

## **Examining the Benefits of Lake Kenyatta Water Users Association (LAKWA) Water Kiosks Project to Women**

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### **Abstract**

This research focused on examining examine the benefits that women's have realised from the implementation of Lake Kenyatta Water Users Association (LAKWA) water kiosks for supplying water to households in Mpeketoni Lamu County, Kenya. The research used mixed-method design in which quantitative and qualitative methods were used to collect and analyse data. Data was collected using open and closed-ended questionnaires. They were administered using questionnaires. The research had 200 respondents comprising of 100 women from the rural settlements and 100 women in Mpeketoni division of Lamu County in Kenya. Data were analysed using descriptive statistics were used to summarise data and compare the results between rural versus urban women and large families versus small families in the research area. According to this research, it's evident that the majority of respondents have a positive perception with large families seeing more benefits of LAKWA kiosks than small families, especially for domestic uses. These are common expectation since the quantity of water raised by large families is higher than the small families. It's in their perception that the situation remains the same in the next 10 to 20 years. It was evident from this research that, women are satisfied with the design aspects of the LAKWA water kiosks. I suggest further research on the ways of including women perceptions in water management planning to improve the water intake and efficiency of LAKWA water system and indeed other water stakeholders in ensuring that it meets the objectives of sustainable development goals and vision 2030 on water and sanitation.

**Key terms:** Lakwa, Households, Mpeketoni Lamu, water kiosks project

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## **Introduction**

Water accessibility is gendered (Kiganda, 2017). Girls walk long distances to fetch water in the early morning. After such an arduous chore, they may arrive late and tired at school. Being 'needed at home' is a significant reason why children, especially girls from low-income families, drop out of school. Providing water closer to communities leads to increased girls' time for school attendance. When water is fetched from a long distance, it means that either she will go to school late, tired or fail to attend.

On the other hand, the absence of clean water and sanitation may lead to increased risk of opportunistic infections and diarrheal diseases among people living with HIV and AIDS. In Kenya, women and girls account for 62.3 Percent of all HIV infections in 2016 (World Bank, 2016). In many cases, this same population is also the caregivers of chronically sick family members. Improving access to water and sanitation is an essential issue since it will reduce the chances of HIV/AIDS patients from getting opportunistic infections (Makali, 2016). With better access to water and sanitation facilities, the burden on women and girls at the household level is reduced and so able to engage on other social, economic activities.

Women are neither involved nor consulted in the management and planning of water resources despite the fact that they play key role in the household water supply management

This means that the prioritisation of water accessibility is not factored. In sub-Saharan Africa, women produce up to 80 per cent of basic foodstuffs, yet they have the least access to the means of production ("Gender: Food security," n.d.), (FAO, 2018). There is evidence to show that water and sanitation services are generally more effective if women take an active role in the various stages involved in setting them up, starting with lay out, operation framework all through to the actualization of the project.

This situation is not different in Lamu County where women have been confined at the household level chores and so water management is not gendered. All decision and policy formulation at the grassroots has not factored the opinion of girls and women. Women participation means, women and girls are active in community projects that focus on health, water, food security, conservation and can access health services, proper nutrition, increased household activities, good education, they are more productive in social-economic activities and have access to improved sanitation. All these services are influenced to a great extent by access to water. Most of the community members of Pangani are nomadic, and so the girls and women have more burdens when there is water insecurity due to their cultural traditions. They are left to walk long distances in search of water, exposing them to many physical and sexual threats, especially with the outbursts and attacks of terror groups, rape, food production, social chores etc.

While they are great agents of economic growth, they have not been able to maximise their potentials. Apart from the woman focusing on providing water for drinking, there are other things that women feel unsatisfied for not delivering, which contribute to stress levels are going up. Women participation is a key factor in water accessibility since they play a significant role in the fetching of water and ensuring that they have adequate time for a domestic setting, participate in agricultural activities, improved sanitation and participate in other economic activities. Girls also can get enough time to attend school, which improves their knowledge and lives. With inclusive water systems management, it enables the service provides to supply adequate water not only for domestic use but also irrigation and hygiene. Girls and women bear the burden of disease outbreak out of usage of unclean water which in many cases is worsened by the level of poverty in our communities. The populations are growing, putting the current situation of access to clean portable water into jeopardy. Apart from women education, family health and

family planning services, participatory approaches in the management of water systems should be embraced. Participatory development to improving water accessibility in Lamu County can be a great initiative since it will be able to bring all stakeholders on board and ensure gender issues are factored in to bring equality and equal access of clean portable water in all households.

