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**THE STORY OF DOMESTIC WATER METERS
AND BILLS IN KHARTOUM:
MATERIAL RUINS AND IMPERIAL RUINATION
OF PUBLIC SERVICES IN URBAN SUDAN**

SUMMARY

This article explores the story of obsolete water meters and water payments in two old legal residential neighborhoods of Khartoum (Sudan) served by the Khartoum State Water Corporation (KSWC). Based on fieldwork conducted between 2008 and 2012, I question the unchanged model of flat-rate payments despite the important political changes and administrative transformations the country has experienced during a century since the 1920's when the colonial administration implemented the first urban water scheme. This reflection allows me to think the material legacies of empires and their transformations by postcolonial governments and to take into account the relations between the welfare and the neoliberal models of urban services in Sudan. It results that these models are not excluding one another but rather appear as more or less prominent at different moments of this century. Along this journey, the outdated water meters, unpaid bills, and obsolete paperwork, lists, and receipts are considered as the ruins of these uncompleted processes of (neo)liberalization or "welfarization", their lack of achievement being itself a process of imperial ruination.

FOREWORD: WAR IN SUDAN AND IMPERIAL RUINATION

Since April 2023, Sudan has been wracked by a deadly war between the Sudanese Armed Forces and the paramilitary Rapid Support Forces, which are mainly fighting in the capital and the Darfur region. The war broke out four years after a peaceful civil uprising that had resulted in the toppling of the dictatorial regime of Omar Al-Bashir, who ruled the country between 1989 and 2019.

Understanding this hideous war, at least partly, as a process connected to a lasting colonial past that has been strongly—and strangely—reactivated in the past four years is a plausible way to reposition the conflict within the global history of empires and a broader geopolitical context. Anne Stoler considers ruination to be a “corrosive process that weighs on the future and shapes the present” (Stoler 2008, 194), thus opening up the possibility of thinking about the current war in Sudan as part of a long process of imperial ruination.

Although this process will not be analyzed in this paper, some of the points presented here can be associated with it. The monumental increase in the price of water in recent years is partly a result of broader external pressures imposed on the Sudanese population in order to rapidly apply the structural adjustments made to support the democratic transition in the country. While these adjustments have contributed to the pauperization of most residents in the capital, the inequalities and scarcity they produce are also rooted in the water infrastructures and bureaucracies established since the colonial regime, and are stained with economic and social violence.

INTRODUCTION

During my fieldwork on domestic water consumption in the neighborhood of Deim and on Tuti Island in Khartoum (Figure 1) between 2008 and 2012¹, I often found old water meters abandoned, broken, and sometimes buried at the side of doors in the courtyards of houses or attached to water inlet pipes (Figure 2). At the time, however, I did not pay much attention to these water meters. In fact, in Deim and on Tuti Island, as in most of the legal residential areas of Khartoum, people were connected to the urban water grid and had domestic taps. They were supposed to pay a fixed monthly fee regardless of

1 I conducted my first fieldwork in Deim from November 2008 to April 2009 for my Master’s studies in anthropology as part of the Water Management in Khartoum International Research Project – WAMAKHAIR. The project was funded by ANR (France) and the DFG (Germany). I subsequently conducted three fieldwork sessions on Tuti Island for a total of 11 months between December 2009 and March 2012 for my PhD dissertation in anthropology.

consumption (and even if they did not receive any water). Although prices have since increased, the model of flat-rate payments has never been modified. It had remained in effect since the first water supply project in the 1920s and was unaffected by independence in 1956, when the water supply company passed into the hands of the new Sudanese government in a political climate of mass nationalization and confiscation²; it lasted throughout the sequence of brief democratic and military governments that succeeded one another, and it survived the so-called socialist and military regime of General Nimeiry (1969-1985). It also remained in force under the authoritarian and Islamist rule of Omar Al-Bashir (1989-2019) and the National Congress Party (NCP), surviving even its neoliberal reforms to public services in the 2000s.

In this context, Deim and Tuti Island are representatives of the old, popular, legal neighborhoods of urban workers served by the Khartoum State Water Corporation (KSWC). Although they have quite diverse histories of settlement and the urban water supply was installed at different times, comparing them helps tackle continuities and discontinuities between the colonial and postcolonial provision of water.

Deim³ is an old, central residential district of Khartoum populated by urban workers from different socio-economic backgrounds who arrived from the various regions of Sudan and from neighboring countries during different waves of migration. The first mention of Deim in Khartoum appears during the Turco-Egyptian rule. Deim's inhabitants, some former slaves, were relocated twice—in 1902 and 1953—to areas that were on the outskirts of the city at the time but which later became sought-after central areas as the city expanded (Sikainga 1996). Initially served by a collective borehole providing groundwater, the government connected them to the urban water supply system shortly after the last relocation of inhabitants by the colonial administration at the turn of the 1950s, just before independence (Arango 2015, 112).

Tuti Island has a longstanding tradition of agriculture, formerly practiced by landowners, who progressively became a class of white-collar workers, and later on by migrant farmers arriving from the west of the country. The

2 These measures were brought to an end by the 1972 Development and Promotion of Industrial Investment Act, which encouraged investments of foreign and domestic private capital. Thus, as Mansour Khalid has noted, during the early years of General Jafar Numeiri's government (1969-1985), when Sudan was theoretically committed to a socialist economy led by the public sector, the private and mixed sectors were greatly encouraged (Khalid 1985, 63).

3 Depending on the context, the word *deim* can designate a neighborhood (Sikainga 1996, 251), the slums of the city (Arthur 1980, 524), or an urban extension. It is not an Arabic word, and the inhabitants of Deim claim a Turkish etymology. The plural in Sudanese Arabic is *diyûm*, but it was pluralized by the British administration, and often in the literature, as Deims.

