

OVERVIEW

# Doing More with Less

## Smarter Subsidies for Water Supply and Sanitation

Luis A. Andres, Michael Thibert, Camilo Lombana Cordoba, Alexander V. Danilenko, George Joseph, and Christian Borja-Vega



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Overview

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Alexander V. Danilenko, George Joseph, and Christian Borja-Vega

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# Abbreviations

CAPEX	capital expenditure
GDP	gross domestic product
IBNET	International Benchmarking Network for Water and Sanitation Utilities
O&M	operation and maintenance
OPEX	operating expenditure
SDG	Sustainable Development Goal
UN	United Nations
WHO	World Health Organization
WSS	water supply and sanitation



# Doing More with Less

## Smarter Subsidies for Water Supply and Sanitation

Water touches every aspect of development and flows through nearly every SDG. Solving many of the largest development challenges requires extending reliable access to safely managed drinking water services to 2.2 billion people, and safely managed sanitation services to 4.2 billion.

### Most existing water supply and sanitation subsidies are:



#### Pervasive

Common across countries, irrespective of region or income level



#### Expensive

Governments spend around \$320 billion per year (up to 2.40% of regional GDP)



#### Poorly Targeted

An average of 56% of subsidies are captured by the wealthiest 20% of the population, while a mere 6% are captured by the poorest 20%\*



#### Nontransparent

Facilitate rentseeking by governments and service providers



#### Distortionary

Contribute to inefficiency, threaten service sustainability, and encourage overexploitation of resources



### Yet if well designed, subsidies can be powerful and progressive tools ensuring that all people benefit from water supply and sanitation services.



#### Smart

- The majority of subsidies go to water, urban, and networked services. A better balance across water and sanitation, rural and urban, and different types of service can make subsidies work harder.
- Subsidies can encourage better operational efficiency through performance incentives.
- A single instrument is unlikely to attain all policy goals simultaneously.



#### Targeted

- Measures to make water supply and sanitation affordable for those in need can ensure that no one gets left behind.
- Effective targeting is increasingly possible through technological innovation.



#### Implemented Effectively

- A communications strategy is essential to build advance backing and for successful implementation.
- Understanding the institutions, incentives, and interests that shape subsidy reform is vital to cultivating supportive political coalitions.
- When a subsidy is temporary, an appropriate exit strategy must include some form of support for the most vulnerable.
- Complementary policy measures can make scarce public resources go further.



\* Percentages from an analysis of 10 developing countries.





## Overview

In 2010, the United Nations (UN) declared clean drinking water and sanitation to be human rights. At the time, the UN's Millennium Development Goals focused on halving the number of people living without access to improved water and sanitation services by 2015. Then, in the fall of 2015, the UN adopted the Sustainable Development Goals (SDGs). These raised the global ambition by aiming to “achieve universal and equitable access to safe and affordable drinking water” and to “achieve access to adequate and equitable sanitation and hygiene for all”<sup>1</sup> by 2030.

As of 2015, about 29 percent of the world's population was without safely managed drinking water, and about 61 percent without access to a safely managed sanitation service (WHO and UNICEF 2017). The World Bank estimates that to realize the SDGs by extending safely managed services to these people would cost \$114 billion a year over the period 2015-30 (Hutton and Varughese 2016).<sup>2</sup>

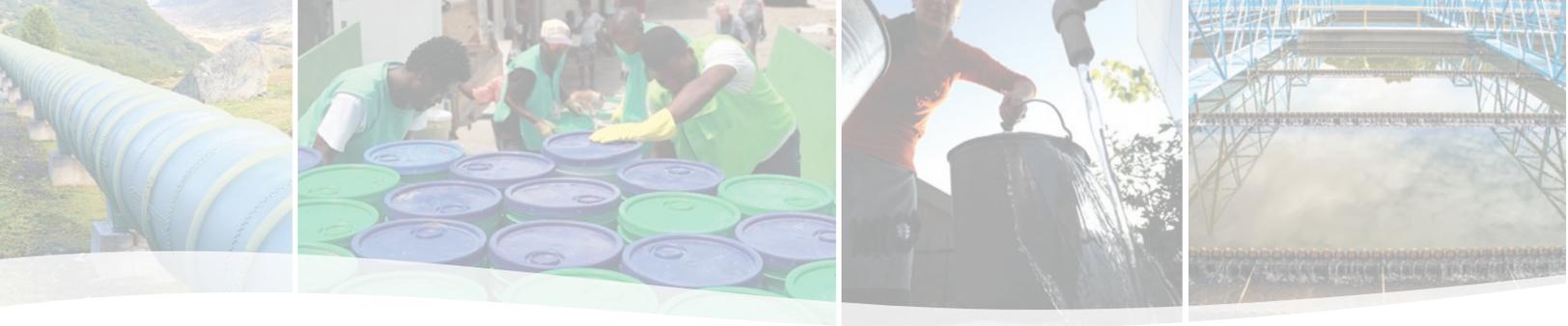
The water supply and sanitation (WSS) sector remains heavily subsidized around the world, as it has been for decades.<sup>3</sup> Despite the prevalence of subsidies and the critical role that effective pricing plays in providers' ability to deliver high-quality services, scant attention has been paid to how current WSS pricing structures and subsidies impede progress toward the SDGs. Although most subsidies are intended to ensure that WSS services are affordable to the poor, they often end up benefiting relatively well-to-do households already connected to networked WSS services. The poorest of the poor, who generally lack access to networked services, are left without their basic human rights to clean drinking water

