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**ENSURING AVAILABILITY AND SUSTAINABLE MANAGEMENT
OF WATER AND SANITATION FOR ALL**

**Capturing the consumer-voice: an evaluation of the social
sustainability of water users associations in Malawi**

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The definition of sustainability, as it pertains to drinking water supply (DWS) services, consists of a combination of several factors which each affect the level of sustainability differently. However, in Malawi, only financial self-sufficiency and decentralized day-to-day management of DWS services are considered when assessing the likelihood of a sustainable service system. However, the definition of sustainability has developed further to include societal aspects of sustainable development; namely “social sustainability”. Therefore, though financial and managerial facets of DWS service sustainability are important, if there are weak social relations between the DWS service and consumers, this will potentially threaten long term growth due to inadequate legitimacy to make social settlements for service expansions that could benefit more households. This paper will attempt to illustrate two years’ worth of research that was purposefully conducted to gain an understanding of the condition of social relations between water consumers and Water Users Associations in peri-urban Malawi.

Introduction

In recent years, the definition of sustainability has grown significantly in scope and meaning so as to encompass broader aspects of human development and human interaction with the physical world. Water supply is one of the most critical aspects underpinning the continuity of human development, thus making its sustainability all the more crucial. The definition of sustainability, as it pertains to drinking water supply (DWS) services, consists of a combination of several factors which each affect the level/quality of sustainability differently (Ungwe *et al*, 2014). However, in Malawi, only financial self-sufficiency and decentralized day-to-day management of DWS services are considered when assessing the likelihood of a sustainable service system (World Bank, 2007).

This Malawi situation was reinforced, significantly, by cases of disrepair, near total service disruption and massive water disconnections which characterized many peri-urban water supply systems across Malawi, including Blantyre, during the early 1990s. Blantyre city, with a population of approximately 800,000 people, is situated in the southern region of Malawi and is often touted as the *Commercial Capital*, due to its being the headquarters of most large conglomerates. As a direct result of being a hive of economic activity, Blantyre experiences a relentless rural-urban migration of 2.1% per annum, which is two-fifths the national urbanization rate. Due to a fragmented social service infrastructure, inappropriate policies to coordinate, regulate and manage settlement development and non-commensurate economic growth, 7 in 10 reside in fast-growing high density informal settlements, or slums, with inadequate access to social services, including water supply, and poor standard of living.

In a bid to resolve the problem of poor access, the public utility company, Blantyre Water Board installed water kiosks in various locations across the informal settlements; with the daily operations of each kiosk being handled by a designated kiosk management committee (KMC). Though theoretically sound, KMCs were plagued for several years with major service disruptions due to reports of poor management practise, financial mismanagement and lack of ownership by the beneficiary community which resulted in bill arrears of an estimated value of US\$105,000 by April 2007. This level of debt was unsustainable for Blantyre Water Board to bear and, as such, the water kiosks were disconnected.

With financial self-sufficiency and day-to-day management as the foremost factors requiring intervention, Water For People partnered with Blantyre Water Board, in 2010, to test an alternative management model called Water User Association, which, unlike its KMC predecessor, would have a robust corporate governance system and oversee a network of 40 – 50 kiosks, on average.

Against this background, and to further build an evidence base for the effectiveness of the WUA model, in 2011, Water For People developed a monitoring framework that aimed to amalgamate the financial and managerial indicators into a proxy indicator that could predict the likelihood of a sustainable water supply system; this proxy indicator was called Level of Sustainability. Though its definition is constantly evolving, Level of Sustainability is, primarily, designed to reflect the capacity of the community or other service providers to sustain an adequate level of service for a DWS service for the long term. Ascertained by aggregating eight key financial and managerial indicators, Level of Sustainability helps determine whether the system in place was highly likely (green), likely (yellow), somewhat likely (orange), unlikely (red) or will not (black) be sustainable. The eight equally weighted indicators for DWS services include:

- There is a service provider for the water point/system
- The service provider is legally recognized
- A tariff or user fee is collected for water service
- Tariff structure designed to cover operational expenditure (OPEX) and capital maintenance expenditure (CAPMANEX)
- Financial records are maintained by service provider (and have been verified)
- Financial records show evidence of a capital maintenance (savings) fund or regular loan repayment for capital costs
- Spare parts are available in or near the community
- There is a person who has been trained to provide water point/system operation and maintenance available

