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Access to water through the informal water supply system in Luanda, Angola

Introduction

Decades of civil war have forced a large part of the Angolan population to migrate in pursuit of protection in Angola's biggest cities. As a partial result, huge, informal, peri-urban slum areas have emerged around the wealthier city centre of Luanda, the capital of Angola. These squatter settlements lack infrastructure, and only very few people have direct access to piped water. Access to water is, therefore, dominated by the informal water provision system - a system where water trucks collect, transport and sell expensive water to poor people living the slums.

This paper analyzes the informal water supply system in Luanda. It focuses on how the inhabitants are being provided with water, and how the informal water supply system influences access to water by the peri-urban inhabitants. By integrating qualitative methods, it turned out that access to water through the informal water supply system is not only influenced by price and distribution, but also by more underlying structures, such as neighbour relations and social capital.

To sum it up, the study shows that the formal water supply system is preferable, as access to water through this system is less influenced by social networks and contributes to a more stable and equal distribution of the resource. It is argued that the informal water supply system is more complex with many variables that produce inequalities and reduce access to water for Luanda's peri-urban inhabitants.

Background

Hardoy et al. (2001, p. 56) mentions that about 75 % of the population in Luanda (approximately 2.8 million inhabitants) do not have any access to the formal water supply system. These low-income people, living in the peri-urban areas pay between 800 - 8000 times more for water than the people living in the city centre pay. Bairro Paraiso - a neighbourhood with about 15,000 inhabitants (Bambi & Oliveira, 2009) is such an area where people have to pay an expensive price for water. Paraiso is also where the fieldwork was done, and laid the foundation of this paper. The area is a typical peri-urban, poor neighbourhood in Luanda where the informal water supply system is prevalent. The informal water supply system consists of different players in Paraiso - the water truck drivers who transport the water, the owners of the water tanks who store and sell the water, and finally the neighbours who buy and consume the water.

The water trucks in Paraiso usually receive water from a pumping station, located at the Bengo River, approximately 20 kilometres from the city centre. At the station, there are 29 individual pumps that can provide 29 water trucks at the same time, as each and every pump is bringing the water up from the river - filling up the water trucks.



Satellite photo from Google Earth (4.5.2010). Kifangondo filling station is marked on the photo as a relatively huge "parking lot" – in the middle of the photo, attached to the Bengo River.

Once filled, the water is transported directly to the peri-urban areas of Luanda, including Paraiso where it is sold to private households that possess water tanks. These households usually consume the water, while some of it is being sold to other neighbours who do not own or have a tank. The last part of the chain, where the water is sold from private water tanks to other neighbours and households is of relevance, and is where the focus will be in this paper, in order to explain how social networks and capital are influencing access to water.



Satellite photo downloaded from ESRI 23.2.2010. The blue line illustrates the track the water trucks usually use between Kifangondo and Paraiso. Distance: 20, 5 kilometer. Driving time spent: 75 minutes.

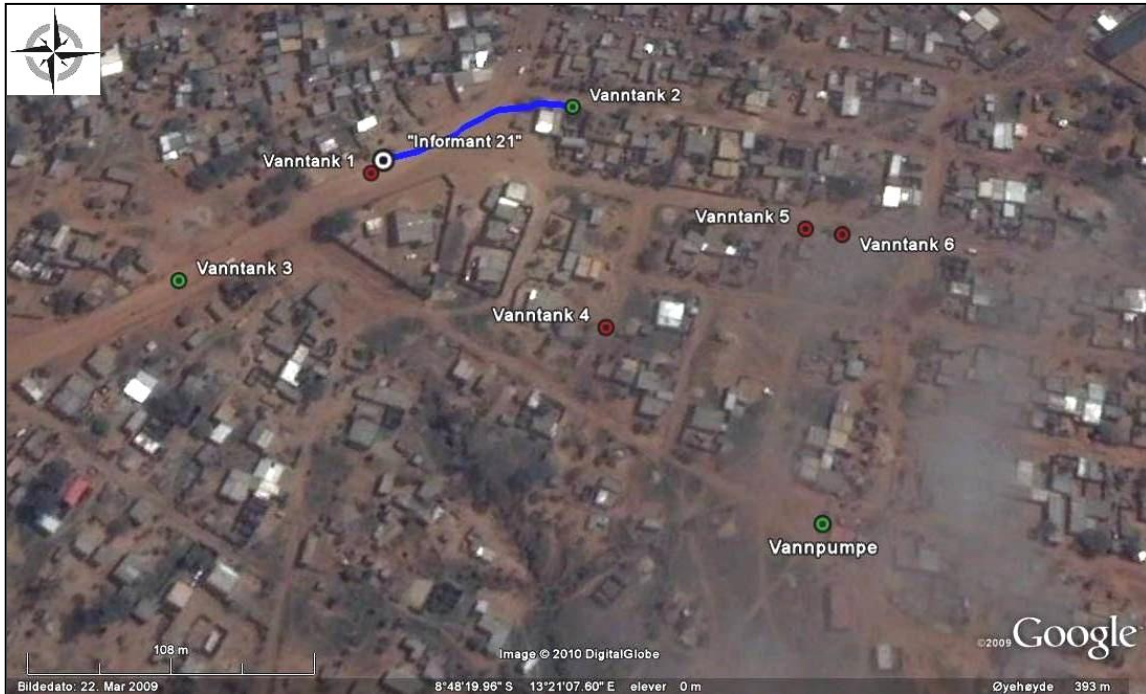
The water landscape of “Informant 21”