and sanitation. And, most often, the poorest communities are located in regions and countries with limited capacity for public spending. Given that most subsidies are expensive, poorly targeted, nontransparent, and distortionary, it is urgent that policy makers reconsider how current spending is working, and carefully target available resources to achieve the greatest impact.

In this report, we explore the question of how scarce public resources can be used most effectively to achieve universal delivery of WSS services. To inform our discussion, we analyze subsidies in the sector, including their magnitude, their efficacy in achieving their policy objectives, and the implications of poor design. We then provide guidance to policy makers on how subsidies can be better designed to improve their efficacy and efficiency in attaining their objectives. Finally, we discuss how to design a subsidy reform package that will have the best chances of success.

### What Are Subsidies?

Subsidies are a subset of funding flows between governments, service providers, and customers. Subsidies occur when a user/customer pays less for a product or service than the service provider's cost, leaving a third party (e.g., government, other users, future generations) responsible for covering the difference. Subsidies may take the form of explicit financial transfers between two entities (e.g., a utility and a customer) or implicit transfers—such as nonpayment for electricity or deferred maintenance—which occur when products, services, or inputs are underpriced.



**Governments subsidize WSS services for a variety of reasons.** Two may be highlighted as the most common:

- **Advancing equitable access to affordable WSS services.** Subsidies may be considered desirable if they help poor or marginalized segments of a population attain access to affordable WSS services. They may be used to facilitate access or consumption.
- **Harnessing positive externalities associated with WSS services.** The widely documented societal benefits of WSS services include positive environmental effects and improvements in people's health—in particular, a reduction in infant mortality—and an associated reduction in health-care expenses.

**To frame our discussion, we have categorized WSS subsidies using several criteria.** First, we consider whether subsidies seek to expand access (e.g., by covering connection charges, initial costs, specific assets, etc.) or ensure that a minimum level of consumption is affordable. We then consider the intended beneficiaries and, if these involve a distinct subset of the population or customer base (e.g., poor households), the targeting mechanism used.

**Depending on who ultimately pays for the subsidy—taxpayers, philanthropic organizations, or a particular group of present and/or future users—the mechanism of the transfer between payer and recipient may vary.** To a large extent, the choice of funding mechanism will be influenced by the type of service involved, and the technological and institutional setup of the sector. Here, we consider two basic funding mechanisms:

- A **demand-side subsidy** involves a direct transfer from the fund provider to the subsidized user. Generally, the government transfers money

directly to the user, who then uses it to pay the service provider.

- In the case of a **supply-side subsidy**, funds are channeled through the service provider or another third party, which, in theory, passes the funds on to the consumer in the form of lower prices.

### Key Messages

Based on an analysis of subsidies around the world, this report puts forward three key messages. First, current WSS subsidies fail to achieve their objectives due to poor design; they tend to be pervasive, expensive, poorly targeted, nontransparent, and distortionary. Second, this poor performance can be avoided; new knowledge and technologies are making it increasingly possible for subsidies to cost less and help more. By moving beyond the design flaws of the past, subsidies are a viable means of ensuring access to sustainable and safely managed WSS services for all. Finally, to successfully reform subsidies, a subsidy reform package, in addition to improved subsidy design, is required. An effective subsidy reform package includes complementary policy measures, the building of a supportive political coalition, a communications strategy, and an exit strategy (where applicable).

#### **Message 1: Current WSS Subsidies Fail to Achieve Their Objectives Due to Poor Design; They Tend to Be Pervasive, Expensive, Poorly Targeted, Nontransparent, and Distortionary.**

While subsidies of WSS service provision are generally implemented in pursuit of worthwhile objectives, poor design often undermines these objectives, rendering subsidies pervasive, expensive, poorly targeted, nontransparent, and distortionary. In chapter 2, we present evidence on the



current state of subsidies within the WSS sector and discuss particular design elements that most often prove problematic.

