Meeting the Financing Challenge for Water Supply and Sanitation

Incentives to promote reforms, leverage resources and improve targeting

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This Summary Report has been prepared from the report “Meeting the Financing Challenge for Water Supply and Sanitation: Incentives to Promote Reforms, Leverage Resources, and Improve Targeting” published by The World Bank and Water and Sanitation Program, 2004. The main report provides a full discussion of these issues, along with numerous examples drawn from global experience.
ABSTRACT

Achieving the water supply and sanitation targets enshrined in the Millennium Development Goals will require a dramatic increase in funding. But mobilizing additional investment is only part of the solution. Developing financing mechanisms that make the most of these resources is equally important.

These financing mechanisms must address three problems: the prevalence of institutions and financing policies that result in ineffective and inefficient use of resources; the inability of available public resources to meet the costs of sustained coverage; and the fact that existing services, even if broadened, often fail to benefit the poor.

The solution to the first problem lies in adopting mechanisms that promote sector reforms. These include decentralization-linked fiscal mechanisms, special fund mechanisms, and programmatic approaches. The solution to the second problem requires the development of methods that leverage additional resources. These may focus on attracting private sector participation, promoting local investment through the development of local credit markets, or enhancing household community resources. Finally, the solution to the third problem calls for the use of appropriate pro-poor subsidies.

Effective subsidy mechanisms include subsidies for access to services as well as demand promotion, improved methods for using cross-subsidies (universal funds, for example, or auctions), and output-based aid programs that provide incentive-linked subsidies for access, consumption, or pro-poor reforms.

The initial focus in any financing approach needs to be on promoting reforms essential for improving sector performance. But the choice of specific mechanisms will depend on factors defining both the macro and sector contexts.
Meeting the Financing Challenge for Water Supply and Sanitation

Despite the advances of the past two decades, 1.2 billion people still lack access to an adequate water supply, and 2.5 billion people have inadequate sanitation facilities. Halving these numbers by 2015—a target enshrined in the Millennium Development Goals—will require a dramatic increase in funding for the sector. But mobilizing additional investment is only part of the solution.

Developing financing mechanisms that make the most of these resources is equally important. Such mechanisms should support the creation of appropriate institutional arrangements and capacity, while carefully targeting expenditures towards intended beneficiaries. They should promote sector reform, thereby attracting community and market-linked resources to the sector. Finally, they should ensure the effective, efficient and transparent use of resources.

This review explores ways of responding to this challenge. Its main objectives are to develop a framework for reviewing financing mechanisms for water supply and sanitation, to provide a global review of such mechanisms and to identify directions for further research. The framework focuses on potential responses to three key problems:

- The prevalence of institutions and financing policies that result in ineffective and inefficient use of existing resources.
- Available public resources are often inadequate to meet the costs of sustained enhanced coverage.
- The poor often do not benefit from increased coverage and existing WSS services.

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The fact that existing services, even if broadened, often fail to benefit the poor.

**Promoting Sector Reforms**

To improve the efficiency of resource use and ensure long-term sustainability of investments, financing mechanisms need to provide incentives and support for key sector reforms, including decentralization of service delivery, community-driven development, and possibly private participation.

Three sets of financing mechanisms to support this reform agenda include decentralization-linked fiscal mechanisms, such as intergovernmental transfers; special fund mechanisms, often developed independent of regular government financing arrangements; and mechanisms structured within programmatic approaches, including a variety of program-based financing arrangements and loan instruments.

All three options can improve the finances and capacities of governments, as well as enable them to develop more demand-responsive approaches to service delivery. But special funds or programmatic approaches may be required in order to promote critical institutional reforms.

**Financing Mechanisms to Leverage Resources**

Financing mechanisms also need to respond to the inadequacy of public funding by leveraging private and community resources. In addition to narrowing the resource gap in water supply and sanitation, such measures can enhance the sustainability of investments through market rigor and greater community control.

Three sets of mechanisms that can fill these roles: those attracting private sector participation for investments and efficiency improvements, those promoting local investments by improving access to domestic credit markets for local...
Addressing the financing challenge requires a sequence of activities starting with progress on sector reforms. Such sequencing and tradeoffs in the use of different mechanisms needs to respond to specific country and region contexts.

Governments or service providers, and those enhancing community contributions for water and sanitation services. There are commonalities across the three approaches, such as the need for an appropriate sector framework and certain upfront reforms.

