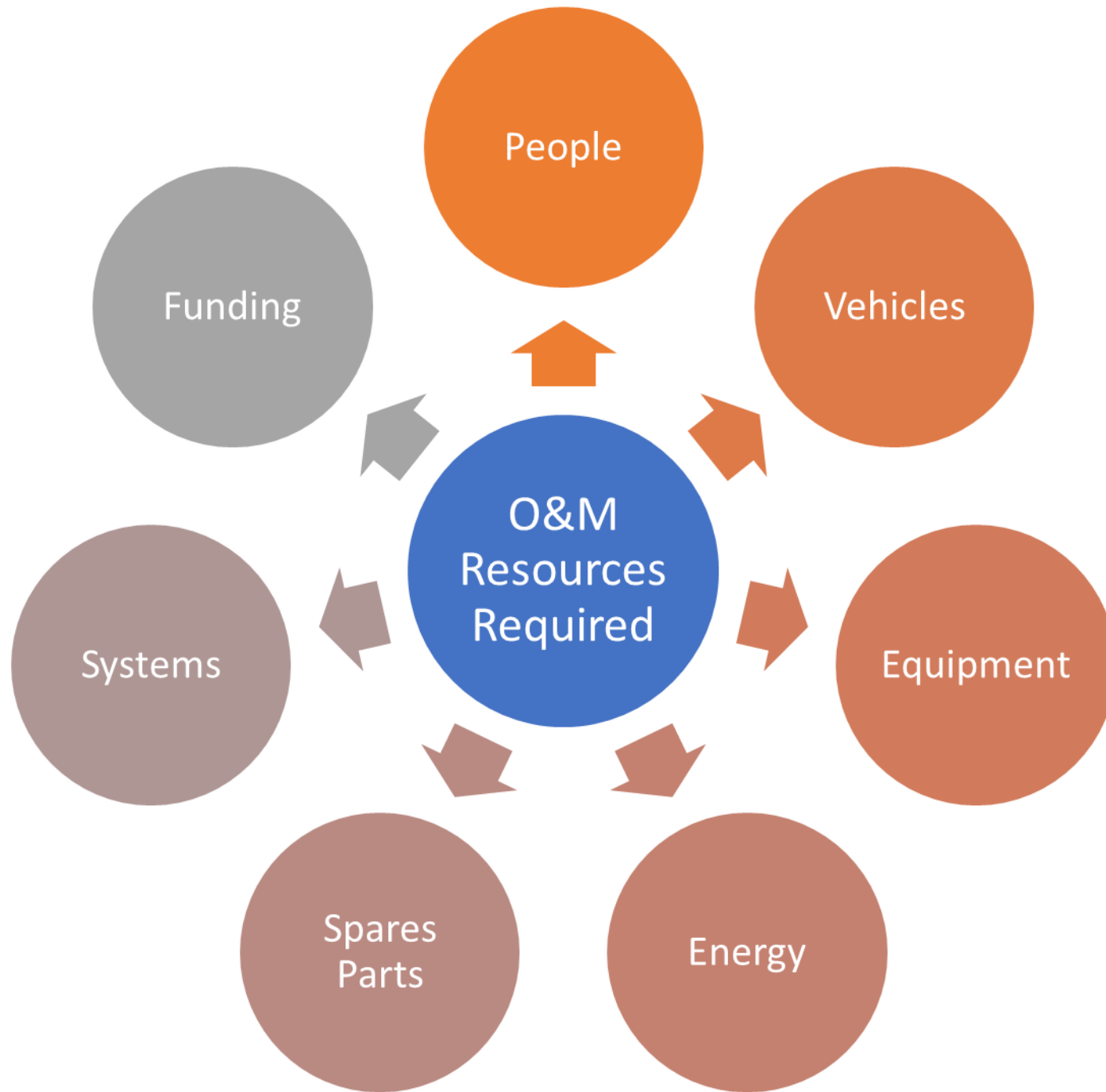
FSM



Customers



What are the limiting factors for effective O&M of PWS?



Country Experience Considered

Central African Republic

GDP / Cap	984
Tax as % of GDP	9%



Uganda



GDP / Cap	984
Tax as % of GDP	9%

Kenya



GDP / Cap	984
Tax as % of GDP	9%

Rwanda



GDP / Cap	984
Tax as % of GDP	9%

Malawi



Zambia



GDP / Cap	984
Tax as % of GDP	9%

Namibia



GDP / Cap	984
Tax as % of GDP	9%

South Africa

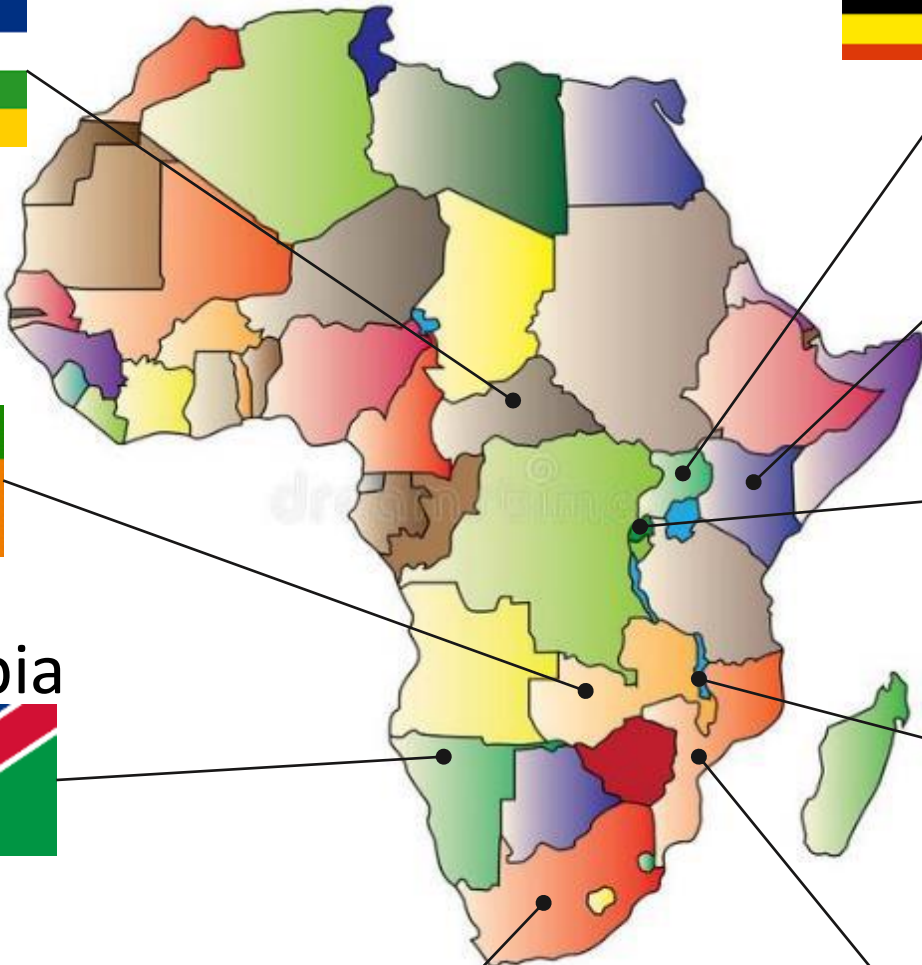


GDP / Cap	984
Tax as % of GDP	9%

Mozambique



GDP / Cap	984
Tax as % of GDP	9%





USAID Water and Development

KEY TAKEAWAYS

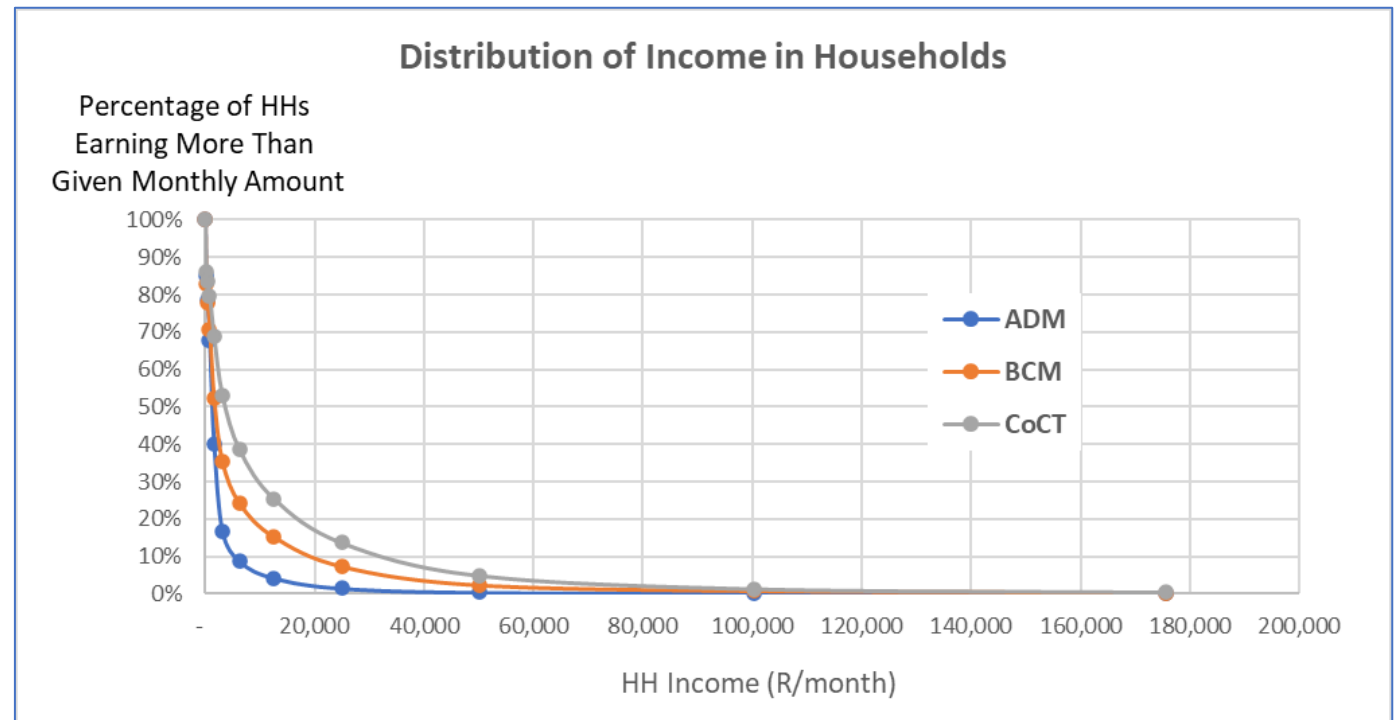
- Take into account that self-supply and community-based management generally fail to deliver sustained services without professionalized maintenance support.
- Think beyond the community level – service authorities and national government play an important role in the sustained delivery of rural water services.
- Design interventions to build capacity of community organizations, government, and other service providers for ongoing service delivery beyond first-time access to drinking water.

- Recent study found that tariffs are unaffordable by a huge percentage of rural population.

Tariff and Affordability Model for Amathole District Municipality					
Projected Revenue =	33,361,825	O&M Grant/Transfer =	263,686,000	Total Income =	297,047,825
% of HH that Cannot Afford =	93%	Unpaid for Water =	92%	Income / HH / yr =	1,249

Counterintuitively:–

More money would be collected
if tariffs are reduced !



**Local
Government**

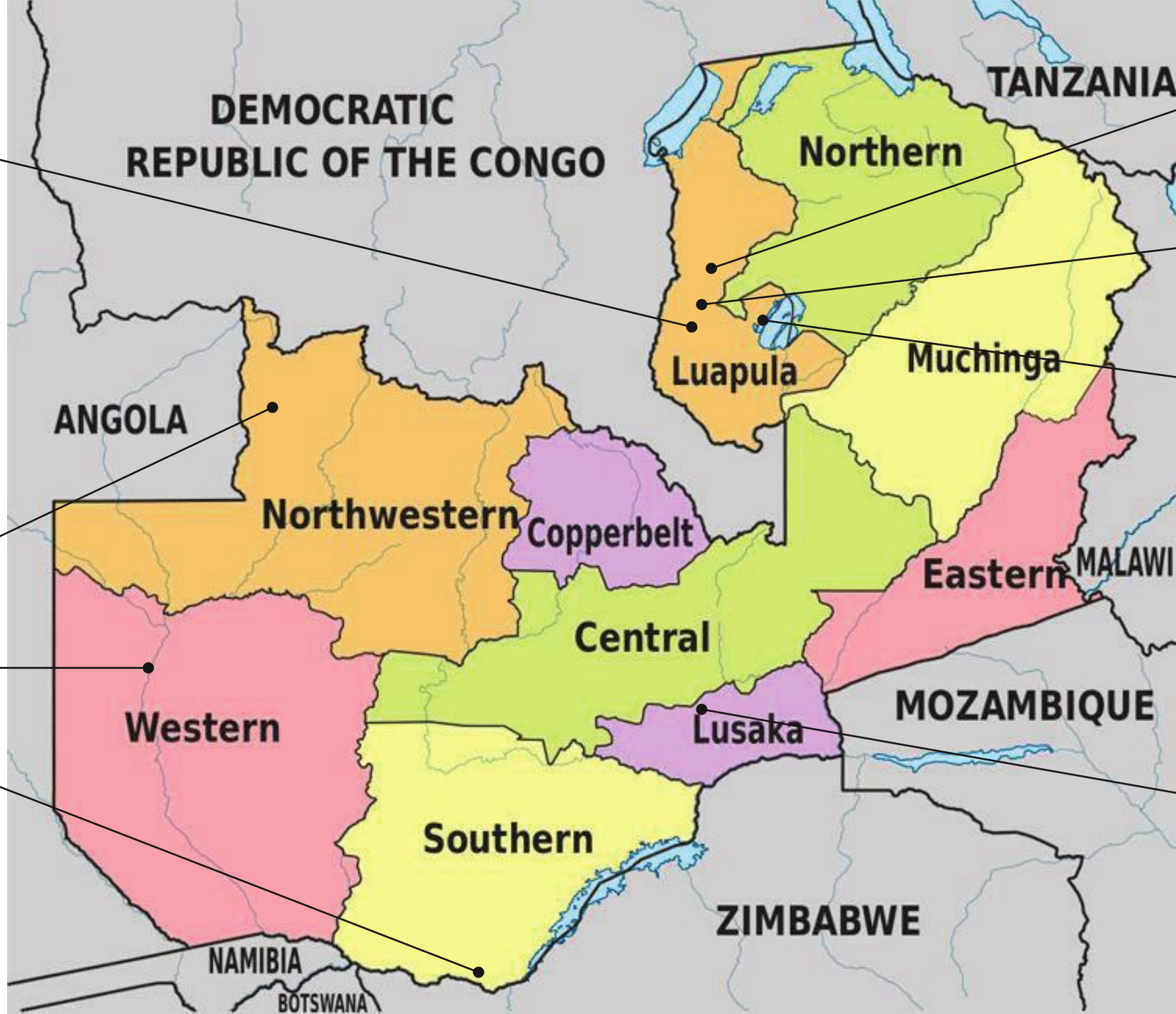
**The
Ministry**

**Commercial
Utility**

**Local
NGO**

**Commercial
Utilities**

**International
NGOs**



Observations from Zambia

- Some communities are managing to keep schemes running ('limping')
 - Challenges are capital expansion.
 - Major maintenance (CAPMANEX)
 - Solar power is dramatically reducing Electricity costs, but backup power is needed.
 - Continuity of supply is not as desired
 - Water quality is sampled sporadically
 - Water Resource Management is not a responsibility of the operators
- Some CUs have deployed their own staff, and are subsidising from broader tariff base
- Vendors resign often, job is not lucrative enough (also reported about APMs)
- NGOs have used Community Based Operators (Cost saving)
- LG may be reluctant to hand over schemes as they generate cash flow. (?)

O&M Of Rural Piped Water Schemes Summary of Observations

Water Resources

- Ground water is frequently utilised. Corrosion challenges in some places
- Centrally managed by the ministry
- Water Service Providers don't take responsibility
- Very few, if any, geohydrologists employed in O&M

Infrastructure

- Solar energy offers big ops cost saving, but some back up is required.
- Technical topics such as Quality Management, Water Conservation and Demand Management and Asset Management are dealt with sporadically. Bacteriological testing of water is seldom done.
- Funding for Major Maintenance (CapManex) is often in short supply.
- Neglect of Minor Maintenance leads to a need for Minor Maintenance.
- Sector Wide Approach to ensure alignment with CU strategies (Tech and Systems)

Billing

- Mobile Money has made things a lot easier.
- Financial sustainability through tariff collection alone is not realistic.

Institutions

- Outsourcing to NGOs or Private Sector may work, but it may just be a deferral of costs.
- Institutional Resources of Govt, LG, CUs, NGOs, APM, CBOs, School Staff, Clinic Staff, Private Sector often collaborate in a 'messy' way.
- There may be a disagreement between LG and CUs in handing over responsibility due to perception of possibility of generating income.

Procurement

- Local Govt rules and procedures appear to hinder procurement.
- Other institutions are able to solve this - 'make a plan'

Policy and Legislation

- Nobody mentioned this as a constraint or a topic of interest, at all?

Funding

- The associated question to O&M model is the funding model. If subsidy is considered then This is a question of national concern
- Revised O&M approaches will only take you so far in balancing the books in rural water (Piped or Point source)
- Recent analysis by KfW suggests that WSP outcomes are more a function of the funding model than of the institutional model.

Transport

- This an almost universally reported constraint

Skills

- The availability of skills was not reported as a constraint.
- Training and skills development is a good thing in and of itself
- But sometimes skills development enables people to get better jobs, and leave.
- There may be a perverse outcome to a good intention. (Urban centres benefit at the expense of rural settings)

Living Conditions Statistics

✓ Verified

Published by source: 22 June 2017

10 time series found: Monthly per capita income - Both Sexes

Export Download API Dashboards 3

> Indicator

> Region

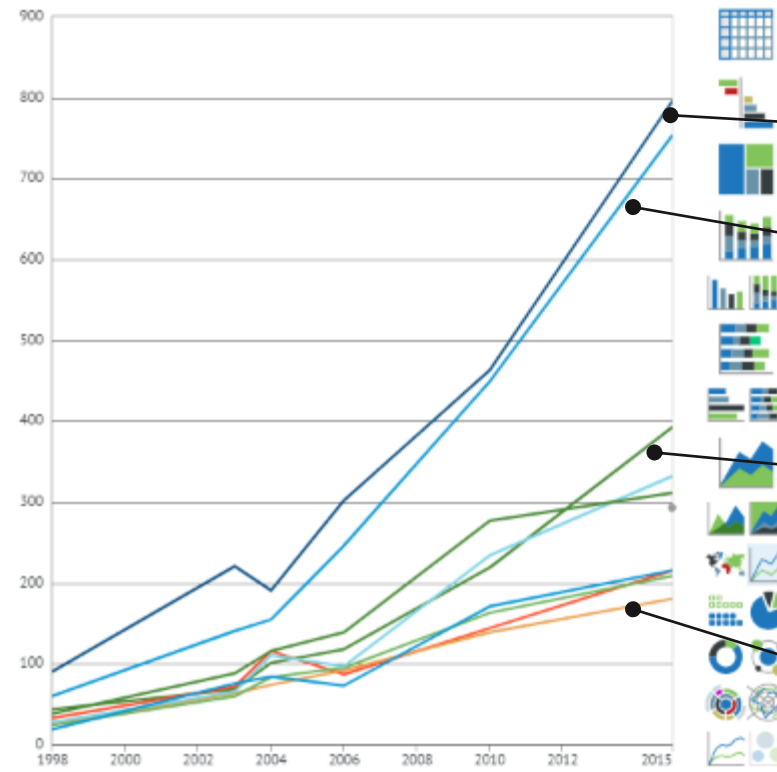
Type to filter

- ☐ Zambia
- ☒ Central Province
- ☒ Copperbelt Province
- ☒ Eastern Province
- ☒ Lusaka Province
- ☒ Muchinga Province
- ☒ Northern Province
- ☒ North-Western Province
- ☒ Southern Province
- ☒ Western Province

> Sex

> Residence

> Time



Household Income

Zambia Average (ZMW 444)

Lusaka (ZMW 794)

Copperbelt (ZMW 752)

Central (ZMW 392)

Luapula (ZMW 180) ... 41 % of National Avg

FREQUENCY
Annual

ORIGINAL DATA
<http://www.zamstats.gov.zm/>

Luapula Water and Sanitation (NWASCO 2019)

Credit control is problematic

Continuity of supply is good

Quality Management is good

Financial Viability is the lowest of all CUs
(by far)

Table 3: Overview of Sector Performance

CU	NRW [%]	Trend	Water Quality compliance	Trend	Metering Ratio [%]	Trend	Water Service Coverage [%]	Trend	Sanitation Coverage [%]	Trend	Hours of Supply	Trend	Staff Efficiency	Trend	Collection Efficiency [%]	Trend	O+M Cost Coverage by Collection [%]	Trend
LWSC	47	↓	A	↑	70	↑	87.5	↑	69.9	↑	16	↓	0.56	↓	81.6	↑	102	↓
NWSC	49	↓	B	↓	90	↑	98.0	↑	79.7	↑	17	↓	0.50	↓	77.1	↑	94	↓
KWSC	75	↓	B	↓	69	↓	83.5	↑	81.4	↑	21	↑	0.53	↓	59.9	↓	81	↓
MWSC	38	↑	A	↑	86	→	97.0	↑	80.8	↑	16	↓	0.46	↓	88.8	↑	101	↓
LGWSC	53	↓	A	→	82	↑	83.7	↑	54.6	↑	17	↓	0.67	↓	85.1	↓	94	↓
SWSC	41	↑	A	→	77	↑	95.3	↑	86.0	↑	19	↓	0.57	↓	94.6	↑	102	↑
CHWSC	37	↑	A	↑	96	↑	79.3	↓	60.7	↑	13	↓	0.79	↑	100.6	↑	83	↑
NWWSC	26	↑	A	→	100	→	81.7	↓	15.7	↓	17	↑	0.64	↑	109.3	↑	106	↑
WWSC	54	↑	D	→	92	↑	44.7	↓	20.1	↓	15	→	0.61	↓	102.2	↑	108	↑
EWSC	43	↓	A	→	100	→	87.1	↑	32.0	↓	20	→	0.82	↓	100.9	↑	84	↓
LPWSC	77	↑	A	→	100	→	49.9	↑	33.9	↑	19	↓	1.33	↓	75.5	↓	54	↓
Average	52(w)	↓	N/A		81(w)	↑	86(w)	↑	66(w)	↑	18(w)	→	0.56(w)	↓	82(w)	↑	96(w)	↓
Benchmark	25		95		100		80		80		18		0.4		85		100	

Proposed Models

- There is no single correct model!
- No model will easily solve fundamental resource deficits and non-viable trading propositions
- What operational resources and arrangements are required to sustain the functionality of the installed infrastructure?
 - Will the new schemes be 'cash positive' undertakings?
 - Are the 'real' operational resources available.
- Available institutional resources:
 - Luapula Water and Sanitation Company (the Commercial Utility).
 - Community based organisations
 - Private Sector (including small scale contractors such as handpump mechanics and kiosk agents).
 - Various non-governmental organisations.

Possible Models

O&M Aspects	Option 1	Option 2	Option 3
Description	Full O&M responsibility taken by the CU. All staff employed by CU.	Community based management. All O&M matters dealt with at community level. Support from other agencies (NGOs, CU, and NGOs) on an ad-hoc / emergency	A hybrid of community based responsibility for day to day operations and technical support from either the CU or a willing and adequately resourced NGO
Day to day ops	CU	CBO	CBO
Minor repairs	CU	CBO	CBO
Major repairs	CU	Emergency support from LG, CO, or NGOs	CU / NGO
Billing and credit control	CU with Kiosk Agents	CBO	CBO
New connections	CU	CBO	CU
Spare part provision	CU	CBO	CU / NGO
Technical support *	CU	LG (minimal)	CU / NGO
Provision of fuel	CU	CBO	CBO
Payment for electricity	CU	CBO	CBO

Scenarios (for and against)

- Commercial Utility takes full responsibility.
 - For:
 - Aligned to longer term responsibilities and vision.
 - Technical expertise available in house.
 - Against:
 - Raises day to day cost to the CU (esp operators salary).
 - Systems must be integrated (e.g. Billing).
- Community takes full operational responsibility.
 - For:
 - Costs constrained through local arrangements (e.g. Salaries)
 - Embedded rationing (energy costs).
 - Against:
 - Results in low level of service. (interruptions).
 - Infrastructure is not maintained.
 - Lots of evidence that this has not worked elsewhere.
- Community with CU support.
 - For:
 - Costs constrained through local arrangements (e.g. Salaries).
 - Embedded rationing (energy costs).
 -
 - Against:
 - staff may demand salaries aligned with CU permanent staff.
 - Behaviour of local staff and customers not accountable to the CU.
 - CU may not have resources to provide support.

Implementing Operational Arrangements

- The financial position of households and water services institutions is precarious.
- What financial resources are actually available
 - Tariffs
 - Grants from central government
 - Development partners.
- Commercially unviable services should be cross subsidised by wealthier domestic and business consumers.
 - Evidence is that this will not be possible in Luapula for the foreseeable future.

Implementing Operational Arrangements

- Recommended that Option 3 be adopted.
 - Limit the costs on Luapula Water and Sanitation Company.
 - Utilisation of Community Based Operators and the direct payment of energy costs by the community will serve to limit costs and ration consumption.
 - Local pump mechanics and other community members can be utilised as much as possible.
 - Wherever possible, the involvement of NGOs that can support service provision should be accepted and encouraged. (governed by clear 'Memoranda of Understanding')

Implementing Operational Arrangements

- CU to support of CBOs
 - technical and governance issues.
 - neglect of this important function will lead to degradation of infrastructure and to a declining LoS.
- Continued lobbying in the sector for resources required to ensure sustainable long-term service provision.
- A sector-wide approach to financing, that considers the full lifecycle costs, must be developed.

**Deutsche Gesellschaft für
Internationale Zusammenarbeit (GIZ) GmbH**

Registered offices
Bonn and Eschborn

Friedrich-Ebert-Allee 36 + 40
53113 Bonn, Germany
T +49 228 44 60 - 0
F +49 228 44 60 - 17 66

E info@giz.de
I www.giz.de

Dag-Hammarskjöld-Weg 1 - 5
65760 Eschborn, Germany
T +49 61 96 79 - 0
F +49 61 96 79 - 11 15

Annex 4: Signed Memoranda of Understanding

MEETINGS HELD IN DEVELOPING AND SIGNING MOU1

SN	DATE	PLACE	TITLE OF MEETING	MEETING OBJECTIVES	PARTICIPANTS	OUTPUTS/OUTCOMES
	17 November 2021	Mwense		<ul style="list-style-type: none"> • Presentation of content of MoU • Discussions on contractual matters that may require negotiation 	<ul style="list-style-type: none"> • GFA • Officials of Mwnese Local Authority 	Comments on the regulatory changes
	18 November 2021	Samfya		<ul style="list-style-type: none"> • Presentation of content of MoU • Discussions on contractual matters that may require negotiation 	<ul style="list-style-type: none"> • GFA • Senior Managers of Access Water for Zambia 	Comments on the concerns of a private operator, Including input from a PPP consultant with ADB (Manila)
	6 July 2022	Mansa		<ul style="list-style-type: none"> • Share content of the draft MoUs with stakeholders. • Present to stakeholders to the complexities of implementing effective O&M Models. • Enable stakeholders to appreciate the challenges and risks and benefits associated with entering contractual arrangements when outsourcing O&M service. • Receive feedback from stakeholders. 	<ul style="list-style-type: none"> • GFA • Officials of LpWSC • Officials of the Mansa Town Council • Others (see attendance register) 	Comments on emphasis, structure and content of the draft MoU
	8 July 2022	Lusaka		<ul style="list-style-type: none"> • Share content of the draft MoUs with stakeholders. • Present to stakeholders to the complexities of implementing effective O&M Models. • Enable stakeholders to appreciate the challenges and risks and benefits associated with entering contractual arrangements when outsourcing O&M service. • Receive feedback from stakeholders. 	<ul style="list-style-type: none"> • GFA • Ministry of Water Development and Sanitation • NWASCO • GIZ • Others (see attendance register) 	Comments on emphasis, structure and content of the draft MoU
	4 October 2022	Mansa		<ul style="list-style-type: none"> • Presentation of content of MoU • Discussions on contractual matters that may require negotiation 	<ul style="list-style-type: none"> • GFA • MD of LpWSC (and other senior managers) 	Comments on emphasis, structure and content of the draft MoU
	5 October 2022	Samfya	Discussion on signing of MoU	<ul style="list-style-type: none"> • Discuss signing of MoUs. • Identify any changes that signatory party may require 	<ul style="list-style-type: none"> • GFA • Access Water for Zambia 	Comments on emphasis, structure, and content of the draft MoU
	7 October 2022			<ul style="list-style-type: none"> • Discuss content and contractual provisions of the draft MoU 	<ul style="list-style-type: none"> • NWASCO 	Comments on emphasis, structure and content of the draft MoU

SN	DATE	PLACE	TITLE OF MEETING	MEETING OBJECTIVES	PARTICIPANTS	OUTPUTS/OUTCOMES
	19 October 2022	Lusaka	Discussion on NWASCO input and comments to MoU	<ul style="list-style-type: none"> • Discuss input and comments provided by NWASCO to the MoU • Agree on the content of the revised draft MoU framework 	<ul style="list-style-type: none"> • GFA • NWASCO 	Revised draft MoU framework
	11 November 2022	Mansa	Discussion content of revised draft MoU framework and roadmap for the signing of the MoU	<ul style="list-style-type: none"> • Discuss content of revised draft MoU framework • Discuss roadmap for the signing of the MoUs. 	<ul style="list-style-type: none"> • GFA • Statutory Manager LpWSC 	Agree on content and roadmap
	14-15 November 2022	Mwense	Discussion on signing of MoU	<ul style="list-style-type: none"> • Discuss and agree on the content of the MoU. • Finalize the MoU. • Sign MoU. 	<ul style="list-style-type: none"> • GFA • Mwense Town Council 	MoU content finalized in readiness for signing
	16-17 November 2022	Mwansabombwe	Discussion on signing of MoU	<ul style="list-style-type: none"> • Discuss and agree on the content of the MoU. • Finalize the MoU. • Sign MoU. 	<ul style="list-style-type: none"> • GFA • Mwansabombwe Town Council 	Signed MoU
	21 November 2022	Mansa	Discussion on signing MoU	<ul style="list-style-type: none"> • Discuss and agree on content of Access Water 4 Zambia MoU with LpWSC • Share agreed content with Access Water 4 Zambia 	<ul style="list-style-type: none"> • GFA • Statutory Manager LpWSC 	MoU content agreed with LpWSC and shared with Access Water 4 Zambia
	22-23	Mwense	MoU signing	<ul style="list-style-type: none"> • Finalize MoU content 	<ul style="list-style-type: none"> • GFA • Mwense Town Council 	Signed MoU
	1 December 2022	Mansa	Discussion on signing of MoU	<ul style="list-style-type: none"> • Received input on content agreed to by LpWSC from Access Water 4 Zambia. • Shared input with LpWSC. 	<ul style="list-style-type: none"> • GFA • Access Water for Zambia • Statutory Manager LpWSC 	Input from Access Water reviewed by LpWSC
	7 December 2022	Mansa	Discussion on signing of MoU	<ul style="list-style-type: none"> • Discuss signing of MoUs. • Follow up on the content provided by Access Water 4 Zambia with LpWSC. 	<ul style="list-style-type: none"> • GFA • Statutory Manager LpWSC 	Finalized content of the MoU
	8 December 2022	Mansa	MoU signing	<ul style="list-style-type: none"> • Signing the MoU by Access Water for Zambia 	<ul style="list-style-type: none"> • GFA • Access Water 4 Zambia 	Signed MoU
	12 December 2022	Mansa	MoU signing	<ul style="list-style-type: none"> • Signing the MoU by LpWSC 	<ul style="list-style-type: none"> • GFA • LpWSC 	Signed MoU

Memorandum of Understanding for Water Supply Services

between

Luapula Water Supply and Sanitation Company

and

**“Mwansabombwe Town Council” Third-Party
Service Provider**

1. Preamble

The provision of water supply in rural areas has historically been the responsibility of Local Authorities (Government of Zambia, 2019; Government of Zambia, 1997)¹², while water supply in urban and peri-urban areas has been the responsibility of commercial utilities (Government of Zambia, 1997). Section 16(2) 10(k) of the Local Government Act mandates the Local Authority (LA) to 'provide and maintain supplies of water and, for that purpose, establish and maintain waterworks and water mains' (Government of Zambia, 2019); while Section 10(1) of the Water Supply and Sanitation Act reaffirms the obligations of LA to provide water supply services, among others, thus: '...a local authority shall provide water supply and sanitation services to the area falling under its jurisdiction...' (Government of Zambia, 1997).