### Subsidies Are Pervasive

**Subsidies are prevalent across countries, irrespective of region or income level.** Table O.1 shows the prevalence of economic subsidies<sup>4</sup> and operation and maintenance (O&M) subsidies among the utilities included in the World Bank’s International Benchmarking Network for Water and Sanitation Utilities (IBNET) database. Only 14 percent of the utilities listed in the IBNET database generate enough revenue to cover the total economic costs of service provision, while only 35 percent of the utilities are able to cover, at a minimum, the O&M costs of service provision.

**Such pervasiveness is due not only to the necessity of clean drinking water and adequate sanitation for health and well-being, but also to the nature of networked WSS services.** The construction of new infrastructure, the expansion or improvement of service to households, and the reduction of tariffs are highly visible to citizens. In many cases, public officials use subsidies to manage political support. Even where subsidies do not reach their intended beneficiaries, they often become entrenched owing to the interests of the stakeholders who do benefit from them. Reformers may find it difficult to reduce existing

subsidies or even to alter their design. And so, in many cases, the level—and longevity—of a subsidy may be influenced by politicians’ unwillingness to charge consumers for the services they enjoy or to disrupt the status quo.

**The characteristics of networked WSS services make setting cost-reflective pricing difficult and allow utilities to neglect asset maintenance, which in most cases they can do without affecting short-term service delivery.** This leads to significant subsidization, which must be funded down the road to avoid service disruptions. Declining marginal costs due to large fixed costs make efficient pricing using marginal costs difficult, and such pricing would not allow for full cost recovery anyway (since the marginal cost of service provision is lower than the average cost). Networked services’ high proportion of shared costs gives their providers a large degree of discretion in setting pricing structures, which is often exploited to advance political agendas. Around 65 percent of the cost of supplying piped water, and 80 percent of the cost of sewerage systems, is for long-lived capital assets (which are likely to last 20–40 years in the case of water, and 40–60 years for sewerage) (Komives et al. 2005). This means that in the short to medium term, utilities may be able to function with a pricing structure that does not cover the full costs of capital and neglects the maintenance of assets—a common occurrence in political environments where subsidies take the place of full cost recovery.

**TABLE O.1. Economic and O&M Subsidies of Utilities Around the World**

	Number of utilities	%		Number of utilities	%
No economic subsidy	220	14	No O&M subsidy	544	35
Economic subsidy	1,329	86	O&M subsidy	1,005	65
Total	1,549	100	Total	1,549	100

Source: Authors’ calculations based on IBNET data, which cover utilities in 147 countries.

Note: IBNET = International Benchmarking Network for Water and Sanitation Utilities; O&M = operation and maintenance.



## Subsidies Are Expensive

Since subsidies are the difference between the cost of service provision and the amount paid by users, defining and estimating the costs of WSS services is fundamental to any analysis. When computing the costs of service, total economic costs (and, eventually, inefficiencies, or slack) should be taken into account. These include operation and maintenance costs, depreciation, taxes, a fair and reasonable return on capital, and environmental costs.

The cost of subsidies associated with the operations, maintenance, and major repair and replacement of existing WSS infrastructure in much of the world (excluding, notably, China and India) is an estimated \$289-\$353 billion per year, or 0.46-0.56 percent of these countries' combined gross domestic product (GDP).<sup>5</sup> This figure rises, shockingly, up to 1.59-1.95 percent if only low- and middle-income economies are considered, an amount largely due to the capital subsidies captured in our estimation. Subsidies of operating costs account for approximately 22 percent of the total subsidy amount both in the full sample and for low-income economies separately. At \$101-\$124 billion per year, the region of Latin America and the Caribbean has the largest amount of subsidies (including both operating and capital subsidies), in absolute terms and as a percentage of GDP. Annual subsidy amounts by region range from 0.05 percent to 2.40 percent of GDP, and low-income economies are generally at the high end of this range. It is important to note that our estimation does not include either capital expenditure for infrastructure expansion—which tends to be fully subsidized—or environmental costs. Therefore, the actual global magnitude of networked water and sanitation subsidies is much greater than our estimation.<sup>6</sup>

While our estimates of subsidies for operating expenditure are relatively straightforward—they predominantly represent explicit expenditures required to sustain service provision at current levels of efficiency and quality—our estimates of subsidies for capital expenditure (CAPEX) require additional nuance. Because of a lack of data on most countries' direct expenditure on networked WSS services, our model instead estimates the CAPEX required for the replacement of existing infrastructure. However, there have been several recent attempts to extrapolate direct expenditure from countries with more comprehensive and transparent expenditure data to regional, and even global, levels of expenditure.

