"Money is Not the Problem": The Slow Financialization of Kenya's Water Sector

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Abstract
This paper analyses the 'arduous and contingent' process of creating the 'preconditions' for financialized forms of development in urban Kenya. Building on a growing critical literature on how finance is shaping development in the Global South, the paper traces the more-or-less concerted effort of an array of actors and intermediaries to create a functioning market for urban water services. Such efforts, which are justified through appeals to a 'finance gap' are an attempt to connect capital seeking profitable investment opportunities with a sector long starved of funding. The pursuit of financialized models of water provision, however, is deepening the gulf between service areas that are deemed profitable (or potentially profitable) and those that are not. The paper argues that it is not lack of money, but an emerging system of water service provision which prioritises commercial principles and value extraction, that shapes where investment *does* (and crucially) *does not* flow.

Two frontiers

"*The question of creating investments that will give a positive return in the future is the current issue in the water sector. Is it worth investing in the sector that is mostly service by nature than commercial?*"

Kenya Water Services Regulatory Board (2020, 11)

In it's flagship *Vision2030* policy, the Kenyan government aims for the country to reach middle-income status by 2030 and to provide "a high quality life to all its citizens" (Government of the Republic of Kenya 2007, 1). Infrastructure development is central to this vision, which "aspires for a country firmly

interconnected through a network of roads, railways, ports, airports, water and sanitation facilities, and telecommunications" (ibid, 6). To achieve this, the government has actively pursued private investment and financialized forms of development (MTI 2013). Official publications frame Kenya as a land of opportunity for investors, promoting recent developments in ICT capabilities, energy infrastructures and transport interconnections, as well as the growth of banking, business and financial markets in the so-called 'Silicone Savannah'. One *Vision2030* document, for example, is entitled "Kenya: A Frontier of Great Opportunity" (Vision2030 Delivery Secretariat 2018). The economy has undergone significant transformation in the last 10-20 years towards financial growth, particularly with respect to infrastructure (as outlined above) and personal banking via new ICT platforms (Allen et al. 2013; Chambers and Evans 2020; Kusimba 2018).

The argument presented in this paper rests on the notion that the economic, social and material transformations underpinning financialization do not occur spontaneously as investors see opportunity, but require the convergent efforts of an array of actors and intermediaries. While there is a growing literature that attends to the processes of financialization and the 'work' of creating new asset streams (Boussard 2018; Fairbairn 2020; Fields 2018), insufficient attention has been paid to what this paper refers to as the 'preconditions of financialization'. The paper studies financialization on two frontiers. Firstly, the financialization of development. Financialization is a burgeoning area of study in critical political economy (see for Pike and Pollard 2010; French et al. 2011; Hall 2012; Sawyer 2013 for reviews of this work), and while much of the existing work concerns the Global North there is an increasing focus on the various ways in which financial markets, actors and practices are shaping development in the Global South (Ouma 2014; Mawdsley 2018). In this regard, Kenya's experience in many ways reflects broader processes towards increasingly financialized forms of development. Secondly, while financialization of infrastructure has been studied extensively in relation to energy, housing, transport and telecommunications, water infrastructure has received relatively little attention (Bayliss 2014; March and Purcell 2014). While water has perhaps lagged behind other sectors as a frontier of value extraction, this is changing, and there is now a growing critical literature on how water services are becoming enrolled in circuits of financial accumulation (Bayliss 2014; Loftus et al. 2019).

Leyshon and Thrift (2007, 98) argue that "the bedrock of financial capitalism is not the spectacular system of speculation but something more mundane." Financial capitalism, they suggest, is "dependent on the constant searching out, or the construction of, new asset streams…which then – and only then – allows speculation to take place." The construction of new asset streams, according to Fairbairn (2020:133), is an "arduous and contingent process," shaped by a "gossamer" of cumulative changes and decisions, helped or hindered by the complex materiality of the commodity itself. In Kenya, the slow process of restructuring and reorganising the water sector in order to attract investment is occurring through two inter-related processes. Firstly, the last 10-20 years have seen

significant attempts by government and development organizations to commercialize water services through institutional restructuring. Secondly and more recently, initiatives are underway to formalize and securitize household bill payments and repackage this into investable products. In other words, what is currently underway in Kenya is a more-or-less concerted effort to transform the social relations of water, *to make water pay*. These transformations are an attempt to connect domestic and international capital seeking profitable investment opportunities – the 'wall of money' (Ahlers 2020) – with a sector long starved of funding. While mainstream analysis lauds the role of private capital in filling 'finance gaps' in infrastructure provision (see Goodfellow 2020 for a critique of this), this paper argues (as the title suggests) that it is not lack of money, but an emerging system of water service provision which prioritises commercial principles and profitability, that shapes where investment *does* (and crucially) *does not* flow. There is, therefore, a danger that the pursuit of financialized models of water provision in Kenya by the state, development organizations and financial actors is deepening the gulf between service areas that are deemed potentially profitable and those that are not.

In what follows, I first explore the burgeoning literature on financialization, paying particular attention to financialized development, infrastructure and water. I then move on to detail the increasing focus on financialized development of water services in Kenya. The research is based on interviews conducted in 2019 with experts and key stakeholders in the Kenyan water sector, as well as documentary and media analysis. The paper charts the attempts over the last decade to commercialize utilities and securitize revenue from household bills and ends with an examination of two water financing intermediaries, the Kenya Innovative Finance Facility for Water (KIFFWA) and the Kenya Pooled Water Fund (KPWF). These two organizations were recently established and funded by the Dutch water sector, which has a history of promoting financialized models of development in Kenya (see Savelli et al. 2019), and are beginning to play a small yet significant role in transforming the social relations of water.

