Sutherland, C.; Mazeka, B.; Odili, A.; Magwaza, F.; Leck, H.
and Lawhon, M. 2026. Who should pay for water services and why?
A typology of justifications for non-payment in eThekwini Municipal area.
Water Alternatives 19(1): 67-85

Who Should Pay for Water Services and Why? A Typology of Justifications for Non-Payment in eThekwini Municipal Area

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ABSTRACT: Water is widely considered to be a basic need, a human right, a resource and a gift from nature, yet there are costs associated with providing it. As states seek to ensure access, controversies remain over water service type, ownership and funding. This paper traces debates over equity, access and costs, and points to a gap between justice-oriented debates and more quantitative studies of non-payment. We respond to this gap by considering the ethical, political and social dimensions of payment, as well as framing it as a relational practice connected to reliable provision. Drawing on surveys, focus groups and interviews from eThekwini Municipal Area – where the legacy of colonialism and apartheid continues to shape material inequality and political positions – we develop a typology for understanding beliefs and practices about payment for water services. Our mixed methods approach enables us to highlight that payment is relational, social and political, and is constructed through conflicting narratives. We consider both the value of a heuristic set of categories and the difficulties of drawing sharp distinctions between the reasons for non-payment. We conclude by reflecting on the difficulty and importance of integrating diverse economic, political economic, and ethical arguments around payment for services.

KEYWORDS: Water, payments for services, infrastructure, water economics, water justice, urban political ecology, eThekwini Municipal Area, South Africa

INTRODUCTION

Although many states have committed to providing water for all, debates remain over what kind of services should be provided, who should own water services, and how these water services should be funded (Libey et al., 2020). Globally, infrastructure maintenance is considered to be underfunded, and in

many places water supply is increasingly insecure. These concerns are exacerbated by climate change, which has increased both the uncertainty of water security and the costs of water provision (Donkor et al., 2014; OECD, 2022).

The literature shows that there are different ways in which services are provided and funded, which typically include at least some payment by users (Pierce et al., 2022; Reis et al., 2024). Payment practices are variable, however, with some users not legally expected to pay and others not paying what is expected. While much scholarship on the politics of water has focused on broad arguments about political economy, including ownership and costs to users, scholars have paid limited attention to the politics and social dimensions of payment and non-payment. Whether or not water services are funded depends importantly on whether users pay, are not meant to pay, or are meant to pay but do not, and funding is crucial for ensuring reliable service provision.

Funding models, including consideration of who pays, are shaped by economics and by political economic systems. Perhaps counterintuitively, however, many studies show that users' incomes and their ability to pay are not the only factors that determine whether they pay and how much they are charged. In the limited body of literature that examines payment and non-payment, the focus is largely on quantitative analyses with substantial variance in findings across different studies and places (Karki, 2023). While this may be, in part, because there are methodological challenges associated with understanding such a political and personal topic, it is also likely that there is real variance across individuals, groups of people and places. As the literature suggests, and as we elaborate on below, funding models and payment practices are not only economic and political economic; they are deeply political, historical, spatial, social and ethical. They also create relationships that are more than transactional which shape both the quality of service provision and citizens' relationship to the provider.

This paper contributes to the wider literature on water politics by developing a typology for understanding beliefs and practices around why people do and do not pay for water services. We do so through a study conducted in South Africa, where beliefs and practices are acutely shaped by a long history and contemporary experience of exclusion and inequality, including the withholding of payments as a form of political protest (Fjeldstad, 2004; Worku, 2017). Today, those who are able to pay for services in most instances, can access high quality and reliable water, while those who do not pay still have a legal right but tend to have less-reliable access. Situating our study in South Africa, given the country's history and post-apartheid transformation, helps us to better understand the politics of water services, including the political relationships and demands enabled by payment and non-payment. While our typology is developed from our specific case, we believe that it likely resonates with concerns anywhere where payment for services is shaped by more than the ability to pay.

Our typology builds on mixed methods research undertaken in eThekwini Municipal Area[1] between 2021 and 2023. It included interviews, focus groups and surveys, all of which were focused on domestic users of state-provided water services. The eThekwini Municipal Area was selected for this case study because of interest in the increasing challenges associated with payment for water services by the South African Water Research Commission (where research is undertaken to support policy and practice), by the eThekwini Water and Sanitation Unit, and by the University of KwaZulu-Natal's Water, Sanitation and Hygiene Research and Development Centre (WASH R&D Centre). We recognise that payments from domestic users are but one piece of a wider financial model and that similar studies are needed to understand payment and non-payment from other types of users (see, for example, Alba et al., 2016).

From this data, and building on arguments in the literature, we outline six different reasons for non-payment that respondents provided. These include: 1) inability to pay; 2) low income, with other

[1] eThekwini Municipal Area is governed by eThekwini Municipality and in 43% of its area, by both traditional authorities and the municipality. Many still know the area as Durban; this was the legal name for the city until 2000, which expanded to form the eThekwini Municipal Area under the National Demarcation process. There is ongoing ambiguity and different uses in academic literature, state policy and the vernacular as to the geographic boundaries of Durban.

priorities; 3) belief that the model for payment is unfair; 4) belief that the quality of service is insufficient and that withholding payment is justified and/or may improve service quality; 5) short-sighted self-interest with no direct consequences for non-payment; and 6) ambiguities in relation to communal tenure. The typology is intended to structure and explain the reasons provided by respondents in our data, rather than the existing rules or practices (although rules and practices do shape beliefs and vice versa). In accordance with wider understandings of the politics of water, we show that developing a model for successful funding of water services is not just about financial accounting and that an increase in household income will not necessarily lead to more payments for services. We emphasise instead the importance of building trust, legitimacy and a social contract, concerns that are particularly important in the context of high inequality and the divergent ethical principles found across our data.

In our discussion of this typology, we emphasise the importance of delineating categories and we reflect on the difficulties of drawing and enforcing clear lines. Ability to pay is undoubtedly a subjective determination, as is self-interest. Our mixed methods approach allowed us to follow up with residents to probe the layers of responses. Our qualitative data was particularly useful, as it was collected by researchers with evidence-based experiential knowledge and long-term familiarity with the area. Discussions with residents showed that many people both make strident political claims to water services, particularly to free water, and articulate a willingness to pay. This willingness is often rooted in an awareness that payment creates a relationship with a water service provider, which is seen as contributing to improved infrastructure. As researchers, we observe the methodological difficulties of differentiating these categories and we understand that it is even more difficult for states to develop policies and funding models that are able to make such distinctions. We argue that thinking carefully about the politics of water while also recognising that water services must be funded means recognising that ethical principles, citizenship, and self-interest are constructed, fluid and hard to disentangle. We conclude by reflecting on the difficulties of ensuring access to water in the context of poverty, inequality and environmental change, in a pluralist society that is characterised by starkly different views about rights, responsibilities and justice.