Prior estimations of global and regional direct CAPEX for WSS services in low- and middle-income countries, making use of data available from a limited number of countries, are between 0.4 and 0.5 percent of GDP. When combined with our model estimates for OPEX, the use of the limited direct CAPEX data available results in total networked water and sewerage sanitation subsidies in low- and middle-income countries in the range of 0.75-0.95 percent of GDP. While these estimates are below our estimate of 1.59-1.95 percent of GDP (also for low- and middle-income countries), such discrepancy is not unexpected given key differences between the two approaches followed.

First, the use of direct expenditure significantly underestimates the CAPEX subsidies provided to the sector for existing infrastructure due to the deferral of maintenance—a phenomenon especially common in low- and middle-income countries. Second, while our model accounts for the full costs of required major repairs and replacement of existing infrastructure, it does not account for expenditures toward infrastructure expansion. In a steady-state situation whereby



infrastructure expansion is limited, both estimates should be reasonably similar since actual direct CAPEX would be exclusively—and comprehensively—covering the maintenance and replacement of existing infrastructure. The two key differences between these two approaches to subsidy estimation are depicted in figure O.1.

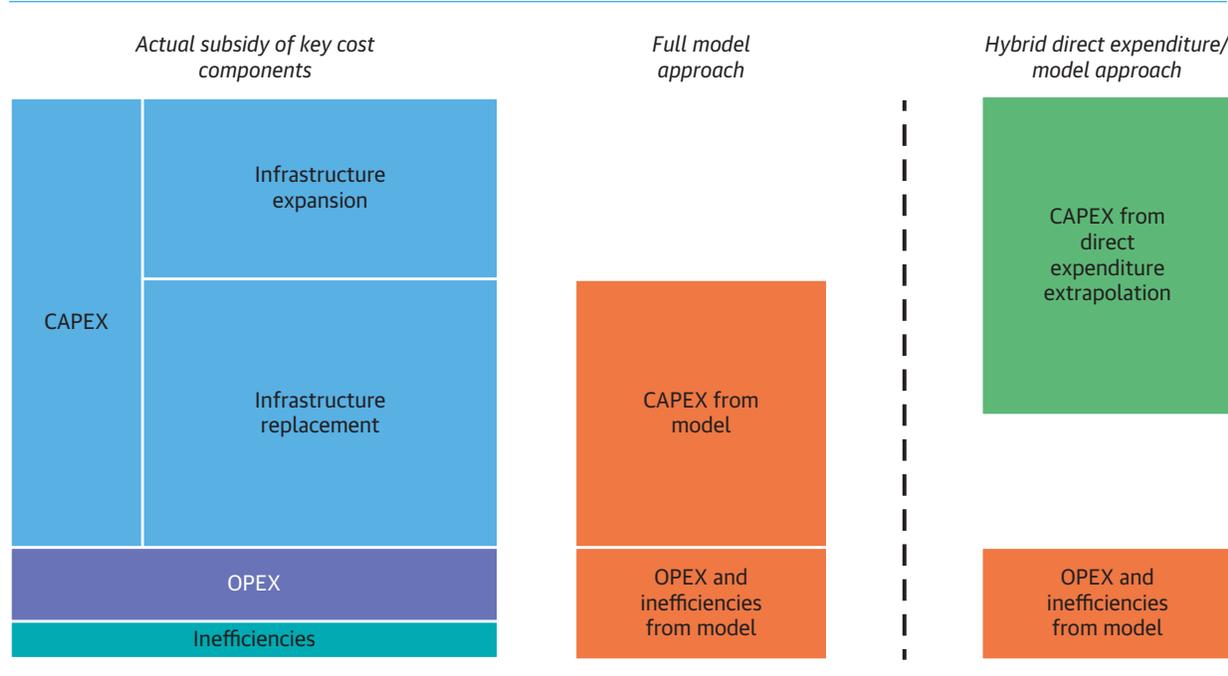
### Most Subsidies Are Poorly Targeted

**In the 10 countries we analyzed, an average of 56 percent of subsidies reach the wealthiest quintile of the population, while a mere 6 percent reach the poorest quintile.<sup>2</sup> Subsidies designed to ensure a minimum level of water consumption among poor households**

rarely achieve this goal, but instead tend to disproportionately benefit the wealthy. Across the countries we analyzed, consumption subsidies are regressive, with the wealthiest households capturing the lion's share. In fact, each decile of household income captures a larger share of the total subsidy amount than the poorer decile below it.

**An analysis of how well subsidies target their intended beneficiaries in 10 countries suggests that poor performance does not arise primarily from subsidy design, but from two factors related to access.** First, most WSS subsidies focus on networked services, even though the poorest communities are typically in areas not serviced by networks.

**FIGURE O.1. Estimating the Magnitude of Subsidies: Two Approaches**



Source: Authors' compilation.