The Water Supply and Sanitation Act (Section 10(2)) further compels Local Authorities to contract a water supply service provider to supply water to a localities within their jurisdiction where no such services are being provided by any service provider.

Alongwith these provisions pertaining specifically to water supply in rural areas, a number of statutory organisations and bodies have roles and responsibilities that may impact on the provision of water services in said rural areas:

The Ministry of Water Development and Sanitation - The statutory functions of policy, water development and management and water supply are with the Ministry of Water Development and Sanitation (MWDS) Text on roles and responsibilities as they pertain to water and sanitation services

National Water Supply and Sanitation Council (NWASCO) – The National Water Supply and Sanitation Council issues licences to Water Supply and Sanitation Utilities (also called Commercial Utilities) and other Service Providers in accordance with section 11 of the Water Supply and Sanitation Act No. 28 of 1997. The Licenced Commercial Utilities (CUs) are allowed to engage third parties for the provision of water supply and sanitation services and urban onsite sanitation and faecal sludge management in accordance with the license conditions and regulatory frameworks developed by NWASCO.

The CU shall ensure that no third party provides water supply and sanitation services within its area of the licence without a valid permit or contract with them. Commercial Utilities can, however, engage third party to provide services on their behalf who comply with regulatory requirements provided herein. All contracts entered into between the License Holder and Third parties shall not be executed without the prior consent of NWASCO as per License conditions. The CU shall remain responsible for the acts and omissions of the operator (including their agents and employees) for provision of such services. NWASCO shall not be a party or be liable for any contracts entered into between the Holder and Third Parties, unless otherwise expressly agreed in line with the license conditions.

In order to guarantee that adequate and affordable water supply of good quality, and safe sanitation, are accessible to all (rural and urban populations), NWASCO in 2018 developed a framework for regulation and provision of rural water supply and sanitation services that essentially extended its regulatory mandate to rural areas. The regulation of rural water supply and sanitation covers five main aspects (NWASCO, 2018)³: namely water quality monitoring; general monitoring and reporting; operation and maintenance; adherence to standards, and sustainability of service provision. The operationalization of these Regulations in 2019 led to the amendment of CU operating licences to include the entire boundaries of provinces.

Water Utility and Sanitation Companies (CUs) - Licenses are issued to Water Supply and Sanitation Companies (Commercial Utilities (CUs)) by the National Water Supply and Sanitation Council

¹ Government of Zambia. (1997). The Water Supply and Sanitation Act, 1997. *Act No. 28 of 1997*. Lusaka, Lusaka, Zambia: Government of Zambia.

² Government of Zambia. (2019). The Local Government Act, 2019. *Act No. 2 of 2019*. Lusaka, Lusaka, Zambia: Government of Zambia.

³ NWASCO. (2018). Rural Water Supply and Sanitation. Framework for Provision and Regulation in Zambia. Lusaka, Lusaka, Zambia: National Water Supply and Sanitation Council.

(NWASCO). This is in accordance with Section 11 of the Water Supply and Sanitation Act number 28 of 1997. Commercial Utilities that are licensed can engage third parties to undertake the actual provision of services and they must ensure that all such companies or individuals adhere to all regulatory requirements. It is also a regulatory requirement that agreements between Licensed Commercial Utilities must include information as required by NWASCO (Attachment A).

Water Resources Management Authority (WARMA) – Established by the Water Resources Management Act No. 21 of 2011 to enforce inter alia the management, development, conservation, protection and preservation of water resources and their ecological systems as well as provide for the equitable, reasonable and sustainable utilisation of the water resources. The Act further mandates WARMA to ensure the right to draw or take water for domestic and non-commercial purposes through permitting water use activities as prescribed under Part IX of the Act No. 21 of 2011. Section 71 provides for activities that require water use permits and 71 (b) is of most relevant to Small Pipe Water Supply Schemes, thus: “constructing, acquiring any water works, impounding, supplying or distributing water from any water works or borehole to any other person”.

Zambia Environmental Management Agency (ZEMA) – Established by the Environmental Management Act No. 12 of 2011, ZEMA is mandated by the Act No. 12 of 2011 to, among others, protect, conserve, manage the environment and natural resources for posterity. ZEMA also provides for the prevention and control of pollution and environmental degradation as well as ensure that environmental impact assessment (EIA) studies are conducted for any new project that may have negative impacts on the environment. Specifically, therefore, Section 29 (1) prohibits any project that may have an effect on the environment to be undertaken without any written approval from ZEMA.

Ministry of Local Government and Rural Development – Amongst the many statutory functions and portfolios under the Ministry of Local Government and Rural Development are those of Local Government Policy, Rural Development, District Health Services and Administration of Chief's Affairs.

Traditional Leadership – Zambia is governed by a dual legal system of statutory law and customary law, and Chapter 287 (The Chief's Act) of Zambia's constitution prescribes the customary role of traditional leaders and mandates them to discharge their traditional functions under the protection of the Constitution. Overall, Chiefs are an effective change agents due to their traditional and cultural leadership influence as custodian of traditional values. Thus, harnessing these virtues would greatly contribute to the long term sustainability of the Water Services in the Rural Growth Centres.

This Memorandum of Understanding (MoU), therefore is a performance-based agreement and binds the Commercial Utility, Third-Party Service Provider and Community Based Organisation/s providing water service through small pipe water supply schemes to the rural communities as outlined under Section 3 to the terms and conditions as agreed by all parties as indicated by the signatures of duly authorised representatives

2. Definitions of Terms and Interpretations

In the context of this MoU, the following definitions and interpretations apply:

“Commercial Utility (CU)” means a water supply and sanitation utility established by a local authority in accordance with section nine of the Water Supply and Sanitation Act, No. 28 of 1997;

“Community Based Organisation (CBO)” means an organisations formed by communities to carry out day to day operation and maintenance activities and provide water supply services in rural communities;

“Guideline” means guidelines issued by the National Water Supply and Sanitation Council (NWASCO);

“Local Authority (LA)” means a Council established under the Local Government Act, Cap 281;

“Licence” means a licence issued by the National Water Supply and Sanitation Council (NWASCO) to CU for provision of sanitation and water supply services;

“Memorandum of Understanding (MoU)” means the agreement between parties that will implement the *“O&M Hybrid Model”* of service provision for small pipe water supply scheme;

“Non-Government Organisation (NGO)” means any not-for-profit organisation that provides services or performs functions that may otherwise be carried out by government departments; and such an organisation may play the role of *Support Services Providers (SSP)*;

“O&M Hybrid Model” means a service provision model for small pipe water supply scheme that entrusts the day-to-day operations to the community-based organization (CBO) while the CU or either a willing adequately resourced NGO provide the technical support, as agreed to and validated by partners in Luapula Province;

“Rural Growth Centre (RGC)” means a service centre within the rural area with potential for further development and conceived as a point of economic, social and cultural development;

“Service Level Agreement (SLA)” means a three-year progressive movement towards meeting the set targets in an agreement proposed by the CU and signed with NWASCO;

“Service Level Guarantee (SLG)” means a guaranteed and defined level of service for a specified price provided by the Third-Party Service Provider (SP) to users, thus ensuring “value for money”;

“Third-Party Service Provider (SP)” means any third-party providing water supply or sanitation services and operating under the CU licence;

“Small Pipe Water Supply Scheme (SPWS)” means a water supply infrastructure providing pipe water supplies to a rural growth centre (RGC);

“Standard Operating Procedures (SOPs)” means written instructions describing the steps in Water Services, including the materials and methods to be used and the expected end quality of the portable water supplied;

“Support Services Provider (SSP)” means an organisation that provides technical, financial and administrative support to CBOs to ensure that safe and adequate water supply services are delivered;

“Water Services” means the abstraction, conveyance, treatment and distribution of portable water through small pipe water supply scheme;

“Water Supply Infrastructure” means all structures, systems, pipes, appurtenances and any plant and equipment, whether located on private or public premises or on private or public land, necessary to provide water supply or sanitation services by any person providing the service, or which is used by any consumer of water supply;

3. Parties to this agreement

The parties to this agreement and their respective details are described below:

Table 3.1: Details of the Commercial Utility

Item	Detail
Name	Luapula Water Supply and Sanitation Company (LpWSC)
Names and ID of directors and chairperson	Eng. David Ngenda
Authorised representative position	Statutory Manager
Address	Plot No. 106, Chitimukulu Road, P.O. Box 710594, Mansa
Contact details	+260972603601
Certificate of registration (number) ¹	120080076582
Proof of registration in Zambia	See Attached PACRA Scanned Copy
Business licence (number) ²	1001989316 (ZRA LpWSC TPIN No)
Business licence (document)	See Attached ZRA LpWSC TPIN Scanned Copy
Hygiene operating license (Dept of Health)	N/A
Road traffic licences ³	N/A

Table 3.2: Details of the Third-Party Service Provider

Item	Detail
Name	Mwansabombwe Town Council
Names and ID of directors and chairperson	Mr Edgar Chilanzi Mulwanda
Authorised representative position	Council Secretary
Address	P.O. Box 750002
Contact details	+260977601260
Type of Organisation: CBO/ NGO/ Company by Registration/ Registered Society/ Local Authority/ Etc.	Local Authority
Constitution of organisation	Local Government Act No.2 of 2019
Certificate of registration (number) ¹	Local Government Act No.2 of 2019
Proof of registration in Zambia	Local Government Act No.2 of 2019
Business licence (number) ²	Local Government Act No.2 of 2019
Business licence (document)	Local Government Act No.2 of 2019
Waste Transport Licence (ZEMA)	N/A
Hygiene operating license (Dept of Health)	N/A
Road traffic licences ³	N/A

Table 3.3: Details of the Communities Receiving Water Supply Services

Item	Detail
Name of community/s:	New Kazembe
Constituency:	Mwansabombwe
Ward:	Mwansabombwe and Kazembe
Names and ID of leaders / water committee (Attach List)	N/A
Authorised representative position	N/A
Address	N/A
Contact details	N/A
Certificate of registration (number) ¹	N/A
Constitution of Community Based Organisation	N/A

4. Background and Purpose

This Memorandum of Understanding (MoU) describes the relationship between the Commercial Utility (Luapula Water Supply and Sanitation Company), the provider of Water Supply Services in **Mwansabombwe** district(s) and other stakeholders that have an interest in ensuring safe water supply service to the residents of Luapula Province.

Water Supply and Sanitation Commercial Utilities are designated as the license holder for all domestic water supply and sanitation services across the respective areas of jurisdiction of all Provinces of the Republic of Zambia. Therefore, the Commercial Utilities have ultimate responsibility for the supply of water supply and sanitation services to all citizens within their geographical area of jurisdiction; notwithstanding the Local Authority's (LA) responsibility of providing water supply and sanitation services as provided by the Water Supply and Sanitation Act No. 28 of 1997 and the Local Government Act No. 2 of 2019. It is a regulatory requirement that all organisations, or individuals, providing water supply and sanitation services within the geographical area of jurisdiction of the Commercial Utility operate under the license of the designated Commercial Utility, and that the roles and responsibilities and points of cooperation in the provision of services be described in an agreement between the parties.

Luapula Water Supply and Sanitation Company has developed a new strategy toward the provision of rural water services. The adopted strategy is a hybrid of community-based responsibility for day-to-day operations, with the Commercial Utility or a willing and adequately resourced third party providing technical support as a *Support Services Provider* (SSP). The *Support Services Provider* will provide the services in line with the and O&M Hybrid Operator Concept, that includes:

- i) Day to day O&M operation aspects being solely a CBO responsibility.
- ii) Minor O&M repair aspects being solely a CBO responsibility.
- iii) Major O&M repair aspects being solely a CU/ SSP responsibility.

EOM

- iv) Billing and credit control O&M aspects being solely a CBO responsibility.
- v) The cost of new connections O&M aspects being solely a CBO responsibility.
- vi) Installation of new connections will be performed by a competent authority and/ or CU.
- vii) Spare parts provision for minor operations being solely a CBO responsibility. Spare parts for major maintenance or repairs will be a CU/ SSP responsibility.
- viii) Technical support of O&M aspects being solely a CU/ SSP responsibility.
- ix) Provision of fuel or other energy will be solely a CBO responsibility.
- x) Payment for all energy costs will be solely a CBO responsibility.

Services will be provided in compliance with the Service Level Guarantee (SLG) as guaranteed by the Third-Party Service Provider and Service Level Agreement (SLA) as proposed by LpWSC and signed by NWASCO.

At the core of the hybrid model is the principle of 'local costs to be borne at a local level'.

This Memorandum of Understanding also describes the roles and responsibilities of other organisations and government departments that have an interest in the provision of water supply and sanitation services.

At this initial stage of formalization of the ongoing cooperation between the parties, the provisions and statements in this Memorandum of Understanding **are binding** on signatories. An initial **3-year** period is, however, considered as a '**trial and learning**' period only, and no litigation or any associated legal action shall be entered into by any party to this Memorandum of Understanding during this 'trial and learning' period. The purpose of this 'trial and learning period' is to demonstrate and test the commitment of all parties to this agreement in creating and realizing an enabling environment for the development of infrastructure and support to operation and maintenance activities for safe water supply services that comply with national guidelines, standards, and regulations.

All parties to this agreement also acknowledge that this Memorandum of Understanding will be amended from time to time. Such amendments will be in accordance with experiences and lessons learnt during the first **3 years** of its tenure. After the initial **3 year** "trial and learning period" legal action based on the provisions of this Memorandum of Understanding may be pursued.

5. Scope of work

The provisions of this Memorandum of Understanding apply to water supply services and associated infrastructure within the **Mwansabombwe** District of the Luapula Province, and in specific the schemes and villages mentioned in Table 4.1 below.

It is estimated that the population served by the schemes provided for within this Memorandum of Understanding are as follows:

Table 4.1: List of Villages and Institutions Served

Name of Scheme	Villages Served	Population Served	Ward / Constituency	Location (Co-ord)	Water Supply Source (Type)	Water Available from Source (yield in l/s)	Power Source	Storage Tank Type and Size (m³)	Network Length (m)	Number of Private Connections	Number of Communal Supply Points
1	Matabishi	3800	Kazembe/ Mwansabombwe	9.81986 S 28.77121 E					2500	68	7
2	Nakabamba	1100	Mwansabombwe/ Mwansabombwe	9.81322 S 28.76507 E					1500	12	9
3	Kasao	220	Mwansabombwe/ Mwansabombwe	9.81338 S 28.75997 E					0	0	0
Total (New Kazembe SPWS)	3 Villages				Groundwater	BH Yield: 6 l/s SWL: 51 m Pump Rating: 10 Hp Pumping Head: 102 m Pump Installation Depth: 52 m	ZESCO	60	4000	80	16

The scope of work, whether geographic or infrastructural in nature may be extended subject to mutual agreement of all parties that are signatory to this agreement. Any operational responsibility or infrastructure creation projects within the geographic area of responsibility of the Service Provider that may be added to the scope of work will be offered to the Third-Party Service Provider on a "first refusal basis". If the Third-Party Service Provider does not wish to take on the additional scope of work the commercial utility will consider other modes of implementation and/or operation.

In the supply of water services, the Third-Party Service Provider may undertake, in consultation with the CU, any or all of the following:

- i) **Design** - The design of all infrastructure and equipment associated with either new areas of service, or upgrades and extension in areas where services already exist.
 - a) All design and component sizing will be undertaken in compliance with the provisions of the Domestic Water Supply Design Guidelines of Zambia. Design reports will be prepared by the Third-Party Service Provider and submitted to all signatories to this agreement for evaluation and approval, which will not be unreasonably withheld.
- ii) **Construction and Refurbishment** - Construction and refurbishment work associated with either new areas of service, or upgrades and extension in areas where services already exist.
 - a) Work undertaken by the Third-Party Service Provider will comply with the norms and standards and good practice of the construction industry in Zambia. The approval of the Commercial Utility must be secured in writing prior to the commencement of any construction work. The Third-Party Service Provider will adhere to all laws of Zambia that are relevant to construction activities, especially law on Occupational Health and Safety, Environmental Protection, and the engagement of Labour. Upon completion of any construction work the Third-Party Service Provider will submit a full set of As-Built drawings in a digital format compatible with the GIS system of the Commercial Utility. After the completion of any works the Infrastructure Asset Register created and managed by Third-Party Service Provider must also be updated and submitted to the Commercial Utility.
- iii) **Operations** – Activities associated with the operation and maintenance of infrastructure to ensure water supply to beneficiary communities. This will include both day to day activities and major maintenance as outlined and agreed in this Memorandum of Understanding.
 - a) All operations will be undertaken in compliance with the laws, guidelines and provisions of the Ministry of Water Development and Sanitation (MWDS), NWASCO, Luapula Water Supply and Sanitation Company and the District Council.
- iv) **Training** – The development of capacity of skills of own staff as well as officials and staff of the Commercial Utility, Local Authorities and Community Based Organisations (CBO).
 - a) All parties to this agreement will provide support and training to other parties wherever they may have expertise or are running programmes that may be useful to the realisation of safe water supply services.
- v) **Transfer** - At the termination of this agreement the Third-Party Service Provider will hand over to Luapula Water Supply and Sanitation Company the infrastructure assets used to provide services.
 - a) An assessment of the condition and fair valuation of all assets must be undertaken and be agreed to at the commencement of the term of this Memorandum of Understanding.
 - b) The assets will be returned in the condition in which they were received, with due consideration and allowance for fair wear and tear.
 - c) In the event of early termination this Memorandum of Understanding for whatsoever reason the following will apply:
 - i) The Commercial Utility will pay the asset owner fair compensation for the infrastructure being transferred.

- ii) Fair compensation will be calculated based on the depreciated value of the infrastructure concerned, and a portion of revenues lost due to the early termination. These values will be assessed at the time of termination by a recognized accounting firm that is agreed to by both parties.

6. Start date and duration

This Contract shall become effective on the date of signature of this document by all parties and shall remain in full force for **3 years** unless prematurely terminated for reasons justified in law and with due consideration of the beneficiaries of the service.

If any of the parties wishes to terminate the agreement for reasons other than breach of any provision of this agreement, they must approach all other parties to the agreement and negotiate a practical exit plan that will not compromise services to consumers.

In all cases both parties shall give 90 days' notice of intention to terminate the agreement. Such a notice will:

- i) State the reason for the desire to terminate the agreement, and the relevant clause of the agreement which has been breached.
- ii) Specify the steps that must be taken to remedy the breach.
- iii) Specify the effective date of the notice and the time limit within which the steps described above must be taken.

Early withdrawal without notice shall attract a penalty equivalent to **3 months' Operational Cost of the Small Pipe Water Supply Scheme**. The operation cost will be calculated based on the following costs factors:

- i) Cost of energy;
- ii) Cost of chemicals;
- iii) Cost of maintenance;
- iv) Cost of wages, and
- v) Any other projected cost to be incurred.

It is noted that the duration of this Memorandum of Understanding may be extended upon terms agreed to by all parties on condition that:

- i) At least 90 days' notice before the expiry of this Memorandum of Understanding is given of the intention to extend the duration.
- ii) All parties that are signatory to this Memorandum of Understanding sign the agreement of extension

7. Role of the Commercial Utility

In the implementation of the terms and provisions of this Memorandum of Understanding, the Commercial Utility will:

- i) Provide permission to the Third-Party Service Provider (SP) to operate under the license of Luapula Water Supply and Sanitation Company.
- ii) Oversee, monitor, and evaluate the operations of the Third-Party Service Provider (SP) with a view to ensuring the provision of safe water supply services:
 - a) A reporting template will be developed together with the Service Provider (SP).
 - b) The Commercial Utility (CU) will have the right, after giving of fair notice, to visit and inspect any of the schemes where water is supplied, and/or the infrastructure under the custodianship of the Third-Party Service Provider (SP).

- iii) Provide technical assistance as the Support Services Provider (SSP) to the Third-Party Service Provider (SP) as and when required.
- iv) Ensure that a Sector Wide Approach (SWaP) is implemented across the province in the supply of water, through Third-Party Service Providers, that complies with the NWASCO guidelines:
 - a) Mobilize finance for and carry out major repair and maintenance work as and when required.
 - b) Such major maintenance work will be identified and motivated for by the Third-Party Service Provider.
 - c) Action to be taken and work to be done will be negotiated between the parties that are signatory to this agreement.
 - d) In the event of any emergency that requires major maintenance or repairs the Commercial Utility will support the Third-Party Service Provider in raising funds for undertaking any work that is required, or equipment that must be purchased.
 - e) As far as is required the Commercial Utility will also assist the Third-Party Service Provider in the implementation of any procurement or work that may be required.
- v) Monitor the quality, availability and sustainability of surface and ground water sources within the area.
- vi) Monitor the quality of water produced and distributed by the Third-Party Service Provider and advise their management on remedial action to be taken.
- vii) The Commercial Utility will develop tariff proposals for water supply services and submit them to NWASCO for consideration:
 - a) The Third-party Service Provider will be invited to have input to the process of cost analysis and tariff setting.
 - b) The process of tariff setting will be carried out in compliance with the provisions, requirements, and guidelines of NWASCO.
- viii) Inform the Third-Party Service Provider of the tariffs to be applied.
- ix) Provide capacity building to the Third-Party Service Provider and beneficiary communities, as far as is possible within existing programmes and available funding.
- x) Assist in carrying out community water supply sensitization workshops for both new projects and where services are already being provided.
- xi) Nominate a senior manager from the Commercial Utility to be part of the recruitment process of any person considered for a management role within the Third-Party Service Provider.
- xii) Participate in all the Annual General Meeting of the Third-Party Service Provider.
- xiii) Secure abstraction permits for all sources utilized by the Third-party Service Provider.
- xiv) Facilitate the availability of land for operational activities of the Third-party Service Provider.
- xv) Where required, facilitate the carrying out of Environmental Impact Assessments.
- xvi) Review the annual audits of the accounts and financial statements of the Third-party Service Provider for the water supply systems being managed.

The Commercial Utility undertakes to not interfere in the day-to-day operations of the Third-Party Service Provider. However, the Commercial Utility reserves the right to intervene when:

- i) Water supply services are not deemed to be reliable or safe.
- ii) There are misunderstanding or disputes between the Third-Party Service Provider and the Community.

- iii) Failure of the Third-Party Service Provider to provide services at satisfactory level.

8. Role of the Third-Party Service Provider

In terms of the provisions of this Memorandum of Understanding, the Third-Party Service Provider will:

- i) Provide water services that are efficient, affordable, and sustainable to residents within the geographic service area that forms the jurisdiction of the Third-Party Service Provider.
- ii) Supply portable pipe water that complies with the NWASCO Guidelines.
- iii) Ensure that the portable pipe water supplies comply with any other regulatory requirements or guidelines of the license conditions that apply to the Commercial Utility and comply with general directives issued by NWASCO through the Commercial Utility.
- iv) At all times strive to provide a safe water supply service and implement good customer care practices.
- v) Design and implement systems for the collection of user fees from customers on a regular basis:
 - a) These user fees from customers will be utilized for the payment of operational costs, including but not limited to, energy, staff costs, chemicals, and spare parts for minor maintenance.
- vi) Apply the tariff approved by NWASCO.
- vii) Ensure that customer agreements with all customers are established and documented:
 - a) These agreements will describe the service that will be provided, including the right of the Third-Party Service Provider to cut off supply to customers that do not pay their user fees, as well as penalties for illegal connections, and other misuse of the installed infrastructure.
- viii) Operate in accordance with existing standards, laws and regulations related to water supply services.
- ix) Adhere to any Standard Operating Procedures (SOP) developed collectively with the Commercial Utility.
- x) Adopt and implement the standard institutional arrangements (Hybrid Model) between third-party Service Providers and beneficiary communities as described in the O&M Plan of the Commercial Utility:
 - a) At all schemes the Third-Party Service Provider must establish a representative Water Based Committee (WBC) for the management and governance of the water supply services which are the subject of this Memorandum of Understanding.
 - b) A Water Supply Service Level Agreement (SLA) between the Third-Party Service Provider and the beneficiary communities must be developed, documented, and implemented.
 - c) This Service Level Agreement will describe the roles and responsibilities of the Third-Party Service Provider and "The Community", as represented by the afore-mentioned WBC.
- xi) The Third-Party Service Provider will be liable to the actions of NWASCO for failure to comply with license conditions.
- xii) Implement suitable performance monitoring systems and submit reports on Financial, Technical, Administrative and any other matters to the Commercial Utility as prescribed in the NWASCO Guidelines.
- xiii) The Third-Party Service Provider will keep financial records and ensure that audits are undertaken and submitted to the Commercial Utility.
- xiv) Ensure that good Occupational Health and Safety (OSH) practices are adhered to in all matters of Water Services, and, in particular, that all staff (including scheme level operatives) are registered with the National Health Insurance Authority, and were necessary immunized against Cholera, Typhoid, Hepatitis B, and other relevant infections.

- xv) Ensure adherence to the Financial Management Act and other relevant laws.
- xvi) At all times work closely with the mandated Local Authority (LA) and Traditional Leadership to keep them fully informed of all activities.
- xvii) Ensure that all waste from Water Services is disposed of in a responsible manner at sites designated for the receipt of such waste.

9. Role of the Local Authority

In support of the roles and responsibilities of the Third-Party Service Provider under this agreement, Local Authorities (LA) will:

- i) Provide financial support for the construction of new water supply infrastructure and rehabilitation of old water supply infrastructure.
- ii) Maintain supply chain for spare parts shops.
- iii) Formation of the community-based organizations and provision of capacity building for WASH stakeholders and community-based organisations.
- iv) Conduct community mobilization, engagement, and sensitization on WASH.
- v) Conduct performance monitoring of delegated water supply systems.
- vi) Coordinate stakeholders implementing WASH activities in the district.
- vii) Maintain and update WASH database in the district.
- viii) Enforce all statutes related to Water Supply, Sanitation, and Public Health.

10. Role of the Community and Community Based Organisations

Community Organisations/ Structures at each scheme will:

- i) Establish an organisation/ committee that will be responsible for Liaison and communication with all stakeholders that have an interest in the provision of water supply services in the community.
- ii) Sign a Community Water Supply Charter with the Third-Party Service Provider and undertake to work within the provisions of the Charter.
- iii) Cooperate with the Third-Party Service Provider in all aspects of operation and maintenance of installed infrastructure at the scheme.
- iv) Adhere to Service Level Guarantees (SLGs) signed between the Commercial Utility and the Regulator (NWASCO).
- v) Perform all day-to-day operations and maintenance of the infrastructure and equipment that is utilized to supply water to consumers within the community:
 - a) A detailed programme of work will be established between the Community Based Organisation and the Service Provider.
 - b) The responsibility of each Community Based Organisation will be limited to the management of a maximum of 10 km of pipeline and/ or 3No. water abstraction facilities (pump stations).
- vi) Provide advice to consumers on the use of water in relation to the quantity, quality, and continuity of service.
- vii) Adhere to the NWASCO Water Quality Monitoring Guidelines.
- viii) Implement the tariff approved by NWASCO.
- ix) Collect user fees from consumers of water within the community:

- a) The collected funds will be kept in a dedicated bank account held with the Third-Party Service Provider.
 - b) Follow-up on defaulters and provide feedback to the Third-Party Service Provider.
- x) Ensure that water users are bind by the rules in the use and access to the Water Services.
 - a) Collectively with the water users, develop the rules for the use and access to Water Services.
 - b) Enforce the rules for the use and access to Water Services by water users.

11. Asset Management

All infrastructure assets associated with the provision of water supply services will remain the property of the Third-Party Service Provider until lawful termination of this agreement. At that time the Commercial Utility will be required to pay fair compensation to the Third-Party Service Provider, after which the assets will become the property of the Commercial Utility. Fair compensation will be determined through negotiations between the parties to this agreement, and fair depreciation as calculated through accepted accounting practice.

Luapula Water Supply and Sanitation Company and the Third-Party Service Provider undertake to implement Infrastructure Asset Management practices as described in the guidelines provided by NWASCO (Attachment C). Within one month of signing this agreement the Third-Party Service Provider is required to draw up a register of all infrastructure assets used in the provision of water supply services. This register will be attached to this Memorandum of Understanding and will form an important part of what is agreed between the parties.

The Infrastructure Asset Register (Attachment C) must include information on the infrastructure and equipment associated with:

- i) Water sources.
- ii) Abstraction rates.
- iii) Transmission (pipelines, pump stations, energy sources).
- iv) Water treatment equipment and infrastructure
- v) Storage tanks.
- vi) Distribution networks.
- vii) Points of supply to customers (private and public connections).

The following information (attributes) on each item (asset) will be included:

- i) Name.
- ii) Position (latitude and longitude).
- iii) Rated capacity.
- iv) Make, type, model, serial number
- v) Supplier or service agent
- vi) Current performance
- vii) Current condition
- viii) Current depreciated value
- ix) Replacement value
- x) Expected life from new
- xi) Remaining useful life.

The Third-Party Service Provider may not pledge or otherwise encumber any of the Infrastructure Assets described in this Memorandum of Understanding, or any other items that may be created during the term of this agreement. The Third-Party Service Provider will ensure that all infrastructure assets acquired during the term of the agreement are placed on an amended version of the official infrastructure asset register and reported to Luapula Water Supply and Sanitation Company. The amended infrastructure asset register will be attached as an amendment to this agreement.

All operational assets, such as vehicles, tools, equipment, buildings, offices, furniture, software, and computers will remain the property of the Third-Party Service Provider upon termination of this agreement. Luapula Water Supply and Sanitation Company will be given first refusal to acquire such operational assets from the Third-Party service provider if offered for sale at a reasonable market price.

12. Business Plan

Within the first year of the term of this agreement the Third-Party Service Provider will develop a 5-year business plan for the services they are providing. The business plan will be updated annually and submitted for review by the signatories to this agreement. The topics to be covered in the business plan must align with the requirements of NWASCO and at least include:

- i) Information on the Third-Party Service Provider – form of organisation, registration, history.
- ii) Services offered – location, population, level of service.
- iii) Operations – strategies, business processes, performance indicators, health, and safety.
- iv) Investments required - plans for new areas of service, new connections.
- v) Finance – financial targets, projections, and strategies (including tariffs, fees, charges, donations, investments), sources of funding, forecast of revenues, expenses and cash flow.
- vi) Resources required – staff and organogram, vehicles, equipment, offices, stores, workshops, supply chains.
- vii) Asset Management – asset management plans, infrastructure asset registers, data management.

If required, the Commercial Utility will assist the Third-Party Service Provider and Community Based Organisations in the preparation of their business plans.

13. Failure to Perform

If any party feels they are prejudiced by or becomes aware of the failure to perform in terms of their roles and responsibilities of any other party to this Memorandum of Understanding, the party recognizing the default of others may take action to ensure that corrective action is put in place. The following procedure will apply:

- i) In the first instance, a meeting will be called within 30 days of all contracting parties during which the nature of the “failure to perform” will be discussed and a jointly agreed plan of corrective action will be agreed and documented. This plan will include reasonable activities and timeframes.
- ii) If the specific failure to perform persists, and is not resolved by the approach described above, a further meeting may be called within 30 days, with NWASCO and the Ministry of Water Development and Sanitation in attendance to offer assistance and plan for corrective action.
- iii) If the steps described above, do not resolve the matter within 90 days of the initial failure to perform then renegotiation of the Memorandum of Understanding must be undertaken. Such renegotiation to be completed within 60 days of any party calling for such renegotiation.
- iv) In the event of continued failure to perform, and no successful corrective action being implemented, and failure to renegotiate terms agreeable to all parties, this Memorandum of Understanding will be cancelled.
 - a) In such an event the cancellation must be implemented in such a way as to always limit any disruption to services and to protect the value of infrastructure assets.
 - b) Nonetheless, Water Services will be assured to users and with the same levels of services.

- c) The Commercial Utility and/ or the Support Services Provider, where different from the Commercial Utility, will take over the full operations and maintenance of the scheme until the suitable Third-Party Service Provider is outsourced.

In all instances of failure to perform and implementation of corrective measures, due consideration will be given to:

- i) The seriousness of the failure.
- ii) The repetitive nature of the failure.
- iii) The degree to which customers and the public are affected.
- iv) The degree of negligence on the part of any signatory to this MoU.
- v) The efforts made by parties to rectify the situation.

