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**DELIVERING WATER, SANITATION AND HYGIENE SERVICES
IN AN UNCERTAIN ENVIRONMENT**

**Water services delivery as a business:
an approach to sustaining water services in rural areas**

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In Kenya, almost 2/3rd of rural water projects start malfunctioning within 3-5 years of construction. While most of these projects have capacity to generate sufficient revenue to sustain their commercial operation, reliance on voluntary community groups has undermined the potential role of local enterprises and professional firms to keep these projects functional. SNV Netherlands Development Organisation in partnership with Adam Smith International have designed and implemented an approach aimed at delivering rural water services at scale. This approach uses market systems approach, which includes market research, commercial viability analysis, and business modelling as a tool to formalise relationship among the regulator/local government, users group, and commercial operators. While challenging the traditional belief that poor people cannot pay for water fees, this approach has demonstrated business incentives for small private firms in rural areas. This paper highlights various steps involved in the innovation, initial findings of the research and emerging lessons.

Context

The on-going water sector reforms, initiated by the Water Act of 2002, liberalised the water services delivery market in Kenya. As per this Act (MoWI, 2002), the role for water infrastructure (asset development) was entrusted to eight regional Water Services Boards (WSBs). The role for post construction management (O&M) was opened to any service provider (public or private) that could meet the regulatory requirements stipulated in a Services Provision Agreement (SPA) to be signed between the WSBs and the Services Providers (WSPs).

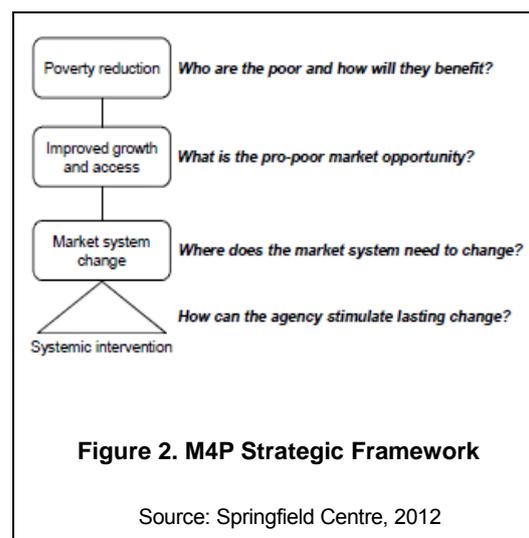
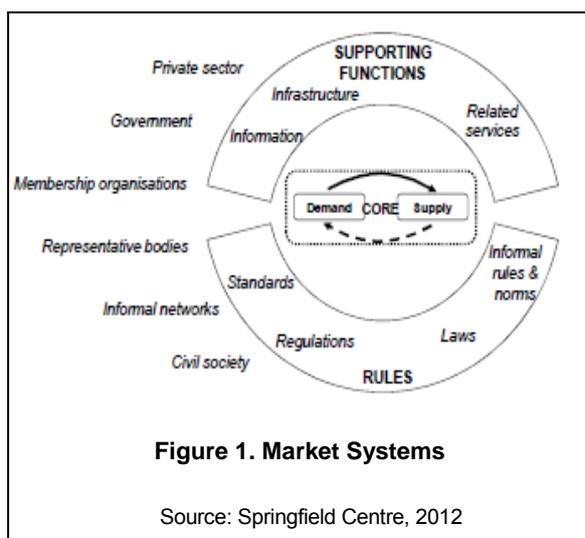
The reforms resulted in huge achievements in urban and peri-urban areas. By 2012, more than 100 WSPs were established and were able to collect revenues at the tune of KSh 11.62 billion (Approx. USD 134 million) annually (WASREB, 2012). However, this model did not work well in rural areas, where the schemes are generally small and serving low population density areas, leading to almost 1/3rd of rural water systems dysfunctional at any given time and almost 2/3rd start malfunctioning within 3-5 years of construction (SNV, 2010). For instance, in the two WSB areas, Lake Victoria North (LVN) and Lake Victoria South (LVS), it is estimated that there are almost 800 small water systems managed by voluntary water committees, who have not signed a formal SPA with the WSBs. These water committees lack professional management capacities and business orientation. In most cases, when there is pump breakdown, or an electrical or treatment plant failure, there is no financing mechanism to undertake repair and maintenance within a reasonably short time. As a result, poor people are forced to travel very long distances to collect water from unsafe rivers or lakes. Most of the rural water supply projects are abandoned when there is a breakdown; communities then approach NGOs or donors for new schemes. This situation is a representative of the entire country; as per the census of 2010, 63.1% of rural population in Kenya is relying on unsafe water (KNBS, 2010).

