

The political economy of the urban water-pricing regime in Freetown, Sierra Leone

Daniel Harris, Michelle Kooy and Gibrill Jalloh

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Results of ODI research presented
in preliminary form for discussion
and critical comment

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* Disclaimer: The views presented in this paper are those of the author(s) and do not necessarily represent the views of ODI or DFID

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Acronyms

| | |
|---------|-------------------------------------------------------------------------------------|
| AMCOW | African Ministers Council on Water |
| ASI | Adam Smith International |
| CPR | Common Property Resource |
| DFID | UK Department for International Development |
| DSDP | Decentralised Service Delivery Program |
| GoSL | Government of Sierra Leone |
| GVWC | Guma Valley Water Company |
| INGO | International Non-Governmental Organisation |
| MDG | Millennium Development Goals |
| MoEWR | Ministry of Energy and Water Resources |
| MoFED | Ministry of Finance and Economic Development |
| MoHS | Ministry of Health and Sanitation |
| NRW | Non-Revenue Water |
| NWRB | National Water Resources Board |
| ODA | Official Development Aid |
| ODI | Overseas Development Institute |
| O&M | Operation & Maintenance |
| PEA | Political Economy Analysis |
| PFM | Public Financial Management |
| PGPE | Problem-Driven Governance and Political Economy Analysis Good Practice Framework |
| SALWACO | Sierra Leone Water Supply Company |
| SLPP | Sierra Leone People's Party |
| WASH | Water supply, Sanitation and Hygiene |
| WSD | Water Supply Division |
| WSS | Water Supply & Sanitation |
| WTP | Willingness To Pay |

Executive summary

This paper presents the findings of one of two country case studies conducted as part of a broader project entitled ‘**Analysing the governance and political economy of water and sanitation service delivery**’, commissioned by the UK Department for International Development (DFID). The objective of the research project is to develop the utility of political economy analysis for the water supply and sanitation (WSS) sector, with a focus on improving the operational impact of DFID (and other donor) country programming.

While the objective of the case study is therefore to inform the development of DFID’s approach to sector-level political economy analysis (PEA), the paper and the research that underpins the paper have been undertaken with the primary goal of working with the staff and development partners of the DFID-Sierra Leone country office to think through the implications of a problem-driven political economy analysis approach for addressing the issues encountered in their work.

Extensive consultation with the DFID-Sierra Leone country office and their development partners highlighted the inability to set, monitor, and enforce appropriate tariffs for urban water services (specifically in Freetown), as a key development problem for the focus of this research. The financial sustainability of the sector and, subsequently, the country’s ability to sustain and expand access to clean water to meet the Millennium Development goals, will depend on increasing revenues from tariffs.

Currently, both of the country’s two urban water supply utilities consistently fail to collect revenue sufficient to cover operation and maintenance costs due to a range of physical, social, political, and institutional issues, including the lack of institutional capacity to collect tariffs, existing low billing rates, high volumes of non-revenue water, and political and economic barriers to the setting and enforcement of appropriate tariffs.

In Freetown specifically, the urban water sector is in dire physical and financial straits, requiring significant injections of cash to continue to operate as designed. There is insufficient revenue for steady state operation and maintenance, let alone rehabilitation or extension of the system and of access to reliable, quality, improved water sources for much of the population. In response to partial coverage of the population by formal public-service providers, there is now a large formal and informal private water market selling bulk and/or treated water.

This inability to set, monitor and enforce appropriate tariffs for urban water supply necessary for sustainable cost recovery, has resulted in an over-reliance on development aid to finance both capital infrastructure necessary to extend water services, as well as to finance the ongoing operation and maintenance of such services. The lack of a sustainable balance between the three sources of sector finance (taxes, development transfers and tariffs) is preventing more rapid development progress in increasing access, and also threatens to decrease coverage as systems continue to deteriorate. In addition, far from being the product of a specifically pro-poor policy or targeted subsidy, artificially low or absent tariffs do not deliver a pro-poor outcome. In many places in Freetown, water is only available through informal providers, who charge up to 100 times more per unit volume than the vastly inadequate formal system. Urban poor residents also jeopardise health by relying on self-provision from contaminated shallow wells.

Although the Government of Sierra Leone has a stated political commitment to cost recovery and place emphasis on sustainable tariffs for service delivery in its new National Water and Sanitation Policy, previous initiatives, both within government and from donors, have not had much success. The political economy of the urban water-pricing regime (setting, implementing, monitoring and enforcing) was subsequently selected as the focus of this country case-study research. The analysis focused specifically on the country’s capital city of Freetown, in light of the previous failed attempts by donors to intervene in Freetown’s water-pricing regime; the relative importance of the Freetown service delivery

given the demographic shift to urban areas in the post-war period; and practical considerations concerning the limited time available to the researchers to spend in country. Where the political economy analysis identified factors relative to water-pricing regimes in other urban areas, or rural areas of Sierra Leone these are included in the interests of providing as much information as possible to DFID-Sierra Leone.

The analysis has identified ways in which the existing institutional and governance arrangements in the sector raise numerous challenges to developing a water-pricing regime – for both rural and urban areas. The prospects for changing the current water-pricing regime require far more than a technical fix. The calculation of recurrent costs, necessary capital expenditure and an adjustment of tariffs to meet those revenue needs will not address the institutional and governance arrangements in the sector, impeding the development of a sustainable financing plan. As this paper highlights, overcoming these challenges will be subject to a range of political and economic factors that place an economic assessment of aggregate willingness to pay – and, equally, the willingness to charge – in a more realistic context.

It argues that, at present, the weaknesses in the institutions governing water service delivery present a significant obstacle to the model envisioned in the National Water and Sanitation Policy. The vision of the GoSL and development partners, in which water is provided equitably and efficiently by utilities to service users through an agreed fee-for-service transaction at an agreed-upon tariff rate, enabling sustainable cost-recovery by the utility, is unlikely to be achieved in the short run.

We stress that the development of such a model of service delivery is indeed necessary for the financial sustainability of the water sector, and is fundamental to enabling the country to improve access of citizens to a clean water supply. With the leadership of MoEWR and the support of development partners, efforts to reform the legal and administrative foundations of the sector and to strengthen the capacity of government institutions are now underway. Such efforts should continue.

However, in combination with the limitations imposed by the limited and severely deteriorated state of water-supply infrastructure, the presence of a number of mechanisms through which a significant number of service users are able to access water free of charge serves to systemically undermine attempts to develop sustainable-sector financing that includes some form of tariff payment.

Supported by a variety of social and cultural norms, the significant incidence of populist electoral short-termism and the persistence of documented and undocumented arrears, which arise from an effective immunity from sanctions for non-payment, contribute to a context in which many of those that are currently served by the utilities (including several large institutional users) are effectively free riding. While such users are able to reap what benefits are emerging from a sorely-constrained system of water supply, other would-be users are left reliant on seasonally variable natural sources or to fend for themselves in private markets at significant cost.

Recommendations

Forward-looking efforts should continue to be made to develop the formal framework necessary to implement and sustain the model of water-service delivery envisioned in national policy documents. Additionally, there is little question that alongside the institutional changes required in the sector, additional investment will be needed to develop the physical infrastructure necessary to provide reliable water services in Freetown and elsewhere. However, alongside both the long-term institutional reform, and physical infrastructure investment, intermediate solutions are needed for the short and medium term.

While policymaking must be directed to the fundamental goal of achieving universal access to clean water, if tariffs are to be a component of sector financing, there is a need to understand and address the implications of the non-excludability of service users who fail to contribute to the sustainability of the sector (i.e. to address the free-riding problem). This means that policy and programming needs to address the adoption of mechanisms to ensure that those who can and should pay do so, according to agreed policy.

Potential activities to address both populist and political challenges to cultivating a culture of payment for water services by existing free riders include:

- Support to public education campaigns establishing the link between payment and provision of services, including the quality of the service, and supporting public participation in a transparent tariff scorecard assessment.
- Support to the newly established Electricity and Water Supply Regulatory Commission to undertake a technical debate on tariff setting and adjustment, and to establish a common national policy on the percentage of subsidy versus water user charge within the cost recovery calculation of utilities.
- Partnerships with donor colleagues working on Public Financial Management and public-sector management to address the large arrears owed utilities by government agencies and institutions in Freetown and elsewhere.
- Exploring public-private or public-public partnerships for contracting out parts, or all, of the water-supply delivery pathway; provided a performance-based contract provides the right incentives, penalties can be enforced, and both the operators and the Regulatory body retain independence from political institutions.

Thinking about urban water as a common-pool resource can provide some useful insights for these intermediate strategies. This would suggest a number of recommendations, including supporting:

- the clear identification and demarcation of user groups (to better understand who can and should pay);
- coordination in the development and implementation of community-based initiatives to ensure a common approach on local tariff setting and sanctions;
- coordination between community-based initiatives and formal institutions;
- the monitoring of compliance by appropriators or those accountable to them (i.e. the use of formal and informal mechanisms to monitor and follow up with users), including potential pro-active engagement with local big men or clientelist politicians, as well as the use of reward schemes;
- the development and promotion of improved mechanisms to monitor compliance with payment schemes by known users (e.g. visible compliance by posting notices on house fronts), including initial steps to make known all current users by formalising all current illegal or unregistered connections; and
- the development of socio-culturally legitimate sanction and conflict-resolution mechanisms could provide valuable institutional foundations for positive change, even where actors from outside the community are involved in elements of service provision.

This should not be taken as a call for the universal adoption of purely community-based approaches to the delivery of water services. Indeed, a combination of actors from communities, utilities, relevant GoSL departments and, potentially, the private sector are likely to play various roles in the service-delivery chain, particularly in urban contexts where infrastructure demands are more complex and initial capital expenditure is likely to be greater. Additionally, community-level action is unlikely to address some forms of systemic rule-breaking by major actors, such as the persistence of arrears from large public actors, which may require intervention from sympathetic high-level actors in GoSL if they can be identified and/or development partners working on complementary issues (e.g. public financial management and the development of realistic budgets).

Yet, the adoption of particular institutional design elements derived from experiences with management of common goods could help to leverage a range of formal and informal mechanisms as shorter-term or intermediate steps, where formal rules and frameworks are being re-negotiated at the national level.

While some of the strategies suggested above may be challenging, doing so successfully would help GoSL and its partners (including relevant utilities, NGOs and international donors) to address free rider challenges better, and thereby improve the likelihood of achieving sustainable improvements in sector outcomes in the shorter term.

1 Introduction

1.1 Purpose of the study

The past decade has witnessed a significant increase in the interest of the international donor community in applied political economy analysis (Harris et al., 2011). With varying degrees of success, a number of frameworks have been developed as tools to help donors better understand country contexts, identify and explain persistent development challenges, and contribute to the design of appropriate donor interventions. While much of the early work in this area took the form of broad country-level analysis, more recently donors have moved towards the application of political economy frameworks at sector or even sub-sector (policy or programme specific) levels. The water and sanitation sector has been no exception to this trend, with a number of country case studies produced in the last few years (McCluskey, 2011; WSP, 2011; Singh, 2008; O'Meally et al., 2010; Foot and Rashid, 2009; Swatuk, 2008). This paper presents the findings from one case study undertaken as a part of a broader project entitled 'Analysing the governance and political economy of water and sanitation service delivery', commissioned by the UK Department for International Development (DFID) and carried out by the Overseas Development Institute (ODI). The project as a whole has as its aim the development of a better understanding of the utility of political economy analysis in the water supply and sanitation (WSS) sector and consists of both the initial selection of a theoretically robust, analytical framework that is applicable in the sector, and the testing of that framework in particular country contexts.

As was the case with the first country case study produced for this project (Harris et al., 2011b), this case study has been approached with a particular view towards improving the operational impact of DFID (and other donor) country programming. Findings from an initial review of experiences with political economy analysis, both in the water-supply and sanitation sector, and more widely, suggest the likelihood of producing operationally-relevant findings depends, among other things, on grounding the analysis in the challenges encountered in the ongoing work of the country office (Harris et al., 2011a). As a result, this case study has been developed on the basis of a number of exchanges with the staff of the selected country office (DFID Sierra Leone) to think through the potential value added of a political-economy perspective in addressing specific issues encountered in their work. In this country case study the inability to set, monitor, and enforce appropriate tariffs for urban water services (specifically in Freetown), was the specific sectoral challenge identified for further investigation using political economy analysis.

Given different technologies, perceptions of differing needs of rural and urban populations, and power relationships, the issues relating to water pricing are not generic.¹ Therefore this research focuses primarily on Freetown, with some attention paid to other urban locations, and rural water service delivery. Following consultation with DFID and ASI it was decided that, while focusing largely on Freetown areas, the authors would share, where possible, findings from and relevant to the rural context. This decision was made on the presumption that it was preferable to share potentially meaningful information even where this deviated from the main thrust of the paper. It is important to note that such observations, while useful, do not necessarily capture the complete picture. Subsequent studies may be required at the sub-sector level following this research, to further analyse the distribution of subsidies within water tariff structures and look in-depth at the winners, losers and incentives for achieving various policy objectives through different tariff structures in each service-delivery context.

¹ We are grateful to KS Manu for emphasising this point in discussion with the project team.

Box 1: Water pricing and sustainable cost recovery

Water Pricing. For the purpose of this case study the term ‘water pricing’ is used in the specific context of costs related to service delivery of clean water supply and can be considered synonymous with ‘water tariffs’. Water pricing is not used in this context to encapsulate the broader uses of economic instruments to determine resource allocation or increase economic efficiency, but rather is used as a short hand reference to the process of setting, monitoring, and enforcing tariffs for urban water-supply services. The focus of this research was not to determine the correct price for urban water services, but rather to examine the political and economic constraints around the ability and willingness of sector actors to set, monitor, and enforce payment for services at a level that would ensure sustainable cost recovery for the sector, in alignment with the policy goals of the National Water and Sanitation Policy.

Sustainable cost-recovery. Setting tariffs appropriate to achieving sustainable cost recovery is considered within the overall equation for financial sustainability of the sector based on tariffs, taxes, and development transfers. The MoEWR is considering water pricing in the context of ‘sustainable cost recovery’, looking only to recover costs of operation and maintenance (not yet capital investment or depreciation) of water-supply delivery to public or non-profit providers (GVWC, SALWACO, CSOs/District Councils). Full cost recovery would entail the full lifetime recurrent costs, including: capital expenditure, capital maintenance expenditure, and operation and maintenance. Sustainable cost recovery is recognised as a more realistic and practical policy principle than full cost recovery for the water sector (OECD, 2009). Sustainable cost recovery recognises sector finance will always come from a specific combination of tariffs, taxes, and transfers, to be determined according to each country’s context. Achieving full cost recovery (including the full lifetime recurrent costs of capital expenditure, capital expenditure maintenance, and operation and maintenance) solely through tariffs is unrealistic for most developed and developing countries.

1.2 Analytical framework: moving from country level to problem focused

Designed explicitly to address specific development challenges encountered in the course of donor operations, the analytical framework adopted in this paper, as in the research project more broadly, is the Problem-Driven Governance and Political Economy Analysis Good Practice Framework (PGPE) developed by Fritz et al. (2009). Whilst a number of frameworks for applied political economy analysis have been developed and subsequently used by donor organisations, academics and a range of consultants (Edelmann, 2009), the analytical framework used here was selected for a number of reasons.

First, the core-component elements of political economy analysis: actors, institutions and structural features, are clearly presented in the selected framework (Box 2). These three component elements interact with one another and in doing so, influence political and public-sector action and policies, as well as their implementation, and, ultimately, development outcomes.