14. Finance

- i) All revenues collected by the Third-Party Service Provider for water supply services will be used for the payment of operational costs at a local scheme level.
 - a) If a surplus is generated through the collection of tariffs, the Third-Party Service Provider together with the community structures (CBOs) will have authority to suggest how these funds should be used.
- ii) Costs associated with major maintenance and repairs will be provided for through:
 - a) Budget allocations
 - b) Supplementary budgets
 - c) Partnerships
 - d) Emergency or Disaster grants.
- iii) All funding received over-and-above tariffs collected, and the work undertaken with such funds, will be reported on in monthly reports. Where there is prior knowledge of such funds becoming available, this must be included in the annual update of the Business Plan of the Third-Party Service Provider.
- iv) Any funds from development partners or other donors offered to any of the signatories to this agreement must be communicated to all other signatories. Such transparent communication of available resources will facilitate equitable and rational planning, leading to a Sector Wide Approach being in place for Luapula Water Supply and Sanitation Company.
- v) Sourcing of the external funds for any project relating to water and sanitation services in the area shall be in line with the Government policy which entails that all resources for the improvement of water and sanitation shall be channelled through the mandated Third-Party Service Provider – in this case the License holder.
- vi) If debt financing for the development of any infrastructure is considered, this must be presented to the signatories of this agreement for their consideration and approval; and no such debt should be secured, and no project may begin until the approval of the terms and conditions of such debt are agreed to by all the signatories.

15. Dispute Resolution

It is noted that all parties have entered into this agreement in good faith, and the parties agree to make a good faith effort to informally resolve any dispute before submitting the dispute to arbitration in accordance with the following procedures:

- i) In any instance of disagreement, the parties agree to convene, discuss, and negotiate amicable solutions in the best interests of ensuring continued safe water supply to customers.

- ii) If resolution of disputes cannot be resolved through negotiations of the parties to this MoU, NWASCO will be asked to assist in mediation between the parties if circumstances do arise and give rise for discussion and agreements, including:
 - a) Any changes of relevant law.
 - b) Natural phenomenon impacting the ability of the Third-Party Service Provider to continue to provide Water Services, i.e., Force majeure.
 - c) Failure of any party to perform in terms of the provisions of this agreement.
- iii) If no agreement can be reached on any dispute through negotiation, such matters will be resolved by means of arbitration.
 - a) Such arbitration will be undertaken in accordance with the Arbitration Act, Cap 40 of the Laws of Zambia.
- iv) During the period of any dispute resolution process no party may suspend the execution of their roles and responsibilities as contained in this MoU.

16. General

- i) It is further recorded that:
 - a) The Third-Party Service Provider warrants that they are not insolvent at the time of signing this MoU.
 - b) The language of correspondence will be English
 - c) Laws and statutes of Zambia will apply.
 - d) Confidentiality between parties will be respects, including documents and communications, proprietary information, and financial records.
 - e) All variations/ amendments of this agreement will be in writing and signed by all parties.
- ii) This Agreement shall not be deemed as a form of financial commitment on the part of any party, unless as expressly agreed by the parties from time to time.
- iii) All Parties acknowledge that they have reviewed, understood, and agreed to the content of this Memorandum of Understanding, thus signed:

Luapula Water Supply and Sanitation Company (LpWSC)	Witness:
Signed:  Name: <u>DAVID DGBANDA</u> Designation: <u>STATE TREASURER</u> Date: <u>01/12/2022</u>	Signed:  Name: <u>Mary Zgambo</u> Designation: <u>Commercial Officer</u> Date: <u>01/12/2022</u>



Mwansabombwe Town Council	Witness:
Signed: 	Signed: 
Name: EDGAR C. MULWANSWA	Name: REGGIE KAMUKHA
Designation: COUNCIL SECRETARY	Designation: CHIEF ADMIN OFFICER
Date: 17/11/2022	Date: 17-11-2022

Attachments A

Documents Required from the Commercial Utility

Attachments B

Constitution of Community Based Organisations.

Attachments C

Infrastructure Asset Register.



**Memorandum of Understanding for Water Supply
Services**

between

Luapula Water Supply and Sanitation Company

and

**“Mwense Town Council” Third-Party Service
Provider**

and

**“Mulundu Small Pipe Water Supply Scheme”
Community Based Organisation**

1. Preamble

The provision of water supply in rural areas has historically been the responsibility of Local Authorities (Government of Zambia, 2019; Government of Zambia, 1997)¹², while water supply in urban and peri-urban areas has been the responsibility of commercial utilities (Government of Zambia, 1997). Section 16(2) 10(k) of the Local Government Act mandates the Local Authority (LA) to 'provide and maintain supplies of water and, for that purpose, establish and maintain waterworks and water mains' (Government of Zambia, 2019); while Section 10(1) of the Water Supply and Sanitation Act reaffirms the obligations of LA to provide water supply services, among others, thus: '...a local authority shall provide water supply and sanitation services to the area falling under its jurisdiction...' (Government of Zambia, 1997).

The Water Supply and Sanitation Act (Section 10(2)) further compels Local Authorities to contract a water supply service provider to supply water to a localities within their jurisdiction where no such services are being provided by any service provider.

Alongwith these provisions pertaining specifically to water supply in rural areas, a number of statutory organisations and bodies have roles and responsibilities that may impact on the provision of water services in said rural areas:

The Ministry of Water Development and Sanitation – The statutory functions of policy, water development and management and water supply are with the Ministry of Water Development and Sanitation (MWDS) Text on roles and responsibilities as they pertain to water and sanitation services

National Water Supply and Sanitation Council (NWASCO) – The National Water Supply and Sanitation Council issues licences to Water Supply and Sanitation Utilities (also called Commercial Utilities) and other Service Providers in accordance with section 11 of the Water Supply and Sanitation Act No. 28 of 1997. The Licenced Commercial Utilities (CUs) are allowed to engage third parties for the provision of water supply and sanitation services and urban onsite sanitation and faecal sludge management in accordance with the license conditions and regulatory frameworks developed by NWASCO.

The CU shall ensure that no third party provides water supply and sanitation services within its area of the licence without a valid permit or contract with them. Commercial Utilities can, however, engage third party to provide services on their behalf who comply with regulatory requirements provided herein. All contracts entered into between the License Holder and Third parties shall not be executed without the prior consent of NWASCO as per License conditions. The CU shall remain responsible for the acts and omissions of the operator (including their agents and employees) for provision of such services. NWASCO shall not be a party or be liable for any contracts entered into between the Holder and Third Parties, unless otherwise expressly agreed in line with the license conditions.

In order to guarantee that adequate and affordable water supply of good quality, and safe sanitation, are accessible to all (rural and urban populations), NWASCO in 2018 developed a framework for regulation and provision of rural water supply and sanitation services that essentially extended its regulatory mandate to rural areas. The regulation of rural water supply and sanitation covers five main aspects (NWASCO, 2018)³: namely water quality monitoring; general monitoring and reporting; operation and maintenance; adherence to standards, and sustainability of service provision. The operationalization of these Regulations in 2019 led to the amendment of CU operating licences to include the entire boundaries of provinces.

Water Utility and Sanitation Companies (CUs) – Licenses are issued to Water Supply and Sanitation Companies (Commercial Utilities (CUs)) by the National Water Supply and Sanitation Council

¹ Government of Zambia. (1997). The Water Supply and Sanitation Act, 1997. *Act No. 28 of 1997*. Lusaka, Lusaka, Zambia: Government of Zambia.

² Government of Zambia. (2019). The Local Government Act, 2019. *Act No. 2 of 2019*. Lusaka, Lusaka, Zambia: Government of Zambia.

³ NWASCO. (2018). Rural Water Supply and Sanitation. Framework for Provision and Regulation in Zambia. Lusaka, Lusaka, Zambia: National Water Supply and Sanitation Council.

(NWASCO). This is in accordance with Section 11 of the Water Supply and Sanitation Act number 28 of 1997. Commercial Utilities that are licensed can engage third parties to undertake the actual provision of services and they must ensure that all such companies or individuals adhere to all regulatory requirements. It is also a regulatory requirement that agreements between Licensed Commercial Utilities must include information as required by NWASCO (Attachment A).

Water Resources Management Authority (WARMA) – Established by the Water Resources Management Act No. 21 of 2011 to enforce inter alia the management, development, conservation, protection and preservation of water resources and their ecological systems as well as provide for the equitable, reasonable and sustainable utilisation of the water resources. The Act further mandates WARMA to ensure the right to draw or take water for domestic and non-commercial purposes through permitting water use activities as prescribed under Part IX of the Act No. 21 of 2011. Section 71 provides for activities that require water use permits and 71 (b) is of most relevant to Small Pipe Water Supply Schemes, thus: “constructing, acquiring any water works, impounding, supplying or distributing water from any water works or borehole to any other person”.

Zambia Environmental Management Agency (ZEMA) – Established by the Environmental Management Act No. 12 of 2011, ZEMA is mandated by the Act No. 12 of 2011 to, among others, protect, conserve, manage the environment and natural resources for posterity. ZEMA also provides for the prevention and control of pollution and environmental degradation as well as ensure that environmental impact assessment (EIA) studies are conducted for any new project that may have negative impacts on the environment. Specifically, therefore, Section 29 (1) prohibits any project that may have an effect on the environment to be undertaken without any written approval from ZEMA.

Ministry of Local Government and Rural Development – Amongst the many statutory functions and portfolios under the Ministry of Local Government and Rural Development are those of Local Government Policy, Rural Development, District Health Services and Administration of Chief's Affairs.

Traditional Leadership – Zambia is governed by a dual legal system of statutory law and customary law, and Chapter 287 (The Chief's Act) of Zambia's constitution prescribes the customary role of traditional leaders and mandates them to discharge their traditional functions under the protection of the Constitution. Overall, Chiefs are an effective change agents due to their traditional and cultural leadership influence as custodian of traditional values. Thus, harnessing these virtues would greatly contribute to the long term sustainability of the Water Services in the Rural Growth Centres.

This Memorandum of Understanding (MoU), therefore is a performance based agreement and binds the Commercial Utility, Third-Party Service Provider and Community Based Organisation/s providing water service through small pipe water supply schemes to the rural communities as outlined under Section 3 to the terms and conditions as agreed by all parties as indicated by the signatures of duly authorised representatives

2. Definitions of Terms and Interpretations

In the context of this MoU, the following definitions and interpretations apply:

“Commercial Utility (CU)” means a water supply and sanitation utility established by a local authority in accordance with section nine of the Water Supply and Sanitation Act, No. 28 of 1997;

“Community Based Organisation (CBO)” means an organisations formed by communities to carry out day to day operation and maintenance activities and provide water supply services in rural communities;

“Guideline” means guidelines issued by the National Water Supply and Sanitation Council (NWASCO);

“Local Authority (LA)” means a Council established under the Local Government Act, Cap 281;

“Licence” means a licence issued by the National Water Supply and Sanitation Council (NWASCO) to CU for provision of sanitation and water supply services;

“Memorandum of Understanding (MoU)” means the agreement between parties that will implement the *“O&M Hybrid Model”* of service provision for small pipe water supply scheme;

“Non-Government Organisation (NGO)” means any not-for-profit organisation that provides services or performs functions that may otherwise be carried out by government departments; and such an organisation may play the role of *Support Services Providers (SSP)*;

“O&M Hybrid Model” means a service provision model for small pipe water supply scheme that entrusts the day to day operations to the community based organization (CBO) while the CU or either a willing adequately resourced NGO provide the technical support, as agreed to and validated by partners in Luapula Province;

“Rural Growth Centre (RGC)” means a service centre within the rural area with potential for further development and conceived as a point of economic, social and cultural development;

“Service Level Agreement (SLA)” means a three year progressive movement towards meeting the set targets in an agreement proposed by the CU and signed with NWASCO;

“Service Level Guarantee (SLG)” means a guaranteed and defined level of service for a specified price provided by the Third-Party Service Provider (SP) to users, thus ensuring “value for money”;

“Third-Party Service Provider (SP)” means any thirdparty providing water supply or sanitation services and operating under the CU licence;

“Small Pipe Water Supply Scheme (SPWS)” means a water supply infrastructure providing pipe water supplies to a rural growth centre (RGC);

“Standard Operating Procedures (SOPs)” means written instructions describing the steps in Water Services, including the materials and methods to be used and the expected end quality of the portable water supplied;

“Support Services Provider (SSP)” means an organisation that provides technical, financial and administrative support to CBOs to ensure that safe and adequate water supply services are delivered;

“Water Services” means the abstraction, conveyance, treatment and distribution of portable water through small pipe water supply scheme;

“Water Supply Infrastructure” means all structures, systems, pipes, appurtenances and any plant and equipment, whether located on private or public premises or on private or public land, necessary to provide water supply or sanitation services by any person providing the service, or which is used by any consumer of water supply;

3. Parties to this agreement

The parties to this agreement and their respective details are described below:

Table 3.1: Details of the Commercial Utility

Item	Detail
Name	Luapula Water Supply and Sanitation Company (LpWSC)
Names and ID of directors and chairperson	Eng. David Ngenda
Authorised representative position	Statutory Manager
Address	Plot No. 106, Chitimukulu Road, P.O. Box 710594, Mansa
Contact details	+260972603601
Certificate of registration (number) ¹	120080076582
Proof of registration in Zambia	See Attached PACRA Scanned Copy
Business licence (number) ²	1001989316 (ZRA LpWSC TPIN No)
Business licence (document)	See Attached ZRA LpWSC TPIN Scanned Copy
Hygiene operating license (Dept of Health)	N/A
Road traffic licences ³	N/A

Table 3.2: Details of the Third-Party Service Provider

Item	Detail
Name	Mwense Town Council
Names and ID of directors and chairperson	Mr Samuel Musonda Mumpa
Authorised representative position	Council Secretary
Address	P.O. Box 760001
Contact details	+260972910020
Type of Organisation: CBO/ NGO/ Company by Registration/ Registered Society/ Local Authority/ Etc.	Local Authority
Constitution of organisation	Local Government Act No.2 of 2019
Certificate of registration (number) ¹	Local Government Act No.2 of 2019
Proof of registration in Zambia	Local Government Act No.2 of 2019
Business licence (number) ²	Local Government Act No.2 of 2019
Business licence (document)	Local Government Act No.2 of 2019
Waste Transport Licence (ZEMA)	N/A
Hygiene operating license (Dept of Health)	N/A
Road traffic licences ³	N/A

Table 3.3: Details of the Communities Receiving Water Supply Services

Item	Detail
Name of community/s: Constituency: Ward:	Mulundu Growth Centre Mambilima Mambilima
Names and ID of leaders / water committee (Attach List)	Mr Carnicious Salangeta Kapungwe 159301/34/1 As per Attachment B
Authorised representative position	Chairperson
Address	Mulundu
Contact details	+260760090200
Certificate of registration (number) ¹	N/A
Constitution of Community Based Organisation	(see Attachment B)

4. Background and Purpose

This Memorandum of Understanding (MoU) describes the relationship between the Commercial Utility (Luapula Water Supply and Sanitation Company), the provider of Water Supply Services in **Mwense** district(s) and other stakeholders that have an interest in ensuring safe water supply service to the residents of Luapula Province.

Water Supply and Sanitation Commercial Utilities are the designated as the license holder for all domestic water supply and sanitation services across the respective areas of jurisdiction of all Provinces of the Republic of Zambia. Therefore, the Commercial Utilities have ultimate responsibility for the supply of water supply and sanitation services to all citizens within their geographical area of jurisdiction; notwithstanding the Local Authority's (LA) responsibility of providing water supply and sanitation services as provided by the Water Supply and Sanitation Act No. 28 of 1997 and the Local Government Act No. 2 of 2019. It is a regulatory requirement that all organisations, or individuals, providing water supply and sanitation services within the geographical area of jurisdiction of the Commercial Utility operate under the license of the designated Commercial Utility, and that the roles and responsibilities and points of cooperation in the provision of services be described in an agreement between the parties.

Luapula Water Supply and Sanitation Company has developed a new strategy toward the provision of rural water services. The adopted strategy is a hybrid of community-based responsibility for day-to-day operations, with the Commercial Utility or a willing and adequately resourced third party providing technical support as a *Support Services Provider* (SSP). The *Support Services Provider* will provide the services in line with the and O&M Hybrid Operator Concept, that includes:

- i) Day to day O&M operation aspects being solely a CBO responsibility.
- ii) Minor O&M repair aspects being solely a CBO responsibility.

- iii) Major O&M repair aspects being solely a CU/ SSP responsibility.
- iv) Billing and credit control O&M aspects being solely a CBO responsibility.
- v) The cost of new connections O&M aspects being solely a CBO responsibility.
- vi) Installation of new connections will be performed by a competent authority and/ or CU.
- vii) Spare parts provision for minor operations being solely a CBO responsibility. Spare parts for major maintenance or repairs will be a CU/ SSP responsibility.
- viii) Technical support of O&M aspects being solely a CU/ SSP responsibility.
- ix) Provision of fuel or other energy will be solely a CBO responsibility.
- x) Payment for all energy costs will be solely a CBO responsibility.

Services will be provided in compliance with the Service Level Guarantee (SLG) as guaranteed by the Third-Party Service Provider and Service Level Agreement (SLA) as proposed by LpWSC and signed by NWASCO.

At the core of the hybrid model is the principle of 'local costs to be borne at a local level'.

This Memorandum of Understanding also describes the roles and responsibilities of other organisations and government departments that have an interest in the provision of water supply and sanitation services.

At this initial stage of formalization of the ongoing cooperation between the parties, the provisions and statements in this Memorandum of Understanding **are binding** on signatories. An initial **3-year** period is, however, considered as a '**trial and learning**' period only, and no litigation or any associated legal action shall be entered into by any party to this Memorandum of Understanding during this 'trial and learning' period. The purpose of this 'trial and learning period' is to demonstrate and test the commitment of all parties to this agreement in creating and realizing an enabling environment for the development of infrastructure and support to operation and maintenance activities for safe water supply services that comply with national guidelines, standards, and regulations.

All parties to this agreement also acknowledge that this Memorandum of Understanding will be amended from time to time. Such amendments will be in accordance with experiences and lessons learnt during the first **3 years** of its tenure. After the initial **3 years** "trial and learning period" legal action based on the provisions of this Memorandum of Understanding may be pursued.

5. Scope of work

The provisions of this Memorandum of Understanding apply to water supply services and associated infrastructure within the **Mwense** District of the Luapula Province, and in specific the schemes and villages mentioned in Table 4.1 below.

It is estimated that the population served by the schemes provided for within this Memorandum of Understanding are as follows:

Table 4.1: List of Villages and Institutions Served

Name of Scheme	Villages Served	Population Served ⁴	Ward/ Constituency	Location (co-ord)	Water Supply Source (Type)	Water Available from Source (yield in l/s)	Power source	Storage Tank Type and Size (m ³)	Network Length (m)	Number of Private Connections	Number of Communal Supply Points
1	Kalindi	481	Mambilima	10.52951 E 28.65043 S					700		8
2	Chimambi	420	Mambilima	10.53023 E 28.64941 S					800		6
3	Ng'andwe	718	Mambilima	10.52837 E 28.65060 S					400		12
4	Kampamba	408	Mambilima	10.52811 E 28.64944 S					600		5
5	Mutoto	451	Mambilima	10.52535 E 28.65049 S					800		12
6	Swaba	588	Mambilima	10.52535 E 28.65049 S					700		8
7	Kabangwe	915	Munwa	10.52355 E 28.65217 S					1000		31
8	Nkunkusha		Munwa	10.52118 E 28.65295 S							
9	Mukopa	1120	Mambilima	10.52397 E 28.65510 S					1100		31
10	Mandefu	1244	Mambilima	10.52612 E 28.65801 S					800		31
11	Mitamba A	946	Mambilima	10.52838 E 28.66042 S					700		27

⁴ The population of the villages is taken from the CLTS headcount of 2018 while that of the institutions is the 2022 headcount

Name of Scheme	Villages Served	Population Served ⁴	Ward/ Constituency	Location (co-ord)	Water Supply Source (Type)	Water Available from Source (yield in l/s)	Power source	Storage Tank Type and Size (m ³)	Network Length (m)	Number of Private Connections	Number of Communal Supply Points
12	Mitamba B	713	Mambilima	10.52719 E 28.66165 S							
13	Lwangwa	2130	Munwa	10.50859 E 28.65967 S					400		15
14	Loki A	1331	Munwa	10.52547 E 28.66368 S					1000		25
15	Loki B	1144	Mambilima	10.52308 E 28.66023 S					1000		30
16	Mwenso	518	Mambilima	10.52949 E 28.64896 S					100		2
17	Kasaululo	430	Mambilima	10.52857 E 28.64813 S					300		5
18	Chonde	211	Mambilima	10.52857 E 28.64813 S					300		3
19	Mambilima Sec Sch	330	Mambilima	10.52814 E 28.65265 S					300		3
20	Mambilima Pri Sch	200	Mambilima	10.52811 E 28.65339 S					300		5
21	Mambilima Hospital	123 bed spaces	Mambilima	10.52735 E 28.65265 S					300		2
22	Mambilima Sec Sch Staff Compound	36	Mambilima	10.52832 E 28.65437 S					300	3	
23	Mambilima Pri Sch Staff Compound	24	Mambilima	10.52832 E 28.65437 S					500	18	

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Name of Scheme	Villages Served	Population Served ⁴	Ward/ Constituency	Location (co-ord)	Water Supply Source (Type)	Water Available from Source (yield in l/s)	Power source	Storage Tank Type and Size (m ³)	Network Length (m)	Number of Private Connections	Number of Communal Supply Points
24	Mambilima Hospital Staff Compound	100	Mambilima	10.52493 E 28.65292 S					300	19	
25	Mulundu Pri Sch	1620	Munwa	10.52259 E 28.65590 S					100		1
26	Mulundu Pri School Staff Compound	42	Mambilima	10.52409 E 28.65638 S					200	8	
Total (Mulundu SPWS)	18 Villages and 8 Institutions	13768 (Villages Population)			Luapula River	741000⁵	ZESCO	45	13000	48	262

⁵ Average flow measured at Kashiba: https://openjicareport.jica.go.jp/pdf/11251634_03.pdf (Accessed November 13th, 2022)

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The scope of work, whether geographic or infrastructural in nature may be extended subject to mutual agreement of all parties that are signatory to this agreement. Any operational responsibility or infrastructure creation projects within the geographic area of responsibility of the Service Provider that may be added to the scope of work will be offered to the Third-Party Service Provider on a "first refusal basis". If the Third-Party Service Provider does not wish to take on the additional scope of work the commercial utility will consider other modes of implementation and/or operation.

In the supply of water services, the Third-Party Service Provider may undertake, in consultation with the CU, any or all of the following:

- i) **Design** - The design of all infrastructure and equipment associated with either new areas of service, or upgrades and extension in areas where services already exist.
 - a) All design and component sizing will be undertaken in compliance with the provisions of the Domestic Water Supply Design Guidelines of Zambia. Design reports will be prepared by the Third-Party Service Provider and submitted to all signatories to this agreement for evaluation and approval, which will not be unreasonably withheld.
- ii) **Construction and Refurbishment** - Construction and refurbishment work associated with either new areas of service, or upgrades and extension in areas where services already exist.
 - a) Work undertaken by the Third-Party Service Provider will comply with the norms and standards and good practice of the construction industry in Zambia. The approval of the Commercial Utility must be secured in writing prior to the commencement of any construction work. The Third-Party Service Provider will adhere to all laws of Zambia that are relevant to construction activities, especially law on Occupational Health and Safety, Environmental Protection, and the engagement of Labour. Upon completion of any construction work the Third-Party Service Provider will submit a full set of As-Built drawings in a digital format compatible with the GIS system of the Commercial Utility. After the completion of any works the Infrastructure Asset Register created and managed by Third-Party Service Provider must also be updated and submitted to the Commercial Utility.
- iii) **Operations** – Activities associated with the operation and maintenance of infrastructure to ensure water supply to beneficiary communities. This will include both day to day activities and major maintenance as outlined and agreed in this Memorandum of Understanding.
 - a) All operations will be undertaken in compliance with the laws, guidelines and provisions of the Ministry of Water Development and Sanitation (MWDS), NWASCO, Luapula Water Supply and Sanitation Company and the District Council.
- iv) **Training** – The development of capacity of skills of own staff as well as officials and staff of the Commercial Utility, Local Authorities and Community Based Organisations (CBO).
 - a) All parties to this agreement will provide support and training to other parties wherever they may have expertise or are running programmes that may be useful to the realisation of safe water supply services.
- v) **Transfer** - At the termination of this agreement the Third-Party Service Provider will hand over to Luapula Water Supply and Sanitation Company the infrastructure assets used to provide services.
 - a) An assessment of the condition and fair valuation of all assets must be undertaken and be agreed to at the commencement of the term of this Memorandum of Understanding.
 - b) The assets will be returned in the condition in which they were received, with due consideration and allowance for fair wear and tear.
 - c) In the event of early termination this Memorandum of Understanding for whatsoever reason the following will apply:
 - i) The Commercial Utility will pay the asset owner fair compensation for the infrastructure being transferred.

- ii) Fair compensation will be calculated based on the depreciated value of the infrastructure concerned, and a portion of revenues lost due to the early termination. These values will be assessed at the time of termination by a recognized accounting firm that is agreed to by both parties.

6. Start date and duration

This Contract shall become effective on the date of signature of this document by all parties and shall remain in full force for **3 years** unless prematurely terminated for reasons justified in law and with due consideration of the beneficiaries of the service.

If any of the parties wishes to terminate the agreement for reasons other than breach of any provision of this agreement, they must approach all other parties to the agreement and negotiate a practical exit plan that will not compromise services to consumers.

In all cases both parties shall give 90 days' notice of intention to terminate the agreement. Such a notice will:

- i) State the reason for the desire to terminate the agreement, and the relevant clause of the agreement which has been breached.
- ii) Specify the steps that must be taken to remedy the breach.
- iii) Specify the effective date of the notice and the time limit within which the steps described above must be taken.

Early withdrawal without notice shall attract a penalty equivalent to **3 months' Operational Cost of the Small Pipe Water Supply Scheme**. The operation cost will be calculated based on the following costs factors:

- i) Cost of energy;
- ii) Cost of chemicals;
- iii) Cost of maintenance;
- iv) Cost of wages, and
- v) Any other projected cost to be incurred.

It is noted that the duration of this Memorandum of Understanding may be extended upon terms agreed to by all parties on condition that:

- i) At least 90 days' notice before the expiry of this Memorandum of Understanding is given of the intention to extend the duration.
- ii) All parties that are signatory to this Memorandum of Understanding sign the agreement of extension

7. Role of the Commercial Utility

In the implementation of the terms and provisions of this Memorandum of Understanding, the Commercial Utility will:

- i) Provide permission to the Third-Party Service Provider (SP) to operate under the license of Luapula Water Supply and Sanitation Company.
- ii) Oversee, monitor, and evaluate the operations of the Third-Party Service Provider (SP) with a view to ensuring the provision of safe water supply services:
 - a) A reporting template will be developed together with the Third-Party Service Provider (SP).
 - b) The Commercial Utility (CU) will have the right, after giving of fair notice, to visit and inspect any of the schemes where water is supplied, and/or the infrastructure under the custodianship of the Third-Party Service Provider (SP).

- iii) Provide technical assistance as the Support Services Provider (SSP) to the Third-Party Service Provider (SP) as and when required.
- iv) Ensure that a Sector Wide Approach (SWaP) is implemented across the province in the supply of water, through Third-Party Service Providers, that complies with the NWASCO guidelines:
 - a) Mobilize finance for and carry out major repair and maintenance work as and when required.
 - b) Such major maintenance work will be identified and motivated for by the Third-Party Service Provider.
 - c) Action to be taken and work to be done will be negotiated between the parties that are signatory to this agreement.
 - d) In the event of any emergency that requires major maintenance or repairs the Commercial Utility will support the Third-Party Service Provider in raising funds for undertaking any work that is required, or equipment that must be purchased.
 - e) As far as is required the Commercial Utility will also assist the Third-Party Service Provider in the implementation of any procurement or work that may be required.
- v) Monitor the quality, availability and sustainability of surface and ground water sources within the area.
- vi) Monitor the quality of water produced and distributed by the Third-Party Service Provider and advise their management on remedial action to be taken.
- vii) The Commercial Utility will develop tariff proposals for water supply services and submit them to NWASCO for consideration:
 - a) The Third-party Service Provider will be invited to have input to the process of cost analysis and tariff setting.
 - b) The process of tariff setting will be carried out in compliance with the provisions, requirements, and guidelines of NWASCO.
- viii) Inform the Third-Party Service Provider of the tariffs to be applied.
- ix) Provide capacity building to the Third-Party Service Provider and beneficiary communities, as far as is possible within existing programmes and available funding.
- x) Assist in carrying out community water supply sensitization workshops for both new projects and where services are already being provided.
- xi) Nominate a senior manager from the Commercial Utility to be part of the recruitment process of any person considered for a management role within the Third-Party Service Provider.
- xii) Participate in all the Annual General Meeting of the Third-Party Service Provider.
- xiii) Secure abstraction permits for all sources utilised by the Third-party Service Provider.
- xiv) Facilitate the availability of land for operational activities of the Third-party Service Provider.
- xv) Where required, facilitate the carrying out of Environmental Impact Assessments.
- xvi) Review the annual audits of the accounts and financial statements of the Third-Party Service Provider for the water supply systems being managed.

The Commercial Utility undertakes to not interfere in the day-to-day operations of the Third-Party Service Provider. However, the Commercial Utility reserves the right to intervene when:

- i) Water supply services are not deemed to be reliable or safe.
- ii) There are misunderstanding or disputes between the Third-Party Service Provider and the Community.

- iii) Failure of the Third-Party Service Provider to provide services at satisfactory level.

8. Role of the Third-Party Service Provider

In terms of the provisions of this Memorandum of Understanding, the Third-Party Service Provider will:

- i) Provide water services that are efficient, affordable, and sustainable to residents within the geographic service area that forms the jurisdiction of the Third-Party Service Provider.
- ii) Supply portable pipe water that complies with the NWASCO Guidelines.
- iii) Ensure that the portable pipe water supplies comply with any other regulatory requirements or guidelines of the license conditions that apply to the Commercial Utility and comply with general directives issued by NWASCO through the Commercial Utility.
- iv) At all times strive to provide a safe water supply service and implement good customer care practices.
- v) Design and implement systems for the collection of user fees from customers on a regular basis:
 - a) These user fees from customers will be utilized for the payment of operational costs, including but not limited to, energy, staff costs, chemicals, and spare parts for minor maintenance.
- vi) Apply the tariff approved by NWASCO.
- vii) Ensure that customer agreements with all customers are established and documented:
 - a) These agreements will describe the service that will be provided, including the right of the Third-Party Service Provider to cut off supply to customers that do not pay their user fees, as well as penalties for illegal connections, and other misuse of the installed infrastructure.
- viii) Operate in accordance with existing standards, laws and regulations related to water supply services.
- ix) Adhere to any Standard Operating Procedures (SOP) developed collectively with the Commercial Utility.
- x) Adopt and implement the standard institutional arrangements (Hybrid Model) between Third-Party Service Providers and beneficiary communities as described in the O&M Plan of the Commercial Utility:
 - a) At all schemes the Third-Party Service Provider must establish a representative Community Based Organisation (CBO) for the management and governance of the water supply services which are the subject of this Memorandum of Understanding.
 - b) A Water Supply Service Level Agreement (SLA) between the Third-Party Service Provider and the beneficiary communities must be developed, documented, and implemented.
 - c) This Service Level Agreement will describe the roles and responsibilities of the Third-Party Service Provider and "The Community", as represented by the afore-mentioned CBO.
- xi) The Third-Party Service Provider will be liable to the actions of NWASCO for failure to comply with license conditions.
- xii) Implement suitable performance monitoring systems and submit reports on Financial, Technical, Administrative and any other matters to the Commercial Utility as prescribed in the NWASCO Guidelines.
- xiii) The Third-Party Service Provider will keep financial records and ensure that audits are undertaken and submitted to the Commercial Utility.
- xiv) Ensure that good Occupational Health and Safety (OSH) practices are adhered to in all matters of Water Services, and, in particular, that all staff (including scheme level operatives) are

registered with the National Health Insurance Authority, and were necessary immunized against Cholera, Typhoid, Hepatitis B, and other relevant infections.

- xv) Ensure adherence to the Financial Management Act and other relevant laws.
- xvi) At all times work closely with the mandated Local Authority (LA) and Traditional Leadership to keep them fully informed of all activities.
- xvii) Ensure that all waste from Water Services is disposed of in a responsible manner at sites designated for the receipt of such waste.

