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## The Gift of Water. Social Redistribution of Water among Neighbours in Khartoum

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**ABSTRACT:** Water gifts are a common strategy to satisfy water needs in the absence of sufficiently performing water networks in Khartoum, but a widely ignored topic in urban political ecology of water. This article questions the exclusive focus of political ecologists on the capitalist waterscape of the city and argues for supplementing the perspective with an in-depth analysis of the neighbourly waterscape, where water gifts are carried out. Through the analysis of interconnected waterscapes on different scales a more holistic understanding of the social construction of water supply in the city can be achieved.

The emergence of the gift of water in a city depends on heterogeneity of neighbours' water access, the cost of the water to be gift, the relationship between donor and recipient, as well as the local social and moral framework. This article uses the example of Khartoum to explore and conceptualize the gift of water in the framework of political ecology.

**KEYWORDS:** Water gifts, water solidarity, neighbourly waterscape, scale, political ecology of water, moral geography, Khartoum, Sudan

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### INTRODUCTION

Accessing water is not only a matter of possibility but also one of choice. Khartoum's waterscape, like that of many other cities in the South, is characterised by different options to satisfy water needs. Due to the unaccomplished modern ideal of uninterrupted tap water supply inside every house, many urban dwellers adopt a variety of strategies to secure water. Many residents of Khartoum obtain water from vendors, who deliver water with donkey carts from public water towers directly to the customer's storage barrels. Water vending is primarily an economic transaction, providing the vendor with income and its customer with water. Water is delivered by tankers, bicycles and spaghetti networks or consumers themselves obtain water from so-called water kiosks, where neighbours sell water mostly obtained from the public network. A rather ignored third category of water supply is non-paid water transfers between neighbours. These 'gifts of water' are a widespread water access strategy in different peri-urban areas in Khartoum. Households that do not manage to receive sufficient amounts of water from their tap, consequently have a choice between purchasing water from a water vendor and consuming water from the taps of their neighbours.

The objective of this paper is to highlight the importance of water gifts in urban water provision by conceptualising the gift as a constituting element of Khartoum's waterscape. While such a transaction would normally be labelled as 'informal' water provision, we prefer to focus on the concept of everyday practice to understand different forms of access to water, so avoiding the contested and ambivalent concept of informality. Knowledge of everyday life and practices has been pointed out by Lefebvre as

crucial to understand society as a whole (Loftus, 2012: 15). A focus on everyday practice enables an understanding of the waterscape that includes all options of water access, including practices that often remain invisible such as water gifts.

In this paper we conceptualise water gifts as an integral element of the city's waterscape and evaluate their relevance for a political ecology of water. We first assess the relevance of everyday practice for the political ecology of water. We then review the water literature on the conceptualisation of gift transactions and the aspects, which favour the emergence of water gifts. Based on three cases of water gifting in Khartoum, we will present the heterogeneity of their spatial and economic embeddedness. A more detailed case study is presented to understand the social logics underlying water gifts. Together the case studies show the relevance of the gift in the formation and reproduction of the urban fabric.

### **POLITICAL ECOLOGY AND EVERYDAY PRACTICES**

Urban water supply is a fruitful field for a Marxist critique of capitalism, since water supply systems – especially in the cities of the South, but not exclusively – are characterised by obvious inequalities in access to water (e.g. Gandy, 2008; Loftus, 2007; Swyngedouw, 1997). Swyngedouw's (1996: 76) term "waterscape" illustrates the perspective of political ecology on water, and provides a framework for empirical research on specific contexts (e.g. Loftus, 2007; Budds, 2008).

Baviskar (2003) has criticised this framework for not taking the cultural perspective sufficiently into consideration. Political ecology, she argues, "tends to unitary analyses that distil meanings down to the economic 'last instance', rendering resources as sources of only profit and subsistence, and not social life" (Baviskar, 2003: 5052). Along with her, anthropologists in the water debate such as Mosse (2008: 943) argue that social science literature has almost entirely ignored that "institutions of water management in Africa are socially embedded and ritually authorized". Strang (2004: 245) highlights that people's interactions with water are permeated by the meanings of water: "water as the spirit, as life, as social, connective substance, as wealth and power, as generative source and regenerative sea, as nature, id, emotion and unconscious".

While the political ecology literature critiques capitalist relations and often refers to Lefebvre's work, it largely ignores non-market relations as well as everyday practices. With our focus on the consumers and their everyday practice we show the value and importance of supplementing the predominant top-down perspective on water supply in cities in the South with an analysis of particular everyday practices and thereby construct a more detailed waterscape.

Analysing the everyday water practices has three advantages.

1. An analysis of water access strategies from the perspective of the consumer allows us to understand 'water gifts'. Just as other water practices, the water gift is an element that shapes the overall city's waterscape. It can indirectly influence processes on scales other than the neighbourly scale on which it is carried out.
2. Considering all possible supply options in a neighbourhood goes beyond a mere description of these options, but allows developing a 'political ecology of the neighbourhood'. Access to different supply options is closely related not only to distribution of economic wealth but also to political and social relationships, which impact on individual choice of water supply strategies. Water gifts can change local power structures and stabilise social hierarchies. As such water gifts are highly political.
3. The approach can inform policy-making. It facilitates understanding of local processes in reaction to water supply policies. These processes are not restricted to the active engagement of local actors with the system, either through protest, refusal of payment, or illegal

connections. They also include less visible and more indirect reactions such as seeking access to water through alternative means.

### **A LITERATURE REVIEW ON NEIGHBOURLY WATER TRANSFERS**

Swyngedouw poetically used the metaphor of the cup of water for the socio-natural complexity of water flows in a waterscape:

These flows would narrate many interrelated tales of the city: the story of its people and the powerful socio-ecological processes that produce the urban and its spaces of privilege and exclusion; of participation and marginality; of rats and bankers; of waterborne disease and speculation in water-industry-related futures and options; of chemical, physical and biological reactions and transformations; of the global hydrological cycle and global warming; of the capital, machinations and strategies of dam builders; of urban land developers; of the knowledges of the engineers; of the passage from river to urban reservoir. In sum, my cup of water embodies multiple tales of the 'city as a hybrid'" (Swyngedouw, 1996: 67).

Let us assume we take a cup of water from several households, each. These cups would not all narrate the same tale, but they would tell it slightly or significantly differently. It is the sum of these interrelated tales, which constitutes the waterscape. The tale of any drop of water in the cup needs to follow its biography in the sense of Kopytoff's (1986) 'biography of things'. Within the hydro-social cycle water is "moving in and out of the commodity state" (Appadurai, 1986: 13). Just as a drop of water flowing as a public good in a river can be moved into the commodity state through extraction, purification, and transport in a commercial network, it can be moved out of the commodity state when it is entering the house, where it will be embedded into biological, cultural and religious practice rather than following economic logic.

Heterogeneous biographies of water drops are very common in cities of the South, since multiple water supply systems are simultaneously operated including rainwater harvesting, individual hand pumps, different types of water networks, water vendors delivering water to the house or water kiosks where people buy water. For many of these supply options, interaction is not restricted to the relation between one supplier and one consumer. Water vendors in Khartoum, for example, purchase water from mainly publicly owned water towers, and transport the water to the households, where it is resold at a higher price.

