

THE ROLE OF WATER VENDORS IN WATER SERVICE DELIVERY IN DALA LOCAL GOVERNMENT AREA

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ABSTRACT

The aim of this paper is to assess the role of informal water providers (IWPs) and elicit willingness-to-pay (WTP) for an improved water services in the low-income area of Dala using household/revealed preference surveys. The data for this study were collected from a survey of 218 households using a simple random sampling technique. The Result shows that Retail vendors buy 25 liters of water for an average price of ₦4.00 from wholesale vendors and resale it to households at an average price of ₦ 20.08 and ₦ 14.02 in dry and wet periods respectively. Those vendors who buy from hand-dug wells pay ₦100.00 per day and draw as much as they like within that day. The WTP for in-house connection elicited is ₦ 477.66 which is almost the same amount with the current monthly flat fixed tariff set by Kano State Water Board for the same facility. It was found out that water supply can be a business with an active role being played by the private sector even in low income communities. It is recommended that Water Vendors be formally recognized in form of Public Private Participation so that technical and financial support is given from Government and thus their activities and charges would be properly regulated.

KEYWORDS: Water vendor, Willingness-to-pay, Retail vendor, Water supply, Low income

INTRODUCTION

Water is the resource that sustains all life on earth and is a key element of sustainable development. It is essential if human beings are to enjoy healthy and safe lives or realized social or economic development (Kataoka, 2002).

Reliable access to safe water of sufficient quantity continues to be one of the major problems for many people in Nigeria. To cover these water availability gaps in many cities, alternative suppliers now exist such as Non-State Providers (NSPs) or Informal Water Providers (IWPs), commonly known as water vendors. Water vendors are persons or organizations selling water to households or at collection points. Vendors may carry water for sale directly to the consumers by tanker trucks, wheel barrows /trolleys or donkey carts (McGranahan et al., 2006; NIS, 2007). Also, Conan (2003) refers to water vendors as Small Scale Independent Private Water Providers (SSIPWP) and McGranahan et al. (2006) refers to them as Small Water Enterprises (SWE). In contrast, McGranahan et al. (2006) includes both bottled and pre-packed water as a category of vended water. But in the context of this research, water vending does not include bottled or packaged water or water sold through vending machines. Although water vending is more common and involves a greater diversity of distribution in developing countries, it also occurs in developed countries in form of water vending machine widely used in UK and US.

Some studies exist on the role of water vendors in providing water in many parts of the world (e.g. Snell, 1998; Whittington et al., 1990 and Debomy, 2000). But however there is little work on the role of vendors in this part of the world. In

fact due to inadequate supply of pipe-borne water, many people have been sourcing their daily water need from water vendors. Thus, the main objective of this paper is to assess the activities of water vendors in the study area and investigate peoples' maximum willingness-to-pay for in-house connection. Water vendors were selected randomly and interviewed on how they carry out their activities.

STUDY AREA

Dala Local Government Area constitutes the study area which lies between latitudes 12°25' N to 12°40' N and longitudes 8°35' E to 8°45' E of Greenwich Meridian and occupying an area of 19 km². It is the second most populated local government area in Kano with an estimated population of 418,759 people as recorded in 2006 census. The study area was divided into wards (already there are 11 wards in Dala L.G.) namely; Adakawa, Bakin-Ruwa, Dala, Dogon-Nama, Gwammaja, Gobirawa, Yalwa, Kabuwaya, Kofar-Mazugal, Kofar-ruwa and Madigawa (see Fig.1). There is an area in Gobirawa called *Duniyar Yan Garuwa* (meaning; Water vendors' world) where most of them stay to carry out their activities because of the higher concentration of private commercialized boreholes and hand-dug wells.

METHODOLOGY

A reconnaissance survey of *Duniyar Yan Garuwa* was carried out to be familiar with the personals that operate hand-dug wells or boreholes and the water vendors. The fieldwork involved structured interview and Focus Group Discussions (FGDs) with the wholesale and retail vendors.



Plate 1 Typical Gidan ruwa



Plate 2 Hand-dug well

Technology

The typical water system consists of one or more deep wells with a submersible pump and 5,000 litre Geepee tanks often fixed in the yard on a concrete platform. The tanks range from 2 to more than 6 in some *Gidan ruwa*, but can be less than these in some instances. Taps are connected to the tanks and fixed on the outer wall of the house from where the vendors queue to wait for their turn (where there is a fence,

otherwise just on the platforms) as can be seen in Plate 1. In some *Gidan ruwa* underground storage tank with an average size of 2.5 x 2.5 x 3 metres is constructed within the yard. The interior is plastered with cement. An opening of one-meter square is kept at the top where water is drawn from the reservoir (see plate 3). In some places 33,000 liter tank is used to store water and sell to costumers instead of Geepee tanks as can be seen in Plate 4.