The Kenya Market Assistance Programme (MAP), implemented by SNV Netherlands Development Organisation in partnership with Adam Smith International and Kenya Markets Trust, has introduced a pro-poor market development approach, with the overall objective of improving the livelihoods of the local population by professionalising management of water services and by bringing private sector firms as and

when possible. This paper highlights the approach of the programme, initial findings of the market research and emerging lessons.

The approach: making markets work for the poor (M4P)

The M4P approach to poverty reduction is based on the belief that poor people are part of market systems and they can improve their livelihoods when such market systems are aligned to their contexts and capabilities. The approach further believes that any sector or sub-sector can be seen as a market system, where the effectiveness of the CORE business within the sector is very much shaped by the framework set up by the RULES and associated SUPPORTING FUNCTIONS, as illustrated in Figure 1.



The approach uses a strategic framework, as shown in Figure 2, for understanding the poor, their contexts, and their opportunities in the market. Once the market potential is understood, systemic constraints in the market are identified and relevant interventions designed and implemented to unlock those constraints so that the sector performance can be enhanced, which in turn would have positive impacts on the net incomes (or savings) of the poor people. The market system framework (Figure 1) is also the reference tool for analysis of the constraints and design of interventions.

The following sections highlight the steps through which the SNV-MAP programme has translated this M4P concept to improve the sustainability of water services in rural Kenya.

Understanding the poor and their contexts

SNV-MAP used household survey to understand the social and economic context of the project area, initially focusing on 31 potentially commercially viable water systems (short-listed using various criteria). The questionnaires were used on the consumers of water from the project area. A systematic random sampling method was used to select the samples for administering the household questionnaires, with a sample size of twenty households and institutions covered by each water system. In addition, some qualitative information was collected through observation and group discussions with the water management committees and consumers. Quantitative data collected was analysed using Statistical Package for Social Sciences while qualitative data was synthesized and summarized into various major themes. The communities were mobilized on time and they cooperated in the socio-economic survey.

Understanding the market opportunities to improve service delivery

Rural water sub-sector analysis was done to understand potential market opportunities for the poor in the two WSB areas. The lack of access to safe, reliable, and affordable water within a short distance was found to be one of the main contributing factors to poverty in the region. People have to walk long distances to collect water, therefore losing valuable time of up to three hours (per household per day) on average. Secondly, the use of poor quality water increases incidences of water borne diseases, resulting in high

medical bills and ‘down-time’, affecting negatively on the general productivity of the households as well as on school attendance especially for the girl children.

By improving access to safe, reliable and affordable water at a convenient source (within a short walking distance), poor people could improve their productivity and minimize expenditures on medical bills. Several technicians such as masons, plumbers, local enterprises would be able to make their livelihoods through employment if all these water systems are managed professionally and commercially.