In the next section, we review the literature on the funding of water services, emphasising why it matters for those interested in water justice. The literature highlights ongoing uncertainty over the reasons for payment/non-payment for water services; it also points out the need for qualitative engagements that see payment as a social, political, historical, geographical and economic process. We then consider debates over whether to improve access through cash transfers or free services. We highlight that this matters significantly in contexts where state processes can be inconsistent and where payments are correlated with improved service quality. These debates provide context for our typology and open a wider set of questions about how water access might be provided justly and sustainably. In Section 4, we provide a brief overview of how water services are funded in South Africa. This is followed by a description of our mixed methods approach. Section 6 presents the typology developed through our research, and we conclude the paper with a summary and reflection on its significance.

FUNDING WATER SERVICES: PAYMENT AND NON-PAYMENT

Debates over the politics of water in and beyond this journal have often focused on social demands for the right to water as well as on broad political economic processes such as privatisation and commodification, subsidisation and the provisioning of free services; such social demands have often focused on the need to increase the availability and affordability of services (Allen et al., 2006; Scheba, 2022). Largely unaddressed in this literature are the broader questions around how water services should be funded and how this should be decided given the plurality of views. Even if water is fully decommodified and owned by the state or community, there is still a need to fund its provision. When a service provider is unable to fund water services, service quality necessarily deteriorates. Thus, while modelling water funding may seem like an apolitical, technical and quantitative exercise, it is deeply

entwined with ethical, political and social questions about what kind of service should be provided (Jaglin, 2008; Sutherland et al., 2014), who should pay, and what happens if payments are not made (Biewald et al., 2015; Ballestero, 2015).

Water service providers typically develop payment models that are within wider legal frameworks. Many water users do not pay for services, including both those who are legally exempt and those who are meant to pay but do not. Payment and non-payment for services have been studied across various topics (for a useful overview, see Dominy and Kempson, 2003), however citizens' relationships with water are quite distinct and are shaped by place and history. Water is entangled with ideas about basic needs, human rights, ecological services and 'natural' resources, and it is entwined with them in ways that complicate the politics of payment for water services (see Jones, 2011). Water is also typically provided through monopolies, such that neoclassical expectations simply do not explain water economics. It is therefore crucial to consider payment models and reasons for non-payment for water services as a distinct topic.

Non-payment for water services has garnered attention from international development actors such as the World Bank (Kingdom et al., 2010) and it is certainly the subject of discussion by state actors at many scales and in some public discourses; however, scholars interested in the politics of water have tended not to engage with this question. Most studies are instead rooted in quantitative, socio-economic analyses, often seeking to correlate particular factors through regression analysis. Foster and Hope (2016), for example, considered non-payment in rural Kenya via a quantitative survey and Karki (2023) built on and adapted this same tool for use in rural Nepal. Studies of payment and non-payment tend to try to explain 'what happens', often correlating this with particular features of households and water services (although see Cheng, 2013, who provides an important political analysis comparing how differently non-payment is approached for low-income residents and for high-volume customers such as businesses). Many studies rely on self-reports of whether people pay and on other factors such as income; good data on the latter is notoriously difficult to acquire and is variable across units of time, particularly in the Global South. Foster and Hope (2016), Mugabi et al. (2010), and Vásquez and Alicea-Planas (2017) analyse data sets that include quantitative reports from water service providers about payment. Importantly, studies examine payment and non-payment across private, community and state-owned systems, as non-payment happens across all types of ownership structures.

This is a fairly small field of study, particularly in the Global South. Writing in 2010, Mugabi et al., use the term 'rare' and develop a literature review that is based largely on studies in the United Kingdom, and in 2015 Vásquez uses the term 'scant'. There have been several studies in the years since, but researchers have shown vastly different explanations from case to case. Karki (2023), for example, found spatial and ethnic differences in payments, but there was no correlation between user satisfaction and payments, nor was there a correlation between education and payments. Many of the research participants claimed that they did not pay because they perceived that others also did not (ibid). Foster and Hope (2016), in contrast, report that the taste of water shaped the payment practices of respondents. They also noted that those who have 'productive uses' for water, such as agriculture and livestock, tend to pay more regularly. The study found a correlation between income and payments but the authors make clear that their data does not enable a differentiation between 'inability' and 'unwillingness' to pay. Mugabi et al. (2010), in their study in Uganda, also link payments to quality; instead of taste, however, their study emphasises the importance of reliability. Vásquez (2015), in his study in Guatemala, focuses on satisfaction with factors such as price, pressure and hours of access; he does show a relationship between satisfaction and payment, but none between income and payment. Asking similar questions in Nicaragua, Vásquez and Alicea-Planas (2017) found quite different results; there, payment was related to both income and satisfaction. This study also asked about whether respondents believed they would be cut off from their current services if they did not pay; interestingly, there was no correlation between payment practices and belief in the consequences of non-payment. Jensen and

Chindarkar (2019), however, provide a slightly different angle, showing that trust in the utility positively impacts payment.

In sum, as Karki (2023: 2) recently and succinctly summarises, "Despite various studies on non-payment behaviour (…), a consensus has yet to be established regarding the variables that are likely to influence it". Addressing this question is surely plagued with methodological difficulties; it is also plausible, however, that scholars are finding differences because there is real variance across places in terms of why some people pay and others do not. More substantively for what follows, the studies reviewed above did not ask questions about people's *beliefs* about whether they should pay and how this impacts practices, nor did we find additional studies in the international literature. The literature we reviewed did not focus on who should pay; it was also not concerned with whether non-payment might sometimes be seen as justified or, as we discuss below, whether it was being strategically deployed as a means for improving services.

IMPROVING ACCESS THROUGH FREE PROVISIONING OR ENABLING PAYMENT TRANSFERS

Understanding payment as not only an economic transaction but also as being political, social and relational, enables us to connect debates over payment to wider conversations around the social wage. Funding mechanisms in South Africa clearly imagined that economic growth and redistribution would enable sustainable payments for water by most households; in keeping with wider trends globally, however, economic growth has had deeply uneven consequences (Ledger, 2021). The expectation that employment might enable widespread payments for services has not been borne out in practice. This has raised questions about how else water services might be funded.

Disbursing cash transfers to increase incomes and improve welfare is a widespread movement and practice that is also prevalent in South Africa. Beyond water services, their use extends to addressing unemployment and the failures of development. In contexts where services have stable costs and where provision and payments are reliable, it may be moot whether state funds are used to increase cash transfers or to reduce the cost of services; in such cases, both methods provide the same net financial impact on states and households (see debates in Buchs, 2021; Lawhon and McCreary, 2023a; Endo and Choi, 2024).