Lamu County remains to be among the counties with huge water accessibility problems in Kenya despite the water being one of the critical pillars of development and empowerment. The effects of climate change have compounded the situation with the only freshwater lake drying up and leading to boreholes and other water sources becoming saline and efforts of improving water accessibility becoming a considerable challenge to the stakeholders. Investments to improve water supply to households have relied on donor funding to support LAKWA which has invested in boreholes, water treatment and distribution.

However, because of resources constraints, improvements in water supply take the form of a two-tier approach where economically able households receive water via piped water connections. At the same time, those who cannot afford are provided with water via water kiosks. Minimal research has been conducted to investigate the impacts of this economic model on household water security, the impact of water kiosk design principles water accessibility, and perceived sustainability of water kiosk benefits. Moreover, given the requirement that women are required to participate in the management of water distribution infrastructure, largely, water kiosks, there is the paucity of research on how this requirement impacts of water service provision, women livelihoods, and customer satisfaction with services.

#### **LITERATURE REVIEW**

Some of the households in growing countries uses an average of 40-60L of water on a daily basis for preparing food, drinking, body hygiene, washing etc. In order to meet

this requirement women and children visits the water-collection points severally which consumes most of their time. In East African areas with mountains, women waste up to 27 per cent of their calories in collecting water. Many local water sources have been polluted due to the disposal of animal and human waste as well as agricultural runoff. In particular, the dry spell period, rural households usually fetch water from polluted sources

In urban areas, the situation is not necessarily better, and when household cash resources are meagre, it may be worse. For example, in Nairobi, slum dwellers buy water from vendors or collect it from communal water points, which are often highly unsanitary. In Mombasa, more than 60 percent per cent of slum dwellers have no access at all to clean water ((UNICEF, 2018).

In Kumasi, Ghana (just like numerous African cities) water linkages connect numerous families, with inadequate sanitary conditions. The poor families are left with no option but to buy water from their more privileged neighbours who have access to water connections. Overall, in informal settlements in African cities, there is a lot of water pollution. Organic and inorganic wastes are discharged into exposed sewages which in turn threaten human and animal health.

Maintenance of water and sanitation facilities is usually difficult if the systems do not operate throughout the year. In some occasions, to save time, women opt for water sources which are nearer to them even if the water quality is compromised.

In other cases, the financial contributions needed to maintain the system may become too burdensome for communities after donor support has ended, and systems may remain in disrepair for long periods. Lack of local expertise to repair and maintain systems also continues to be a problem, as is the unavailability of spare parts.

Access to safe drinking water is a human right (De Albuquerque, & Roaf, 2012). Lack of water in Wachule and Jidda Woreda in Ethiopia was found to have serious implications on the education of women and girls according to Demie et al., women and girls in developing countries face a tremendous impact on water accessibility even after going for long distances they obtain water which is of poor quality and aesthetic, due to the common use of water source for both man being as well as other domestic animals. Women and girls spend a lot of time looking for drinking water instead of taking part in education and other social-economic activities.

#### **BENEFITS**

Participation of women in development projects can have several benefits. This contributes to the achievement of specific projects objectives of functioning and use of facilities and also to the attainment of a wider development goal. Participation has both direct and indirect benefits to the women themselves.

#### **Health benefits**

Water and sanitation-related diseases are responsible for most of the morbidity and mortality in developing countries. Findings from research done in Ethiopia and Zimbabwe indicated how water-related diseases were high purely because of poor accessibility to improved water sources. The use of more water of improved quality and safe methods of excreta disposal, adequate personal hygiene, and food hygiene by all members of the community can lead to a significant reduction in these diseases. These measures can also decrease the economic cost of these diseases and their treatment for individual households and governments considerably, and reduce the human suffering associated with them. Women play a key role in this process because traditionally, they manage domestic water use and household hygiene, educate and care for young children, provide health care in their household and often also in their community, and make decisions on use, and to some extent maintenance, of water supply and sanitation facilities.