### **Neighbourly water transfers**

Among the different biographies there are some, in which those who are customers of a water operator become suppliers of others. In her study on water supply in Metropolitan Cebu in the Philippines, Verdeil (2003) analyses household to household access to water, in addition to other access options of individual households, such as the purchase from water vendors or standpipes. We will use her example to deduct a typology of three different modes of water transfers between neighbours: for-profit, co-operative and non-paid transfers.

In Metropolitan Cebu, water is metered. Transferring water to neighbours therefore implies a direct cost for the household. Water sales to neighbours have become a business in the same way as home delivery of water by mobile vendors. During the process the price of water increases on average by nearly 700% (Verdeil, 2003: 347). These for-profit transfers are common and they are also reported for other urban contexts (e.g. Sri Lanka: Nauges and Berg, 2008: 545; Uganda: Tumusiime and Njiru 2004: 227; Mozambique: Zuin et al., 2011). Keener et al. (2010: 9) deduced from a survey with government officials that reselling of water by households is a familiar practice in more than 70% of the largest cities of 24 African countries. These transfers are sometimes prohibited, mostly tolerated, or even legalised (Collignon and Vézina, 2000: 31). The policy-promoted counterparts to these water supply options, to be developed completely by the community, are labelled in scientific and policy literature as 'water

kiosks'. They exist in public-private-(community) arrangements in, for example, South Africa (Loftus, 2006: 1032) and Kenya (Whittington et al., 1990).

In addition to reselling water, Verdeil describes – but in much less detail – two other neighbourly water transfers. In the second type of transfer, several neighbours cooperate to jointly access one tap. While one person makes the contract with the water corporation, the costs are shared among all households (Verdeil, 2003: 338). The logic underlying this arrangement is that of a little 'association' from the perspective of the users, because the members jointly organise and manage their water access, at least from the tap onward, while the water in the tap turns into a club good, to which all actors have access, and which is protected against overuse by the social relations among the actors. The very small number of actors can strongly contribute to the successful management of this 'commons', as suggested by Ostrom's (1990) general argument on common property resource management. Müller and Mitlin (2007: 432) give an example of such a system in Windhoek, where sharing a tap is part of a wider arrangement of several households sharing a plot that was designated for one household only.

The association model is still very much connected to the economic value of water, because efforts are made to share costs fairly, even if this does not necessarily mean that everybody pays exactly what he or she consumes. The third type of transfer consists of free transfers that seem to be distinct from cost-benefit economics. In Verdeil's (2003: 337, 346) example, free transfers are only accessible to households with family ties. They make up slightly more than 10% of total water flows between neighbours. The absence of payment makes the transfer a gift relationship, which Verdeil refers to as a "broader 'agreement' regarding life in a group" (Verdeil, 2003: 337; our translation). It is these arrangements that need more in-depth analysis to allow for an understanding of water transfers in Greater Khartoum, where transfers without financial compensation or contribution are the only empirically observed transfers among neighbours.

### **Water gifts**

Literature on non-paid water transfers is poorly developed. The DFID publication by Allen et al. (2006) on peri-urban water supply, at least identifies 'water gifts' as a supply option along with the more commonly known ones. Case studies providing in-depth explanation of the function and genesis of these transfers are rare. With the exception of a few studies (Xali, 2002; Amiraly, 2009), the empirical observation of non-paid transfers merely mentions the existence of these transfers without any attempt to explain them, for example by pointing out that people are "begging for water" (Loftus, 2005: 196), "borrowing water" (Bond and Dugard, 2010: 10) or "collect water from neighbours with private connections for which they may [or may not] pay a fee" (Whittington et al., 2002: 3). Because the existence of free water transfers is mentioned but not elaborated upon, the reader is left with a series of questions: Is borrowed water paid back by equivalent water or money?; is it compensated on other occasions which are not water-related?; is it indirectly compensated for by accumulation prestige for the donor?; or is it not compensated at all? Which criteria determine whether payment is necessary or not? And how does receiving water for free or offering water for free change the social relations between the donor and the recipient, as well as between both and the society at large?

### **A FRAMEWORK FOR ANALYSING NON-PAID WATER TRANSFERS**

To analyse water gifts we consider economic, spatial and social factors to explain the practice of water gifts. Each will be discussed below.

#### **The economics of water gift transactions**

A water gift involves costs for the transaction partners, which include not only the costs of water purchase for the donor – on which we concentrate in this section – but also transaction costs for

transport and negotiation and, hence, costs which can also occur for the recipient. From an economic perspective, the prevalence of gifts would be greater when the donor incurs the least costs, either because the cost of water is low, or the costs are (partly) compensated.

In a case study of Cape Town's township Khayelitsha, where non-paying households were cut off from the network, Xali (2002) found that 89% of those cut-off requested and received water from their neighbours without payment. Such solidarity cannot be taken for granted: some neighbours even locked their taps because of the "fear that they will end up paying more money for water and may themselves end up as victims of water cut offs" (Xali, 2002: 114). Vice versa, solidarity was not necessarily called upon, as many of the water-poor were reluctant to take water and tried to clear their debts as soon as they could, or installed illegal connections: "Water cut offs diminished their dignity by making them request water from neighbours" (Xali, 2002: 107). Xali portrays the 'requested' gift of water as a material benefit – since cut-off households receive water – but contrasts these benefits with negative impacts for the recipient. "The gift narrows the distance between the giver and receiver because it is a form of sharing, yet it widens the social distance between them because the receiver is now indebted to the giver. The gift can, simultaneously or sequentially, be an expression of generosity and/or an act of violence" (Verhezen, 2009: 32). Buying water instead of requesting a gift can be a preferred strategy to avoid potential future social costs. Equally on the side of the potential donor, not giving water might maximise benefits, when the loss in social reputation is lower than the financial and social costs of the gift.

Like Xali, Amiraly (2009) assumes balancing of interest to be the basic motivation for gift transfers. He analyses water gifts between neighbours in Chennai, stating that "in an Indian society, where the social relationships are highly valued, giving and receiving follows precise codes. What is received from the donor – in this case water – will be returned by the recipient at another occasion in a different way, to free himself from the debt and allow that the gift relationship is reproduced" (Amiraly, 2009: 255; our translation). The possible introduction of water meters would, according to Amiraly, reduce the practice of water gifts and consequently weaken the positive social function of these gifts. Water purchased by a metered system in comparison to a flat rate billing system increases the cost to a donor. Just as the profitability of for-profit neighbourly water transfer decreases through the introduction of water meters (Trémolet and Hunt, 2006: 17). From a mere economic perspective, because the cost of gifting water in the metered system increases, the probability of gift transfers decreases. Amiraly therefore argues against the corporation's plan to install water meters: "What seems disturbing in the case of Chennai is the willingness to introduce a tool which weakens the ties of solidarity between users, although these ties constitute a response to deficiencies of supply services" (Amiraly, 2009: 256; our translation).