**Subsidies to Enhance Access for the Poor**

To ensure that the emerging reform framework also benefits the poor, subsidy mechanisms must be carefully designed. Traditional subsidies often suffer from design flaws that undermine their ability to enhance access for the poor. But recent approaches focus on improving targeting while addressing other principles related to appropriate incentives and simplicity in design. Three such approaches: using access subsidies for water or sanitation, improving the cross-subsidies used throughout the world, and providing incentive-linked subsidies within the output-based aid framework. For each option, it is important to come up with context-specific choices and designs.

**Issues, Tradeoffs and Directions for Future Research**

Some critical and cross-cutting issues affect the use of such mechanisms in the water supply and sanitation sector. First is the difficulty of achieving fiscal viability at countrywide scale. Second is the need to prepare the sector to compete within a multisectoral framework. Third are the constraints on financing non-traditional activities, such as institutional reforms. Fourth is the weakness of sector’s monitoring and information systems. Fifth are the need for appropriate and flexible standards and the importance of context-sensitive design.

What, then, should be the choice, sequencing, and tradeoffs in the use of financing mechanisms in different contexts? While the initial focus in any financing approach needs to be on promoting reforms essential for improving sector performance, the use of specific mechanisms will depend on factors defining both the macro context and the sector context. Some of these considerations include the degree of government commitment, the level of financial sector development, the capacity of local authorities and service providers, and the extent of overall liberalization in the infrastructure sector.

Further research is needed in three key areas. The first is the analysis of choices in local contexts. Useful research on this would show how various factors influenced the decisionmaking process and the impact on sector reforms, leveraging resources, and targeting subsidies. The second is to explore fiscal viability at scale. This requires a better understanding of the link between inputs and outputs and doing more to assess and measure outcomes—areas where the sector has traditionally been weak. The third is developing and documenting innovative financing mechanisms.
Financing Mechanisms to Promote WSS Sector Reforms

As the importance of water supply and sanitation services gains broader recognition, public funding for the sector may increase. But increased funding will not have the desired impact unless it occurs within the context of critical sector reforms, including those for decentralization of service delivery, community-driven development, and possibly private participation. Based on recent experience, three types of financing mechanisms can support this reform agenda: decentralization-linked fiscal mechanisms, special funds, and programmatic approaches. While all three approaches can improve the performance of the water supply and sanitation sector, each mechanism also raises issues that may limit its effectiveness in particular contexts.

Defining the Reform Agenda

Principles of reform

Experience over the last decade suggests an emerging global consensus on the key principles that should guide institutional and financial reforms in the water supply and sanitation sector. On the institutional side, these principles include:

- Decentralizing service responsibility to the lowest appropriate levels of government.
- Adopting a community-driven and demand-responsive approach.
- Creating financially viable autonomous utilities with a commercial orientation, backed by appropriate governance and regulation.

- Promoting appropriate private sector participation.
- Restructuring sector institutions to unbundle such functions as policymaking, regulation, and service delivery.

On the financial side, key reform principles include recognizing water as both an economic and a social merit good, promoting financial autonomy and sustainability for service providers, and linking funding to outputs and outcomes. Together, these principles suggest the importance of increasing cost recovery for services while ensuring access to basic services for the poor. They also suggest the need to build capacity in such areas as regulation, financial management, and monitoring and evaluation.

Approaches to reform

Based on these broad principles, three areas of reform are particularly important:

- Decentralized service delivery. The goal of decentralization is to introduce efficiency and effectiveness while increasing accountability. This process generally gives local governments a lead oversight role while allowing responsibility for service delivery to be delegated to community organizations.
- Community-driven development. The second important area of reform is having communities do more in planning, managing, and delivering services. This change in practice requires a rethinking of the
Inter-governmental transfers are often used to promote reforms and support local capacity building.

government’s role, as well as capacity-building for community organizations.

- Private sector participation. This third area of reform encompasses both private sector management of commercial utilities and service delivery by small independent providers. The idea here is to increase efficiency and coverage by changing the incentives to focus directly on consumers and improved services.

Implementing reform in different contexts

The implementation of these approaches can vary across settings and subsectors. In rural water supply, for example, the focus has been on creating institutional structures that allow communities to drive investment decisions through a demand-responsive approach. In cities, where scale economies come into play, the emphasis in water supply has been on developing autonomous and financially viable utilities within the municipal regulatory framework. And in sanitation, the broad directions of reform may be to promote demand, clarify organizational responsibilities for different subcomponents of sanitation, and emphasize the financing of services with wider public benefits while providing well-targeted subsidies for the poor.