#### **Project benefits**

Their traditional roles are the obvious rationale for the involvement of women in the introduction of improvements to water supply and sanitation and in concurrent arrangements for operation, maintenance and health education. The literature reviewed indicated that many cases of rejection and problems in the functioning and use could be explained, either partly or fully, by insufficient attention to the traditional roles and positions of women, and that the women have had sound reasons for non-use of facilities.

On the other hand, there are many accounts of specific contributions of women resulting in indirect benefits to the projects and communities. As prime beneficiaries, they have promoted the interest and willingness of men to contribute to improving water supplies and installation of latrines. Other projects have benefited from their knowledge of local socio-cultural and environmental circumstances, including the identification of reliable water sources of acceptable quality and accessibility; reduction in construction costs by having shorter line tracks, thus enabling more communities to be served with the material available; adaptation of the design of equipment for improved operation and use; and socially acceptable arrangements for sharing facilities.

Although awareness is increasing that participation in rural water supply and sanitation is more than merely the contribution of voluntary labour, the notion of self-help construction being equivalent to community involvement still persists.

This type of engagement benefits the residents in that, when they get organised, they save on the capital cost specifically in gravity schemes. The organization has reversed their savings by providing an extra tap for the users in places with public facilities.

In areas with house connections, contributions in kind have reduced the connection cost so that at the time of

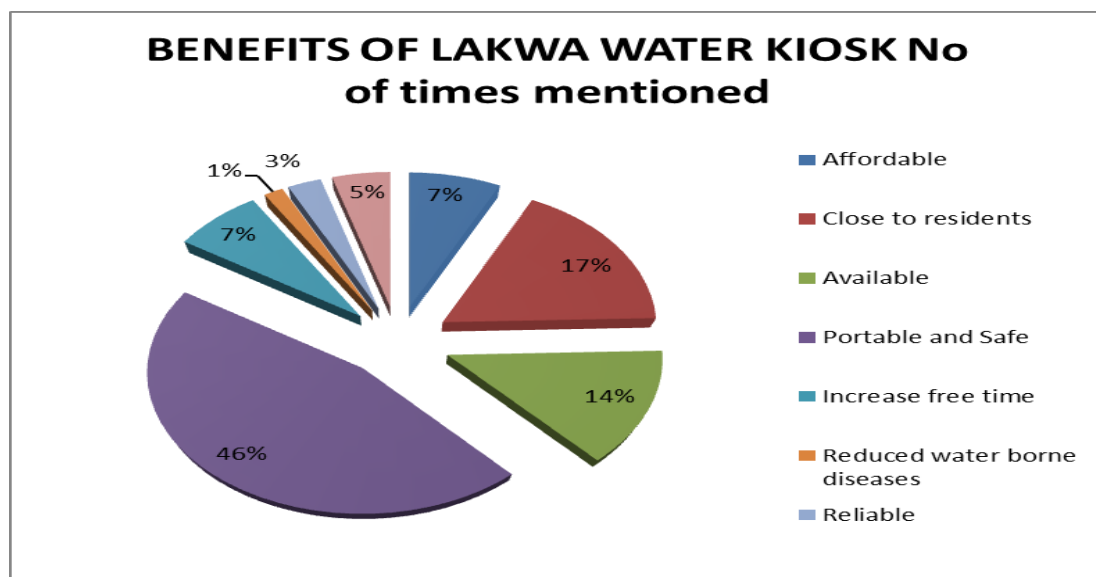
installation, more households could participate in the project. However, increased coverage has not necessarily resulted in access to all, and this form of participation in itself does not guarantee that facilities will be maintained. This depends more on a joint agreement between agency and community, both men and women, that a particular improvement is wanted; is within the capability of the community to maintain, with additional institutional support and training where necessary; and that the design and location of facilities meet the needs of the users. An important issue emerging from the literature review is that the traditional skills and knowledge of women can benefit water supply and sanitation projects.

The value of their knowledge of local planning has already been discussed. Women have also made well-reasoned selections of community workers, such as members of local committees and candidates for training in health education and maintenance. Often, the women selected are older women heads of the household because of their greater freedom of movement. Other reasons for preferring these

women, as community workers, are their need for an interest in part-time work which can be integrated with their household tasks, and their greater job motivation. Other, more subtle criteria may also play a role. The main point is that when asked to select suitable community workers, women can make use of inside knowledge not necessarily available to the agency.

