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Equitable Access to Basic Utilities: Public versus Private Provision and Beyond

FROM THE EDITORS

Poverty in Focus is a regular publication of the **International Policy Centre for Inclusive Growth** (IPC-IG). Its purpose is to present the results of research on poverty and inequality in the developing world. Support is provided by the Swedish International Development Cooperation Agency (Sida).

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* We express our sincere condolences on the recent passing of Professor Peter Townsend, who was a member of the Advisory Board.

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IPC-IG is a joint project between the United Nations Development Programme and Brazil to promote South-South Cooperation on applied poverty research. It specialises in analysing poverty and inequality and offering researchbased policy recommendations on how to reduce them. IPC-IG is directly linked to the Poverty Group of the Bureau for Development Policy, UNDP and the Government of Brazil.

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Rights and Permissions – All rights reserved. The text and data in this publication may be reproduced as long as written permission is obtained from IPC-IG and the source is cited. Reproductions for commercial purposes are forbidden. **P** roviding universal access to basic utilities is justified on human rights grounds and also because of the positive externalities involved. Adequate provision of water, sanitation and electricity contributes to the achievement of the other Millennium Development Goals (MDGs). Access to these services, however, is still unequal in the developing world. Services do not adequately reach the poor. This *Poverty in Focus* brings together a mix of policy issues and some country experiences.

Degol Hailu and Raquel Tsukada provide an overview of the broad challenges involved in making access to basic services equitable and universal.

Hulya Dagdeviren and Simon A. Robertson point out the difficulties of expanding utility networks in slum areas, which include technical barriers and a lack of land and housing tenure. They make a case for stronger public interventions.

Kate Bayliss argues that the allocation of demand and investment risks during privatisation in Sub-Sahara Africa is distorted. This is because the risks are borne by governments and end users instead of the private contractors.

David Hall and Emanuele Lobina provide a critique of both the investment potential of the private sector and cost recovery schemes in the provision of sanitation services.

Ashley C. Brown discusses the externalities involved in supplying basic infrastructure to those who can least afford it. He argues that, contrary to established views, cross-subsidy schemes actually benefit all users and not only the targeted population.

Alison Post emphasises the benefits of water metering but highlights problems of implementation and poor design in Argentina.

Degol Hailu, Rafael Osorio and Raquel Tsukada examine the reasons for the privatisation and then renationalisation of the water supply in urban Bolivia.

Andre Rossi de Oliveira explores water privatisation in Brazil. He argues that the expansion of coverage has stemmed mainly from high levels of investment by private operators.

Suani Teixeira Coelho, Patricia Guardabassi, Beatriz A. Lora and José Goldemberg note that geographically isolated communities without access to electricity grids, such as those in the Amazon, can be served by renewable energy sources.

Luc Savard, Dorothée Boccanfuso and Antonio Estache present the findings of a general equilibrium model that assesses the impact of electricity price changes on the poor in Mali and Senegal.

Joana Costa, Degol Hailu, Elydia Silva and Raquel Tsukada empirically show that water provision reduces the total work burden on women in rural Ghana.

Nitish Jha conducts a sociological analysis of access to water and sanitation in India, emphasising the challenges encountered in community-based schemes.

Julia Kercher explains why and how a human rights framework must guide the design and implementation of private utility provision.

We hope that this collection of articles will contribute to the discussion of how to provide vital infrastructure services more equitably.

This *Poverty in Focus* is the result of an International Workshop on Equitable Access to Basic Services held on 5 December 2008 in São Paulo, Brazil. IPC-IG and the David Rockefeller Centre for Latin American Studies at Harvard University (DRCLAS) jointly organised the workshop. We gratefully acknowledge DRCLAS' contribution.