Across the Global South, however, service type and quality are often differentiated among households. Even for households that are connected to the same network, repair and maintenance are spatially and often socio-economically differentiated. In such contexts, fraught and multidirectional relationships can prevail between politics, incomes, payments and service quality. Observable differences in outcome may then be observed depending on whether incomes are improved or free services increased. In such places, debates over how best to ensure a social wage are relevant to water services and water funding models for three key reasons. First, as shown by both our data below and by the wider literature (Cirolia and Robbins, 2021; Ledger, 2021; De Coss-Corzo, 2021), water service providers tend to focus services and maintenance on areas with paying customers, while comparatively neglecting low-payment areas. We disagree with the ethics of this trend, but it is both pervasive and unlikely to be easily overcome. Second, free basic water provisioning has been criticised for its limited reach and its financial sustainability in a context of low payment for services. In South Africa, millions of eligible households do not receive free services, at least in part because municipalities are financially disincentivised to provide them. More generally, the problem of 'who counts' and the pressure to ensure that the right people are included in welfare programmes is a well-documented, pervasive issue that goes far beyond water. Third, services (including, but not only in, South Africa) are increasingly irregular and even those who pay for services may go days without access. At such times, cash transfers provide a fungible resource that can be temporarily redirected to the purchase of bottled water or to other means of acquiring the necessary water supply; those who lose access to free services, in contrast, have no such flexibility.

Scholars and activists have also observed differences in spending depending on whether increases in income came from improved wages or from cash transfers. Cash transfers, notably, are also not just about income; they have been shown to build social trust and improve relationships with the state (Ferguson, 2015; Widerquist, 2018; Lawhon and McCreary, 2023b). The links between increased cash transfers and payments for services are worth further exploration given the complex nexus between non-payment, ability to pay, perceptions of fairness and trust in the state. We return to these points in conversation with our data below.

FUNDING FOR WATER SERVICES IN SOUTH AFRICA

This section provides a brief overview of water politics and economics in South Africa, to make sense of payments for water services in our case study of the eThekwini Municipal Area, and the broader justifications that people offer for who should pay, In the last 30 years, municipalities across the country have significantly expanded water infrastructure, with current countrywide coverage at about 90% (Lieberman, 2022). Ongoing concerns persist, however, over a number of issues; these include: the financial viability of existing models (Ledger, 2021), significant municipal debt, unpaid bills, unequal service provision, backlogs of maintenance and repair, and increased risks due to environmental change.

In South Africa, access to water is both a constitutional right and partly commodified. Those who can afford to pay for the service are expected to do so, but subsidies and free services are also widespread for those who are considered to be indigent (Muller, 2008; Ledger, 2021). Water services are provided to residents by water service providers (WSPs), and funding for WSPs comes from taxes and from water user payments. WSPs have the power to create their own revenue model; they are able to set tariffs and payment systems within the wider legal framework (for a review of water pricing in South Africa, see Schreiner, 2015; also see Ruiters and Matji, 2015, on different models).

Determining appropriate costs and who should pay them, however, is far from straightforward. As Ledger (2021) notes, the framework set out in the early post-apartheid years assumed that, "tariffs [would] be low enough to ensure universal affordable access to quality services, and high enough to ensure local government financial viability". In practice, however, South African municipalities seem unable to fund affordable water services through the existing financial frameworks, which include some funding from national government grants and revenue generated from the provision of services to paying customers (ibid). This is, in part, because economic growth has been lower than hoped for and because the impacts of growth have been highly uneven. Climate and environmental change are also increasing the costs of water provision.

The state has responded to broader economic problems through both investments in job creation and a vast programme of cash transfers. South Africa has become a global leader in cash transfers, with 40% of South Africans now receiving some form of grant; free services, by comparison, are accessed by only about 10% of the population that are eligible (Ledger 2021) though this percentage is much higher in the eThekwini Municipal Area (45%). Some, like Ledger (2021), are critical of the use of social grants to pay for services; here, however, we take an agnostic approach, which opens a space to consider the relative merits of different ways of providing funding for water services and ensuring water justice.

Scholarship on (non)payment for services in South Africa points to why there might well be important social and historical features to consider. Many studies observe that anti-apartheid municipal boycotts created a "culture of non-payment", while others emphasise a "culture of entitlement"; few studies, however, have deeply examined these underlying premises (exceptions are, for example, Enwereji and Uwizeyimana, 2020; Fjeldstad, 2004). As shown in spatial analyses of Gauteng (Mushongera and Modiba, 2024), the history of boycotts is linked to, but does not mirror, sites with high rates of non-payment. More generally, it can be difficult to consistently make sense of literature in South Africa because it is not always clear whether non-payment means "those who legally do not pay" or "those who legally are meant to pay, but do not" (see, for example, Tshililo et al., 2022). These studies raise important questions

around the wider politics of services; as noted above, however, it is also important to consider whether, and how, non-payment of water services might be different from, for example, non-payment of rent or electricity services.

METHODOLOGY

Catherine Sutherland (one of this paper's authors) is affiliated to the University of KwaZulu-Natal WASH R&D Centre. Through the South African Water Research Commission, the centre was awarded funding to undertake research on payment for water services. A mixed methods approach, including open- and closed-ended survey questions, provided data on main trends and enabled comparisons across different sites. Qualitative methods generated data that was used to develop the storylines, discourses and narratives of citizens and state officials. The research was undertaken iteratively in order to ensure reliability. Questions about ethics, beliefs and politics can be difficult for respondents, and in the course of discussion a respondent's later ideas and narratives can sometimes change their initial answers. Triangulated open-ended questions provided space for discussion and reflection, which was important to the results below; specifically, when asked an open-ended question about why residents do not pay for water. The range of answers provided by respondents were coded. Conversations that continued after the end of the questions were captured and documented; these were analysed in fieldwork debriefings, often contributing further distinctions around norms and values.

Research was led by Sutherland and was conducted between May 2021 and August 2023. Five learning labs were held to enable co-learning; these took the form of focus groups that addressed the challenge of payment for water services. They included the head of the eThekwini Water and Sanitation Unit as well as senior management. 'Case study surveys' were also undertaken to help reflect on the impact of histories, geographies, socio-economic conditions, socio-technical relations and the quality of services provided on payment for water services. Surveys were conducted in 4 different settlement types involving 105 respondents; they comprised residents of low-income state-provided housing (30), a peri-urban settlement on Ingonyama Trust land (30), a township (30), and a middle-income suburb (15). Both the learning labs and the surveys were focused on the question of payment and non-payment for water services. For ethical reasons, the respondents and the settlements are anonymised in the results.