Financing mechanisms to promote reform

Despite the emerging consensus on the broad principles and dimensions of reform, few reform-linked pilots have reached country-wide scale. This failure is at least partly due to the inadequate attention to developing appropriate and sustainable incentives and financing mechanisms. Even so, examples of innovative financing mechanisms that promote and enhance sector reforms are emerging around the world. Reviewed here are three such mechanisms: decentralization-linked fiscal mechanisms, special fund mechanisms, and programmatic approaches.

Decentralization-linked Fiscal Mechanisms

Within the framework of decentralization, many governments use intergovernmental transfers to promote reforms. These mechanisms can enhance the capacity of local governments and help them develop more demand-responsive approaches. But due to the longer time frame for the reform process, as well as the transaction and political costs, intergovernmental transfers are often less effective at promoting significant institutional reforms. Other mechanisms, such as special funds and programmatic approaches, are better suited to this.

Developing an appropriate fiscal framework

A precondition for effective intergovernmental transfers is a fiscal framework that supports decentralization. This means, first, that expenditure assignments must be clear and
consistent, backed by measures for strengthening local capacity for providing services. Second, local expenditure responsibilities must be matched with local revenue potential. Third, an effective framework for local borrowing must be in place. And fourth, the intergovernmental transfer system must be designed to promote reform. It should be simple, transparent, and predictable; backed by independent and rigorous monitoring systems; and, compatible with efforts to promote local revenue mobilization.

Types of inter-governmental transfers

Within this framework, intergovernmental transfers can take a variety of forms. For example, higher levels of government may offer reform-linked conditional grants that direct expenditure to priority sectors, often with specific reform-linked conditions and related technical assistance. Based on experience, key issues include ensuring that the government has the fiscal capacity to support countrywide scaling up, avoiding undue distortion of local preferences, strengthening local capacity to implement reforms, clearly connecting grants to outputs and outcomes, and nesting the grants within a context of wider sector reform.

A second approach helps build local capacity by providing discretionary transfers with conditions for local reforms. Local governments can allocate these grants as they choose. But to receive the funds, they must meet performance criteria in such areas as financial management, planning for service delivery, and governance. Some lessons from experience:

- Making the grant pool large enough to be effective but small enough to avoid undue politicization.
- Having a transparent and open process for allocating transfers.
- Not weakening local incentives for revenue collection.
- Conducting rigorous monitoring.

### Types of Intergovernmental Transfers

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<td>Reform-linked conditional grants</td>
<td>Help local authorities introduce or scale up reforms.</td>
<td>Often poorly tied to reform, fail to leverage sector reforms, and result in unsustainable investments.</td>
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<tr>
<td>Discretionary transfers with conditions for local reform</td>
<td>Provide incentives for local authorities to improve governance systems</td>
<td>May become politicized and weaken local incentives for revenue collection.</td>
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<td>Conditional grants with asymmetric decentralization</td>
<td>Respond to varying needs and capacities across regions and provide incentives for local authorities to improve performance beyond required levels.</td>
<td>Require programs for including weak local authorities, transparency and accountability and parallel capacity-building support.</td>
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From 1996 to 2001, the Ethiopian Social Rehabilitation and Development Fund (ESRDF) financed projects that provided access to safe water through easy-to-maintain systems using low-cost appropriate technologies. The ESRDF supported more than 2,300 subprojects and reached around two million people at a cost of $33 million. These projects often lacked long-term sustainability. While user fees were expected to help maintain facilities, they were collected in only one-third of the schemes. Even so, the ESRDF’s successful demonstration of a demand-responsive approach had an important impact on policy for rural water supply and sanitation in Ethiopia.
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Linking grant programs to the wider reform framework.

A third type of transfer design relies on conditional grants with asymmetric decentralization. This approach accommodates varying local capacities and needs, and provides incentives for local authorities to improve their performance. A proposed program in Nigeria, for example, classifies local authorities into three categories based on their capacity and uses this classification to determine their control over funds for communities in their jurisdictions.

While these programs are fairly new, it is clear that to succeed, they must ensure that even weak local authorities are included. They must also emphasize transparency and accountability—and include provisions for capacity-building support.

Special Fund Mechanisms

Special funds constitute a second set of instruments for supporting reforms and have grown substantially over the past two decades. They can pave the way for a broader reform commitment by providing successful precedents that demonstrate the relevance of reforms. They can also promote reforms when local governments suffer from low capacity, and where the financial sector is too weak to support market-linked sustainable financing systems.