A higher cost of gifting with the metered system does not necessarily render water gifts impossible, as Iskandarani (2002: 44) reports for Amman, where 19% of households partially rely on their neighbours. Even under an economic conceptualisation of the gift, such transfer can still be more beneficial for both transaction partners than when the water-poor household would purchase from a vendor. There is wide consensus in literature on water supply in the global south that 'informal' water provision is much more costly per unit than water obtained from the network.<sup>1</sup> The savings realised by consuming the neighbour's cheap network water instead of vendor water can be shared between the two transaction partners within the gift economy.

Why are these transfers not recognised in the literature? Although they disregard free neighbourly water flows, Keener et al. (2010: 9) argue that 'for-profit' neighbourly transfers are ignored in the debate, because "households usually 'hide' in the surveys the fact that they buy water from their

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<sup>1</sup> Swyngedouw (2004: 139) and Mitlin (2004: 230) summarise several studies in which 'informal' water is four to 300 times more expensive per quantity than water of the 'formal' network.

neighbours because household water resellers often are not listed in the established categories of household surveys". But this critique may also hold true for their own survey. They classify Khartoum water supply under the category 'household reseller' (Keener et al., 2010: 7), while our data show that in our study areas people never pay for household water transfers, nor are they aware of financial compensations taking place elsewhere in Khartoum.

### **The spatial configuration of water gifts**

Water tariffs are not the only element that makes water gifts more or less probable, but also the spatial layout of water availability is of importance. Gifting water requires heterogeneity. In a setting where all households have sufficient water, for example from a fully operative network, water gifts are unlikely to take place, because there is no need for redistribution. The same holds true in the inverse situation: if all people suffer from water shortage, and no one can afford to share his or her limited resources, transfers are not likely to take place. Heterogeneous spatial configurations can be produced through techno-natural differences of the water network as well as through different socio-economic capacities, which allow only some neighbours to connect to networks. Heterogeneity is inscribed into space either in the form of a patchwork within a neighbourhood or along social or technological borders in the city. Bousquet (2010: 148) reports for colonial Nairobi that residents from an unplanned settlement begged for water from the houses of white colonial settlers connected to the drinking water network. Proximity of neighbourhoods with different economic statuses allows water gifts, as does the proximity between neighbourhoods with very similar socio-economic characteristics but along the fringe of the network. Likewise, on a smaller time scale, heterogeneities can arise when networks are interrupted and some households temporarily run out of supply, while others still have plenty of water stored in tanks or barrels.

### **The social embeddedness of water gifts**

For the existence of gifts in a practical context much more is required than merely favourable spatial and economic constellations. Billionaires pass beggars on the street without giving; just as gifts take place under objectively unfavourable economic conditions, for example when comparatively poor people insist on purchasing a bottle of water for the European researcher entering their house to do an interview. A water gift, as any other gift, needs to be analysed in the social context in which it is applied.

A 'gift of water' is not a mono-directional flow of water but involves a complex process, embedded in the social milieu of the two transaction partners, as well as the wider social context. Marcel Mauss' essay on the gift (1990 [1923]) is the classic reference point for a discussion on gifts; the notion of 'reciprocity' is its most contested element. The range of conceptions of the gift is wide. While some acknowledge that 'pure' gifts take place without reciprocity (e.g. Singer, 1993) others have an economic reading of the gift in which actors only invest, if they profit in the long term by receiving return gifts or other indirect benefits (e.g. Bourdieu 2000 [1997]). To fully understand the content of the gift, and the extent of reciprocity, demands a detailed empirical analysis of the water transfers themselves and of the relationship of the donor and the recipient, taking into account non-monetary flows between them. Important indicators are for example, their social position and status, or mutual aid and support. In addition, the wider social conceptions underlying these water gifts, such as the recognition of universal rights to water or the social and ethical norms of helping the poor also need to be taken into consideration.<sup>2</sup>

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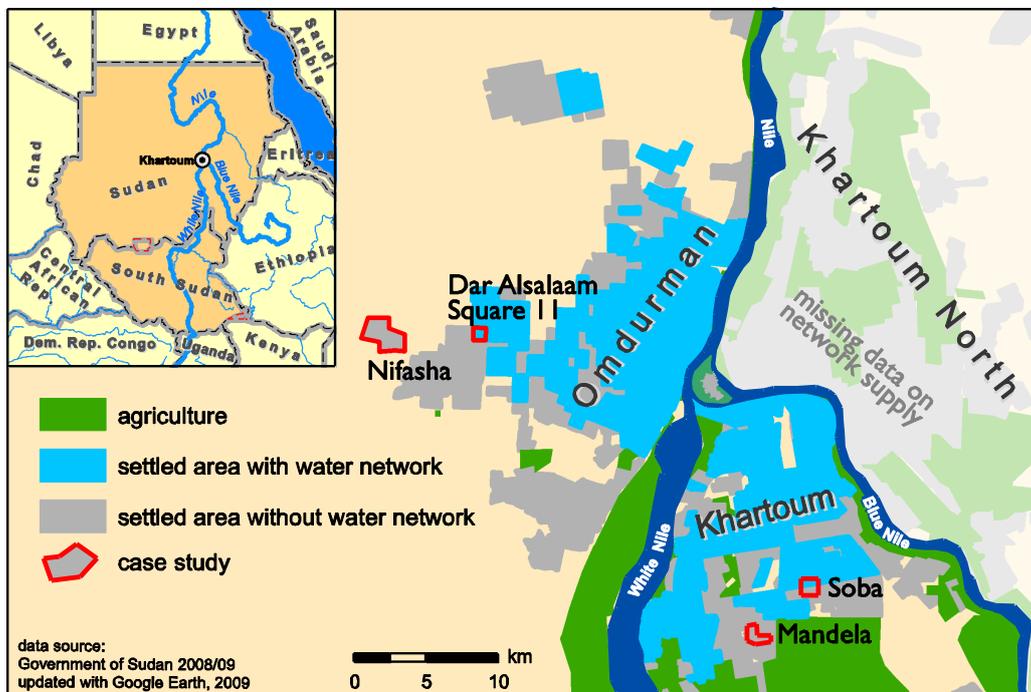
<sup>2</sup> For a detailed overview see Zug, 2014 (in press).

In the literature on water transfers, only Amiraly (2009) in the above-presented case on water meters in Chennai explicitly refers to gift theory. He highly values the social function of the water gift, as an integral part of neighbourly solidarity, crossing cast and family boundaries (Amiraly, 2009: 252). Through its function of reciprocity, water can become an element in the construction of social interaction between people, both in breaking down boundaries, as well as in their consolidation.

**NON-PAID WATER TRANSFERS IN KHARTOUM**

Water gifts are an important strategy to access water in many areas of Khartoum. This study focuses on the peripheries where water gifts are more frequent. There, water networks are often non-existent or malfunctioning while mainly poorer urban residents live there. For the poor, accessing water gifts is a more relevant option than for wealthier people, who are able to access more expensive alternatives to the network supply. Water access in our case is analysed from the perspective of the consumers, in order to grasp local and everyday practices. Taking the actors as a starting point was a choice facilitated by the absence of scientific research available in 2009 on water supply in Khartoum, which allowed a rather unbiased view of people’s practices. The first and exploratory phase focused on those areas without water networks. These form a ring around the more central, served areas of Khartoum. During random motorbike rides through the peripheries of Khartoum for several weeks, short interviews were conducted at those locations, which subjectively seemed interesting for understanding the peri-urban waterscape. These interviews revealed that free water transfers take place in Khartoum under very diverse social constellations. In this section, an overview of the water supply infrastructure in Khartoum will be presented followed by a presentation of different typical socio-spatial configurations in which the gifts take place.