In addition to the specific data collected on payment and non-payment, data from a large household survey (500 respondents) was used. It included respondents from a wider range of settlement types who were representative of everyday life in the municipality (referred to below as the municipal-wide survey), and included three questions on payment for water services. Interviews were conducted with six water specialists who represented a range of sectors including research and advocacy, engineering firms, and consultants. These interviews were used to triangulate survey and focus group data and to gain broader national-scale insights on payment for water services. As a final note, our analysis is also informed by a longer history of work on water infrastructure and politics in the area.

The timing of this study is important in that household surveys were conducted in 2021 and 2023. Early work happened during the Covid-19 pandemic, and in subsequent years the municipality has faced extensive flooding and infrastructure damage. From other research across multiple different projects in the WASH R&D Centre, it is evident that water availability is becoming more variable and that the social and financial cost of obtaining it is increasing. The results nonetheless provide important insights into respondents' experiences and into their justifications for (non)payment at the time of data collection; these results also continue to be indicative of wider practices and beliefs.

Analysis of the data was undertaken in several stages. A report that presented the methodology and results was provided to the municipality and to the South African Water Research Commission. Further analysis was undertaken for this paper, in the course of which we developed a typology to reflect the main reasons for non-payment. The modalities or categories of the typology emerged from a review of the literature, from dialogue between Sutherland and Mary Lawhon (one of this paper's other authors),

and from a review of the data. This combined approach led to the emergence of aspects related to particular justifications for non-payment; it also brought out points of controversy or ambiguity.

OVERVIEW OF WATER SERVICES, PRACTICES AND BELIEFS IN THE ETHEKWINI MUNICIPAL AREA

The geography of water services in the eThekwini Municipal Area is a result of colonial, apartheid and post-apartheid politics and practices. In 2000, in order to address past inequalities in water service provision, eThekwini Municipality adopted a spatially differentiated approach to the universal provision of basic water and sanitation (Sutherland et al., 2014; cf Jaglin, 2008). This spatiality of service provision continues to shape citizens' relationship with the state in terms of payment for water services (see Box 1).

Box 1. Service differentiation and payment structure

The following levels of service and payment are offered to domestic customers:

- Full pressure metered water supply fed directly to the household from the municipal supply network, payment calculated according to a rising tariff scheme
- Semi-pressure supply received by the household via a roof-tank
- 200 litres of free basic water per household per day available via an individual household supply (municipal ground tank) or a metered flow limiter connected to a yard tap for indigent households
- Free water from standpipes/water dispensers/communal ablution block taps and showers that are provided to supply informal communities as part of incremental water services (this applies mainly in informal settlements)
- Water boreholes where there is no water reticulation
- Water sachets or tankered water in the case of prolonged service interruptions

In eThekwini Municipal Area, full pressure domestic customers living in households below R350 000 or where there is no municipal property value, a home with a floor area of less than 50m², receive the first 6000l of water free of charge, per month, in line with local government and national policy. This includes residents in the peri-urban periphery in non-cadastral areas on Ingonyama Trust land, who have access to water through ground tanks and live in households less than 50 m2, and all semi-pressure domestic customers.

Those whose properties fall between R350 001 and R600 000 and whose 'aggregate monthly household income is R4,220 or less' can motivate to obtain free basic water (see 2023/2024 Tariff Tables).

The eThekwini Water and Sanitation Unit is mandated to provide water services across the eThekwini Municipal Area. It has had to respond to urban growth and expansion, informal development, and the densification of the peri-urban areas, providing services in areas that are not formally planned or where development has outstripped the water service infrastructure. This creates uncertainty and places pressure on the state for provision of services. As we detail further below, it also raises questions about what kinds of services and payments should be provided.

At present, the eThekwini Municipal Area has the highest rate of non-revenue water in South Africa, with 54% of water being either lost through leaks and illegal consumption or not paid for (Carnie, 2024). At the time of writing (and after the conclusion of our data collection), the national government announced a requirement for a reduction of bulk water consumption in the eThekwini Municipal Area.

This current need to reduce water demand may exacerbate economic and financing difficulties because, as observed in Cape Town, reduced household consumption decreases revenue (Simpson et al., 2019).

Water provision and politics are deeply shaped by a number of factors; these include: settlement typologies and densities, which are rapidly changing; the particular forms of water infrastructure that were rapidly expanded into the periphery post 2000 as a result of the national municipal demarcation process (Sutherland et al., 2014, 2015); a dual governance system over 43% of the eThekwini Municipal Area which combines municipal and traditional authority (Sim et al., 2016); a hilly and deeply incised topography; the high cost of providing water services to the periphery of the eThekwini Municipal Area due to its limited bulk infrastructure and rapidly increasing density (Gounden et al., 2006); financial constraints; and the impacts of environmental change on water security, infrastructure and innovation as a result of drought and floods (Strydom et al., 2020; Sutherland et al., 2024).

Payment for water is defined by a rising block tariff and the municipal indigent policy; it is further shaped by context and technology (see details in Box 1). In South Africa, municipalities allow those with unpaid water bills to continue to access at least some municipally provided water, although its flow may be restricted. The kiosks and pre-payment metering devices described in Loftus (2006) were not found in our study.

Both the municipality-wide surveys and the case study surveys that were conducted in households provided insights on citizens' responses to water provision and payment for water services. When asked why South Africa in general, and Durban in particular, experienced water scarcity, answers focused primarily on concern about degradation of the environment and its impacts on water scarcity and services (77%), and the role of the state (72%). There was a notable awareness of the impacts of climate change and droughts on water availability (62%). Most residents reported feeling a moral obligation to use water well and not waste it. In other words, people recognised both the challenges of water provision and the role of the state in ensuring that residents use water more responsibly; at the same time, they argued that the state should find a way to provide water sustainably despite hydrological and ecological change.

In our survey of the four settlement types, the majority of residents in the low-cost housing projects (80%), townships (80%) and suburbs (100%) reported that they had access to sufficient good quality water, but that the supply was not always reliable. Residents in the suburbs pay their water bills because they do not want to experience the restrictions that are enacted by the municipality if payments are overdue and because they receive a reliable service. Municipal officials support this behaviour by maintaining services and fixing infrastructure, with the aim of ensuring that their paying customers keep paying; a high quality of service is therefore related to payment for water services. These residents also have a reasonably high level of trust in the municipality in relation to water provision. In low-cost housing projects[2], townships and peri-urban areas, by comparison, the quality of service is reported to be lower, with residents experiencing more frequent loss of water services and paying less regularly for them, and with a much longer response time for fixing breakages in the system. There is a notable relationship here between decreased levels of payment and lower trust in the municipality (cf Fjeldstad, 2004).

