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Public-Private Partnership approach towards enhancing water accessibility in Busia Municipality, Kenya

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Abstract

Access to safe drinking water remains a challenge for most developing countries including Kenya, which is already classified as water-scarce. To enhance water supply to consumers, the Government of Kenya enacted the Water Act 2002 that opened the door for private sector to partner with the government to revitalize water service delivery. As a result, the government has partnered with the private sector and civil society organizations to enhance access to safe drinking water and sanitation services with a special focus on the materially-dispossessed households. However, the partnership is faced with challenges including inadequate resources and poor working relationship between the public and private sector. This paper assesses the impact of the partnership approach in scaling up water service provision in order to enhance its access by poor households. Household survey and key informants interviews were the main data collection methods and the collected data was analysed using descriptive statistics. The study found out that Public-Private Partnership (PPP) approach has enhanced water accessibility in Busia Municipality since the majority of households (84.4%) can access water within a distance less than one kilometre, however, the residents' complaint of high water bills attributed to the private sector involvement.

Key words: access, agency, cooperation, principal, water service delivery

INTRODUCTION

Water is an essential resource for all aspects of human enterprise: agricultural, industrial and domestic. This makes access to clean water an important factor in the attainment of Kenya's Vision 2030. The United Nation [UN] General Assembly, in 2010, recognizes water and sanitation as a human right thus providing additional political impetus towards the ultimate goal of providing everyone with access to these vital services (World Health Organization [WHO] 2012). Further, access to safe drinking water and improved sanitation services as enshrined in the Constitution of Kenya, Article 43 [1d] have been considered as a human rights (Government of Kenya [GOK] 2010). Despite this, majority of the population do not have access to potable water and improved sanitation. For instance, water supply in Busia Municipality is characterized by low levels of access as well as poor service delivery. As a result, the Municipality has been experiencing uncontrolled sinking of wells and tapping of underground water whose quality is unknown, further there is also poor sewage system and lack of designated dumpsites which pauses environmental hazard to the residents of Busia Municipality. Therefore, the challenge of providing basic water and sanitation services persists even after the Water Act 2002 that came into effect more than ten years ago.

Despite the strong advocacy for partnership approach in service delivery of public utilities especially water services, very little empirical research has been undertaken on its impact in the

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water sector (Republic of Kenya [ROK] 2002, 2003 and 2007). Little is known about how Public-Private Partnership (PPP) approach has contributed in enhancing domestic water accessibility. Although there has been an overall decline in the number of large-scale contracts awarded to international private sector companies since 2001, PPPs, particularly through the local and national private sector, are still active in the water sector and serving an increasing percentage of the population (Marin 2009). Recently there is an emerging shift in approaches to PPPs in the water and sanitation, requiring new approaches to contacts, regulation, financing and stakeholder engagement (Anderson & Janssens 2011). Jamatia (2003) reported that the main achievement of adopting PPP in water and sanitation is the trust that is developed between the customers, the government sector and the private operator, which allows a better service to be provided to all. Further a financial model developed by Owen (2013) and applied in Wales has largely been able to minimizing customer tariffs and improving customer service and environmental sustainability under PPP, while lowering the cost of financing these operations. Moreover PPP contract structures should permit more transparency during the project planning process and preserve the flexibility of governments to control key planning tasks such as user fees, service coordination and facility expansion (Matti & Naeem 2012).

In this paper, the aim was to address this gap by focusing on contributions of PPP approach in enhancing water accessibility in Busia Municipality and identify the challenges facing the use of the approach. The issue of PPP approach in providing water services raises many questions which include and not limited to: can this collaboration approach run more efficiently and feasible in water supply? Is PPP approach a panacea for water problems in Busia Municipality? It is on this basis that the study seeks to assess the contribution of PPP approach in enhancing water supply services.

METHODOLOGY

Study area

Busia municipality is located in Busia District one of the seven districts found in Busia County with an area of 673.6 km^2. The settlement patterns in the district vary with dense population in the town centre of Mjini and parts of Mayenje sub-location with population density of 4,062 persons per km^2 (Busia District Development Plan, 2009). There is linear settlement along the roads and water bodies to access social amenities. In the township there are slum areas around Marachii estate on the border of Kenya and Uganda. The study targeted 8,558 urban household water consumers as per 2009 population census results in Busia Municipality since they had essential information on the study.