Figure 1. Government water supply in Greater Khartoum and study areas.



### **'Non-gift' water provision in peri-urban Khartoum**

Water vendors with donkey carts are omnipresent in the peripheries of Khartoum. They mostly purchase water from government-owned water towers connected to generator-powered deep tube wells, which are today mostly subcontracted to private operators. These towers were established in government planned settlements mostly financed by international development aid in the 1990s when Khartoum was experiencing strong growth due to migration from the war zones in the South and areas suffering from droughts throughout the country (e.g. Assal, 2004: 12). In combination with open wells and deep tube wells, which were originally established for agricultural purposes, these towers are used by vendors, who deliver the water by donkey cart to unplanned settlements. These self-employed businesses are not an independent mode of water provision, but are part of the public water supply system. Without them the construction of water towers all over the peripheries would not have made sense.

Despite the absence of additional water sources, such as rainwater and surface water, due to climate conditions and the inaccessibility of groundwater with low-cost equipment, people had several options to access water. Surprisingly, many of these options were free of charge.

### **Water gifts along network fringes 1: The chicken farm in Nifasha<sup>3</sup>**

Urban fringes are favourable locations for the emergence of water gifts since they spatially bring different urban entities close to each other. Different types of land use, economic status of inhabitants and the quality of prevalent water supply system produce micro-spaces of heterogeneity. The first example concerns the fringe between industrial and household water use.

Nifasha was established in 2004 in the western peripheries of the agglomeration. Due to the illegal status of the settlement, the Government did not invest in water infrastructure and even prohibits NGOs to do so. Still, people access water from a borehole constructed for agricultural purposes, but completely transformed for household water provision. The only crop still being produced on a much reduced scale is animal fodder – fodder which is required to feed the donkeys that are used for delivering and selling water to the inhabitants of Nifasha.

Besides this fully commercial water supply, some people have a second possibility to access water free of charge. In the South-West of Nifasha a chicken farm with large stables was established in 2006 on the ground of an old agricultural farm. To reduce the exposure to wind, a high hedge was planted on the border with Nifasha. Irrigation water pumped through a permanently installed hose to water the trees has been made accessible by the company to residents by installing five taps along the hedge. These taps allow those living close to the hedge to satisfy their water consumption free of charge as long as they are willing to invest labour for carrying the water and the time for waiting.

Providing this water was explained by managers of the company on grounds of religion-based duties related to water. However, the company has manifest reciprocal interests for doing so. When the chicken farm was established, 30 families had settled on their premises. With the help of the police these settlers were forcefully evicted. Giving water to the neighbouring settlement – along with financial support for the local soccer team, and providing construction material to the local mosque – is a means of keeping good relations with the local inhabitants and the self-declared committee which provides people with 'preliminary' land titles. The benefit of having good relations is – among others – that the committee ensures that the chicken farm premises are not encroached upon.

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<sup>3</sup> The case study took place in March 2009, with ten spontaneous short interviews with households in different areas, two managers of the chicken farm, the operator of the water tower, and four members of the self-defined settlement administration.

Figure 2. Water gifts along the hedge of a chicken farm in Nifasha.



### Water gifts along network fringes 2: A socio-economic boundary in Soba<sup>4</sup>

A second type of urban fringe is one between residential areas which differ by their connectedness to public network infrastructure. In Soba, a middle-class settlement is divided by a road from an unplanned settlement. In the early 1990s, government officials originating from northern Sudan received plots of 400 m<sup>2</sup> in the northern section. However, hardly any house was constructed for more than a decade. It was only after the area was connected to the public water and electricity network around 2004 that construction activities slowly started. During the research in early 2010, the density was still very low.

The living conditions of these households are in strong contrast to those of the settlers south of the road. Since the mid-1980s, internally displaced persons from South Sudan appropriated the land. In 2002, the houses were destroyed by the government but the settlement was rebuilt shortly after. The street divides people by income, ethnicity, education, loyalty to the government and land security. This discrepancy also manifests in service provision. Households in the north pay 26 pounds for unlimited water provision, which allows them to water trees around their house and operating flushing toilets. The households in the south pay some 60 pounds per month for the daily refilling of a single barrel of water transported to them by a vendor with donkey carts.

This spatial proximity of households with very good access to the public water network on one side of the road and the absence of such a connection on the other side, allows not only the emergence of water gifts, but also an overall generation of social welfare by these gifts. Gifting water to the water-poor does not cost the water-rich any money, due to the flat rate character of their connection. However, it creates substantial economic benefit to the (water) poor by allowing them to substitute commercial water with free water.

People prefer taking water from the construction sites, rather than from the inhabitants of already established houses. This is firstly related to the easier accessibility. The gift recipients do not have to knock on a door and ask, but they can easily take water directly from the hose whenever it is not used by the construction workers. Secondly, many water-poor are reluctant to knock on the doors of rich

<sup>4</sup> This example is based on a small case study with qualitative interviews with four inhabitants of the southern settlement, two owners of connected houses in the north, two construction workers and two guards of construction sites.

households. Only some of those who take water from construction sites, also ask water from the houses when construction is not taking place.

Figure 3. Water gifts between a connected and a non-connected neighbourhood in Soba.



### Water gifts under heterogeneous access conditions: The case of hand pumps in Mandela<sup>5</sup>

In the third case, privatised hand pumps are the water source for gifts. This case shows the relevance of non-monetary costs for potential donors in gift transactions as well as the strong 'habitualisation' of water practices.

In the early 1990s, the Government of Sudan established several camps for the internally displaced and gave traditional leaders the responsibility of spatial planning, resulting in settlement patterns similar to those of unplanned settlements. In contrast to other unplanned settlements, NGOs were allowed to install hand pumps, which provided free water to the inhabitants and which contributed to the production of a completely different local waterscape than in other parts of the agglomeration. In the Mandela camp, in southern Khartoum, a section was reorganised in 2008 by destroying all the

<sup>5</sup> The case study is based on qualitative interviews with eight political actors, the government official responsible for maintenance of hand pumps, seven qualitative interviews with inhabitants, a standardised questionnaire with 200 households, and a semi-open questionnaire with people found at all 48 hand pumps in the settlement.

houses and by introducing a rigid geometric settlement pattern. In this new grid, many pumps were no longer on public ground but located on the household plots.

With the granting of land titles, the public hand pumps officially became privatised. Plots were distributed to entitled former residents by lottery. People were very reluctant taking plots with hand pumps, and several new owners closed the pumps on their premises. Why was owning a water pump not perceived as a gain, but as a burden? From the perspective of the neighbours, a hand pump does not become privatised but remains public, thereby granting them access rights to the pump and consequently to the plot. Ultimately, the private plot of the pump owner becomes public again, which devaluates its value for the plot owner.