Second, as the name implies, the framework facilitates analysis that is focused first on a particular developmental challenge and then attempts to drill down to the underlying political economy factors influencing such outcomes (Figure 1). As political economy analysis is defined in part by the way in which it takes local realities as its starting point, rather than a given idealised form, some degree of contextual focus is clearly a prerequisite. However, there has also been a significant move in the last few years away from analysis that is purely and broadly contextual in focus and towards analysis that is grounded in a single development ‘problem’ or ‘question.’ This shift has been driven by a perceived demand for approaches that are more likely to produce findings that are directly relevant to country office operations. The authors have attempted to reflect this need for specificity in the paper by drawing on key political economy factors in the paper only where they appear immediately relevant to the problem in question, rather than first providing a broad survey of political-economy issues in Sierra Leone and then drawing on those factors in a separate analysis of the problem in question.


Box 2: Core components of political economy analysis

- **Structural factors** are the conditions that influence the state and political system, including geographic, demographic, historical, economic and social characteristics of the community in question. ‘Generally these are not readily influenced, either because of the timescale needed, or because they are determined outside the country’ (The Policy Practice and ODI, 2009:5). However, structural factors provide the foundational elements of the context in which analysis must be grounded and often include systemic constraints on what is possible in a given context.
- **Institutions** are both the formal and informal norms that govern behaviour, being the explicit or implicit ‘rules of the game’. Institutions tend to be more susceptible to change in the medium term than structural features. These are sometimes grouped together with the structural factors in the previous point as the ‘context’ – as in the IAD framework – or, occasionally, with the actors (stakeholders), as in the World Bank’s Political Economy of Policy Reform framework.
- **Actors** are the individuals or organisations that are most relevant to the issue in question. These include those individuals or organisations that support reform as well as those who oppose it; individuals or organisations that engage with the issue as well as those who ignore it; and individuals or organisations who benefit from potential reforms, and those who incur costs. Their actions are shaped by incentives (both material and non-material). Precisely what types of incentives exist for each actor or set of actors and how actors respond to incentives will be shaped by all of the factors above and the resultant decision-logic used. Actors will vary in their ability to exercise agency, in large part due to the power (economic, social, and political) they hold.

Source: Fritz et al. (2009) and DFID (2004).

Third, the framework is open with regard to the potential interventions one might make in response to emerging findings, thus preserving space for country office staff to engage creatively in problem solving, and avoiding the tendency to apply familiar blueprint approaches. No particular model of best practice is assumed to lead to improved sector outcomes. This inevitably challenges both practitioners and users of the research to engage actively in the operationalisation of findings. However, in the experience of the authors, this engagement, particularly where informed sector staff are able to draw on extensive tacit knowledge, dramatically increases the quality of findings when compared to an analysis that is merely delivery by externally-contracted researchers.

Figure 1: Problem-driven governance and political economy analysis

| | | |
|-----------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| Problem -driven governance and PEA  | Identifying vulnerabilities, challenges or operational ‘problems’ | Evidence of poor outcomes to which PE weaknesses appear to contribute |
| | Understanding institutional and governance arrangements and capacities | What are the associated institutional set-up and governance arrangements? |
| | Identifying key political-economy drivers | Why are things this way? Why are the policies or institutional arrangements not being improved? |

Source: Adapted from Fritz et al., 2009:7.

1.3 Outline of the remainder of the paper

In the remainder of the paper we present findings from a case study: that of the political economy of the urban water-pricing regime in Freetown, Sierra Leone. In Section 2 we outline in greater detail the developmental ‘problem’ to be explored in the study, first providing a brief overview of the extent and form of access to an improved water supply in both rural and urban areas in Sierra Leone, and then laying out the justification for an examination of one key component of the institutional arrangements underpinning sector performance: water pricing for urban service delivery. Section 3 focuses in greater detail on the challenge of developing a sustainable system of financing for the provision of access to improved water supply, with a focus on Freetown urban areas but also including discussion of rural supply where appropriate. This Section lays out the existing institutional and governance arrangements in the sector, including detail on relevant tariff structures. While much of the material in Sections 2 and 3 will likely be familiar to readers with pre-existing knowledge of water-service-delivery issues in the Sierra Leone context, this should provide the reader with the necessary background to drill down to the specific issues raised later in the paper. Section 4 then puts forth the main arguments in the paper, namely, that specific features of the political-economy context in Sierra Leone suggest the need for short- to medium-term routes to sustainable-sector financing as a complement to the ongoing long-term sector-reform processes. We suggest that an approach to urban water pricing that draws on institutional design principles from common-pool resource management is useful in identifying programmatic strategies to complement longer-term policy goals for the sector. We draw here on a selection of key political-economy drivers emerging from a review of relevant published and unpublished literature and a series of more than 40 key informant interviews carried out in October 2011 that may help to explain sector outcomes. Based on the analysis in the previous Sections, Section 5 then provides some thoughts on the implications of the analysis for policy and potential donor interventions.

2 Problem identification

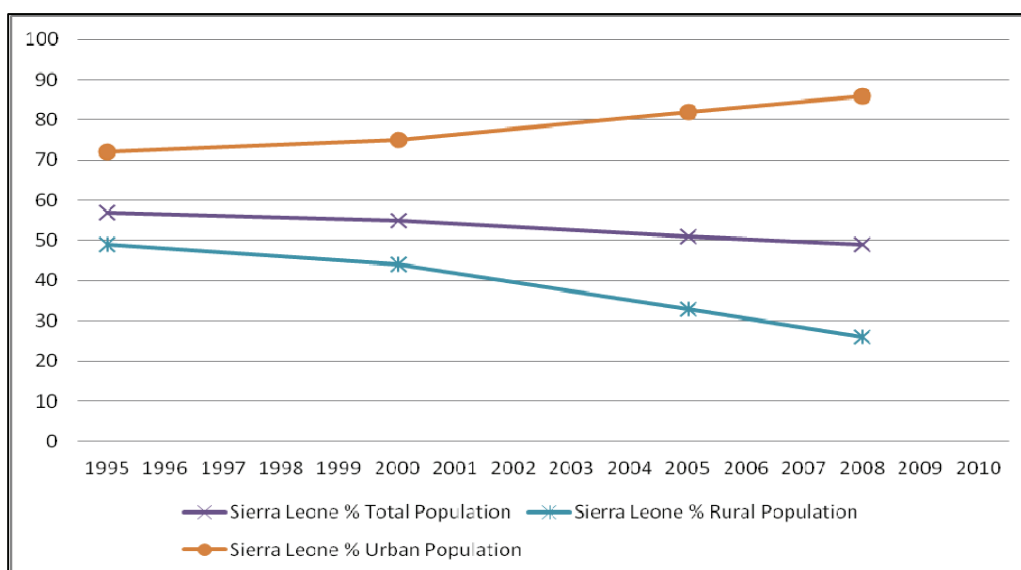
The approach adopted in this paper is to draw on knowledge of persistent poor outcomes in the sector to identify a specific development challenge as a focus for further analysis. As such, we first provide an overview of recent sector outcomes related to sustainable-sector financing first mentioned in Section 1. We then move on to a more detailed description of one key component of the institutional arrangements underpinning poor sector performance, identified in consultation with DFID country office staff and partners within and external to GoSL, namely, the water-pricing regime intended to contribute to sustainable-service delivery in the sector.

2.1 Sector outcomes: the extent and form of access to water services

2.1.1 Rates of access to an improved water source

The statistics on access to clean water supply services in Sierra Leone reflect the broader development challenges of the country, following a decade long civil war that saw widespread destruction of the country's basic infrastructure. In 2010 the country was ranked 158 out of 169 countries in the UN Human Development Index (HDI, 2010), and although this constitutes a slight improvement from previous years, the country is not expected to meet any of the MDGs, including the MDG for increasing access to improved water supply (AMCOW, 2011). During the civil war much of the water supply infrastructure in rural areas and urban areas outside of Freetown was destroyed and/or looted for parts and machinery. The water-supply infrastructure in Freetown suffered an overall deterioration from lack of regular operation and maintenance, as well as trying to cope with a rapid influx of residents fleeing the conflict in the countryside. As a result, there was a considerable reduction in the access of the population to clean water services and there is still a general downward trend in access to clean water that has persisted after the cessation of the civil war (see Figure 2). Currently 51% of the population of 2.8 million people live without access to improved water sources (WHO/UNICEF, 2010). While there has been some progress on increasing coverage in urban areas, there is widespread concern over the quality and reliability of access. It is also important to note that if the water-supply services in both rural and urban areas continue to fall into a state of disrepair owing to lack of operation and maintenance, the net coverage over the coming years will decrease.

Figure 2: Access to an improved water source in Sierra Leone, 1995-2008



Source: World Development Indicators.

The latest Joint Monitoring Programme Update (2010) for Sierra Leone reports that 86% of residents in urban areas have access to improved water supply, compared with only 26% of residents in rural areas. However, the high rate of access reported in urban areas is contested by those who argue that the 37% of the urban population who rely on protected hand dug wells, and the 30% of urban residents accessing water through a standpipe should not be considered as having access to an 'improved source' (WHO/UNICEF, 2010). There is sign of widespread contamination of well water which raises questions regarding their designation as an 'improved source'.² A 2010 water-quality survey found 52% of all wells tested to be contaminated with faecal coliform, and in some areas in Freetown as high as 80% of wells were contaminated (UNICEF, 2010).

The national target for access to clean water supply is set at 74%³ (National Water and Sanitation Policy), with the same targets applied for both rural and urban coverage. Although the target for access to clean water in urban areas has theoretically already been achieved (86%), in addition to the questions regarding quality and quantity of 'improved sources' in urban areas there is also a huge evidence gap on the status of water service delivery.

As reported by DFID's WASH technical assistance service provider (ASI et al, 2011), the majority of monitoring and reporting in the sector is confined to specific project results that are initiated and specified by donors or NGOs, and, as a result, there is a proliferation of monitoring activities; but with little sector coordination and the absence of any robust baselines it is difficult to measure change. The only official source of data on access to clean water nationwide is survey data produced by Statistics Sierra Leone (SLL) as provider-based data is hard to come by.

In urban areas, neither the Guma Valley Water Company (provider in Freetown), or the Sierra Leone Water Supply Company (responsible for provision to urban areas outside Freetown) are able to provide an accurate picture of service coverage due to the high number of illegal connections, and lack of an accurate customer database. GVWC has only 13,700 registered consumers in its database (in a city of over 1 million residents), most without a meter to record volume of usage, making it extremely difficult to assess what percentage of its non-revenue water is due to illegal access and/or pipe leakage. This highlights the inability of the utilities to monitor compliance with any water-pricing scheme, no matter how well-designed the tariff structure is, or how well-supported cost-recovery principles are within the sector policy reforms. For rural areas, the Water Supply division (WSD) within the MoEWR is responsible for service delivery through District Councils; in rural areas it currently reports on the amount of water-supply infrastructure installed (number of wells, number of spring boxes, number of hand pumps), rather than the number of people with access. The lack of data on service provision is particularly glaring when it comes to data on paid service delivery (see details in Section 4.3).

Some improvements in data availability are on the horizon. The latest round of the Sierra Leone National Public Service Survey, supported by the World Bank and expected in early 2012, will provide statistics on access to water supply, sanitation and hygiene. Additionally, as the second phase of the Decentralized Service Delivery Program (DSDP II)⁴ rolls out, the contracts intended to be signed between MoFED and local councils will include indicators on access to water-supply services – at least improving baselines for rural water supply coverage. Data on urban coverage, however, will continue to be provided (or not) by service providers (SALWACO, GVWC).

² While protected wells are considered an improved source, the JMP concedes that an improved facility may not necessarily provide safe water if the quality is compromised. In Sierra Leone, sector actors have pointed to widespread contamination of these wells which then does not make them improved source. We are grateful to Kwabena Manu for highlighting this point.

³ This is also the target to be reached under MDG 7.

⁴ The DSDP II is funded by the World Bank, and is operational from December 2011 until December 2015. The total funding of \$26 million supports decentralised delivery of basic services in Sierra Leone, specifically focusing on strengthening the capacity of local councils to manage decentralised services; improving availability and certainty of funding for Local Councils; and developing the inter-governmental fiscal-transfer system. More information is available at: <http://web.worldbank.org/external/projects/main?pagePK=64283627&piPK=73230&theSitePK=40941&menuPK=228424&Projectid=P119355>

2.1.2 Current forms of access to water services

The focus of this research was on the water-pricing regime in Freetown, but as noted previously there are a number of political economy issues relevant for both rural and urban water supplies (discussed in Section 4). Therefore in this Section we provide a brief overview of forms of access to water in both rural and urban areas, as there are important differences.

Water access in rural areas is characterised by use of a combination of water sources which are combined to meet household needs, including streams and wells for cooking, washing and bathing. These unimproved sources are used even where protected sources (wells) exist for a variety of reasons, including proximity and ease of access; lack of awareness of hygiene and health impacts from using contaminated sources; lower cost; and cultural preferences. However, it is also relevant to note that many of the improved sources were installed in emergency-relief efforts after the war and are no longer functional due to missing parts and lack of finance or the supply chain to secure replacements or carry out the necessary repairs (authors' interview). Many of the community water-supply schemes are delivered through external agencies with capital costs that are heavily, or completely, subsidised. In return, rural communities are expected to take an active role in operation and maintenance: WASH Committees are set up at the village level by the WSD of the MoEWR, or by an INGO if active in that area, to operate and maintain the infrastructure. The Committees are, in theory, supposed to charge fees from households using the water in order to save up necessary capital to finance any repairs, but as indicated through interviews with UNICEF and NGOs active in rural areas, this is rarely practiced. In the rainy season households prefer to use other (non-treated) water sources⁵ available rather than pay for access to hand pumps, and in the dry season when wells are often dry and access intermittent, households complain of quality/quantity received compared to access fees.

In contrast to rural areas, in urban areas the two state utilities (SALWACO, GVWC) have a greater responsibility for service delivery and for maintaining services, although community involvement in operations is sometimes seen in urban-poor service-delivery models such as the DFID-supported Urban WASH Consortium in Freetown. Although, theoretically, the consumers of water in urban areas are supposed to be paying for both capital and operation and maintenance charges, low tariffs, along with the inability of utilities to monitor and enforce tariffs, have so far prevented any capital cost recovery.

Supply of safe water in the six urban areas outside of Freetown is the responsibility of the Sierra Leone Water Supply Company (SALWACO), and is largely limited to provision of piped water from dug wells, as the water-treatment plants and centralised distribution systems (already in disrepair before the war) are largely non-functional. Less than 5% of the population in the 3 largest provincial capital cities of Bo, Kenema and Makeni (total population of 496,000, or 10% of the population of Sierra Leone) have access to the piped water supply (AfDB, 2010)⁶, with the remaining population relying on self-supply through private wells.

Access to clean water in the capital city of Freetown is secured through a combination of sources depending on where one lives in the city, what one can afford, and where access to the city's centralised pipe distribution system is physically possible. The range of water sources provided through a spectrum of formal and informal providers include the typical options evident in most cities in the global south: piped water from the utility network through a household connection, stand posts connected to the utility, piped networks and stand posts connected to gravity-fed systems independent

⁵ We note that in Sierra Leone rainwater is a safe form of water supply if properly harvested and is a good supplement to other sources, as well as a potentially safer source in cases where wells may be contaminated. We are grateful to Kwabena Manu for pointing this out.

⁶ The AfDB report cites that only 5% of the population in the 3 cities has access to safe water supply, but as Kwabena Manu has noted, this likely refers to access to piped water supply, as other forms of improved (safe) water supply include protected wells, harvested rainwater and boreholes, sources of which a large percentage of the residents with non-piped water rely on in urban areas.

from the central network (for peri-urban areas), public and privately operated water tankers delivering water from the utility stand posts or spring water sources outside the city to either households or industries, informal water vendors selling 5L containers from stand posts, and a range of small-medium and large-scale bottled or ‘sachet’ water sellers.