Methods

The research methods used in this study included household surveys using questionnaires, documentary research, interviews and focus group discussions. It was important to establish water sources commonly used by household, whether PPP approach has enhanced water accessibility, and socio-economic characteristics of the respondents. Using a preset questionnaire, a survey of randomly selected 199 households from a range of socio-economic backgrounds was carried out. The questionnaire were design to find out the contribution of PPP approach in enhancing water accessibility; and challenges facing PPP approach in service delivery. Busia Municipality located in the western part of Kenya was stratified based on administrative boundaries; socio-economic status and water availability, and used for selection of households which were included in the survey, with a random sample of households chosen from areas of different income levels and with a low connection rate

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to the official water supply network. Descriptive data analyses were employed (frequencies distribution; percentages; pie-charts and graphs) to analyze collected data from the field.

Theoretical framework

The study was guided by principal agent theory which is defined as an economic theory of cooperation with respect to the utilization of scarce resource (water for the current study) in a world where externalities and imperfect information prevails (Grossman & Oliver 1983; Elisenhardt 1989). The starting point of the theory is an agency relationship which is characterized by one part the agent acting on behalf of another party the principal. This arrangement results in inefficiencies in the system arising from misalignment of the agents' interest with those of principals and from the costs of monitoring the agents (McAfee 2002).

The rationale for agency relationship is specific information and skills advantage of the agent with regard to the task to be carried. Therefore, the analysis of the transfer of provision of water to private sector was based on principal agency theory framework. This theoretical choice can be justified on the ground that the principal agency theory addresses the issues of delegation and the resulting problems of controls. Thus it promises to identify instruments and structures to manage shared accountability between the levels of the partnership.

Conceptual framework

The conceptual framework of the study was based on partnership concept in provision of services. The concept recognizes collaboration or cooperation of partners in provision of public utilities whereby the public sector that is the government and private sector work collectively to supply water services to the urban residents (Figure 1).

This cooperation results in improved service delivery in terms of regular water flows, fair billing, reduced leakages, easy access of water, and clean and safe water. For this to be achieved, the organization has to work as a system and interact with environment rather than in isolation.

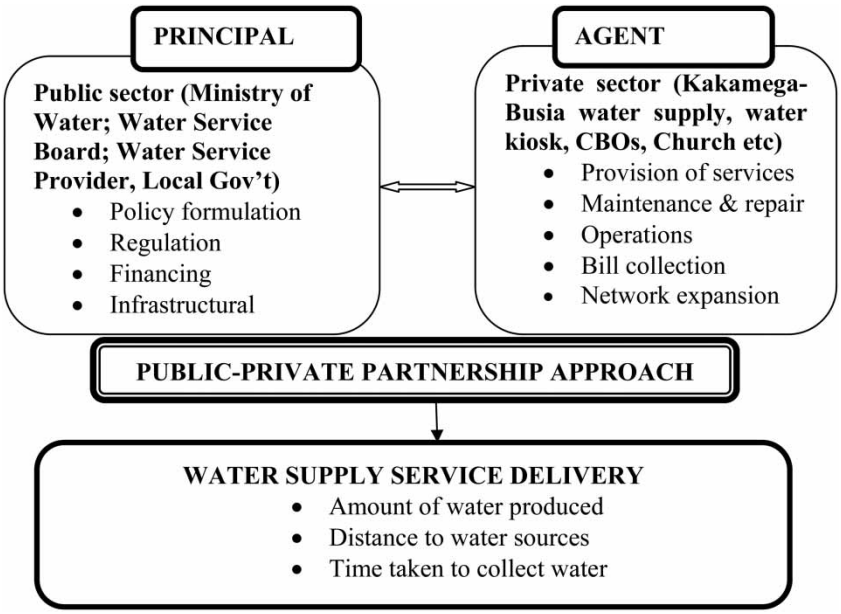

Figure 1 | Conceptual framework of the study.

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RESULTS AND DISCUSSION

The driving force of adopting PPP approach in water sector was to improve accessibility to improved water and sanitation services. In this study, this objective was measured by looking at the following variables: water sources, distance to water points from the household before and after PPP approach, time taken to collect one round trip of water from source, opinion on appropriateness of PPP approach in water sector, garbage collection, water supply problem and rating of municipal sewerage services.

Household water sources

When 199 randomly sampled respondents were asked from which water source they do collect water for their domestic use, they gave various sources ranging from a single source to multiple sources. Results indicate that 21.6% of the respondents reported that piped water was their main source of water; 21.1% use water from protected well, 13.6% said that they use borehole water, while 10.1% use water from kiosks and 6.5% get their water from the river. However, some reported to use more than one water source, 8.5% reported to get water from both protected well and water kiosks, 8% from both borehole and water kiosks, 5.5% from both piped water and borehole, 3% from both piped water and 2% from both river and water kiosks.