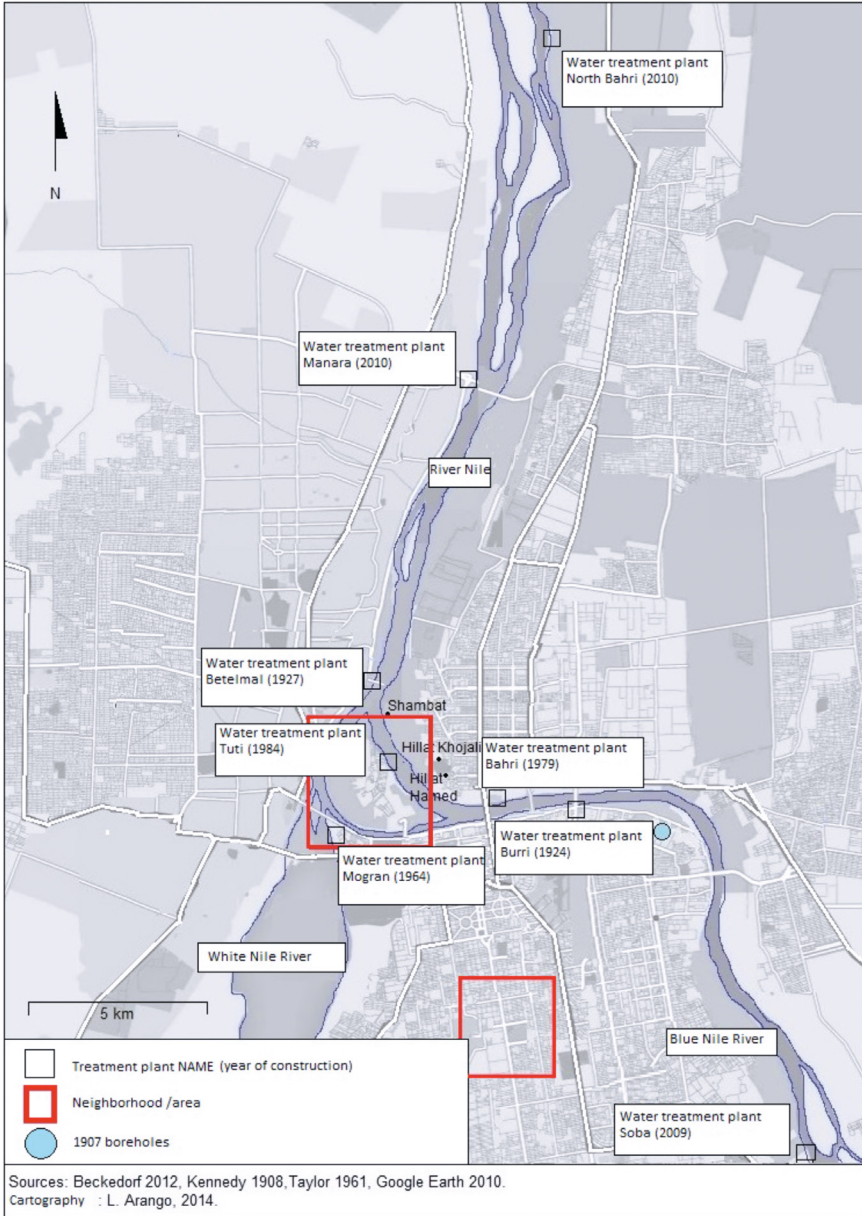


Figure 1. Map of the Khartoum water supply system and the location of the Deim neighborhood and Tuti Island. L. Arango 2014

earliest population is claimed to have settled there six hundred years ago, and to share tribal homogeneity and its origins with the people of the northern Nile Valley. The Central Electricity and Water Authority (CEWA), created in the 1960s at a time of Sudanization (Beckedorf 2012, 89), established an urban water supply network, transferring water through pipes from the Burri pumping plant in central Khartoum. This project failed since the pipes that were laid under the river continually broke. In 1984, during General Nimeiry's regime, the government succeeded in building a water pumping and treatment plant on the island (Figure 1)⁴.

I reflect on the material legacies of empires and their transformations by postcolonial governments, focusing my interest on the everyday experiences of the state for long-time urbanites, and using the water meters and bills as my point of entry. I rely on the assumption that drinking water and the small equipment associated with it intimately bind the daily lives of households to state apparatuses (Bender 2008; Von Schnitzler 2008; Janssens and Thill 2013;



Figure 2. A water meter buried in the courtyard of a house, Deim, Khartoum. L. Arango, 2009

4 The first three pumping and treatment plants in Khartoum were built during the colonial administration: Burri in 1924, Betelmal in 1927, and Old Bahri in 1954. The next three were completed during General Jafar Nimeiry's time: Mogran in 1964, the Old Bahri extension, called New Bahri, in 1979, and the Tuti Island plant in 1984. The most recent ones (Soba, Gebel Aulia, Shamal Bahri and El Manara) were started after 2009. Several boreholes across the city complete the system (Beckedorf 2012).

Ojani 2023), as water is a medium par excellence between the state and its citizens (Mosse 2008, 947).

My aim with this reflection is to contribute to a conversation on the relations between the welfare state model of service that guarantees sufficient accessible water to everyone and a (neo)liberal service model that drops state intervention and lets self-regulating markets ensure water access. The public and international debate has contrasted these models by using the difference between water as a human right and water as a commodity (Ballestero 2019, 40), but scholars have revealed a more complex relationship in past decades. Some have highlighted the fact that neither publicly nor privately operated utility companies are able to serve the urban poor with convenient water services (Budds and McGranahan 2003). Many have shown that the role of the state is central to the neoliberal reforms of basic services, which results in a reconfiguration of the state's functions rather than a retreat (Beckedorf 2012; Bakker 2003; Hibou 2004). A few have suggested that since people pay for the treatment and distribution of water, it should already be considered a commodity even if it is managed by the state and does not generate profit (Ballestero 2019, 40). In addition, others have pointed out that although the UN General Assembly has officially recognized safe, clean water as a human right under state responsibility, it did not mention the means of guaranteeing such a right, which could be private (Sultana and Loftus 2012, 1).