Scores	Color	Label
0	Black	No Service Provider
1-2	Red	Unlikely to Provide Sustainable Service
3-4	Orange	Somewhat Likely to Provide Sustainable Service
5-7	Yellow	Likely to Provide Sustainable Service
8	Green	Highly Likely to Provide Sustainable Service

Each DWS service point, in this case predominantly water kiosks, is therefore measured using this metric to ascertain the strength and effectiveness of the organizations responsible for the long term O&M and financial planning for water points/systems. Then, dependent on the recognized administrative or geographical level for analysis, the scores for every DWS service, expressed as a percentile proportion of “green” and “yellow” against the total number of systems assessed, are consolidated at the administrative/geographical level, thus providing an overall sustainability score at both macro- and micro-levels. Such level of analysis is crucial for data-driven decision-making where progress is assessed at all levels across time, trends are isolated and interpreted, programmatic strengths are built on and weaknesses become the target of joint-problem solving with local governments and communities.

From between 2011 and 2012, Water For People, with financing from the European Union, started monitoring the Level of Sustainability of the water supply systems being managed by 8 Water Users Association (WUAs) as one way of having an evidence base for the effectiveness of delegated DWS service management. By focusing solely on aspects of financial self-sufficiency and decentralized day-to-day management, the WUA model demonstrated increasing Level of Sustainability year-on-year from, as low as 3% in 2010 to 66% in 2012, which was attributed largely to:

- Increasing number of water kiosks in low income areas under the management and oversight of WUAs
- Increasing number, and thus coverage, of Water Kiosks in low income areas as a result of infrastructure development
- Improved financial and operations management of WUAs by secretariat

During a rigorous reflection process with local government, Blantyre Water Board and non-governmental agencies in late 2012, where the data was shared for purposes of validating the effectiveness of WUA management model, there was general consensus that, by focusing on knowledge sharing, mobilization and advocacy, cost recovery, solid financial management and transparent staff hiring and training, the WUA model was able to overcome a dire situation of intense corruption, disrepair, vandalism and near-total service disruption. By the time of the reflection session, the 8 functional WUAs were on the path to fully settling all the outstanding bills they had inherited from the KMCs and had never had supply disruptions for non-payment of bills.

Despite this success as evidenced by the Level of Sustainability scores, there were some crucial unanswered questions that emerged from the process that called to question the long term sustainability of the WUAs.

The following questions arose the reflection session:

- *“Level of sustainability has improved, but what do the consumers think of the service?”*
- *“Tariff are being collected, but are we sure that water users are happy with the tariff they pay?”*
- *“WUAs have AGMs, but are consumers involved or consulted about service improvements?”*
- *“Are we sure that the WUAs actually make decisions based on consumer feedback?”*
- *“Are the WUAs really accountable to the water users they claim to serve?”*

Many of these aspects clearly related to the social sustainability - the ability of the community to create value through human relationships - of the WUA model which was not a key focal area or priority from the onset.

As such, a new methodology was adopted, re-designed and developed to firstly understand the level of consumer satisfaction with the current level of service being provided by the WUAs and, using the results, design and implement a field-based response to address the areas of consumer dissatisfaction.

Methods and materials (methodology)