Equitable Access to Basic Utilities: An Overview

The Millennium Development

Goal (MDG) for water is to halve the proportion of people without access to safe drinking water by 2015. The urgency of meeting this target is reflected in the UNDP's Human Development Report 2006, which warns that more than 1 billion people globally are living in extreme water deprivation. Over 40 per cent of the world's population also lack access to safe and clean sanitation services. The report also notes that "not having access to water and sanitation is a polite euphemism for a form of deprivation that threatens life, destroys opportunity and undermines human dignity" (UNDP, 2006, p. 5).

Similarly, about 1.6 billion people worldwide do not have access to electricity. Of these, 706 million are in South Asia and 554 million in Africa, despite large mining and industrial conglomerates enjoying cheap access to an enormous supply of electricity (see McDonald, 2009). The figures indicate how inequitable is access to basic utilities, both across and within countries.

Communities with the least access to utility infrastructure often live in slum dwellings and remote areas. Rapid urbanisation and informal settlements pose particular problems for water provision. As Hulya Dagdeviren and Simon Robertson report, the number of residential water connections has fallen in most unplanned urban settlements in the past decade. The authors also highlight the obstacles that large-scale private providers cannot resolve without imposing exorbitant tariffs to cover costs. Those obstacles are two-fold in origin. First, technical difficulties such as the topographical location of informal settlements pose physical challenges. Second, lack of tenure for land and housing creates uncertainties. In these

cases, market-oriented policies are not appropriate means of providing access to water in the slums of the developing world. They note that "there are serious doubts about the potential gains of both privatised network utilities (where planning and development challenges persist) and small-scale service providers (because of pricing and quality issues). Ultimately, these concerns can be resolved by investing in the expansion of the public water and sanitation network."

While access to basic services should be a human right, it is also a public good with numerous positive externalities. The impact on the other MDGs, for instance, is clear. Making water, sanitation and electricity available empowers women by freeing them from the burden and dangers of carrying water, often over long distances, and allows them more time to attend school. As Joana Costa et al. show, the provision of utilities in rural Ghana reduces the burden of unpaid work. In addition, for women already engaged in remunerated activities, work time seems to have increased, which in turn has a gender-empowering impact. They stress that "additional public policies are needed to achieve that goal [reducing work burden], especially policies related to educational training and childcare facilities".

The policy challenge that developing countries face is to increase the poor's access to utilities while simultaneously reaping the benefits of the positive externalities. For the past two decades, policy has focused mainly on private investment and foreign capital. Just as the "market failure" argument gave rise to public ownership of certain enterprises, so the "government failure" reasoning paved the way for privatisation. The latter was supported by developments in economics, which emphasised public by Degol Hailu and Raquel Tsukada International Policy Centre for Inclusive Growth

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A fiscal case was also made: gains from the sale of enterprises, savings from subsidising unprofitable companies and new tax revenues from the privatised firms would improve government budgets. Additionally, privatisation was seen as a permanent shift to a market economy—what the World Bank called "lock-in" in the 1990s. Unlike, say, changes in interest rates or exchange rates, which can be reversed overnight, privatisation was seen as a commitment to reform, one that sent the right signals to investors.

The above arguments are well captured in a World Bank (2004) research report, which stated that:

"In a globalised economy, poorly performing state-owned infrastructure providers were increasingly seen as constraining economic growth and undermining international competitiveness. Developing countries simply could not continue to absorb the fiscal burden of these enterprises. Around the world, it became evident to policymakers that the problems of public enterprises could be solved only by implementing radical structural changes and realigning the roles of the government and the private sector" (p. 35).

Under utility privatisation and commercialisation schemes, governments usually retain ownership of assets while inviting private contractors to run the operations and provide management services. While there are plenty of cases in which publicly managed utilities are marked by poor maintenance, wastage and uncollected bills, social welfare goals such as increasing the poor's access to basic services can be organised successfully by public initiatives.

As Vickers and Yarrow (1991, pp. 113–114) note: "public ownership may have the advantage if externalities are larger and the pursuit of personal agendas is more constrained, for example by a well-functioning political system." For instance, large private enterprises can be highly inefficient, leading to a concentration of market structures. This is mainly related to a lack of competing firms and scarce capital. Such outcomes are confirmed by private investors' interest in sectors with less competition, such as utilities.