The price of water in Paraiso is high, partly owing to an unsustainable transport system. The water trucks have to drive about 20,5 kilometre between Kifangondo and Paraiso to sell water - this takes about 1 hour and 15 minutes, and increases the price of water. Importantly, the high price of water is also influenced by another factor - social relations and networks. I argue that the households that possess a water tank are in a position where they can choose what price and to which neighbours they want to sell the water. The price of water actually varies, depending on the relationship between the owner of the tank and the water buyer. The owner of the water tank are often selling water for a lesser price to someone he/she likes or has established a good relationship with, compared to someone he/she dislikes or has a poor relationship with.

During my fieldwork in Angola, I interviewed three different women in Paraiso. They were responsible for fetching water, and bringing the water back to their households. They also had in common that they needed to buy and collect water from a neighbours' water tank, as they did not have any own tank installed. As a consequence, their access to water was based on the informal water supply system.

All of the three women that I interviewed in Paraiso told me directly or indirectly that they regarded well-established networks and healthy, social relations with neighbours as important for different reasons. I realized that the social network building in Luanda was not only a result of regular socialising, but network building had a rational benefit among the people in Paraiso. By consciously building relations with each others, they claimed that they could receive some advantages in return.

I conducted several interviews with different households in Paraiso during my fieldwork. Among them was “informant 21”. She was a woman in her 20s, living in a house with her husband and children. As a woman, she had the main responsibility to provide her household with water. She told me that the water they bought was expensive, and she usually had to pay about 80 AOA (Angolan Kwanza) for a 20-litre bucket of water from the neighbours' water tank. Each day, she had to fill up about 5 buckets of water, and walk the same numbers of trips between her house and the water tank. This means that her household approximately spend about 100 litres of water a day – which corresponds to about 400 AOA (Angolan Kwanza) a day, or about 12000 AOA (Angolan Kwanza) a month. This is equal to approximately 132 US Dollars a month. “Informant 21” told me that this was a lot of money, as a huge part of their budget went to financing necessary expenses on water.



The photo above illustrates the water landscape of "informant 21". It is possible to observe her house, the different water sources available in her neighbourhood, and the path she used while collecting water. The water sources are marked as red and green "dots". It is easy to notice that "informant 21" could buy and fetch water at several places.

One of the green "dots" named "Vannpumpe" illustrates the only standpipe located within a reasonable distance from her house. The other "dots" named "Vanntank" illustrates different water tanks. Green colour means that the water tank contained water at the time of registration, while red means that the water tank was empty at the time of registration.

Several neighbours were selling water from their private tanks (dots named "Vanntank") - all of them located within a reasonable distance from the house of "Informant 21". She usually had to walk about 10 meters to the nearest neighbour to buy and collect water - at "Vanntank 1". But as this neighbour did not have any water to offer at the time of registration, she had to walk to another neighbour, located about 90 meters further away, marked as "Vanntank 2".