Note: CAPEX = capital expenditure; OPEX = operating expenditure. The full model approach estimates CAPEX, OPEX, and inefficiencies using our model, which complements utility-specific data with estimates of the long-term incremental costs of efficient model utilities. The hybrid direct expenditure/model approach, meanwhile, substitutes direct expenditure data in the place of the CAPEX model estimates, while maintaining the model's estimates for OPEX and inefficiencies.



Second, even where poor households *could* connect to a network, many do not do so because they cannot afford the connection and/or consumption charges. The result is that many rich households are included in the subsidy recipient pool, while even more poor households are excluded. This issue is particularly pronounced in the five African countries analyzed, where errors of inclusion and exclusion fall between 90 and 100 percent (with Nigeria's error of inclusion being somewhat lower).<sup>8</sup>

### Most Subsidies Are Not Transparent

**Many common approaches to subsidizing the WSS sector lack transparency; this allows some service providers to misuse scarce public resources, failing to benefit customers through improved service quality and/or reduced costs.** A particularly opaque method of subsidization is general financial support to the service provider (through transfers to cover operational expenditures, direct funding of capital assets, tax exemptions, subsidized prices for inputs, loan guarantees, and so on). Ideally, a government entity provides a subsidy with the intention that the service provider will pass it on to consumers in the form of improved services at lower costs. But since the service provider is responsible for allocating the subsidy, much of the financial support may be captured by the provider's management and employees instead of going toward the maintenance required to sustain or improve the level of service. The customers, meanwhile, may scarcely benefit from the subsidy, whether in the form of improved service quality or reduced costs, and may even observe a deterioration in service quality as maintenance is neglected. And since a utility possesses more information about its cost structure and level of efficiency than any regulator, the lack of transparency is difficult to

overcome. This so-called informational asymmetry gives the utility a bargaining advantage that can lead to inadequate and inefficient services, inflated costs, or both.

**Information asymmetries also exist in contexts where several levels of government oversee the WSS sector, as is common in most countries.** For example, local needs are difficult for central authorities to observe and estimate, and this may result in suboptimal levels of investment. Also, administrative complexity can provide cover for rent-seeking. For example, central authorities may deliberately foster opacity in intergovernmental allocations and the timing of transfers, in some cases influenced by patronage politics at the local level.

### Most Subsidies Are Distortionary

**Poorly designed subsidies contribute to inefficiency, and may even threaten the sustainability of service.** Utilities may find themselves trapped in a vicious circle whereby low prices lead to revenue losses and required maintenance is postponed, leading to mounting losses. The maintenance needs of underground piped networks in particular are difficult to observe and monitor, and underinvestment in their maintenance is common. Inadequate maintenance shortens the life span of assets, reduces service quality and coverage, and contributes to financial losses.

**Subsidized tariffs do not reflect the true cost of a service and therefore cannot provide signals that might encourage efficient production or consumption.** By affecting prices, subsidies distort economic agents' choices. On the supply side, subsidies may discourage utilities from increasing their efficiency by improving collection rates and billing accuracy, for example, or by reducing water losses. With a significant amount of funding coming from government



transfers, utilities are less likely to hold themselves accountable to consumers, reducing their incentives to improve service quality. On the demand side, subsidized prices may discourage consumers from seeking more efficient providers or encourage over-consumption in a context where cost-reflective prices would encourage conservation.

**Message 2: The Current Poor Performance of WSS Subsidies Can Be Avoided; New Knowledge and Technologies Are Making it Increasingly Possible for Subsidies to Cost Less and Do More.**

Although current WSS subsidies tend to be pervasive, expensive, nontransparent, distortionary, and poorly targeted, such poor outcomes are not a given. Well-designed subsidies are indeed an important and necessary policy instrument for decision makers, who can use them to effectively and efficiently attain their objectives and avoid the adverse impacts of the past. In chapter 3, we provide guidance to policy makers on improving the efficacy and efficiency of WSS subsidies.

**Improving the efficacy and efficiency of subsidies requires careful consideration of five key questions:**

1. *What is the context?*
2. *What are the policy objectives that the subsidy seeks to achieve?*
3. *What are the target service(s) and/or population(s)?*
4. *How will the subsidy be funded?*
5. *What subsidy design will be most effective and efficient?*

**Since socioeconomic factors, WSS service delivery modalities, levels of institutional capacity, and fiscal space vary substantially from context to context, we do not seek to provide explicit recommendations on what should be subsidized and how.** Instead, we

discuss the myriad factors and policy options that should be considered along the way, therefore providing a roadmap for policy makers to follow in assessing their particular context and determining the most effective and efficient subsidy design.