Despite these very real concerns and ongoing debates over service differentiation, the majority of residents in the low-cost housing projects (80%), the townships (90%) and the suburbs (80%) rate the provision of municipal services as good or very good. This contrasts with data from members of peri-urban households, with 43% of respondents there stating that service provision is poor. After the 2000 national municipal demarcation process, services were rapidly rolled out in peri-urban areas, with much of it located on Ingonyama Trust land (Sim et al., 2016). Reasons for a lower quality of service include: limited urban planning; bulk infrastructure designed for dispersed rural settlements now being used to

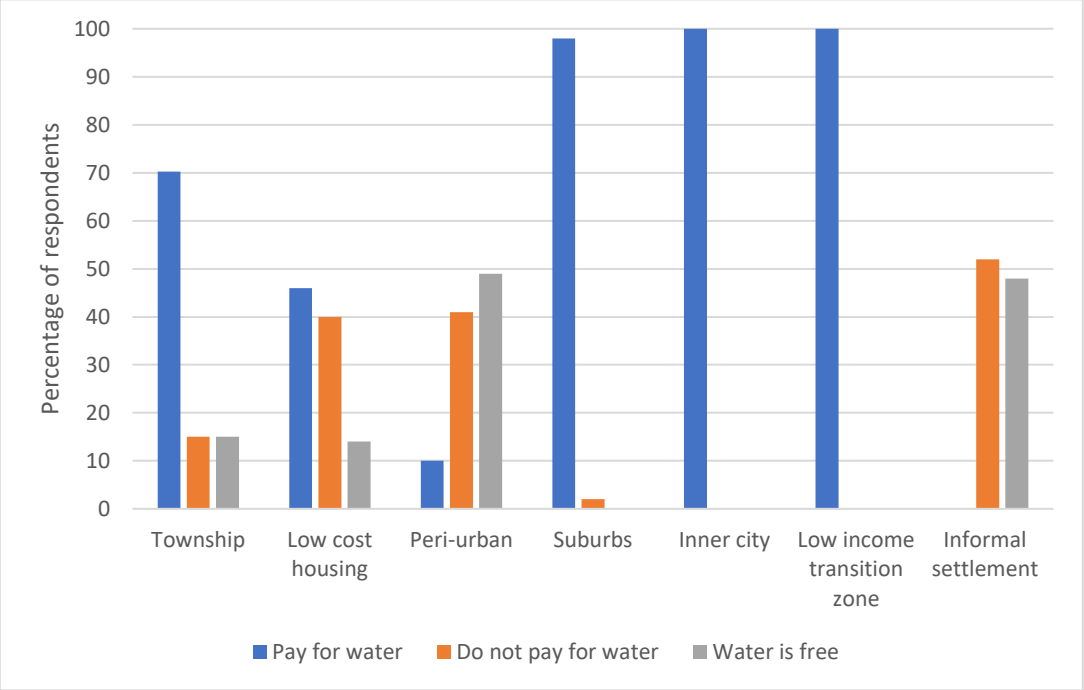
[2] Low-cost housing projects refer to state-subsidised housing in South Africa, more commonly known as RDP (Reconstruction and Development Programme) houses, which are provided free to those who qualify for state-provided housing under South Africa's post-apartheid housing policy. They are formal houses which include internal water and sanitation and electricity services.

provide water for rapidly densifying peri-urban areas; higher income residents installing their own plumbing and accessing free basic water at high consumption levels; very low levels of payment for water; longer response times by the municipality for attending to maintenance issues due to relatively lower densities and large areas; and the presence of water tankers that supply water in periods of water insecurity, managed through outsourced contracts. Many residents in peri-urban areas report that they do not have access to enough water. Water provision is often disrupted due to infrastructural and maintenance challenges. Both here and in the townships, the municipality limits the use of water through flow limiters; it also places other types of restrictions on households that do not qualify for free basic water nor pay for water services due to low income. In peri-urban areas, however, the large number of non-functional water meters accounts for why, in part, a high percentage of residents neither pay for water services nor face flow restrictions.

WHO PAYS FOR WATER SERVICES

According to both the household and the citywide surveys, only 55% of respondents stated that they paid for water services. The municipality provides 20% of residents with free water, while almost 25% of respondents reported that they do not pay for water. Respondents in the latter group stated that they either received free basic water or were not paying for billable municipal water. This means that almost half the residents of the city use non-revenue water. Payment varies across settlement areas (see Figure 1).

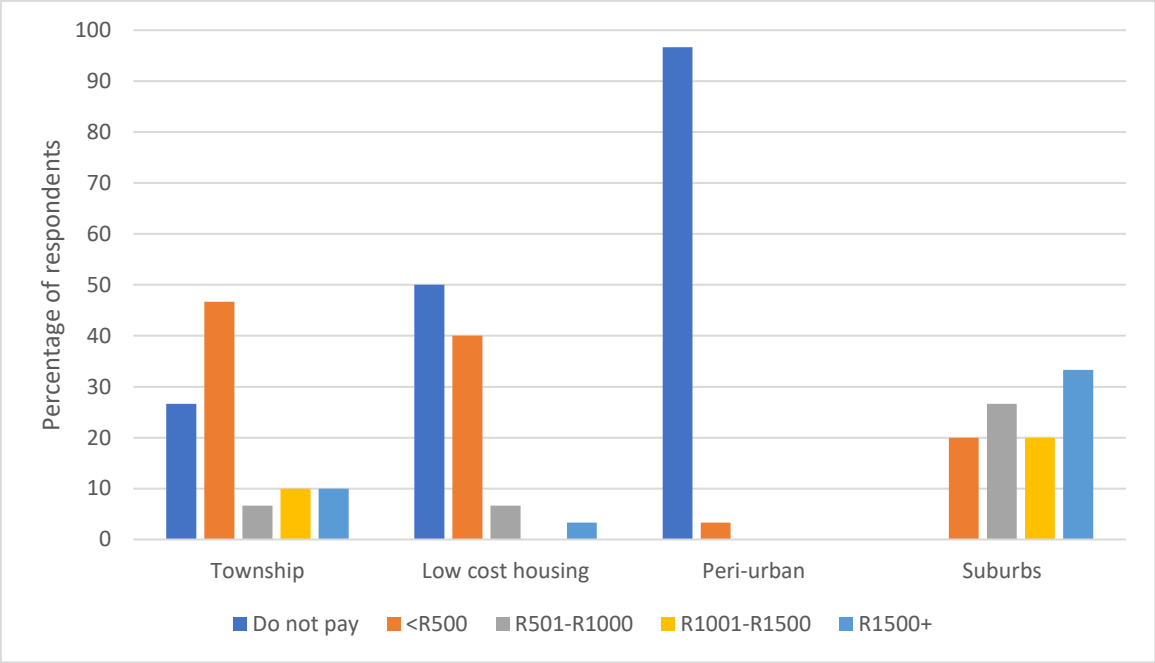
Figure 1. Payment for services across settlements (n = 500)



The data shows the variation in payment for water services both within and across settlement types, with peri-urban areas and informal settlements receiving the bulk of free basic water. This aligns with eThekwini Water and Sanitation's free basic water policy; it also reflects non-payment by peri-urban households that can afford to pay but do not. There are relatively high levels of payment within the townships and low-cost housing projects, where payment for services is perceived to be a household's responsibility.