### RESULTS

Results from the open-ended questions showed that majority of the respondents cited portability and safety of LAKWA water, 46 per cent, cited safety and portability of LAKWA water as the biggest benefits. This is a great observation from the community as it meets the threshold for agenda four. They also cited the closeness of the LAKWA water kiosks to the community as a second-most benefit, mentioned 46 (23 %). Looking at the research by Gedo and Morshed (2013) inadequate accessibility as a cause of water inadequacy, this is contrary to their findings.



Benefits of LAKWA'S Water Kiosks

**Table 1**

Benefits associated with relying on LAKWA's Water Kiosks as sources of water	Family Size	Agree	Neither agree nor disagree	Disagree
a) <b>Improved</b> quality of drinking water for my household	Small	7 %	3 %	90 %
	Large	7 %	19 %	74 %
b) <b>Reduced</b> amount of money spent on buying water	Small	28 %	12 %	60 %
	Large	39%	3 %	58 %
c) <b>Reduced</b> amount of time spent collecting water	Small	19 %	5 %	76 %
	Large	24 %	5 %	71 %
d) <b>Increased</b> availability of water for washing utensils	Small	25 %	9 %	66 %
	Large	47 %	3 %	50 %
e) <b>Increased</b> availability of water for bathing	Small	25 %	8 %	67 %
	Large	45 %	4 %	51 %
f) <b>Increased</b> availability of water for washing clothes	Small	28 %	6 %	66 %
	Large	45 %	4 %	41 %
g) <b>Increased</b> availability of water for watering vegetables	Small	50 %	8 %	42 %
	Large	65 %	1 %	34 %
h) <b>Increased</b> availability of water for watering livestock	Small	38 %	9 %	53 %
	Large	53 %	8 %	39 %
i) <b>Reduced reliance</b> on other water sources	Small	36 %	8 %	56 %
	Large	48 %	8 %	44 %
j) <b>The increased time</b> my children spent reading, playing, doing school work	Small	26 %	21 %	53 %
	Large	46 %	16 %	38 %
k) <b>Reduction in the number</b> of waterborne illness, typhoid, diarrhoea	Small	45 %	27 %	28 %
	Large	56 %	19 %	25 %

(Source: Field data 2018)

When asked about the benefits of relying on LAKWA water, 14/21 uses, respondents disagreed in the benefits. Taking into account key resource areas in community development, quality, cost, time and availability, the majority of respondents, both small and large families, disagreed that LAKWA met expectations.

On the quality of drinking water, majority of small families, 91 per cent, disagreed that LAKWA water had improved its quality while a majority of large families, 74 per cent,

equally disagreed that it improved their lives. When we talk of vision 2030 and agenda four on improving the lives of citizens, this will not be realised if we lack to improve the quality of drinking water.

When asked about the reduction of the cost of water, majority of the respondents, 60 per cent of small families and 58 per cent of the large families disagreed that LAKWA water helped them save money spent on the water. This is an indicator that, these people may look for alternative

sources of water, exposing them to poor hygiene and health hazards.

On the time reduction to fetch water, majority of the respondents, 76 per cent of the small families and 71 per cent of the large families disagreed that LAKWA water reduced the time. When time is wasted while fetching water, it means that the funds for undertaking development activities are reduced. When asked about the availability of water for washing utensils, majority of the small families, 66 per cent, disagreed that they benefited from LAKWA water. This is another perception that women have in Mpeketoni location of Lamu County, Kenya.

Most of the women identified LAKWA water portability as the biggest benefit with the kiosks closeness to the residents being the second biggest benefit. It was very strongly agreed by both women in the rural and urban without children that, the benefits are the same.

Majority of small families, 67 per cent, completely disagreed that, LAKWA water increased availability of water for bathing while the majority of the large families, 51 per cent, also disagreed that it increased availability of water for bathing. Majority of the small families, 66 per cent, completely disagree that availability of LAKWA water improved water for washing clothes while the majority of large families, 45 per cent, agree that they have enough water for laundry work.