The debate on private versus public provision of utilities is complex, but the guiding principle for the kind of provision preferred must be the *initial level of access* to water, sanitation and electricity. Where access is already high in developed and middle-income countries, privatisation may yield productive and dynamic efficiencies.

Private providers have incentives to improve overall performance through new techniques and novel management processes. Where access to utilities is low and the focus is on increasing coverage of the poor in low-income countries and neighbourhoods, public provision makes sense. This is because of problems associated with affordability, how much cost recovery can be pushed, and regulatory capacity. The persistent challenge, however, is financing investment outlays. The options are reducing system losses such as water leakages; improved billing; domestic resource mobilisation; and external financing (both donor and private bond/equity financing).

Historical experiences are particularly enlightening. Privatisation had been relatively successful in the United Kingdom and the United States, because these countries embarked on private utility provision after achieving 100 per cent access to water and electricity by the 1980s. As David Hall and Emanuele Lobina observe, "the sewerage systems in Europe, the United States and Japan were not developed through full cost recovery from users; they were paid for by distributing the costs among the public, using taxation and cross-subsidy."

The overall evidence is that privatisation of utilities is not a solution where initial access is low and the objective is the coverage of the poor. This point is made in the article on Bolivia by Degol Hailu et al.

The private concessionaire and the government agreed on coverage targets to provide universal access in the city of La Paz and 82 per cent

coverage in El Alto by 2001. The poor's access to water connections increased, but the private company could not meet the targets. Inevitably, the limits of cost recovery and profitability had been reached. The tariff increases needed to connect the additional poor consumers were so high that they sparked public outrage.

Similarly, as Alison Post reveals, private concessionaires in Argentina entered into a contract with the government to increase water metering up to 100 per cent. Fees were imposed for the installation of the meters and tariffs were increased. The result was intense public protest. In Mali and Senegal the poor have not benefited from privatisation, simply because they were not connected to the grid in the first place. The tariff hikes after privatisation affected them indirectly as a result of economy-wide effects, a point stressed by Luc Savard et al. The concessions in Argentina, Bolivia, Mali and Senegal have all been terminated.

Contract cancellations and renationalisation are often the result of a policy that transfers risk to governments and end users. As Kate Bayliss argues, the focus in Sub-Saharan Africa has been to transfer investment, demand and currency risks in order to attract private investors. She argues that "in industrialised economies, the transfer of risk to the private sector is considered essential if efficiency gains from privatisation of the delivery of basic services are to reach end users. In SSA [Sub-Saharan Africa], however, the emphasis is on reducing the risks faced by the private sector in order to encourage private investment." The upshot is always exorbitant tariffs and neglected infrastructure. This contrasts with the standard practice in developed countries, where risk is usually transferred to private providers at the time of privatisation.

One reason why private participation in the water sector has been successful in Brazil seems to be the transfer of investment risk. Contracts with the various government entities at the state and municipal levels clearly outlined the investment obligations of the private operators, particularly in low-income areas.

As Andre Rossi de Oliveira points out, the private operators had invested about U\$500 million by 2004. He underscores that "the positive outcomes in Brazil are related to contract design... Most contracts stressed investment obligations, something relatively easy to monitor."

The limitations of public and private provision to increase the poor's access to utilities have enhanced the role of community and small-scale water providers. The absence of economies of scale, however, means that water prices are typically high. Maintenance facilities are inadequate and there is no proper accountability for service interruption.

The quality of small-scale providers' supply is not always assured. Moreover, it is not easy to regulate community and small-scale providers, and neither is it possible to engage in cross-subsidy. In India, as Nitish Jha argues, communitybased water provision schemes are often poorly designed and implemented. Because of a lack of social cohesion, vulnerable groups are often excluded from decision-making processes.