This case shows the importance of the social construction of specific water supply types. Donkey cart operators are allowed to sell water even to their closest neighbours because they are classified by people as a 'business' given the costs for the cart, the donkey, the water, and their own labour. Selling the water from a hand pump, in contrast, is illegitimate because the hand pump remains perceived as a gift to all from an NGO. It cannot be redefined by the new owner into a business. The owners close the hand pumps because the social costs of gifting are not compensated for by the practical and economic benefits of having their own hand pump. The same social construction of the hand pump led to the deterioration of many pumps in the past because users did not make payments to maintain the pump after the NGO had left. The gift of the hand pump is perceived as an unconditional gift. That gifting of water from the hand pump can only be denied by demolishing it, underlines the strong social construction of hand pump water as a public good. The hand pump owners are strongly aware of their social obligation to satisfy their neighbours' right to water.

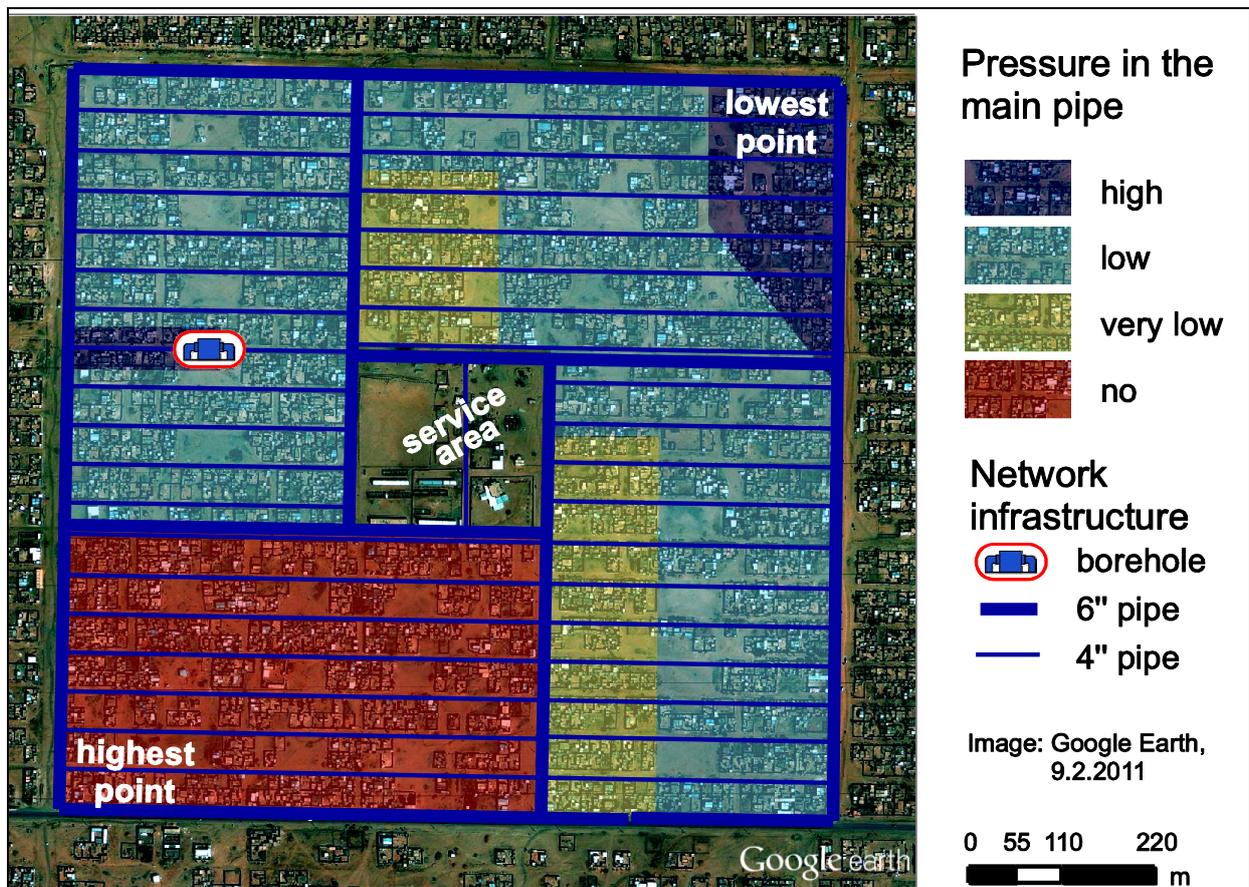
#### **THE GIFT OF WATER UNDER UNEQUAL NETWORK PERFORMANCE**

Having demonstrated the relevance of non-paid water transfers in different locations in Khartoum, we provide the case of water transfers in Dar Alsalam Square 11 in more detail in order to understand the social construction underlying the "right to the neighbour's tap". Interviews were conducted with political leaders, religious elites and people working in the water sector, such as the donkey cart operators, local staff of the public water corporation, and a private company collecting water fees. Detailed attention was given to four clusters purposely selected in those areas where water access was possible but difficult, and where the access to the tap was very heterogeneous between individual households. Guided interviews were conducted with members of all 53 households of the clusters, focusing not only on water supply strategies but also on the general social relations between neighbours. About half of the households were revisited at least once after the first analysis of data. Interviews were conducted with different members of households, including men, women and children.

The Square follows a standard government design of street grid measuring about one by one kilometre, with predefined open spaces and a service area in the centre. Plots were distributed to people relocated from other areas of Khartoum in 1991, resulting in a very mixed ethnic population. For all 2080 plots land titles were granted, but in 2010 only around 1600 plots were inhabited.

Shortly after the establishment of the neighbourhood, an NGO provided a water tower which was run under the authority of the public water corporation (KSWC). For nearly two decades, all water consumed in the square was delivered by water vendors with donkey carts. With increasing oil revenues, in the mid-2000s the Khartoum state government started to extend the water supply network towards the peripheries (Beckedorf, 2012). Square 11 received a network in 2007 fed by a borehole located in the square. Ultimately, the square is to be served – as most of the north-western agglomeration – by an already constructed Nile water treatment plant. However, the construction of the main pipes has been delayed for several years. In early 2010, many of the connected households did not manage to access water from their taps because the water produced from the borehole was both insufficient and unequally distributed.

Figure 4. Internal fragmentation of Dar Alsalam Square 11’s water supply



Water inequality manifests on two different scales in the square. The topography – the south-western corner is five metres higher than the north-eastern one – combined with the particular network design and the absence of technical and managerial measures to prevent water following the natural slope, causes differential access. The square can be subdivided into areas ranging from having water in abundance to those with completely dry taps.

On the scale of the neighbourly waterscape, people invest differently in their water connections. While some households accept that their tap is hardly performing, others adapt the infrastructure. In those areas where water pressure is low (light blue area in Figure 4), water pressure is improved by lowering the tap to the ground level, or even up to 1 metre below ground level. Figure 5 below shows how the infrastructure is adapted. Some remove several, or all, elements of their connection pipe that create friction and turbulence, and can decrease water flow. Others install pumps which draw water from the network. Pumps are more effective and convenient, as they pump water directly into the household barrels. However, they are only affordable to the few households that can afford the costs of the generator to produce the necessary electricity. The different investments into water access results in a mosaic of diverse water consumption patterns in the neighbourhood even though the network supply performance in that particular area of the square might be uniform.