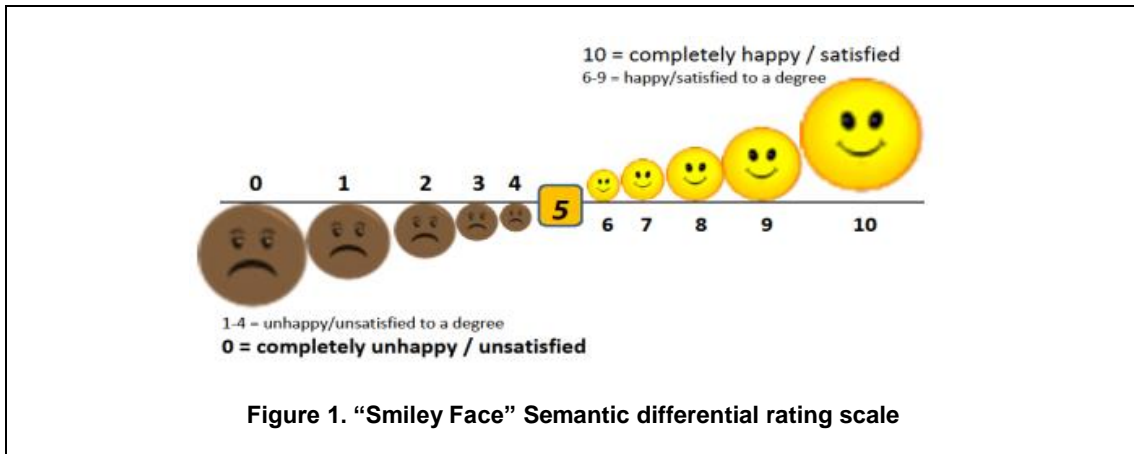
Through a joint collaborative effort between Water For People, The University of Malawi - The Polytechnic and international consultancy firm, Keystone Accountability, the “Constituent Voice” methodology was adopted, and redesigned; this involved the following stages:

- Research design and data collection
- Analysis and reporting
- Field implementation of research results

The Constituent Voice is an existing methodology developed by Keystone Accountability which enables organizations to improve results by optimizing their relationships with their constituents. The choice of using Constituent Voice as the primary data collection approach was due to its collection of cost-effective and easily adaptable methods which aim to both understand and systematically cultivate consumer feedback into service delivery improvements of social purpose organizations, including 75 NGOs already using it, around the world.

Research design and data collection

This stage involved developing the actual research tools and sampling plan that would be utilized for data collection in the field. The primary data collection tool was a mobile phone with the AKVOFLOW survey app on which the questionnaire was installed. The questionnaire was designed as a rapid assessment so as to ensure that each survey could be administered within 10 -12 minutes.



The questions utilized a Sematic Differential Rating Scale of 0 to 10 to gauge the level of the respondents' level of satisfaction with a specific performance area. To accommodate respondents of differing literacy levels, the enumerators employed a Smiley Scale (shown above) where respondents would be asked where along the scale did they lie in relation to a specific performance area. The surveys had 20 questions, jointly designed by Keystone and University of Malawi, and were clustered into 6 categories/performance areas to enable a single performance index for each category as shown in the table below:

Table 2. Performance index	
Performance area	Questions
Demographics	What is the Community Name? What are the GPS coordinates for this kiosk? What is the ID number or Name for this kiosk? Is the respondent Male or Female? To what age group does the respondent belong?
Availability	How satisfied/happy are you with the time the kiosk opens? How satisfied/happy are you with the time this kiosk closes? How satisfied/happy are you with the availability of the water seller of this kiosk? How satisfied/happy are you with the time it takes you to collect water?
Value for money	How satisfied/happy are you with the price of water at this kiosk?
Water quality	How satisfied/happy are you with the taste/smell/colour/cleanness of water from this kiosk?
Management	How satisfied/happy are you with the cleanliness of this kiosk and the area around it? How satisfied/happy are you with the behaviour of the water seller of this kiosk? How satisfied/happy are you with the outward presentation of the water seller of this kiosk? How satisfied/happy are you with how well the system is maintained and repaired when it breaks down?

Lastly, the survey was administered by a team of 12 trained enumerators who interviewed an average of 25 people at 88 sampled water kiosks (based on a 20% sampling plan derived from Keystone Accountability Constituent Voice methodology) within the peri-urban Blantyre. The sampled water kiosks included WUA-managed kiosks and kiosks without WUA management i.e. managed by private entities or other community structures; this would facilitate a comparative analysis between the levels of consumer satisfaction between WUA-managed locations and non-WUA managed locations.

Analysis and reporting

The analysis used the raw quantitative data from 3017 submitted questionnaires from 110 sampled water kiosks, where the respondents were asked to provide their level of satisfaction on specific performance areas affecting water supply management and governance. To determine the relative ranking of the factors, the scores were then transformed to importance indices based on the following formula:

$$\text{Relative Satisfaction Index (RSI)} = \text{Summation of } \frac{W}{(A * N)} \quad (1)$$

Where w is the weighting given to each factor by the respondents, ranging from 0 to 10, A is the highest weight (i.e. 10 in the study) and N is the total number of samples. Based on this equation, the RSI can be calculated ranging from 0 to 1. (Tam et al, 2004).