Low-income residents in Freetown rely on unprotected wells (self-supply) or stand posts provided by GVWC, the Freetown City Council (FCC) or NGOs. Although the water from the stand posts is provided free of charge to the poor, in reality they often pay between Le 500-1,500 per 5 L bucket for delivery to an intermediary who controls local access (authors’ interview). At a cost of Le 111/gallon, this means the city’s poorest residents are paying almost 100% more for their water than the lowest bracket of domestic consumers in the tariff price set by GVWC.⁷

Access from stand posts is also intermittent, since total water quantity produced by the utility is insufficient for the city’s population. Stand posts typically offer access during daytime hours from 8am-6pm, though this varies extensively. Household connections theoretically have access 24 hours a day, 7 days a week, but, in reality, access is intermittent depending on where one lives in the city (water pressure in the eastern part of the city is notoriously poor).

2.2 Water pricing for service delivery: a key development challenge

The performance of the water-supply sub-sector reflects a range of factors and therefore the performance outline in the above Section reflects a range of concerns. In consultation with the DFID country office and ASI staff, the issue of water pricing (setting, monitoring, and enforcing tariffs for urban water supply) was selected from the broad range of institutional and policy reforms as an entry point for the analysis. The reasons for this were twofold:

- (1) First, together with the Ministry of Energy and Water Resources, both DFID and ASI viewed water pricing as a key issue for sector sustainability: service providers need to achieve a sustainable cost recovery⁸ in order to allow limited public funds to be allocated to much-needed capital investment rather than subsidising recurrent costs (as explained above); any aid finance for capital investment would only increase access for a limited time period if in the future service providers are not able to undertake repairs and maintenance. This sector priority of the MoEWR is subsequently reflected in a key area of technical assistance being provided by the DFID-funded service provider and so sits within overall DFID support to the sector.⁹
- (2) Second, it was noted that some initiatives, both within government and from donors, had been tried on this issue historically, but without much success. Lack of progress on the issue of

⁷ 5L equals 1.11 imperial gallons, so Le 500/5L therefore equals Le 111/gallon. The lowest domestic tariff bracket for piped water supply by GVWC is set at Le 1.3/gallon, although we note this does not include the fixed monthly demand charge (which varies, depending on pipe diameter of the connection) and per-gallon energy surcharges (which vary dependent upon one’s location in the city network and the use of electricity to pump water through the network at that point).

⁸ Sustainable cost recovery is recognised as a more realistic and practical policy principle than full cost recovery for the water sector (OECD, 2009). Sustainable cost recovery recognises sector finance will always come from a specific combination of tariffs, taxes, and transfers, to be determined according to each country’s context. Achieving full cost recovery (including the full lifetime recurrent costs of capital expenditure, capital expenditure maintenance, and operation and maintenance) solely through tariffs is unrealistic for most developed and developing countries.

⁹ Output 3 entails ‘support to the MoEWR and local governments to develop and operationalise investment plans for more sustainable financing at central and local levels that are responsive to local needs, and a funding strategy to bring in new sources of revenue. A key element of the technical assistance support to fulfil this objective entails support to the MoEWR and state utilities to develop revised tariff structures, in order to enable effective cost recovery of service provision.

sustainable cost recovery through water pricing/revenue collection by various service providers despite repeated attention from other development partners, indicated the presence of political economy factors blocking progress on the setting of appropriate tariffs, monitoring of compliance, and enforcement of policies on existing free riders.

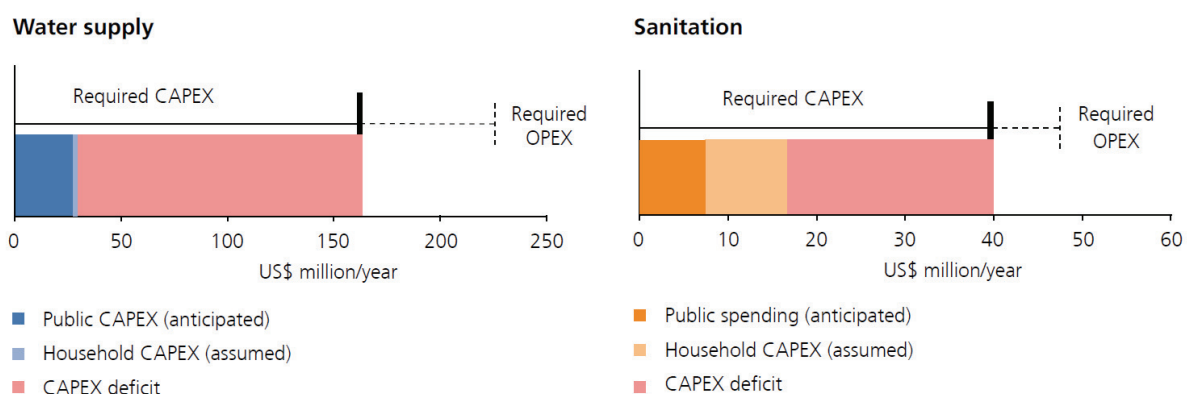
3 Urban water-pricing regime

3.1 The current state of sector financing

The rate of investment in the WSS sector in Sierra Leone has been on the rise,¹⁰ but there is still a significant gap in terms of what is needed for the country to achieve the national targets for water and sanitation. While the allocations to the sector as a percentage of national budget have more than doubled between 2008-2010, reaching close to 3%, the shortfall in sector financing for what is required to reach the national targets for access to improved water supply in rural and urban areas is calculated to be a minimum of \$130 million USD/year (AMCOW, 2011). This represents a substantial shortfall, even assuming a far greater level of funding from GoSL resources, and – of interest to this case study – revenue generation from consumers (see Figure 3).

For the water-supply sub-sector, the annual capital investment costs for infrastructure in rural/urban areas required to meet national targets is estimated at US\$164 million, but the anticipated public funding for water supply is only US\$28 mn. As the AMCOW report states, it is important to note that a key assumption in these calculations is that the operation and maintenance (O&M) costs for the rural and urban water-supply services will be recovered from users. However, cost recovery by service providers for operation and maintenance costs (including SALWACO, GVWC, District Councils and/or community-based organisations/WASH committees) is currently not achieved either in urban or rural areas, with the GoSL providing subvention to SALWACO and periodic emergency cash injections to GVWC, and user fees amongst rural WASH Committees not enforced. Rural water services provided through District Councils and/or community organisations typically do not manage to cover sufficient O&M to enable repair of key parts as they deteriorate.¹¹ Together, the low rates of cost recovery across the sector raise substantial risk that the total amount of financing available for the much-needed capital investment will be further diluted.

Figure 3: Required vs. anticipated (public) and assumed (household) expenditure for water supply and sanitation



Source: CSO2 costing in AMCOW (2011).

Undoubtedly, meeting the investment requirements for water supply entails challenges both at the national and the household levels. First, there are competing demands on scarce national resources

¹⁰ From 2010-2012, GoSL expects to increase spending in water sector from Le34 billion to Le46 billion; in 2008 spent Le10 billion; in 2009, Le11 billion (cite MoEF from CSO).

¹¹ In rural areas, insufficient supply chains for the needed parts, as well as a lack of technical expertise needed for repairs, are noted as key bottlenecks for sustainable rural water services. These problems are not solved by revenue collection, but, equally, a sustainable service will require fee collection for where and when supply chains and expertise are available.

(limiting the public-sector funding allocated to capital or recurrent investments in the sector). Second, the ability of households/users to pay for the true cost (i.e. O&M and capital investment costs) of the service is limited by widespread poverty.¹² Sector financing through development partners is substantial,¹³ but insufficient, and ultimately an unsustainable model. On a positive note, the government's agreed priority actions for the sector indicate steps in the right direction: for urban water services, the government will prioritise speeding up reform of the sector to improve efficiency and set realistic tariffs to recover a substantial portion of production costs; for rural water services, the government will prioritise increasing user contributions (payment) with remaining from increased public (and donor) funding (AMCOW, 2011).

Recognising the limited feasibility of operating water services solely based on user costs (note, this constraint holds even in developed countries, though taxes rather than transfers generally constitute the subsidy in such contexts), it is accepted that taxes and transfers will continue to constitute a majority of the sector financing in the short to medium term (see Box 3). However, an eventual rebalancing of the 3T's will be needed both to sustain and expand services to those currently without access. This will require physical investment in the infrastructure system, as well as tariff reforms and investment in the institutional, regulatory/legal and physical plumbing that enables tariffs to be implemented, monitored and enforced.

Box 3: The 3Ts – tariffs, taxes, transfers

Establishing the water sector on a financially sustainable basis requires finding the right mix between the ultimate revenues for the sector, the so-called '3Ts': tariffs, taxes, and transfers (primarily, official development assistance grants). Revenues from these three sources need to increase to cover the costs of achieving the agreed policy objectives for the provision of water supply. This contributes to 'sustainable cost recovery', which, on the basis of country experience, is now considered a more realistic and practical policy principle than 'full cost recovery' based on tariffs alone. Every country must find its own balance among the three basic sources of finance, but it is important to note that the 3Ts are not simply interchangeable: the impact of water-sector spending may be sensitive to the sources of funds, and to the modalities of their delivery. Tariffs will provide incentives for more efficient use of water, whereas subsidies generally will not. The mix of the 3Ts, the ways in which the revenues are delivered to the water sector, and the funds that they leverage, require careful consideration. (OECD, 2009: 13, 15.)

In Sierra Leone, a review of the budget suggests that the vast majority of investment expenditure in water infrastructure is coming from transfers (ODA). A breakdown of the sources for recurrent expenditure does not yet exist, but the deficiencies of revenue collection (tariffs) by GVWC and SALWACO in recovering recurrent costs explained in Section 3.3 highlight that the shortfalls in recurrent expenditures are also subsequently financed through transfers (channelled through the MoFED) or taxes (subvention to SALWACO).

The need for an overall reform of the water-pricing regime in Freetown, to enable not only setting of a proper tariff, but collection, and monitoring and enforcement is illustrated in Box 4. As is indicated, 'getting the prices right' in terms of levels of subsidy is but one component of the needed reform, and must be preceded by actions to improve the monitoring and enforcement of any set tariffs.

It should also be noted that the current urban water-pricing regime is not the product of a specifically pro-poor subsidy targeting program, and does not deliver a 'pro-poor' outcome. As will be discussed in greater detail in Section 4 of the paper, low tariffs are not benefiting the poor, who are either not connected to the piped water service (and therefore will not benefit unless the utility or government has the finance for capital investments to extend network access) and usually pay higher than standard tariff costs to informal providers, and/or comprise health and/or expend considerable time in securing affordable water resources far from their homes.

¹² SL is ranked 179th of 182 in per capita GDP, which stands at US \$326 (IMF, 2010).

¹³ Major development partners in the sector in SL include: AfDB, BADEA (US \$4 million), EU (7million E), Islamic Development Bank, JICA, UNICEF, and the World Bank, in addition to Indian and Chinese governments (AMCOW 2011).

Box 4: Cost recovery challenges in Freetown

A review of the state of cost-recovery and sector financing for water-service delivery in Freetown identifies the chain of issues to be addressed in water-pricing regime reform. Currently, GVWC only manages to cover 15% of its total costs (capital investment and maintenance and operation/maintenance costs) from tariff revenues (UNDP, 2009), leaving the company unable to make critical investments in production and distribution. This lack of cost-recovery is a corollary of the following related issues:

- **Non-revenue water:** 45-50% of total water treated is lost through commercial losses (vast numbers of illegal connections are spread through the city) and physical losses (breakage or leakage in the pipes, including the main trunk line). GVWC is unable to apply tariffs to water that do not reach registered consumers. The total amount of illegal connections is, not surprisingly, unknown. With the vast majority of registered consumers paying on a flat-rate basis, without a household meter to record volume of use, GVWC is unable to accurately calculate unregistered consumption.
- **Tariff setting:** for those consumers who are registered, and do pay, current tariff structures are very low (for both residential and commercial users), with per unit usage rates even for commercial/industrial users set at less than 0.01 US cent per gallon. The last tariff increase in Freetown was in 2006, and costs of production have since increased.
- **Tariff collection, monitoring and enforcement:** GVWC's billing collection ratio is very low, at 30%. Large- and small-scale users alike do not consistently pay monthly water bills, and collection of arrears is challenging given the lack of legislation to support sanctions. In addition to GVWC's difficulty in getting known consumers is the impossibility of getting unknown consumers to pay. GVWC database of consumers lists only 13,700 connections (approximately 300,000 users) in a city of over 1 million residents.

3.2 Outlining existing water-pricing regime in Sierra Leone

3.2.1 Sector legislation outlining tariff authorities

In the immediate post-Independence period of the 1960s, the Guma Valley Water Act (1961) officially established GVWC as a company owned by the GoSL and the Freetown City Council, and gave it the responsibility to provide water-supply services to the city of Freetown. In 1963 the Water (Control and Supply) Act vested responsibility for all water-supply services outside of GVWC operations in a government ministry responsible for water (WSD). For more than 30 years both urban (non-Freetown) and rural water-supply services in the country were provided by the WSD. The Sierra Leone Water Company Act (2001) subsequently established SALWACO, and so responsibility for provision of water to urban areas outside of Freetown was transferred from WSD to SALWACO. This comprised services to Bo, Kenema, Koidu, Makeni, Kabala and the international airport at Lungi.

The 2004 Local Government Act led to the establishment of 19 Local Councils (13 rural District Councils, six urban city councils) and provides for the decentralisation and devolution of functions, power and services to local councils. The Act also devolved water-supply and sanitation responsibilities to District and Town Councils; technically the District and City Councils now have the responsibility to deliver water supply within their localities. However, there is still a very low capacity for service delivery at the District level, and the accompanying devolution of staff and resources for water supply, sanitation and hygiene has been partial, leading to confusion regarding responsibility for service delivery (and funding dedicated thereto), and lines of reporting for sector staff (e.g. to District Councils, WSD, etc).

These three forms of management provide a useful way of framing water-pricing practices in the sector and we therefore now turn to a brief description of each as they relate to Freetown, other urban areas, and rural areas.

3.2.2 Formal water tariffs (formal providers)

Freetown: Guma Valley Water Company

The tariff structure and rates of GVWC have not changed since 2006 when the tariff structure was revised following technical assistance from the World Bank and DFID, and subsequently new price structures

approved by Cabinet. Prior to 2006, tariffs were also increased in 2004 and 1999. The tariff structure presented in Table 1 indicates per unit costs (Le/gallon) in USD in 2006 when the current tariff was established, and in 2011. The noticeable devaluation of the Sierra Leone currency against the US dollar is particularly relevant for GVWC, for whom the majority of operating costs are foreign driven.

Like many cities in developing countries GVWC has a mixture of measured and unmeasured tariffs, combining metered (rising block tariff) and flat rates. However, in addition to per unit volume surcharges for energy (required for pumping stations at various points in the city), and flat monthly rates based on connection-pipe diameter, the combination of metered- and unmetered-tariff differentiation has resulted in a highly complex structure for what are almost ridiculously low tariffs, with per unit usage rates even for commercial/industrial users set at less than US 0.01 cent per gallon.

GVWC aspires to apply a universal rising block tariff, differentiated between domestic, commercial/industrial, public institutions, and water tankers delivering piped water to domestic and commercial consumers. However, not every residential consumer who has GVWC water piped into their home is metered. In fact, most of the registered residential consumers do not have a meter, despite a 2004-2009 GVWC city-wide metering programme implemented through a World Bank support programme 7-10 years ago.¹⁴ Therefore, the tariff structure also includes a flat tariff for those without household meters and/or who have a meter that is not working due to damage incurred and lack of O&M. Flat tariffs are subsequently differentiated between domestic and commercial users.