Plate 3 Underground storage tank



Plate 4 33,000 liter tank storage

Price of vended water

None of the water vendors had any agreement with the KNSWB to sell water, KNSWB confirmed this. It means that the activities of water vendors are not being monitored by Government or any agency. The pricing of water by vendors have no fixing body or established basis and is generally left to the individual vendor. The vendors, however, respond to two elements; the demand for water at any given time and the distance between the water source and destinations. In periods of water shortages the rates are higher than at ordinary times. The retail water vendors pay ₦3 - ₦5 per each jerry can (₦60 per 12 jerry can carter). In case of the hand-dug wells each

well has an average of 4 vendors on daily basis that pay a fixed rate of ₦100, and thereafter he can draw water as much as he can. Therefore, each well has a fixed rate of ₦400 every day. The maintenance of the well is carried out by the owner to ensure continuity. Costumers also complain of arbitrary changes in the price of water by the vendors especially during shortages of water (this is for the consumers that are closer and those that are far away from the water sources).

Figure 1 and 2 give the prices of vended water in dry and wet season in the study area.

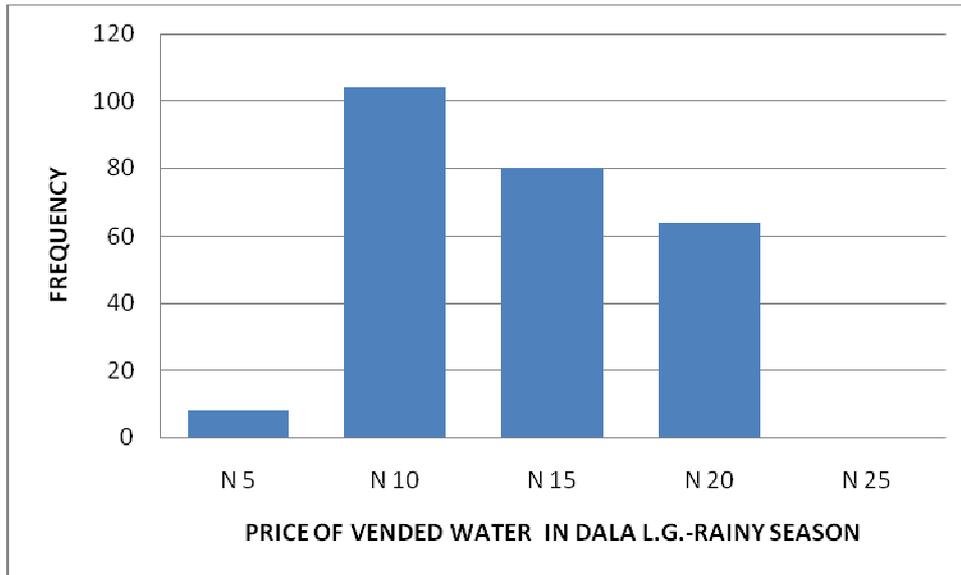


Fig.1 Price of vended water during wet season

The average price of vended water during dry season is ₦20.08 with a standard deviation of 4.97. The lowest price is ₦10 within 100m (in places like Gobirawa) and the highest is ₦30 (which is the peak) in the core areas around

Kabuwaya and Kantudu. This is because of the proximity or otherwise from the water source. It can be said that the distance of the water source is proportional to the price of the water.

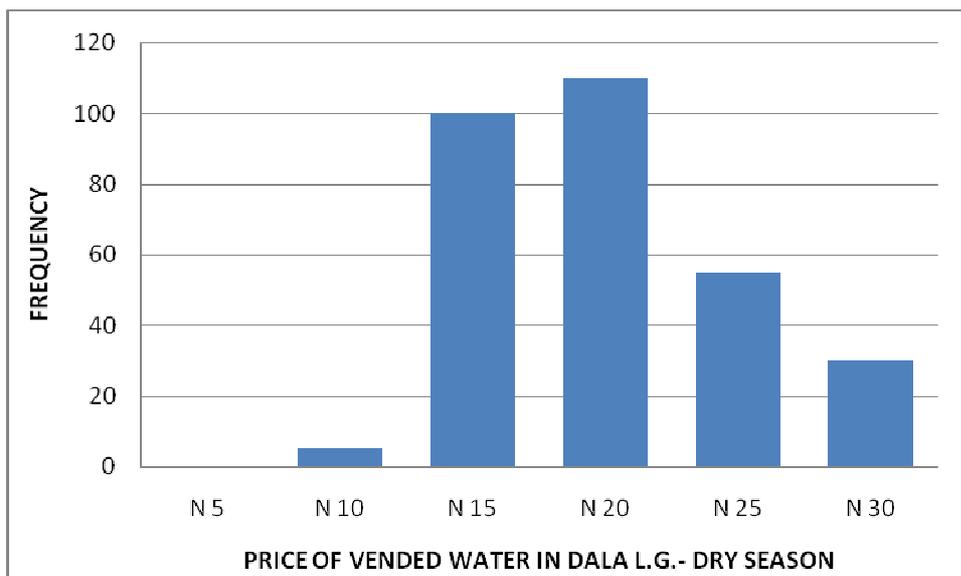


Fig.2 Price of vended water during dry season

The average price of vended water during rainy season is ₦14.02 with a standard deviation of 4.2. The lowest price is ₦5 within 100m (or ₦ 20 for 3 jerry cans in places like Dandinshe) and the highest is ₦20 (which is the peak) in the core areas around Madabo and Kabuwaya. The price is low because during rainy season households have enough water they get when the rain fell and so the demand will be low and so is the price.