The result indicates that the common water source in Busia Municipality is piped water that represents close to one quarter (21.6%) of the households. This also points to a fact that the PPP approach has made water connection process faster hence more residents have access to improved water source since piped source is classified as improved water source according to WHO standard (WHO 2009).

This finding confirms those found out in Congo-Brazzaville that once the private management takes part in water supply operation, water connection becomes faster and improves performance (Gabriel 2005). Those who use multiple sources cited different reasons that force them to have alternative sources. Respondents argued that at times boreholes and protected wells give them dirty water hence forcing them to go for piped water, rationing of piped water, and some thought that water from borehole, protected well and river is unsafe hence they only use it for laundry work and get water from piped source for drinking and cooking. This informs why some households fetch water from different sources. However, it can be revealed that residents of Busia have not explored other alternative waters source especially from rain water harvesting despite the fact that the region more specifically the Municipality receive adequate amount of rainfall throughout the year.

Household distance to water points before and after PPP approach

For the purpose of comparison of water sources coverage for the two conditions, it was important to establish the distance to water source before and after PPP approach was introduced in the water sector, therefore respondents were asked to estimate the distance to water source point before introduction of PPP and the current distance and their response are as illustrated in Figure 2.

From the results in Figure 2, 84.4% of respondents estimated the distance to water source point from households after PPP approach to be less than 1 km as compared to only 8% who estimated the distance to be less than 1 km before PPP approach, which represents a significant increase of 76.4%. This reveals that there had been reductions of the distance residents walk to collect water while 7% estimated the distance in the range of 1–3 km after the PPP approach compared to 46.7% of the respondents before PPP. Prior to the PPP approach 35.7% of the respondents estimated the distance to be between 3–5 km compared to 5.5% after the PPP approach, and 13.6% said the

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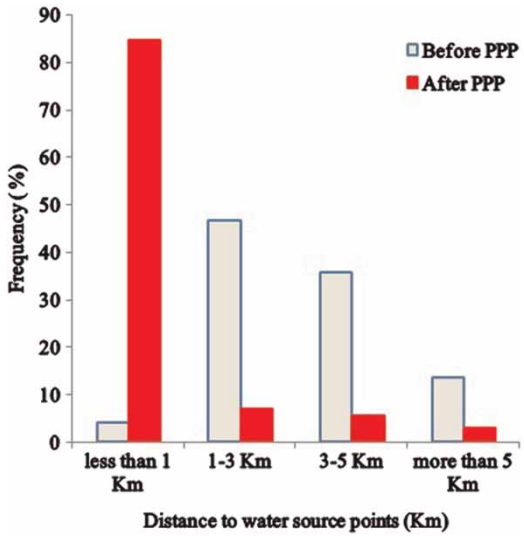

Figure 2 | Household distance to water points before and after PPP approach.

distance was more than 5 km before the PPP approach as compared to only 3% who said the distance is more than 5 km after the PPP approach.

From the results majority (84.4%) of residents are within the international community's recommended distance of less than 1 km walking distance to water source after the PPP intervention. The global assessment criterion has defined 'reasonable access' as the availability of at least 20 litres per person per day from a source within a kilometer from the dwelling (WHO 2000). According to United Nations International Children's Emergency Fund [UNICEF], access to water is defined as having regular access to 20 litres of water per person per day within 1 km of the house from an improved source (WHO 2004). Therefore, the obtained findings reveals that majority (84.4%) of the resident within the Municipality have a reasonable access to water point hence the position that the PPP approach has contributed to enhancing water accessibility in the study area. This finding is in support of views that partnership approach in water sector enhances accessibility and improves quality of service delivery (Naren 2006).

Before PPP approach was initiated, most residents used to walk for one kilometer and above to look for water. However, after the PPP approach was put in place, the distance of access to water reduced drastically as some households managed to secure piped water in places of their residence, while others accessed water from kiosks which are near their places of residence. Furthermore, PPP approach has significantly improved access to quality water as well as effective sanitary services, however there is still more work to be done in order to ensure that the estimated 15.6% resident of the municipality access quality water within a kilometer from their households.

Time taken to fetch water

When respondents were asked to estimate time taken to collect one round trip of water from the source, majority (84.0%) of respondent reported that they took less than one hour (Table 1).

From the results in Table 1, 31.7% of the respondent reported that they take less than 30 min to fetch one round trip of water, 52.3% reported they took 30 min-1 h to fetch one round trip of water, 7% reported they took about 1–2 h while the remaining 9% of the respondent were unable to estimate the time taken to collect one round trip of water.

