

SIURC

BEYOND THE NETWORKED CITY

Policy Brief no.1: Access to Water in Portee-Rokupa Informal Settlement



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Beyond the Networked City is a 3-year research project funded by the Economic and Social Research Council, on behalf of the Global Challenges Research Fund. The vision for our research is to improve the delivery of water, sanitation, and energy services to poor and marginalised communities by developing and testing a hybrid economy model of on-grid and off-grid systems in Freetown, Sierra Leone and Kampala, Uganda.

This brief No. 1 has been produced by Sierra Leone Urban Research Centre in order to provide insights on the state of water access in Portee-Rokupa, a coastal informal settlement in Freetown. It also aims to identify the challenges related to water access and to support policy and interventions to address these challenges.

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Contents of this Policy Brief:

I. Introduction	2
Methods	2
Profile of Case Study area: Portee-Rokupa	2
II. Findings	3
Drinking Water Access and Usage	3
Cost of Drinking Water	3
Water for Domestic Uses	4
Barriers to Access Water	4
Strategies to Access Water	5
Safety Concerns	6
Interventions	7
III. Conclusion	7

I. Introduction

Freetown faces acute water challenges particularly in informal settlements which have limited connection to the municipal water grid. With the growing climate crisis and the limited infrastructures for water supply, the city faces huge challenges to maintain equitable and sustained supply of water. Poor access to water has been shaped by multiple factors, key among which is the weak and crumbling infrastructures to supply water to the growing number of city residents. The municipal grid system operated by the Guma Valley Water Company was set up at independence in 1961 to provide water for the Freetown municipality, but the population of the city has increased rapidly in the last six decades. Over the period, regulatory provisions such as the 2017 Guma Valley Water Company Act has increased the company's mandate to supply water to the entire western area, beyond the initial mandate of supplying only the city residents. These administrative and regulatory factors, coupled with the weak financial capacities to keep up with maintenance and running costs have made it difficult for effective water supply in Freetown and the Western Area.

Rapid deforestation of water catchment areas for housing development has also made the situation much worse.

With this constant water crisis, residents of informal settlements are often the ones facing the brunt of the crisis. Beyond these challenges, planning processes within the city have tended to exclude residents of informal settlements which means that they are likely to not only face acute challenges with access to water, but other critical services linked to wellbeing such as health, and sanitation. In this study, we focused on access to water, perceptions of safety and strategies employed to retain access to water in Portee-Rokupa. This brief No. 1 has been produced to provide insights on the state of water access challenges in Portee-Rokupa and to support policy and interventions to address these challenges.

Methods

We conducted mixed methods research involving 385 household surveys, 6 focus group discussions with community residents, comprising landlords and tenants from formal and informal sections of Portee-Rokupa.

We also conducted 25 key informant interviews with community stakeholders, community and municipal service providers, and institutional stakeholders.



Figure 1: The coastal settlement of Portee- Rokupa. Photo credit: Amadu Labor, SLURC.

Profile of Case Study area: Portee-Rokupa

Portee-Rokupa is a sea front settlement located in the east of Freetown, the capital of Sierra Leone. It is approximately 10 km from the city center and shares borders with Grass field to the west, Congo water to the east, Kuntolo to the south and the Rokel river to the north of the Rokel estuary. The geographic features of the settlement consist of sandy soil and rocky slopes, and it is a vibrant fishing community.

Politically, the settlement is situated within two separate wards (Portee in Ward 355 and Rokupa in Ward 354) divided by the wharf (Jetty). The estimated population of the settlement is 34,502 comprising the formal and informal sections. A 2015 estimate by YMCA indicated that there are over 6,000 residents living in the poorest section of the community, which is often described as informal (YMCA and CODOHSAPA, 2015).