Inspired by these scholars, I argue that the obsolete water meters I found during fieldwork bear witness to episodes when welfare or (neo)liberal state service models were more prominent in Sudan. By so doing, they blur the contrast between them, showing that, actually, none of these models has been fully achieved. To analyze them, we should consider both social liberalization, with its ideal of continuous flows of water permanently available for free to citizens (Anand 2017), and economic liberalization and neoliberalization as a belief in self-regulating markets that are supposed to achieve these continuous flows⁵. Metering water and billing for its consumption are generally important conditions for making water enter the market.

Along this journey, the outdated water meters, unpaid bills, and obsolete paperwork, lists, and receipts constitute the ruins of these uncompleted processes of (neo)liberalization or "welfarization." In turn, this lack of achievement can be viewed as a "prevalent process of imperial ruination" in itself (Stoler 2008), as it has permeated urbanites' everyday experience of the state through the provision of domestic water since the beginning of the twentieth century.

I begin this paper with a short history of the first devices and models used for metering and paying for household drinking water in Khartoum. This will

5 For a discussion on the difference between social and economic liberalism, see Thorsen and Lie (2010), and for a discussion on (neo)liberalism and urban water supply, see Anand (2017).

highlight the ambiguities of an unequal and fragmented “universal” water supply system at the city level while also documenting the colonial hesitation to turn a profit from the provision of water. I then focus on residents’ narratives of the setting up, usefulness, and decline of domestic water meters, which are replete with forgetfulness and inconsistencies. My contention, which is inspired by Tess Lea and Paul Pholeros’s reflection on indigenous public housing in Australia (Lea and Pholeros 2010), is that when meters are obsolete, they become “non-meters,” calling into question their relationship with processes of water privatization and commodification. I suggest that the inaccuracies surrounding the story of these devices speak not only to the inefficiencies of a bureaucratic or technical system, but also to the unachieved (neo)liberalization of domestic water supply and a satisfactory welfare-state-like provision service in the old legal neighborhoods of Khartoum until the 2000s. I finally turn my attention to the introduction of private companies into the collection of monthly water charges in 2001 and the implementation of electricity meters in 2005. Here I suggest that privatization and electricity metering turned water meters into ambiguous “quasi-meters” (Ballestero 2019, 29). On the one hand, water meters represent the failed future of a colonial history of controlled, metered, billed, and payed water — a history that was never fully realized. But, on the other hand, water meters still retain the potential to be successful devices, and to realize this history. In other words, they show what kind of (neo)liberal water supply model is not in place, while threatening that this same model could one day replace the welfare state’s provision of water. In this same section, I will discuss the introduction of automated payments in 2014 as the final episode of water meters’ journey.

SETTING UP URBAN INFRASTRUCTURES AND WATER PAYMENTS: A FRAGMENTED “UNIVERSAL” WATER SUPPLY SYSTEM AS IMPERIAL DEBRIS

The question of metering and paying for drinking water in Khartoum first appeared in the archives⁶ almost twenty years after the first water supply system was set up in 1907, when the Department of Public Works constructed seven deep wells in the Burri area (Taylor 1960). They served the administrative area

6 All the archival material used in this paper is part of the collection made by Sebastian Zug in 2009 from the Sudan Archives in Durham and the British National Archives for the WAMAKHAIR project.

and individual homes in the first- and second-class areas⁷, while public fountains and boreholes supplied the third-class areas until 1920, when it became necessary to expand the urban water infrastructure (SudA PK1591 MCL). Until 2023, people who were served by the public body were supposed to pay for domestic water based on a four-tier rate system that was updated in the 1980s. It regularized the monthly charge based on various different parameters⁸ and was closely related to the colonial classification of urban residential areas.

Although Khartoum has expanded enormously since that time, and these former boundaries were pushed outwards, the rate grids and the classifications of urban residential areas continued to shape how water is distributed in the city. Fragmentation deepened with rapid urban growth, together resulting in limited coverage. In addition, the differences between those served by the official system and those outside it marked the urban geography of water access in Khartoum over the long term. To the extent these lasting grids and classifications disrupt the idea of liberal and equal access to water, we can refer to them as imperial debris. As Ann Laura Stoler suggests, they represent lasting duress produced by imperial formations and obstinately imbued with their ontologies that persist, sometimes subadjacently, in people's lives (2008, 192). Thus, the colonial administration bore and bequeathed the ambiguities of a system that claimed to be universal and theoretically provided continuous water for free subjects but that was in fact fragmented and uneven for the city as a whole. As Nikhil Anand has shown in the case of colonial Mumbai, water infrastructures were closely linked to the production of liberal citizens in Europe. In the colonies, however, they were created to differentiate "those who were deserving of membership in the colonial city and those for whom the promises of liberal citizenship were deferred or denied" (Anand 2017, 14).

In the same vein of ambiguity, doubts have permeated administrative discourse since the inception of the water supply system in Khartoum, where the

7 The town building regulations of 1909 provided a classification of urban residential areas in Khartoum, categorizing them as first-, second-, or third-class residential areas. The 1912 Government Town Lands Ordinance added a "native lodging area" to this list. This classification determined the legality of a plot, the building materials used, the number of floors, the size and location of a plot, and the "type" of population living in it: Europeans, merchants, wealthy foreigners and Sudanese, or Sudanese urban workers (SudA PK1591 MCL; El Agraa et al. 1985). This contributed to an urban policy of racial and social segregation (Curless 2016, 562). This kind of segregation policy in urban areas was common in British-ruled urban Africa (Mabogunje, 1990). For details, see El Agraa Omer, Ahmad Adil Mustafa, Haywood Ian and El Kheir Osman (1985).