9. Role of the Local Authority

In support of the roles and responsibilities of the Third-Party Service Provider under this agreement, Local Authorities (LA) will:

- i) Provide financial support for the construction of new water supply infrastructure and rehabilitation of old water supply infrastructure.
- ii) Maintain supply chain for spare parts shops.
- iii) Formation of the community-based organizations and provision of capacity building for WASH stakeholders and community-based organisations.
- iv) Conduct community mobilization, engagement, and sensitization on WASH.
- v) Conduct performance monitoring of delegated water supply systems.
- vi) Coordinate stakeholders implementing WASH activities in the district.
- vii) Maintain and update WASH database in the district.
- viii) Enforce all statutes related to Water Supply, Sanitation, and Public Health.

10. Role of the Community and Community Based Organisations

Community Organisations/ Structures at each scheme will:

- i) Establish an organisation/ committee that will be responsible for Liaison and communication with all stakeholders that have an interest in the provision of water supply services in the community.
- ii) Sign a Community Water Supply Charter with the Third-Party Service Provider and undertake to work within the provisions of the Charter.
- iii) Cooperate with the Service Provider in all aspects of operation and maintenance of installed infrastructure at the scheme.
- iv) Adhere to Service Level Guarantees (SLGs) signed between the Commercial Utility and the Regulator (NWASCO).
- v) Perform all day-to-day operations and maintenance of the infrastructure and equipment that is utilized to supply water to consumers within the community:
 - a) A detailed programme of work will be established between the Community Based Organisation and the Service Provider.
 - b) The responsibility of each Community Based Organisation will be limited to the management of a maximum of 10 km of pipeline and/ or 3No. water abstraction facilities (pump stations).
- vi) Provide advice to consumers on the use of water in relation to the quantity, quality, and continuity of service.
- vii) Adhere to the NWASCO Water Quality Monitoring Guidelines.
- viii) Implement the tariff approved by NWASCO.

- ix) Collect user fees from consumers of water within the community:
 - a) The collected funds will be kept in a dedicated bank account held with the Third-Party Service Provider.
 - b) Follow-up on defaulters and provide feedback to the Third-Party Service Provider.
- x) Ensure that water users are bind by the rules in the use and access to the Water Services.
 - a) Collectively with the water users, develop the rules for the use and access to Water Services.
 - b) Enforce the rules for the use and access to Water Services by water users.

11. Asset Management

All infrastructure assets associated with the provision of water supply services will remain the property of the Third-Party Service Provider until lawful termination of this agreement. At that time the Commercial Utility will be required to pay fair compensation to the Third-Party Service Provider, after which the assets will become the property of the Commercial Utility. Fair compensation will be determined through negotiations between the parties to this agreement, and fair depreciation as calculated through accepted accounting practice.

Luapula Water Supply and Sanitation and the Third-Party Service Provider undertake to implement Infrastructure Asset Management practices as described in the guidelines provided by NWASCO (Attachment C). Within one month of signing this agreement the Third-Party Service Provider is required to draw up a register of all infrastructure assets used in the provision of water supply services. This register will be attached to this Memorandum of Understanding and will form an important part of what is agreed between the parties.

The Infrastructure Asset Register (Attachment C) must include information on the infrastructure and equipment associated with:

- i) Water sources.
- ii) Abstraction rates.
- iii) Transmission (pipelines, pump stations, energy sources).
- iv) Water treatment equipment and infrastructure
- v) Storage tanks.
- vi) Distribution networks.
- vii) Points of supply to customers (private and public connections).

The following information (attributes) on each item (asset) will be included:

- i) Name.
- ii) Position (latitude and longitude).
- iii) Rated capacity.
- iv) Make, type, model, serial number
- v) Supplier or service agent
- vi) Current performance
- vii) Current condition
- viii) Current depreciated value
- ix) Replacement value
- x) Expected life from new

- xi) Remaining useful life.

The Third-Party Service Provider may not pledge or otherwise encumber any of the Infrastructure Assets described in this Memorandum of Understanding, or any other items that may be created during the term of this agreement. The Third-Party Service Provider will ensure that all infrastructure assets acquired during the term of the agreement are placed on an amended version of the official infrastructure asset register and reported to Luapula Water Supply and Sanitation Company. The amended infrastructure asset register will be attached as an amendment to this agreement.

All operational assets, such as vehicles, tools, equipment, buildings, offices, furniture, software, and computers will remain the property of the Third-Party Service Provider upon termination of this agreement. Luapula Water Supply and Sanitation Company will be given first refusal to acquire such operational assets from the Third-Party service provider if offered for sale at a reasonable market price.

12. Business Plan

Within the first year of the term of this agreement the Third-Party Service Provider will develop a 5-year business plan for the services they are providing. The business plan will be updated annually and submitted for review by the signatories to this agreement. The topics to be covered in the business plan must align with the requirements of NWASCO and at least include:

- i) Information on the Third-Party Service Provider – form of organisation, registration, history.
- ii) Services offered – location, population, level of service.
- iii) Operations – strategies, business processes, performance indicators, health, and safety.
- iv) Investments required – plans for new areas of service, new connections.
- v) Finance – financial targets, projections, and strategies (including tariffs, fees, charges, donations, investments), sources of funding, forecast of revenues, expenses and cash flow.
- vi) Resources required – staff and organogram, vehicles, equipment, offices, stores, workshops, supply chains.
- vii) Asset Management – asset management plans, infrastructure asset registers, data management.

If required, the Commercial Utility will assist the Third-Party Service Provider and Community Based Organisations in the preparation of their business plans.

13. Failure to Perform

If any party feels they are prejudiced by or becomes aware of the failure to perform in terms of their roles and responsibilities of any other party to this Memorandum of Understanding, the party recognizing the default of others may take action to ensure that corrective action is put in place. The following procedure will apply:

- i) In the first instance, a meeting will be called within 30 days of all contracting parties during which the nature of the “failure to perform” will be discussed and a jointly agreed plan of corrective action will be agreed and documented. This plan will include reasonable activities and timeframes.
- ii) If the specific failure to perform persists, and is not resolved by the approach described above, a further meeting may be called within 30 days, with NWASCO and the Ministry of Water Development and Sanitation in attendance to offer assistance and plan for corrective action.
- iii) If the steps described above, do not resolve the matter within 90 days of the initial failure to perform then renegotiation of the Memorandum of Understanding must be undertaken. Such renegotiation to be completed within 60 days of any party calling for such renegotiation.
- iv) In the event of continued failure to perform, and no successful corrective action being implemented, and failure to renegotiate terms agreeable to all parties, this Memorandum of Understanding will be cancelled.

- a) In such an event the cancellation must be implemented in such a way as to always limit any disruption to services and to protect the value of infrastructure assets.
- b) Nonetheless, Water Services will be assured to users and with the same levels of services.
- c) The Commercial Utility and/ or the Support Services Provider, where different from the Commercial Utility, will take over the full operations and maintenance of the scheme until the suitable Third-Party Service Provider is outsourced.

In all instances of failure to perform and implementation of corrective measures, due consideration will be given to:

- i) The seriousness of the failure.
- ii) The repetitive nature of the failure.
- iii) The degree to which customers and the public are affected.
- iv) The degree of negligence on the part of any signatory to this MoU.
- v) The efforts made by parties to rectify the situation.

14. Finance

- i) All revenues collected by the Third-Party Service Provider for water supply services will be used for the payment of operational costs at a local scheme level.
 - a) If a surplus is generated through the collection of tariffs, the Third-Party Service Provider together with the community structures (CBOs) will have authority to suggest how these funds should be used.
- ii) Costs associated with major maintenance and repairs will be provided for through:
 - a) Budget allocations
 - b) Supplementary budgets
 - c) Partnerships
 - d) Emergency or Disaster grants.
- iii) All funding received over-and-above tariffs collected, and the work undertaken with such funds, will be reported on in monthly reports. Where there is prior knowledge of such funds becoming available, this must be included in the annual update of the Business Plan of the Third-Party Service Provider.
- iv) Any funds from development partners or other donors offered to any of the signatories to this agreement must be communicated to all other signatories. Such transparent communication of available resources will facilitate equitable and rational planning, leading to a Sector Wide Approach being in place for Luapula Water Supply and Sanitation Company.
- v) Sourcing of the external funds for any project relating to water and sanitation services in the area shall be in line with the Government policy which entails that all resources for the improvement of water and sanitation shall be channeled through the mandated Third-Party Service Provider – in this case the License holder.
- vi) If debt financing for the development of any infrastructure is considered, this must be presented to the signatories of this agreement for their consideration and approval; and no such debt should be secured, and no project may begin until the approval of the terms and conditions of such debt are agreed to by all the signatories.

15. Dispute Resolution



It is noted that all parties have entered into this agreement in good faith, and the parties agree to make a good faith effort to informally resolve any dispute before submitting the dispute to arbitration in accordance with the following procedures:

M.S.M
S.K.K. M.Z

- i) In any instance of disagreement, the parties agree to convene, discuss, and negotiate amicable solutions in the best interests of ensuring continued safe water supply to customers.
- ii) If resolution of disputes cannot be resolved through negotiations of the parties to this MoU, NWASCO will be asked to assist in mediation between the parties if circumstances do arise and give rise for discussion and agreements, including:
 - a) Any changes of relevant law.
 - b) Natural phenomenon impacting the ability of the Third-Party Service Provider to continue to provide Water Services, i.e., Force majeure.
 - c) Failure of any party to perform in terms of the provisions of this agreement.
- iii) If no agreement can be reached on any dispute through negotiation, such matters will be resolved by means of arbitration.
 - a) Such arbitration will be undertaken in accordance with the Arbitration Act, Cap 40 of the Laws of Zambia.
- iv) During the period of any dispute resolution process no party may suspend the execution of their roles and responsibilities as contained in this MoU.



16. General

- i) It is further recorded that:
 - a) The Third-Party Service Provider warrants that they are not insolvent at the time of signing this MoU.
 - b) The language of correspondence will be English
 - c) Laws and statutes of Zambia will apply.
 - d) Confidentiality between parties will be respects, including documents and communications, proprietary information, and financial records.
 - e) All variations/ amendments of this agreement will be in writing and signed by all parties.
- ii) This Agreement shall not be deemed as a form of financial commitment on the part of any party, unless as expressly agreed by the parties from time to time.
- iii) All Parties acknowledge that they have reviewed, understood, and agreed to the content of this Memorandum of Understanding, thus signed:

Luapula Water Supply and Sanitation Company (LpWSC)	Witness:
Signed: 	Signed: 
Name: DAVID NDENZA	Name: Mary Zgambo
Designation: STATUTORY MANAGER	Designation: Commercial Officer
Date: 01/12/2022	Date: 01/12/2022



SKK M.S.M
MX

Mwense Town Council	Witness:
Signed: 	Signed: 
Name: <u>MUBONDA S. MUMBA</u>	Name: <u>MANDA MISHECK</u>
Designation: <u>COUNCIL SECRETARY</u>	Designation: <u>WATER AND SANITATION COORDINATOR</u>
Date: <u>23 NOVEMBER 2022</u>	Date: <u>23RD NOVEMBER, 2022</u>

Mulundu Small Pipe Water Supply Scheme Community Based Organisation	Witness:
Signed: 	Signed: 
Name: <u>KAPWINDA S. KUMBUKA</u>	Name: <u>MWAPE CHALWE YVONNE</u>
Designation: <u>CHAIRPERSON</u>	Designation: <u>TREASURER</u>
Date: <u>23 NOVEMBER 22</u>	Date: <u>22 NOVEMBER 2022</u>

Attachments A

Documents Required from the Commercial Utility

Attachments B

Constitution of Community Based Organisations.

Attachments C

Infrastructure Asset Register.



Annex 5: Validation Workshop: Memorandum of Understanding



Luapula Piped Water Scheme O&M Models

Recap on Work so Far

Luapula

6 July 2022



Implemented by

giz Deutsche Gesellschaft
für Internationale
Zusammenarbeit (GIZ) GmbH

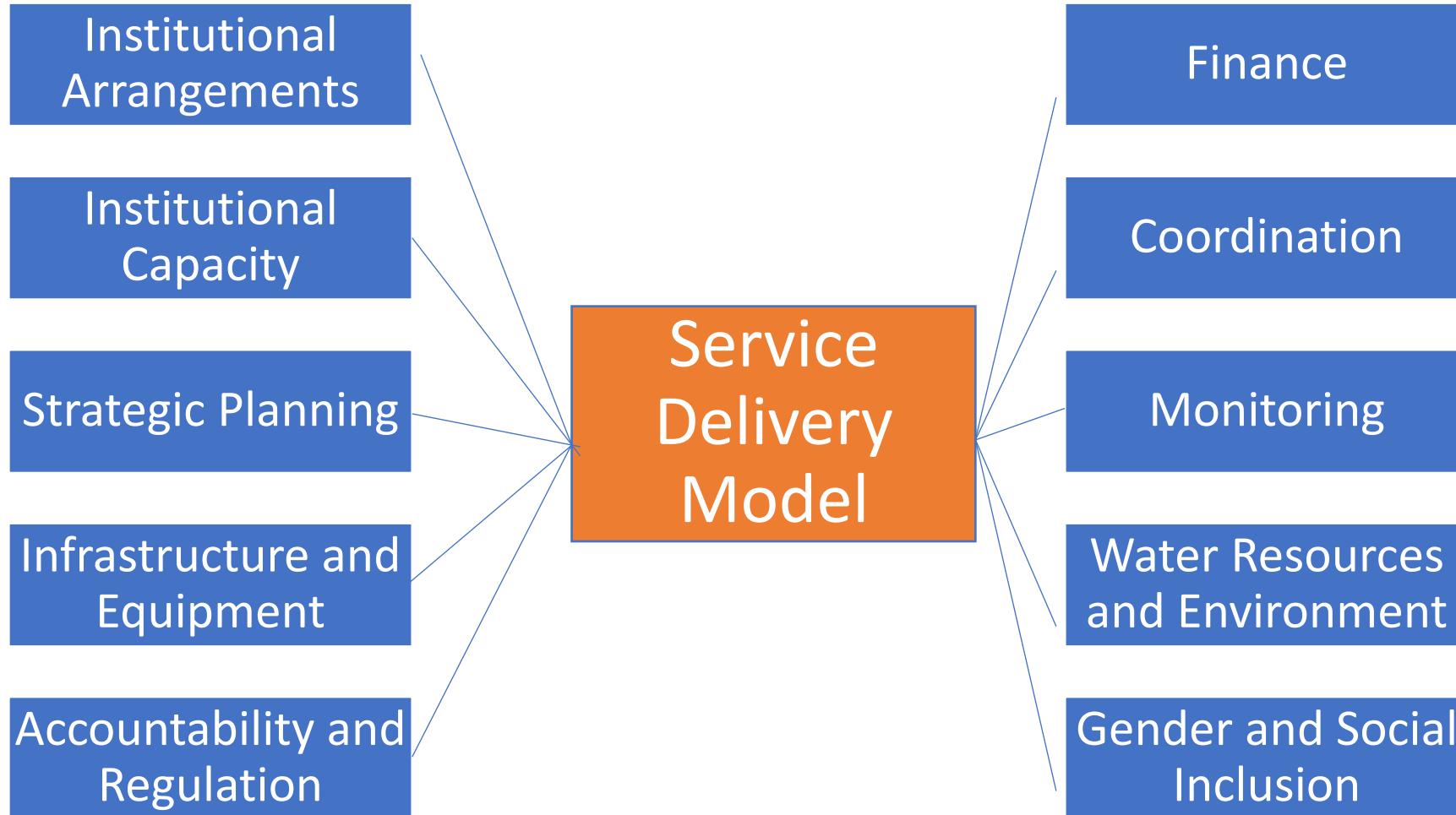


What is a Service Delivery Model

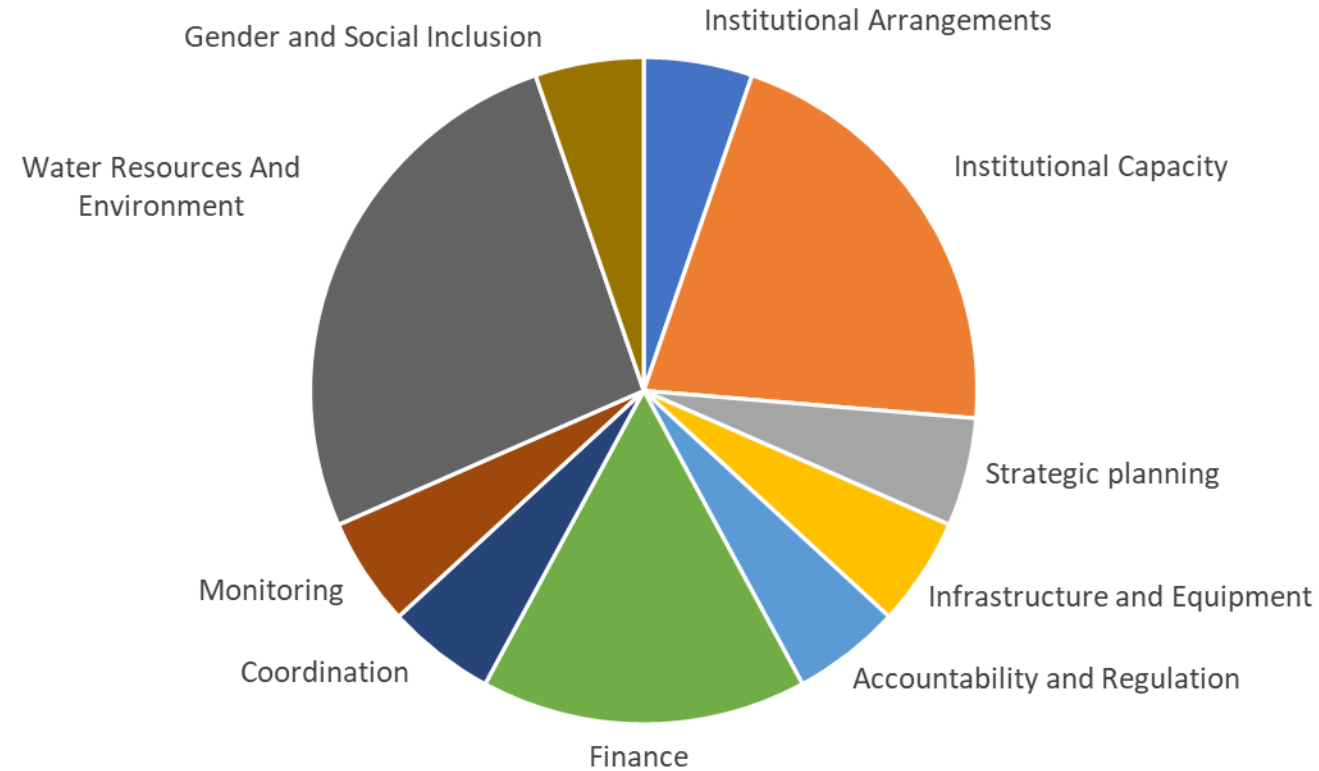
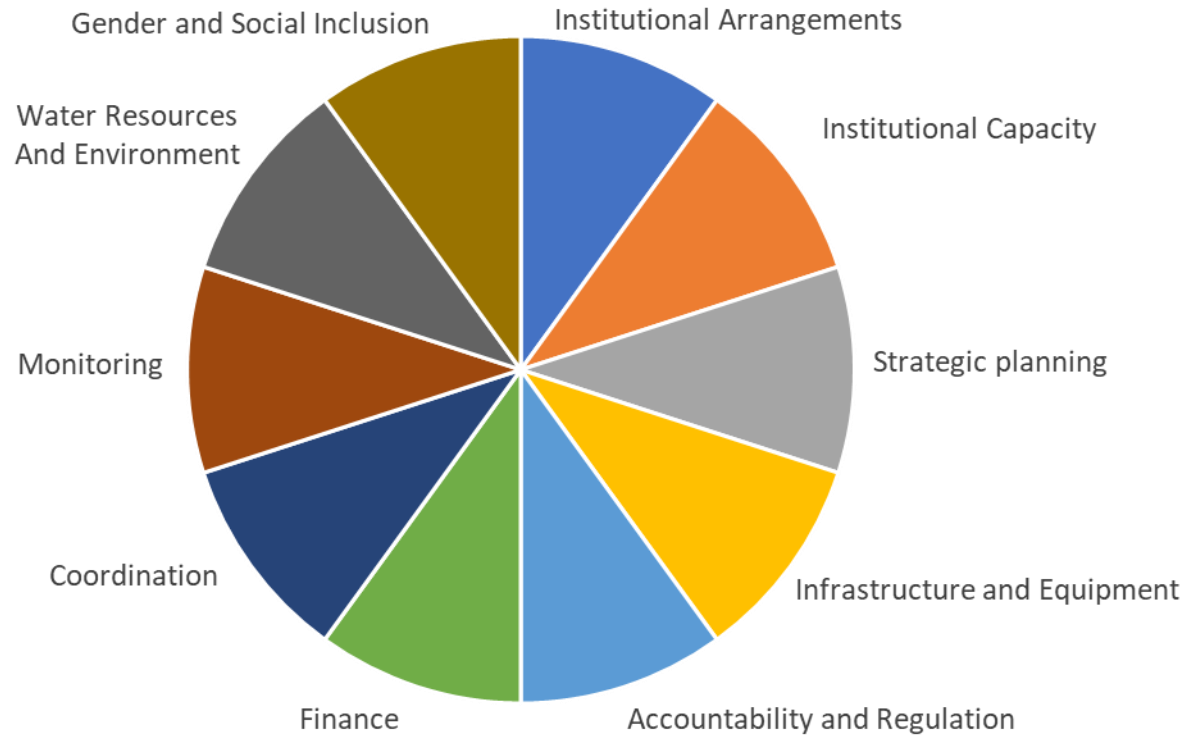
- the legal and **institutional setup** for the provision of WASH services. A service delivery model includes all links in **the value chain, the method of provision, the end use of services and the level of service delivered**. Examples include a community water supply, a utility's sewerage service, and water kiosks managed by a small private provider
- the combination of **infrastructure and management arrangements** required to **ensure affordable, safe and reliable water for users**. In urban contexts, the most common urban service delivery model is utility-managed, while community-managed wells and handpumps comprise the common service delivery model in Africa's more rural contexts
- the combination of **management model at service delivery level** (for example, community-based organizations, private, public utility, and so on) and the necessary vertical **legal, policy, institutional, regulatory and financing frameworks** that support these management structures and allow them to function effectively



Key Elements of a Service Delivery Model



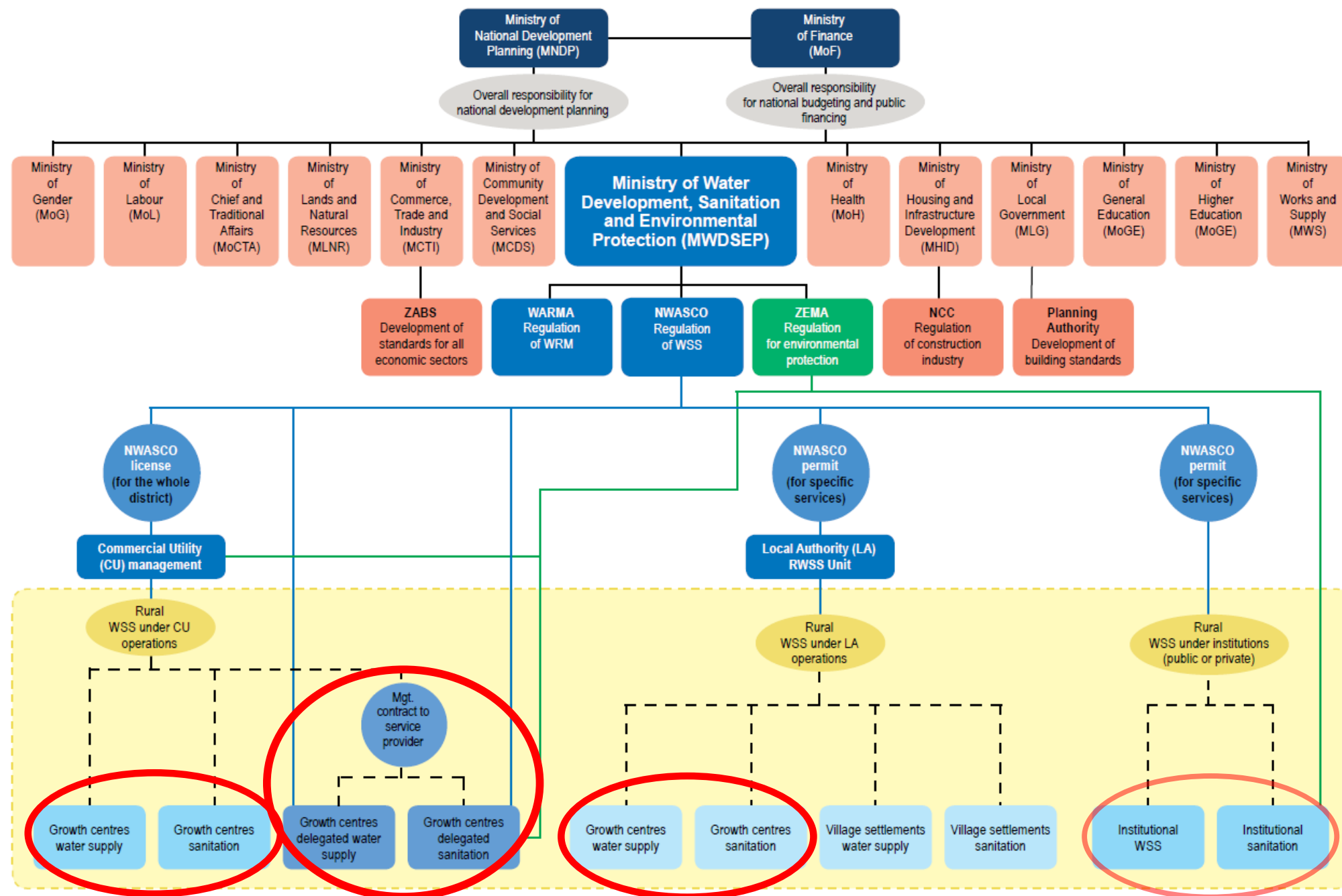
Components of a Service Delivery Model



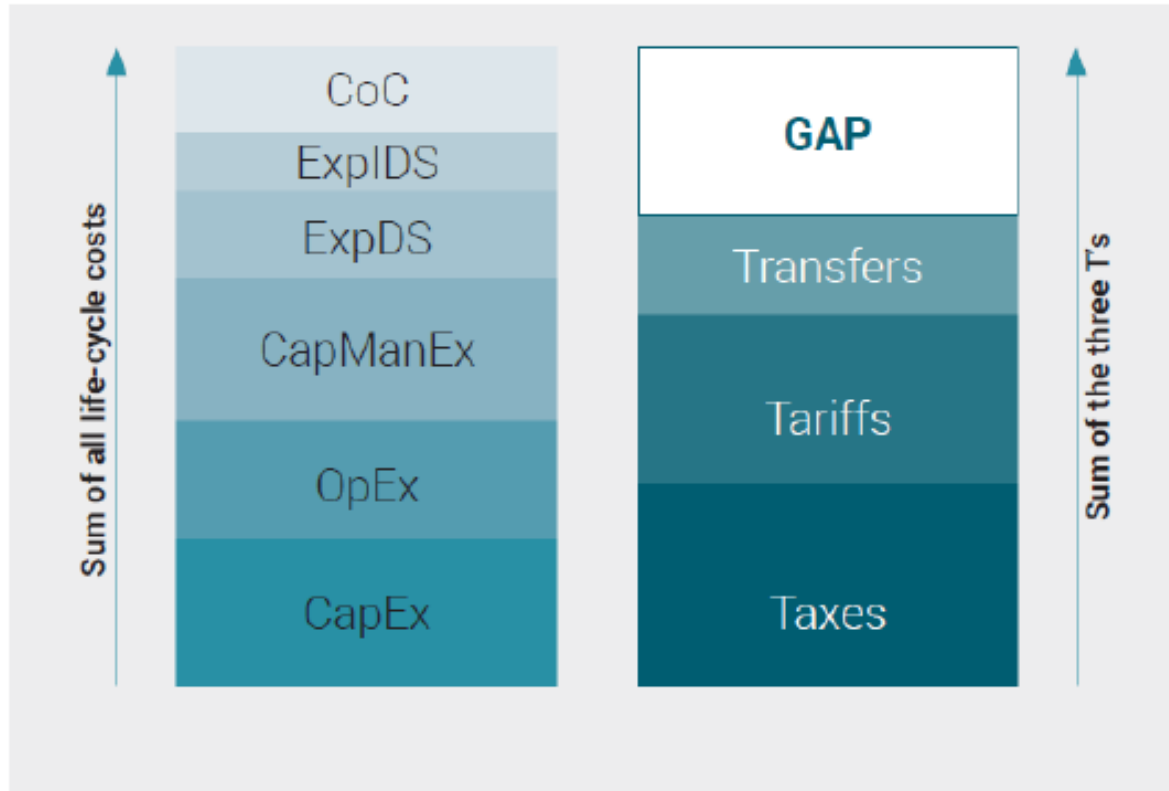
Contents

- Background
- Findings of the Study
 - International Observations
 - Zambian Observation
- Operation and Maintenance Models
- Group Discussions
- Report Back from Groups

Figure 5: Recommended organisational arrangements for regulation of rural water supply and sanitation services



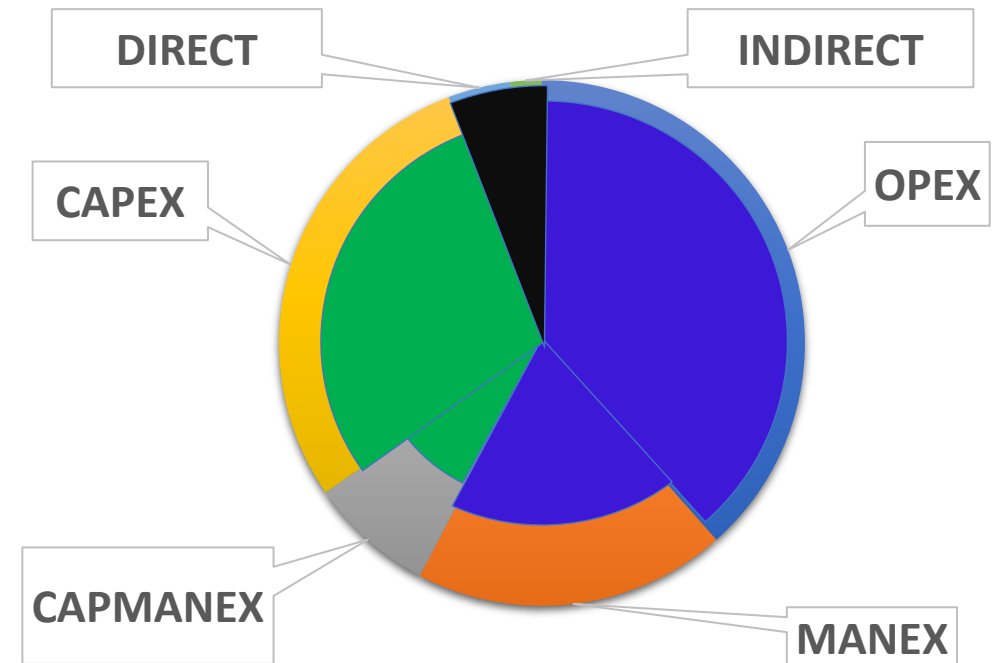
Taking on New Operational Units



*Costing and financing of small-scale water and sanitation services
(Smits and Fonseca)
WHO et al*

Identifying where the gap lies is crucial

- This may not be a focus of funders



Project Terms of Reference states...

'A challenge is obviously that rural WSS does not have a high potential for financial viability, and therefore the new models should not overburden the financial and human resources of LpWSC, a CU smaller in size and rather financially weak'.

The financial challenges of rural water service provision is a recurring theme in the sector.

We have to ask how far tariffs can take us?

In a recent KfW publication that compared many sites all over the world, ... the author notes that the outcome of water services delivery is **more a function of the financial arrangements** than it is of the **institutional arrangements**

Infrastructure Under Consideration

There are currently 5 PWS under consideration.

This is relatively small scale, but in the long run there will be many more.

[What about handpumps]
???