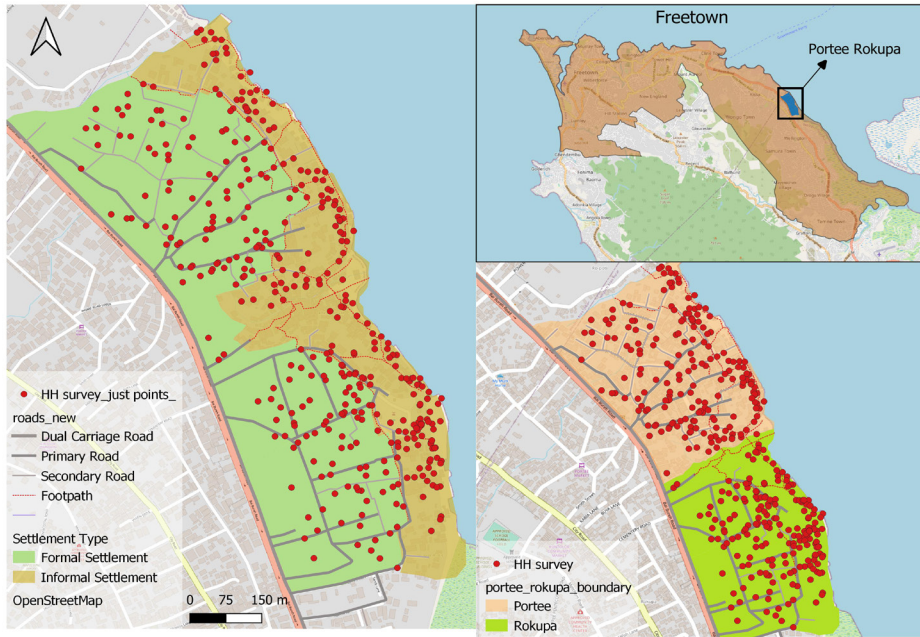


Figure 2: Maps of Portee-Rokupa

Left: Showing the formal & informal sections. Top Right: Location in Freetown. Bottom Right: Showing Portee & Rokupa sections.

Credit: Ansumana Tarawally, SLURC.

II. Findings

Drinking Water Access and Usage

In Portee-Rokupa, residents use different sources of water for drinking, and these include sachet water, piped water, boreholes, protected wells and other sources such as rainwater harvesting. While the entire community is considered as informal, sections within the community are classified as formal and informal, to highlight income, housing and service access gaps. In the formal parts for example, many residents have access to piped water, but most (82.1%) prefer sachet water due to safety concerns. As such, only 7.2% of the formal residents prefer to use piped water. When it comes to the informal sections however, there are very limited connections to the municipal water grid, which limits access to drinking water. While most residents of the informal section of Portee-Rokupa trust in the quality of piped water, access is very limited. Only 4.8% of residents have access to piped water which comes at huge personal costs such as out of pocket payment and travelling to formal parts of the community and beyond to access drinking water. Because of these access barriers to piped water, 85.8% of residents in the informal part, use sachet water for drinking. Using sachet water for many households adds to the financial burden of many households in the informal parts of Portee-Rokupa. Figure 3 below shows the access situation and usage described above.

Cost of Drinking Water

Sachet Water: The costs of drinking water in Portee-Rokupa are high and often unstable. For the sachet water, prices are likely to increase during the dry season due to increase in production cost, and the drying up of

other sources such as boreholes and protected wells. We observed that price increases for sachet water were higher in the informal parts than in the formal areas due to road access challenges. Participants stated that vendors selling within the non-motorable informal sections increase the cost of water to cover the cost of transporting water to their doorsteps.

Piped Water: Price differences exist for piped water between residents of the formal and informal sections of the community. This is based mainly on nearness to the water sources and social relationships. For example, since residents of the formal parts live near areas where piped water sources are installed, they are more likely to buy water at lower costs from their neighbours and relations than those coming from afar. Figures 4 and 5 show price variations for sachet and piped water in formal and informal sections of Portee-Rokupa based on seasonal differences.