Financialization and development

In recent years, financialization has become an increasingly capacious and malleable concept. It has been used as a tool to describe and analyse an array of processes and phenomena from a variety of disciplinary and theoretical perspectives, and as such is now "made up of a plethora of contested narratives" (French et al. 2011, 800). For some, financialization denotes a novel set of processes and even a new epoch of global capitalism (see Epstein 2005), while others argue that financialization itself is not novel, but rather that its contemporary scale and scope is unprecedented (see Krippner 2005; Sawyer 2013). At a broad level, financialization concerns "the structural transformation of capitalist economies during the last three decades, with its attendant social implications" (Lapavitsas 2011, 611). Such structural transformations include, but are certainly not limited to: the rise of shareholder value and associated corporate restructuring (Froud et al. 2000; Labban 2014); the expansion of interest-

bearing capital (Fine 2013); the securitization and bundling of disparate revenue streams into financial products (Leyshon and Thrift 2007); the extension of financial mechanisms into previously unfinancialized sectors (Sullivan 2012; Fine, 2013; Kay 2018); and the restructuring of social relations and cultural practices around financial imperatives (García-Lamarca and Kaika 2016; Langley 2008; Pitluck et al. 2018).

Financialization has become heavily theorized in the literature and is often applied to diverse phenomena as an abstraction. This has led some commentators to caution against the pluralization of the term and argue that by diversifying the conceptual scope of financialization we risk losing its meaning and analytical purchase – see for example, Engelen's (2008) warning against concept-stretching and Christophers' (2015) 'limits to financialization.' I argue, however, that conceptual pluralisation is not *necessarily* undesirable, given the vast range of phenomena, processes and socio-material relations that are potentially or actually implicated by finance and financialization, and indeed the diversity of financialized accumulation strategies pursued by private capital (March and Purcell 2014). As van der Zwan (2014, 101) nicely puts it, "despite the usage of a common terminology, financialization covers a host of empirical phenomena at different levels of analysis." Nevertheless, such warnings should encourage us to be clear in our theoretical claims about financialization and the empirical processes to which it is applied (Pike and Pollard 2010).

So far, the literature on financialization has predominantly focussed on the Global North, particularly the ideological centres of finance: the United States and United Kingdom; (Bortz and Kaltenbrunner 2018). Yet, recent years have seen financialization being debated in the context of development. For Carrol and Jarvis (2014), the financialization of development has emerged from a "confluence of interests" including the changing role of development organizations away from providing concessional loans towards blended finance, international financiers seeking investment opportunities in emerging markets, and governments looking to generate revenue to fulfil development targets. "Emerging markets," Carrol and Jarvis (2014, 533) argue, "are seen as ripe for private sector investment and, at the same time, in need of foreign capital to support rapid industrialisation, modernisation and poverty reduction." Such processes, Mawdsley (2018, 267) argues, are part of a shift towards framing economies in the Global South as "'frontiers' that are increasingly attractive to global capital flows." The injection of finance into so-called 'frontier' economies, which has become characteristic of contemporary development, serves to open-up new enclosures for capital accumulation (Storm 2018). Gabor (2021) argues that these efforts to make development investible constitute a 'Wall Street Consensus' to connect profit-seeking global investors to infrastructure assets in the Global South.

For this study, particularly because it concerns a sector in a national context in the early stages of financialization, the interesting question is less about how value is extracted via financial mechanisms and more about the real material forms of development that are enabled and/or constrained by the

introduction of more financial actors and financial imperatives. There is a growing literature that points to the variegated and uneven geographies of financialization, creating opportunities for some areas, sectors or actors, while marginalizing others. Financialization and debt-led development, Furlong (2019, 572) argues, can be double-edged in the sense that it can be "a foundation for economic development and social inclusion," directing funding to cash-starved economic sectors, but can also be "an instrument of wealth extraction, enhanced inequality and potential crisis." If decisions on funding and investment are increasingly being made on the basis of a project's ability to generate returns, 'attractive' sectors or areas are likely to draw in capital and grow rapidly, while 'unattractive' sectors are side-lined and starved of credit (Bond 2013). This leads to variegated processes of exclusion on the one hand, where humans and nonhumans are pushed out of the circuits of capital, and processes of inclusion on the other hand, where previously excluded humans and nonhumans are enrolled into those circuits. As such, financialization is bound up with increasing social inequality both within countries – for example, through increased household debt (Young 2010) – and between Global North and Global South (Bortz and Kaltenbrunner 2018). Moreover, as financial relations, practices and mechanisms increasingly become part of the norm in development, in the absence of policies to redress inequality such asymmetries are likely to deepen.

The work of financialization via infrastructure

There is a growing literature exploring how infrastructures mediate the processes of financialization (see O'Neill 2019). Infrastructures are implicated both as a focus of investment and by allowing finance to access resources and environmental processes (Ahlers 2020; Fields 2017; Lapavitsas 2011). At the heart of this is a dialectical relationship between simplification and complexification. On one level, financialization drives a process of simplification; of disavowing the complexities of socio-natural forms and rendering these relations simply in terms of their financial attributes (ability to generate return, risk profile and so on). Infrastructures, according to Pryke and Allen (2019) are lifted out of their local contexts, disassembled and reduced to their various investment qualities, and are thus translated into equity. Financialization, therefore, is about extracting value from "illiquid assets by turning them into liquid forms" (Pryke and Allen 2019, 1327). In this sense, financialized assets are placeless and removed from context in that their principle characteristics are expressed in the universal metrics of finance. On another level, however, financialization is predicated on geographical complexity. Indeed, geographical difference creates opportunities to maximise profits through the creation of innovative financial products. This is achieved by combining assets with different risk profiles into investment bundles, whereby relatively safe assets with low returns mitigate higher risk assets with correspondingly higher rates of return. Pooling investments is not so much about disavowing the complexities and contingencies of water infrastructure, but in smoothing out differences between contexts in order to create a marketable financial product – it is about de-risking, where risk embodies

difference and contingency. Put another way, geographical variation becomes an opportunity because it allows risk to be spread. Infrastructures rendered as financial assets and combined in financial products, therefore, "capture the value of a place while distributing the risk of ownership globally," creating a "geography of the rate of return" (Torrance 2009, 76).