Business Processes

Operational Support

Engineering Support

Administrative Support

Potable Water



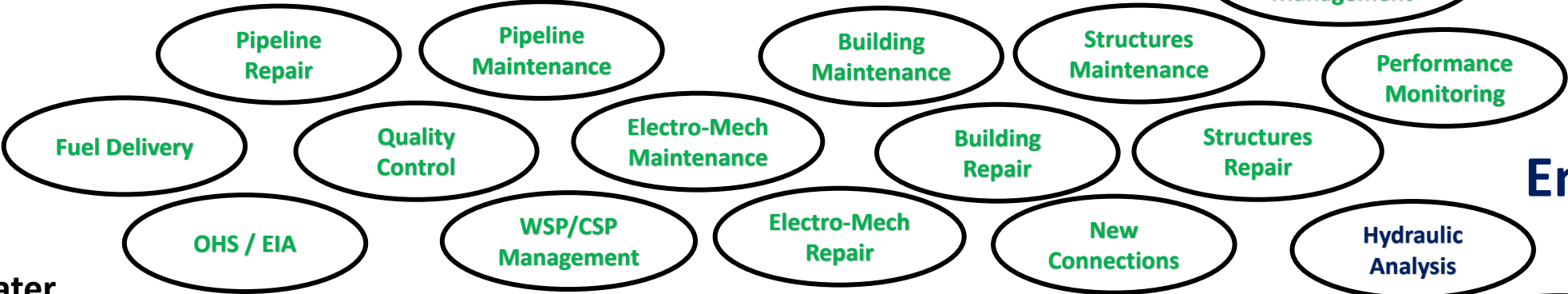
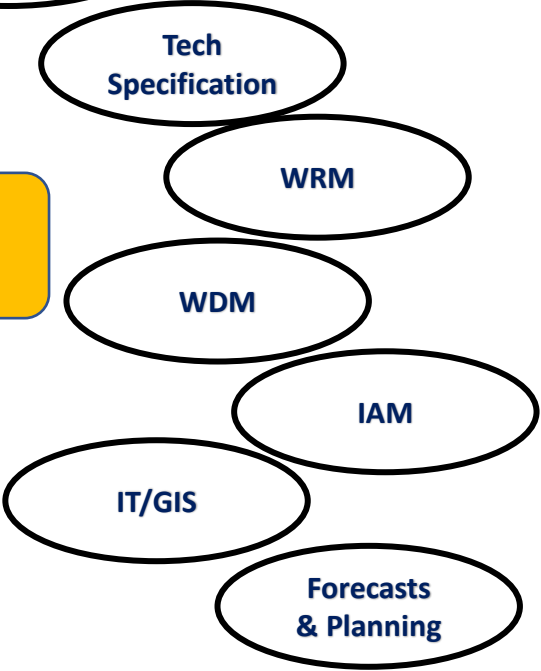
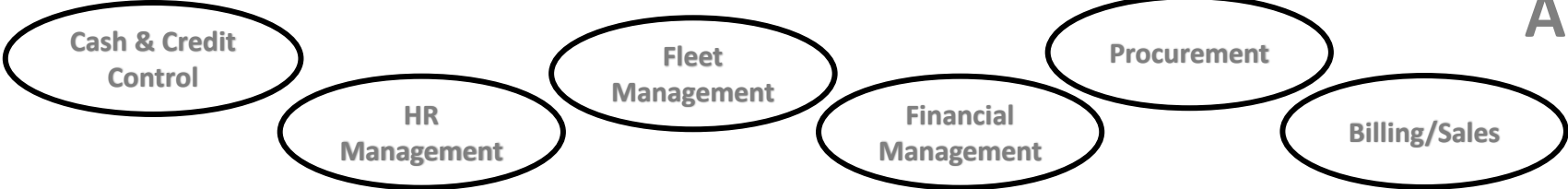
Sewerage



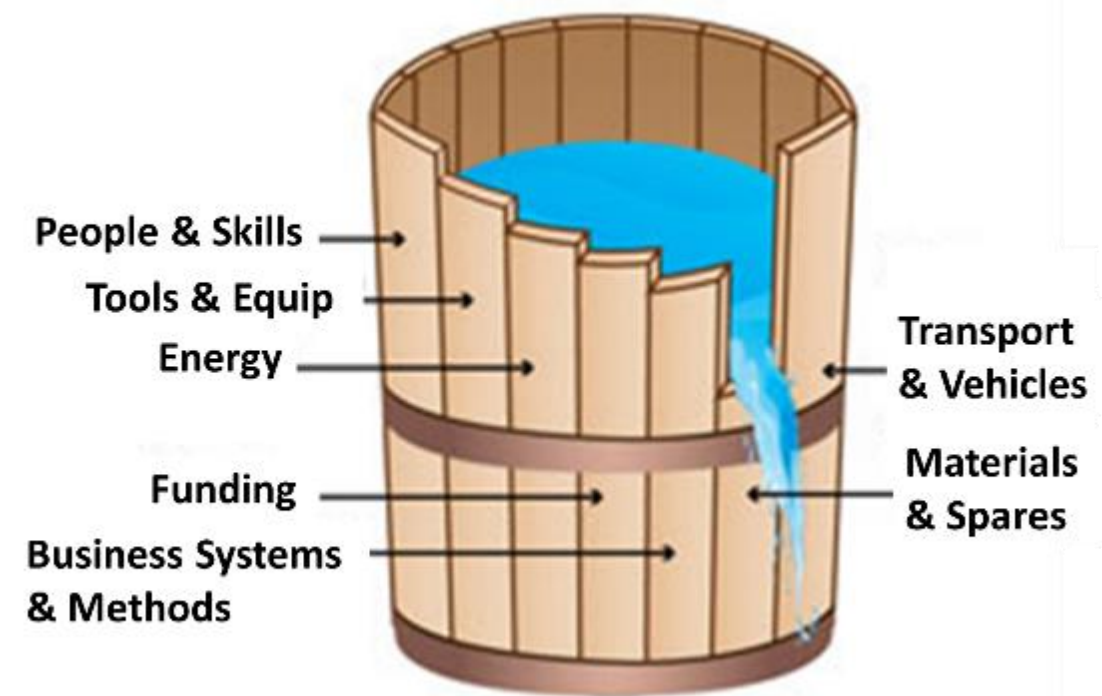
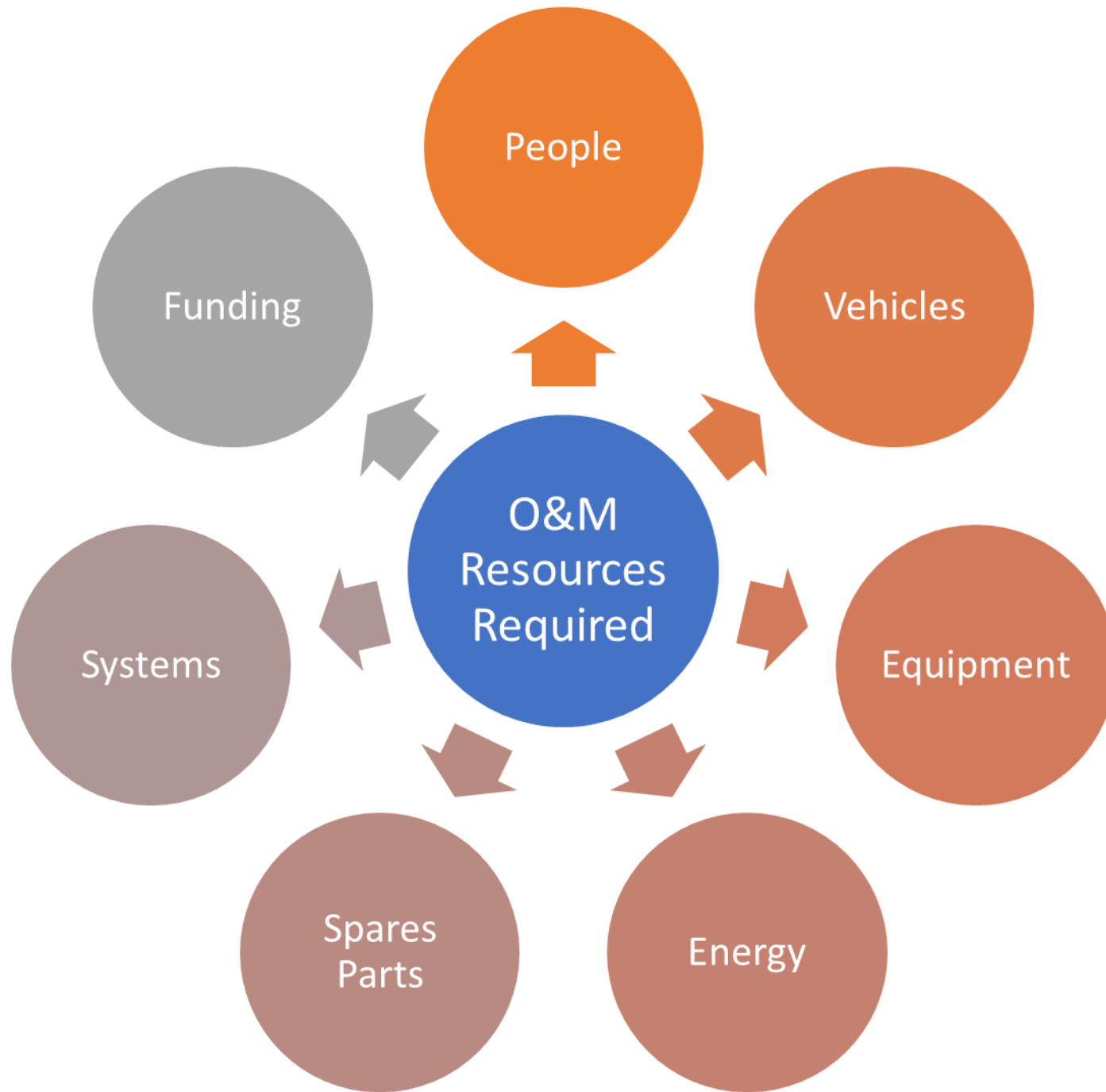
FSM



Customers



What are the limiting factors for effective O&M of PWS?



Country Experience Considered

Central African Republic

GDP / Cap	984
Tax as % of GDP	9%



Uganda



GDP / Cap	984
Tax as % of GDP	9%

Kenya



GDP / Cap	984
Tax as % of GDP	9%

Rwanda



GDP / Cap	984
Tax as % of GDP	9%

Malawi



Zambia



GDP / Cap	984
Tax as % of GDP	9%

Namibia



GDP / Cap	984
Tax as % of GDP	9%

South Africa

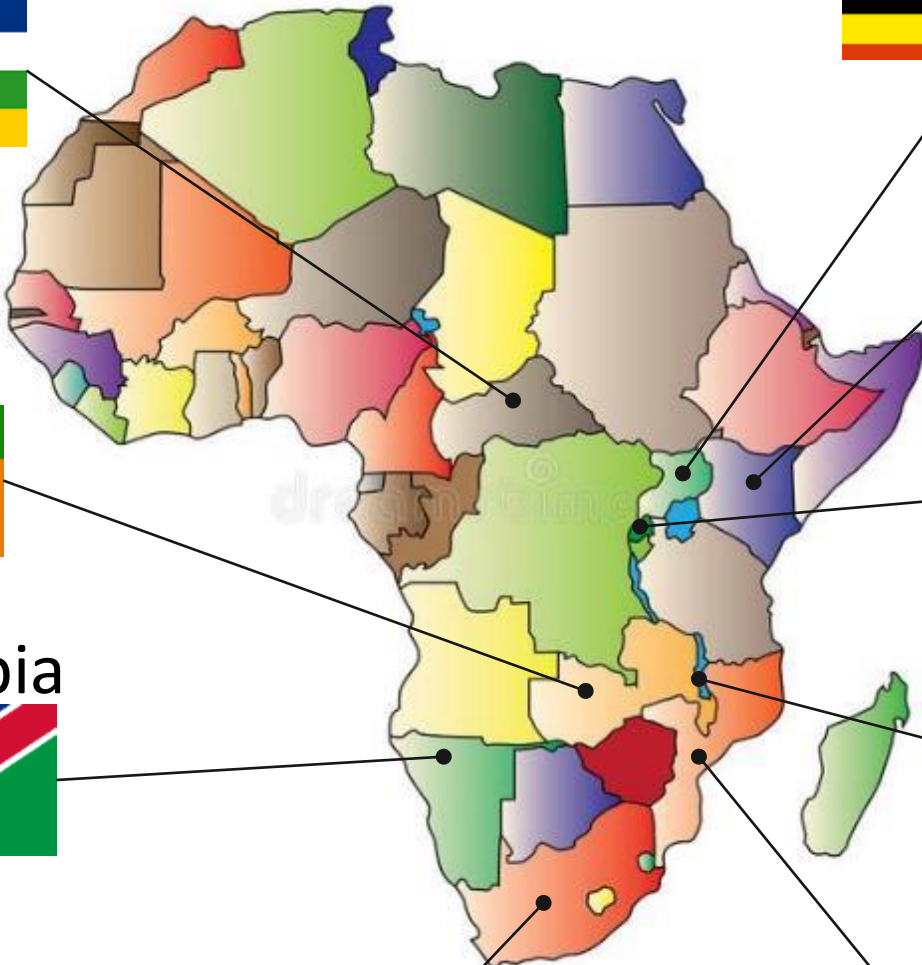


GDP / Cap	984
Tax as % of GDP	9%

Mozambique



GDP / Cap	984
Tax as % of GDP	9%



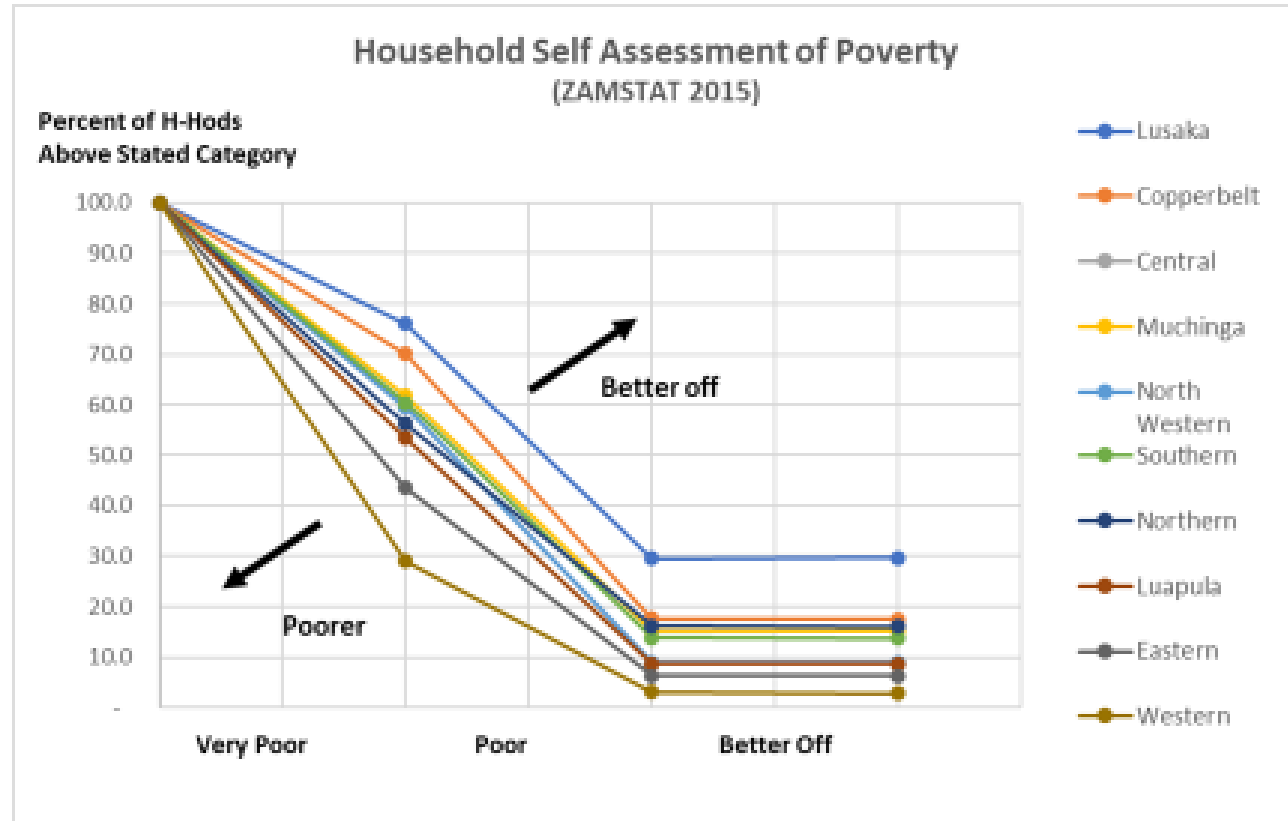


USAID Water and Development

KEY TAKEAWAYS

- Take into account that self-supply and community-based management generally fail to deliver sustained services without professionalized maintenance support.
- Think beyond the community level – service authorities and national government play an important role in the sustained delivery of rural water services.
- Design interventions to build capacity of community organizations, government, and other service providers for ongoing service delivery beyond first-time access to drinking water.

The
distributions
of household
income levels
are not the
same across
the country



Distribution of Income in Households

Percentage of HHs
Earning More Than
Given Monthly Amount



Household income and affordability trends follow a similar pattern in all communities

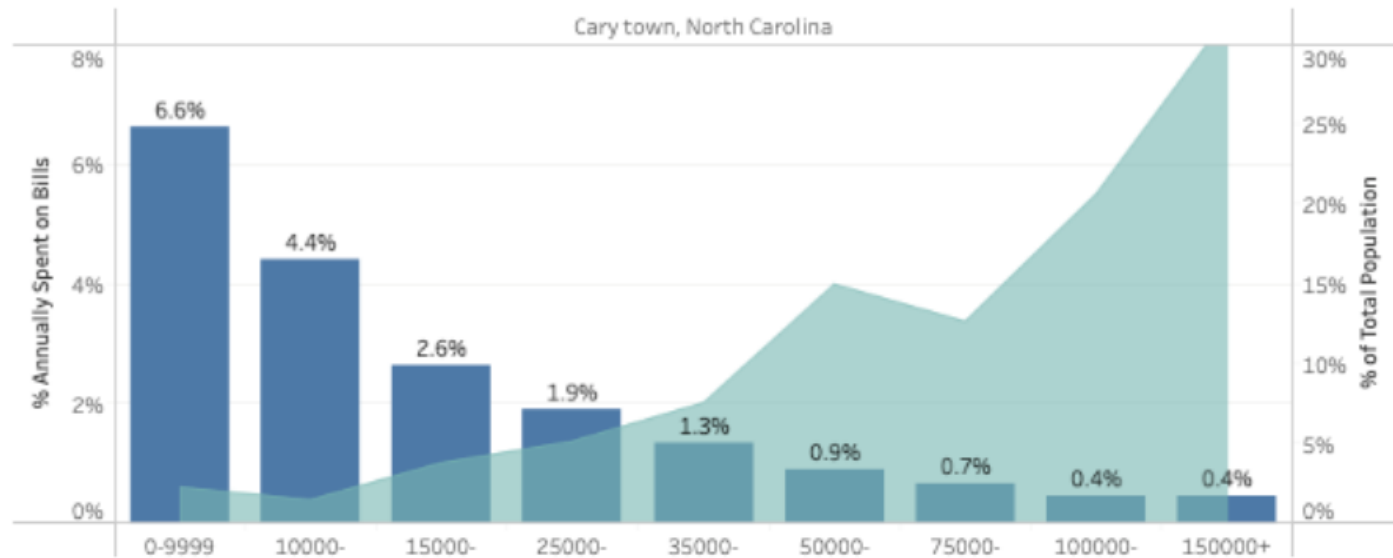
← South Africa

United States of America



Affordability of Water/Wastewater Rates at 2020 Income Levels

Cary town, North Carolina



Household Income

- Zamstat data on H-Hold Inome.
- NB... National avg HH income is similar to survey results for Mansa.
- NB... Rural incomes are MUCH lower than the national avg

Avg HH Income = ZMW 1,997 / mth

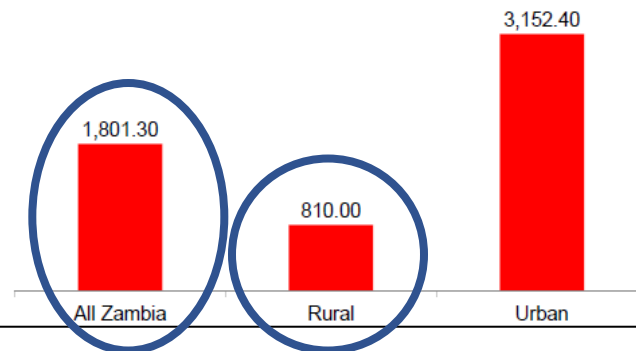
3% = ZMW 60 /MTH

Household Income and Assets

Figure 20 shows the average monthly household income by rural/urban. The average monthly income for households was K1, 801.30.

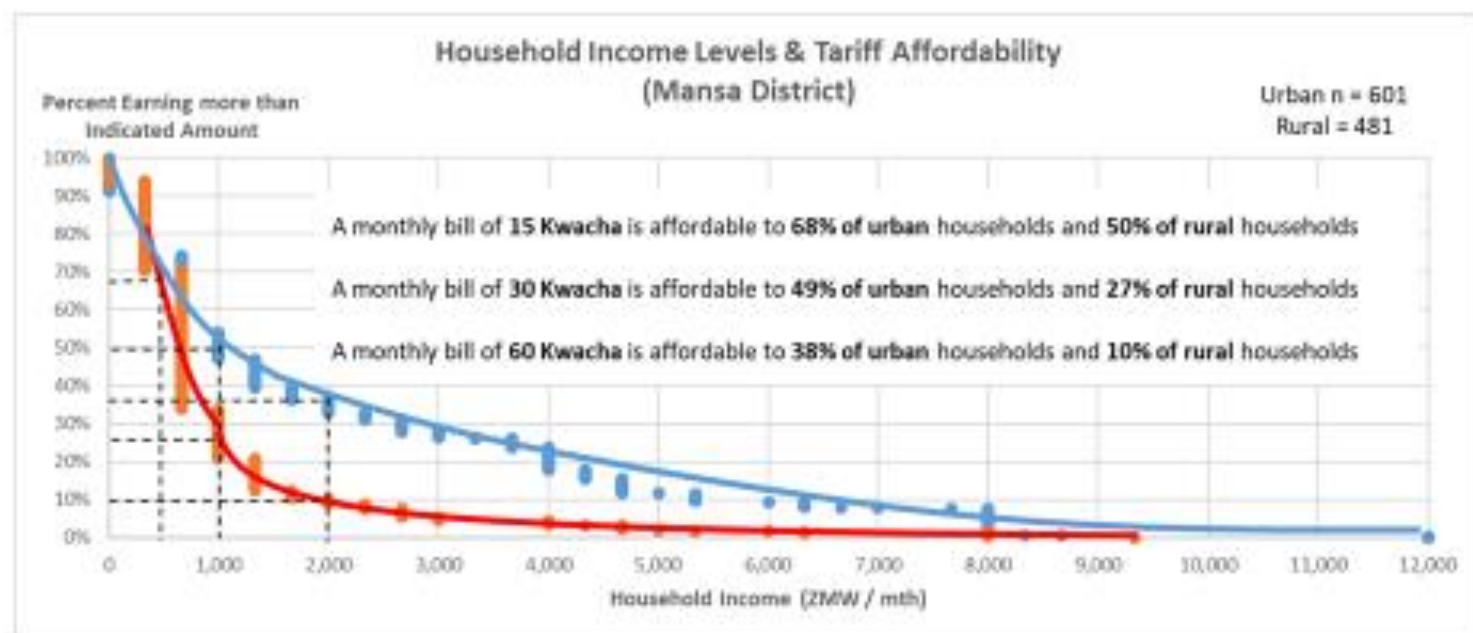
On average, households in urban areas earned about four times as much as those in rural areas.

Figure 20: Average Monthly Household Income by Rural/Urban, Zambia, 2015.



Survey of Household Income

- From the survey we see that the majority of households in Mansa have very low income.
- The distribution of income/affordable cost of water is illustrated in the graph
- Assuming the guideline that 3% of H-Hold income is the guideline on affordability.
- This graph represents the “distribution” of how many H-holds can afford any given monthly cost of water.

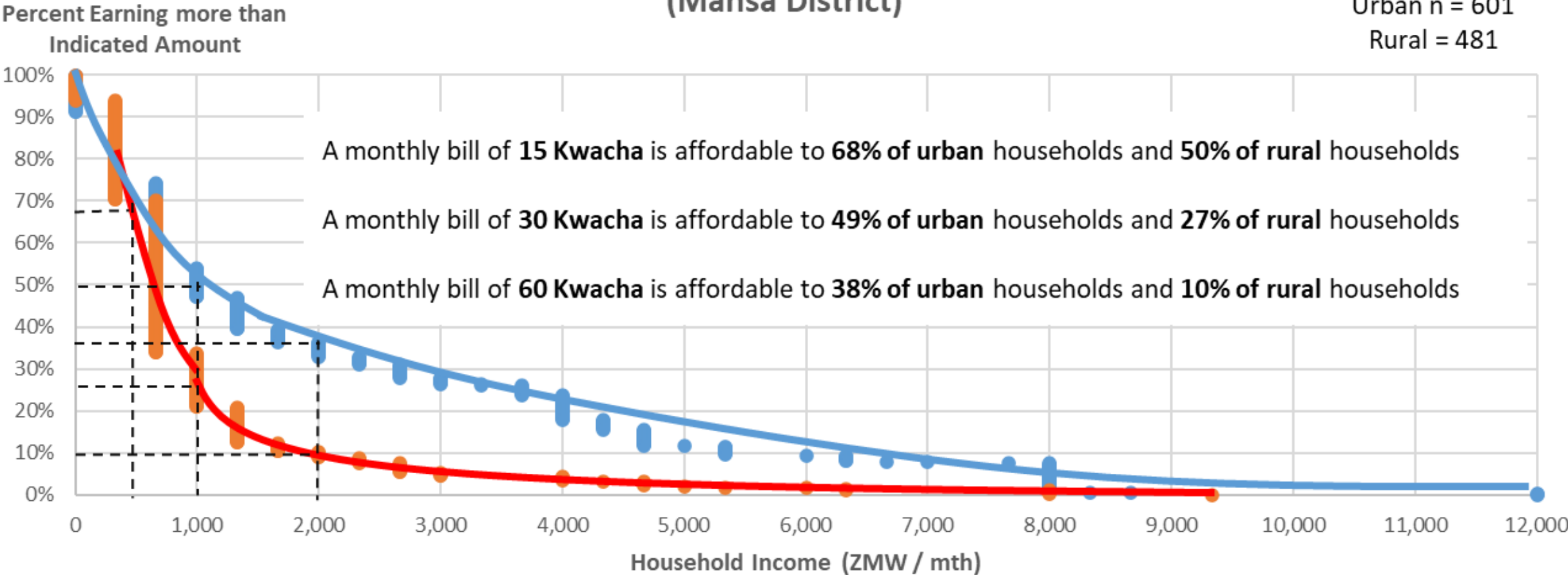


Expanded on next page

Survey of Household Income

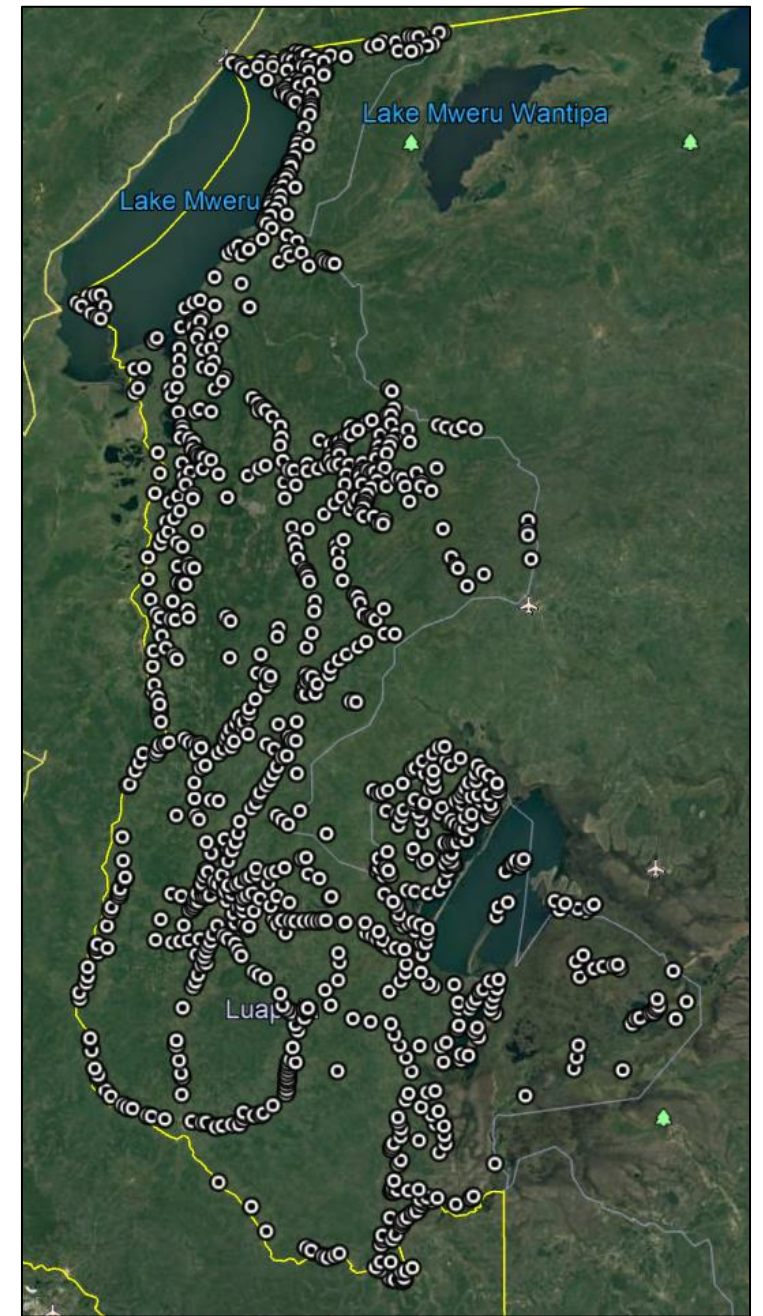
Household Income Levels & Tariff Affordability
(Mansa District)

Urban n = 601
Rural = 481



Scope of Responsibility

- The province has close to 1,000 settlements !
- Current operations
 - A number of towns (6)
 - Sophisticated technology
 - Piped distribution
- Adding the Rural Growth Centres
 - Sophisticated technology (nb. solar power)
 - Piped distribution
 - Increased resources required
 - Financial viability may be uncertain
- The “End Game”
 - Many rudimentary pt sources
 - Growing amount of sophisticated infrastructure
 - Logistical challenges.