Table 1: Guma Valley Water Company water tariff structure with effect from 1 September 2006

| Rate type | Type of charge | Size of connection | Usage block | Pumping station | Tariff (Le) | Tariff in USD (09/2006) | Tariff in USD (01/2012) |
|--------------------------------------|---------------------------------|--------------------|-------------|-----------------------------|--------------------|-------------------------|-------------------------|
| 1 General water rate | - | - | - | - | - | - | - |
| 2 Domestic metered supply charges | 2.1 Monthly demand charge | ½" diameter Pipe | N/A | Additional, as in 2.3 below | SLL 5,080.00 | USD 2.03 | USD 1.02 |
| | | ¾" diameter Pipe | | | SLL 5,715.00 | USD 2.29 | USD 1.14 |
| | | 1" diameter Pipe | | | SLL 7,620.00 | USD 3.05 | USD 1.52 |
| | | Other | | | SLL 15,000.00 | USD 6.00 | USD 3.00 |
| | 2.2 Monthly usage charge | N/A | I | Additional, as in 2.3 below | 1.30 SLL/Gallon | 0.00052 USD/Gallon | 0.00026 USD/Gallon |
| | | | | | 1.70 SLL/Gallon | 0.00068 USD/Gallon | 0.00034 USD/Gallon |
| | | | | | 2.60 SLL/Gallon | 0.00104 USD/Gallon | 0.00052 USD/Gallon |
| | | | | | 3.30 SLL/Gallon | 0.00132 USD/Gallon | 0.00066 USD/Gallon |
| | | | | | 4.50 SLL/Gallon | 0.00180 USD/Gallon | 0.00090 USD/Gallon |
| | 2.3 Energy related surcharge | N/A | N/A | Spur Road | 1.00 SLL/Gallon | 0.00040 USD/Gallon | 0.00020 USD/Gallon |
| | | | | Tower Hill | 0.50 SLL/Gallon | 0.00020 USD/Gallon | 0.00010 USD/Gallon |
| | | | | OAU Village | 1.70 SLL/Gallon | 0.00068 USD/Gallon | 0.00034 USD/Gallon |
| | | | | Hill Station | 0.50 SLL/Gallon | 0.00020 USD/Gallon | 0.00010 USD/Gallon |
| | | | | Regent | 0.50 SLL/Gallon | 0.00020 USD/Gallon | 0.00010 USD/Gallon |
| Africanus Road | | | | 0.50 SLL/Gallon | 0.00020 USD/Gallon | 0.00010 USD/Gallon | |

¹⁴ Interviews with GVWC indicate that this programme failed miserably, with most of the meters quickly vandalised for small parts/scrap metal – and pre-paid meters simply leading consumers to cut pipes in other locations. Notably, public education or socialisation campaigns on the purpose of meters and the long term sustainability of the supply was absent from the metering programme.

Table 1: cont.

| | | | | | | | |
|------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|--------------------------|-----|-----|----------------------------------------|--------------------|--------------------|
| 3 Industrial and commercial | 3.1 Monthly demand charge | N/A | N/A | N/A | 38.00 Le 1.00 of assessed Annual Value | | |
| | 3.2 Monthly usage charge | N/A | N/A | N/A | 13.00 SLL/Gallon | 0.00520 USD/Gallon | 0.00260 USD/Gallon |
| | 3.3 Energy related surcharge | Same as 2.3 above | | | | | |
| | 3.4 Ship bunker monthly usage charge | N/A | N/A | N/A | 16.00 SLL/Gallon | 0.00640 USD/Gallon | 0.00320 USD/Gallon |
| 4 Institutions | 4.1 Monthly demand charge | Same as 2.1 above | | | | | |
| | 4.2 Monthly usage charge | N/A | N/A | N/A | 1.00 SLL/Gallon | 0.00040 USD/Gallon | 0.00020 USD/Gallon |
| 5 Public stand posts | Monthly charge per household without a connection | N/A | N/A | N/A | SLL 2,000.00 | USD 0.80 | USD 0.40 |
| 6 Water delivery | 6.1 Company bowser delivery | N/A | N/A | N/A | 90.00 SLL/Gallon | 0.03600 USD/Gallon | 0.01800 USD/Gallon |
| | 6.2 Customer bowser delivery | N/A | N/A | N/A | 25.00 SLL/Gallon | 0.01000 USD/Gallon | 0.00500 USD/Gallon |
| 7 Flat charges for meters not working in place of usage charge | 7.1 Domestic customers (monthly) | N/A | N/A | N/A | SLL 25,000.00 | USD 10.00 | USD 5.00 |
| | 7.2 Non-domestic customers (monthly) | N/A | N/A | N/A | SLL 200,000.00 | USD 80.00 | USD 40.00 |
| 8 Un-metered customers (those who are connected, without meters, but currently pay on the General Water Rate) | 8.1 Domestic monthly demand charge | Same as for 2.1 above | | | | | |
| | 8.2 Domestic monthly flat charge | N/A | N/A | N/A | SLL 25,000.00 | USD 10.00 | USD 5.00 |
| | 8.3 Non-domestic monthly demand charge | Same as 2.1 or 3.1 above | | | | | |
| | 8.4 Non-domestic monthly demand charge | N/A | N/A | N/A | SLL 200,000.00 | USD 80.00 | USD 40.00 |

Source: Communication, GVWC.

Main urban areas outside of Freetown: Sierra Leone Water Supply Company

Although the 2001 Act establishing SALWACO as responsible for water service delivery to the 6 urban centres outside of Freetown (Bo, Makeni, Kenema, Lungi, Koidu and Kabala) specified that it should be self-financing, in reality it has never achieved this. The water treatment and distribution infrastructure was built in the 1960s for populations of 10,000 – 20,000 residents was never metered, and set up to rely on flat rate tariffs. Currently only 12% of SALWACO revenues are generated from tariffs, and so the company depends almost exclusively on public financing; it is subsidised by the MoEWR to meet operating costs (authors' interview). The analysis in the Sections that follow seeks to provide some insight into why this is the case.

SALWACO's current tariff structure is based on a flat rate, as none of its consumers are metered. They are looking to install meters as a part of the AfDB 3 Cities WSS project (in 3 of the 6 cities SALWACO is mandated to serve). In the 6 cities where SALWACO operates, the urban District Councils are not responsible for water-service delivery; however, the councils are currently working to put in place performance-based contracts with service providers.

Table 2: SALWACO Tariff Structure¹⁵

| | | |
|----------------------------------------------------------------------------|---------------------|-------------|
| Category A: Banks, NGOs, airports, barracks, parastatals | Connection fee | -Le.500,000 |
| | General rates/month | -25,000 |
| | First point | -40,000 |
| | Additional points | -25,000 |
| | Reconnection fees | -50,000 |
| Category B: Domestic, public offices, schools and colleges, hospitals etc. | Connection fees | -Le.250,000 |
| | General rates/month | -15,000 |
| | First point | -15,000 |
| | Additional points | -10,000 |
| | Reconnection fees | -25,000 |

Source: SALWACO (no date).

Rural and peri-urban areas: District Councils¹⁶ – outside of SALWACO urban-service areas

Rural: Piped water supply systems or decentralised water points (wells, spring boxes, standpipes) are managed by the WSD working at the District Council level. However, given the number of communities to be supported by the few WSD technical staff at the district level, the involvement of local communities through local management structures is crucial to the operation and maintenance of most, if not all, rural water-supply infrastructure. Tariffs, or user fees, in rural villages in the District are supposed to be determined by the village-level WASH Committee together with the WSD, to pay for any related fuel costs for pumping, or accrued to finance repairs at a later date. There is no expectation that these funds be transferred to the District Council, but rather that they remain at the village level.

Peri-urban: Tariffs for water users connected to large-scale systems (networks) in urbanised villages of the District are based on property taxes, and paid annually together with property-tax payment. These non-metered tariffs are based on a flat rate rather than a per-unit consumption charge. For example, in the Western Rural Area District, adjacent to Freetown, the semi-urban Waterloo Ward operates 78 public taps and some individual connections. Since 2009, the District Council has fixed an annual composite charge for water services, in addition to the individual connection fee. This fee is paid to the District Council as part of the house tax, and paid annually by the user. However, council revenue mobilisation

¹⁵ Interviews suggested that SALWACO is currently looking to apply for tariff increase this December or early in 2012.

¹⁶ Note, GoSL allocations to the District Councils are based on district population, not on any strategic plans or targets for coverage. Health centres, police stations, schools, and hospitals in district do not pay for water on the basis that they are public institutions, there for the public good.

(based on all local taxes) is only at 20% of target. Revenue collection for water is not differentiated, but a safe assumption is that those who do not pay general taxes are subsequently also not then paying for water services. Additionally, since water revenues are not ring-fenced, revenues collected under the scheme do not necessarily support service delivery in the sector.

3.3 Performance relative to a goal of lifetime recurrent costs

For many years GVWC water tariffs have recovered less than 15% of total costs (both capital investment and operation and maintenance costs) (UNDP, 2009), leaving the company unable to make critical investments in production and distribution. The company is currently in a critical state – only kept together through occasional emergency cash injections from the central government and donors. The system was designed 60 years ago for a population of 400,000 residents – now over a million in Freetown – and is in drastic need of repairs.

Poor cost recovery and the inability to finance any subsequent capital investment by GVWC is partly attributable to the existing tariff rate. First, there is no system of indexation which allows GVWC to apply for tariff increases when key variables change (like inflation or rising production costs) so subsequently the current approved tariffs are not based on the actual production and recurrent costs which have risen in the last years, due to a combination of inflation, the recent 15% GST tax, and the rising cost of chemicals for water treatment. Second, GVWC, like other utilities in Sierra Leone, is faced with a range of unplanned (and therefore unbudgeted) costs. One prominent example receiving attention in Freetown in the period studied is provided by the costs incurred due to the re-laying of pipes, necessary because of the ongoing road-widening scheme on Wilberforce road in Freetown. GVWC was among a number of actors publically criticised by contractors responsible for the roadworks component of the scheme, but viewed these costs as additional to those otherwise necessary for steady-state operation and maintenance of the network – and therefore an unfortunate cost to bear.

Poor cost recovery is also attributable to low revenue collection, leakage, and formal and informal non-revenue water. First, the billing collection ratio for GVWC is given as only 30%, meaning that 70% of potential revenue from tariffs is lost. Interviews with GVWC reported an almost total reliance upon revenues from a handful of commercial water users to contribute to operation and maintenance costs: Freetown Cold Storage/Coke bottling company, Star Beer Brewery, Sierra Fisheries, SL Port Authority, salt factory, cement factory. Second, non-revenue water (NRW) is currently between 45-50% of total water treated, and consists of an unknown combination of commercial losses (vast numbers of illegal connections are spread through the city) and physical losses (breakage or leakage in the pipes, including the main trunk line). While a clear breakdown of registered consumers into household connections and public standpipes would be necessary to ascertain precisely the number of citizens obtaining water illegally, it is clear that the scale of illegal access is large, a conclusion widely supported in interviews. Commercial losses come both from the registered and illegal consumers who do not pay, but also from large governmental and public institutions who do not pay their bills. Hospitals and Ministry offices in Freetown owe GVWC 100s of millions of Le, but have not yet paid.

3.4 Summary: status in Freetown

A review of GVWC indicates insufficient revenue for steady-state O&M, let alone rehabilitation or extension of the system or access to reliable, quality improved water sources for much of the population. From this picture it is clear that the urban water sector is in dire physical and financial straits, requiring significant injections of cash to continue to operate as designed. In response to partial coverage of the population by formal public-service providers, there is now a large formal and informal private water market selling bulk and/or treated water in tankers, jerry cans, bottles, and sachets. It is also clear that there are significant free riders, consumers who benefit from GVWC water services, but do not pay.

With this as the starting point, the issue of cost recovery and the ability to set, monitor and enforce tariffs that would, at the outset, aim to recoup current O&M costs, is taken by most actors as a significant determinant of the prospects for effective service delivery in the sector in the years to come. The prospects for change, however, depend on far more than an assessment of recurrent costs, necessary capital expenditure and the simple adjustment of tariffs to meet those revenue needs. Rather, they are subject to a range of political and economic factors that place an economic assessment of aggregate willingness to pay in a more realistic context. It is to these factors that we turn our attention in the following Sections.

4 Political-economy drivers

There have been a limited number of studies in Sierra Leone explicitly taking a political-economy perspective. Examples include the 2005 *Drivers of Change* study conducted by Taylor Brown and others with the IDL group (Brown et al., 2005) and James A. Robinson's 2008 study on *Governance and Political Economy Constraints to World Bank CAS Priorities in Sierra Leone*. These studies provide a comprehensive analysis of the prevailing political economy of Sierra Leone; however, they tend to remain fairly broad in their analysis and subsequently may be more difficult to clearly link to operational implications at the sector level. For example, Brown et al. (2005) cite five features of governance in Sierra Leone that help to explain its 'unwillingness and inability to deliver to poor people' (2005:2):

- (1) A lack of penetration by the state into 'rural Sierra Leone to a degree that would enable it to deliver goods and services or to build citizenship or relations of accountability between the state and its citizens'.
- (2) The prominence of informal institutions such as personal-patronage networks and their relative strength in comparison with the weakness of the institutions.
- (3) The use of the state and its offices as vehicles for 'the social and economic advancement of individual politicians, bureaucrats and their extended networks'.
- (4) The relative absence of issue-based politics.
- (5) The relative absence of formal mechanisms for citizens to hold the state to account, with the government in many cases more responsive to donors than to its own citizens.

In the remainder of this paper we draw on a selected sub-set of the factors discussed by Brown et al., Robinson and others, as well as a number of factors identified in the course of the fieldwork, to examine the core PE problem identified.

4.1 Introduction to positions on willingness to pay: common narratives

With respect to the problem proposed as the focus of this analysis, namely the development of a water-pricing regime that will provide sustainable finance to water-supply service delivery in Sierra Leone, two positions appear to dominate the present policy discourse:

- First, the contention that establishing a sustainable financing system in the sub-sector is constrained by refusals to pay arising from the belief of Sierra Leoneans that access to water should be free; and,
- Second, the contention that Sierra Leoneans would certainly be willing to pay for water if they could be guaranteed reliable access to quality water supply services.

While each view captures some truths regarding the challenge of water pricing, neither sufficiently captures all of the key features of the prevailing political economy of water supply in Sierra Leone. In addition, neither of the above statements captures the reality of the fact that many water users (especially in urban areas) currently do pay for water, but not to formal providers. The amount that they, and other users pay, or not, is also determined by the prevailing political economy of water supply in Sierra Leone.

4.1.1 Unwillingness to pay: confronting the belief that access to water should be free of charge

One of the main concerns noted by multiple donor staff members and by a number of service providers was the problem of overcoming the belief of Sierra Leoneans that access to water should be free of charge. This view was indeed expressed by a limited number of citizens interviewed for this study. Amongst those who continue to hold it, such a belief appears to have deep roots in both historical

legacies and socio-cultural norms in Sierra Leone and, to a lesser degree, an interpretation of international human rights norms.

Historical influences can be traced to the colonial-era division of Sierra Leone into the Crown Colony of Freetown, established in 1808, and the Sierra Leone Protectorate, established in 1896. The Colony and the Protectorate were ruled under different political systems, with the former governed by an elected local government, and the latter governed indirectly through a system of ‘native administration’, with power residing largely with chiefs (Jackson, 2005). Under this bifurcated system, the state played a gate-keeper function and there was little emphasis placed on developing the type of formal contractual relationship (e.g. a social contract) between service providers and service users in the Protectorate.