Types of special funds

Special funds can be distinguished by their purpose, which may relate either to some form of infrastructure investment or to some form of institutional reform, and by their level of operation, which can range from very local to global. While the main purpose is important in determining the scope and nature of a fund’s operations, the level of operation affects its governance structure and level of flexibility.

Three types of special funds have been relevant to the water supply and sanitation sector.

Social investment funds are an important vehicle for the World Bank to support community-driven development, and in some cases, they have helped bring about significant improvements in water supply and sanitation. In Bolivia, for example, the average distance between a household and a water source fell by more than 50 percent from 1993 to 1997. But recent evaluations also suggest areas of concern, including the need to ensure consistency with national strategies, the possibility that some funds may work at cross-purposes with decentralization, and the lack of sustainability of many projects.

Community development funds also promote community-driven development but put greater emphasis on building local social capital. Their primary advantages are flexibility, faster response time, and more direct local accountability structures. Thailand’s Community Organization Development Institute, for example, works through 100 networks of community
organizations. But the use of these funds also raises issues—including the time needed for scaling up, the need to balance community processes against visible outcomes, the lack of clear separation between the financing and community development functions, the need for institutional independence, and the need to invest adequately in capacity-building.

Challenge funds for institutional reform, more recent in origin, support public sector institutions or subnational governments undertaking institutional reforms by funding measures such as public information campaigns and subsidies for the poor. For example, India’s proposed City Challenge Fund plans to help cities develop sustainable management and service delivery systems by providing funds to ease the transition to new tariffs for public services. Based on the limited experience with such funds, some key design issues that need to be addressed include the need for independent governance and effective monitoring, the danger that equity concerns may result in grants to poorly performing governments, and the importance of providing local governments with support in applying for grants.

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Poverty Reduction Support Credits: Uganda

In 2001, the World Bank disbursed the first $150 million tranche of the PRSC to Uganda to help implement its Poverty Reduction Strategy Paper. The related policy matrix included reform milestones and quantitative targets for water supply and sanitation. The second tranche was approved in June 2002 with all policy benchmarks met and a 90 per cent utilization rate of budgeted resources. Rural, small town and urban water supply and sanitation have all seen improved coverage and private sector management contracts have increased, in accordance with targets. Key lessons from this experience focus on strong leadership from both government and Bank managers, thorough sector work and background work, and the need for parallel TA projects to deal with complex issues and improve the quality of service delivery.
Key characteristics of special funds

Special funds need a clear reform focus to ensure that resources support reform, rather than deliver political benefits. For the same reason, they should be independent of regular public finance arrangements, recruit professional staff, and have a range of stakeholders represented on their boards.

In addition, most special funds share some broad characteristics. They are multisectoral, which may result in inadequate focus on critical water supply and sanitation issues unless the case for the sector is carefully prepared. They are demand-responsive, which means that demonstrations of local interest and capacity for sustainable investments are important factors in allocation decisions. And they often serve an important intermediary role by connecting government and aid institutions to small subprojects.

Programmatic Approaches

In contrast to traditional project-based approaches, programmatic approaches are designed to promote domestic ownership of development programs, work through and strengthen existing institutions, and promote sectorwide coordination among donors and government. Based on recent research, they are expected to increase the effectiveness of development assistance and support reform.

Key features of programmatic approaches

Programmatic approaches share two key features. The first is a sector-wide approach. Key elements of this concept include an underlying sector policy with common approaches and an expenditure program to support it, strong government leadership, and progression toward reliance on government procedures for all investments. A common pool-funding arrangement for all sector funding is often included, though not essential. The difficulties in adopting a sector-wide approach include the weak position of sector institutions in the national planning framework, varying institutional arrangements across settings and subsectors, often weak prevailing links with central budgets due to project funding and the increasing importance of devolution to local authorities, lack of homogeneity and consensus among stakeholders, and very weak or non-existent sector-level information.

The second key feature is a medium-term expenditure framework that links budget allocations more clearly to outputs and outcomes—and allows sector expenditure plans to be developed in relation to the ceilings established by macroeconomic and budget constraints. Difficulties in using this framework include the sector’s past reliance on project loans and off-budget contributions, the need for and use of demand-responsive financing mechanisms, the lack of fiscal sustainability at scale for many financing and subsidy policies in the sector, and the weakness of the information and analytical base for converting broad reforms and strategies to action programs with accurate costing.