**What Is the Context?**

**Policy makers should first seek to understand how effective and efficient existing subsidies are at attaining their underlying goals to make informed decisions on how they should be reformed.** In particular, they need to understand the magnitude of public resources being expended, the ultimate beneficiaries of those resources, the public’s perception of the subsidy and any opportunities for misappropriation, and the subsidy’s adverse impacts on sector performance and resource allocation. Using this information, policy makers can then improve subsidy design to avoid existing pitfalls.

**Subsequently, a political economy lens should be used to assess the sector’s institutional and financial structure, the reasons behind an unsatisfactory status quo (where applicable), and opportunities to improve and propel subsidy reform.** Efforts to reform subsidies have had widely varied results across countries, with successes often predicated on reformers’ ability to understand and strategically overcome political barriers. An assessment of (i) the WSS sector’s institutional structure and (ii) how subsidies are currently organized allows for a better understanding of the prospects for reform. Where a subsidy is failing to achieve its intended objectives, a political economy analysis can determine the key institutional and policy-related bottlenecks that explain its poor performance. Finally, attention can be turned to the future: identifying opportunities for reform and developing strategies to overcome institutional and policy-related bottlenecks.



**Finally, an up-front understanding of affordability barriers to WSS service provision is imperative to the subsidy design process.** The number of households that cannot afford to access WSS services, their relative socioeconomic characteristics and geographic locations, and the gap between what each household can reasonably be expected to pay and the total cost of service, in addition to any liquidity barriers, are all crucial data needed to answer four key questions:

1. *Is a subsidy required to advance equitable access to affordable WSS services?*
2. *What service and/or population should be targeted?*
3. *What is the magnitude of the subsidy required?* (The answer will help decide available funding options.)
4. *Which subsidy design options would be most effective and efficient?*

A comprehensive analysis of affordability provides the policy maker with important insights into which populations require support, and whether one-time access costs or recurrent consumption charges pose the greatest challenge to affordability.

### What Are the Policy Objectives?

**The specific policy objectives that a prospective subsidy seeks to attain largely dictate its design.** As discussed above, the most common policy objectives that WSS subsidies seek to attain are:

- Advancing equitable access to affordable WSS services
- Harnessing positive externalities associated with WSS services

**A single policy instrument—no matter how ingeniously designed—is unlikely to meet all policy objectives simultaneously.** In most cases, a subsidy’s

target population or service will differ depending upon which objective is selected. Subsidies to advance equitable access to affordable WSS services seek to either reduce the cost of service to end users (i.e., ensure a minimum level of consumption) or expand service areas to unserved populations (i.e., expand access). Meanwhile, the pursuit of positive externalities will lead to the prioritization of densely populated areas and sanitation services that have increased potential to positively impact the environment and/or improve public health.

### What Are the Targeted Service(s) and/or Population(s)?

**Upon selecting a policy objective, policy makers must decide which service(s) and/or population(s) will be targeted.** As with policies in general, there is no *one-size-fits-all* solution to the problems of inadequate access to or consumption of WSS services: the most suitable policy will depend on the specific goals to be attained, the context in which it is to be implemented, and the resource constraints of the government and stakeholders.

**Any decision to subsidize a particular service, population, or cost in the WSS sector entails inherent trade-offs that affect the efficient attainment of the chosen objectives.** Although subsidies with a policy objective to advance equitable access to affordable WSS services will, by definition, seek to benefit the poor and marginalized, the decision to target, for example, a particular service (e.g., networked) or geographic areas (e.g., urban) will establish the eligibility of particular segments of the population, even before any selection of a targeting mechanism. In this report, we provide an overview of trade-offs associated with subsidizing: (i) water vs. sanitation,



(ii) urban vs. rural areas, (iii) networked/sewered vs. nonnetworked/on-site services, (iv) infrastructure on household premises vs. off, (v) supply vs. demand, (vi) capital vs. operating expenses, and (vii) access vs. consumption. Though these trade-offs are neatly categorized to aid the process of analysis, it should be noted that there is considerable overlap among them, and their relevance will depend on the specifics of the case at hand.

### How Will the Subsidy Be Funded?

**WSS subsidies can be funded by either taxpayers (through government) or philanthropic funds, or through cross-subsidization by charging other present and/or future users more than the cost of service (which can include users of an unrelated service subsidizing users of WSS services).** The choice of funding will largely be driven by the government's fiscal space, opportunities for philanthropic funding or concessional financing, and the potential for cross-subsidization across users.