Additional structural influences on notions of payment for water arise from the more recent set of historical factors related to Sierra Leone’s transition from a state of emergency and the prioritisation of immediate life-saving humanitarian service provision to a more developmental model that prioritises sustainability. Supply-side issues, including the destruction of infrastructure; weaknesses in human resources and other areas of government capacity; constraints on financing available for, among other things, public-sector salaries (UNDP, 2009), are compounded by the impact of the conflict on the demand side. Interviewees noted how ‘everything was free after the war’ as international donors focused on limiting, to the extent possible, the immediate costs (human and economic) of the conflict and delivering on the ‘peace dividend’ with an absence of mid-level civil servants, eroded infrastructure, and gaps in the maintenance of traditional institutions promoting collective action.

Cultural norms add another layer of complexity to citizens’ views on service provision. The belief that water, as a natural resource, is god-given and therefore something that should be available free to people is another justification of the need to ensure free access to water resources. While this view is not particular to Sierra Leone, we do note that as this belief was likely held before the war, it may have served to reinforce these existing norms rather than impose new norms of free service provision. This study was unable to assess independently the degree to which this view is widely held, although the position was explicitly stated by multiple interviewees. The perception among Freetown-based officials is clearly that this view is relatively widely held outside of Freetown (potentially linked to the historical legacies noted in the previous point).

In addition to these local historical and socio-cultural norms, there does appear to be a risk that some approaches drawing on the widely-accepted international norm regarding the right to water could contribute to the belief that access to water should be free of charge. The adoption of UN Resolution A/RES/64/292¹⁷ in July 2010 has been seized upon by a number of organisations as an advocacy tool to promote universal access (see, for example, recent initiatives by WASH-Net Sierra Leone that advocate for universal access without specifying the types of institutional arrangements necessary for sustainable financing¹⁸), and might be used to build on campaigns of previous civil-society coalitions calling for caution in relation to private-sector participation in the water sector in SL (PERMG, 2007). Our purpose here is not to argue against such a resolution, but rather to point out the dangers of a particular interpretation in which service users are universally entitled to unconstrained use of water resources regardless of the presence or absence of institutional arrangements that enable the maintenance of the resource in a sustainable manner. It is possible to use a rights-based approach to advocate for the types of reforms necessary for a sustainably-financed and -managed sector in which access is not denied on the basis of inability to pay water tariffs. However, in the absence of alternative arrangements to ensure payment of tariffs by those who are able to pay, or adequate financing from taxes and transfers (see Box 2), sustainability can be jeopardised.

Yet there are numerous reasons to doubt the universality of the position that access to water must be, or even should be free of charge. Perhaps the clearest evidence is the emergence of numerous private-

¹⁷ The resolution ‘[r]ecognizes the right to safe and clean drinking water and sanitation as a human right that is essential for the full enjoyment of life and all human rights’ (UN, 2010)

¹⁸(<http://www.change.org/petitions/water-sanitation-and-hygiene-network-of-sierra-leone-prioritize-water-sanitation-and-hygiene-in-political-parties-manifestos>)

sector water supply alternatives visible on the streets of Freetown including single-serving sized sachets of water, bottled water, larger jerry cans (Shepler, 2010) and private provision via water bowsers (Box 5). While anecdotal evidence suggests customers for these private alternatives are not the poorest of the poor in urban Sierra Leone and the quality of such alternatives is questionable, the prevalence of these enterprises suggests the concept of paying for water, particularly where it is provided in a convenient manner, is not unknown to Sierra Leoneans.

Box 5: A window of opportunity regarding rent management in the water sector

Assessment of the state of the private provision of water supply in Freetown suggests there may be a need for a degree of urgency in resolving some of the types of problems highlighted in this report that are currently limiting the provision of water supply by utilities. The prevailing arrangements, in which clean water is undersupplied, have resulted in the rise of a burgeoning informal market in water, particularly in urban centres such as Freetown. Both value-added providers (sachet and bottled water containers) and ‘default’ providers such as bowsers and cart operators have grown in number since 2002, despite attempts by the Ministry of Health in 2009 to regulate the former. While the research team was not able to assess the ownership patterns of the range of small-scale private providers, it appears such providers have not yet coalesced into an organised political force capable of opposing the types of reforms necessary to develop a more financially sustainable sector capable of delivering services to the full range of Sierra Leoneans. However, as informal opportunities become increasingly profitable, particularly in the bulk water provision to private households through water bowsers (where one large tanker truck can sell for as much as US\$100; see Concord Times 28 March 2011), the consolidation of rents in the sector could provide a significant obstacle to reform in the sector. We note that while there is no documented evidence in any African country that ‘default’ providers have opposed sector reforms, there is abundant evidence of informal providers (often connected to the ‘big men’ of various urban districts) creating obstacles to utility operations where it means informal provision will be regulated and/or made obsolete (Barraqué, 2011).

4.1.2 Conditional willingness to pay

In contrast to the position that citizens do not believe in paying for water services, multiple interviewees argued Sierra Leoneans would be certainly be willing to pay for water if they could be guaranteed reliable access to quality water-supply services. This position presents somewhat of a dilemma in the current context in which the utilities responsible for provision (including Guma Valley Water Company, SALWACO and the relevant local government authorities) cite insufficient revenues and therefore insufficient capital as the main constraint to the improvement and extension of services. If both claims are true, a ‘big push’ of investment (including donor investments) in necessary infrastructure and the setting of water tariffs at an adequate level might be sufficient to shift the sector to a new sustainable equilibrium of service provision and sustainable financing via revenues. In other words, sufficient investment in the development and demonstration of supply-side capacity may reveal latent willingness to pay among the population, provided there is a willingness to charge.

There appears to be little reason to doubt that assets and infrastructure on the supply side are insufficient to guarantee reliable access to a service of sufficient quality for most citizens to consider it to be worth paying. In Freetown, **demographic pressures**, urban growth and urbanisation have contributed to a context in which infrastructure designed for a city of 400,000 is now expected to provide water services to a far larger population. While the last census took place in 2004 resulting in a degree of uncertainty, massive internal displacement during the civil war drove rapid urbanisation with estimates of Freetown’s population now ranging from 1.5 to 2 million citizens. Additional investment is clearly necessary, particularly as population growth, including urban growth is expected to continue (UNDP, 2009; Table 3), but is it sufficient to put the sector on a sustainable financial footing? Our analysis suggests this is not the case, but understanding why it is not the case is critical for discerning the implications for the development challenge identified above.

Table 3: Population growth rate estimates, urban and rural, 1990-2015

| | 1990 | 2002 | 2005 | 2006 | 2010 | 2015 | |
|------------------------------|--------------|---------|---------|---------|---------|---------|----|
| Population | 3787530 | 4528440 | 5061480 | 5216890 | 5746800 | 6506420 | |
| Annual growth rate | 1.5 | 1.5 | 2.4 | 2.4 | 2.4 | 2.4 | |
| % share of population | Urban | 32.2 | 39 | 44.2 | 45 | 48.1 | 52 |
| | Rural | 67.8 | 61 | 55.8 | 55 | 51.9 | 48 |

Source: Statistics Sierra Leone, Ministry of Education, Ministry of Finance and Consultant's Estimates in UNDP, 2009.

We suggest that an insufficient focus on investment and tariffs requires us to recognise the nature of the good in question. More specifically, we suggest that a number of political-economy factors, including those institutional features noted above, contribute to a context in which **urban water supply services, for much of the population, should be seen as a common good**, at least in the short to medium term. The question of water pricing then, which tends to be associated with the provision of private goods through (more or less) efficient markets, must then be reframed accordingly, taking into account a more realistic picture of the short and medium-run context of provision.

There are at least two major political-economy drivers that underpin this diagnosis:

- The impact of the institutional context for the selection and maintenance of power in Sierra Leone. The presence of a neo-patrimonial system in which the continued dominance of patron-client relationships sits alongside formal democratic elections has significant negative impacts on financing arrangements in the sector.
- The limited strength of existing formal institutions within the sector and within which the sector sits. We refer here to the degree to which laws and regulations governing access and payments are upheld and backed by the threat of effective sanctions.

In the following Sections we address each of these drivers in turn, before turning our attention to the implications for policy and programming.

4.2 Undermining willingness to pay: 'political interference'

Service delivery is widely understood to be a key priority in developing countries. There is, of course, significant variation in the extent to which this statement holds true over time and the degree to which services in different sectors and sub-sectors are viewed as priorities by citizens in any given context (national or local).

Variation of the former type (temporal) has clearly been an issue in Sierra Leone given its recent history. While economic concerns and recent experiences with the breakdown of peace and stability have occupied the attention of Sierra Leoneans for some time, interviews and a survey of public media during the period of fieldwork suggest services (including issues of both access and quality) are currently very much on the public agenda Sierra Leone. A number of relevant actors suggested that service delivery is, in fact, trending upwards in the public eye and will likely continue to increase in significance in the near term as the country continues to transition from immediate humanitarian concerns to more developmental concerns. Although our understanding of the relationship between service delivery and state-building is still evolving, this increasing attention to service-delivery performance (with both access and quality dimensions) is unsurprising, with similar issues arising in a number of post-conflict governance transitions (e.g. OECD-DAC, 2008; Batley and McLoughlin, 2010).

The latter form of variation (cross-sectoral) reflects differences in the nature of the service in question as well as imperfect information on both the supply and demand sides regarding the true costs and benefits associated with a particular service (e.g. where a lack of information regarding the nature and severity of the impact of poor sanitation on health reduces demand for sanitation services). Even within

a sector, the importance attached to the issue by citizens can rise and fall according to sector-specific characteristics (e.g. impacts of seasonality, visibility of the service in question) or a range of other factors (e.g. electoral cycles). For many Sierra Leoneans, particularly those in rural areas, access to water remains a largely seasonal concern, owing to variation in the availability of rainfall as an alternative source of water. However, access in urban areas (where infrastructure is a significant constraint) and quality concerns (e.g. discolouration of piped water in Freetown) have led to increasing public recognition of service-delivery issues in the water sector.

Unsurprisingly, in Sierra Leone, where access to formal political power is determined by electoral competition¹⁹ and the delivery of services forms an (increasingly) important part of the broader political settlement, the importance attached to service delivery by citizens has made such issues key targets for politicians.²⁰ Some interviewees, including politicians and political parties, suggested that issues of service delivery, including that in the water sector, is arguably becoming more central to political competition than in the past. Such an interpretation would suggest that there has been some degree of change in the political landscape since Brown et al.'s 2005 argument that issue-based politics had yet to develop in Sierra Leone. More recently Robinson (2008) has argued that the emergence of political processes based on the performance of government on particular issues, such as service delivery, is likely to be largely concentrated in Freetown, rather than a broader national shift, potentially leading to a new form of electorally-driven urban bias.

While electoral manifestos for the upcoming 2012 elections have not yet been released, there are some indications of the way in which these issues will influence electoral strategies. Despite the public contention by the current opposition (SLPP) that, 'water pricing is not an issue we should play politics with' (authors' interview with SLPP spokesman), since the sustainability of the supply is a national issue and should therefore be addressed in a bipartisan manner, the current opposition is clearly cognisant of the politically charged nature of service provision in the sector, and indicated their intent to raise the profile of current service-delivery failures as a part of their electoral strategy for the upcoming 2012 elections.

However, while access to services, including water, is arguably increasingly a political priority in Sierra Leone, there is some reason to question whether this is certain to lead to improved service provision. There is now significant evidence that the way in which democratic elections operate in numerous sub-Saharan African contexts is not necessarily conducive to the provision of public goods and services in a broad-based, financially-sustainable fashion (Booth, 2011). In many cases, claims to provide public goods are simply not credible, with politicians resorting to short-termist electoral strategies. The case of water supply in Sierra Leone appears not to be a significant exception to this challenge. In the course of fieldwork carried out for this study, a number of interviewees noted the perverse effects of democratic elections on decision-making within the sector, including interviewees from GoSL, MoEWR, relevant utilities and NGOs active in the sector, particularly as service delivery becomes increasingly central to political competition. Rather than providing citizens with an opportunity to hold decision-makers within government to account for the range of policies likely to deliver sustainable, broad-based improvements in service delivery, the confluence of elections and the continued prevalence of strong patron-client norms appear to generate incentives for politicians to adopt strategies that can be detrimental to attempts to establish a sustainably-financed water sector.

Problematically, where the provision of services has been relevant to political competition in this strongly **neo-patrimonial context**, elections have often been treated as a referendum on the capacity

¹⁹ The presence of chiefs with inherited titles is clearly an exception to this rule.

²⁰ We should note that the timing of the interviews carried out as a part of this study, in the run-up to the upcoming elections, suggested that politicisation of service-delivery issues may be particularly acute at the moment.

of public officials to extend bring highly visible infrastructure projects²¹ and/or to promise and provide free access to services to members of the selectorate (authors' interviews).²² Previous work on the politics of water supply and sanitation suggests that this type of dynamic can result in the relative neglect of key investments in software, operations and maintenance necessary for the provision of sanitation services (Harris et al., 2012; WSP, 2011). However, a similar argument can be made regarding the types of policies and investments in sector financing that are needed to ensure the sustainable management of the water-supply system. In other words, it is not difficult to get support from local political leaders for the construction or rehabilitation of significant pieces of infrastructure, but it is far more difficult for politicians to commit to complicated institutional reforms, which tend to be risky, or to implementing (and enforcing) unpopular charges for service delivery. Thus, the intent of the opposition to raise the profile of service-delivery failures in the run-up to the elections, as noted above, does not necessarily equate to intent to engage in such reforms. Unless the forthcoming opposition manifesto puts forth a convincing alternative strategy, such campaigning is more likely an opportunity to score the political points necessary to gain office (and the benefits that entails), at which point they would be subject to many of the same pressures currently facing the government. Differences between the parties' positions on water services seem more likely to reflect whether a party is currently in power or not rather than genuine disagreement over the strategies adopted.

Interestingly, reports regarding local political competition suggest that the potential for short-term political strategies adopted in the quest to gain or retain power to undermine longer-term development outcomes is significant even in parts of the country where electoral competition *between* political parties is limited. In such contexts, the proximity of Local Councillors and Council Administrations to the electorate may increase political susceptibility to populist impulses and pressures to engage in forms of patronage, including those from local MPs and chiefs demanding access to resources or political credit (Fanthorpe et al., 2011).²³ Anecdotal evidence includes a widely-reported story regarding the provision of water services in Kambia District in which political interference on the part of key local officials resulted in the provision of free tap stands to communities. In addition, as a result of key politicians refusing to pay for water services, together with the increasingly intermittent services in the dry season, water users who had previously agreed to pay for the service as a result of participating in an extensive consultation process, changed their minds, and the payment rate decreased from 80% to less than 30%. Despite the fact that service from such tap stands tends to be unreliable in practice and can undermine economic/fiscal/financial sustainability of the sector, such actions were seen to be politically profitable.²⁴

There does not yet appear to be significant evidence that supply of water services is being used *directly* for the economic advancement of state officials (e.g. through direct ownership of private, for-profit

²¹ The preference for visible infrastructure investments can likely be traced to a number of causes, including high rates of illiteracy (over 65%), which mean voters may judge the effectiveness of politicians/representatives on what they can physically see.

²² Selectorates refer to the subset of the total population in a polity with a voice in selecting leaders. Within a selectorate, the 'winning coalition' is the subset sufficient to choose and sustain a leader in office. The size of these groups may have important impacts on the provision of public goods and private benefits, with a larger winning coalition generally associated with an incentive to provide public goods (Fritz et al., 2009:52).