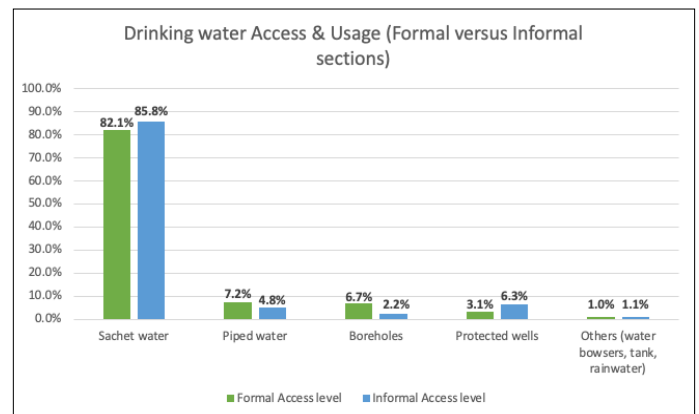


Figure 3: Drinking water usage and access in formal and informal sections of Portee-Rokupa

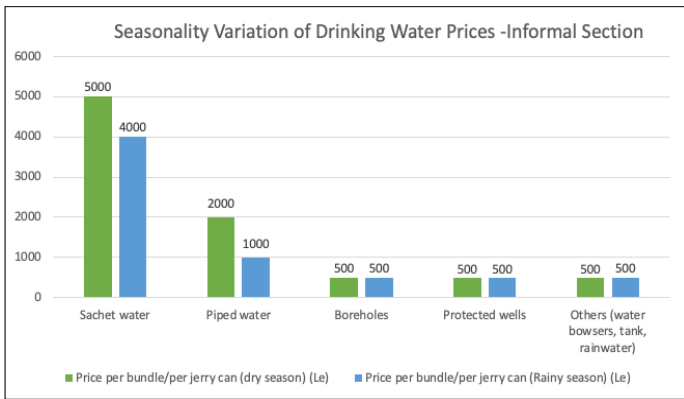


Figure 4: Seasonal variation of drinking water prices in the informal sections

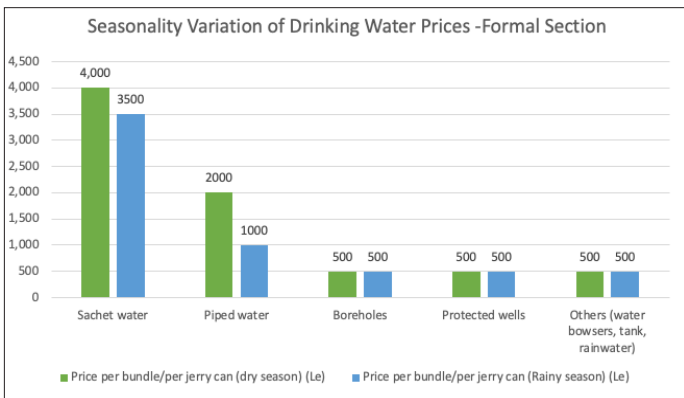


Figure 5: Seasonal variation of drinking water prices in the formal sections

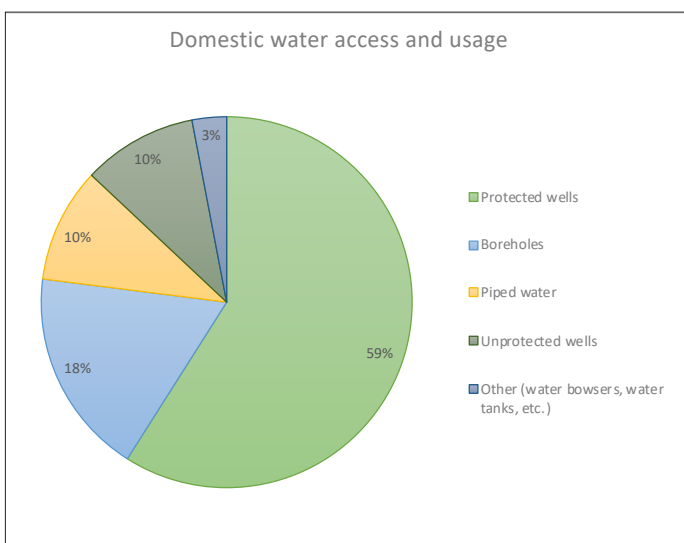


Figure 6: Domestic water Access & Usage

Water for Domestic Uses

Residents use different sources of water for domestic purposes (see Figure 6). Most residents in both formal and informal sections (59%) use protected wells as primary source for domestic use, while 18% use boreholes. Piped water and unprotected wells were in limited use for domestic purposes and both stand at 10% respectively. A very limited number of residents (3%) use other sources of water supplied from water bowzers and water tanks. Domestic water sources are used for cooking, laundry, bathing and household cleaning. Across the community, protected wells were preferred because they have protective cover and are properly maintained by owners or caretakers.