8 This tiered rate structure was based on the following factors: area classification; estimated consumption based on domestic infrastructure and housing conditions; number of floors; size of the inlet water pipe; and type of sanitation.

colonial designers and developers were hesitant about whether making a profit from selling domestic water was justifiable.

In 1924, a consortium of four English companies asked the colonial government of Sudan for permission to create a concession to be known as the British Sudan Light and Power Company. This company would be in charge of a number of public works in Sudan: operation of the existing government-owned power station, waterworks, and ice factory; expansion of these public works to Khartoum North and Omdurman; construction of the Mogran Bridge; and operation of and improvements to Khartoum's tram and ferry systems. The consortium and the British government provided the capital and shared the profits, while the infrastructures and their expansion were the responsibility of the Sudanese Government (FO 141/493/2). With regards to privatization, the proposal for the creation of the company states as follows:

“(…) It is not altogether desirable that public utility services, especially such a vital service as water supply, should be put into the hands of a private enterprise, whose principle objective must be the making of profits. To a great extent this objection has been guarded against in the proposed terms for the Concession which lay down maximum rates and also provide that when the profits exceed a certain figure a portion of the surplus must be used in rate reduction. Also as regards water, provisions will be inserted in the final concession agreement giving the Government power to insist on compulsory extensions and making provision for meeting the case when these are not actually profitable” (FO 141/493/2 , p. 8).

Making a profit from public services, specifically from the supply of water, was seen as conflicting with some of the principles of the former British administration in Sudan. As Nicole Grandin explains, the British administrators showed themselves to be wary of private investment, be it foreign or Sudanese, and prioritized government control and the development of infrastructures and basic services (Grandin 1982). Still, the formula adopted in the documents is the classic version used in both European and non-European countries at the time⁹: private and foreign companies ran the concessions and financed infrastructure development through loans to the public company, which repaid the loans from the profits made from the provision of basic services.

The files on the creation of the company indicate an existing system for paying for water, and mention the presence of water meters (Figure 3).

9 See, for instance, what happened in Cartagena, Colombia (Casas Obregón 2000) and Guayaquil, Ecuador (Swyngedouw 2004), as well as the account provided by Musemwa on the privatization of water in Europe, America, and some African cities (Musemwa 2008).

THIRD SCHEDULE.

The agreed Scales of Maximum Rates for the Supply of Electricity, Water and Ice are to be those at present being charged. These rates are stated by the Representative of the Sudan Government to be as follows :—
(The Group have no information at their disposal to verify that these are correct.)

| Service General. | Detail of Service. | Unit. | Rate per unit in Milliemes. | Remarks. |
|----------------------------|---|----------------------------------|-----------------------------|--|
| Electricity Supply. | Lighting Private Consumers | } Kilo-watt-hour | 50 | |
| | Lighting Govt. Departments. | | 40 | |
| | Power to all consumers. | | 25 | |
| | Street lighting. | Lamp per annum including upkeep. | 5200 | |
| | Meter Hire. | Per meter per month. | 50 | This applies to all new lamps installed after June, 1923. Rate for lamps installed prior to above date £5 per annum. |
| Water Supply. | All purposes by meter. | Cubic Meter. | 15 | |
| | Meter Hire. | Per meter per month. | 50 | |
| | Residences, Domestic Supplies, Abonnés. | per month. | 300 | Water only to be used for domestic purposes to the exclusion of Garden irrigation, etc. |
| Ice Supply. | To Contractor. | Per ton of 1000 Kilo-grammes. | 4200 | |
| | To Consumer via Contractor. | Per Kilogramme. | 50 | |
| Tramways. | <u>PASSENGERS.</u> Monthly tickets over the whole system including Ferries | Per month. | 850 | |
| | 1st Class. " " " " | " " " " | 600 | |

Figure 3. Third Schedule: Proposals for the construction and operation of certain public works in Sudan, (FO 141/493/2, p. 37)

Residences, domestic supplies, and *abonnés*¹⁰ would continue to pay 300 milliemes per month, which included meter rental, priced at 50 milliemes. The document states, “Water is only to be used for domestic purposes to the exclusion of garden irrigation.” Other customers, mainly shops and industries, paid for their water by the cubic meter, with a minimum payment of 300 milliemes per month, including meter rental. Surprisingly, the document also warns that “the group has no information at their disposal to verify that these [information on water payment and rates] are correct” (FO 141/493/2, p. 37). It is therefore impossible to say whether or not households actually paid for domestic water at the time.

Since the first water supply system was set up in 1907, water access in Khartoum has been unequal and fragmented on a citywide scale, although it was conceived as a “universal” welfare service to be provided by the state without profit. The colonial administrators installed water meters and established payment scales, but there are no documents that prove that people actually paid for their domestic water. In their narratives, the developers avoided the processes of privatization and commercialization of water but made loans to the public body, following a model of private concessions (Lobina 2005). Here, a process of liberalization of the water supply service was planned but not definitively achieved.

10 In French in the original text.

“NON-METERS” AND UNPAID BILLS AS EVERYDAY EXPERIENCES OF THE POST-COLONIAL STATE

When I began my research on access to domestic water in Deim in 2008, I found a number of old, broken water meters, sometimes buried beside doors in the courtyards of houses or attached to the water inlet pipes. Three years later, I found the same objects on Tuti Island, although they were more recent than the ones in Deim. In both cases, the water meters clearly seemed to be there to meter household water consumption, but the public body was not using them to regulate the price of water, and few people remember any monitoring of consumption by the municipal authorities¹¹. Their purpose will remain a mystery, but as I will show in this section, these devices complicate our ways of interpreting the relationship between water metering and billing and the (neo)liberal state.