Figure 5. The adaptation of network infrastructure.

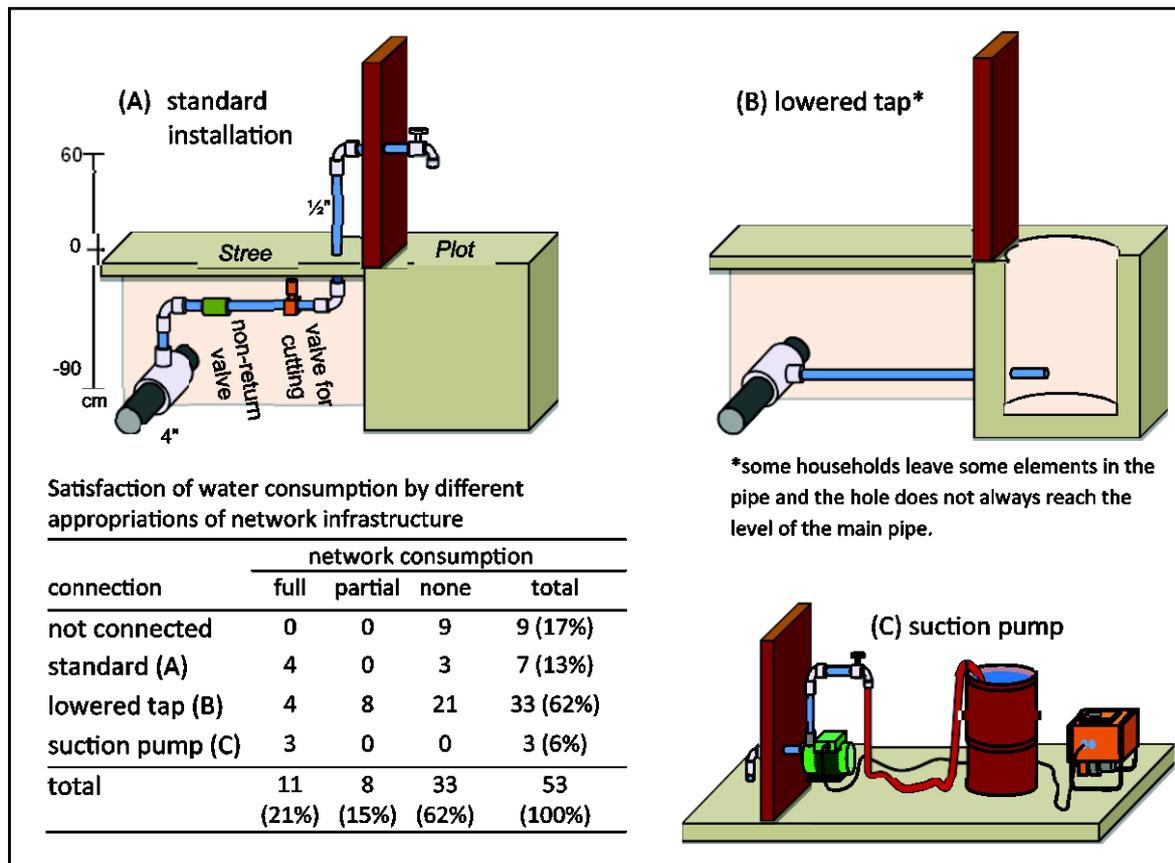


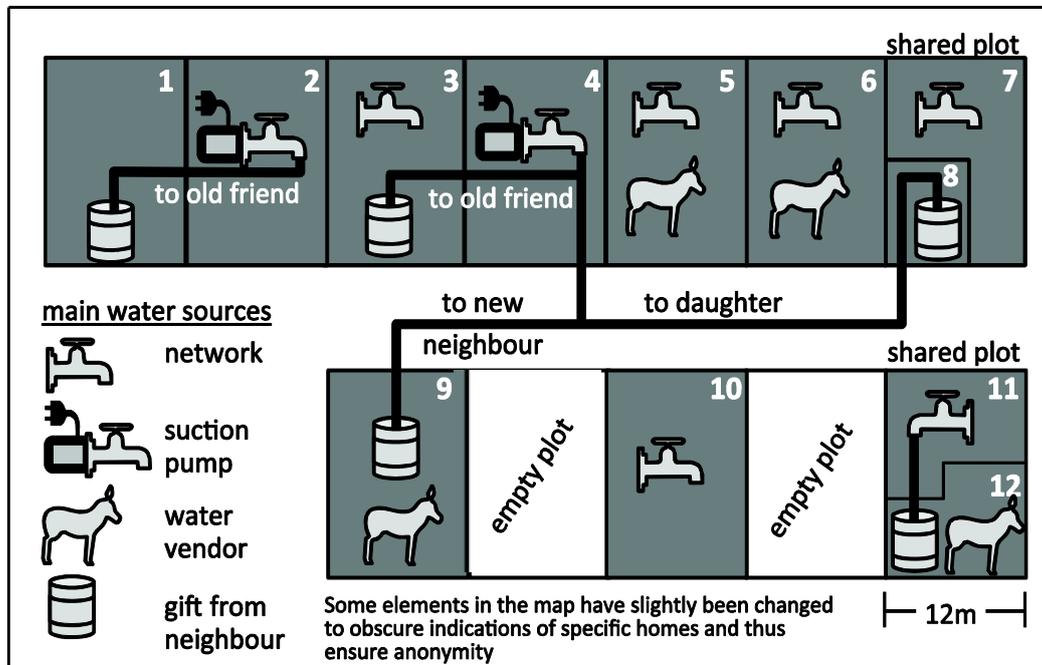
Figure 6 below provides an example of a stretch of a street in which accessing water is possible by lowering the tap. Household 7, 10 and 11 manage to satisfy all their water consumption from lowered taps. This access is not very convenient, since they have to wait up to 15 minutes for a bucket to be filled because the pressure is so low, and then they have to carry the water to their storage barrels. Since sufficient pressure is only available for short periods during the day, households 5 and 6 supplement their tap water with water purchased from water vendors. Households 2 and 4 are economically better-off than the other households, which is also visible by the quality of their houses. These households could afford installing generators to run water pumps; operating their pump for half an hour when water pressure is available in the network allows them to fill their barrels by hose and directly watering the trees around their houses.

The spatio-economic constellation for water gifts in the neighbourhood is favourable, firstly because water-rich households live in direct proximity to water-poor households. Secondly, the cost to the potential donors is significantly lower than the savings of the recipient household<sup>6</sup> leading to an overall welfare increase. After household 2 finishes filling its storage barrels, it hands the hose to the neighbouring household 1. Although they are neither relatives nor from the same ethnic group, the two households have developed an intense relationship over the last 15 years as they live next to each other. This intensity became symbolised by the removal of parts of the wall and is verbally underlined

<sup>6</sup> Since water from the tap is purchased based on a flat rate tariff every additional litre consumed does not increase the monthly bill. The only cost to be carried by the donor household is the cost for operating the generator for additional time, which amounts to about 0.25 Sudanese Pounds per barrel. A barrel purchased from a water vendor costs 2 Sudanese Pounds.

by household 1 stating "The moment they arrived here, we felt like brothers and sisters". Even if household 1 would be able to receive water by lowering its tap, it never did, knowing that its good relationship with its neighbour would render its access much more comfortable.