World Bank instruments for programmatic approaches

In recent years, the World Bank has introduced several new instruments that can be used within this framework. Sector investment and maintenance loans help borrowers develop the
in institutional capacity to manage investment programs. Phased adaptable program loans support programs involving complex, sustained institutional change. Sector adjustment loans provide medium-term support for policy and institutional reforms. Programmatic structural adjustment loans provide phased support for government policy reforms and institution-building. And poverty reduction support credits provide budget support, but place emphasis on the institutional and policy reforms that accompany a government’s overall poverty reduction strategy.

**Key issues in the use of programmatic approaches in water supply and sanitation**

The successful use of programmatic approaches requires a high level of government commitment to reforms. They entail a continuous process of aligning sector programs and expenditure allocations with intended outputs and outcomes, with regular midcourse connections. And issues related to decentralization, such as tensions between national and local priorities and variations in the capacities of different stakeholders, and donor preparedness to pool resources and support government leadership can have an important impact on the use of programmatic approaches.

**Summary**

This review suggests that decentralization-linked mechanisms have often been used to enhance the finances and capacity of local governments. They can also enable these governments to develop more demand-responsive approaches. But to promote the critical institutional reforms necessary in the water supply and sanitation services, other mechanisms, such as special funds or programmatic approaches, are often required. Special funds can help promote reforms under difficult conditions, such as when local governments suffer from low capacity or when the financial sector is weak. But they also raise important issues, including the need to ensure that their transition to more regular public finance systems is planned upfront. Finally, programmatic approaches are likely to be particularly relevant in providing incentives for key policy and institutional reforms. But they require a strong country commitment and good capacity in lead sector institutions.

Programmatic approaches, including sectorwide approaches and budget support instruments, help promote domestic ownership, use and strengthen existing institutions and improve sector co-ordination.
Despite widespread agreement on the importance of increasing access to safe water and sanitation services, the public resources allocated to the sector are likely to fall far short of what's needed to achieve internationally agreed goals. That makes it important to identify financing mechanisms that can leverage these funds to mobilize market-based and community resources. Based on recent experience, three sets of options can fill this role:

- Attracting private sector participation in the sector.
- Promoting local investments through domestic credit markets.
- Enhancing community contributions for water and sanitation services.

In all three cases, however, effective leveraging requires local commitment to, and preferably a basic level of, market-oriented reforms.

Closing the gap

Global estimates of the resources needed to meet the water and sanitation targets in the Millennium Development Goals suggest a funding gap of about $10 billion to $85 billion a year, representing a significant increase in current investment levels. To help close this gap, global efforts must focus on increasing aid flows to developing countries and enhancing their incomes through improved trade and finance. Water and sanitation should also receive a higher priority in aid and public investment allocations, as well as in poverty reduction strategies. Even then, public sector resources are likely to be insufficient. But these limited resources, if leveraged, can help in mobilizing additional market and community resources.

Attracting Private Sector Participation

Promoting private sector investment

The predominant approach to leveraging resources over the past decade has been to attract private sector participation. But the water and sanitation sector suffers from several handicaps in investors' eyes. These include historically low tariffs, the lack of a clear and independent regulatory framework in most developing countries, and the difficulty of mitigating risks. So, private investment flows in water and sanitation have been very limited, amounting to just 5 percent of total private investments in infrastructure during 1990-2001.

Increasing efficiency in service provision

Even if private investment remains low, private participation can increase resource flows by introducing efficiency gains. In Gaza, for example, a four-year water services management contract improved services, expanded coverage, and doubled revenues in just a year. Measured globally, the potential for similar gains is substantial, given that operational inefficiencies alone are estimated to cost developing countries $10 billion a year.
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To take full advantage of private participation, tariffs must be set to enable full cost recovery. (The shock of higher tariffs can be cushioned by subsidies and gradual tariff increases, as well as public education about the benefits of reform.) Effective economic regulation is also needed to assure the private sector that government cannot change tariffs at will. Ideally, there should be a transparent and sound regulatory framework in place to assure companies that contracts will be enforced. And contracts must be adapted to local conditions to ensure long-term viability along with access for the poor.

**Small-scale private sector**

Even so, investments by small private enterprises have improved service delivery in some regions. In rural Bangladesh, for example, small firms have installed 67 percent of hand pumps, while the public sector's share is only 33 percent. Recent studies in Africa and Latin America highlight the actual and potential role of small-scale private service providers—often operating in the informal sector—but policy response to support them have been inadequate.

Governments can enhance the role of small-scale private service providers by putting them on a firm legal footing, establishing appropriate regulatory frameworks, and improving access to finance, both for the enterprises and for their customers. In addition, financial institutions need to explore the possibilities offered by these markets. This is particularly important because large-scale private sector participation in water supply and sanitation projects remains limited and may be declining.