Identifying the constraints in the market system

A market research was undertaken to understand the challenges of up-scaling efficient/commercial management models for water projects in the areas. The following key constraints were identified as the factors hindering the access of underserved and un-served people to adequate, safe, reliable, and convenient sources. Firstly, the mechanisms and overall operating environment i.e. legal and regulatory framework required to incentivise efficient operations of the rural water systems are not aligned properly. The development and signing of SPAs, as envisaged by the Water Act 2002 has turned out to be a more complex process for very small WSPs than originally envisaged. Secondly, even though rural households value access to quality water, they are used to subsidised delivery mechanism, and this had undermined the need for consumers to pay additional to use quality water. Thirdly, lack of performance based incentives and the lowest return on investment in the water sector compared to other businesses has resulted in very weak participation of private sector in the water services delivery. The availability of subsidies (for public utilities) was another reason why private providers could not develop their business.

Stimulating the lasting change

To address the identified systemic constraints, SNV–MAP has designed and been implementing the following key strategic interventions.

- Commercial viability analysis and assessment of business opportunities: The key objective of this step is twofold, i) to assess the viability of commercial businesses in the sector, and ii) to show that there is enough business opportunity for commercial/private firms in rural water services sub-sector. Detailed findings of this step are discussed in the next section.
- Business strategy support to potential water projects: This step includes the entire process of economic analysis and developing tools and instruments necessary to engage private or commercial firms or WSPs in the sector. Once the commercial WSPs are engaged, their professional management capacity is further strengthened and key SUPPORTING FUNCTIONS are aligned. These first two steps are very crucial as they determine the viability of the entire concept.
- Policy advocacy and support: This intervention is aimed at aligning the RULES (policy and regulatory environment) so that private entrepreneur’s confidence level can be enhanced. This intervention covers the issue of commercial water tariff, targeting of subsidies to those who cannot afford, and development of various instruments for the engagement of private/commercial sector. SNV-MAP has been working with the Ministry of Water and Irrigation, regulator and the Public Private Partnership unit within the Ministry of Finance to improve policy and regulatory environment. An informal advisory group has been established with the membership of WSP/World Bank, Embassy of the Kingdom of the Netherlands, IFC, GIZ, and SNV to support this process. To attract commercial financing to the viable water systems, SNV-MAP is leveraging on the USAID/FIRM and WSP supported K-Rep Bank programmes, and working closely with USAID on aligning their Development Credit Authority (DCA) to the water sector; a DCA of US\$ 5m is earmarked to the water sector through Kenya Commercial Bank.
- Institutional development and organisational support to WSBs and local governments: This is one of the key interventions, which aims at empowering local authorities with skills, tools, and set of behaviours that are key to drive commercial and efficient water management models. SNV-MAP has been supporting two WSBs in the entire process through evidence generation, training, workshops, and joint analysis of the issues, opportunities, solutions, and business models.
- Business strategy support to WASH consumer products: This intervention is yet to take full shape, the key objectives are to develop retail networks of WASH consumer products so that the poor people residing in relatively inaccessible rural areas are able to get safe water in the short term, and their willingness to invest on quality water is gradually developed.

Key findings and emerging lessons

Initial findings and emerging lessons of SNV-MAP programme show that consumers are willing to engage a private entrepreneur to manage the community water systems, indicating that there is a huge business opportunity for private entrepreneurs in rural water services sub-sector.

Economic analysis (revenue trends, revenue collection efficiency, expenditure trends, breakeven points, tariff analysis etc.) of potential business models show that more than 50% of the water systems have opportunity for immediate commercialisation; whereas other 50% will be potentially viable after putting some investments for rehabilitation and expansion of the services to underserved areas (SNV, 2012). On the top of the RULES and adequate SUPPORTING FUNCTIONS, the key drivers for changing the current practice and professionalization of rural water service delivery are identified.

Key drivers for change

Following sections highlight as the key drivers for commercialisation of rural water services in Kenya based on the initial findings of the research (ibid).