Centroids of Settlements in Luapula

Towns	2
RPWS (pumped)	8
RPWS (gravity)	1
Hand Pumps	475

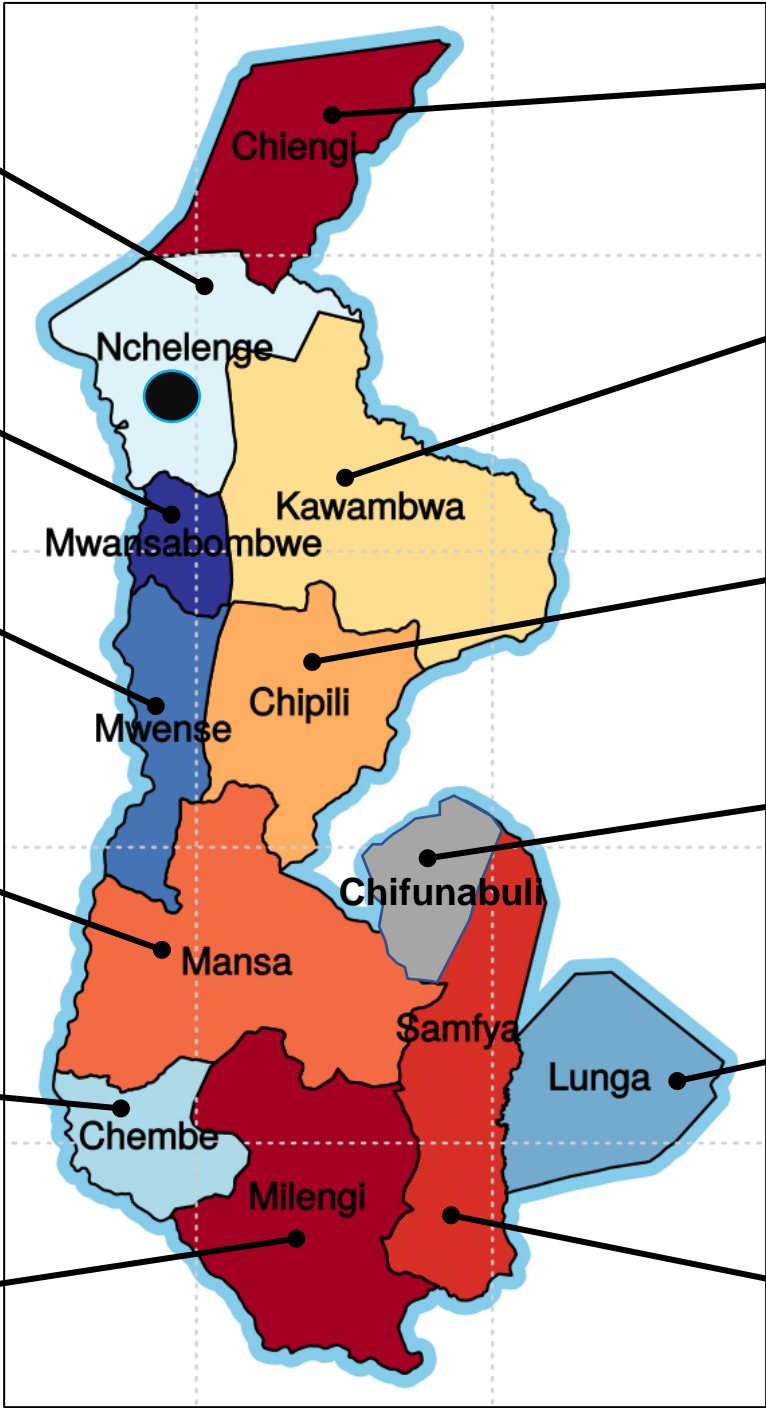
Towns	0
RPWS (pumped)	4
RPWS (gravity)	1
Hand Pumps	160

Towns	1
RPWS (pumped)	19
RPWS (gravity)	0
Hand Pumps	428

Towns	1
RPWS (pumped)	3
RPWS (gravity)	0
Hand Pumps	530

Towns	0
RPWS (pumped)	1
RPWS (gravity)	0
Hand Pumps	140

Towns	0
RPWS (pumped)	2
RPWS (gravity)	0
Hand Pumps	70



Towns	0
RPWS (pumped)	0
RPWS (gravity)	0
Hand Pumps	350

Towns	1
RPWS (pumped)	1
RPWS (gravity)	0
Hand Pumps	255

Towns	0
RPWS (pumped)	2
RPWS (gravity)	1
Hand Pumps	143

Towns	0
RPWS (pumped)	3
RPWS (gravity)	0
Hand Pumps	357

Towns	0
RPWS (pumped)	2
RPWS (gravity)	0
Hand Pumps	70

Towns	1
RPWS (pumped)	14
RPWS (gravity)	0
Hand Pumps	373

**Local
Government**

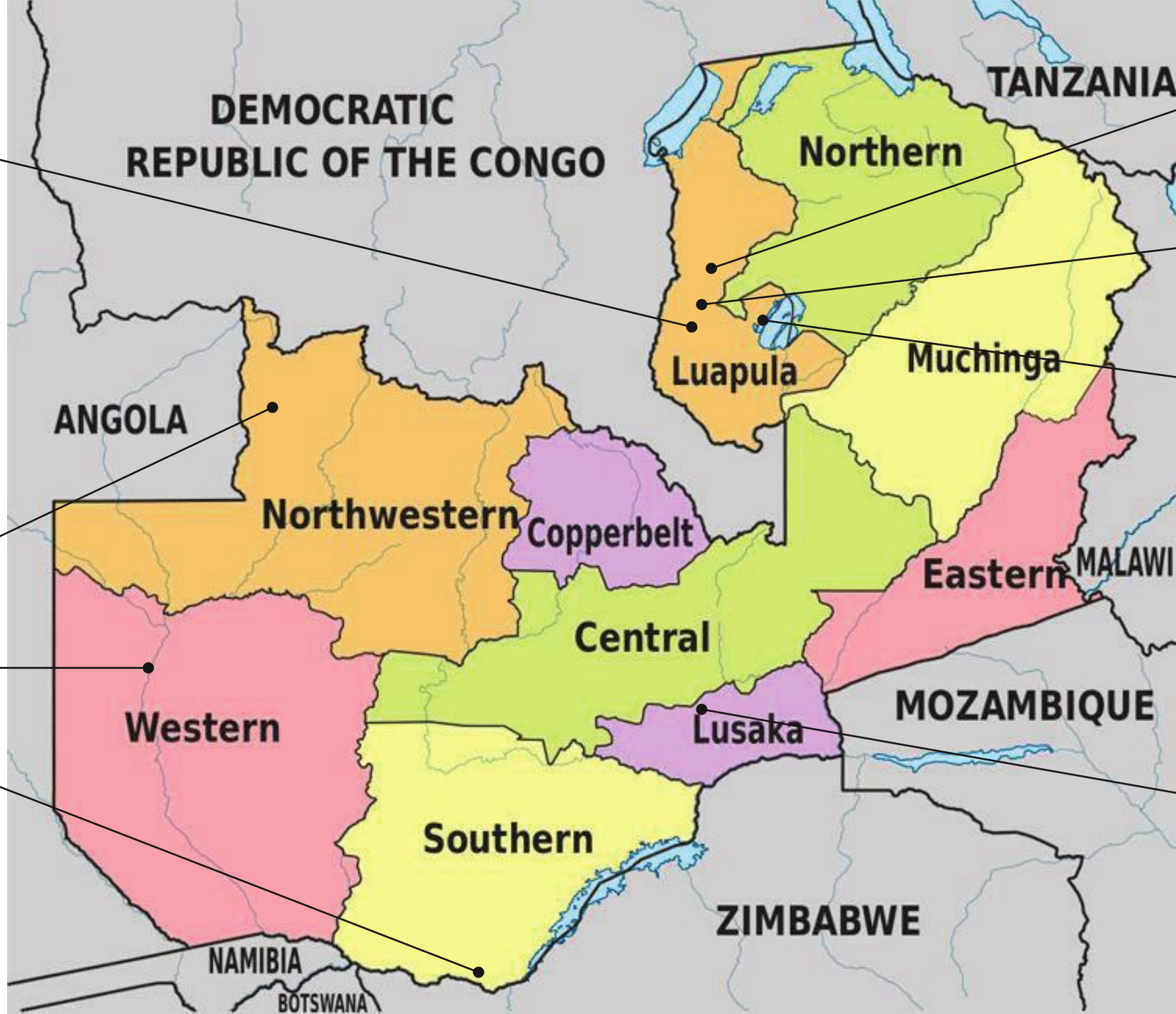
**The
Ministry**

**Commercial
Utility**

**Local
NGO**

**Commercial
Utilities**

**International
NGOs**



Observations from Zambia

- Some communities are managing to keep schemes running ('limping')
 - Challenges are capital expansion.
 - Major maintenance (CAPMANEX)
 - Solar power is dramatically reducing Electricity costs, but backup power is needed.
 - Continuity of supply is not as desired
 - Water quality is sampled sporadically
 - Water Resource Management is not a responsibility of the operators
- Some CUs have deployed their own staff, and are subsidising from broader tariff base
- Vendors resign often, job is not lucrative enough (also reported about APMs)
- NGOs have used Community Based Operators (Cost saving)
- LG may be reluctant to hand over schemes as they generate cash flow. (?)

Luapula Water and Sanitation (NWASCO 2019)

Credit control is problematic

Continuity of supply is good

Quality Management is good

Financial Viability is the lowest of all CUs
(by far)

Table 3: Overview of Sector Performance

CU	NRW [%]	Trend	Water Quality compliance	Trend	Metering Ratio [%]	Trend	Water Service Coverage [%]	Trend	Sanitation Coverage [%]	Trend	Hours of Supply	Trend	Staff Efficiency	Trend	Collection Efficiency [%]	Trend	O+M Cost Coverage by Collection [%]	Trend
LWSC	47	↓	A	↑	70	↑	87.5	↑	69.9	↑	16	↓	0.56	↓	81.6	↑	102	↓
NWSC	49	↓	B	↓	90	↑	98.0	↑	79.7	↑	17	↓	0.50	↓	77.1	↑	94	↓
KWSC	75	↓	B	↓	69	↓	83.5	↑	81.4	↑	21	↑	0.53	↓	59.9	↓	81	↓
MWSC	38	↑	A	↑	86	→	97.0	↑	80.8	↑	16	↓	0.46	↓	88.8	↑	101	↓
LGWSC	53	↓	A	→	82	↑	83.7	↑	54.6	↑	17	↓	0.67	↓	85.1	↓	94	↓
SWSC	41	↑	A	→	77	↑	95.3	↑	86.0	↑	19	↓	0.57	↓	94.6	↑	102	↑
CHWSC	37	↑	A	↑	96	↑	79.3	↓	60.7	↑	13	↓	0.79	↑	100.6	↑	83	↑
NWWSC	26	↑	A	→	100	→	81.7	↓	15.7	↓	17	↑	0.64	↑	109.3	↑	106	↑
WWSC	54	↑	D	→	92	↑	44.7	↓	20.1	↓	15	→	0.61	↓	102.2	↑	108	↑
EWSC	43	↓	A	→	100	→	87.1	↑	32.0	↓	20	→	0.82	↓	100.9	↑	84	↓
LPWSC	77	↑	A	→	100	→	49.9	↑	33.9	↑	19	↓	1.33	↓	75.5	↓	54	↓
Average	52(w)	↓	N/A		81(w)	↑	86(w)	↑	66(w)	↑	18(w)	→	0.56(w)	↓	82(w)	↑	96(w)	↓
Benchmark	25		95		100		80		80		18		0.4		85		100	

Most frequent NWASCO ranking of CU performance (2010 – 2020)

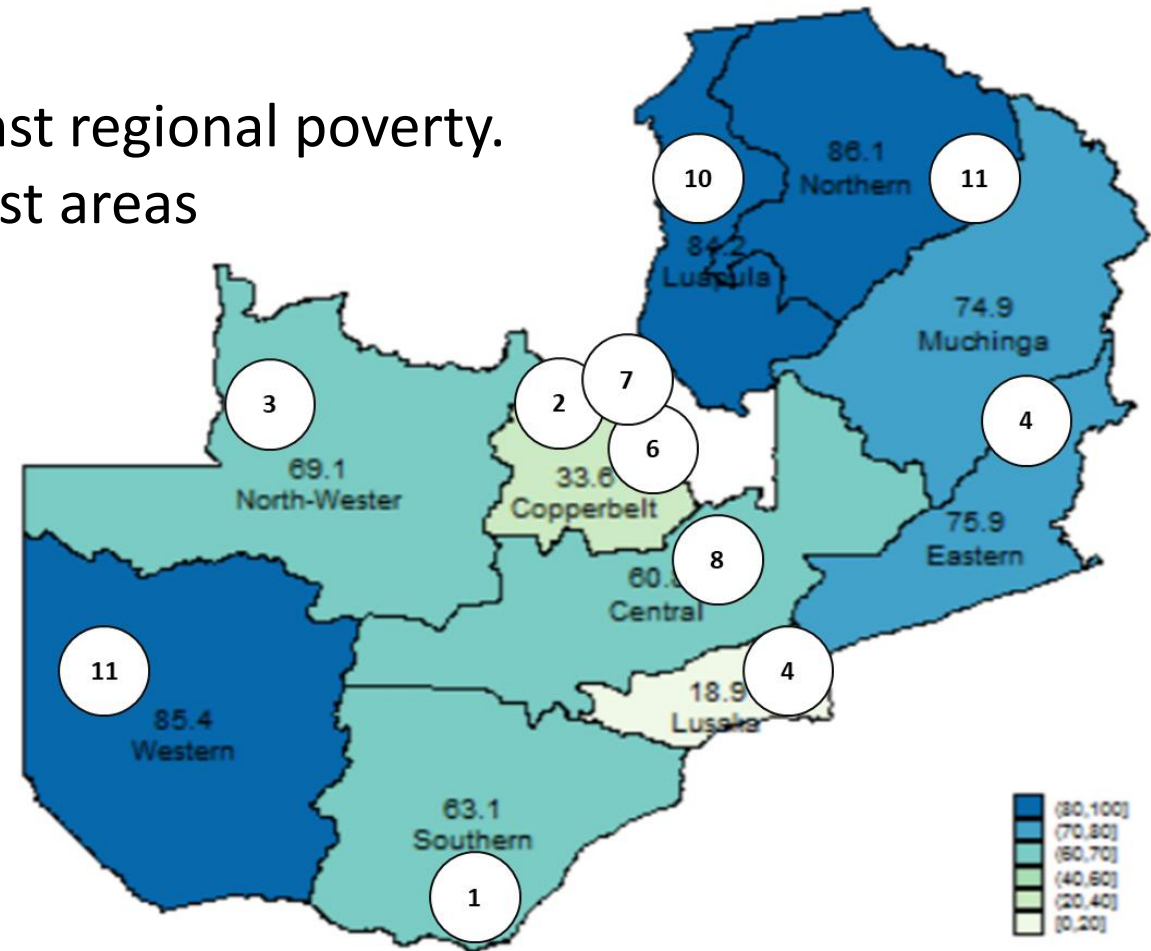
Figure 5. Monetary Poverty Distribution by Province for Children Aged 0-17 Years

- Mapping CU performance over 10 yrs against regional poverty.
- Weakest performance is observed in poorest areas

After Deming:

“I should estimate that in my experience most troubles and most possibilities for improvement add up to the proportions something like this:

- *94% belongs to the system”*



Source: Authors' calculations using Zambia LCMS (2015)

Note: 2015 national poverty line was valued at K214.26 per Adult Equivalent (monthly)

O&M Of Rural Piped Water Schemes Summary of Observations

Water Resources

- Ground water is frequently utilised. Corrosion challenges in some places
- Centrally managed by the ministry
- Water Service Providers dont take responsibility
- Very few, if any, geohydrologists employed in O&M

Infrastructure

- Solar energy offers big ops cost saving, but some back up is required.
- Technical topics such as Quality Management, Water Conservation and Demand Management and Asset Management are dealt with sporadically. Bacteriological testing of water is seldom done.
- Funding for Major Maintenance (CapManex) is often in short supply.
- Neglect of Minor Maintenance leads to a need for Minor Maintenance.
- Sector Wide Approach to ensure alignment with CU strategies (Tech and Systems)

Billing

- Mobile Money has made things a lot easier.
- Financial sustainability through tariff collection alone is not realistic.

Institutions

- Outsourcing to NGOs or Private Sector may work, but it may just be a deferral of costs.
- Institutional Resources of Govt, LG, CUs, NGOs, APM, CBOs, School Staff, Clinic Staff, Private Sector often collaborate in a 'messy' way.
- There may be a disagreement between LG and CUs in handing over responsibility due to perception of possibility of generating income.

Procurement

- Local Govt rules and procedures appear to hinder procurement.
- Other institutions are able to solve this - 'make a plan'

Policy and Legislation

- Nobody mentioned this as a constraint or a topic of interest, at all?

Funding

- The associated question to O&M model is the funding model. If susidy is considered then This is a question of national concern
- Revised O&M approaches will only take you so far in balancing the books in rural water (Piped or Point source)
- Recent analysis by KfW suggests that WSP outcomes are more a function of the funding model than of the institutional model.

Transport

- This an almost universally reported constraint

Skills

- The availability of skills was not reported as a constraint.
- Training and skills development is a good thing in and of itself
- But sometimes skills development enables people to get better jobs, and leave.
- There may be a perverse outcome to a good intention. (Urban centres benefit at the expense of rural settings)

Living Conditions Statistics

✓ Verified

Published by source: 22 June 2017

10 time series found: Monthly per capita income - Both Sexes

Export Download API Dashboards 3

> Indicator

> Region

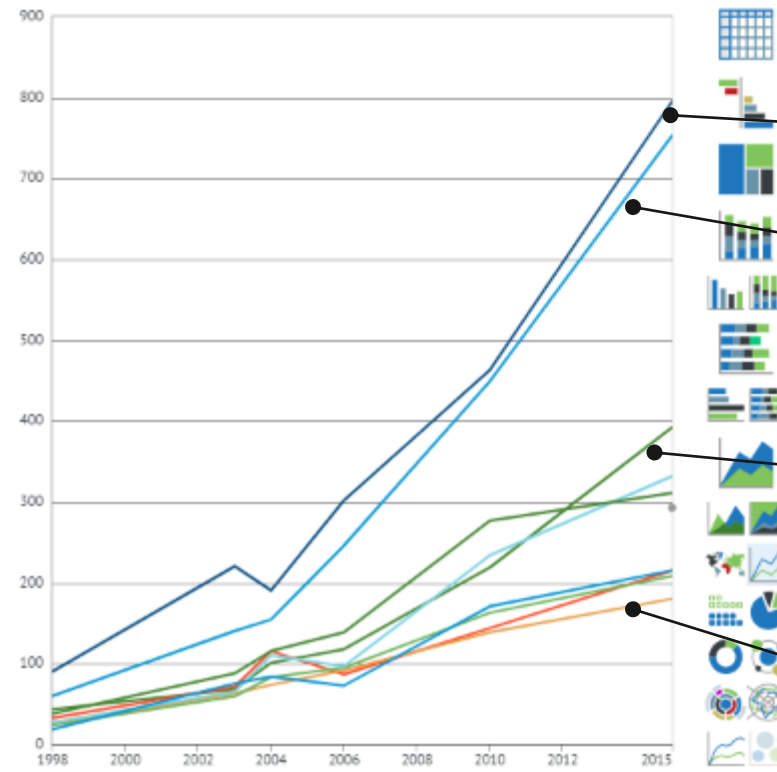
Type to filter

- ☐ Zambia
- ☒ Central Province
- ☒ Copperbelt Province
- ☒ Eastern Province
- ☒ Lusaka Province
- ☒ Muchinga Province
- ☒ Northern Province
- ☒ North-Western Province
- ☒ Southern Province
- ☒ Western Province

> Sex

> Residence

> Time



Household Income

Zambia Average (ZMW 444)

Lusaka (ZMW 794)

Copperbelt (ZMW 752)

Central (ZMW 392)

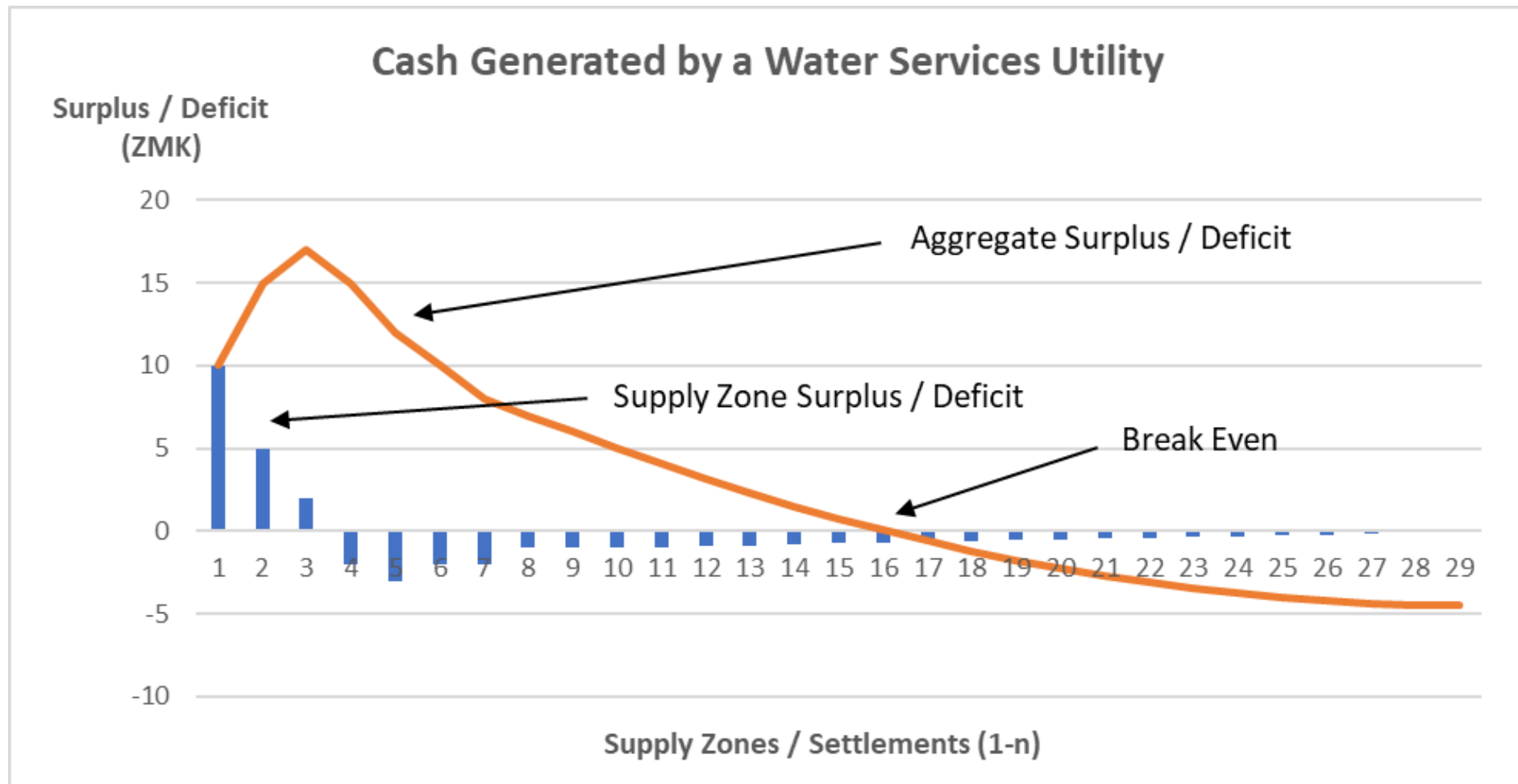
Luapula (ZMW 180) ... 41 % of National Avg

FREQUENCY
Annual

ORIGINAL DATA
<http://www.zamstats.gov.zm/>

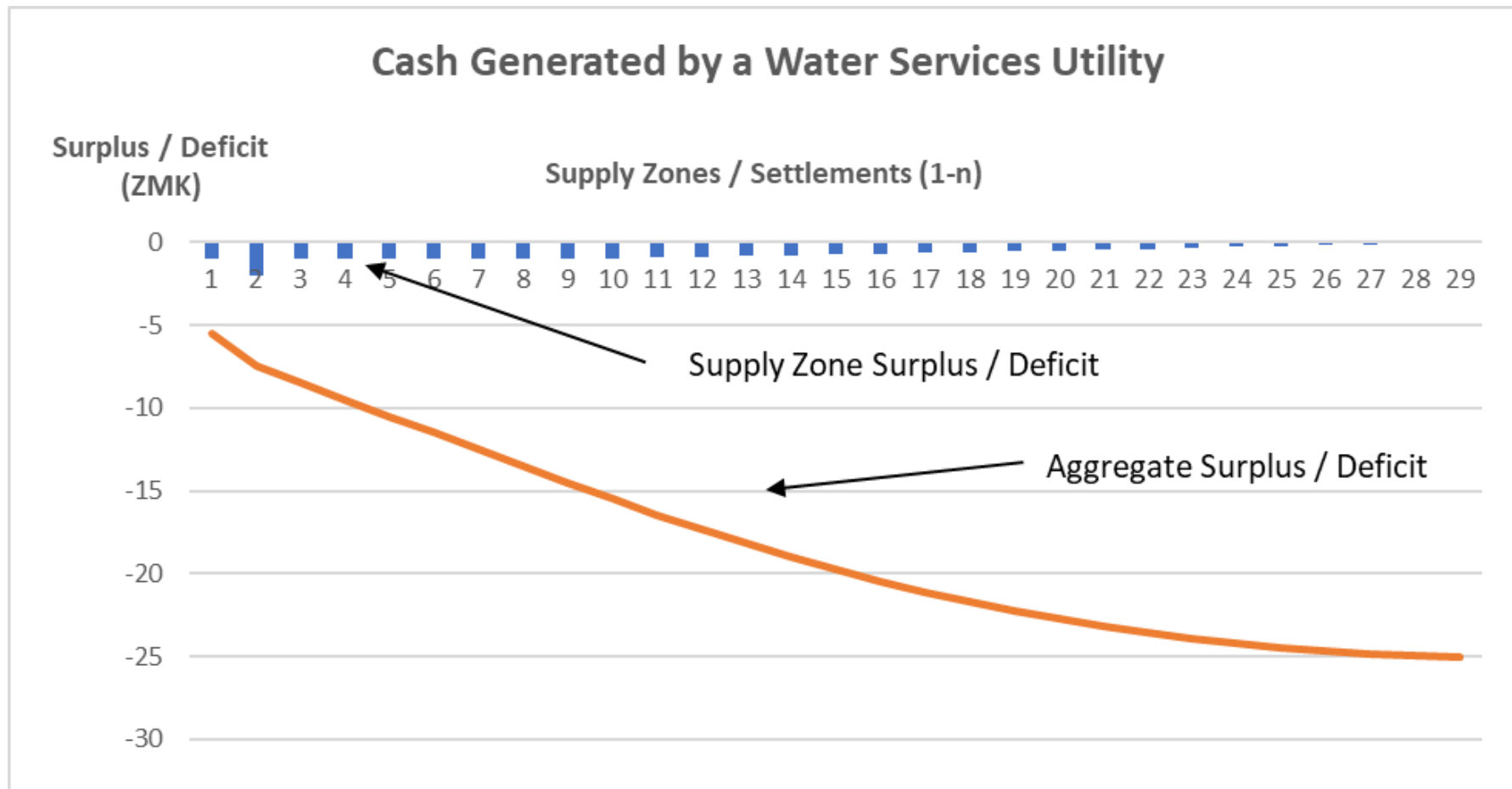
Financial Impact of Taking on Deficit Generating Schemes

- Taking up ever more unprofitable areas will ultimately lead to break-even or even a aggregate deficit.



Financial Impact of Taking on Deficit Generating Schemes

- Luapula Water already has a 42% deficit on covering O&M costs (see NWASCO report)
- Adding unprofitable schemes will result in an even greater deficit



Quotes from Recent Paper on Zambia Water Sector

Recommendations - Policy

Increases in production efficiency might decrease costs, and should be pursued when possible, but in many cases the cost of access will need to be subsidized in order to make access more affordable. Indeed, WaSH access is currently subsidized in many locations around the globe, including Zambia. But it is important that subsidies are designed in such a way that they encourage improvement and expansion of access over time and have a net positive impact over all locations and social groups.

Furthermore, it is important to create mechanisms for transparency, both for affordability metrics as well as the distribution of subsidies among different social groups and wealth categories. It has been observed that subsidies do sometimes go to more privileged or better resourced households, while marginalized and poorer households are over-looked.

Affordability is likely a major barrier for the extension of basic WaSH access to all Zambian households, and we would argue that adopting an indicator of affordability should be a priority for policy makers in the WaSH sector in order to make sure that subsidies are distributed in such a way that those who can least afford basic access are prioritized.

Proposed Models

- There is no single correct model!
- No model will easily solve fundamental resource deficits and non-viable trading propositions
- What operational resources and arrangements are required to sustain the functionality of the installed infrastructure?
 - Will the new schemes be 'cash positive' undertakings?
 - Are the 'real' operational resources available.
- Available institutional resources:
 - Luapula Water and Sanitation Company (the Commercial Utility).
 - Community based organisations
 - Private Sector (including small scale contractors such as handpump mechanics and kiosk agents).
 - Various non-governmental organisations.

Possible Models

O&M Aspects	Option 1	Option 2	Option 3
Description	Full O&M responsibility taken by the CU. All staff employed by CU.	Community based management. All O&M matters dealt with at community level. Support from other agencies (NGOs, CU, and NGOs) on an ad-hoc / emergency	A hybrid of community based responsibility for day to day operations and technical support from either the CU or a willing and adequately resourced NGO
Day to day ops	CU	CBO	CBO
Minor repairs	CU	CBO	CBO
Major repairs	CU	Emergency support from LG, CO, or NGOs	CU / NGO
Billing and credit control	CU with Kiosk Agents	CBO	CBO
New connections	CU	CBO	CU
Spare part provision	CU	CBO	CU / NGO
Technical support *	CU	LG (minimal)	CU / NGO
Provision of fuel	CU	CBO	CBO
Payment for electricity	CU	CBO	CBO

Scenarios (for and against)

1. Commercial Utility takes full responsibility.

- For:
 - Aligned to longer term responsibilities and vision.
 - Technical expertise available in house.
- Against:
 - Raises day to day cost to the CU (esp operators salary).
 - Systems must be integrated (e.g. Billing).

2. Community takes full operational responsibility.

- For:
 - Costs constrained through local arrangements (e.g. Salaries)
 - Embedded rationing (energy costs).
- Against:
 - Results in low level of service. (interruptions).
 - Infrastructure is not maintained.
 - Lots of evidence that this has not worked elsewhere.

3. Community with CU support.

- For:
 - Costs constrained through local arrangements (e.g. Salaries).
 - Embedded rationing (energy costs).
 -
- Against:
 - staff may demand salaries aligned with CU permanent staff.
 - Behaviour of local staff and customers not accountable to the CU.
 - CU may not have resources to provide support.

Implementing Operational Arrangements

- The financial position of households and water services institutions is precarious.
- What financial resources are actually available
 - Tariffs
 - Grants from central government
 - Development partners.
- Commercially unviable services should be cross subsidised by wealthier domestic and business consumers.
 - Evidence is that this will not be possible in Luapula for the foreseeable future.

Implementing Operational Arrangements

- Recommended that Option 3 be adopted.
 - Limit the costs on Luapula Water and Sanitation Company.
 - Utilisation of Community Based Operators and the direct payment of energy costs by the community will serve to limit costs and ration consumption.
 - Local pump mechanics and other community members can be utilised as much as possible.
 - Wherever possible, the involvement of NGOs that can support service provision should be accepted and encouraged. (governed by clear 'Memoranda of Understanding')

Implementing Operational Arrangements

- CU to support of CBOs
 - technical and governance issues.
 - neglect of this important function will lead to degradation of infrastructure and to a declining LoS.
- Continued lobbying in the sector for resources required to ensure sustainable long-term service provision.
- A sector-wide approach to financing, that considers the full lifecycle costs, must be developed.