**Offering partial guarantees to mitigate risk**

Beyond these basic conditions, strategies for attracting private participation should also include partial guarantees to mitigate and allocate project and operating risks, particularly in the early stages of reform. Designed properly, partial guarantees can deliver close to a fivefold leverage of private resources in infrastructure, while reducing the costs of funds and extending the period over which loans must be repaid.

Such guarantees can mitigate risks that are likely to be difficult to allocate, such as risks of the long payback periods characteristic of capital-intensive investments, risks of political interference or non-performance, and risks of investing in a project with foreign currency (inconvertibility and devaluation). Several
financial institutions, including the World Bank, the Multilateral Investment Guarantee Agency, and export credit agencies such as the Overseas Private Investment Corporation, offer coverage for these risks. The World Bank has also initiated work on products that address issues specific to infrastructure. One example is the guarantee facility, which focuses on wholesale or bundling arrangements to help smaller borrowers gain access to credit.

Partial guarantees can deliver many benefits, but their use raises several issues. For example, the guarantees could become a substitute for reform. So, they should be provided only where reform has been initiated, the government commitment to reform is clear, and appropriate monitoring structures are in place. A second concern is that many of these instruments may not be appropriate for small water supply and sanitation projects. In such cases, simpler project-specific credit enhancement mechanisms, such as special escrow accounts, can help. Finally, given the trend toward decentralization in the sector, the dominant role of local-level entities becomes important. This may require pooling arrangements.

Supporting the development of bankable projects

In addition to offering partial risk guarantees, effective strategies for private sector participation may also need to promote commercially viable bankable projects. In most countries where public funds dominate the financing of infrastructure projects, the development of bankable opportunities is a new concept that may require institutional support. As one example, in 1998, the government of South Africa set up a dedicated facility, the Municipal Infrastructure Investment Unit, to encourage and support private sector participation in municipal services and create market capacity for project development. Within a few years, this body had leveraged government funding of about 20 million rand to support the completion of 14 projects with a total contract value of 5.6 billion rand. Several such project development facilities have also been set up in India to support development of bankable infrastructure projects.

Lessons from South Africa and from India, which has experimented with various approaches, show what effective support requires. First, project development facilities should include dedicated capacity for water supply and sanitation. Otherwise, due to its complexity, the sector tends to be overlooked. Second, project development can help identify key areas of policy and promote capacity-building intervention through learning by doing. But it cannot substitute for sector reforms. Third, more attention should go to decentralized options in water and sanitation, which most project support facilities have tended to ignore.

Promoting investment through local credit markets

Private participation is not the only avenue available for mobilizing additional resources. A second set of options focuses on developing local credit markets. Improving access to these markets for local authorities and utilities can pay off in three ways. It can help meet the need for long-term capital necessitated by the capital-intensive nature of water and sanitation investments. It can avoid foreign currency risks, which cannot be covered easily in water and sanitation services. And it can help introduce market rigor in service delivery and the investment decisions of service providers.
Establishing a local credit market

Establishing sustainable access to local credit market involves several inter-linked and sequential steps:

- Building the creditworthiness of local governments/borrowers. Most important, local governments and utilities have to demonstrate that they can manage their resources. Steps toward building creditworthiness include ring-fencing water revenues and maintaining a steady income stream through scrupulous revenue collection; implementing adequate accounting, disclosure, and reporting standards; stabilizing the system of transparent and predictable intergovernmental transfers; and building staff capacity to manage and operate systems. In addition, a strong and transparent legal framework must be in place.

- Developing precedents for commercial local borrowing. Potential borrowers also need opportunities to create a track record of loan repayment. In countries with well-developed financial sectors, this can be achieved by helping local governments and service providers borrow on commercial terms. Where financial sector development is weak, loans to local governments from municipal development funds are likely to be important. Alternatively, such municipal development funds as Colombia’s FINDETER can play an intermediary role.

- Establishing the fiscal and regulatory building blocks. While borrowers work to gain lenders’ confidence, governments should establish the foundations of a sustainable local credit market. That includes macroeconomic stability and free market orientation, a predictable intergovernmental finance system, and a regulatory framework for local borrowing that includes bankruptcy legislation to cover defaults.

- Progressing to sustainable market financing. Once these conditions are in place, the emphasis should be on encouraging broader private market participation in the local credit system. This may involve disseminating information to the wider financial community (say, through credit-rating agencies), refining the regulatory framework to increase investor confidence, and encouraging municipal development funds or other special facilities to evolve into autonomous financial intermediaries or to reduce their role gradually.