While the infrastructure/finance nexus is receiving growing attention, more work needs to be done to understand the mechanisms by which infrastructural services are aligned with financial imperatives. Understanding the "arduous and contingent process" (Fairbairn 2020:133) of market formation via infrastructure has become a rich area of study in critical political economy. This work on financialization as an emergent process is seen as a way of opening the black-box of finance and identifying potential ruptures for contestation and politicization (Fields 2018). Important research on this by Boussard (2018), Fairbairn (2020), Fields (2018) and Ouma (2016) has contributed a great deal to our understanding of the 'operations' of capital as messy, contested and contradictory. These scholars have foregrounded the role of financiers, land owners and bankers, as well as technologies, in the formation of new financial markets and asset streams. Yet, more work needs to be done to understand what this paper refers to as the 'preconditions of financialization' – i.e. the re-alignment of sectors, driven largely by service providers, development professionals and state actors rather than investors, in order to encourage financialized forms of development. In the water sector, as explored below, this often entails substantial restructuring to create the pre-conditions for the simplification/complexification dialectic through which water service infrastructures are enrolled in the circuits of finance. Such restructuring, in turn, has important implications for the development options available to service providers. As Furlong (2020) shows in the case of infrastructure financing in Medellín, Columbia, it takes a great deal of effort to re-align the social relations of infrastructure services, via mechanisms like full cost recovery, to encourage utilities to take on higher levels of debt and to service that debt by effectively passing it on to rate-payers. Investigating how infrastructural sectors are restructured in this way, therefore, is essential in politicising the corollary of "how the need to generate revenue requires a city [or region] to be operated in particular ways" (O'Neill 2019, 1307).

The financialization of water

If economies in the Global South are understood as a geographical frontier of financialized modes of accumulation, then previously unfinancialized nature – such as water, land, ecosystems and so on – represents a material frontier of financialization (Kay 2018; Knuth 2018). The financialization of nature, as noted more generally above, describes a diverse set of phenomena through which the varied material elements and processes of 'nature' become enrolled in the circuits of capital accumulation through financial mechanisms, such as debt, value extraction and speculation (Ahlers and Merme 2016; Schmidt and Matthews 2018). Such processes are always messy and contradictory, often emerging in

a piecemeal and (as noted above) *uneven* manner (Friend and Hutanuwatr 2021). At the heart of it, however, as put by Ouma et al. (2018, 501), is "a process of ontological reconfiguration;" a re-constitution or re-imagining of complex nature and social relations, "through which different qualities of nature and resource-based production are translated into a financial value form."

Financial involvement in water is geographically varied, with some areas (e.g. London) having undergone deep financialization and other areas (particularly in the Global South) almost entirely excluded from circuits of finance. In general, however, compared to other sectors, finance has been slow to penetrate water resources and services (Loftus et al. 2019). In part, this is due to the particular material and social characteristics of water that make it unfavourable – or at least highly context-dependent – for investors; qualities that have now been thoroughly debated in the literature (see Bakker 2003; Castro 2013; Williams 2018). While there is a strong tradition in Geography and related disciplines of studying neoliberalization in the water sector in diverse contexts (characterized by the related processes of commodification, privatization and commercialization), processes of financialization have received less scholarly attention (Bayliss 2014; Loftus et al. 2019). March and Purcell (2014, 11) suggest that financialization is actually a more appropriate term to interpret structural changes in the water sector because very often "it is not water itself, but the network of services and infrastructures involved in its delivery, that has been embroiled within the contemporary financial environment." Financialization requires a certain level of commodification of water but is not *necessarily* predicated on the full privatization of water. When we talk about financialization in the water sector, therefore, it is important to be clear about whether we are referring to water resources (the actual water itself) or water infrastructures and water services (Bresnihan 2016; March and Purcell 2014).

Historically, there have been many barriers to the introduction of finance to the water sector, but under certain conditions, water services present an attractive destination for investment. For one thing, everyone needs water, and so populations – particularly those concentrated in cities – can represent captive rate payers for monopoly-holding utilities. Those ratepayers, because they have little choice in where their water comes from and who they buy it from, can be converted into reliable and dependable revenue streams. They are central and essential to the viability of investments in the water sector, in that it is "their regular payment of bills on which the whole architecture of securitisation rests" (Bayliss 2017, 393). This repackaging of guaranteed revenue from households into financial products through securitization, combined with fact that most water utilities hold monopolies or near monopolies on water service provision, has led some to argue that the financialization of water constitutes a form of rent extraction (Loftus et al. 2019). Put simply, if financialization is more about the commercialization of water services than the privatization of water resources, then rent – which in its most basic form connotes income for the provision of *access* to a resource rather transfer of *ownership* of it – is a useful concept in understanding the contemporary political economy of water. Of

course, rent extraction does not capture the whole picture, but Purcell et al. (2019, 438) suggest that taking it into account "significantly deepens our knowledge of how value is extracted from particular material geographies implicated in the 'capitalisation of everything.'" Similarly, Allen and Pryke (2013) argue that by guaranteeing future revenue streams, households themselves become financial assets, with water services as the medium. "Crucially," they write, "it is not the asset itself that is sold on but the performance of the asset," which for households paying for water services is their "anticipated ability to pay inflation plus revenues over the long term" (Allen and Pryke 2013, 422).