What are the lessons? The debate should move away from a narrow focus on public versus private to analysis of the constraints on public intervention, possible improvements, and the potential for alternative provision under a poverty reduction framework. Three issues seem to matter.

First, where initial utility coverage is low, subsidy and cross-subsidy schemes are the best alternative. As Ashley Brown reminds us, another externality comes from connecting the poor to infrastructure networks though cross-subsidies.

All consumers benefit if the cross-subsidy is designed in such a way that the poor cover the variable cost and make some contribution to fixed costs. Income-based targeting schemes, for instance, with a mix of some consumption-, ageand geography-based targeting of beneficiaries, can be sustainable.

Second, decentralised and locally based utility provision has been promising in the electricity sector. Geographically isolated communities, such as those in and around the Amazon, have benefited from locally managed electricity generating facilities. The difficulty has been expanding the traditional grid system in the densely forested areas. As Suani Teixeira et al. report, following the ambitious Light for Everyone programme in Brazil, local renewable energy-generating services using photovoltaic, small-scale hydropower and biomass sources have become viable solutions.

Third, where initial access to utilities is high and privatisation is considered, better contract design is needed to take account of political and social considerations. Risk must be transferred to private providers, not to governments and consumers. As Julia Kercher explains a human rights framework must guide the design and implementation of private provision based on the principles of availability, accessibility, acceptability and its quality.

Finally, utility provision can only succeed if effective regulatory and intuitional capacities are put in place to enforce contracts and ensure the efficiency of cross-subsidy mechanisms. Regulation is most effective when laws and institutions are stronger and are free of political influence (see Estache et al., 2003). Regulation is also country-specific, while technical skills, legal frameworks and dissemination of information to the wider public are essential.

Estache, A., J. L. Guasch and L. Trujillo (2003). "Price Caps, Efficiency Payoffs, and Infrastructure Contract Renegotiation in Latin America", *Policy Research Working Paper* 3129. World Bank (Washington, D.C.).

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Vickers, J. and G. Yarrow (1991). "Economic Perspectives on Privatization", *Journal of Economic Perspectives* 5 (2), pp. 111–132.

World Bank (2004). *Reforming Infrastructure: Privatization, Regulation, and Competition,* World Bank (Washington, D.C.) and Oxford University Press. While there are plenty of cases in which publicly managed utilities are marked by poor maintenance, wastage and uncollected bills, social welfare goals such as increasing the poor's access to basic services can be organised successfully by public initiatives. by Hulya Dagdeviren and Simon A. Robertson, University of Hertfordshire

The increase in urbanisation and its disproportionate concentration in informal settlements pose problems for the expansion of water and sanitation services.

Forced evictions are still used extensively, especially in Africa and Asia, where over 14 million people were evicted between 1998 and 2006.

Access to Water in the Slums of the Developing World

The problem of inadequate access to safe water is nowhere more pressing than in the slums of the developing world. Most countries in which a large proportion of the urban population live in squatter settlements are unlikely to meet the water-related Millennium Development Goals (MDGs). This article argues that market-oriented policies make little, if any, difference in those circumstances.

Trends in Slum Development

About a third of the world's urban population lived in slums in 1990, and the total number of slum dwellers might rise to 1.5 billion by 2020. Slum growth has been particularly marked in Africa where, on average, more than 70 per cent of the urban population live in informal settlement areas.

Table 1

Access to Safe Water in Countries with the Largest Slum Population (%)

	Slum population to urban population ratio		Urban population without access to safe drinking water		Urban households without residential piped water supply		
Asian countries	1990	2001	1990	2004	1990	2004	
Afghanistan	99	99	90	37	94	85	
Nepal	97	92	5	4	59	48	
Bangladesh	87	85	17	18	72	76	
Pakistan	79	74	5	4	40	51	
India	61	56	11	5	47	53	
Sub-Saharan African countries							
Ethiopia	99	99	19	19	98	68	
Chad	99	99	59	59	90	90	
Tanzania	99	92	15	15	67	57	
Niger	96	96	38	20	81	65	
Mozambique	95	94	17	28	67	82	
Malawi	95	91	10	2	56	71	
Mali	94	93	50	22	92	71	
Uganda	94	93	20	13	76	93	
Madagascar	91	93	20	23	72	84	
Sudan	86	86	15	22	25	54	

Source: UN-Habitat (2007).