- Choosing between direct access (bonds) and intermediation (bank borrowing). In transitioning to sustainable credit markets, governments will have the opportunity to decide whether to rely on borrowing from banks, to issue bonds, or to do both. Development institutions should not try to enforce a particular system. The important thing is to guarantee that financial markets are deregulated to the extent that bond

Enhancing Access to Local Credit Markets: Colombia

Colombia’s FINDETER demonstrates how municipal development funds can help local credit markets develop. FINDETER works with local governments to evaluate investment projects. Once a project is approved, FINDETER helps the municipality find a commercial bank willing to finance the project. FINDETER agrees to refinance up to 85 percent of the commercial bank’s loan, but the bank assumes credit risk for the entire loan. Combined with a voluntary intercept provision that diverts intergovernmental transfers or other local revenue streams to commercial banks in the case of default, this provision has helped keep the percentage of non-performing loans below 2 percent. In recent years FINDETER has had a shrinking share of the market, as municipal lending is integrating better into the commercial credit market.
Proper sequencing is critical in establishing access to local credit markets. The first essential step is to build creditworthiness of potential local borrowers, supported by development of bankable investment opportunities.

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<tr>
<th>Evolution of a Municipal Development Fund: India</th>
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<tr>
<td>Created in 1988 as part of the Tamil Nadu Urban Development Project, the Municipal Urban Development Fund disbursed $63 million to 500-plus infrastructure projects in eight years, with repayment rates close to 80 percent. But the fund was weakened by its dependence on public financing and vulnerability to political interference. In 1996, it was restructured as an autonomous financial intermediary, the Tamil Nadu Urban Development Fund (TNUDF), under private management. Since then, interest rates on TNUDF loans have converged to market levels, the loan recovery rate has reached 99 percent, and annual disbursements have grown sixfold. The TNUDF also issued a $23 million bond issue in 2000. This experience demonstrates that it is possible to gradually convert a municipal development fund into a market-oriented fund when there are clear mandates for private sector integration.</td>
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Markets can develop at their own pace. In addition, countries should consider creating independent rating agencies and promoting pooled finance mechanisms to help smaller communities issue bonds.

Key issues in using local credit markets

- Understanding the country context for sequencing. The steps identified in the foregoing section may proceed in a different order, depending on such factors as the capacity and creditworthiness of local authorities and service providers, the development of the financial sector, and bankable investment opportunities.

- Ensuring the withering away of municipal development funds. These funds need to have an explicit mandate to encourage the transition to sustainable local credit markets, as India’s Tamil Nadu Urban Development Fund is attempting to do. Otherwise, they may become vested interests, inhibiting the development of market-based credit systems.

- Urban finance versus project/utility finance. Different types of projects require different financing structures. While using general municipal revenue may be valid for the provision of sanitation services by local governments, a project finance structure or balance-sheet borrowing by the local utility would be more appropriate for water services.

- Converting creditworthiness to bankable opportunities within the reform context. Local credit markets cannot be established without viable projects to invest in. These opportunities should develop within utility structures operating on commercial terms.

- Need for information and benchmarking. Mechanisms are required to provide financial markets with regular, independent, and credible information about local governments and other borrowers. For example, steps should be taken to build and improve on systems of subsovereign credit rating in developing countries.

Enhancing Household and Community Contributions

A third way to mobilize resources for water supply and sanitation is to increase household and community contributions. This requires a

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<th>A Sector Framework for Rural Water Supply: China</th>
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<td>Far greater than the global norm of about 10 percent cost recovery, users of piped rural water supply schemes in China pay about 75 percent of the capital investment and the full operation and maintenance cost. The capital cost is recovered through upfront cost sharing by the county government and community (25 percent each) and an IDA loan (50 percent), which is repaid through user charges. User charges also cover full operation and maintenance expenses. This approach is possible due to a supportive sector framework, which includes independent and financially viable utilities, low monthly bills (about 3.5 percent of household income), local regulation of tariffs, and uniform cost-recovery policy across programs. It is also facilitated by China’s history of greater emphasis on local cost sharing.</td>
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sector and regulatory framework that provides appropriate incentives for communities and enables communities sustainable access to credit.