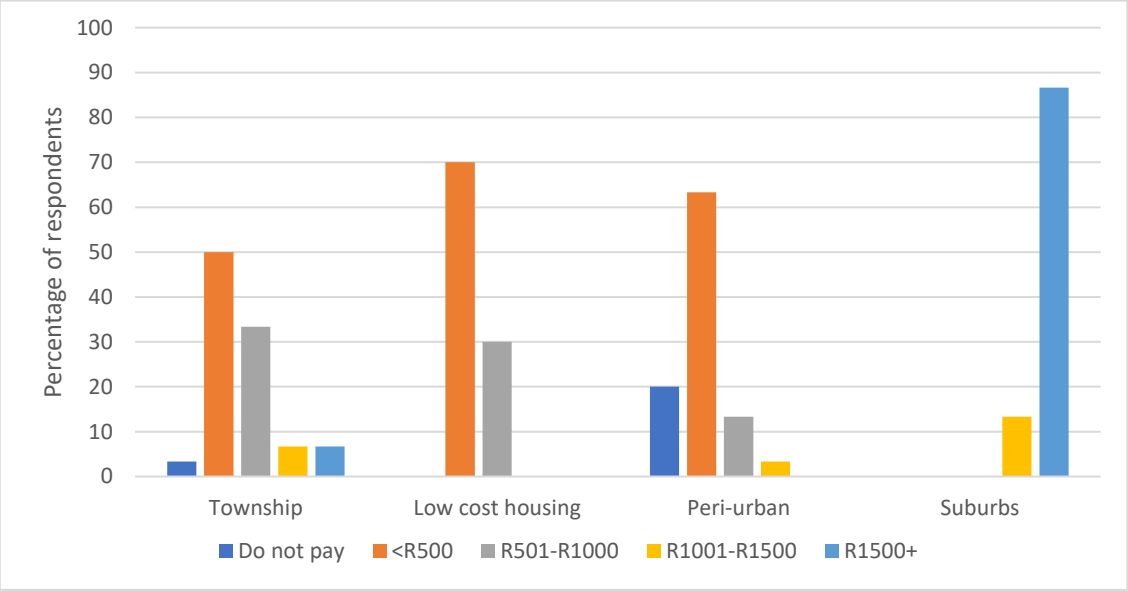
Of those that report that they pay for water services (55%), the amount paid varies considerably, with the municipality-wide survey showing that households pay between R100 and R800 per month for water. Monthly payments for water, waste collection and property taxes, which are included in a combined municipal bill, are highest in townships and suburban areas (see Figure 2). Figure 3 shows that payment for electricity is prioritised over payment for water.

Figure 2. Monthly spending on combined water, waste and property taxes where applicable (n = 105).



Note: Households in peri-urban areas do not pay property taxes to the municipality so the monthly spending for this settlement type would only reflect payment for water.

Figure 3. Monthly spending on electricity (n = 105).



Most people in the study (96%) believed that everyone has a right to water, including those who cannot afford to pay for it. It was not clarified in our research, however, whether this should be interpreted as awareness of constitutional rights or as the respondents' ethical belief. Respondents also believed that people who can afford to pay for water should do so and they reported a willingness to pay for services if they could afford it. They also stated that those who cannot afford to pay for water should receive it for free.

Thus, while the eThekwini Water and Sanitation Unit has a defined policy (see Box 1), the conceptions of state officials and citizens about who should pay and who should not, are complex. How people choose to use and pay for water services is shaped both by broader principles that vary across individuals, household poverty levels, and notions of citizenship and responsibility and self-interest. Drawing from our data and our review of the scholarly literature, we have identified with six main reasons, which make up our typology for non-payment. They are: 1) inability to pay; 2) low income, but with other priorities; 3) belief that the model for payment is unfair; 4) belief that the quality of service is insufficient and that withholding payment is justified and/or may improve service quality; 5) short-sighted self-interest without direct consequence; and 6) ambiguities in relation to communal tenure. We note, and repeat throughout our paper, that it is difficult to draw clear lines around these justifications. It is nonetheless crucial to develop a heuristic distinction between them, both in terms of scholarly conceptualisation and for making sense of how municipalities might respond to ongoing financial difficulties. We elaborate on these six reasons in what follows.

Inability to pay

Poverty is a main reason why many households are unable to pay for water services. Income in South Africa can be both low and irregular. Free basic water is provided where households are designated as indigent through municipal evaluation, spatial location or individual household applications; this provision of free water, however, can be irregular due to infrastructure and water security challenges. In cases where households are registered as metered water users but cannot afford to pay their water bills, the state continues to provide water according to the rationale that water is both an economic and a social good. As noted in Box 1, and unlike in many other countries, the state does not cut off access to water when households do not pay for water services; instead, it commonly responds by installing a flow limiter. Those who can afford it are prompted to pay for services in order to have the flow limiter removed; however, this strategy does not improve payment or the service, if there is an inability to pay or if households are resisting irregular service provision.

Our surveys also point to an important and specific reason why some households are unable to pay; that is, the existing water-related debt that they inherit when they move to a new home without a formal legal arrangement. This issue was raised by residents in townships and low-cost housing projects where the sale and transfer of properties is not always regulated and does not take place within formal administrative and legal systems; in such cases, new homeowners or tenants cannot pay for services when a large historical debt has been passed on to them. In such contexts, where the transfer of municipal service bills and the settling of debt is not linked to a formal sales process, the clearance of this debt needs to be managed. While there are legal and administrative processes in place to mitigate this, respondents raised concerns over the continued existence of such historical debts.

There is both legal and moral support for providing water to those who cannot afford it, yet there is always ambiguity around what this should mean in practice. Interview data and the wider literature make it clear that determining inability to pay is difficult, subjective and hard to monitor and enforce, both internationally and in South Africa. Existing policies leave out many people who should qualify for free water services (see Ledger, 2021), while providing services to those who can afford to pay, but whose homes are in areas that predominantly receive free basic water. Respondents noted in interviews, and literature supports the notion, that reports of income are not very reliable (particularly given extensive

work in the informal economy), and thus the municipality has instead shifted to a consideration of house size and associated value, which requires careful mapping and valuation. Fieldwork for this study revealed that maps or municipal evaluations can quickly become outdated as people improve their homes, and that the number of people varies both across and within households. This impacts a household's per capita access to free basic water, which is 6000 litres per household per month.