Public policies towards slums are highly politicised. They are influenced by factors such as the strength of non-governmental organisations (NGOs) and other social groups, as well as by the politics of slum management. So far, governments have dealt with squatter settlements and the associated problems in three ways:

- clearing slums through forced or legal evictions;
- applying public policies that range from benign neglect to occasional interventions; and
- (iii) regularising settlement conditions.

Forced evictions are still used extensively, especially in Africa and Asia, where over 14 million people were evicted between 1998 and 2006 (UN-Habitat, 2007).

Access to Water in the Slums of the Developing World

The increase in urbanisation and its disproportionate concentration in informal settlements pose problems for the expansion of water and sanitation services. Table 1 provides data on access to safe water in the countries with the largest slum populations in Asia and sub-Saharan Africa, where conditions are particularly drastic.

UN-Habitat's original database, which includes a larger number of countries, shows that urban access to improved water facilities declined in more than a third of African countries during the period 1990–2004. In many cities, there is a notably low rate of access to water through private household connections from network infrastructure. More than two-thirds of the urban population in Africa depend on water from non-residential connections. In half of the African countries, the share of residential water connections either declined or was static. Lack of access to safe water in general, and lack of residential supply in particular, is positively correlated to the proportion of the population living in unplanned settlement areas. An important trend in Africa, and to some extent in Asia, is that improvements in access to safe drinking water were frequently accompanied by a decline in residential connections during the period 1990–2004. In other words, more people now rely on public standpipes, boreholes, "protected" wells and springs.

Challenges for Public Utilities in Improving Access to Safe Water in the Slums

1. Technical difficulties of infrastructure extension: The supply problems facing public utilities are exacerbated by a number of barriers that make it impractical to build the network in some slum areas. The most important are:

- The topographical location of settlements in previously unused land such as hills, ravines, flood plains and desert land.
- The physical conditions of the settlements, which are marked by a random and haphazard development pattern and overcrowding.
- The quality of the materials used to build housing units, such as thickened mud, plant leaves and stems, tin and plaster boards, which are unsuitable for permanent water pipes and taps.

2. Lack of tenure for land or housing: the result of the invasion of public or private land, can pose a significant obstacle to the provision of water services. This is because provision by utilities and the extension of water services by local authorities often depend on the existence of legal tenure for property.

These two issues are challenging for public policy. Overcoming the difficulties associated with the settlement conditions outlined in (1) requires relocation of slum dwellers to more suitable areas and enforcement of housing standards. Granting full tenure in order to tackle the problems associated with the insecurity of tenure outlined in (2) may raise property prices and encourage the development of new slum areas. Dwellers may sell their plots and squat elsewhere. The policy may benefit the non-poor, especially property merchants. Opposition to redistributive policies, involving relocation and/or the formalisation of slums, can be testing for governments.

Can Privatisation of Utilities Provide an Answer?

Thus far, policies geared to improving access to water have emphasised the importance of market-oriented solutions (World Bank, 2004). The shift towards private or commercialised services has meant that direct public investment in the water sector has declined. But the resulting gap has not been offset by private sector investments (Estache, 2006). Where public utilities have been privatised there have been numerous problems related to cost recovery, affordability and regulation of services. Private service providers have not performed better than public operators. Nonetheless, though the outcomes have been disappointing, the drive for privatisation continues with renewed emphasis following a short period of critical reflection.

The potential for privatisation is even more limited in countries where a significant proportion of the urban population live in squatter settlements. In these settlements, the multifaceted nature of the problems (such as tenure, technical difficulties in building water infrastructure, widespread poverty, high population turnover) seriously constrain the capacity of privatised utilities.