Figure 6. Gift transactions by garden house in a cluster in Dar Alsalam Square 11



A similar relationship exists between the pump-owning household 4 and its neighbour household 3, who explains:

When [hh4] has finished filling their barrel, they send us the hose. With the hose, we fill our barrel or use the water for washing clothes. Sometimes we refill our barrel a second time in the evening. We can even take water from [hh4]’s barrel if there is no water in the pipe. (...) We can take until their barrel is empty.

Even though, household 3 is economically weak, they compensate their neighbour with reciprocal support, during house construction for example. Because of the absence of men in household 4 during daytime, the sons of household 3 maintain and operate household 4’s generator. By naming one of their sons after the neighbour, household 3 underlines its indebtedness.

Household 4 not only supplies household 3, but also the household’s daughter, who lives in house 8, and spontaneously offered water to the unknown members of household 9, who recently moved to the street and have not yet been connected to the network. Household 9 described the initiation of the gift:

Our neighbour [hh4] saw us trying to stop a donkey cart to buy water. He stopped us and said: "Do not buy water from the donkey cart again. This is the tap and this is the pump. Every day we operate it. Take the water you want". This was the first time.

The reason for supplying this family is not based on an already existing reciprocal relationship as is the case with household 3. The father of household 4 is very proud of the social relationships he has in that particular street: the greetings and small talk with the neighbours; the feeling of being a small community. By offering water to the new neighbours he invites them to become a part of this reciprocal community.

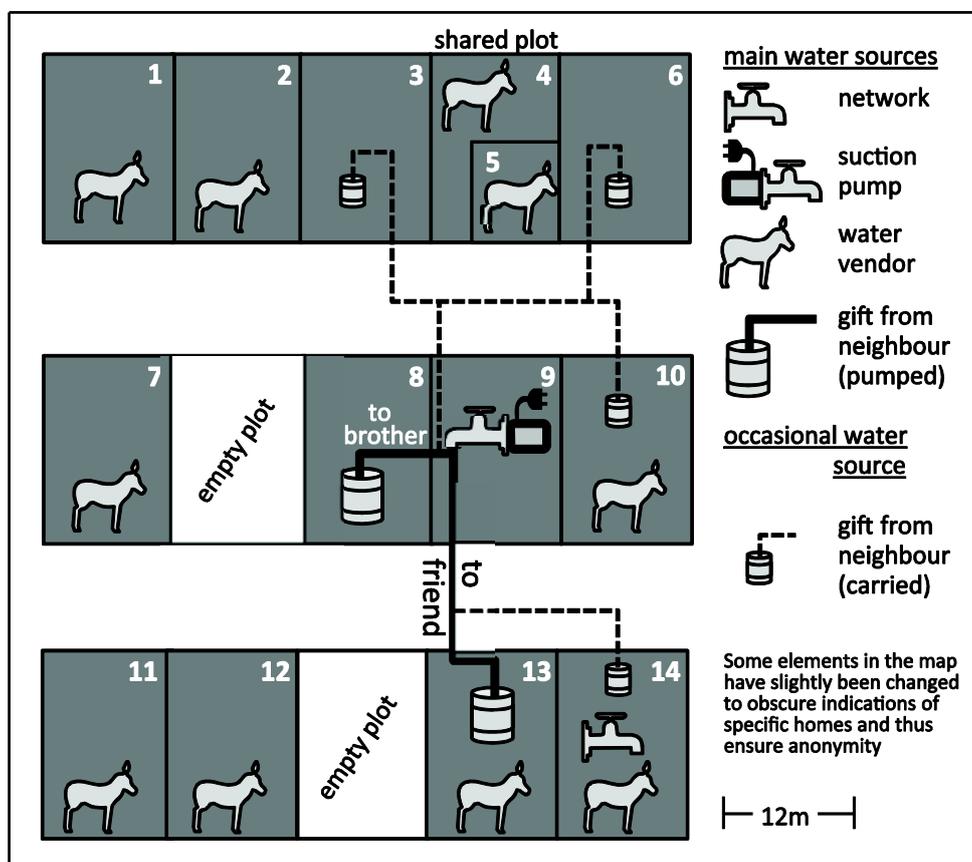
Despite the offer from household 4, inmates of household 9 had been buying most of their water from the water vendors when revisited four months later. It was only when they were directly offered water that they accepted the offer, but they were hesitant to actively ask for it. That the daughters of the two households began a friendship in which they sometimes go to central Khartoum to have ice cream together, lend each other a charged battery for their mobile phones, or braid the hair of one of the daughters of household 4, could be perceived as a starting point of a relation as hoped for by household 4. However, for household 9 it was clearly not sufficient yet to compensate for the indebtedness related to a continuous supply with water.

With his benevolence towards his poorer neighbours, the father of household 4 obtained a powerful position: he earned the respect of the households in the street and is the unquestioned leader of this small community. In case of local disputes, he is asked for his opinion through which he can set the local agenda. As such the gift is part of a political economy of the neighbourly social field, in which water becomes a means to exercise power while influencing the social hierarchies as this example shows.

**THE UNIVERSALITY OF WATER GIFTS**

In a second cluster of houses the water situation is worse than in the first one. The central household 9 in this cluster is 'water-rich' due to an installed suction pump, and is surrounded by households of which only household, 13, manages to partially cover consumption from an optimised network connection. The social constellation differs from the one in the example presented above. Rather than sharing a long common history, half of the households moved to the area only during the last 12 months.

Figure 7. Gift transactions by carrying in a cluster in Dar Alsalam Square 11.



Household 9 supplies water by hose only to a brother (hh8) and a neighbour (hh13) with which the family maintains a friendship. Despite the very poor water availability of the other neighbours, household 9 does not provide water to them. The female head argues that the other households did not follow the initiation rituals of visit and return visit: "They did not visit us back. I went two or three times. But they did not come back. So I will not establish a relationship with them". Furthermore, the male head of the household expresses antipathy against his neighbours:

There are no good neighbours, so what can we do? We do not want our women to connect to anybody, because there are some who are not good. (...) with them we just connect in Eid and Ramadan. We have *Iftar* together, but we do not want to have more than that.<sup>7</sup>

His antipathy is directed towards his neighbours in general, but in particular against two plots occupied by young men. Young, mostly unmarried migrant workers jointly rent plots where they mainly sleep at night, while they work or search for work outside the square during daytime. These households can be found all over the square, and two of them are among the direct neighbours (hh4 and hh10). According to household 9, "We are a family. We do not deal with single men households. We never give them our water hose. (...) Single men do not respect others". They make very clear that they consider only those households eligible for supply to their plots as those with whom they maintain a strong social relationship.