Barriers to Access Water

Through our qualitative studies, participants expressed concerns about barriers to access water. For the piped water, the most common barriers included damaged pipes, high cost of connection to the grid water, and irregular supply of water. For well water sources, long queues and saltiness of the water were the main concerns. We have arranged these responses based on the two water sources mentioned above. Table 1 below outlines the key concerns from residents and quotes from participants. The table also shows that piped water is accessed more by residents of the formal section of Portee-Rokupa, while wells are accessed more by residents of the informal section.



Figure7: Protected well at Portee-Rokupa. Photo credit: Amadu Labor, SLURC.

Table 1: Water access barriers

Water source	Settlement type	Key concerns	Quotes
Tap water	Formal	Water pipes damaged by vehicles and people trying to access water	<i>"Most of our water pipes are damaged by vehicles and people cutting them at night to fetch water, without fixing it back. Wastewater and running surface affect the supply of water."</i> (FGD-Landlords formal)
	Formal	High cost of connection	<i>"I don't have [a] piped water connection because [the] cost of the connection is high and the materials to do the connection are also very expensive. I can't afford that amount of money."</i> (FGD-Landlord-formal)
	Formal	Irregular supply of water	<i>"There is regular shortage of piped water supply within the community and so, the street taps and even private taps are always closed during the dry season."</i> (FGD-Female tenant-formal)
	Informal	Distance	<i>"Our challenges are with the distance our women and children [have] to cover to fetch water. Sometimes the children go to school late, and some children absent themselves from school for that day."</i> (FGD-Male tenants-informal)
Well water	Informal	Long queues	<i>"The queuing at the tap is one of my challenges, and the amount we pay to access water is high."</i> (FGD- Female tenants-informal)
	Informal	Water is salty	<i>"The water from [the] majority of the wells is not good for drinking. The water is salty, and some wells are not properly taken care of. Some are constructed near drainages that flood during the rainy season and contaminate the water. When children drink from it, they experience diarrhoea."</i> (FGD-Landlord-informal)

Strategies to Access Water

Due to the water access challenges, residents or households employ clever strategies to access water. These strategies are discussed as follows:

Rising very early to start the queue: Residents wanting to avoid queues rise early to join or start the queue. To let others know they are present, they place a stone in the queue, so they can return home to attend to urgent matters. Despite this, some stay late into the night without receiving water:

"Our challenge is the sleepless night we have, especially during the dry season when the water sources are overcrowded. We wake up very early in the morning and sometimes we stay up late to avoid queues". (FGD-Landlord-informal)

Buying from vendors: Some people purchase water from

vendors often located outside the community. This often comes with other indirect costs such as transportation.

Hiring labourers: This involves paying labourers to fetch water. This also incurs high costs, and the amount of water purchased depends on the size of a household.

Water for water: The phrase "water for water" is well known in Freetown which many people use to simplify the sexual abuse of young women and girls who need access to water by men taking care of this vital resource. This practice is more common in marginalised urban settlements where water resources are very scarce.

"Children get pregnant when going to fetch water outside the community. They are faced with harassment from young boys who ask to help them fetch water and in return ask for sex which is called "water for water". (FGD- Female tenants informal)

Storing excess water: This involves the storage of excess water in jerry cans or drums to be used over several weeks. This strategy works well for people with small household sizes. Large households find it difficult to adjust because of the quantity of water required for use daily.

Double payment (Express): Some people prefer to make double payments to owners of water sources and caretakers to avoid overstaying. Residents refer to this strategy as express because it allows them to get quick access to water.