As such, financialization in the water sector usually occurs through two channels. First, through public-private partnership contracts for specific infrastructures, technologies, or projects. Such contracts can vary somewhat and can include agreements between a private company and utilities, city governments and/or national governments (Ahlers 2020), but usually involve some sort of take-or-pay clause that guarantees minimum returns for investors. In such arrangements, utilities or public agencies do not borrow directly, but rather commit to paying for an infrastructural services for a given length of time, guaranteeing future revenue. Infrastructures, therefore, become sites of financial innovation, structured in a way to allow value to be captured by investors (Pryke and Allen 2019). Second, the commercialization of publicly-owned water utilities (i.e. the restructuring and realignment of utilities along commercial lines). This occurs either when utilities themselves take on private debt capital to support an aspect of operations, or when utilities offer equity in exchange for investment (Bayliss 2014). These two channels can even operate in tandem. Loftus and March (2016), for example, demonstrate this in their study of Thames Water, a private monopoly-holding water company based in the United Kingdom. They show how large water infrastructure projects in London function as mechanisms to sustain Thames Water's business model and increase revenues to its shareholders. Here, the financialization of the water utility is driving the development of particular infrastructure projects that are geared towards the intensification of value extraction in a mutually reinforcing cycle. Financialization, therefore, describes the process through which private capital seeks returns either by investing in the operations of public or private utilities or in individual pieces of infrastructure in return for securitised portions of future revenue.

The new frontier: financializing Kenya's water sector

Infrastructure and the finance gap fallacy

In Kenya, the past 10-20 years have seen attempts to commercialize key sectors by a range of actors, from national and regional government, domestic financial actors, international investors, development organizations and non-state actors (Newell and Philips 2016; Savelli et al. 2019). Facilitated by these interests, the Kenyan government has been active in pursuing a growth model based on financialized infrastructure development, restructuring sectors and setting up public bonds and feed-in tariffs to

encourage private investors (Klagge and Nweke-Eze 2020). For example, in 2013 the National Treasury established the Public-Private Partnership Committee with the express remit to "provide for the participation of the private sector in the financing, construction, development, operation, or maintenance of infrastructure or development projects" (Public-Private Partnership Act 2013, 311). The Act established an institutional and regulatory framework, as well as the PPP Project Facilitation Fund, to encourage private finance into Kenyan infrastructure projects. Such efforts have been enabled, shaped and supported by global development agencies, particularly the World Bank. For example, the 2013 PPP Act was established using a $40 million loan from the World Bank (WBG 2018). Indeed, much of the assistance given by the World Bank in Kenya is delivered under the principle of 'maximising finance for development,' which aims to attract private sector investment for every dollar loaned by the Bank. This principle, for instance, was applied to the Bank's interventions in Kenya's electricity sector in the late 1990s and 2000s (WBG 2019). Yet, despite clear policy objectives over the last 20 years aimed at encouraging private participation (K'Akumu 2006), investment in water services sector has lagged behind other sectors. To illustrate, of the 80 infrastructure projects involving private finance currently being monitored by the PPP Committee, which oversees all PPPs involving the national government, only three are water supply projects (Public-Private Partnership Unit, 2020).[i] Moreover, while domestic financial investors have been active in other sectors, such as energy (Klagge and Nweke-Eze 2020), the financialization processes described below have been driven by the Kenyan state, abetted by international actors.

The challenges facing the water sector are framed by government organizations and development agencies in terms of an infrastructure finance gap. This is usually illustrated with reference to the projects needed to deliver the *Vision2030* target of universal supply by 2030 compared to the public sector's ability to deliver those projects. For instance, a major report by the World Bank and the Water Services Regulatory Board (WASREB) calculated that for Kenya to reach its *Vision2030* target of universal access to safe water required investment of 1.288 trillion Kenyan Shillings between 2015-2030.[ii] Of this, the report suggests, 562 billion KShs can be met through government budgets, leaving an investment gap of 726 billion KShs, equivalent to 7.1 billion US Dollars (WSP and WASREB 2015). Elsewhere, a World Bank study calculated that this amounts to a 31% shortfall in supply compared to demand, or a deficit of 6.5 million cubic metres of water a year (2030WRG 2015). And the National Water Master Plan, which describes the infrastructure finance gap as a "seriously tight situation," suggests that cities face particular challenges, with the Athi Catchment Area – which contains Mombasa and Nairobi – facing a 65% deficit compared to demand (MEWNR 2013, EX11).

This gap in investment is mobilized as a discursive justification for the introduction of private finance to the water sector. For example, WASREB's current strategic plan states that addressing the "chronic investment gap" requires greater budgetary allocation from government, which "should be complemented with innovative financing by maximizing the mobilisation of resources from the blended

sources…commercial financing and private sector financing" (WASREB 2018, 21). For state actors, then, the 'finance gap' provides a discursive tool for justifying the commercialization of services and relieving pressure on strained budgets. For development organizations and international partners, this diagnosis is consistent with a broadly neoliberalizing agenda and the opening up of new markets for investment. Market analysis conducted by the Netherlands Business Hub in order to identify investment opportunities for Dutch companies suggests that this framework is taking effect. Their report highlighted that the national government has led an "increased focus on innovative finance models" that are "supported by macro-economic policies," including the constitution and water acts discussed below, which has begun to open up opportunities for private investment (NBH 2017, 1). In other words, appeals to a finance gap are shaping both how socio-ecological challenges are understood by a range of actors, but also the kinds of 'solutions' that are deemed feasible. More broadly, this raises questions around the efficacy and equity of finance-led development visions, especially in the context of urban Africa (Goodfellow 2020).