One might form numerous hypotheses to explain the presence of unused water meters in the courtyards of houses, and the inhabitants’ assumptions about their purpose reflect the diversity of potential explanations:

“[The water meters were there] to make people aware of using water well, but there were flat rates, there were not even people who came to look at the meters! So I think it was just so that people would watch out for their water [consumption].”¹²

Abdallah’s hypothesis is plausible, as this happened in Durban, South Africa, in 1950¹³, but no trace of any such policies from the municipal water company in Khartoum have been found. One might also imagine that the colonial developers and engineers simply copied the infrastructure of British houses, importing water meters manufactured by the Leeds Meter Company

11 However, this case is not as exceptional as it seems. For instance, Nikhil Anand reports that most of the water meters in Mumbai are not working (60% according to one estimate) and that people pay a monthly flat rate estimated by the water company (2017, 166).

12 Author’s interview with Abdallah, mechanic, 56 years old, Deim, February 2009.

13 The water company installed “check meters” randomly in certain properties throughout the city so as to be able to assess household water usage. Later, in 1970, their installation became widespread, initially to dissuade wealthy households from consuming excessive amounts of water (Loftus 2006).

from England to Sudan¹⁴ with the idea of future use that never came to fruition. It is also possible that they installed meters to calculate detailed figures without actually intending to ask for payment based on how much water was consumed by each household. As we have seen, the Department of Public Works installed water meters before the British Sudan Light and Power Company was formed in 1924 and they continued to be installed in Khartoum at least until 1980, when they were installed on Tuti Island. However, it is not clear whether any employees of the water company ever came to check the meters, nor are there any identifiable policies stating that meters were part of a strategy to regulate water consumption, and payments did not depend on the amount of water used or received by a household each month.

In addition, the inhabitants of both Deim and Tuti Island report either that meters disappeared or that they stopped working; if they remember anything about them, it is seen as an incident without any particular consequences for the ways domestic drinking water was accessed. They also found it difficult to pinpoint the moment when it happened. Some people removed them themselves, others did not notice when they stopped working, and a few more said that they disappeared in sandstorms or that the 1988 floods caused them to break down. Finally, some thought the government had cut them off to cut the cost of paying salaries to the agents who were supposed to check consumption. These narratives, in addition to being purely anecdotal, conflict with the case of other former British colonies in Africa, where prepaid water meters are a current hard political arena: in postcolonial South Africa, people manipulate or destroy them, transforming these small devices into an “object and medium for people of making claims on the state” (von Schnitzler 2016, 3). In Deim and on Tuti Island, obsolete water meters were imperial ruins that expressed a never-achieved process of neoliberalization which could have, but never did, become a point of conflict with the state.

Reports of payment followed a similarly vague pattern. According to some, water was offered by the government, which did not expect people to pay for it. Others remembered that someone from the neighborhood used to collect the charges and take the money to the municipal offices, although it is unclear how often this happened. In all cases, no form of pressure appears to have been exerted at the time to force households to pay. Additionally, the KSWC employees recounted that, until 2000, household water payments in connected areas of Khartoum were almost non-existent, and numerous homes

14 This idea is inspired by Timothy Mitchell’s assumption that Europeans believe in modern government and modern science based upon “principles true in every country” (Mitchell 2002, 54) such as “private property” or the “nation.” It is my hypothesis that British water meters were installed in Khartoum houses based upon the supposedly universal idea that water flows were measurable and should be compartmentalized to convert them into volumetric units or pounds.

obtained water without receiving or paying bills (Beckedorf 2012). At the same time, the discontinuity in water flow did not appear to justify a claim against the state, and neighbors made arrangements among themselves to ensure satisfactory access by every household (Arango 2015, 119-120).

Based on fieldwork data, I have no means of definitively solving the mystery of why the colonial and postcolonial public company installed domestic water meters until at least the 1980s. Nor can I accurately elaborate on how it is possible that people seem not to have had to pay for domestic water for decades. I will therefore turn my question into an interpretative one.

Using the parallel Tess Lea and Paul Pholeros make between what they call “indigenous non-houses” in Australia and René Magritte’s masterpiece “Ceci n’est pas une Pipe,”¹⁵ we might think of the abandoned water meters as “non-meters.” They are hard devices that last over time but have never worked for the purpose for which they were intended, thereby questioning our habits of viewing and interpretation (Lea and Pholeros 2010, 188). Because they are closely related in other contexts to the processes of privatization and commodification of water, what do these non-meters and unpaid bills tell us about the neoliberal and postcolonial state in the old legal neighborhoods of Khartoum?

My suggestion is that they are not simply an expression of the inefficiency of a bureaucratic or technical system¹⁶: rather, they show that despite the presence of domestic water meters, the colonial and postcolonial public bodies did not, and do not, measure water flows and have rarely enforced payments for the use of water. In this way, urbanites from older legal residential areas and the water company set aside a potential neoliberal technology and maintained a tradition of providing welfare services (Bilo et al. 2020)¹⁷, albeit in an uneven way at the city level: virtually free water shared by neighbors when the pipes ran dry (Arango 2015; Zug 2014) and managed by a public company that was not making a profit. As a result, the inhabitants of both neighborhoods retrospectively expressed a general feeling of

15 The authors explain that indigenous houses built on Australian social programs look like houses but are not houses. Instead, they are steel sheds made of cheap, non-perennial materials that are mostly incomplete or badly built (Lea and Pholeros 2010, 188).

16 Nikhil Anand writes that the difficulty of measuring water is not the result of technical incompetence or deliberate ignorance. Efforts at measurement appear alongside the effort to control flows of water through engineered pipes that are inherent in projects that seek to make things countable using neoliberal technologies (2017, 167-169).

17 The interim government established in 2019 also considered social protection as a priority, with a primary role for the state in achieving social development (Bilo et al. 2020).