This results suggests that majority (84%) of the respondents in the Municipality spend less than an hour to collect water. This implies that they are within the international organization recommended standards. These findings are similar to findings in Figure 2 (distance covered to water point) since

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Table 1 | Time taken to collect one round trip of water

Time	Frequency	Percent
Less than 30 min	63	31.7
30 min-1 h	104	52.3
1–2 h	14	7.0
Don't know	18	9.0
Total	199	100.0

majority of the respondents admitted that after the introduction of PPP approach, distance to water point drastically reduced which also affects time taken. The shorter the distance, the lesser time taken to access water. As a result, residents can have enough time to participate in other developmental activities than before PPP approach was initiated because a lot of time was dedicated to accessing quality water services.

Opinion on service improvement by PPP

The introduction of partnership approach in water sector aimed at improving service delivery to customers. When the respondents were asked about service improvement through partnership approach, majority (80.9%) reported that the service has improved while only 19.1% said that the approach had not resulted to any improvement.

The finding indicates that majority of water consumers appreciate that partnership approach has resulted to service improvement especially in network system expansion and reduced water losses. The study established that increment of water kiosks in the municipality; expansion of tap water to the residents in the municipality and expansion of sewer system were among the factors that made majority of the respondents who are residents of the municipality to confirm that PPP approach has improved service delivery. This finding is consistent with the findings that the provision of water services improved under private sector than it could have been under public ownership alone (Okeyo 2011).

Service improvement through PPP approach in water sector

As stated earlier, water service improvement was the core drive of introducing partnership approach in the water sector. Results indicated that water customers highlighted various kinds of service improvements in the water sector since the introduction of partnership approach as illustrated in Figure 3.

From the results in Figure 3, the respondents reported that PPP approach has resulted to reduced water losses. Close to a quarter (26.1%) indicated that the approach had resulted to high water bills; 14.1% reported that it had resulted in network improvement and expansion; 2% reported that the approach had led to improved sanitation services, and only 0.5% reported that it had resulted to water flowing throughout.

However it should be noted that other respondents gave more than one response: 11.6% said that the approach resulted in the improved network, high water bills and reduced water losses; 7% observed that it resulted to improved network expansion, reduced water losses and high water bills; 5.5% said that the approach resulted in improved network, high water bills and frequent checks-up and repair; 3.5% reported that the approach resulted in the improved network expansion and high water bills; and only 1% reported that the approach resulted in improved network expansion and water flow throughout.

This finding, therefore, indicates that majority of the respondents appreciate that PPP approach accounts for the diverse range of improvement ranging from network expansion to reducing water

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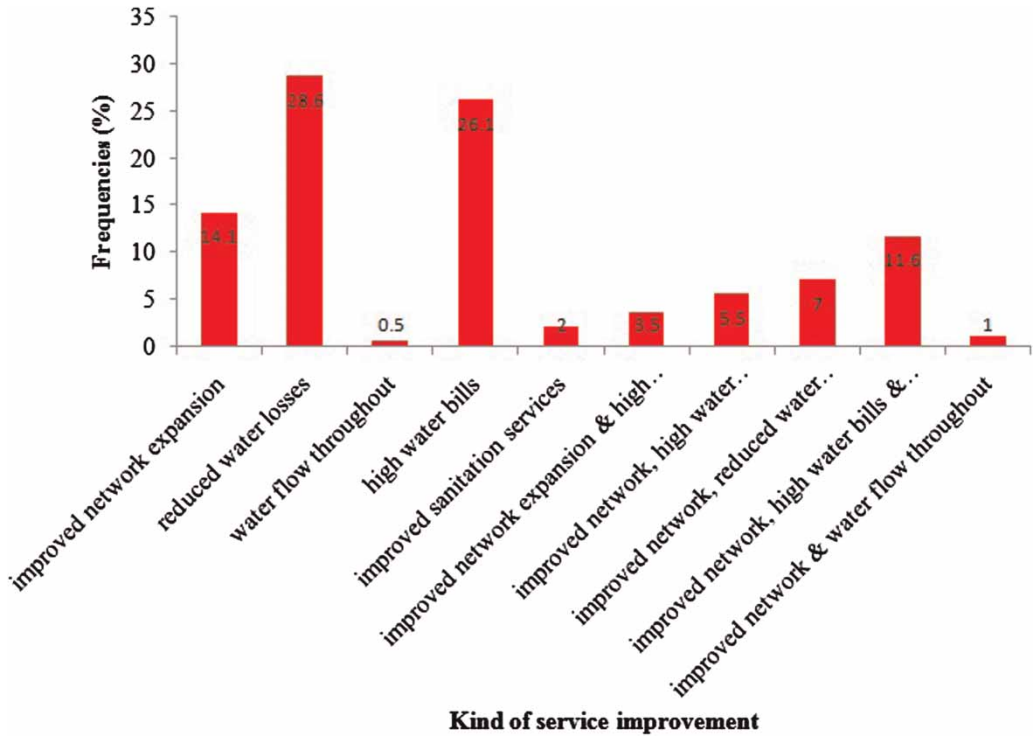

Figure 3 | Service improvement through PPP approach in water sector.

losses. However, they also complain that the approach also resulted to the high water bills consequently affecting its accessibility which compels them to rely on the other alternative water sources which could not be safe (for instance, fetching water from rivers).