Operational Scenarios of the Hybrid Model

Commercial Utility

CU as
SSP

LG as
SSP

NGO as
SSP

Priv Sect
as SSP

CBO

CBO

CBO

CBO

CBO

CBO

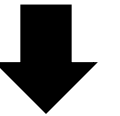
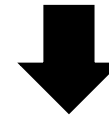
CBO

CBO

CU manages contracts with
SSPs

SSPs Manage CBOs, provide
technical support, implement
major maintenance

CBOs carry out day to day
operational activities



Financial Scenarios of the Hybrid Model

Commercial Utility

CU as
SSP

LG as
SSP

NGO as
SSP

Priv Sect
as SSP

CBO

CBO

CBO

CBO

CBO

CBO

CBO

CBO

**CU Support and Major
Maintenance Costs Covered
by Tariffs and External
Funding**

**Support and Major
Maintenance Costs Covered
by External Funding**

**Local Costs Covered by Local
tariffs**

**Deutsche Gesellschaft für
Internationale Zusammenarbeit (GIZ) GmbH**

Registered offices
Bonn and Eschborn

Friedrich-Ebert-Allee 36 + 40
53113 Bonn, Germany
T +49 228 44 60 - 0
F +49 228 44 60 - 17 66

E info@giz.de
I www.giz.de

Dag-Hammarskjöld-Weg 1 - 5
65760 Eschborn, Germany
T +49 61 96 79 - 0
F +49 61 96 79 - 11 15

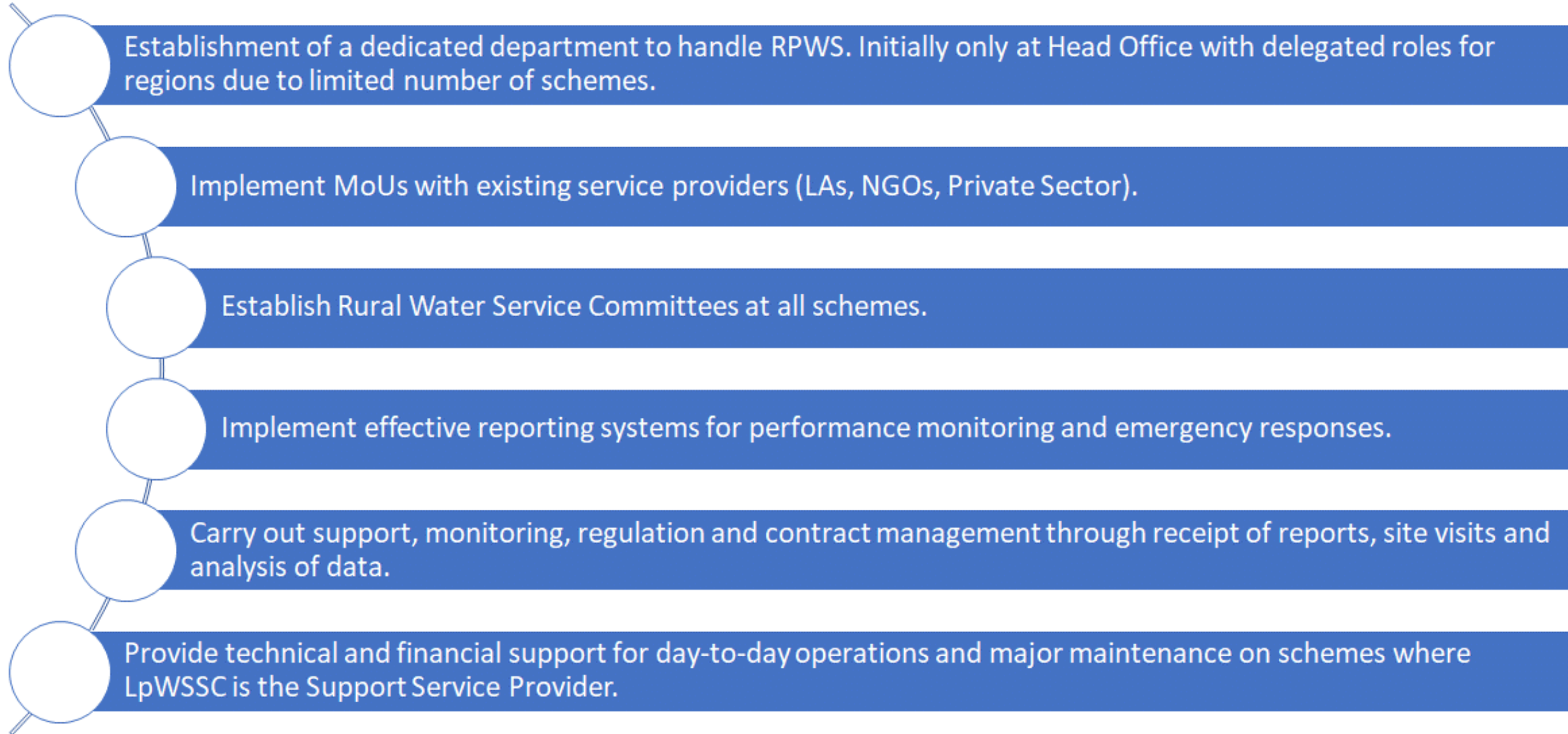
Part 2

Implementing the Hybrid Service Delivery Model

Service Delivery Model

- Key Role Players and Resources
 - Commercial Utility
 - Local Govt organisations
 - NGOs
 - Private Sector
 - Community Groups
 - Individuals

Actions for Implementation



Ten Steps of Implementation

Establish a Dedicated Dept in the CU

Implement Service Agreement with Rural WSS

Identify / Recruit Support Service Provider

Implement CU Contracts (CBOs and SSPs)

Develop in-house Support Capacity


```
graph TD; A[Develop Reporting / Monitoring Systems] --> B[Develop In-house Tech Support Capacity]; B --> C[Develop Reporting / Monitoring Systems]; C --> D[Develop Min Std for Tech Activities]; D --> E[Manage the Contracts]; E --> F[Consider O&M (Planning)];
```

Develop Reporting / Monitoring Systems

Develop In-house Tech Support Capacity

Develop Reporting / Monitoring Systems

Develop Min Std for Tech Activities

Manage the Contracts

Consider O&M (Planning)

Part 3

Implementing Memoranda of Understanding / Contracts

- Law of Contract is a complex legal discipline in its own right
 - The O&M guideline project asked for a legal person to be included on the team
 - We don't want an overly complex outcome – but it must be meaningful
- “At the end of the day” - Any contract is a negotiation between the parties.
- There is a need for very specific definition and description for the agreement to be as clear as possible to all parties.
- All agreements will be nuanced by local circumstances.
- Parties can agree (negotiate) what is included and what is not.

Content of the MoU / Contract

- Preamble
- Parties to the Agreement
- Background and Purpose
- Scope of Work
- Start Date and Duration
- Role of the Commercial Utility
- Role of the Support Service provider
- Role of the Ministry
- Role of Community Based Organisations
- Asset Management
- Business Plan
- Finance
- General

Preamble

- History of service provision
- The regulation on the Mandate of Commercial Utilities

Parties to the Agreement

- Commercial Utility
 - Support Service Provider
 - Local Authority
 - The Ministry
 - Communities and Representative Bodies
-
- Various documents required
 - Business Licenses
 - Dept of Health Permits
 - Constitutions
 - etc

Background and Purpose

- Describe relationship, roles and responsibilities between parties
- Describes roles and responsibilities at a high level
 1. Day to day O&M operation aspects being solely a CBO responsibility.
 2. Minor O&M repair aspects being solely a CBO responsibility.
 3. Major O&M repair aspects being solely a CU/ NGO responsibility.
 4. Billing and credit control O&M aspects being solely a CBO responsibility.
 5. New connections O&M aspects being solely a CBO responsibility.
 6. Spare parts provision O&M aspects being solely a CU/ NGOO responsibility.
 7. Technical support O&M aspects being solely a CU/ NGOO responsibility.
 8. Provision of fuel O&M aspects being solely a CBO responsibility.
 9. Payment for electricity O&M aspects being solely a CBO responsibility.
- Highlights need for compliance with the requirements of NWASCO.
- Highlights that the binding nature of the agreement – with a “trial and learning” period

Scope of Work

- Geographic area
- Names of villages
- Location of villages
- Type of infrastructure
- Allows for the following
 - Design
 - Construction and Refurbishment
 - Operations and Maintenance
 - Training
 - Transfer

Start Date and Duration

- Start date
- Duration
 - Initial
 - Possible extension
- Termination
 - Reasons
 - Negotiation
 - Penalties

Role of the Commercial Utility (use and delete as required)

- Permissions / Authorisations.
 - NB... The natural resource
- May choose to be the Support Service Provider (in-house)
- Monitoring, evaluation and inspection.
- Technical assistance.
- Finance and implement major maintenance.
- Monitor day to day operations.
- Develop tariff proposals (in consultation with other affected parties).
- Capacity building
- Participate in board meeting of Support Service Providers.
- Secure or make available land as required
- Facilitate environment studies (and actions)

Role of the Support Service Provider

- Provide water services.
- Comply with NWASCO requirements.
- Comply with other legislative or regulatory requirements.
- Implement good customer care.
- User fee collection.
- Apply the authorised tariff.
- Implement customer agreements.
- Develop and adhere to standard operating procedures.
- Implement and adhere to the institutional arrangements as prescribed by the CU.
- Employ qualified and experienced staff.
- Implement performance monitoring systems.
- Keep financial records.
- Adhere to good Occupational Health and Safety practices.

Role of the Ministry

- Monitor the performance of all role players.
- Raise funding for sector projects (infrastructure and institutional).
- Manage the continued roll-out of infrastructure for water services.
- Technical assistance.
- Facilitate communication with govt departments and development partners.

Role of Community Based Organisations

- Establish community representative groups / committees.
- Cooperate with the Support Service Provider and the Commercial Utility.
- Perform day to day operational activities.
- Advise consumers on water use.
- Keep operational records (equipment and staff).
- Implement the authorised tariff.
- Collect and manage user fees.
- Ensure that consumers adhere to rules of water use.
- Ensure good health and safety practice.
- Ensure protection of the environment.

Asset Management

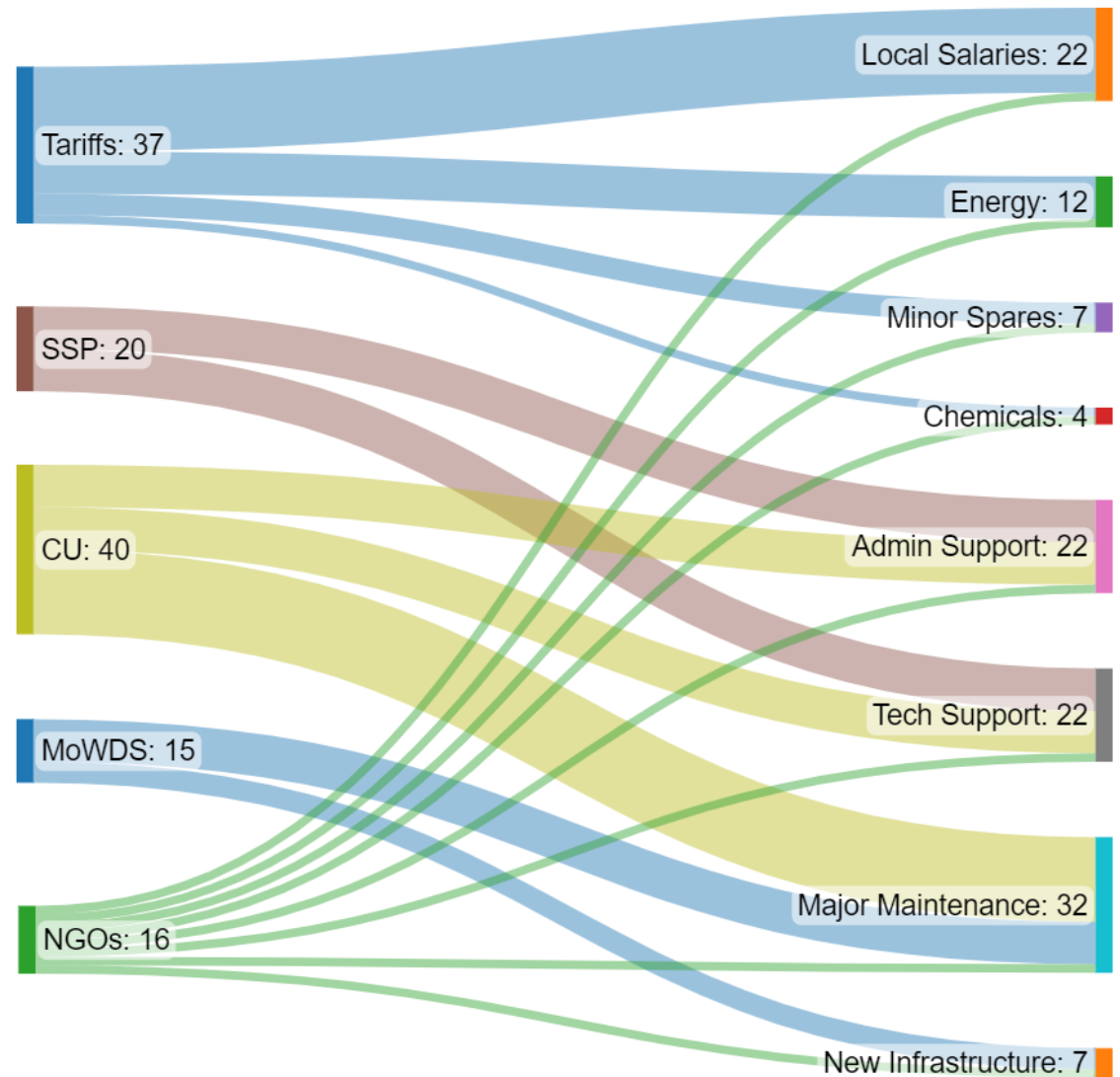
- Adhere to NWASCO guidelines
- Who owns the assets?
- Who owns the natural resource, and how is it used.
- Asset registers must be created.
- Business plans must detail asset management activities and plans.

Business Plan

- Support Service Provider to develop a 5 year business plan.
- Update annually.
 - Basic information
 - Services
 - Operations
 - Investments needed
 - Finance
 - Resources
 - Asset Management
- A basic resource plan should be included as an annexure to the contract.
 - Finances.
 - Personnel.
 - Vehicles.
 - Energy.
 - Consumables (spares, chemicals, etc).
 - Business systems and methods

Finance

- Tariffs.
- Transfers
- Taxes.
- Allocation to
 - Day to day costs
 - Major maintenance
- All finances to be communicated. (confidentiality) / privacy).
 - Show in business plan.
- Debt financing ???



General

- Good faith agreement.
- Commitment to amicable solutions.
 - Interests of consumers are paramount.
- Language of the correspondence.
- Law of Zambia prevails.
- Confidentiality.
- All variations to the contract to be in writing and signed by all parties.
- The agreement does not indicate a financial commitment on any party.

Key Issues (a)

- Binding or Not Binding
 - Binding in law - This leads to a complex situation
 - If it is very vague and unenforceable it has no meaning
 - How do we strike the balance
- Allow for a period of “exploration”.
 - The parties may have no experience of operating under such conditions.
 - The knowledge may be asymmetrical.
 - Clauses may be agreed to in Naivety.

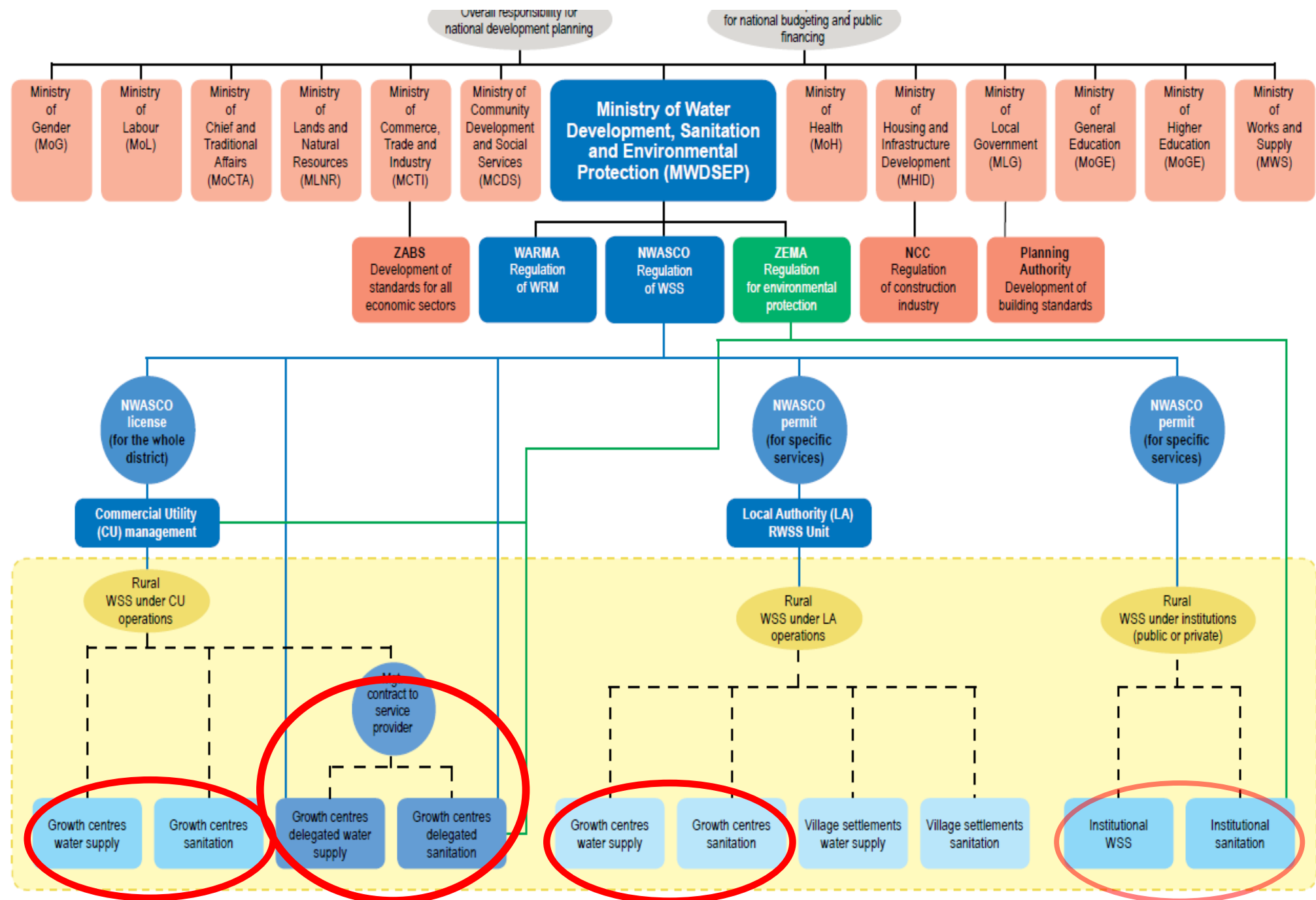
Key Issues (b)

- Disclosure of Finances
- Allocation of finances
- Transparency vs Privacy
- Consequence of Failure to Perform
 - Long-term Breach of contract
 - Short-term compromised services

Key Issues (c)

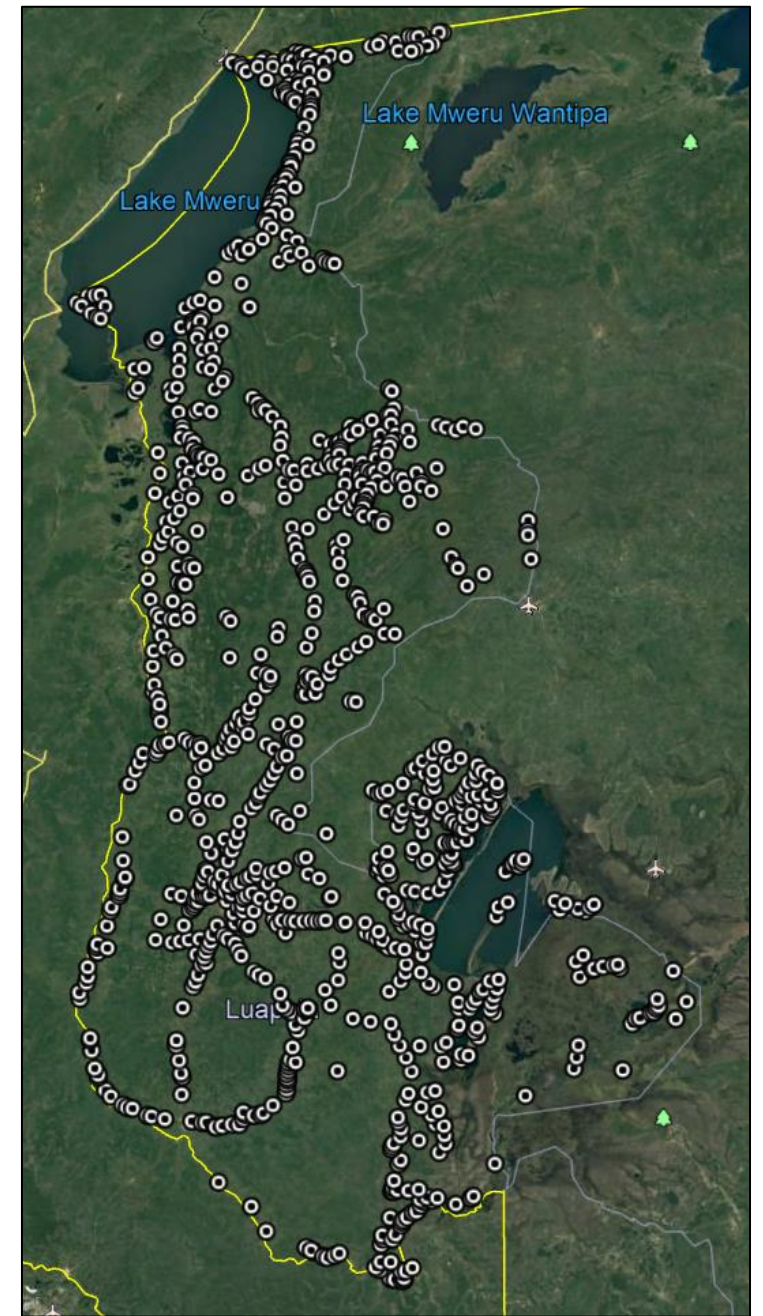
- Responsibility for paying bills must be clear
 - Salaries
 - Energy costs (elec, diesel, etc)
- Cash flow mechanisms must be described
- Tariff setting

Annex 6: Findings from Research for O&M Guidelines



Scope of Responsibility

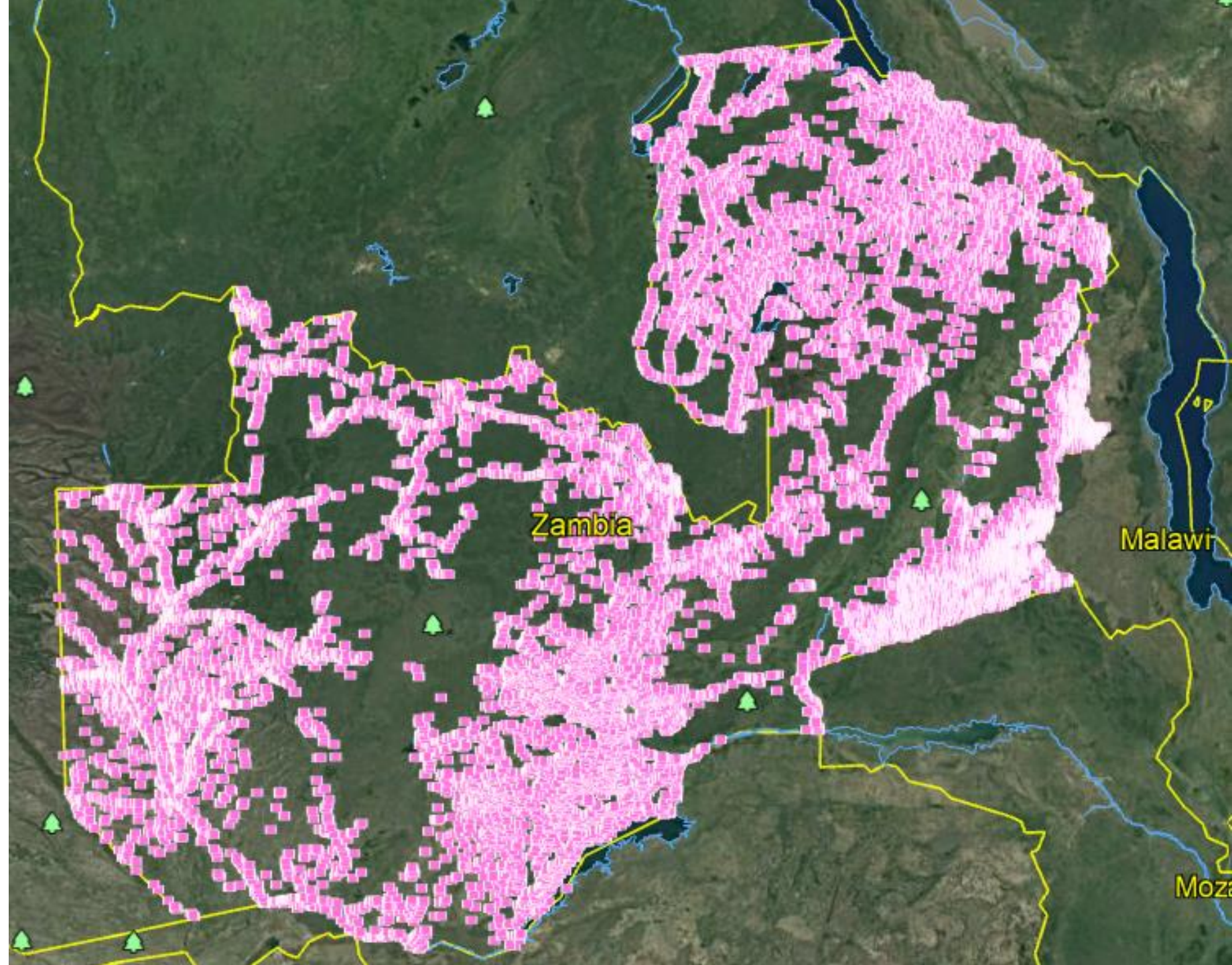
- The province has close to 1,000 settlements !
- Current operations
 - A number of towns (6)
 - Sophisticated technology
 - Piped distribution
- Adding the Rural Growth Centres
 - Sophisticated technology (nb. solar power)
 - Piped distribution
 - Increased resources required
 - Financial viability may be uncertain
- The “End Game”
 - Many rudimentary pt sources
 - Growing amount of sophisticated infrastructure
 - Logistical challenges.



Centroids of Settlements in Luapula

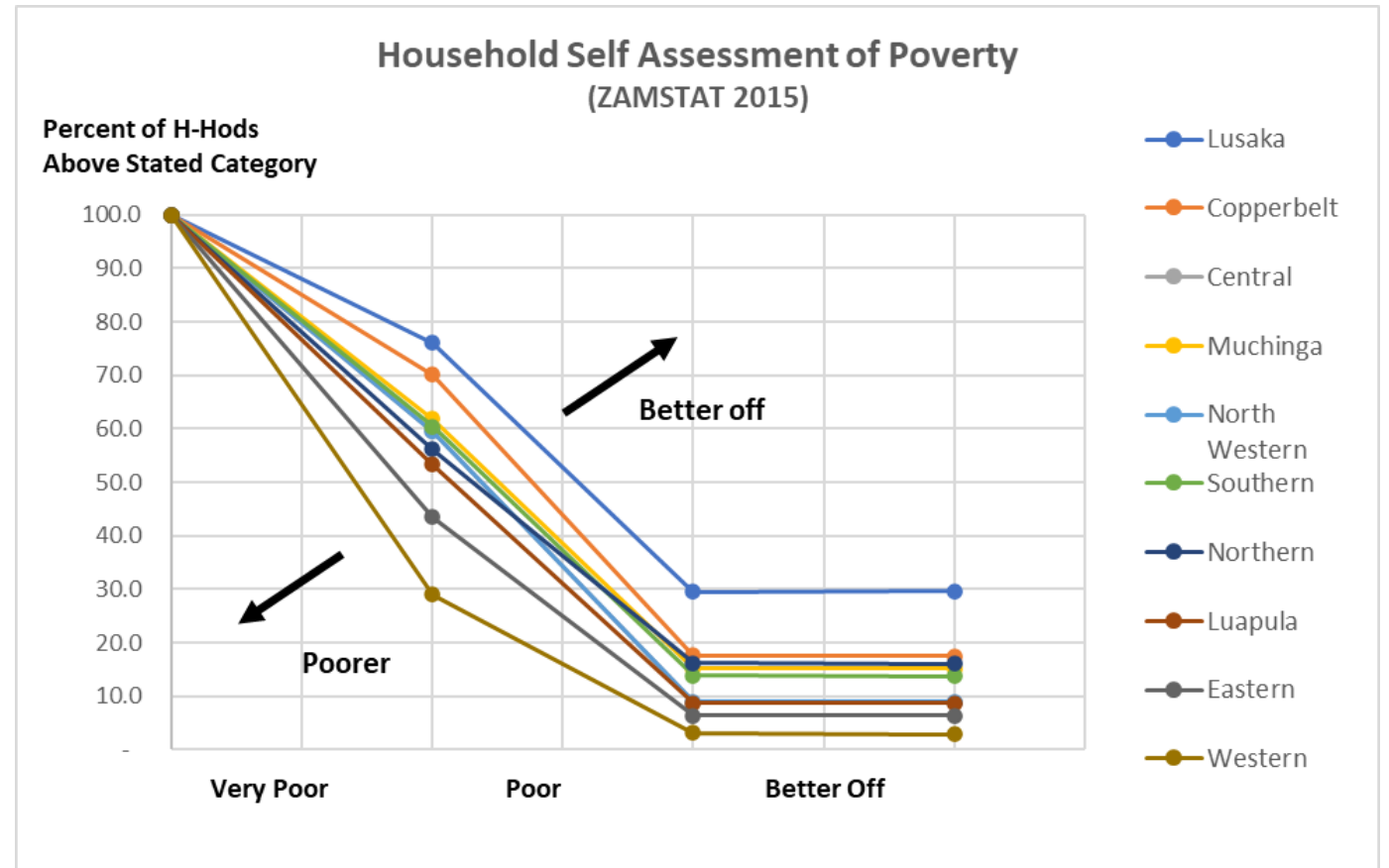
Centroids of all
settlements
in Zambia

The future of the CUs
is managing
many, many, many
small piped schemes



Responsible Organisation	Luapula Water Supply and Sanitation Company						
Infrastructure (Drinking Water)	H-Pumps (x 3300)	Small Piped Water Schemes (x ???)					Towns (x 5)
Support Agent	Local Authority	Local Authority	WV (MoU)	Water 4 (draft MoU with LpWSSC)	FBO & Others (no MoU)	LpWSSC (Direct Ops and Maintenance)	LpWSSC (Direct Ops and Maintenance)
Day to Day Ops (MOUs for Day to Day Activities)	Community Based Organisation	Community Based Organisation	Community Based Organisation	Scheme Attendant	Community	LpWSSC	LpWSSC
Financing Arrangements (Tariffs – Transfers – Taxes)	Comm Collect -Equal Fund -LA Taxes	Comm Collect -Equal Fund -LA Taxes	--- -UNICEF & WV ---	-M³ (Tarrif-PPM) -Water 4 ---	-Comm Collect -Periodic Donor ---	Comm Collect -Min of WDSEP ---	-M³ Tariff -Min of WDSEP ---
Support Service MoU (specify funding arrangements)	Community and Customers	Community and Customers					Community and Customers
Community Based Organisation (MoU)	MoU with LpWSC and SSP	-CBO	CBO	-CBO	CBO	CBO	1000 Villages
Customer / Supply Charter	Community and Customers	Community and Customers					Community and Customers

The
distributions
of household
income levels
are not the
same across
the country



Distribution of Income in Households

Percentage of HHs
Earning More Than
Given Monthly Amount



Household income and affordability trends follow a similar pattern in all communities

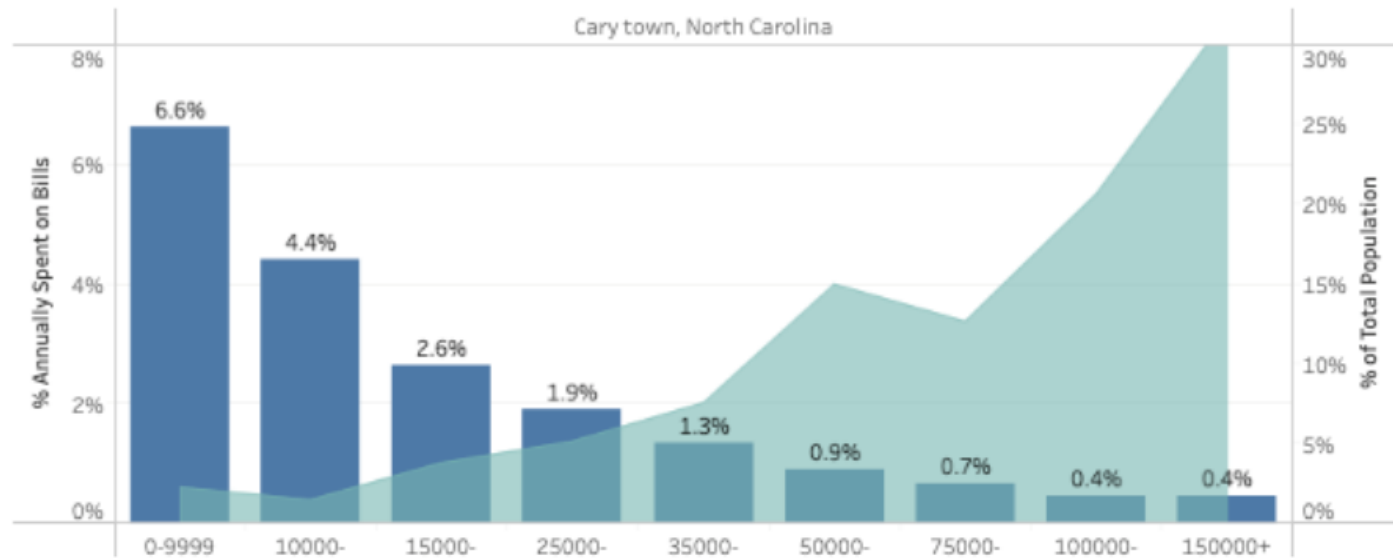
← South Africa

United States of America



Affordability of Water/Wastewater Rates at 2020 Income Levels

Cary town, North Carolina



Household Income

- Zamstat data on H-Hold Inome.
- NB... National avg HH income is similar to survey results for Mansa.
- NB... Rural incomes are MUCH lower than the national avg

Avg HH Income = ZMW 1,997 / mth

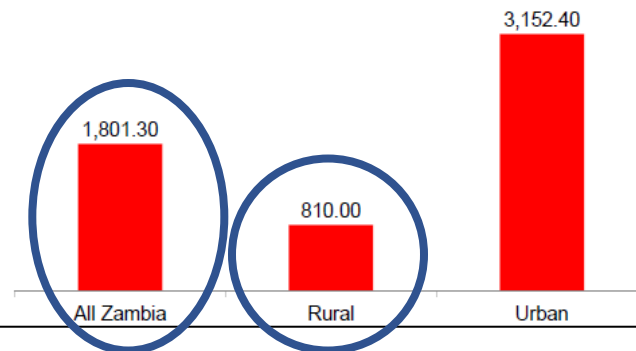
3% = ZMW 60 /MTH

Household Income and Assets

Figure 20 shows the average monthly household income by rural/urban. The average monthly income for households was K1, 801.30.