Commercialization of water services

Although the role of the state is often overlooked in accounts of financialization (Ouma et al. 2018, Langley 2018), the Kenyan government has been instrumental in creating the preconditions for greater involvement of private finance in the water sector through legal and institutional restructuring. Whereas in other countries there exist highly contradictory tensions between water as a public good (and the corresponding right to access), and water as a commercial good or commodity (see Bosch and Gupta 2020; Morgan 2004 for more comprehensive work on this), the Kenyan Constitution of 2010 and Water Acts of 2002 and 2016, which are now the legal foundation of water resource management, are fairly unequivocal. There is a clear legal and institutional distinction between water resources, which are protected as a public good entrusted to the state[iii], and water services (see Figure 1). Over the past 20 years, water services have undergone a dual process of decentralization (with greater control and responsibility devolved to the 47 county governments) and commercialization[iv]. This restructuring was kickstarted by the 2002 Water Act and completed, at least in principle, in the 2016 Water Act. The explicit goal of these Acts was to encourage the sector to operate within its means:

"*The reason the [2016] Water Act was initiated was to commercialise water operations, to make them financially self-sufficient. That is why there was a clear separation between water resource management and service provision. It brought a lot of efficiencies*." Finance Manager of a WWDA (2019)

Water Service Providers (WSPs) are responsible for delivering water to consumers, for connecting new customers to the network and collecting revenues. WSPs are all structured like private companies

and are supposed to fund their operations through revenues (this generally has not been achieved in practice, however). Most WSPs are owned by the county governments (e.g. the Nairobi City Water and Sewerage Company is a WSP owned by Nairobi City County). In principle WSPs can be owned or operated privately, although only three out of 94 are currently privately-owned. While WSPs can carry out mainly small-scale infrastructure projects within their own service areas, larger projects involving cross-county resources are coordinated by the Water Works Development Agencies (WWDAs). Very large infrastructure projects involving donors or commercial loans require the support of the national government and the treasury in order to prevent counties taking on bad debt.

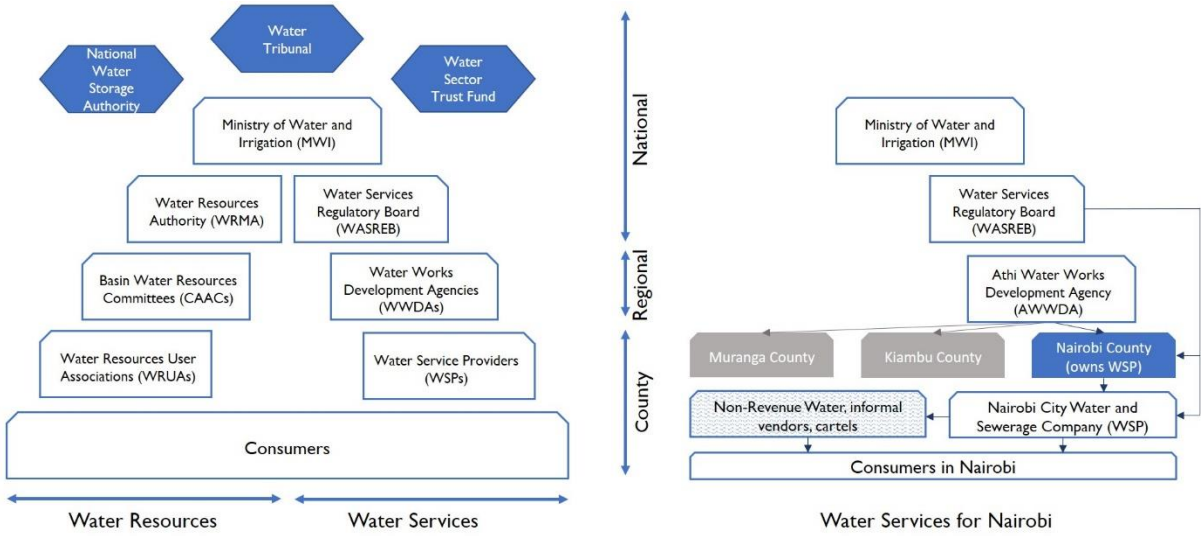

Figure 1. **Left:** Devolved water governance structure in Kenya, as set out in the 2016 Water Act. There is a clear institutional separation between water resources (which are a public good) and water services (which are commercialized). WSPs are supposed to operate like private companies, although most are owned by county governments. WASREB works directly with both county governments and WSPs. WWDAs are accountable to the MWI, but work regionally to develop projects that involve more than one county. **Right:** example of water services governance structure for Nairobi. AWWADA is controlled by the MWI and is responsible for cross-county infrastructure projects between Nairobi, Kiambu and Muranga. Nairobi County Government owns the WSP, although the WSP is (in theory) semi-autonomous. WASREB works mainly with the County and the WSP. Informal water services are not officially part of this governance structure, but still account for about 35-40% in Nairobi.

These efforts by the federal and county governments have, of course, been shaped and supported by development organizations. The World Bank, for example, coordinates an initiative called the 2030 Water Resources Group. Funded by a number of global corporations and operated in 14 countries, including Kenya, the aim is to attract private investment in water (2030WRG 2019). In urban Kenya the 2030WRG offers technical and governance assistance to counties and utilities with the aim of increasing commercial viability. For many stakeholders, both within the country and outside, the

reforms over the last 20 years mean that Kenya now has a regulatory framework that should, in principle, foster greater financial participation in water services:

"*From a distance, compared to other water sectors, the Kenyan water sector is pretty good. Why? Because there's a strong regulator (WASREB); it's diversified (there are about 100 utilities); utilities are corporatized (publicly owned, privately operated). So it looks good.*" Programme Manager of an international water finance organization (2019)

Water services are regulated by WASREB, which works with WWDAs and WSPs on strategic matters such as tariff-setting. WASREB's tariff-setting process has become the linchpin of the commercialization of water services. WSPs are now required to undergo a formal process, which is reviewed and updated every three or five years. Tariffs are calculated, first and foremost, according to an economic study that takes into account, in order of priority, a WSP's: 1) operation and maintenance (O+M) costs; 2) debt obligations; 3) planned infrastructure projects and network improvements; 4) and cost of producing water (including electricity charges). The results of this calculation are then combined with political factors (political will, public willingness to pay, etc.) to set the tariff. Tariffs vary between service areas, but all are tiered. There is a flat national rate for water kiosks, a rate for low-income consumers (both of which are subsidised), and progressively higher rates for other consumers. In principle, tariffs should be set at a rate to allow WSPs to cover the costs associated with 1-4 through revenue collection. In reality, however, very few WSPs are close to achieving this. Fewer than 50% of utilities recoup their O+M costs through revenue collection (WASREB 2020). Moreover, WSPs are not considered to be commercially viable until they can meet 130% of O+M costs through revenue. Only seven out of 94 achieve this threshold. This means that over half of WSPs rely on county governments to support their most basic operations, and only a handful can support their own debt servicing, network improvements and infrastructure developments, let alone take on commercial loans. This, in the view of one interviewee, has created a downward spiral, whereby revenues are insufficient to provide proper service, leading to lower future revenues: "it's like a revenue cycle, which keeps going down if you don't have money come in from outside" (civil engineer in a WWDA 2019).