Majority of the small families, 50 per cent, completely agree that they use LAKWA water for watering vegetables with a majority of the large families, 65 per cent, also agreeing that they have readily available water for watering their vegetables. Majority of the small families, 53 per cent, disagree that the LAKWA water increased available water for their livestock while a majority of the large families, 53 per cent, agree that, they had benefitted from LAKWA water for their livestock.

Most of the small families, 56 per cent, completely disagree that with LAKWA water being available; it did not reduce their reliance on other sources of water while a majority of the large families, 48 per cent, agrees that they reduced their reliance on other sources of water. This clearly shows that most of these small families do not use LAKWA water for domestic uses. They still use other sources of water, including boreholes and shallow wells which put them into risks of waterborne diseases. Looking at the time saved for using LAKWA water, majority of small families, 53 per cent, do not agree that they save any time. While the majority of large families, 46 per cent agree that their children have more time to do other duties and responsibilities.

On the reduction of waterborne diseases, the majority of the small families, 45 per cent, agrees that they see it as a benefit from using LAKWA water. Equally, the majority of the large families, 56 per cent, agree that they benefitted by reducing waterborne diseases.

Whereas LAKWA is packaged to bring household water solutions to the community in Lamu county, majority of the small communities do not agree and or view LAKWA as such, and this compounds the water crisis that requires a solution. Majority of the large family partly agree and thus gives an indication of the large families being more in need of portable clean water. The burden of water is more felt in the large families who have even reduced the use of other sources of water for domestic uses like washing clothes, watering of livestock and watering of vegetables.

## **DISCUSSION**

### **Women's perceptions of water kiosk benefits and sustainability**

When asked about the reliance of other sources of water apart from LAKWA water kiosks, the majority said that they used community wells as a source of water compared to hand pumps, private wells, and water vendors.

Women in this area have very gloomy perception at the moment. Majority of the respondents said that the

situation in the next 10 to twenty years would either remain the same or decline. Majority of them said that the situation would remain the same in regard to the availability of water, number of water kiosks, frequency of breakdowns and the price of water. They also said that there would be a decrease in conflicts in relation to water queues. There was deferred opinion between the small and large families, especially when asked about the reliability of water supply where the majority of small families said that it shall remain the same while the large families said it will increase and also when asked about their opinion on the number of households relying on LAKWA water in the next 10 to 20 years from now, majority of the small families said that it would remain the same while a majority of the large families said that it would increase. Majority of the respondents both in the small and large families said that there would be a decrease in conflicts over queues at the LAKWA water kiosks. ☐

#### **CONCLUSION AND RECOMMENDATION**

Women perceptions in domestic water uses and issues are very important in any society and initiative. LAKWA water system success depends mainly on women perceptions and feelings. Climatic perceptions and adaptations measures need to put into consideration the perceptions of women. Droughts have become a major concern across the globe with professionals looking for ways to address it due to numerous challenges it causes to water flow and availability. These challenges are different from one geographical area to another, depending on the local perceptions and adaptation mechanisms. Water access and supply in Kenya, poor service delivery and inconsistent water supply is a major concern in many settlements with

droughts, community perceptions and water scarcity exacerbating the situation. ☐

According to this research, it's evident that the majority of respondents have a positive perception with large families seeing more benefits of LAKWA kiosks than small families, especially for domestic uses. These are common expectation since the quantity of water raised by large families is higher than the small families. It's in their perception that the situation remains the same in the next 10 to 20 years. Once the conflicts reduce and the quality of LAKWA water improves, they seem not worried about the distance to water kiosks (Gedo & Morshed, 2013).

It is equally evident from this research that, women are satisfied with the design aspects of the LAKWA water kiosks. Base on the results of this research findings, we suggest further research on the following area; Ways of including women perceptions in water management planning to improve the water intake and efficiency of LAKWA water system. Whereas these areas are key to reassuring the consumers/ users, it's important for the future strategy of LAKWA and indeed other water stakeholders in ensuring that it meets the objectives of sustainable development goals and vision 2030 on water and sanitation. ☐

How can the distances and round time be reduced to ensure that people responsible for collecting water are able to engage in other gainful activities to improve their economic activities? This is one way, or another will increase the economic ability. ☐

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