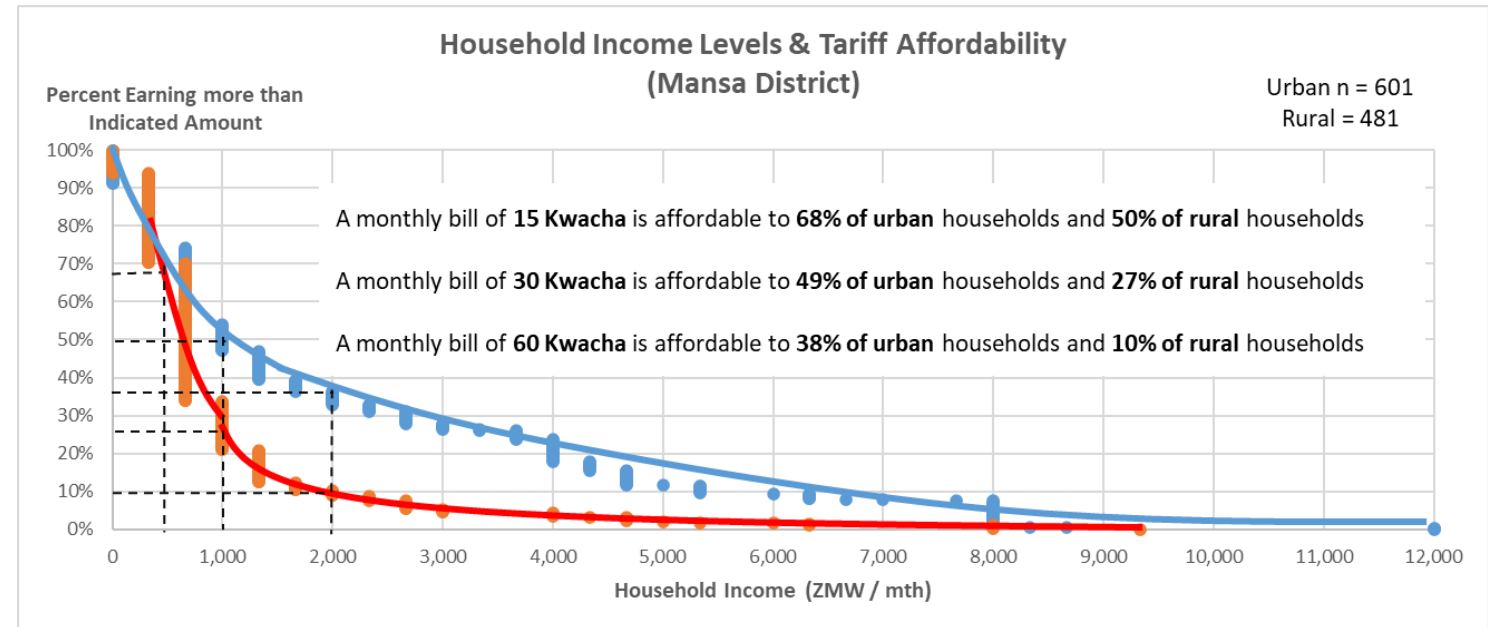
On average, households in urban areas earned about four times as much as those in rural areas.

Figure 20: Average Monthly Household Income by Rural/Urban, Zambia, 2015.



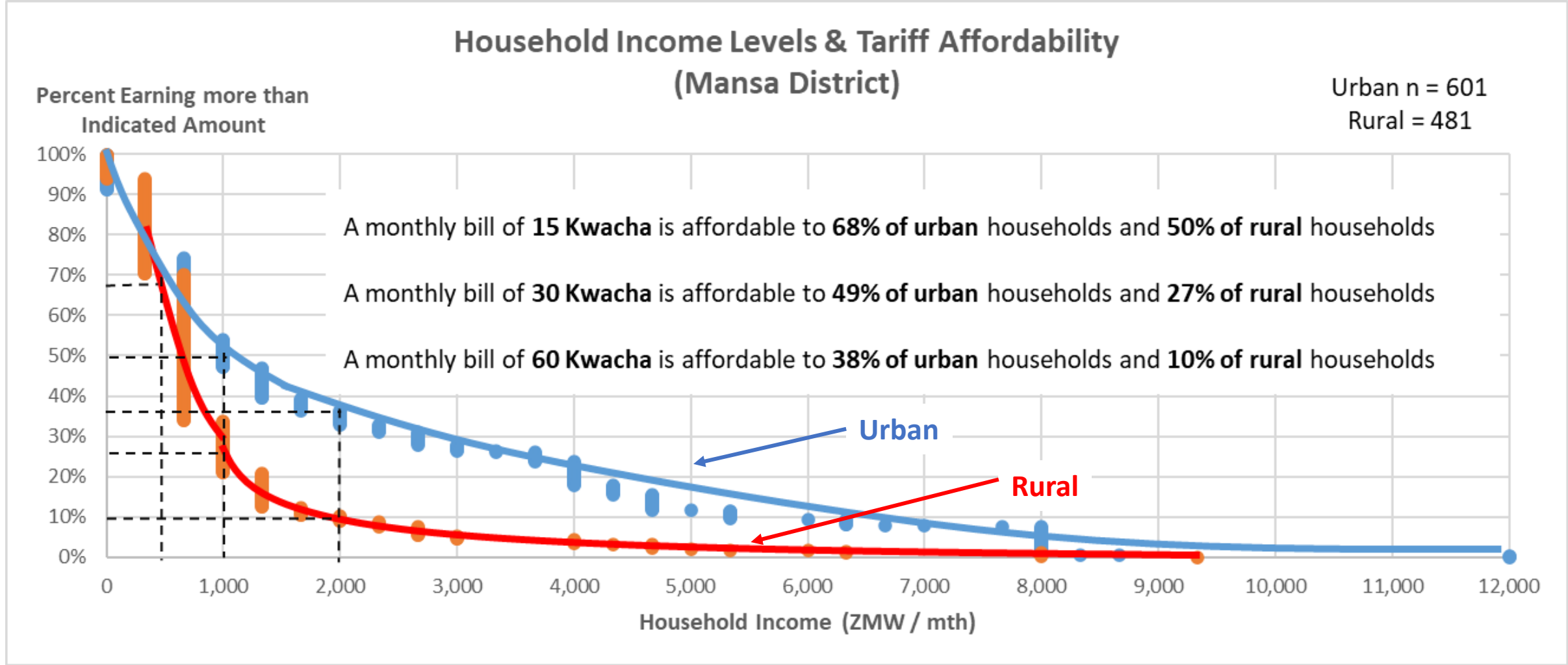
Survey of Household Income

- From the survey we see that the majority of households in Mansa have very low income.
- The distribution of income/affordable cost of water is illustrated in the graph
- Assuming the guideline that 3% of H-Hold income is the guideline on affordability.
- This graph represents the “distribution” of how many H-holds can afford any given monthly cost of water.



Expanded on next page

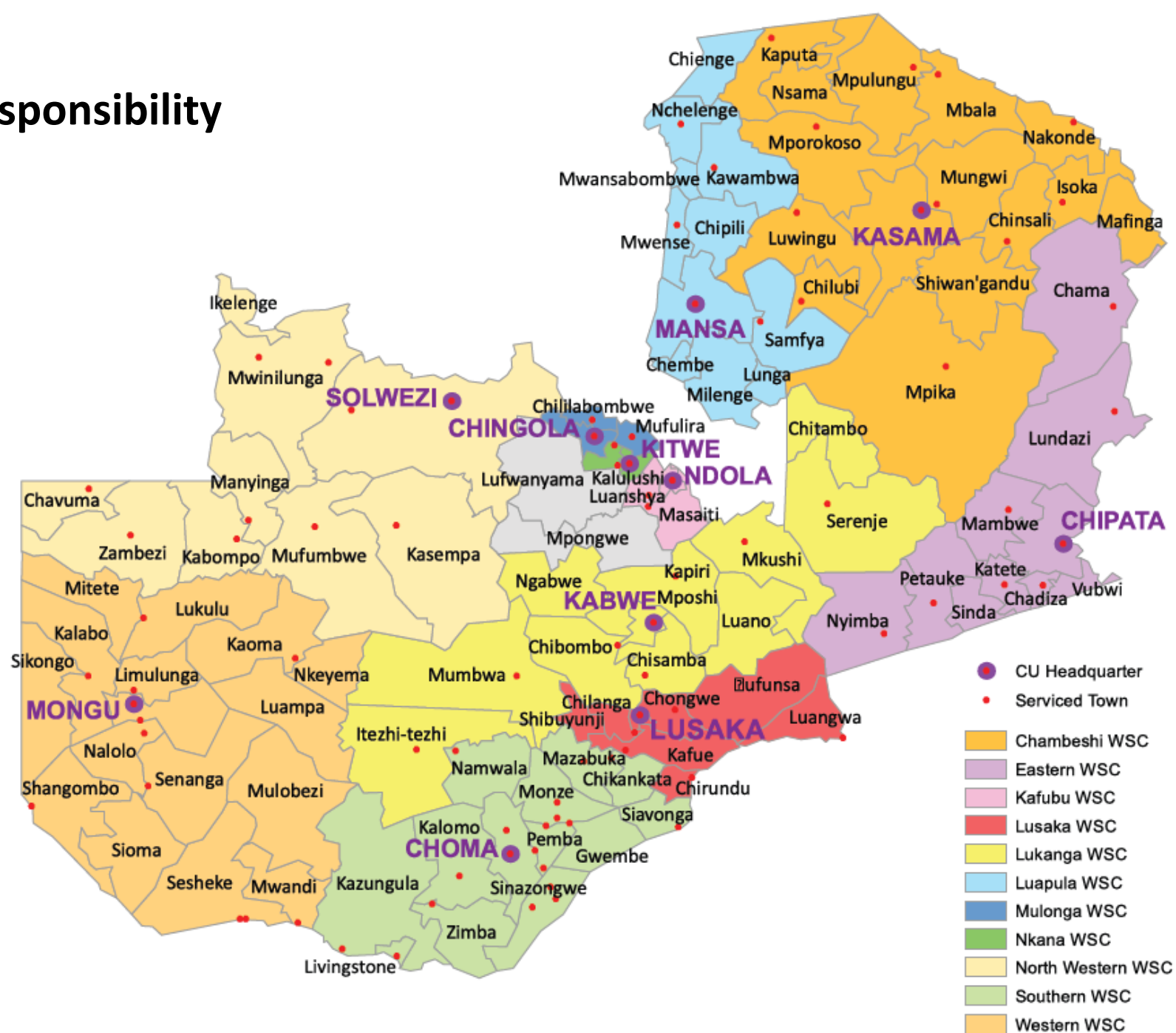
Affordability of Water Supply



Comment from Luapula Water Managing Director

- Affordability challenges are compounded by seasonality of:
 - Household Income
 - Water supply from alternative sources

Areas of CU responsibility



Most frequent NWASCO ranking of CU performance (2010 – 2020)

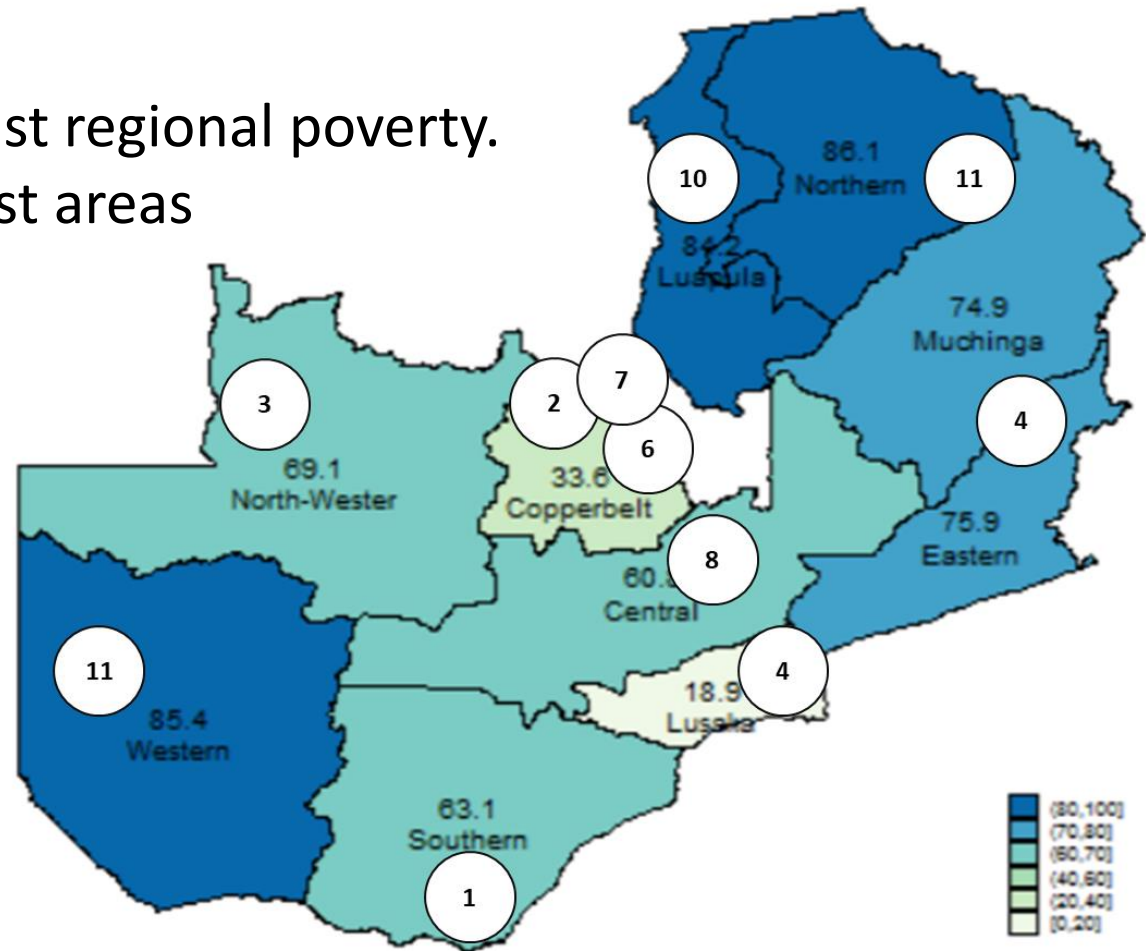
Figure 5. Monetary Poverty Distribution by Province for Children Aged 0-17 Years

- Mapping CU performance over 10 yrs against regional poverty.
- Weakest performance is observed in poorest areas

After Deming:

“I should estimate that in my experience most troubles and most possibilities for improvement add up to the proportions something like this:

- *94% belongs to the system”*

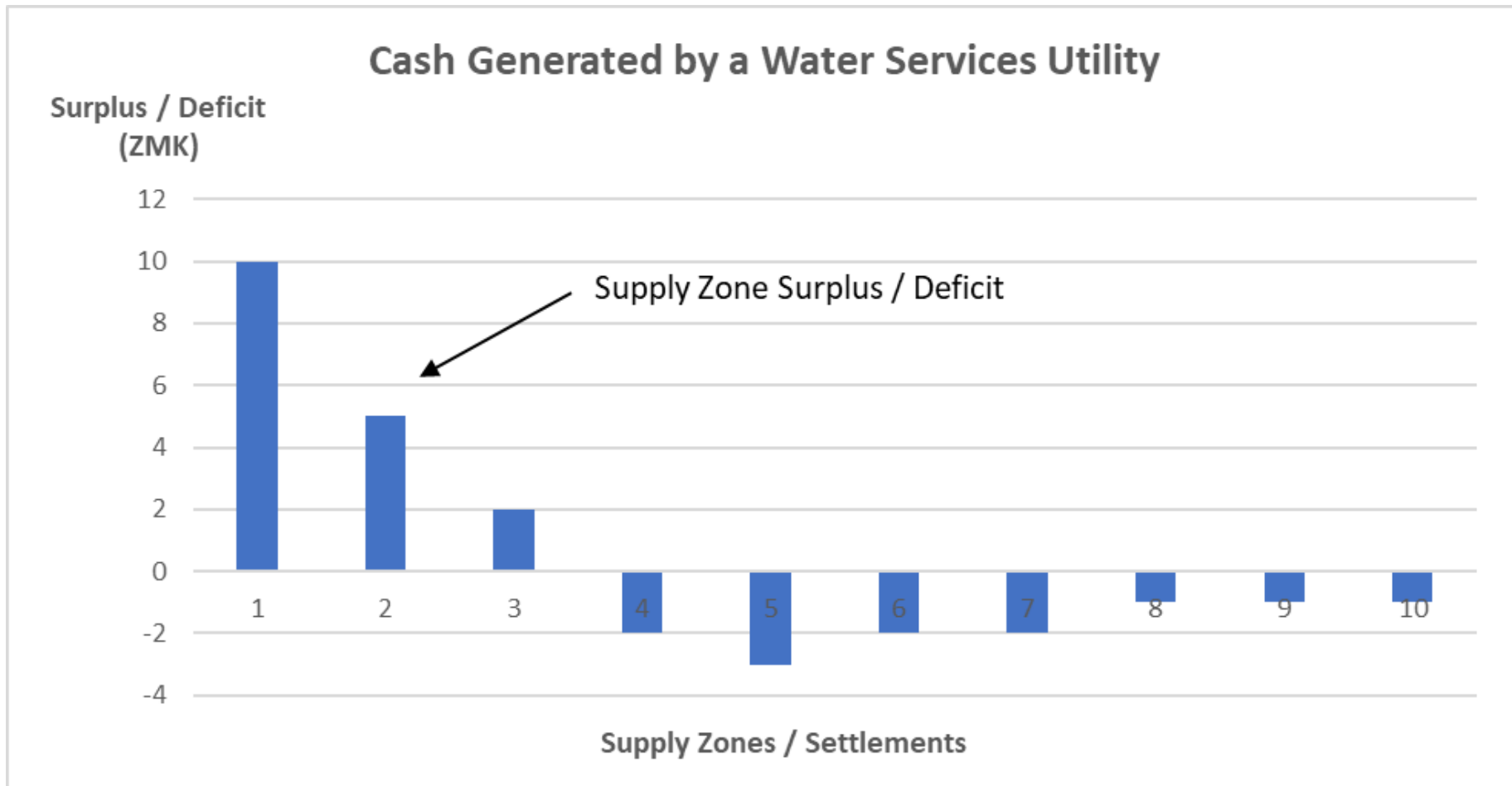


Source: Authors' calculations using Zambia LCMS (2015)

Note: 2015 national poverty line was valued at K214.26 per Adult Equivalent (monthly)

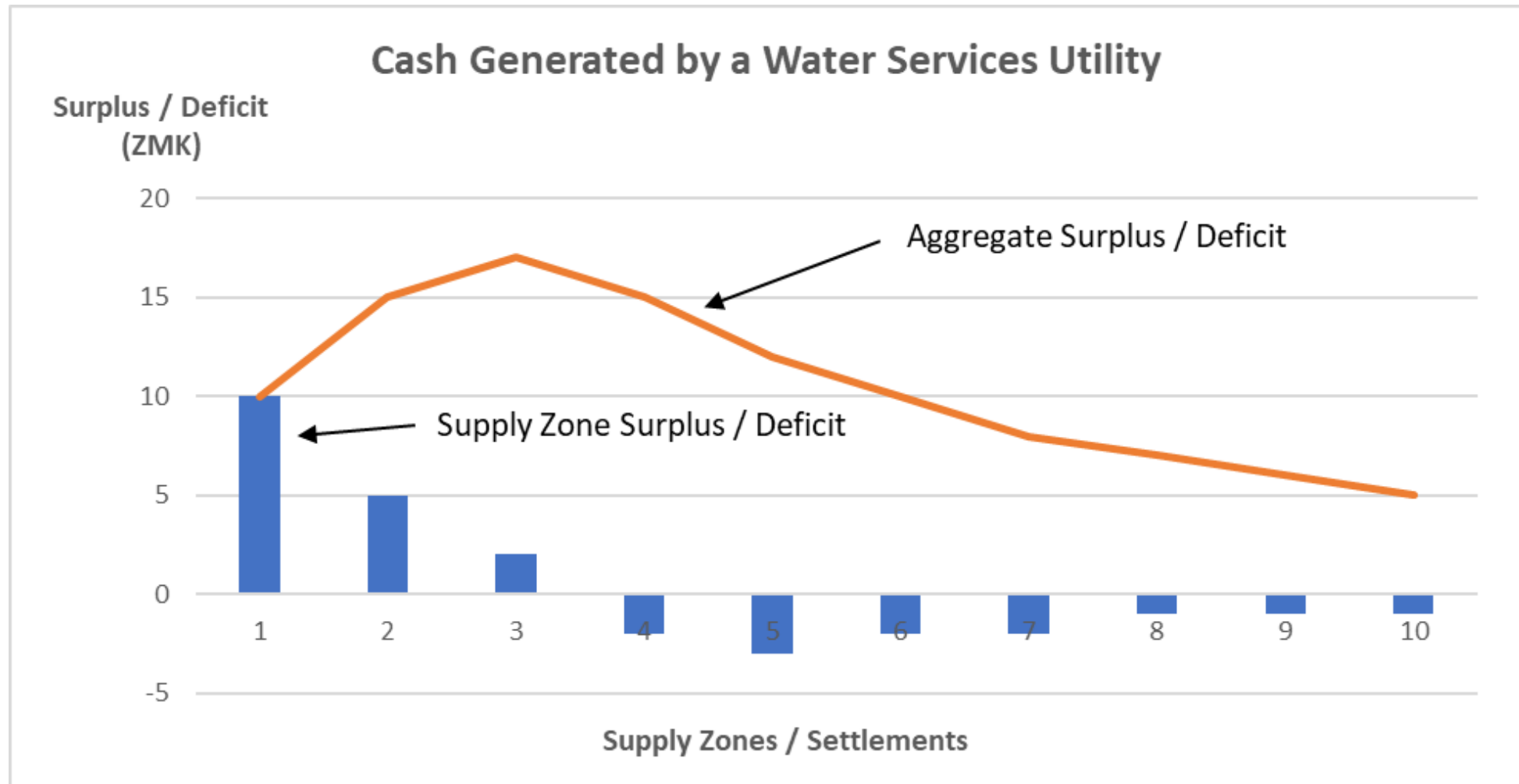
Financial Impact of Deficit Generating Schemes

- Any water services supplier will have a combination of surplus and deficit generating areas



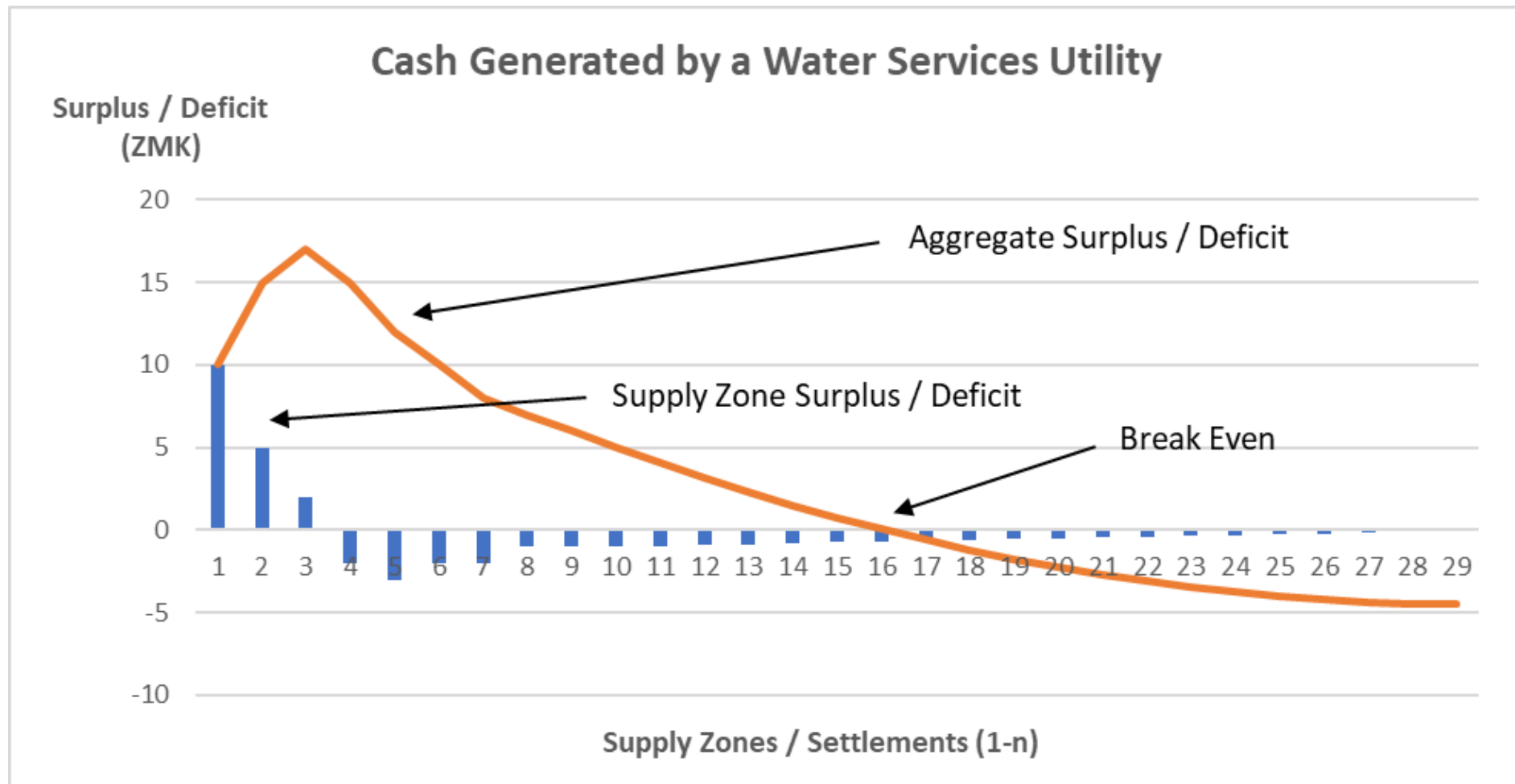
Financial Impact of Taking on Deficit Generating Schemes

- In aggregate a service provider may be able to cross subsidise less “profitable” areas



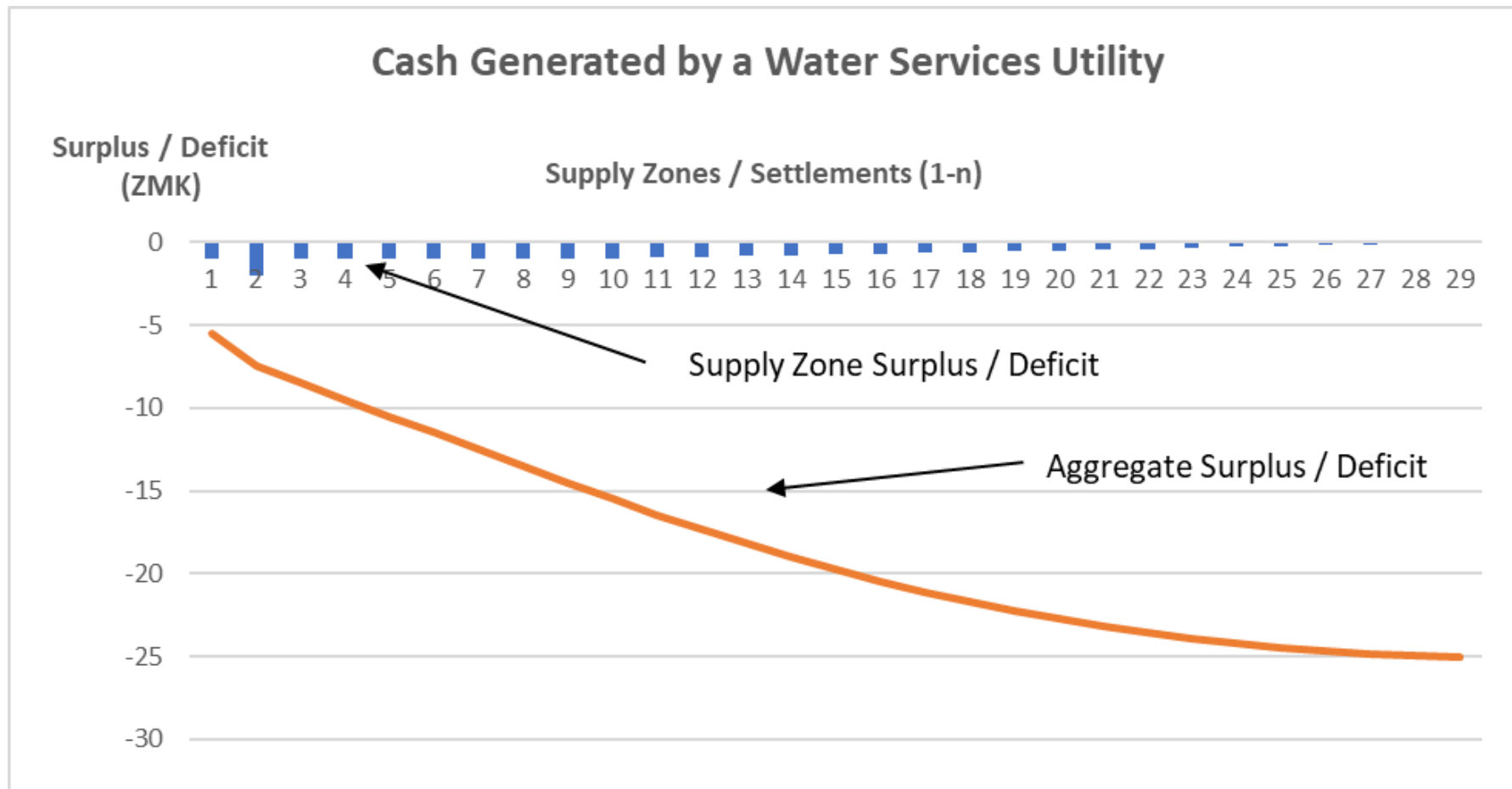
Financial Impact of Taking on Deficit Generating Schemes

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Financial Impact of Taking on Deficit Generating Schemes

- Luapula Water already has a 42% deficit on covering O&M costs (see NWASCO report)
- Adding unprofitable schemes will result in an even greater deficit



<p><u>Scenario 1 – In House O&M</u></p> <ul style="list-style-type: none"> - CUs take over all ops - CUs carry full cost of O&M. - Services extended to poorer households, and there is ever increasing unaffordability - Ever increasing financial demands on CUs. - More need for subsidy to cover O&M costs (especially in CUs where O&M cost ratio < 1) - D2D activities may be compromised in CUs where cash is scarce. 	<p><u>Scenario 2 - Hybrid Model</u></p> <ul style="list-style-type: none"> - Communities carry out day to day O&M. - CUs provide support only. - Local finance covers local costs. - Services extended to poorer households, and there is ever increasing unaffordability. - CUs carry capmanex. - D2D ops don't comply with spec (e.g. disinfection). - CAPMANEX requires special motivation.
<p><u>Scenario 3 – CBM</u></p> <ul style="list-style-type: none"> - Communities carry out all O&M - <i>Plenty of evidence that this does not result in good O&M and services</i> 	<p><u>Scenario 4</u></p> <p>???</p>

Quotes from Recent Paper on Zambia Water Sector

Recommendations - Policy

Increases in production efficiency might decrease costs, and should be pursued when possible, but in many cases the cost of access will need to be subsidized in order to make access more affordable. Indeed, WaSH access is currently subsidized in many locations around the globe, including Zambia. But it is important that subsidies are designed in such a way that they encourage improvement and expansion of access over time and have a net positive impact over all locations and social groups.

Furthermore, it is important to create mechanisms for transparency, both for affordability metrics as well as the distribution of subsidies among different social groups and wealth categories. It has been observed that subsidies do sometimes go to more privileged or better resourced households, while marginalized and poorer households are over-looked.

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Annex 7: Business Plan Template