²³ This logic could suggest that traditional authorities, who are not reliant on electoral mechanisms for retaining power each electoral cycle, may retain a greater ability to refrain from short-termist, electorally-driven populism, though not necessarily from patronage demands. However, this paper was not able to fully assess the role of such authorities relative to more 'modern' forms of government administration. There is an extensive literature on the relationship between formal and informal authorities at the local government level in Sierra Leone. See, for example, Jackson, 2005 and 2006; Fanthorpe et al., 2011; Srivastava and Larizza, 2011.

²⁴ The spillover effects of such behaviour can also contribute to failures in establishing pricing regimes for stand posts in urban poor areas. The INGO GOAL (a member of the DFID supported Urban WASH Consortium) established a community-based tariff system for standpipes, paid Le140, 000/month per stand post. However, the scheme was reportedly subsequently undermined by the government-led installation of 20 new standpipes adjacent to the community where water was provided for free. Residents previously willing to pay under the GOAL scheme now had little incentive to continue with the fee-for-service model when water could be obtained for free elsewhere and scarce resources devoted to other needs.

providers by state officials, see Box 5). Rather, even in intra-party competition, the social and economic incentives for individuals to maintain political office may be sufficient to encourage them to adopt short-termist, populist strategies in the provision of water services. As long as this remains true, the potential for elected officials to undermine water-pricing regimes remains a significant barrier to sustainability.

4.3 Strength of formal institutions: arrears, immunity and the rule of law

In addition to the challenges to sustainable financing and the imposition of water tariffs presented by the types of short-termism generated by the way in which the political system in Sierra Leone currently functions, the provision of water-supply services appears to be further constrained by the limited strength of existing formal institutions governing the enforcement of water-pricing instruments (involving both sector-specific challenges and broader sets of rules within which the sector sits). This holds true even where limited infrastructure capable of delivering water services exists. A significant part of DFID support to the sector and particularly the work of the technical assistance provider, ASI, is devoted to supporting the MoEWR as it strengthens this formal institutional framework (see Annex 2). However, evidence suggests that such efforts alone may not be sufficient to establish the form of contractual arms-length service provision envisioned in the reform process. Interviewees cited a number of key examples that shed some useful light on the multiplicity of dynamics that prevent the enforcement of water-pricing regimes. Here we identify three such dynamics:

- (1) Most evident to the casual observer in Freetown, there is extensive incidence of pipe-breaking that has resulted in a large (though unknown) number of citizens accessing water services illegally and without payment to service providers. Such practices are facilitated by the geography of the Freetown region in which rocky mountainous terrain is subjected to significant season rainfall and consequent erosion, thus resulting in the exposure of water-supply infrastructure. The dilapidated state of much of the infrastructure in the sector further contributes to the ease of engaging in illegal and unpaid access of this type. Service providers are aware of this widespread practice, but are almost entirely unable (or unwilling?) to curtail it given current capacity constraints. The assistance of law enforcement agents would likely form an important part of any strategy to address this open practice; however this does not appear to have been a significant priority to date. For largely understandable reasons, given the lack of incentives for strict enforcement and the disincentive of the state to take frontline actions that appear to deny some citizens access to water.
- (2) A second form of subversion of water-pricing regimes is indicated by reports of a significant number of illegal connections installed either by private technicians, without registration, for customers with the relevant utility, or by technicians employed by utilities who, nevertheless, do not report the connection. In such cases, engineers reportedly connect individual service users to the distribution network for a one-off payment directly to the engineer as a form of salary supplement. In such cases, the service provider is generally unaware at an organisational level that the connection is active and is thus unlikely to receive any payment of services delivered. A similar set of cases exists where disconnected households are able to pay to reverse prior disconnections with the assistance of corrupt engineers. This type of tariff evasion is not made with the same degree of openness as pipe-breaking, but similarly serves to undermine the concept of fee for service. Freetown service providers admitted this practice is prevalent, but appear to consider it beyond their control.
- (3) A third dynamic involves cases in which the service provider in question is aware of the use of water services (often including the quantity of services consumed) and knows the identity of the user, but is unable to ensure the service user in question pays the agreed upon tariff. In a sense, the connection itself is legal, but use of water services continues on the basis of the effective immunity of several significant water users to the consequences of accumulated

arrears rather than payment for services as required by law. Service providers report this dynamic is particularly common in the case of provision to GoSL itself. All of the SALWACO regional offices have significant non-payment by government departments, and GVWC also has numerous challenges in getting the Ministry of Defence, amongst other government departments, to settle its bills. However, the threat of disconnection (the only enforcement mechanism available to service providers in the absence of an effectively functioning system of formal legal enforcement) was viewed by service providers as ‘off the table’ for many GoSL actors. There was widespread understanding that one did not disconnect powerful actors, with references to parts of the executive and national security apparatus being particularly common. The reasons for this inability to disconnect were not limited to a fear of reprisal by powerful political actors. The accumulated arrears dynamic also exists where service providers face particularly difficult moral choices, as in the case of service provision to public facilities like hospitals.

While acknowledging the fact that each of these forms of leakage in the system need to be addressed, the fact remains that in the medium-term there is little chance of effectively limiting the use of water services to paying customers. As a result, there is a need to seriously question whether the institutional arrangements necessary for a simple arms-length transaction model for service delivery to result in a sustainable model of service provision based on service users’ willingness to pay are likely to emerge in the short run.

4.4 Urban water services as a common good

The above Sections bring a body of evidence together on how politicians’ incentives are weighted against a sustainable water-pricing regime, and formal institutions are too weak to monitor compliance and ensure that users pay. There are strategies to address some of this, much of which is being undertaken in DFID’s support to reforming the institutional frameworks themselves, but we know this takes time. Accepting this political-economy framework, what are some intermediate strategies that support a reform of the urban water-pricing regime (and, pragmatically, attract more donors and private actors to enable more funding into the sector)?

Here, we can usefully learn from body of work looking at how to manage common-pool resources. This provides a significant body of research dealing with the types of institutional solutions that may be helpful in providing non-obvious options for reform in Sierra Leone, options that place water tariffs in a more realistic political-economy framework. From this, we know:

- 1) We cannot easily exclude people for non-payment (which would be the conventional route):

For part of the year, abundant rainfall results in a context in which large portions of the population access water as a public good. During this time, citizens cannot easily be prevented from using water freely and one citizen’s use does not impact on that of other citizens.²⁵

Moreover we may not want to exclude people, as the GoSL and development partners recognise the need to design strategies to ensure access to clean water for all citizens. Indeed, avoiding exclusion of those unable to pay for water is a key goal of system design in all countries and is often done through the use of familiar tools in the sector, including minimum-supply criteria, lifeline tariffs and subsidies, all of which provide a critical institutional framework to ensure that the type of exclusion based on an inability to pay that can be generated by a reliance on pure market forces is overcome.

However, alongside some of the other shifts that have taken place in the sector (e.g. the corporatisation of the Guma Valley Water Company), a focus on water pricing and the imposition of tariffs as a key mechanism for managing the sector suggests a vision of water-service delivery in Sierra

²⁵ Competition for clean and safe rainwater may be an issue in areas of Freetown in which population densities are sufficiently high and opportunities for rainwater collection are limited.

Leone that does not exclude users that are unable to pay, but does retain a certain role for tariff-based excludability.²⁶ In this vision, water services are something that can be obtained from the relevant utility through a fee-for-service transaction, albeit one mitigated for some users by regulation, potentially progressive tariff structures and the partial reliance on taxes and transfers to ensure access for those unable to pay the necessary tariff. In such a system, we must necessarily be concerned with ensuring that payment is made in accordance with the agreed-upon rates, with excludability remaining the key incentive mechanism used to facilitate direct payment for services. If those service users who are able to pay are allowed to access water services without any form of payment, they will tend to do so, becoming free riders and becoming a danger to the sustainability of the system.

One of the key challenges for the sustainability of the water sector in Sierra Leone is the fact that, despite attempts to make the good excludable in a manner consistent with the vision expressed in relevant legislation and implied by the adoption of a system of water tariffs, the types of dynamics outlined in sections 4.2 and 4.3 mean that, for a significant portion of the population, the application of water tariffs remains non-excludable. The formal expectation under the law that payment must be made for water, which fundamentally suggests an exchange of payment for access even if payment is not made at a rate sufficient to guarantee sustainability (e.g. through lifeline tariffs or free minimum consumption policies), has been undermined, even when discussing those forms of delivery other than the officially free public tap stands. This suggests that water supply, at present, should be considered a common or public good.

2) We know there are other exit options, which cannot be easily eradicated:

For one portion of the population, water services do take the form of a purely private good. Access to clean water for those currently underserved by the relevant utility, including both those who choose to opt out based on relative service quality and those who are forced to do so by its absolute inadequacies, depends on the ability of such citizens to purchase clean water from unregulated private providers. Where citizens are unable to pay, they can be denied access to the services offered by those providers. Additionally, the total quantity of such products (sachets, bottles, private bowsers, etc.) is limited and, as a result, once clean water is purchased and consumed by one user, this impacts on the availability of the resource to other potential users.

3) It may be helpful to see water as a common good, as there are specific strategies that can adopted

As noted above, the rainy season provides a period during which availability of water resources arguably far outstrips demand (as noted by some interviewees who suggested that willingness to pay for water services might drop during the rainy season), while in the dry season much of the population may struggle to obtain sufficient water resources. Given this seasonality, the presence and quality of water resource infrastructure capable of storing excess water supply during periods of plenty and distributing it during times of scarcity thus becomes a major factor influencing the ability to provide effective year-round coverage. However, in Sierra Leone, the provision of clean water is constrained by the quality and quantity of infrastructure in place.

Even with water resources at sufficient levels during the rainy season, the limited size of the collection and water retention infrastructure (e.g. the Guma Valley Reservoir, the Regent Reservoir, etc.) means the total treatment capacity for Freetown is roughly 22 million gallons per day, a figure insufficient to provide water to all of Freetown's population. Taking into account seasonal variation, GVWC caps treatment and distribution at around 16.5 mn gallons per day, in order to keep enough water in the reservoir to be able to provide limited service for the duration of the dry season.

²⁶ One alternative could take the form of socialised system in which funding relies only on tax revenue, with all water use free of charge. Such a system would clearly suffer from its own problems (e.g. a lack of incentives to conserve water resources, likely resulting in the overwhelming of a system's supply capacity), but would not necessarily require any form of price based excludability.

This suggests that supply-side constraints on collection, holding and distribution of water resources mean that the water consumption/usage of one person necessarily impacts on the prospects for others to access the good (i.e. it is 'rivalrous' in nature). Access to water services through utilities in contemporary Sierra Leone should therefore be considered a common good. This suggests a number of strategies can be taken, to better manage the use of water and to ensure that the usage by some does not detract from the usage of others by establishing shared rules and setting in place compliance mechanisms.

5 Towards more effective water-supply service delivery in Freetown

In this section we assess the implications of the emerging findings regarding the political economy of a water-pricing regime in Freetown. The analysis in this section focuses on the short- to medium-term actions that can be implemented in coordination with the GoSL's long term vision and commitment for the sector. These are supportive of the existing long-term institutional-reform process, and are designed to provide some guidance on what a realistic mid-point for section ambitions might be. These types of solutions may not in themselves lead to depersonalised, equitable, arms-length provision of water in the short or medium term. However, they may be necessary steps to take in the interim while the capacity of key players in the envisioned systems (including the utilities, regulatory authority and others) is built to the required levels and the wider relationship between the citizen and the state changes. These changes, both of which are critical components of the 'short and long routes of accountability' envisioned in the 2004 *World Development Report*, are likely to take a significant amount of time.

5.1 Addressing complaints implied by common narratives on willingness to pay

In section 4.1 we described two positions dominating the present policy discourse. While we have suggested that these positions fail to capture the complexity of the dynamics underlying non-payment, we did note some elements of truth in both narratives that may be the focus of useful policy or programmatic responses.

First, there is the contention that establishing a sustainable financing system in the sub-sector is constrained by refusals to pay arising from the belief of Sierra Leoneans that access to water should be free. To the extent that this is true amongst the population in Freetown, programming designed to change a 'culture of non-payment', including **education campaigns establishing the link between payment and provision of services**, including the quality of the service, may be a useful response.²⁷ Community-level engagement has already shown some success in encouraging Freetown residents to pay for water. The forthcoming **willingness-to-pay survey to be supported by ASI should better establish the degree to which this is a binding constraint** in particular communities. The reported GVWC strategy to bypass this process of changing minds by framing payment in the sector as payment for *services* rather than payment for water resources is arguably a logical response, but rests on a fairly fine distinction and may be difficult to effectively communicate and implement. This is in part due to the fact that the proposed framing will not easily align with existing tariff structures based on per unit consumption. Current tariff structures include a water usage charge for those actors paying under the Domestic Metered; Industrial and Commercial; Institutional; and Water Delivery categories (see Table 1, Page 20). Resolving this disjuncture is not necessarily easily achieved, as the presence of significant supply-side constraints suggests it is important to maintain whatever incentives exist to limit higher volume usage.

Second, there is the contention that Sierra Leoneans would certainly be willing to pay for water if they could be guaranteed reliable access to quality water-supply services. As noted above, supply-side constraints are severe, not only in the quality of the distribution network, but also in the sheer lack of sufficient collection and storage capacity relative to the growing needs of Freetown's burgeoning population. There is little question that, alongside whatever institutional changes are required in the sector, **additional investment will be needed to develop the physical infrastructure necessary to provide reliable water services** to Freetown's population on a year-round basis.

²⁷As noted in the preceding sections, many Freetown residents are already paying for water.

5.2 Addressing ‘political interference’

In Section 4.2 we identified how various types of political interference within the sector also undermine willingness to pay. We also highlighted the ways in which the neo-patrimonial political context works against the necessary long-term institutional changes required to support the willingness and ability of utilities to charge – enabling them to set, monitor, and enforce payment for service by a variety of consumers. While altering these dynamics is a long-term process, we suggest some specific activities which may serve to limit the impact of the political interference which will still continue to occur in the short to medium term.