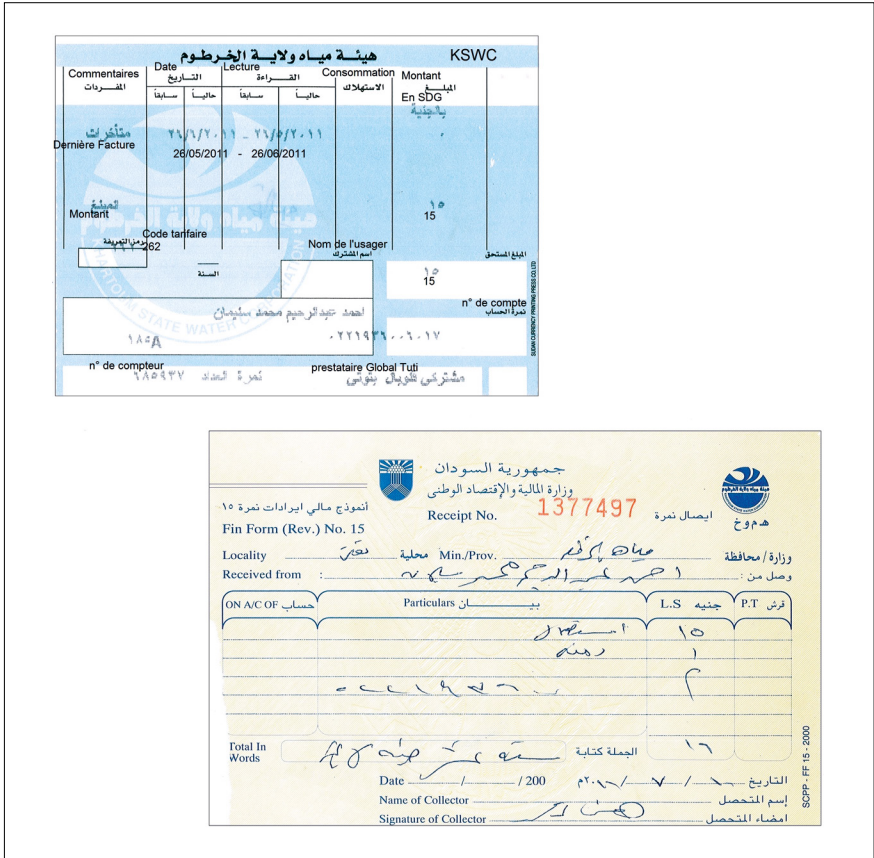
satisfaction¹⁸ that contributed to their conceptualization of the water supply as a service of the welfare state. Working on domestic water in South Africa, Antina von Schnitzler has shown that the everyday experiences of the post-colonial state are shaped by leaking pipes or inaccessible infrastructure (2016, 4). In the old popular legal neighborhoods of Khartoum, water meters were obsolete, bills went uncollected and unpaid, and the flows of water were intermittent but sufficient for the inhabitants. A small and outdated water infrastructure materialized an uncontested link to the state that was not yet politicized.

PRIVATE COMPANIES, WATER CUTS, AND “QUASI-METERS”: TURNING WATER INTO A POLITICAL MATTER

In 2001, the KSWC outsourced household water charge collection, engaging mainly Sudanese private companies for the purpose, because of the widespread idea that the public corporation had failed its duty (Arango 2015). However, the administration did not change the former metering and payment structure, maintaining the flat monthly rate, which had been increased over the years¹⁹. The possibility of actually metering water use appears to still have been considered because, among other items, water bills included two boxes entitled “consumption record” and “(monthly) consumption” that remained empty (Figure 4). From the 1980s, the urban water supply system had been operating beyond capacity: while demand continued to increase and the dysfunctions in the system hit households hard. Coverage began to decrease with

18 However, fieldwork observations reveal significant inequalities among households in Deim and Tuti Island. The composition of families, their itineraries as they came to settle in the city, the location of their houses in relation to water mains, the equipment in their homes (motor pumps, tanks, and the size of the inlet pipes), and the use of water for gardening or washing machines, result in substantial differences in the quantities of water consumed by a household or an individual on a daily basis. Surprisingly, despite this unevenness, water access seems to have been perceived as generally adequate for the inhabitants of both neighborhoods until the introduction of private companies for the collection of payments.

19 These increases cannot be accurately converted because of galloping monetary devaluation: in 2008, households paid SDG15 per month (€5 at the time); in 2011, SDG15 was equivalent to €2. In January 2022, the monthly rate was SDG1,000 (€1.80) and, since June 2022, it has doubled to SDG2,010 (€3.5).



urban growth²⁰, and as cut-offs and outages became a recurring feature of service people began to develop other sources, such as bottled water or wells, individual motorized pumps, and storage tanks (Sammani et al. 1989, 269; Arango 2015, 115). Although the non-existent water metering and the monthly flat rate payment had not changed, the introduction of private companies to household water charge collection marked an unprecedented turning point in the ways people connected to the KSWC and experienced the state through domestic water.

20 At the beginning of the 1990s, it was estimated that the total production of potable water, including both the formal and informal systems, was 244,000 cubic meters per day, with very uneven distribution per person per day. The first- and second-class residential areas were receiving 350 liters, the third-class areas were receiving 100 liters, and the remainder 20 liters (Salah and Abbas 1991).

Water charge collection in Deim became the responsibility of two newly created companies, WARID and Gurashi Barti Company, while the KSWC continued to collect money in a small area of the neighborhood. In Tuti, the collection of water charges was the responsibility of the Tuti Global Company, which belonged to a larger company based in Omdurman with offices in various wealthy neighborhoods in the capital.