- **Governance challenges:** One of the very interesting findings from the analysis is that poor governance and mismanagement of the revenue is a key reason why people would hesitate to pay for water bills. 52% of respondents in LVSWSB area stated that mismanagement/misappropriation of funds would discourage them from paying for water services, compared to 69% in LVN-WSB.
- **Water quality and incidence of water borne diseases:** The incidence of water borne diseases, which varied from 95% to 10%, within the project areas was another key factor that would motivate people to change their current practices. In the research area, 84% of those who depend on river water believe it is unsafe; 74% and 63% of well water and rainwater users respectively believe their water is unsafe, while 78% of those who depend on piped individual connections believe they consume safe water. 45% of the consumers from LVS and 42% from LVN boil their drinking water, 40% in LVS and 49% in LVN chlorinate, 3% in LVS and 1% in LVN use alum for water treatment. These findings indicate that that improved water services through piped network and quality assurance would help drive professionalization and private sector participation.
- **Time spent in water collection:** The research also showed that most of the people who are relying on river or a spring source spend more than an hour to reach to the water source each time. Opportunity to save time and engage in productive activities was another driver for the consumers.
- **Technical problems in the current water systems:** In the two WSB areas combined, 73% of the respondents stated that they had experienced interruptions in water supply; major reason for water supply interruptions are attributed to pipe bursts. Others being drought and localized communal conflicts. Consumers value timely response to such technical defects.
- **Unmet market demand for improved water services:** The Constitution of Kenya 2010 recognises access to safe and reliable drinking water at an affordable price as basic human rights. Nonetheless, only 54% of the population under LVS and 29% under LVN are currently served by the 31 water systems used for this analysis, showing that there is a huge gap in terms of coverage of drinking water services in rural areas.

Willingness and ability to pay for improved services

From the above findings, it is clear that there is huge opportunity for professionalising management of rural water services delivery in Kenya. Another key success factor for commercial operation is the consumers' willingness and ability to pay for improved water services. The research findings indicated that 74% of the respondents are paying their water bills as expected and all are willing to pay commercial water tariff. Similarly, it was found that the main sources of income for the households include farming, local retail businesses, formal employment and casual labour; and that each household has an average monthly income of KSh. 10,854 (Approx. USD 126) and KSh. 12,945 (Approx. USD 150) respectively, for LVS & LVN WSB area (ibid). This level of income shows that most consumers in the 31 water project areas are capable of paying for improved commercial water services.

The current low coverage combined with the affordability and willingness to pay commercial fees as seen above, indicates that there is a huge business opportunity for private sector in improving rural water services in Kenya.

Limitations of this study

- The study findings though indicated that there is a huge opportunity for private sector participation in rural water services, it is important to note that the conclusions are drawn on the findings of the analysis

of 31 water projects. The difficulty in accessing reliable data on revenue, expenditure, diseases, subsidies (in the form of materials, chemicals, payment of electricity bills etc.), and coverage trends might have contributed to some inaccuracies.

Conclusions and the way forward

Application of market principles can help improve overall sustainability of rural water service delivery. It is important to understand and address underlying systemic constraints if we want to commercialise and professionalise the management of rural water systems. This, however, would require a strategic market development approach, where both the RULES and the SUPPORTING functions are aligned to create business incentives for the private sector. Such strategic process involves analysis of willingness and ability to pay by consumers for better services, economic analysis, and business strategy development, among others.

Following to the positive outcomes of the first phase, SNV-MAP team is supporting WSBs in development of various business models for attracting private entrepreneurs. Four possible models of private sector engagement, including lease contract, service contract, private operator, and professional manager are being elaborated. Business modelling and contracting of private sector using a competitive and transparent process is another crucial step to claim that this approach is working. Though it is too early to predict the nature of the majority of the entrepreneurs, initial research findings show that a wide range of actors are interested to manage water systems. Some examples being the petrol pump owners, pharmacies, private consultancy firms, retired employees/Engineers, motor workshop owners among others. Yearly income of such entrepreneurs varied from USD 15,000 to 2m. Further research findings and lessons will be documented and shared in the second half of 2013.

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