However, through an alternative gift biography, neighbours still have access to water from the suction pump. Four households occasionally consume water from household 9. Instead of offering these neighbours water, household 9 implicitly allows any neighbour to take water, but only outside. Neighbours can fill their buckets with water and carry them to their house when household 9 waters the trees on the street or when they wash a minibus in front of the house. One of the households of single men is among the households that occasionally access water in this way. Household 9 explains that these transfers take place in spite of the absence of an intensive relationship, because "we do not refuse when people want to take water. (...) It is normal, they can take water, and we do not stop them. The hose is outside, we do not guard it".

The example of the provision of small amounts of water to anyone who wants is a common practice in the square. Water gifts by accessing the neighbours' water by buckets is widespread in streets where no suction pumps are installed, but where some households have more favourable access to water than others because they improved their network access. In houses with deep holes, close neighbours and sometimes people coming from a neighbouring non-connected square queue to get their jerry cans and buckets filled. They are allowed to do so despite the tap being inside a private plot and legally owned by a household, and despite the owner of the tap having to, in many cases, restrict their own water consumption to satisfy the needs of others.

That water is not only given free of charge to socially connected people but also to strangers and those less liked, underlines that the donor's motivation cannot be explained only by reciprocity. People argue that water is not just any good on the market. "Water is a necessary thing for life. If you do not have water you will die". People strengthen this by relating it to the climate of Sudan situated in the middle of Sahara Desert, where access to water is even more important for survival than in other places on earth. Nevertheless, a neighbour asking for water is clearly not a person dying of thirst in the middle of the desert. His survival is ensured by the vendors. The water accessed is not only required for satisfying basic water needs, but also for taking a shower, cleaning the house, and watering the plants. That people define water as a gift to be given for free, cannot be understood out of the present water situation in Khartoum. The gifts go far beyond what is required for survival.

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<sup>7</sup> *Iftar* is the meal that is taken at sunset during the fasting month of Ramadan and Eid (al-Fitr) is the celebrations after Ramadan. In Square 11, men take meals together with neighbours mainly on open squares, empty plots, or on small streets.

Besides the social construction of nature, religious concepts about water are used by people to explain the local water habitus, which reflects the local universalised norm, 'to give water whenever you are asked for'. Several people mention only three words, which they cannot always explain: "grass, water and fire". These words refer to a *hadith*, which can be interpreted as a prohibition to sell these elements and as a request for granting access to anyone (Abu-Dawood: Hadith Nr. 3470, interpreted by Faruqi, 2001: 2). These cultural and religious explanations are opposed to the economic realities of water exchange and justify the acceptance of economic loss for a potential donor.

Through local gift practices, social actors move water, which was produced by the public water cooperation and supplied inside a capitalist economy, out of the commodity state. The social rules make water exchange between neighbours always free of cost; however, they do not necessarily make it a freely accessible resource in unlimited quantities for each and everyone without access to piped water. The local rules of water supply are interrelated with the economic and social transaction costs water gifts produce for potential donors, such as the costs of acquisition and the presence of non-household members in the private sphere. These rules include the local construction of property rights of water, as they are dependent on a specific person at a defined place, as the example of the hand pump showed. Finally, donors can deny access to water used beyond the satisfaction of basic needs.

The inability to explain water gifts as a reciprocal transaction underlying market logic requires going beyond a reciprocal explanation of water gifts. Tvedt and Oestigaard (2010: 16) argue that "many notions about water are shared by different religions and different geographical and climatic regions, so specific civilizational or cultural analytical frames are not particularly helpful in this regard". They aim to establish a "history of perceptions and ideas of water", in which water in societies is conceptualised as a "unique (...) element in the sense that it is both universal and always particular. This dual nature of water makes it unique as empirical data because it enables studies of both universal and particular aspects of water at the same time" (Tvedt and Oestigaard, 2010: 16).

We argue that the "right to water" is one of the universal features of water. The UN's declared human right to water (2010) is only a particular codification of the universal right to water at the scale of the nation state. However, the human right to water is also inherent in different religious laws (e.g. Pradhan and Meinzen-Dick, 2010; Larson, 2011), and in long-established community arrangements of collective water management (e.g. von Benda-Beckmann et al., 1997; Boelens et al., 2010). In case of the presented case of free access to a neighbour's water – at least to satisfy the basic human need to drinking water – the right to water is ensured in the neighbourly waterscape of Khartoum.

## CONCLUSIONS

Water gifts in the studied neighbourhood in Khartoum are an important element to understand the local waterscape. The existence of water gifting allows many households, whose taps do not perform as intended by the public provider, to substantially reduce water costs. At the same time, the business opportunities of water vendors are reduced. The total composition of the physical flows of water in a neighbourhood is only partially produced by the economic interplay between demand and supply. The role of water in social and religious conceptions, as well as in the relevant social constellations, impacts the biographies of water drops and thus influences the social and power relationships in the neighbourly waterscape. Social positions and relations evolve according to the flow of water between neighbours. In our case, the redistribution of water not only secures the coverage of vital needs but also, and foremost, social bonds. Water is mobilised for purposes of social integration or exclusion in the neighbourhood.

The impact of water gifts is not restricted to the studied neighbourhood but also occurs in the waterscape of large parts of the city. The unreliability of the central water network and the ruptures of water provisions by the KSWC force households with means to share some of their water with neighbours as observed in central parts of Khartoum like Deim (Arango, 2009: 73). While the

importance of water gifts fluctuates according to the different neighbourhoods and different periods, they play an important role in the water provision of a part of urban households.

By their services, vendors guarantee the satisfaction of basic water needs at a high cost in those areas where water networks are absent or fail. In this way, they allow the city to expand faster into the desert, and beyond the limits defined by the urban network. In a constellation of a failing network, water gifts provide free water to those who cannot, or do not want to, spend their money on water from vendors. The basic needs of those deprived from the network are, at least partially, satisfied by their neighbours.

While everyday gifting practices reduce water inequality inherent in the neighbourly waterscape, they have an inverse impact on water inequality in the city. Water poverty is a central argument for the installation of water networks and the performance of the networks. Through gift practices the consumers release the public corporation from their responsibility to ensure equal access to network water, because they are taking care of their neighbours. When someone is not sufficiently supplied with water or able to purchase water, she or he can access water gifts. Consequently, gift practices and their coverage of basic water needs reduce the pressure by consumers to actively claim services from the public water provider, and by extension, releasing the authorities to secure a universal water delivery. Finally, water gifts contribute to the manifestations caused by the fragmentation of the city's waterscape but simultaneously conceal them. Despite the localised failure of water supply, the corporation can afford to not take any immediate or even intermediate actions without social or political consequences.

With our case we show how important it is to understand the consumer perspective and their everyday practices in accessing water. Our analysis also shows the relevance of the gift in the formation and reproduction of the urban fabric, and its underlying horizontal and vertical political relationships. The gifting of water is an important foundation for social relationships between neighbours living in the same street or a block. Vertically, the gifts of water are beneficial to local and political authorities as pressure to deliver or guarantee water services in all urban areas is somewhat dampened. With this paper we encourage research and policy-making to be more sensitive and attentive to the agency of the consumers and the non-monetary transfers of water.

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