Types of Informal Water Services in the Slums and Their Limitations

In the middle- and upper middle-income countries, slums are often supplied from the public network. In low-income economies, however, the provision of water in informal settlements is dominated by community-managed water schemes and small-scale private suppliers.

Community managed water schemes:

Typically, these are facilitated by NGOs that help the community to build a shared water point such as water kiosk, which is then managed and run by people employed by the community's members. These small-scale projects are crucial to the provision of water in the absence of other alternatives, but they are not problem-free. Water charges are higher and cross-subsidisation is not feasible because the projects do not benefit from economies of scale. Their long-term maintenance can be difficult because of a lack of social cohesion, financial resources, and technical and management capacity.

Small-scale private water suppliers: Some

50 per cent of the urban population in Africa obtain water from small suppliers. These include water tankers, street vendors and other water re-sellers (that is, households with a piped supply or wells in their yards selling water to those without access). Their services are problematic for three reasons. First, their prices are much higher, partly because they lack economies of scale. Second, the quality of the water is highly dependent on the quality of sanitation services in the locale. Finally, where regulation is absent (which is often typical), prices may be subject to collusion. While it is desirable to regulate small, private suppliers, it is intrinsically difficult and costly to do so because of their size, variety and number.

Policy Recommendations

There are three fundamental reasons why governments should play a more active role in the provision of water and sanitation. First, universal access to safe drinking water has positive externalities in the form of lower rates of illness and mortality, an associated increase in productivity, and reduced medical costs. The returns from universal water coverage can be significant, varying from US\$4 for each dollar invested in sub-Saharan Africa to US\$17 in Latin America (Table 2). Second, privatisation is not an option in poor and low-income areas where services are not profitable.

Table 2 Cost-Benefit Ratio of Achieving Universal Water Coverage				
Sub-Saharan Africa	3.9			
Arab States	5.9			
East Asia and Pacific	6.6			
South Asia	3.9			
Latin America	17.2			

Source: Hutton et al. (2006).

Finally, as outlined above, there are specific failures associated with non-state, small-scale supply systems.

In short, solutions to the lack of safe water services in the slums of the developing world lie in the following approaches:

 Coordinated public sector interventions: Improving water services depends heavily on upgrading slum conditions more generally. Urban planning and tenure issues require multifaceted interventions within the remit of governments.

> by Kate Bayliss, School of Oriental and African Studies, University of London

In industrialised economies, the transfer of risk to the private sector is considered essential if efficiency gains from privatisation of the delivery of basic services are to reach end users. In SSA, however, the emphasis is on reducing That requires thinking outside the "water and sanitation box" (IIED, 2003).

The expansion of public network utility: Long-term policy should be devised in light of the costs and benefits of alternative systems of provision. There are serious doubts about the potential gains of both privatised network utilities (where planning and development challenges persist) and small-scale service providers (because of pricing and quality issues). Ultimately, these concerns can be resolved by investing in the expansion of the public water and sanitation network. ■ Estache, A. (2006). 'PPI Partnerships vs. PPI divorces in LDCs', *Review of Industrial Organization* 29, 3–26.

Hutton, G., L. Haller and J. Bartram (2006). "Economic and Health Effects of Increasing Coverage of Low Cost Water and Sanitation Interventions", HDR Office Occasional Paper. New York, UNDP.

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Private Investment in African Infrastructure: Who Bears the Risk?

Rates of access to water and electricity in Sub-Saharan Africa (SSA) remain below those of other developing regions. More than 42 per cent of all Africans—some 300 million people lack access to an improved water supply and 64 per cent—477 million people do not have adequate sanitation. Only one in four Africans has access to electricity, and in some countries access

was for telecommunications. Less than 1 per cent was for water and sewerage.

Donors and country governments have increased their efforts to attract private investment into infrastructure in SSA. Central to these policies and programmes is the reduction of risk for the private sector.

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