“As for me, I don’t like to stay too long in the queue. What I do sometimes is to buy space from other people. I also pay more money to the caretaker to grant me access. We call it “Overtake” or “Express” (FGD- Female tenants Informal)

Safety Concerns

From our quantitative surveys, most residents of the Portee-Rokupa community (91.9%) consider sachet water as safe for drinking. Reasons advanced for this were that sachet water is packaged in clean sachets, with limited chances of contamination during transportation and storage. Other reasons for users’ satisfaction were that they consider most of the brands they use as pure.

However, few respondents (8.1%) were concerned about the safety of sachet water because of their experiences with some of the producers. To further explore these safety concerns, we held focus group discussions and key informant interviews to understand the factors driving these safety concerns.

Participants spoke about a range of concerns regarding the safety of sachet water brands used for drinking. These concerns include odour, inadequate purification measures, and hygiene procedures during production. Some participants were also concerned about the use of water from untreated wells in the production of sachet water, while others shared their experiences of finding particles in some of the packages sold by some of the production companies.

“I don’t think the water is safe because we don’t know how the workers in these companies are handling the production materials. Even in the environment where they do their production, we are not sure if it is clean”. (FGD-Male tenants formal)

“Some sachet water are not safe because they produce bad smell; which might be as a result of wrong packaging processes or chemicals used for the inscriptions on the sachet”.(FGD-Female tenants formal)

Table 2: Water safety concerns and strategies to overcome them

Water type	Safety concerns	Strategies to purify
Sachet water	Bad odour during prolonged storage/storing near fuel	Store water on raised platforms such as tables when purchased in large quantities
		Place water in the fridge to control odour
	Use of untreated wells for production	N.A.
	Particles found in sachet water	Allow particles to settle before use
	Bad odour due to inadequate purification measures/procedures	Treating water to ensure the odour is removed
	Chemicals used to inscribe/brand water packages produce bad odour	N.A.
Piped water	Water has particles	Allow water to settle before use
Well water	Water is salty	Store water in the fridge to reduce salty taste
	Water has particles	Allow water to settle before drinking; drink water
		Chlorinate water, boil or filter



Figure 8: Queuing up for water at Portee-Rokupa. Photo credit: Amadu Labor, SLURC.

Interventions

Participants identified priorities to enhance access to water and safety within their communities. This requires investing more in the water infrastructure and to strengthen policy processes that can enhance inclusion and equity in terms of water resource distribution. The priorities for residents of the formal and informal sections were somewhat different based on the ways in which they experience water access and safety challenges.

Formal residents' priorities:

- Installation of more water street taps to ease access to water.
- Monitoring of companies producing sachet water to improve the quality of water.
- Increase the depth of wells to prevent them drying up easily; some wells are shallow.
- Installation of more water tanks and regular refilling of existing ones.
- Regular supply of water from the GVWC.

Informal residents' priorities:

- Extension of water grid to the informal section of Portee-Rokupa to reduce travel time to access water.
- Installation of more boreholes in the informal parts of the community and to reduce pressure on the limited water facilities; most of the boreholes are currently installed at the formal sections.
- Regularly purify wells to make fit for drinking.
- Installation of hand pumps.

III. Conclusion

Access to safe drinking water is one of the major urban development challenges the city of Freetown faces. These challenges have been driven mainly by poor water infrastructure, in addition to financial and spatial barriers to fair distribution of water, particularly in informal settlements. This is exacerbated by policy processes that exclude informal settlements from the municipal water grid system. Thus, the supply of water challenge in the informal settlements is dire, and has severe consequences on sanitation and health outcomes for residents living in these settlements. This needs a coordinated and adequate response from policy actors, community stakeholders and service providers to improve access to safe drinking water.

This brief has been produced to outline the key challenges residents of informal settlements face to access water. It is our hope that this brief will generate conversation among actors having oversight over water supply in Freetown. SLURC and its partners will continue to initiate such engagements through community groups such as the Federation of Urban and Rural Poor (FEDURP), which helps significantly with building a comprehensive understanding of the needs and perceptions of marginalised communities about the quality, adequacy and preferred means of improving services in their settlement. SLURC and its partners will further work with all stakeholders (marginalised urban communities, formal and informal/off-grid service providers, government agencies, and civil society) in order to co-develop options for delivering services that are integrated, inclusive and innovative.

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