**Each type of funding source (government, other users, or third parties) carries its own risks.** Governments may fail to deliver the promised resources. This risk is borne by the customer in the case of demand-side subsidies, or by the utility in the case of supplier-side subsidies. Also, in many cases, subsidies are part of the national budget and therefore must be approved on an annual basis, implying a continuity risk for the funding of long-lived sunk assets. When the subsidy is financed by underpricing an input generated by other sectors, this risk is also present, since the subsidy depends on a government policy that can be changed or reversed. In the case of cross-subsidies, cost recovery requires an estimation of user charges across the customer base to ensure a proper balance between subsidy recipients and

cross-subsidizers. The difficulty in conducting this estimation introduces the risk that the subsidy amount may exceed the revenue collected from the cross-subsidizers, thus entailing a deficit.

### What Design Will Be most Effective in the Context?

**After selecting the policy objective, the target service(s) and/or population(s), and the means of funding, policy makers can turn their attention to the design of the subsidy itself.** As they do so, it is important to keep in mind the characteristics of well-designed subsidies: they should be well targeted, transparent, and nondistortionary.

**Our goal is not to present a comprehensive catalogue of subsidy design options.** Instead, we highlight three key strategies that have been proven, when well designed and implemented, to improve the efficacy and efficiency of subsidies: (i) the use of alternative approaches to improve targeting, (ii) making subsidies conditional on performance, and (iii) decoupling subsidies from service charges.

**Common methods of targeting WSS subsidies have generally been ineffective at directing scarce public resources toward their intended beneficiaries—the poor.** Yet there are three main approaches that may be used to better target WSS subsidies to the poor. First, policy makers can subsidize poor households' connection/access to WSS services in contexts where connection rates are low, where the poor in particular lack WSS household connections, and where sufficient infrastructure exists to service their neighborhoods. Second, they can better identify poor households requiring consumption subsidies through administrative selection, either using means-testing or readily observable factors strongly correlated with poverty (e.g., location). Third, they



can provide a range of types of WSS services that are most likely to reach everyone. The appropriate policy mix of these three pro-poor instruments will depend on local conditions. We should stress that although some improved targeting mechanisms may entail additional administrative costs, these can be significantly reduced through the use of innovative technology or cost sharing with other government programs.

**The conditioning of subsidies on well-crafted performance targets that are tangible, transparent, verifiable, and under the service provider's control can avoid inefficiencies associated with traditional supply-side subsidies.** Performance- and results-based contracts can be used in both public-public or public-private contracts to improve performance by linking subsidies not to individual expenditures, but rather to the timely and quality delivery of verifiable outputs or results (Mumssen et al. 2018). Key performance indicators, developed by the government or regulator, may include standards for service continuity and water pressure; nonrevenue water reduction; meter installation or service repair schedules; the volume of waste treated or reused; or for addressing consumer complaints.

**The decoupling of subsidies from WSS access and consumption charges through the provision of cash transfers, whether conditional or unconditional, has the potential to improve the efficiency, transparency, and targeting of WSS subsidies.** By avoiding the use of the service provider as an intermediary, cash transfers avoid the distortionary impacts on service providers previously discussed. The service provider remains accountable to meeting the needs of the customer, since it cannot depend upon direct transfers from the government to make up any funding

gaps. Furthermore, by decoupling subsidies from the service itself, the targeting of WSS subsidies is improved in contexts where a significant proportion of poor households lack access, since poor households that either live outside the provider's service area or are unable to connect can now benefit from the subsidy.

### **Message 3: To Successfully Reform Subsidies, a Subsidy Reform Package of Four Complementary Elements (in Addition to Improved Subsidy Design) Is Required.**

Subsidies do not function in isolation: any well-designed subsidy requires a number of additional elements to facilitate its acceptance and improve its efficacy in both advancing equitable access to affordable WSS services and harnessing positive externalities. In chapter 4, we provide guidance to policy makers on each of the four crucial elements of an effective subsidy reform package: complementary policy mechanisms, the building of supportive political coalitions, a communications strategy, and an exit strategy (where applicable).

### **Complementary Policy Mechanisms**

**Various policy mechanisms may be used to complement subsidies, with the aim of improving WSS services' access and affordability for the poorest segments of the population.** As noted in the World Bank's Utility Turnaround Framework, any sector turnaround should begin with making service providers' current operations and capital investments more efficient (Soppe, Janson, and Piantini 2018), therefore reducing the amount of subsidy required. A number of additional mechanisms can be used to reduce the amount of subsidy required to advance poor households' access to affordable WSS services.



For example, the costs of providing services may be reduced by involving community members in construction and management processes. Innovative technologies and approaches can support service providers in more effectively targeting subsidies to the poor and in overcoming financial, legal, or administrative barriers to access. In some cases where large benefits to particular user groups have become entrenched, the use of social safety nets may be required to ease the burden of lost benefits as subsidies are reformed.