At a household level, people were not aware of the reforms that made payment methods stricter. They began receiving bills regularly and appearing on network maps and lists of unpaid charges, while unknown collectors came to their door every month with orders to cut off the water supply if payment was not made. The companies were equipped with the necessary tools to disconnect households, while households also equipped themselves to reconnect their own supply, often calling a plumber from the market, mainly in Deim. The introduction of private companies led to new relationships (with collectors or plumbers) and new activities (monetary transactions, water cuts, and reconnections) around drinking water that became more and more conflictual:

“Normally, there is a guy who comes to collect the money with a bill on which is written SDG16 as usual. He asks me for the money. If I give it to him, he takes it and gives me a receipt attesting to the payment. If I do not pay, after the second month and then the third month I do not pay, my water will be cut off. If I say I can pay tomorrow and then I do not pay the day after [makes an outraged face]... I don't know how they estimate the [monthly] rate, I don't know how much water I consume, but I do prefer this. With a meter, we will pay a lot of money. As with the electricity. [The electricity meters] are not good, not good at all!... They say they will do the same with water...”²¹

Based on Povinelli's work (2011), Andrea Ballesterio calls devices such as the obsolete water meters of my fieldwork “quasi-events,” defined as “things that are not privileged by a sense of full existence but instead unfold without quite [achieving] the status of having occurred” (Povinelli 2011 in Ballesterio 2019, 29). She invites us to consider them even if they seem to lack effects that are recognizable in the present day because, she says, they can give us access to possible futurities (Ballesterio 2019, 29). Water meters as “quasi-events” have opened up various potential futurities since their installation, but, with the introduction of domestic prepaid electricity meters in 2005 and of private companies for the collection of water charges in 2001, they show that drinking water marketization is becoming a distinct possibility for urban residents (Figure 5). Alongside this step towards privatization, however, the state became a major presence through the closure of pipes, bureaucratic procedures, and copious red tape. The KSWC used to print water bills at their

21 Author's interview with Intizar, housewife, 54 years old, Deim, February 2009.



Figure 5. Domestic electricity meters in different neighborhoods of Khartoum. W. Adam and L. Arango 2022

offices, and the private companies collected them for distribution (Beckedorf 2012). These printed bills had a large KSWC logo in the background, while the payment receipts bore the logos of the Ministry of Economics and Finance and the KSWC at the top (Figure 4). This paperwork brought the state into the intimate space of households every month on the shelves and in the drawers where people kept it, embodying a state’s powerful presence in homes through the provision of water.

Though the state was already involved in the space of households through public television, health, and education, the privatization of charge collection strengthened its presence by means of the provision of water. On this subject, Anand writes that “different modernist infrastructures produce different (but related) forms of political subjectivity” (2017, 11), and that, for instance, a hydraulic citizen is not the same as an energetic citizen. Taking different kinds of citizenship into account is particularly relevant to our discussion on Sudan at the end of the 20th century, when the authoritarian rule of Omar Al-Bashir and the NCP established a regime of political repression and Islamization. In fact, these features of the state did not come up in conversations about urban water distribution during my fieldwork, even though some authors have shown that the neoliberalization of state services since the 2000s was intimately connected with the authoritarian regime (Mann 2012; Beckedorf 2012). In their narratives, my interviewees did not relate the hydraulic citizen to the repressed citizen.

At the same time, when it became a mandatory paid service, water increased in importance as a household political issue related to the state that was grappled with through individual tools for pumping and storage, illegal reconnections, and unpaid bills. Rather than becoming claimed collectively,

water remained a domestic affair, as it had been defined by bureaucracy and infrastructure with the installation of household water taps during the colonial administration. However, this is not the case in other newer settlements of Khartoum. For instance, in popular and suburban neighborhoods settled between the 1980s and the 2000s, demands for basic services such as domestic water were largely made by popular committees that were themselves an outpost of the NCP at a local level (Revilla 2023, 631). In those areas, domestic water is both collectively claimed and highly related to the party in power.

The privatization of the collection of water charges contributed to the expansion of bureaucratic procedures, standardization mechanisms, and state documentation practices, strengthening the relationship between households and the institution of the state. These transformations, that have been both recent and brutal, produced a proliferation of narratives in which the role of the state and both its previous and current roles vis-à-vis access to water took a central place:

“What happens now is different from what happened in the past, because in the past, the government taxed us, but it provided services, I mean *offer*²². Now it is the opposite. There are no services and they are seizing what you have by force. There is no water and someone comes to knock on your door to take the money. You say that there hasn’t been any water for four days and she [the employee] answers: ‘That’s not my job, that’s the job of the supplier,’ or I don’t know what, of the company. I don’t understand these words, I don’t know, she only comes to get the money. Our brain wants to escape what happens these days, that’s so different from what we lived in the past in this city.”²³

These narratives on what long-term urbanites expected to be a welfare state provision of water appear to be rooted in a recent past when the KSWC loosely controlled its distribution and fee collection, but did not truly manage its operations in as neoliberal a way as it may have sought. A retrospective and actualized conceptualization of the welfare state service therefore emerged, in contrast to what seemed to be a step towards the neoliberalization of drinking water in the 2000s, illustrating different tensions between these two models in the legal old neighborhoods of Khartoum.

First, they show that the hydraulic paradigm of the state as the guarantor of free and safe access to water was still a strong model for the inhabitants of both neighborhoods. However, this did not appear to contradict people’s experience of uneven access to water at a city or neighborhood level, nor did it prevent the development of individual means that might potentially limit access for others. Second, the introduction of private companies and

22 Mansur said the word in English in a conversation otherwise in Arabic.

23 Author’s interview with Mansur, 71 years old, retired, Tuti Island, August 2011.

mandatory payments did not mean that the KSWC was making a profit from drinking water, even though the private companies were charging the KSWC large sums for their services (Beckedorf 2012, 164). Therefore, people could not oppose a marketization of water that would have been a feature of a more neoliberal state. Some were against paying for a sub-par service, although others, radically, were against paying for water at all, and so were more opposed to its commodification²⁴. These last interviewees went beyond the scope of a welfare state that itself makes water a commodity by billing water treatment, distribution, and management (Ballestero 2019, 40). Third, these misunderstandings point to the fact that local ties with the institution of the state were broken, and dialogue and negotiation became conflictual. This tendency was confirmed by the subsequent transformations in the water billing and payment system.