In their responses to open-ended survey questions, many residents reported that they felt that their ability to demand a higher quality service was restricted by the fact that they do not pay for water. Indeed, those with free services are unable to withdraw payments for inadequate service provision, nor can they divert money towards supplemental infrastructure in times of disruption.

In summary, several points are clear; first, there is strong support for free services for those who are considered to be poor, but there is difficulty in assessing who is poor; second, non-payment limits demands for improvement in services; third, the impact is acute when these services are disrupted; and fourth, in areas where free basic services are the predominant form of service there is also evidence of misuse of the free basic water policy by those whose can afford to pay.

Low-income, but with other priorities

While our data makes it clear that there is support for ensuring access to water, there is ambiguity and a divergence in opinions over what this might mean in practice. Data suggests that residents prioritise paying for different kinds of services because of the way non-payment is dealt with (see Figure 3). Electricity, for example, is understood to be a basic need that people must pay for to access to, as it is cut off if payments are not made or needs to be paid for up-front if pre-paid electricity is installed; they therefore prioritise paying for it over making water payments, because water can still be accessed even if it is not paid for. Responses in the household surveys suggest that there are also no cheaper substitutes for electricity, as other forms of energy tend to be more expensive. For many households, in contrast, water can be more easily accessed by diverting it from water pipelines, collecting water in rivers, or borrowing water from neighbours (whose water may or may not be metered). The state will also not cut off water for non-payment, only limiting the amount received.

How water services should be funded for those with some income remains contested, and disagreement over the precise answers to this can be found in the data. There is clearly not an 'inability' to pay for some services and basic needs, but instead a prioritisation of what to pay for. Again, non-payment for water does not mean water is less valued, but that it can be accessed in other ways, ways which may be less safe, may damage state infrastructure, may be illegal, and/or take considerable amounts of time.

Whether payments should be sought, and at what rate, is fundamentally an ethical and political question. It is entangled with whether the state can generate sufficient financial resources to provide services for free and whether free services will be well maintained. In interviews, municipal officials suggested that non-payment for water services both undermines the quality of the service provided and supports the political rationale for a lower level of service, which in turn results in lower payment for services. But it is also a pragmatic question that is rooted in the difficulty of determining where the lines fall between categories of water users and how the state can determine *which* households sit on *which* side of the line of *who* should and can afford to pay for water. These debates are also entangled with ongoing debates over what kind and level of service should be provided, and answers to this question shape perceptions of fairness (cf Jaglin, 2008, in Cape Town and Sutherland et al., 2014, in Durban).

Belief that the existing structure of payment is unfair

Perceptions of fairness vary in South Africa, shaped by ongoing debates over historical and contemporary inequalities. Our data suggests that this diversity of perceptions of what is fair matters for payment for water services. Specifically, people are less willing to pay for services when they think the broader system

is not fair. Our point in this section is not to say what a fair system entails and who is correct, but rather to show the wide range of opinions about what fairness entails. Crucially, we think this dissensus has implications for the economic viability of the water system, because there is no single answer that will be seen as fair by most people.

Residents' views on who should pay for water varied significantly and responses also varied across settlement types. All respondents stated that water should be provided free to those who are poor. Just under one-third of respondents in the low-cost housing and peri-urban settlements (30%) stated that no one should pay for water; 40% of respondents in low-cost housing projects, 20% in peri-urban areas, and 43% of township residents stated that some people should pay for services. In both township and suburban areas, 40% of residents stated that all people should pay for water, with 27% in low-cost housing projects and 33% in peri-urban areas stating that all people should pay for water services if they can afford it. Averaged across the sites, the findings suggest considerable differences, with 34% stating that all people who can afford it, should pay for services, 37% stating that some should pay for services, 18% stating that nobody should pay for services, and 10% not responding.

There is greater agreement in our data from water sector specialists and municipal officials, perhaps because they largely adopt positions that are in accordance with state policy. Here, all participants agreed that water is a basic human right and that poor households should be provided with free basic water. Crucially, they disagreed on who qualifies as 'unable to pay' and how this can be measured and enforced, a point that resonates with the distinctions made above. They also disagreed about the merits of service differentiation and its impact on willingness and ability to pay. Specifically, some thought that service differentiation contributed to non-payment while others felt that it did not.

The extent to which these different beliefs shape actual payment practices was not entirely clear in the survey data and could not be determined from our data. Surveys with residents and interviews with water sector specialists and municipal officials all suggest that perception of fairness is an important factor in shaping payment practices. This was reported to be particularly true in peri-urban areas, where most people believe that under the communal land tenure system they are not required to pay for water services given their governance and land system.

Belief that the quality of service is insufficient and that withholding payment is justified and/or may improve service quality

Survey data and interviews largely support the argument that a lack of trust in the state and its failure to maintain infrastructure and provide reliable services is undermining its ability to collect revenue from customers and is eroding the latter's willingness to pay (cf Fjeldstad, 2004). Water and water infrastructure are unlike many other goods in that the consumer cannot simply change suppliers; instead, dissatisfaction can be shown in only a limited number of ways, one of which is withholding payment. In the case of electricity, in contrast, state-provided services can more easily be supplemented or substituted with 'off-grid' options, although these can be expensive. Options such as rainwater harvesting to supplement irregular water supply have become more prevalent; however, there are risks associated with using untreated water for domestic consumption and rainwater is thus seen as supplementary and is often perceived to be a 'rural' solution.

Given the inability to change suppliers, some users perhaps rightfully believe that withholding payment might mobilise the state to improve its services. Interviews with municipal officials indicate that they cannot afford, and thus want to avoid, losing the income of paying customers. They thus avert the risk of non-payment by those in middle- to high-income areas by ensuring a rapid response to service failure.

Service maintenance responses and infrastructure improvements are therefore not always carried out by municipal officials in an incremental or socially just way that prioritises areas with the highest need; instead, they respond to particular places where the potential impact of non-payment would be more

significant. In other words, service quality is better in middle- and high-income areas because of the potential impact of households withholding payment, rather than being due to the actual withholding of payment. The household data also shows that middle- to high-income households pay for water services because they do not want their water supply to be restricted due to non-payment.

In other areas, people argued that non-payment is justified because service quality is not good enough to warrant payment. We are unaware of coordinated efforts to systematically withhold payments in ways that parallel historical boycotts or protests, but interviews with officials and with participants in our focus groups suggest that there continues to be an understanding by state actors that non-payment is a way of showing dissatisfaction with the state. Periodic and spatially confined service protests across the eThekwini Municipal Area put pressure on the state to sustain water services.