### Political Coalitions to Support Reform

**To design feasible reforms and implementation plans, it is crucial to develop a strategy to both foster supportive political coalitions and mitigate the impact of opponents.** Broad and diffused interests tend not to be well organized, whereas concentrated interest groups can mobilize more readily and effectively to advance their narrower causes. It is therefore important for policy makers to understand how interest groups might support or oppose government efforts toward subsidy reform.<sup>2</sup> This will depend on the level of organization and political power of the groups concerned, as well as the ability of reformers to choose political allies and to weaken or even win over the political influence of groups that could potentially block a proposed reform's implementation.

### A Communications Strategy

**Communication is a necessary investment that should be planned and implemented by professionals before, during, and after a reform's implementation.** Public reactions to subsidy reform programs are highly contextual and dynamic. Reforms are successful only where an informed and supportive public

understands the rationale for reform. By assessing risks and opportunities early, informing the public in accessible and engaging ways, and helping people understand the benefits of subsidy reform and how these link to their own lives, policy makers can encourage public understanding—and, ultimately, goodwill.

### An Exit Strategy (Where Needed)

**An exit strategy is an important component of a subsidy reform package when the relevant subsidy is intended to be short term.** When proposing a new subsidy, policy makers should consider whether the conditions demanding the subsidy are permanent or likely to dissipate in the near future. If the conditions are temporary in nature, policy makers should develop a credible commitment mechanism that helps the government exit when the time is right. A reform likely to adversely impact the poor or an otherwise politically salient group might be designed in such a way that subsidies are removed gradually, in phases, over time. Some of the reform's phases might include additional elements such as complementary sector or legal reforms, policies to temporarily compensate users for the loss of benefits, and communication strategies, among others. The choice and timing of these elements should be politically informed.

The SDGs for water supply and sanitation set out a transformational vision for the future whose achievement will require substantial financial resources. Given the scarcity of public resources globally, it is more important than ever to ensure that those public resources already allocated to the sector are used efficiently. Well-designed subsidies



effectively advance the goal of equitable access to affordable, sustainable, and quality WSS services, while maximizing the targeting of the poor, promoting transparency, and minimizing distortion. As the financial sustainability of service providers improves, these public resources can be leveraged to attract complementary private resources to the sector. By moving beyond the design flaws of the past, subsidies are a viable means of ensuring access to sustainable and safely managed water supply and sanitation services for all.

## Notes

1. The SDGs focus on improving access to “safely managed” water and sanitation services. To fit this definition, improved water services must be accessible on household premises, available as needed, and free of contamination. In the case of sanitation services, this would imply that toilets separate their users from fecal content, which is then disposed of in such a way as to avoid the contamination of soil or water resources.
2. This estimate represents the capital expenditure required for infrastructure expansion, and does not include the capital and operational expenditures required to sustain existing services over that time period.
3. Although hygiene is a crucial component of what is often referred to as the water supply, sanitation, and hygiene (WASH) sector, our paper focuses on subsidies supporting the delivery of *services*, and thus on water and sanitation, to the exclusion of hygiene.
4. The economic subsidy of a utility is calculated as the difference between revenue and the economic cost of service. The economic cost of service encompasses all the economic resources deployed for service provision, including the cost of not only O&M but also all capital (depreciation plus return on capital), as well as costs imposed by operational inefficiencies. The methodology used to estimate the economic cost of service provision for each utility in the IBNET database is discussed in detail in appendix B.
5. China and India were notably excluded due to insufficient data and the fact that their singularity makes estimates based on extrapolation impossible.
6. As discussed in chapter 2, box 2.4, we estimate (using analysis by Fay et al. 2019) that global capital expenditure on WSS

infrastructure investment is approximately 0.4 percent of global GDP per year. This figure includes capital expenditure for infrastructure expansion—not included in our estimation—and some fraction of expenditure on infrastructure replacement—which our model captures in full. Therefore, an estimate of the full magnitude of global subsidies in the sector would require adjusting our estimate upward by some undetermined portion of this 0.4 percent of global GDP.

7. Building on the methods of Komives et al. (2005) and Angel-Urdinola and Wodon (2011), we provide new estimates of the performance of piped-water consumption subsidies in terms of pro-poor targeting across 10 countries: Ethiopia, Mali, Niger, Nigeria, Uganda, El Salvador, Jamaica, Panama, Bangladesh, and Vietnam.
8. Error of inclusion is measured by the percentage of all beneficiary households that are rich; error of exclusion is measured by the percentage of poor households that do not get a subsidy. Poor households are defined as belonging to the first four deciles of the expenditure (or income) distribution in each country.
9. Note that not all interest groups will be politically organized. Moreover, within governments themselves, officials may hold conflicting positions regarding subsidy policy.

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