Support to the Electricity and Water Supply Regulatory Commission

First, the role of newly established Electricity and Water Supply Regulatory Commission established under the MoEWR is a crucial first step in enabling partisan and transparent decision-making processes for setting tariffs, and ensuring service quality by providers. Within this, there are a number of key roles and entry points for support:

- Supporting a technical debate on tariff setting and adjustment is a key role for the Regulatory Commission given the current political interference in the sector. However, as the Regulatory Commission is still sitting under the MoEWR, and so still limited in its autonomy, there are still questions as to whether or not, and to what extent, it can maintain effective independence. Support to the Regulatory Commission, as planned through technical assistance from ASI, will play a key role in building its capacity for independent decision making. In addition, guidance from the MoEWR in terms of policy on tariffs and cost-recovery in the sector are required to enable non-politicised assessment of tariff adjustments. The MoEWR needs to establish an agreed-upon ratio to determine the percentage of subsidy vs. the percentage of household payment/tariffs set for the overall cost-recovery for service providers and to set this out in policy documents. This missing element, to date, in the NWSP and sector reform has meant that subsidies are not transparent, or targeted to the poor, and are left up to the service providers to determine. Setting this policy would allow the Regulatory Authority to assess the tariff reform proposals set forth by GVWC and SALWACO, and would provide a national standard for guidance to rural water committees or delegated management in urban areas.
- Unbundling consumer subsidies from utility finance is another area for policy development that would assist the role of the Regulatory Commission. The traditional way to deal with utilities has consisted in mandating low tariffs, in exchange for compensating for the losses incurred through various means (typically taxes or aid transfers). However, such transfers to utilities mix two different financial issues, i.e. utility financing needs and social equity considerations. Due to political-economy problems of various kinds, in practice this has often meant unfunded subsidies, lack of incentives for utility efficiency, or both, resulting in declining quality of service which further undermines the viability of the utility. For the regulator or the government it is difficult to sort out, in the financing requests of the utilities, how much relates to efficiency problems and how much relates to actual consumer subsidies (le Blanc, 2008). This seems to be a large part of the challenge for both GVWC and SALWACO, where it is noted that water pricing and tariff reforms cannot be isolated from a discussion on the need for efficiency reforms within the two utilities. The typical dilemma as to which reform to pursue first (overall utility, or tariff reform) might not need to apply, however, if both reforms could be done simultaneously, but in a manner which separates (or at least clearly defines) the finance required for consumer subsidies vs. utility finance for capital and recurrent expenditures.
- Supporting a ‘tariff scorecard’ exercise to be done for Regulatory Commission could also help to evaluate how well the existing tariff and subsidies in Sierra Leone fulfil the policy objectives in the NWSP (affordability, cost recovery, economic efficiency, fairness), and identify changes that may be needed in the context of a wider reform process. If this exercise is conducted in a

transparent manner, it could serve to identify and strengthen potential allies for a new water-pricing regime. The World Bank (2002) lists tariff-evaluation criteria that have been used in other countries, including: how well tariffs contribute to cost recovery; economic efficiency; fairness; affordability; and subsidy evaluation criteria such as whether they respond to a genuine need, achieve accurate targeting of benefits to the poor, maintain low administration costs, and avoid generating perverse incentives. Given the complexity of the current tariff structure of GVWC, such a transparently executed assessment would also serve as an important element of a clear communications and public-relations strategy, given the role of educating water users on actual fees relative to consumption, and between different user groups.

The potential of public education campaigns

Second, public education campaigns establishing the link between payment and provision of services could also limit the detrimental impact of ‘free provision’ promised by politicians if the education campaign could focus on the **relationship between payment and ensuring service quality**. Drawing closer parallels to the provision of electricity, where the quality of service in terms of continuity of supply is a key concern of the population, public-education campaigns on the payment for provision of water services could communicate the impact of non-payment on continuity of water supply and water quality. The various communication components of the ongoing sector-reform process could usefully build the needed momentum and potential support for longer term reform processes required for the less visible institutional changes needed to support a financially-sustainable water sector.

Building private sector investment/involvement

Finally, a more radical approach to limiting political interference in both willingness to pay and institutional reforms required to enable the ability of utilities to monitor and enforce tariff collection would be to consider **forms of private-sector involvement** in various aspects of the supply chain. Complete privatisation of the water-supply system and ownership of capital infrastructure is unlikely, as this is a model seen few places but in the United Kingdom, but various utilities in African cities have successfully partnered with the private sector in concession or lease models to improve performance efficiency. Private-sector participation in the form of concessions to operate and maintain urban water-supply services does have the advantage of being able to set in place various performance-based incentives to promote pro-poor service delivery – reduced non-revenue water, improved billing collection ratios – that are currently absent in the GVWC operations. However, successful performance-based contracts also require a strong regulatory commission with the power to enforce penalties for poor performance, and it still remains to be seen to what extent the newly established Regulatory Commission will be granted powers for enforcement, separate from the MoEWR.

There is also a need for caution with regard to **political interference in the design and issuing of the contracts** given the experiences in the award of mining contracts in Sierra Leone and the experiences of other developing countries where there is absence of a strong, independent regulatory commission prior to initiation of private-sector contracts. Finally, there are questions as to whether or not private-sector operators will be better able to address the problems of free riders.

While private-sector operators might be better at capturing some of the leakage associated with non-revenue water, they will not be able to address in any better fashion the illegal access through pipe cutting/tapping. A private sector company will also require **redress to legislation to enforce penalties**. As the current legislation around illegal access prevents the issuing of charges in any strength to change behaviour, and/or is not enforced by stretched law enforcement officials, this would need to be addressed in parallel to expecting improvements in reducing free riders.

Finally, there is the question of whether or not the private-sector market is going to be attracted to Freetown or other urban areas of Sierra Leone, given the state of the sector and the relatively high risks to profit. Reducing the risk to a sufficient level to interest private-sector operators might require concessions on behalf of the government (covering currency devaluations, guaranteeing certain rates

of return, or delinking payment from revenue collection) to a point at which any long-term public benefits would be jeopardised. In light of these challenges to private-sector partnerships, it would be worthwhile considering the recent positive experiences from public-public partnerships in cities in Africa as an additional option for Freetown (see Tucker et al., 2010).

5.3 Addressing free riders: institutional design for local service delivery

In Sections 4.3 and 4.4 we made the case that an inability to exclude non-paying users from using what water services are provided by GVWC is a key feature of the political economy of the sector. The multitude of dynamics leading to the free-riding behaviour as described in the Sections above suggests that no single approach is likely to be capable of leading to effective water-supply service delivery. Therefore, we identify a number of potential ways forward that address specific dynamics, though recognising that more will inevitably be needed.

5.3.1 Addressing effective immunity for illegal pipe breaking by small-scale actors

As a starting point, Elinor Ostrom's seminal work on management of common-pool resources identifies eight principles of institutional design that are conducive to effective management of common-pool resources (Box 6); these may provide some insights regarding institutional design principles that may facilitate improved service delivery and reduce current immunity for those who illegally access resources.²⁸

Box 6: Institutional design principles for effective management of common-pool resources

1. Demarcation of clearly defined boundaries to identify the members of the user pool as well as the physical boundaries of the CPR.
2. Congruence between appropriation and provision rules and local conditions.
3. Collective-choice arrangements allow participation by all affected individuals in deciding on the appropriation and provision rules.
4. Either the appropriators themselves or persons accountable to the appropriators are responsible for monitoring compliance with collective decisions.
5. Sanctions should be graduated to reflect the severity, frequency, and context of the violation.
6. Low-cost and readily available conflict-resolution mechanisms must exist to mediate conflicts among appropriators and between appropriators and officials.
7. Users must have recognition of their own rights to organic institutions.
8. Nested enterprises, i.e. sets of rules established within a hierarchy of appropriator institutions, must be established for common-pool resources that are within larger resource systems and political jurisdictions.

Source: Ostrom, 1990.

The analysis in the box above suggests an approach to water pricing that is grounded in communities and works with enforcement mechanisms that hold some degree of legitimacy. Even where the private sector or utilities take the lead on service provision (as is likely to be the case in urban areas), a number of these principles may prove helpful in the design and implementation of appropriate water-pricing mechanisms.

A number of such models may be possible, including partnerships in which local community organisations (trade associations, faith-based, or security units), or some form of local service-delivery

²⁸ In rural contexts, see also Christopher B. Barrett, David R. Lee and John G. Mcpeak (2005) 'Institutional Arrangements for Rural Poverty Reduction and Resource Conservation' *World Development*, 33(2):193–197.

oversight committees, act as collection agents for tariffs within clearly defined boundaries while returning a portion of revenues to GVWC, in exchange for maintaining the supply network. The involvement of local residents, specifically those with the seniority and respect to enable enforcement of community sanctions, is a strategy that has long been advocated for service delivery to urban poor settlements, where the risk of illegal connections and low rates of payment have often dissuaded formal service providers from operating, but locally-established independent water providers and/or community-based organisations are successfully sub-contracted to provide (Valfrey-Visser et al., 2006; WSP, 2009; Cain and Mulenga 2009 Keener et al, 2010).

In some respects, DFID's programme of support to the WSS sector in Sierra Leone, which, at a total of £50.5 million (DFID SL Operational Plan, 2010/11-2014/15) of programming over the period 2011-2015, makes it the largest provider of bilateral assistance to the sector, reflects some of these principles. Alongside support to the Government of Sierra Leone to build their capacity in the sector,²⁹ DFID is continuing to support direct-service provision development programmes to fill existing gaps in coverage. A programme of support for WASH service delivery in rural and urban areas is provided through the work of UNICEF (rural areas: £8.5 million), Plan International (rural areas: £1.5 mn), and an Urban WASH Consortium delivering – or supporting improved delivery of – services in the Freetown area. The Urban WASH Consortium is a coalition of iNGOs led by Oxfam,³⁰ and has £4 mn of funding. Interviews with a range of Consortium members suggest that the principles laid out above underpin much of the community-level engagement being carried out in a localised fashion in Freetown.³¹

However, in this context, evidence suggests that additional attention is needed on a number of specific issues:

- **Ensuring community-level initiatives establish clearly-defined user groups to both demarcate those with access rights and facilitate collective action in engagement with supply-side actors.** Defining user groups would be an important prerequisite for more effective service delivery regardless of the actors involved in service provision. At the very least, the improved availability of data on service users (and the forms of access they use) generated by such an exercise would be a valuable contribution to the sector, if agreed-upon standards could be used in data collection. The approach adopted by the iNGO consortium, to utilise the self-defined boundaries of communities has its advantages (specifically in the legitimacy it provides in the implementation of such schemes); however, there are clear challenges in the lack of documentation of such boundaries. Mapping of these self-defined community boundaries (for example, through the use of geographic information systems (GIS) software, or otherwise) would be a useful first step towards the eventual reconciliation of community-defined user groups with existing administrative and political affiliations used by GoSL and by relevant utilities.
- **Leveraging existing enforcement mechanisms that hold socially determined (albeit informal) legitimacy.** In Sierra Leone, given the weaknesses in the formal system that constrain willingness and ability to enforce payment for water services, this is likely to mean drawing on both community-level social pressures (e.g. peer-to-peer pressure) and the strength of informal leadership provided by **traditional authorities and local big-men**, who perform a wide range of critical institutional functions in Sierra Leone.

²⁹ See Annex 1 for an overview of the component of DFID programming addressing policy and institutional reform.

³⁰ Other iNGOs in the consortium include: Concern, SAVE, Action Contra La Faim, and GoAL.

³¹ From an institutional perspective, management of common-pool resources is likely to be easier where there is a clearly defined user group or community. While work by the WASH consortium suggests that communities can be defined in the urban context in Freetown, difficulties remain as boundaries can be unclear and/or fail to align with political or administrative boundaries. Thus, while fiscal sustainability may be currently priorities in urban areas, from an institutional perspective it may be easier to achieve some goals in rural areas, where community boundaries and (informal) institutional infrastructure are clearer.

Options for strengthening the former are addressed in section 5.2.2 with respect to increasing the visibility of the payment behaviour of connected households for whom peer-to-peer monitoring of behaviour is currently more difficult. However, the highly visible public nature of ongoing pipe-breaking behaviour suggests visibility does not necessarily result in the cessation of free-riding behaviour. Additional enforcement mechanisms to establish a new norm in which observed violations of agreed bylaws are sanctioned rather than tolerated are necessary. Historically, informal leaders have played important roles in the development of effective sanction mechanisms in a number of sectors in Sierra Leone. Donor agencies have not often excelled in their engagement with such informal power structures (see Denney, 2011, for an example of DFID's struggles to engage with non-state providers of services in the justice sector in Sierra Leone), but understanding these informal structures is a critical step towards effective management of resource appropriation, including the adoption of socially-legitimate sanction mechanisms for violations of agreed-upon rules. Although traditional authorities may be more recognisable to outsiders in rural contexts where chieftaincies are more clearly established, locally-recognised big-men often play similar roles in urban communities and could potentially be leveraged if there is sufficient knowledge of community-level dynamics.

- **Use rewards as complements to punishments.** It may also be worth exploring options for both negative and positive incentives in enforcement. The latter could include the use of prize draws, scratch cards, competition between communities for prizes or local infrastructure or materials (education supplies, hygiene kits) based on performance, or other mechanisms that, with sufficient media profile, could help to ensure compliance while helping to avoid the negative political implications associated with more punitive attempts to enforce payment. Designing such schemes to operate through the utility could help to develop a more positive image for GVWC as a provider.
- **Improved coordination in the development and implementation of community-based initiatives.** Ostrom's eighth principle notes the need for nested hierarchies where multiple smaller sets of institutional arrangements interact within a broader framework. Some form of structured relationship between community-level institutional arrangements appears to be necessary in a context such as Freetown where such schemes do not operate in geographic, economic or political isolation. The consortium model provides a useful framework, but was providing limited coordination at the time of field research due to a recent change in leadership. There is a need to ensure linkages between consortium members lead to coordinated implementation (over time and space). Such coordination would help to ensure free provision in neighbouring communities does not undermine schemes for fee-for-access provision. As noted above, a lack of coordination in the timing of implementation can undermine initiatives to establish locally-grounded norms on water pricing.
- **Improved coordination between community-based initiatives and formal institutions.** As community-level actors are filling only a limited number of roles in the service-delivery chain (e.g. where GVWC retains a role in management of the distribution network), it is important to ensure linkages between consortium members and coordinate implementation with formal providers. **The MoEWR could usefully take on this coordination function** to provide a useful link between the experiences of the iNGO Urban WASH Consortium and its ongoing reform initiatives. Development partners, like ASI and DFID-SL, could play a supporting role.

5.3.2 Addressing effective immunity of illegal (re)connections at the household level

Addressing the effective immunity of illegal (re)connections may also benefit from the application of the institutional-design principles outlined above. In practice, this is likely to include:

- **Developing and promoting improved mechanisms to monitor compliance with payment schemes.** Evidence from other African contexts suggests that willingness to pay is dependent on an assessment, on the part of service users, of the likelihood that not only will they pay, but

enough of the other service users will pay that the provider will be willing and able to provide water services. In Senegal, Hanatani and Fuse (2010) find that, in addition to traditional concerns with quality and convenience of services, service users ‘who trust that other users will pay are more likely themselves to pay than those who do not trust their peers’ (2010:1). The authors suggest programmes that promote peer trust may therefore constitute an important component of efforts to increase willingness to pay (*ibid.*), though they do not provide detail on what forms such programming would take. Similar incentives would seem to exist for service users in Sierra Leone, where the free-rider problem appears relatively pervasive. In this context, the ability to **monitor compliance** with agreed tariff arrangements is key, suggesting initiatives could potentially include building on experiences with schemes to visibly and publically indicate those households that have paid for their connection, even where a variety of actors from across the public, private and community spheres are involved in service delivery. This practice was evident in the peri-urban areas of Western Rural Township, and although not yet successful in achieving 100% payment for services from a communal water point, was effective in enabling the local WASH committee to identify those non-compliant households, to apply social pressure. In rural areas, the move towards the adoption of this or other types of community-based-monitoring and compliance mechanisms appears to have some traction among GoSL and ASI, for instance in the sub-division of river basin management. However, for such mechanisms to function effectively in urban areas, user groups of a sufficiently limited size need to be more clearly established. Close collaboration with the ongoing work of the Urban WASH Consortium would be helpful in this sense.

Other practical actions complementary to, but not necessarily directly derived from Ostrom’s principles, can also be identified. In this case, given the scale of the problem of illegal water withdrawal in Freetown, the initial **legalisation of all existing unregistered household connections in Freetown** is a first step towards enabling the utility to identify existing consumers, and gather much-needed information on the potential volumes of non-revenue water through domestic connections, while initiating more robust data sets required to record accurately the scale of future non-payment.

- Formalising the current illegal or unrecorded connections without sanctions for the illegal consumers should reduce the resistance of registration with the utility, although the large-volume consumers withdrawing from a household connection (for example, those private water bottling or sachet enterprises who repackage piped water from a household connection for resale) would pay a higher tariff and so might be more resistant than regular domestic consumers to legalisation.
- The utility might usefully combine a set of incentives for those households that voluntarily register with the utility (such as one free month consumption), with supporting the development of stronger legislation by the MoEWR with which to penalise non-compliance.