RSI	Equivalent assessment scale
$0 \leq \text{RSI} \leq 0.29$	Not at all satisfied
$0.3 \leq \text{RSI} \leq 0.49$	Slightly satisfied
$0.5 \leq \text{RSI} \leq 0.69$	Satisfied
$0.7 \leq \text{RSI} \leq 0.89$	Fairly satisfied
$0.9 \leq \text{RSI} \leq 1.0$	Very satisfied

Field implementation of research results

The results from the pilot survey revealed a glaring difference to the otherwise positive Level of Sustainability scores. Notably:

- 88% of respondents did not know what a WUA was, how it worked or how they could get involved
- RSI scores for all other performance area, except Tariff, ranged from 0.68 to 0.94, with Water Quality registering high levels of satisfaction, signifying general medium to high level of consumer satisfaction;
- The tariff performance area registered the lowest with 0.38 signifying a substantial level of dissatisfaction with the tariff rates; and
- The comparative analysis showed very little marked difference in the level of consumer satisfaction between WUA-managed and non-WUA managed locations.

Following the pilot survey, Water For People used the research results to design a series of community interface forums that aimed to address the performance areas that required attention, namely low awareness of the WUAs existence/operations and tariff rates. The forums were facilitated jointly with Blantyre Water Board, Water Users Associations and water users. The forums were implemented over a period of a year across all WUA-managed areas.

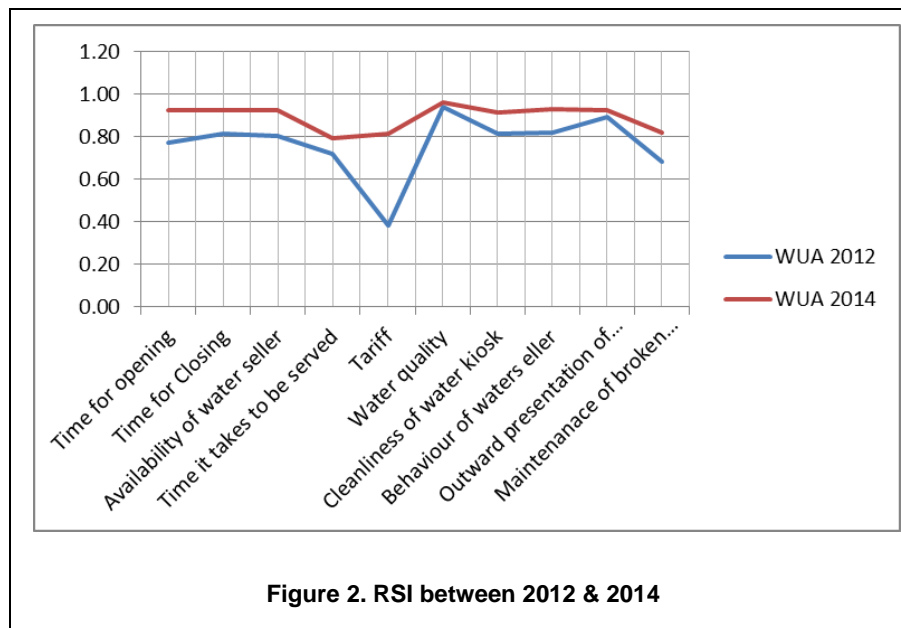
Following this, another survey was conducted in 2014 following the same monitoring protocol whereby 3247 questionnaires were administered.

Results and discussions

In 2012 88% of respondents did not know what a WUA was, how it operated, its governance processes and whether they could influence its operation. This fell to 69% in 2014.

Furthermore, there was a marked improvement across all performance area with Tariff registering a significant shift from 0.38 to 0.81. However, there was still no significant difference in the level of consumer satisfaction between the WUAs and other management entities.