The new governance structure outlined in Figure 1 has, furthermore, experienced teething problems, many of which are not yet resolved. For example, the issue of asset liability, where there is disagreement between counties, WSPs and WWDAs on which party owns certain infrastructures and therefore has responsibility for associated debt or other liabilities, has proved to be a stumbling block. Moreover, like other aspects of Kenyan political economy, the water sector faces severe challenges from corruption (D'Arcy and Cornell 2016). Corruption affects all levels of governance, from the national government (for the example, the finance minister, Henry Rotich, was arrested in July 2019

for his involvement in transactions relating to two mega dam projects (*The Nation* 2019)), through to county government officials' involvement in water cartels. Furthermore, water is supposed to be ring-fenced in county budgets – i.e. revenue earned by WSPs is supposed to be kept within the sector, rather than being used to subsidise other activities of county governments. This has become an area of political controversy, however, with some counties being accused of re-directing funds away from water services. As one interviewee put it, "the major problem is that there is a lot of political interference in how [water] compan[ies are] run, how they use funds… some are on the verge of collapsing because of political interference" (Programme Officer of an NGO, 2019).

There are also perennial challenges in WSP operations and management. One of the key issues here is high levels of water losses, or non-revenue water (NRW). Currently, water utilities lose an average of 43% in NRW, either through physical losses (pipe leakages) or commercial losses (water theft, usually by cartels and illegal vendors, or faulty metering). This amounts to the loss of 15.8 billion KShs, or US$146 million, in revenue each year (WASREB 2020). Although there is some variation between regions and cities (e.g. NRW is 26% in the city of Thika, 38% in Nairobi and 50% in Mombasa (WASREB 2019, 2020)), water losses are generally high across Kenya. This, combined with other governance issues are a major barrier to WSPs achieving financial self-sufficiency. As one interviewee put it:

"*In a funny sort of way, money is not the problem here. The real problem is getting the potential borrowers to clean up their act – bill everybody, collect their cash, don't waste water – basic principles.*" Managing Director of a water finance company (2019)

De-risking water services

The challenges outlined above mean that much of the water service sector in Kenya is currently considered by financial actors to be 'unbankable' and 'uninvestable'. 'De-risking' has therefore emerged as a crucial mechanism pursued by the state and development organizations to cultivate markets and woo investors (Fairbairn 2020; Gabor 2021). Following many years' work by government and financial intermediaries, we are seeing two movements beginning to accelerate: first, the creation of reliable revenue streams in certain service areas; and second, efforts to re-package this into investable products for domestic and foreign capital. With respect to the first, most of the focus has been around formalizing water consumption and reducing non-revenue water (NRW). Levels of NRW are still very high – over 50% in some urban areas. Barriers to reducing NRW are significant, including the power of the cartels that supply large areas of cities with water, political inertia, and the fiscal constraints on WSPs described above. Nevertheless, many see great untapped potential for stable revenue from Kenya's urban water users. For one thing, people are used to paying often extortionate rates for water. The informal forms of water provision – including illegal connections, water kiosks, water carts

and water trucks (known as bowsers) – many of which are controlled by cartels, already operate like a market, albeit one tightly controlled often by violent means. In informal settlements, those who are not connected to the water network pay an average of 150% (and up to 1,000%) of the highest WSP tariff per unit for domestic consumers (WSUP 2018).[v] So, there are already very high levels of reliable revenue, but much of it is not formalized or financeable:

"*There is so much low-hanging fruit here… So it's very attractive. Our urban centres are largeish and we have a culture of being billed and paying our bills – it's not like many other African countries where people do not believe they have to pay for water. We have a law and a regulation to ensure full cost recovery… If I was an international company I would be interested in Kenya*." Manager of a non-profit water company (2019)

In many respects, therefore, WSPs are just one player in a competitive market; the only regulated actor, attempting to establish monopolies and formalize revenue collection (Boakye-Ansah et al., 2019).

Efforts to reduce NRW are being made at a variety of levels. WASREB, of course, is working with WSPs to tighten up billing and revenue collection. At the international level, the World Bank has been active in this area through its Water Utility Turnaround Framework, which aims to encouraging private sector finance by improving governance and commercial viability of public utilities (Soppe et al. 2018). In Kenya, the World Bank's 2030 Water Resources Group has been working with 11 WSPs since 2015 on performance-based contracts to reduce losses and stop NRW from "jeopardizing municipalities' financial health and ability to attract private investment" (2030WRG 2019). Charities, such as Water and Sanitation for the Urban Poor (WSUP) also see the reduction of NRW as an important development goal. WSUP's approach is to provide WSPs directly with expertise and personnel to improve connection and billing procedures in order to connect previously un-connected urban households to the formal water network. Through this model of working directly with WSP management, WSUP (2020) claim to have enabled 600,000 residents of informal settlements across five cities in Kenya to access networked water supply from utilities. All of these organizations, although having different remits, strategies and scope, see the reduction of NRW, attracting private finance into the water sector and increasing access to water among the urban poor as compatible and mutually reinforcing goals. Thus, for water professionals, formalizing access leads to stable and predictable revenue, which in turn leads to investment.

The other important transformation currently underway in the water sector is the creation of financial products based on these revenue streams. A key process of financialization in the Global South has been the de-risking and securitization of certain economic sectors, including microfinance (Kar, 2018; Young 2010), technologies for extending personal banking to unbanked communities (such as M-Pesa, headquartered in Kenya), transport and energy infrastructure (Baker, 2015). De-risking has

become a core mechanism of financialized development, understood by Gabor (2021: 3) as a "state-mediated project of constructing development asset classes" by which capital is "escorted" into infrastructural sectors. Several organizations have begun attempts to de-risk the water sector to create opportunities for investors in Kenya's water infrastructure and utilities.