Appropriateness of PPP approach in water sector

When respondents were asked if PPP approach was appropriate in provision of water and sanitation services, majority (88.9%) agreed that the approach is appropriate and the remaining small percentage (11.1%) indicated that PPP is not appropriate. Those who agree that the approach is appropriate argued that the approach brings on board all stakeholders in water sector including the consumer in decision making process. They further said that involving private sector in water sector brings in better management skills and financial resources necessary in network expansion. Furthermore, the approach has enabled residents to access quality services that were unavailable before PPP approach was put in place.

The findings of the study are contrary to those who hold that full privatization as a way of reform in the water sector is undesirable and unnecessary (Hukka & Katko 2003). However, those who said no to this approach hold that the invitation of private sector to water sector has resulted to water becoming expensive, making it unaffordable for most households in the Municipality. These findings are consistent with the argument that the manner in which PPPs are carried out reveals that the agenda is commercial rather than service oriented due to an increase in complains on water bills (Collignon & Vezina 2000).

PPP service delivery quality ranking

Households were asked to rank the quality of service delivery in water sector through PPP approach and the obtained results indicate that 39.2% ranked the quality of service delivery as good, 49.7% said the services were fair and 6% ranked services as poor while the remaining 5% had no opinion. As a

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result, almost half of the respondents' ranked the quality of service delivery through PPP approach as fair supporting the earlier indication that the majority held the view that the approach is appropriate (88.9%). This is because looking at the previous records that water services were poorly provided by the public sector that targeted the rich class at the expense of the poor who were majority. Further it was established that the level of water leakages and frequent repair had reduced and increased respectively in most estates. The impact of PPP contract has been quite positive (Gassner *et al.* 2009), since it has provided value for money and has assisted to solve serious problems of coverage and quality of services.

Challenges facing PPP approach in water supply

Interview with the Busia Municipality Engineer revealed that limited awareness and technical capacity to undertake PPP approach in water sector is a serious challenge. The official argued that this resulted in the implementing agencies not satisfactorily addressing the water issues especially concerning demand management. The study further found out that inadequate baseline information, lack of clarity on risk sharing and weakness in the service provision process has contributed to difficulties in getting the approach off the ground.

This finding confirms the views that there exist misunderstandings among stakeholders in water sector as reported in the study about the managing interaction in the informal water markets (Gerryshom & Harald 2012), the case of Kisumu. Therefore, the study noted that there was need for partners to develop a better understanding of the roles of each of the various actors in order to sustain better service delivery. The study further found out that roles and relationship among various government departments and partners is still not well defined, often resulting in conflict and competition over control and autonomy. This finding concurs with that in the study about the failure in services delivery by public-private networks: the case of Flemish childcare in Belgium, that the providers may face conflicting public accountabilities (Diederik & Bram 2011). This was attributed to the absence of a well-constructed law on PPP approach in the water sector.

CONCLUSIONS

In conclusion, the study established that PPP approach has enhanced water accessibility in Busia Municipality, since the distance to water source points is within recommended standard. Majority (84.4%) of the residents have reasonable access to water point which is less than one kilometer as compared to before the PPP approach when they used to walk for long distance looking for water. Further, results from the study indicate that time spend collecting one round trip of water was less than one hour. Therefore, the study concludes that PPP approach has impacted on provision of water services. In addition, the quality of service delivery to the residents of Busia Municipality was fair enough, this is because more than 50% of the respondents ranked the quality of services provided as fair. The major services that have improved since the PPP approach was initiated include: reduction of water losses; improved network expansion; and increase in water production (water flowing throughout). As a result, it was established that PPP was appropriate in the provision of water services. Thus, it is concluded that the PPP approach has enhanced provision of quality services to the residents. However, the study notes that PPP approach faces the following challenges: inadequate baseline information, lack of clarity on risk sharing and weakness in the service provision process. Therefore, the study recommends that there is need for partners to develop a better understanding of the roles of each of the various actors in order to sustain better water service delivery.

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