The connections between payment, protest and service quality are thus impossible to make sense of without understanding this longer history and perceptions of fairness. The connections between payment, protest and service quality are also crucial for making sense of why areas with the lowest quality and reliability are in places that do not pay for services. Users in such areas have fewer types of recourse; that is, they cannot withhold payments because they do not pay for services and they may protest because they have fewer other options for influencing the quality of service.

Short-sighted self-interest without direct consequences

This section attempts to explain those who benefit from the provision of water services and can pay for them, but who make a decision not to pay (cf Dominy and Kempson, 2003). Crucially, it can be very difficult to separate this category from the others described above, and much of the scholarship on water justice does not address such questions. Our research did not directly ask this question because, methodologically, it is difficult to imagine respondents voluntarily admitting that, while they receive a good and reliable water service and are able to pay for it, they do not pay because they have not directly experienced negative consequences for non-payment. Residents nonetheless frequently mentioned concerns around non-payment being motivated by self-interest. 'Self-interest without consequences' was also a key concern identified in our interviews and focus groups, and municipal officials specifically registered a concern that many who could pay for basic services were "hiding behind" those who could not, particularly in mixed-income parts of the city.

Identifying such households is undoubtedly both important and a challenge for the municipality. More research is needed to understand the rationale for this practice and to help citizens see that it threatens the financial viability of the whole system. While state actors clearly opposed this practice, residents were more ambivalent with regard to the ethics of non-payment by those who clearly could afford to pay. Municipal officials and paying residents stated that non-payment in this case was unfair and that it undermined the economics of water services.

Ambiguities in relation to communal tenure

Ambiguities in relation to communal tenure is perhaps more prevalent in the eThekwini Municipal Area than in many other metropolitan South African municipalities, as they do not have communal land within their municipal boundaries. However, it is relevant to municipalities in previous homeland areas, undergoing rapid urbanisation. Given its significance and associated political difficulties, some interviewees noted it as perhaps the most important and challenging issue to address.

The relationship between the municipal government and the traditional authority is always under negotiation because of the complexities of authority and governance in areas of shared jurisdiction. There is currently considerable variation in payment structures and also, as noted previously, significant non-payment. Many survey respondents suggested that there was a tacit agreement in place that households on traditional authority land are not required to pay for water services. Some households have meters, many of which do not work, and others access ground tanks that provide free basic water. The ground

tanks were initially set to provide 200 litres per household per day, but this municipal regulation has technically broken down in many areas. There are widespread reports that both the wealthy and the poor have access to free water services in peri-urban areas.

Developing a system of payment for water services on traditional authority land requires a clearer set of roles and responsibilities for all stakeholders. The National Treasury has attempted to broker a solution, suggesting a flat rate for property taxes and service provision, but those in our surveys, interviews and focus groups were not confident this would resolve the situation. They also noted that the mapping of cadastral boundaries has been attempted by the eThekwini Water and Sanitation Unit. This was in part aimed at linking to the indigent policy and providing a valuation of household prices; however, determining the value of homes is particularly difficult here because land is not bought and sold via established land markets. Many of the areas in the urban periphery are also changing rapidly, making it difficult to build a financial model that is based on home values.

Determining a fair system of water payments for those inhabiting communal land is difficult and beyond the scope of this paper, but it is crucial to note how this question intersects with the various points raised above. Non-payment happens for a variety of reasons, but when it becomes a widespread practice it threatens the economic viability of the whole municipal water system as well as public faith in the fairness of the payment system.

CONCLUSION

Many scholars and activists in and beyond South Africa have demanded, quite reasonably, that the state ensures the right to water. Much remains unclear, however, in terms of how this right might be allocated and funded. Even if water is not treated as a commodity, funding must come from somewhere. The post-apartheid state anticipated that rising incomes would lead to a high proportion of people paying for services, yet income inequality remains high and services underfunded. Both scholarly sources and our data support the argument that payment for services is not simply an economic transaction rooted in ability to pay; rather, it is shaped by wider beliefs and practices and is a way of building or withdrawing from relationships.

In this context, drawing on data from the eThekwini Municipal Area, we provide a typology through which to make sense of how people justify non-payment for water services. The literature and those we interviewed (residents, water service professionals, and municipal officials) generally agreed that good, reliable services should be provided, that people who can pay should pay, and that it is the responsibility of the state to ensure a fair system of payment, accompanied by consequences for those who should pay but do not. They separated the inability to pay from other reasons for non-payment, and widely agree that water should be provided to those who cannot afford to pay.

There is perhaps hopefulness in this broad consensus, however there are two fronts along which there is much less agreement. While many research participants moved from more polemical statements towards more middle-ground positions in the course of their interview, there remained important differences between respondents. The first point of difference is around how to measure and enact the line between ability and inability to pay and how to make such a differentiation legible to the state. This is accompanied by much scepticism that people will voluntarily place themselves on the right side of such a line. The second key point of difference is around what to do in the absence of such a system. Many find withdrawing payments to be an appropriate form of political action, whether for poor services or because they believe the system is unjust; this practice is rooted in a long history of protest. Others argue that this withdrawal undermines the very system in which residents seek to participate, one that provides good, reliable services. For residents with free services, of course, this form of political withdrawal is not an option.

Our findings thus both provide a typology for understanding payment and non-payment, and contribute to wider debates around how water justice might be achieved. There are real differences in the political strategy behind pursuing free or low-cost services and that behind increasing incomes (whether through wages or cash transfers). These differences become clearer when we understand payment for water services as not only being about the flow of money, but also as a socio-political practice that builds relationships and provides opportunities for protest or withdrawal. Our typology is not meant to provide an answer to how to pursue water justice; instead, it is aimed at helping make better sense of the many different reasons for payment and non-payment and at how these reasons and decisions impact broader strategies for pursuing water justice.

Given the historical and ongoing inequalities observed in our case study and beyond, it unlikely that a system of water provisioning, on which everyone agrees, will be found. Disagreement over payments continues to be a point of struggle, one that is both political and social and, according to our data, shaped by individual self-interest. Providing a typology of reasons for non-payment will not reconcile such differences, but we hope to have shown that research can shed light on the diversity of beliefs and practices, including on points of agreement and disagreement.

ACKNOWLEDGEMENTS

Funding for this work was provided by the Water Research Commission of South Africa for the project entitled, The Socio-Economic, Technical and Institutional Dimensions of Non-Payment for Water: Solutions and Lessons for South Africa. We would also like to thank Jay Bhagwan and Sarah Slabbert for their contributions to the research.

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