Two such organizations are the Kenya Innovative Finance Facility for Water (KIFFWA) and the Kenya Pooled Water Fund (KPWF). Both are headquartered in Nairobi, but were established and initially funded through grants from the Dutch government, which has an established record of offering assistance for financialized development in Kenya (Savelli et al. 2019). KIFFWA and KPWF are both overseen by the Netherlands Water Partnership and another Dutch organization called the Water Finance Facility (WFF). While the two organizations are based on different models, both aim to de-risk water infrastructure and services via the simplification/complexification relationship identified in the previous section. In other words, their objective is to attract private finance into the sector by taking advantage of the varied investment opportunities between WSPs, whilst simultaneously flattening difference through innovative financial products. KIFFWA was established in 2017 with a €10 million grant and a remit to provide "early-stage capital, finance, and technical expertise to support the creation of viable water investment opportunities and attract (private) providers of finance" (KIFFWA 2018). KIFFWA's model is to support infrastructure projects in their early stages. As such, they offer resources, procedural support and expertise to project developers up to the point of financial close:

"*Water, being a heavily regulated industry, has very many risks – [this is] one of the reasons why the private sector doesn't participate. So the work of KIFFWA is to ensure that projects happen in the first place*." CEO (2019)

The logic is that a project is at greatest risk of failure before financial close, but that project costs are also lowest before construction begins. Therefore, a relatively small investment in the early stages can greatly increase the likelihood of projects going ahead. KIFFWA acts as a 'co-developer' of water projects broadly understood (drinking water, sanitation and waste, hydropower, marine transport, irrigation). It's principle work is to guide project developers through project design, feasibility, impact assessments, permitting, and negotiation of commercial agreements. KIFFWA's main criteria for selecting projects is twofold: 1) that they contribute to public good; and 2) that they are commercially viable. The idea is to effectively de-risk water on a project-by-project basis.

One of KIFFWA's first initiatives was to set up the KPWF in 2017, with another €10 million grant from the Netherlands. Whereas KIFFWA works on individual projects, KPWF works with utilities. KPWF's model is to offer long-term (15 year) loans to WSPs at commercial rates. The debt from these loans is then re-packaged – or 'pooled' – and issued as bonds on the stock market (see

figure 2). These bonds are targeted at domestic investors, but can also be bought by international actors. By pooling debt from a number of WSPs across Kenya, which is further guaranteed via a reserve account, KPWF aim to offer a financial product that is de-risked and securitized. The model is based on the Dutch Water Bank, which finances water and housing infrastructures through long-term bonds in the Netherlands, and also the US model of bond financing. As Froud *et al.* (2000) reminds us, strong domestic finance is a precondition of financialization, and the strength of Kenya's banking system, capital markets and financial markets was one of the key factors underpinning the establishment of KPWF (see Vision2030 Delivery Secretariat 2018). The main idea is to link WSPs, which struggle to attract investment, with Kenya's burgeoning financial sector, which struggles to find viable investment opportunities.

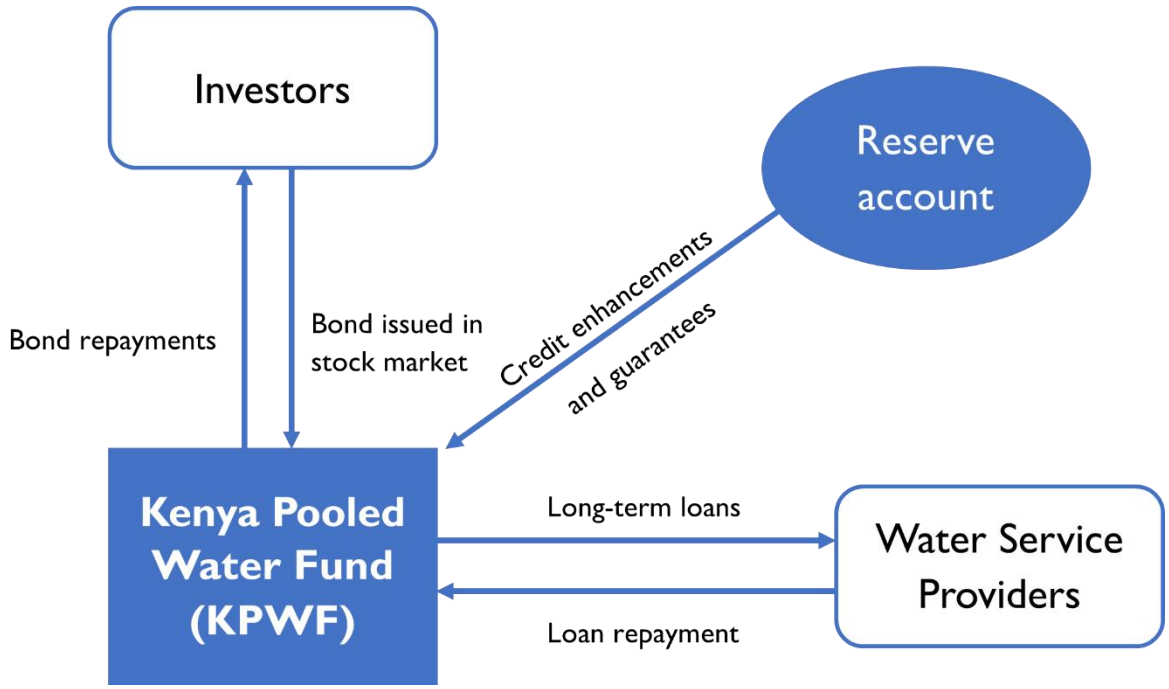

Figure 2: Kenya Pooled Water Fund's model for bond investments. The reserve account and guarantees (in KShs) provide additional security. Adapted from KPWF (2020).