In 2014, the KSWC continued down the path towards mandatory payment for domestic water with the inclusion of water charges in household electricity bills replacing door-to-door collection. Prepaid electronic meters had already been installed in all households since 2005, and people were used to paying at the nearest public company office or at accredited businesses, mainly supermarkets. Since 2014, with the introduction of remote banking, bank account owners could pay through an app. They obtained a receipt with a twenty-digit code that, when punched into the electricity meter, immediately updated the number of kilowatts purchased. Water charges, which appeared on the bill among other monthly fixed charges,²⁵ were paid automatically and compulsorily with the electricity and accumulated every month if the household did not purchase electricity. People in Khartoum stopped receiving water bills and home visits from collectors, and the new payment receipts did not have a government logo on them (Figure 6). The new, smaller bill was in English, and not in Arabic or in Arabic and English, as it had been in the past.

The digitization of water charges and their collection by private companies modified the state's daily presence in households. The relationship between the state and residents of older areas through drinking water developed outside the private sphere, for instance when demonstrations broke out between 2015 and 2016 to demand access to water (Casciarri and Deshayes 2021). These

24 Andrea Ballestero shows how her interlocutors make the distinction between a humanitarian treatment of water as a utility that does not generate profit, and a commodified treatment, which sees it as a utility that does generate profit. However, as they pay for water according to the cost of its purification, distribution, and management, the contrast between both is blurred (2019, 40).

25 The bill included in 2023 a service charge (SDG15), a stamp duty (SDG10), the water charges (SDG2,010) and a third-party surcharge (SDG15) when electricity was paid for outside the company's offices.



Figure 6. Electricity and water payment receipt. L. Arango 2022

protests were part of general political unrest that was developing in Sudan at the time, and were tied in particular to the digitization of water charges.

Water continued to link citizens and the state, because the former blamed the latter for fee increases and the dysfunctions in the system and they were obliged to pay the monthly charges for water, in some cases at the KSWC's offices. However, the physical link created by the water paperwork and domestic infrastructures had been transformed, as had been the space for the negotiation they enabled and materialized. These objects and documents became ruins that recalled all the vicissitudes of the points of contact drinking water established between the state and households. Furthermore, they saw the unachieved social and economic liberalization as well as the unachieved "welfarization" of the service as a process of ruination rooted in past decisions that still haunted the future and informed the present (Stoller 2008), a process that was produced by the state and users at the same time.

CONCLUSION

The story of domestic water meters, bills, and payments in Khartoum challenges the conflict between the models of welfare and (neo)liberal state services. Over the course of almost a century since their installation in the 1920s, they have shown that neither colonial nor postcolonial governments in

Sudan (be they nationalist, socialist, neoliberal, or military and Islamist) have fully achieved these ideals of welfare protection, liberal wellbeing, or self-regulating markets.

I have pointed out that water metering has remained an unsolved mystery. In fact, although the archives mention that water meters were rented to households paying a monthly flat rate as early as 1924, they also state that the veracity of this information cannot be guaranteed. The water company continued to install water meters until at least 1980, but it did not monitor domestic consumption, and the meters stopped working and disappeared without anyone noticing. Later, with the water payment reforms in 2001, the new bills contained two boxes entitled “consumption record” and “(monthly) consumption,” but they remained empty. Something similar happened with household payments, which seem to have being non-existent until the end of the 20th century. Since the moment a household was connected, across a century, therefore, there do not seem to have been any major changes in the models of metering and paying (or not paying) for drinking water in the old residential and legal areas of Khartoum. These devices carry on the inheritances of an unachieved liberalization or “welfarization” of the water services from the colonial administration and they bequeathed some logics and operating procedures to the management of public services by the neoliberal Islamist regime that took over the country in 1989, making it possible to consider them as “imperial debris” (Stoler 2008).

This evidence echoes some of the complex relations scholars have pointed out between these models. We have seen that colonial administrators seemed skeptical of the idea of making a profit from domestic water. However, they settled on a system of private loans to the government that was very similar to the current private concessions. At the same time, the city waterscape in the aftermath of independence, as in other former British colonies (Anand 2017; Musemwa 2008; von Schnitzler 2018), was structurally unequal, while administrators thought of domestic urban water as a universal service for free citizens.

After independence, neither urbanites nor the public body ever used water meters, and they have forgotten their history and dismissed their purpose. Here, meters become “non-meters” insofar as they never worked as they were supposed to (Lea and Pholeros 2010). In this sense, they challenge a common relationship between meters and the (neo)liberalization of water services in which water is metered and users are asked to pay for consumption to produce profit. While we cannot assume that the public body and the urbanites *decided* to reject the neoliberal model, the fact is that domestic water in legal old neighborhoods of Khartoum until the 2000s was *de facto* a welfare state service: a free service managed by a public company that was not making a profit.

The introduction of private companies to collect water and electricity charges changed the status of water meters, transforming them into “quasi-events,” i.e. things that unfold without really happening (Ballesterro 2019). Here, “quasi-meters” carry a strong presumption of water neoliberalization,

even though these steps towards the privatization and marketization of public services reinforce the presence of the state in households, and do not result in the KSWC making a profit from domestic water.

The history of domestic water meters and bills in Khartoum bear witness to unachieved models of (neo)liberalization and “welfarization” of the state public water services in urban Sudan. Their changes in status from meters to “non-meters,” then to “quasi-meters,” highlight episodes when one of these models were more prominent. At the same time, they blur the contrast between these models, showing their connections with colonial decisions that transform them into ruins and the lack of achievement of the welfare or the (neo)liberal state into imperial debris.

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