As we can see from this example, the distance to the water points differs from day to day, as it varies among the neighbours who have water at given times. I asked "informant 21" about why she bought relatively expensive water from her neighbours, as she could collect cheaper water at water pump ("Vannpumpe"). She explained that it was not an option, as the water pump was located far away

from their house. Moreover, she knew that there were always a lot of people around it. At the water pump, she could risk having to wait for 3 - 4 hours.

Distance and time was obviously important variables that influenced her choice of water point. As shown at the photo, "informant 21" did not collect water from either tank 1, 4, 5, or 6. Her explanation was because none of these were operational (marked red), and all of them had no water. However, she had two other options - she could fetch water from either tank 2 or tank 3.

A 20-litre jerry-can filled with water from Vanntank 2 had a price of about 80 AOA, while the same amount of water from "Vanntank 3" only had a price of 50 AOA. It is interesting that the woman chose to buy water from tank 2 even as the water was more expensive from this tank, compared with the water from tank 3, especially because the distance between her house and the two tanks was also almost equal. It was about 90 meters walking to water tank 2, and about 100 meters walking to water tank 3. So what influenced her choice of water points - could it be that variables, such as social relations and good neighbourhood relations, influenced her choice?

How can social capital, relations and networks influence access to water?

During my qualitative interview with "informant 21", I was interested in obtaining knowledge about her social relations with her neighbours - and especially in relation to the neighbours from where she bought the water. After a relatively short time, I realized that she had established strong ties and healthy relations with her neighbours. This was both meaningful and important for her household. She explained:

"... It is important to keep a good relationship with the neighbours, because if I have a problem, I can go to the neighbours ..." informant 21".

In other words, "informant 21" told me that it was important to maintain good relations with your neighbours, simply because if you have a problem, you can get help from them. Furthermore, she said:

"... When there is no food, they (the neighbours) help, when we do not have salt, we get salt from the neighbours, and when someone is sick, the neighbours accompany us to the hospital ... neighbours are like a family..." informant 21"

By looking at these quotations it can be noted that the nearby neighbours were important for the woman's household. They supported her family and, if necessary, they assisted with food and other services. My "informant 21" had formed a social network with her neighbours. These social networks had a value,

as she could get help from her neighbours in certain situations when it would be necessary.

It is interesting to note that even the water supply is affected by these social networks and neighbour relations - as "Informant 21" stated: "If the neighbours who sell water do not like you, they will not help you - and they'll let you wait. If the water vendors are engaged in washing clothes, he or she will first finish the laundry, then sell you water".

She added: "On the other hand, if you have a good relationship with the neighbours who sell water, they will immediately help you - even if they were doing the laundry..."

Even more interesting, "informant 21" told me: "...they (the private water vendors) sell a bucket for about 80 - 100 AOA. But if you have a good relationship they give you one extra bucket (for free) ..."

A good relationship with the water vendor means, according to "informant 21", that you are a true customer and know the person well. To sum it up, by interviewing "informant 21", I discovered that good neighbour relations can have a positive impact on the individual's access to water. Or, on the contrary, lack of good neighbour relations can negatively impact and restrict individual access to water in Paraiso.

Theories

Wirth (2010, p. 105) mentions on the basis of a sociological perspective that a city can be defined as a relatively large, dense, and permanent settlement of social and heterogeneous individuals. Cities have historically been melting points between races, people and cultures, and served as favourable breeding areas for new biological and cultural hybrids (Wirth, 2010, p. 107). This heterogeneity reflects differences in a city, and the diversity is a good example illustrating that urban areas contain a wide range of people with different assets. Swyngedouw (2004, p. 9) points out that cities consist of dense networks, interwoven in socio-spatial processes - human, material, natural, discursive, cultural and organic forms. Cities consist of social and complex structures between individuals who live there. For that reason, cities are bodies with large ranges of non-similar people who possess different capital, but are connected in a network. This agrees well with the studies of Cain et al. (2002, p. 18) as it is explained that the peri-urban areas of Luanda have been shaped by human migration from different locations at different times. The city consists of a fragmented society where different groups and people are possessing different power. They all fought to survive in the daily struggle for resources. The individual power level that each person holds is crucial for their access to resources.