5.3.3 Addressing effective immunity of arrears accumulated by powerful large-scale users

While the strengthening of community-level institutional arrangements has the potential to address free riding by individuals and households, it is clearly insufficient to address the problems of unpaid access by large and powerful entities, including arms of GOSL itself. Based on the findings presented in Section 4.3 regarding the ineffective nature of sector and national rules regarding payment of utility bills, we suggest the **development of a clear partnership with colleagues working on PFM and public-sector management, including fiscal management, on developing realistic budgets in the public sector to reduce utilities arrears**. Externally, this might include support to MoEWR engagement with MoF and other GOSL actors ensuring GOSL provides ‘leadership by example’ with respect to payment of utility bills. There is some disagreement among actors in the sector regarding the commitment of the government to paying its bills. This is owed, in part, to a circular (or letter), apparently issued by the Ministry of Finance directing government departments not to pay their water bills. While some actors, particularly some interviewees in the relevant utilities, have taken this to mean MoFED was endorsing non-payment by departments, interviews with MoFED officials in the

Budget Bureau suggest the intent was that the MoFED would take on the burden of directly paying the bad debts accrued by other government departments and was trying to avoid duplication of payment. This, however, was intended only as a one-off measure that has now stopped and currently MoFED reports the ministries are responsible to settle their own bills directly with the relevant utility. **Clarifying this responsibility is a clear initial priority.** There is some question of moral hazard worth noting here. If government departments feel they can rely upon MoFED to cover unpaid utility bills, it may be difficult to institutionalise realistic budgeting and the development of the type of contractual arms-length relationships between utilities and government-service users (who comprise a significant component of demand) envisioned in the sector-reform agenda.

6 Conclusion

In this case study we have argued that at present, the weaknesses in the institutions governing water-service delivery in Freetown, and more broadly in other urban and rural areas, present a significant obstacle to the model envisioned in the National Water and Sanitation Policy. The vision of the GoSL and development partners, in which water is provided equitably and efficiently by utilities to service users, at a tariff rate enabling sustainable cost recovery, with capacity in the utility to be able to monitor and enforce bill collection, is unlikely to be achieved in the short term.

We stress that the development of such a model is indeed necessary for the financial sustainability of the water sector as a whole – not only within Freetown. Reforming the water-pricing regime is fundamental to enable the country to sustain current levels of access, and improve access of citizens to clean water supply. Water services in Freetown and elsewhere will not be sustainable if they continue to rely on transfers (development grants) and taxes for the bulk of the revenue; tariffs from water users currently benefiting from the service (including those currently not registered – i.e. free riders) must increase to comprise at least the operational and maintenance costs of the service. With more than 50% of the population of Sierra Leone still without access to improved water sources, available finance must be directed to expanding and extending services, with operation and maintenance covered by tariffs. We stress that supporting the institutional capacity of GVWC and other service delivery partners to enable bill collection, monitoring and enforcement is a fundamental starting point, prior to the setting of any new tariff price. In addition, there is little question that alongside the institutional changes required, additional investment will be needed to develop the physical infrastructure necessary to provide reliable water services in Freetown and elsewhere.

Development partners and, to a lesser extent, the fiscally-constrained GoSL have begun to make some of the much-needed investments on the supply side to enable increased access, though the financing gap is large enough that additional deterioration, rather than the improvement of the water supply system, remains a real possibility. With the leadership of MoEWR and the support of development partners, efforts to reform the legal and administrative foundations of the sector and strengthen the capacity of government institutions are now underway. Such efforts should continue.

However, in combination with the limitations imposed by the limited and severely deteriorated state of water-supply infrastructure, the presence of a number of mechanisms, through which a significant number of service users are able to access water free of charge, serves to undermine, systemically, any attempts to develop sustainable sector financing that includes some form of tariff payment. Supported by a variety of social and cultural norms, the significant incidence of populist electoral short-termism and the persistence of documented and undocumented arrears arising from effective immunity from sanctions for non-payment contribute to a context in which many of those that are currently served by the utilities (including several large institutional users) are effectively free riding. While such users are able to reap what benefits are emerging from a sorely-constrained system of water supply, other would-be users are left reliant on seasonally variable natural sources or to fend in private markets at significant cost.

We suggest that even as forward-looking efforts continue to develop the formal framework necessary to implement and sustain the model of water-service delivery envisioned in national policy documents, solutions are needed in Freetown for the short- and medium-term that do not require the application of best-practice service-delivery models. The free-riding dilemma we have noted means that while policy-making must be directed to the fundamental goal of achieving universal access to clean water, if tariffs are to be a component of sector financing there is a need to understand and address the implications of the non-excludability of service users who fail to contribute to the sustainability of the sector. In other words, policy and programming need to address not only minimum supply-criteria, lifeline tariffs, formal regulation and other mechanisms to ensure access for the poor is not denied on the basis of an

inability to pay, but also the adoption of mechanisms to ensure that those that can and should pay according to agreed-upon policy, do so.

We have argued that, given the roots of the challenges identified in this paper, thinking about urban water supply in Freetown as a common-pool resource can provide some useful insights regarding the way forward. This should not be taken as a call for the universal adoption of purely community-based approaches to the delivery of water services. Indeed a combination of actors from communities, utilities, relevant GoSL departments and, potentially, the private sector are likely to play various roles in the service-delivery chain, particularly in Freetown where infrastructure demands are more complex and initial capital expenditure greater. Additionally, community-level action is unlikely to address some forms of systemic rule-breaking by major actors. The persistence of arrears from large public actors may require intervention from sympathetic high-level actors in GoSL if they can be identified and/or development partners working on complementary issues (e.g. public financial management and the development of realistic budgets).

Moreover, there are a range of strategies which can be adopted to address some of the political incentives at play and support a culture of payment for services. Realigning political incentives by supporting public demand for accountability in pricing-regime reforms could work by rolling out public-education campaigns to link payment to service quality, and by civil-society participation in a review of tariffs against policy objectives. Removing (some) of the political incentives by contracting out parts of the water-service-delivery pathway to the private sector is also an option. Support to the Regulatory Commission to enable it to make independent decisions based on technical criteria (e.g. tariff increases, subsidy evaluations) is one of the most important strategies. Finally, working on public financial management with colleagues outside the water sector could remove the incentives of public institutions to defer payment of water bills, by removing the option completely.

Together with the above strategies, the adoption of particular institutional design elements, derived from experiences with management of common goods, appears to be a feasible route to improvements in service delivery, not only in the small rural communities that have historically been associated with implementation of community-based natural resource management, but also in appropriately defined subsets of the Freetown urban populations. The adoption of recognised principles, such as clear identification and demarcation of user groups; the monitoring of compliance by appropriators or those accountable to them; and the development of socio-culturally legitimate sanction and conflict-resolution mechanisms, could provide valuable institutional foundations for positive change even where actors from outside the community are involved in elements of service provision. In practice, this is likely to require engaging proactively with the informal mechanisms (such as local big men, or the presence of clientelist politicians) that continue to shape behaviour in Sierra Leone, and improving coordination in ways that may challenge individual actors. Doing so may be challenging, but doing so successfully would help GoSL and its partners (including relevant utilities, NGOs and international donors) to better address free-rider challenges and thereby improve the likelihood of achieving sustainable improvements in sector outcomes. This option can be pursued even as ongoing initiatives strengthen the formal institutions necessary to achieve the long-term vision for the sector.

Annex 1: List of Interviews

1. ActionAid Sierra Leone – Executive Director
2. Action Contra la Faim – WASH Manager
3. Adam Smith International – WASH Sector Reform Team Leader, Institutional reform Advisor, Technical Advisor, Senior Manager
4. African Development Bank – Infrastructure Specialist
5. Concern – National Health Coordinator, Engineering Coordinator
6. DFID Sierra Leone – WASH Advisor, Governance Advisor
7. Freetown City Council – Deputy Chief Administrator, Development and Planning Committee Chair, Development and Planning Officer
8. GoAL – Urban WASH Programme Manager
9. Guma Valley Water Company – Acting General Manager, Financial Controller, Chief Engineer
10. JICA – Project Advisor
11. Ministry of Energy and Water Resources (MoEWR) – Advisor to the Permanent Secretary, Energy Advisor
12. Ministry of Finance and Economic Development (MoFED) – Director of Local Government Finance, Director of the Budget Bureau
13. Oxfam Sierra Leone - Urban WASH Consortium Manager, WASH Advocacy Advisor
14. Save the Children – Programme Director, WASH Manager
15. Sierra Leone People’s Party (SLPP) – National Secretary General
16. Sierra Leone Water Supply Company – Acting Director General, Financial Controller
17. Tombo Water Committee (CBO), Western Rural District
18. UNICEF – WASH Manager
19. Water Supply Division (MoEWR) – Chief Engineer, Officer
20. Western Rural District Council – Chief Administrator, WSD officer, Council staff
21. World Bank – Governance Advisor

Annex 2: The evolving formal institutional context and DFID support to institutional and policy reform in the WSS sector

Sierra Leone is currently in the midst of a period of substantial reform to the formal institutions intended to govern behaviour in the WSS sector. This annex provides an overview of the recent development of the National Water and Sanitation Policy, efforts to establish and implement an independent regulatory authority, and DFID support to the ongoing institutional change processes in the sector.

National Water and Sanitation Policy

The National Water and Sanitation Policy was developed in 2007 and published as a final draft in July 2008. The policy aligns water- and sanitation-policy objectives with the GoSL's Development Vision 2025, the Poverty Reduction Strategy Paper (PRSP) objectives and the commitments to attaining the MDGs for water supply and sanitation. The MDG targets for Sierra Leone are to increase access to safe drinking water and sanitation from 46% in 2005, to 74% by 2015, requiring a 3% annual rate of increase. The Implementation Plan for the NWSP was approved in 2010, subsequently launched by the MoEWR in January 2011, and disseminated to the districts in May 2011. Implementation of the NWSP is now being supported through DFID's technical assistance to the MoEWR and MoHS.

The limiting of functions of MoEWR to policy formulation, coordination, regulation and monitoring is central to the policy. Separate agencies are to be established for regulating water use (National Water Resources Board) and tariffs (Regulating Committee), and, in conjunction with National Decentralisation policy, service provision is to be achieved through state utilities and community-based institutions under the leadership of central government.

The NWSP recommended the following major reforms to the sector:

- Shifting the role of government from implementer to policy-making and facilitation.
- Creation of a National Water Resource Board with responsibility for water resource management.
- Establishment of a regime for regulating WSS services which effectively balances economic, financial, and social objectives.
- Enactment of a new Water Law which creates a legislative framework for all those involved in the sector (public and private, present and future) and supersedes outdated water-related legislation from 1960s.³²

Specifically regarding financing, the NWSP states commitment to: improving the financial viability of urban water service providers so that they become financially self-sustainable, covering their operational costs and gradually contributing towards investments in their networks; gradually increasing communities' obligations for paying for the operations and maintenance costs of rural water schemes; and to mobilise adequate financing in a sustainable manner for increasing rural water-supply services (UNDP, 2009).

³² Consultations on the draft Water Law are currently underway (facilitated by ASI) and may provide a useful benchmark to reveal how acceptable pricing reforms will be in different areas of the country. In other developing countries, opposition to sector reform has used new legislation as initial focal point for opposition for seeing water as economic good, and provisions for cost-recovery.

Establishment and implementation of an ‘independent’ regulatory authority

There is currently very limited regulation of urban water supply through state utilities besides from the limited reporting requirements of the Governing Board of sector agencies (GVWC, SALWACO) and the MoEWR. More effective regulation is being planned through the National Water Resources Board (NWRB) and the Energy and Water Regulatory Authority.

The bill to establish the Regulatory Authority was just passed by Parliament in October 2011, after having been deferred twice previously (last time April 2011). Within the legislation the membership of the Authority is specified as: one representative from the Consumer Protection Agency, one representative from the Institute of Engineers, one representative from the SL Labour Congress, four expert persons to be appointed upon recommendation by the Ministry of MoEWR, and a Director General of the Authority to be appointed by the President upon recommendation of the Minister of MoEWR. The members of the Authority will sit for three years, following which new appointments will be made. Independence of the Authority from the MoEWR is being questioned by some interviewees given the fact that it will still sit within, and report to, the MoEWR, and the power of the Minister to make the above appointments.

A central responsibility of the new Authority will be to approve both the electricity- and water-supply tariffs, taking away the current responsibility of the Cabinet and, as such, depoliticising the process. The current approval procedure for tariff increases for GVWC are as follows: approval by the Board, approval by the NCP, approval by MoEWR, and, subsequently, approval by Cabinet. Interviewees with experience in attempting to push through tariff increases noted that most resistance to increases has been at the Cabinet approval stage.

To complement their support for direct service delivery, and reflecting the overall transition in the country moving from emergency relief to building government capacity, DFID is also supporting a comprehensive sectoral reform process. As part of this package of support, DFID has contracted a consortium of organisations to provide technical assistance to the Ministry of Energy and Water Resources (MoEWR) and the Ministry of Health and Sanitation (MoHS). A package of £10 million of support for the sector-reform process includes funding for activities in sector harmonisation, capacity-building, water resources management, and implementation of the National Water Policy.

To provide technical assistance to the Ministries to enable implementation of the NWSP, DFID has appointed Adam Smith International (ASI), in partnership with Action Aid Sierra Leone (AASL) and Triple Line Consulting. As a service provider funded by DFID but reporting to the GoSL, this group sits within the MoEWR and is contractually accountable to DFID but responsible for satisfying the needs of the Ministry. The consortium is managing a programme of support to the Government of Sierra Leone (GoSL) over three years, to support the implementation of its National Water and Sanitation Policy (NWSP). This programme commenced on 21 February 2011 and has already concluded its Inception Phase (July 2011).

Box 7: Key outputs for the programme of support to implement the NWSP

- Sector coordination. Strategic coordination, alignment and harmonisation processes are followed by the MoEWR, GVWC, SALWACO, MoHS and six district councils, development partners and NGOs.
- Legislative and institutional reform. Support to MoEWR to design and implement the required legislative and regulatory framework, and institutional and organisational arrangements to manage WASH strategic change.
- Sustainable sector financing. Support to the MoEWR and local governments to develop and operationalise investment plans for more sustainable financing at central and local levels which is responsive to local needs, and a funding strategy to bring in new sources of revenue. A key element of the technical-assistance support needed to fulfil this objective entails support to the MoEWR and state utilities to develop revised tariff structures, to enable effective cost recovery of service provision.
- Improved water resources management at district and local levels.
- Improved water supply, sanitation and hygiene delivered at community level in seven selected districts with an emphasis on sustainability.

Source: (ASI, 2011).

Annex 3: Types of goods

Drawing on the classic definition of a public good, two distinctions are particularly useful. First, we must assess whether or not a good is **excludable**. A good is excludable if individuals can be prevented from using it, whether by pricing or by other means. Applying a pricing scheme to a particular good or service effectively makes it excludable, based on the premise that those that are unable or unwilling to pay the required price are then unable to access the good or service (as is the case, say, when tolls are applied to certain roads and those unwilling to pay the toll are forced to find alternate routes). Second, we must assess whether or not a good is **rivalrous**. If the consumption of that good by one individual necessarily diminishes another individual's consumption of that same good, it can be considered rivalrous. Pure public goods are only those that are both non-excludable and non-rivalrous.

Table 4: Types of goods

| | Excludable | Non-excludable |
|---------------|----------------------|---------------------------------------------|
| Rivalrous | Private goods | Common goods (common-pool resources) |
| Non-rivalrous | Club goods | Public goods |

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