Coverage

The water vending system in Dala L.G. remains a major means of potable water supply accounting to over 60% of the total water used according to the survey, providing about 8.3 million liters per day (MLD). This compares well with findings by Whittington *et al.*, (1991) that in Nigeria, the private water vending system supplies 66% (2.96 of 4.46 Million Galloon per Day) of the water consumed daily in the dry season.

Water vendors earn 96% (\$28,000 of \$29,100) of the revenues (Abdullah, 1999; Okiaga, 2007). The consumers, nevertheless, have problems with the waiting time of more than 2 hours which they consider very long and in some places you have to travel a distance of more than 500m before getting the water vendor.

Sustainability of Water vending in Dala L.G.

The business of water vending will continue to grow as long as there is lack of supply or intermittent supply from Kano State Water Board. Also, the rapid increase in population in Dala

(2.38% rate in 2007 estimates) is an indication that the market potential for this system is assured. Another point is that the individual/household-based nature of the water vending system presents a simple process devoid of unnecessary institutional complexities. The entire relationship between the consumers and the vendors is based on pure economic relationship of demand and supply and once the suppliers continue to satisfy the customers, this system is assured of its sustainability.

Table 1 Monthly tariff amounts respondents are WTP in Dala L.G.

Monthly Rate (₦)	Frequency (f)	%(f)	Cumulative (f) %
100 or less	36	14.63	14.63
101 - 200	24	9.76	24.30
201 - 300	32	13.01	37.71
301 - 400	16	6.50	43.81
401 - 500	92	37.98	81.79
501 - 600	36	14.61	96.40
601 or above	10	4.07	100.5
	24	100.5	100.5

Source: Field Survey July-Oct., 2009

Willingness-to-Pay (WTP) for Improved Water Supply

The above table shows the amounts of money respondents are willing to pay for private in-house water connection. Respondents were offered only one water supply option i.e. private connection from Kano State Water Board to determine the maximum Willingness-To-Pay. This is because during the pilot study and Focus Group Discussions, it seems to be the only feasible option that the people are happy with. Most of the boreholes constructed by politicians as constituency projects have failed because of poor management. No spring or river that can be used as an option (protected stream) in the study area. 88% of the respondents said they will like to used the option and contribute something towards its construction, only 12% said they would not like this option and would not like to pay anything. Those People who want to pay expressed the view that they are currently willing to pay an average of ₦477.66 which is almost the same as the present tariff paid to KNSWB (S.D. = 358.06) for a regular uninterrupted piped water supply to their areas. The higher standard deviation indicates much difference in the amounts respondents stated they are WTP for. Although the amounts that the respondents indicated WTP reflect their monthly incomes, these amounts are still lower than what they spend on vended water. KNSWB collects ₦500 for house with no soak away and ₦800 for the houses with soak away. Some of the responses indicate unwillingness to pay any amount while others indicate to pay large sums of money. 14.63% indicated they are willing to pay ₦100 or

less, the amount they are WTP is very low because they normally fetch water from public boreholes and they have small households, so the money they spend on water is minimal. Also, low-income households buy as little as they must and only after having exhausted all the free sources, such as water from wells and boreholes. Mostly adults and children spend a lot of time queuing to fetch water as it can be seen in the plate 5 below and therefore their WTP for water is very low. Moreover, they perceive water to be social goods that must be provided by Authorities. Only 4.07% are WTP for above ₦ 600, this could be due to the level of their income and the distance of the water sources.

CONCLUSION

Water shortage in the study area is as a result of inadequate supply from Kano State Water Board, this lead to the reliance of people on other means of obtaining water for daily requirements. Consequently, there is the proliferation of water vendors. Water vendors accounted for more than 60% of the water supplied in Dala L.G. They use handcart to deliver water they buy either from *Gidan ruwa* or hand dug-wells to their customers. The activities of both wholesale and retail vendors are not monitored by the authority. The willingness-to-pay surveys show that people are willing to pay the present tariff set by the Kano State Water Board. Another significant finding of this study pertains to the nature of the demand for vended water in Dala L.G. It shows that a market for vended water exists even during rainy season (28%).



Plate 5 children and adults on queue



Plate 5 vendors waiting for their turns

The water vending business is generally demand driven. Though water vendors are sometimes accused of supplying water at high prices, they do so in direct response to consumer demand and willingness to pay. The price charged by vendors also strongly depends on the ease or

difficulty by which vendors can get water close to their customers. It recommended that people's perception of water supply as a social service shall be improved through enlightening and educating to develop a more commercial culture towards the supply of water for sustainability

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