It is very clear from the analysis that, despite significant improvements in financial self-sufficiency and day-to-day management of the DWS service as illustrated by the Level of Sustainability scoring, the Constituent Voice method revealed that respondents felt the prevailing tariff was too expensive with respondents requesting for considerations as regards a tariff reduction. This introduces a considerable threat to the long term growth of the DWS service as, if water users feel the tariff is too expensive and, coupled with that, there is a poor understanding of how they could engage or influence the WUA operations more meaningfully, then there is a high probability that households will access unsafe sources of water meaning, potentially, reduced revenue for expansion of safe DWS and increased cases of waterborne diseases.



Consequently, WUAs are non-profit making organizations that are, beyond merely providing a service, are supposed to engage the wider water user community in open and transparent dialogue to facilitate service improvements and eliminate system inefficiencies. This has the added value of catalyzing an active citizenry that can hold the DWS service accountable for its actions and decisions and, thereby, ensuing good institutional governance practice. However, despite the 19% drop in number of respondents who did not know what was a WUA was or how it operated; there is still a significant proportion of the water user community who do not know what a WUA is. This stifles the process of creating a critical mass of active citizens who could hold the WUA, and its operatives, accountable for their actions and decisions. This, further, presents another threat to long term growth whereby WUA operatives are not motivated to be transparent and accountable and thus providing the opportunity for corruption and cronyism as has been the case with some WUAs in recent years. Additionally, the fact that consumers experienced similar levels of service between the WUAs and other management entities only reinforces the need for the WUAs to invest in promoting their services more clearly and add differentiating features to their service portfolio, as compared to other management entities, if WUAs are to experience increased demand for their services and, thus, increase water revenue for investment in service growth and expansion.

Lastly, but not least, the interface forums that were held in 2013 evidently had an impact on the upward trend of all the performance areas particularly Value For Money/Tariff which shifted from 0.38 to 0.81. This is attributed to the significant time given to Blantyre Water Board, during the interface forums, where they educated the water user community on how tariff is calculated and clarified further on the process for how such tariffs can be adjusted, if need be. This clearly validates the need for more regular, meaningful and open engagement between the WUA and the wider water user community to maintain a locally appropriate, legitimate and feasible institutional DWS service which can facilitate both economic growth and inclusive social development, while also helping to overcome the major social problems of reaching every household with safe DWS.

Conclusions and recommendations

The significant lack of awareness of the WUAs operations, and water users can engage with the WUAs, poses a threat to its technical, financial as well as social sustainability in the long term. Water For People, in conjunction with Blantyre Water Board and the WUAs, will continue to engage water users in open forums to address the areas requiring service improvements. In line with this, and with a view of imbuing results-based performance monitoring within the WUAs, the RSI results will have to be segregated by WUA jurisdiction as one way of isolating high high-performance WUAs from low-performance WUAs; and further foster cross-learning and inform operational improvements. However, more thought has to be made as to how such a performance monitoring system, based on collecting and analyzing data regularly, will be owned, managed and sustained in the long term, without further subvention from NGOs like Water For People.

The current approach for assessing the sustainability of DWS service, by evaluating financial self-sufficiency and decentralized day-to-day management proficiency, is inadequate. Financial self-sufficiency and decentralized day-to-day management are in-ward-looking and do not include the views, opinions or attitudes of the wide water user community the DWS service is aiming to serve. As much as these are crucial to any community-based management system, the deliberate engagement that took place between 2012 and 2014 has demonstrated the importance of understanding the consumer voice and finding ways to “close the loop” in terms of service inadequacy. The community interface forums impacted positively across all performance areas and thus helped improve community perception of the WUA and its place in the landscape of community life which, in the medium term, could help improve social relations. Such positive social relations facilitate long term growth of any service through enhanced social legitimacy and societal acceptance that would be crucial for social settlements for system expansion.

That said, the following research questions are recommended for further study:

- If the social capital is non-existent between a DWS service and the water user community, how will this measurably impact on the sustainability of DWS service?
- How can we weight social aspects in our current assessment methods of sustainability of DWS services as a sector?
- What incentives can be sustainably introduced to encourage DWS services to integrate consumer feedback into their service delivery operational framework?

Overall, the research results, their implication for field/sector practice and the lessons learnt from the experience provide a foundation for the development of a more integrated monitoring framework which takes into consideration the technical, financial, operational and social aspects of sustainability for delegated DWS services and how each of these dimensions, individually and collectively, impacts on long-term sustainability.

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