"We are not pro-poor": finance and uneven development in Kenya

The imperatives of finance and value extraction on the one hand, and increasing access to water services on the other hand are not necessarily mutually exclusive (Loftus et al. 2019). Indeed, many of those who have been critical of financialization concede that finance inevitably has a role to play in addressing social and ecological challenges (see Castree and Christophers 2015). Notwithstanding, the main issue in the examples discussed above where financialized 'solutions' are being proposed to plug funding gaps in Kenya's water sector – as with many other sectors – is that they prioritize profitable ventures over issues of justice, equity and human rights. Water becomes the focus of value extraction

rather than general precondition of production and reproduction, and therefore the *mode*, not the *means*, of achieving economic development. KIFFWA only supports commercially viable projects and KPWF only works with bankable WSPs, which are currently few and far between in Kenya, and are exclusively urban. As detailed above, there are only a handful of WSPs in the country that perform to a high enough standard. Moreover, as KPWF discovered in its first round of financing, only two or three of those are in a position to take on KPWF loans with interest at 15%. This is significantly higher than development finance (typically 5-6%), and even higher than standard bank loans (about 13%). The attraction for WSPs that can afford such rates is that KPWF loans are much longer-term (i.e. lower annual repayments) and are more stable (i.e. in local currency with no additional fees). Nevertheless, organizations like KPWF have found that it is "a battle to get the WSPs to agree to pay the market rate" (Managing Director of a non-profit company 2019).

The result is that models like this only offer funding for water service improvements to utilities that are already high performing. As one interviewee responded:

"*It's a question we often get: are we pro-poor? The answer is no, we are not…However, the question 'are we pro-poor' could also be answered with 'yes' because if we are successful, we free up a lot of concessional finance for those utilities that should receive concessional finance*." (Programme manager of a water finance organization 2019).

Of course, the actors working for financial intermediaries like those mentioned above are very often motivated by a deep normative desire to improve access to water services. Nevertheless, offering opportunities only to the top 10% of utilities does little to address the deeper and more systemic challenges underpinning lack of access to safe and reliable water in Kenya.

There is also a de-politicising character to discussions on the finance gap or infrastructure gap, which obscure the root problems and structural challenges facing water supply in Kenya (see Dill and Crow 2014; Nilsson and Nyanchaga 2008). As Butcher (2020) recognises in relation to housing in South Africa, framing access both as a constitutional right and a market good leads to simplistic explanations of market failure, which overlook colonial histories and other systemic drivers of inequality, such as access to and rights over property. Such discourses, Bayliss (2014, 296) argues, allow issues such as access to safe water to be framed as a financial problem rather than a development or moral problem, leading to reductionist debates on how best to mitigate inadequate public budgets and the "obvious policy conclusion that the private sector is needed to fill the gap."

Conclusion

Financialization has become a large and unwieldy, yet still useful concept to interrogate and critically understand structural, institutional and cultural transformations in contemporary capitalism. The case

study presented here contributes two core insights to the field. First, it provides an empirical account of actually occurring financialization in a context where such processes are embryonic, and as such, highly relevant and instructive. The analysis shows that increased financial involvement in a sector is not the spontaneous result of investors seeking out opportunities or individual utilities seeking funds, but an arduous and long-winded process of transforming socio-natural relations in-line with financial motivations and creating the pre-conditions necessary for investment. The paper unpacks the roles of intermediary organizations (including government, civil society, development organizations and business) that are engaged in a more-or-less concerted effort to create a functioning market for Kenya's water services. Such actors are key to understanding the growing role if finance, contributing to a concept financialization as emergent, contested and processual. The processes described above, therefore, should be understood as the result of complex assemblages of actors (some state, some private, some civil society), working at different scales and with (often wildly) diverging remits and priorities (see Langley 2018) that nevertheless contribute to fostering the conditions underpinning the greater role of finance in Kenya's water sector.

Second, the paper combines insights from literatures studying financialization on two under-studied 'frontiers': development and water services. The paper problematizes and critiques emerging trends towards the opening up of spaces of development in the Global South for value extraction via the creation of new markets and financialized infrastructural assets. It also pushes back against a dominant depoliticizing framing that positions private finance as an inevitable partner in filling infrastructural deficits. Although mainstream accounts diagnose challenges of water service provision through appeals to a 'finance gap', it is not lack of money that is the problem, but a system of service provision increasingly oriented towards value extraction and commercial viability rather than basic needs and rights. The analysis presented here identifies a model of infrastructure development that offers opportunity to utilities that already perform relatively well and ignores those that are in most need of assistance in a way that further marginalizes the poorest communities. But by prioritizing those infrastructures and service areas that are profitable, this model necessarily overlooks important normative issues of poverty and access to basic services. As a result, financialized models of water service provision are likely to deepen the divisions between urban and rural, formal and informal, rich and poor.

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Endnotes

[i] Of the 80 projects on the PPP Committee's books 25, are road and transport, 13 are energy and 16 are housing. There are also two irrigation projects and one wastewater project.

[ii] The figure given for infrastructure investment gap is just for water supply, not sanitation, which would require an additional 477 billion Shillings.

[iii] "Every water resource is vested in and held by the national government in trust for the people of Kenya". (Water Act 2016, Part 2, Article 5).
"Upon the commencement of this Act, no conveyance, lease or other instrument shall convey, assure, demise, transfer or vest in any person any property, right, interest or privilege in respect of any water resource except as may be prescribed under this Act". (Water Act 2016, Part 2, Article 7).

[iv] The decentralization of water governance was part of the broader devolution process, mandated in the 2010 Constitution, which shifted many functions from central government to the 47 county governments.

[v] The highest domestic tariff in Kenya is 100 KShs per cubic metre, whereas vendors sell for an average of 250 KShs and up to 1,000 KShs per cubic metre.