Bourdieu mentions that the ability to dominate a room, and especially by acquiring (materially or symbolically) the rare goods (public or private) that are distributed in space depends on capital (Bourdieu and Prieur, 1996, p. 154). In Paraiso, where different people hold different power levels and compete for different resources, their capital is crucial for the extent to which they gain access to the benefits or resources. Water is a resource that only certain groups acquire and have greater control over. The individuals with a higher economic capital have better access to water, compared with other groups with less economic capital. Some individuals in Paraiso do have higher economic capital than others, and in many cases they represent those who have invested in water tanks. The portion of the population who have less economic capital, usually do not have any water tank, and they are kept away from the water resources. Households with own water tanks are having much better access to water compared with those without. They can consume water from their own tanks, they can choose to whom they want to sell water to and at what price they would like to sell the water. It gives this group some kind of power, simply because they own a water tank. In this context, it is interesting to return to Bourdieu's statement claiming that the people who are poor of capital are usually kept away from the social resources that is the rarest (Bourdieu and Prieur, 1996, p. 155). The losers in Paraiso are the individuals who belong to households without a water tank. They are the poor, lacking financial capital, and kept away from the resources - in this case water. They lack direct access to water and rely on others to gain access.

Not all individuals without a water tank, lacking economic capital are in a hopeless situation with little water. Many possess other forms of capital, such as social capital. As mentioned, capital, according to Bourdieu can be economic, social, cultural or symbolic. These four forms of capital can be exchanged with each other - social capital, for example, can be exchanged with economic capital, and capital is thus convertible (Bourdieu, 1986, p. 243). Therefore, if one belongs to a household without a water tank in Paraiso, with reduced access to water and lack of economic capital, one can improve its access to water by actively making use of the social capital and utilizing networks, relationships and good neighbour relations. To state it more precisely, if you have a good relationship with your neighbours who sell water in Paraiso, you will most probably have better access to water. Individuals with reduced economic capital can improve their own water supply if they possess social capital. They can, in other words, take advantage of their social capital, and exchange it with economic capital, because capital is, as Bourdieu explains it, convertible. Social relationships can be exchanged for material goods, such as water. Among the residents of Paraiso there is an unfair distribution of water. The extent to which the individuals have access to water in Paraiso is determined by the extent to which they possess economic capital, or if they manage to exchange social capital with economic capital.

Conclusions

By this, it is possible to see that water supply is not only determined by a number of quantitative parameters, such as distance or time. One does not necessarily have sufficient access to water if a public water source or a standpipe is located within a range of 200 meters from the household. Unfortunately and traditionally, definitions concerning access to water do not integrate qualitative variables, such as power relations and social capital. By not integrating such qualitative variables, we might obtain a distorted picture of the actual water supply, as social relations between vendors and consumers may affect the price of water. The informal water supply system creates informal rules that nourish differences, as people are at risk of paying a higher or lower price of water - completely dependent on their social relationships.

Access to water should not only be defined by distance, price and quantitative data, as partly defined by the UN and WB. It is also important to integrate complex variables - such as social relationships when you are about to develop a comprehensive assessment of the water access in the informal sector. If the goal is to understand access to water, it is necessary to not only study the frequency and the amount of water available, but also study the relationships associated with the phenomenon itself.

The group with the poorest access to water in Luanda is based solely on the informal water supply system. Most people who are dependent on this system belong to the poorest section of the population, and are living in peri-urban areas. But there are also differences within the peri-urban areas. Households in peri-urban areas that have invested in a water tank and possess major economic capital, have better access to water than those households without a water tank. Also, those households with well-developed networks and relationships have better access to water compared with those who lack this social capital. Households with the scarcest water supply in Luanda are those located in peri-urban areas, and who possess a low degree of economic and social capital.

Measures to be taken

To improve the water supply in Luanda's peri-urban areas, it is necessary to focus on constructing additional water pumps. Water supply through the formal water supply system is affected by fewer factors, and water is more fairly distributed. As we have seen, the informal water supply system is very complex and can affect access to water. Unlike the formal system that is more stable, the informal water supply system is affected by, among other things, price, distance, distribution, neighbour relations and social capital.

In traditional studies on access to water in urban areas, the focus has mainly been on quantitative approaches where access to water has been assessed by using numerical variables. My study shows that the research should also focus on qualitative methods. Access to water can not only be studied by using qualitative methods or quantitative methods. The methods must be combined so as to bring out different sides of the same phenomenon. Only in this way one can obtain a comprehensive understanding of the people's actual access to water in a given, urban area.

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