**Improving the sector framework**

The characteristics of an appropriate framework differ across subsectors. For rural water supply—since communities are typically responsible for operation and maintenance as well as a share of capital costs—the key elements of the framework include clear and uniform rules for cost recovery, a clear legal basis for the participation of community groups, and a clear definition of the role of local governments. In urban settings, where cost recovery generally comes through water tariffs, rational tariff design and better regulation are the main aspects of the framework. However, improvements in community infrastructure often require that additional issues be addressed, such as land tenure and the need for a local champion with technical assistance support. Third, for rural sanitation, the emphasis is on developing

**Leveraging Community Resources: Vietnam**

As part of the World Bank-funded Three Cities Project, a revolving fund was set up with the Women’s Union (WU), a local nongovernmental organization, to provide credit for household toilets. Working through over 350 small savings and credit groups, the WU made loans to more than 4,000 households in the program’s first year. The recovery rate for these loans – typically for $150 repayable in two years at an annual interest rate of 6% – was over 95%. In addition, the WU promoted demand generation and hygiene awareness through the monthly meetings of its 12-15 member savings and credit groups.

<table>
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<tr>
<th>Illustrative Examples of Financing Mechanisms to Leverage Resources</th>
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<td><strong>Private Sector Participation and Investments</strong></td>
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<td>Enabling reform framework and appropriate contracts</td>
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<td>Partial guarantees for risk mitigation</td>
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<td>Project development support facilities and focused interest by financial intermediaries</td>
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<tr>
<td><strong>By Attracting Local Investments through Local Credit Markets</strong></td>
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<tr>
<td>Municipal development fund, specialized financial intermediary and refinance to banks/domestic financial institutions</td>
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<tr>
<td>Direct market access through municipal bonds, credit rating and regulatory framework for local borrowing</td>
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<td>Pooled finance mechanisms</td>
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<tr>
<td><strong>By Enhancing Household and Community Resources</strong></td>
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<tr>
<td>Enabling sector framework for cost recovery and regulation in community WSS</td>
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<tr>
<td>Credit for household facilities and community-level infrastructure</td>
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<td>Integrated facility for scaling up community infrastructure finance</td>
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Essential upfront reforms for sustainable leveraging additional resources include: internal cash generation, policy and regulatory framework to manage risks, and institutional forms for sound governance and management.

**Demand promotion strategies to leverage household contributions to individual facilities.**

**Giving households and communities access to credit**

In all these cases, a key condition for leveraging greater community resources is household and community access to credit. Several successful initiatives over the last two decades in community-based finance and microfinance systems have amply demonstrated the possibility of developing viable systems for providing finance to the poor. But the use of microfinance for infrastructure has not materialized to a great extent. The potential is suggested by the Women’s Union in Vietnam, which has funded more than 4,000 household toilets by funneling credit through 350 savings and credit groups.

In exploring such options, it helps to distinguish between different types of credit requirements, which may call for different responses. Community-based financial institutions and microfinance institutions can generally handle credit to households, whether for household facilities or for contributions to community-level facilities. But lending for community-based projects, which are typically more complex and capital intensive, will need support for project development and continued capacity building. In addition, some link with formal financial institutions is likely to be necessary for mobilizing medium- to long-term resources.

**Key issues in leveraging household and community resources**

Governments have to carefully design subsidies for community infrastructure to avoid crowding out contributions by communities and other financial institutions. This may be through partial guarantees against policy and political risks. In addition, measures may be necessary to reduce the transaction costs incurred by both community-based organizations and financial institutions, which are likely to be high.

**Summary**

This review identifies three main avenues for using public funds to leverage additional market-based and community resources—and the main issues raised by each set of options. But it is also important to emphasize the general need for certain upfront reforms if any of these mechanisms is to work.

These reforms include ensuring adequate internal cash generation by the service providers through tariff reforms and enhanced revenue potential, designing an appropriate regulatory or contractual framework to manage risks, and developing institutional forms to ensure sustainable management.

There are several common elements in the design of effective mechanisms for leveraging both private and community resources. These include the need for an appropriate sector framework that will enable resources to flow in; emphasis on risk management and the possible need for a partial risk guarantee framework; and, support for project development and implementation through appropriate development support.

Other elements include the need for a good information base and its dissemination to enhance transparency and reduce risk perceptions; and, the importance of ensuring market principles so that the resources are truly additional—and sustainable.
Institutional and financing reforms can help bring about significant improvements in the water supply and sanitation sector. But some of these measures—setting tariffs to allow full cost recovery, for example—may make basic services unaffordable for many people. Well-designed subsidy mechanisms are therefore needed to ensure access for the poor. In the past, subsidies for water supply and sanitation have often failed to meet this objective. Recent approaches suggest financing mechanisms that can improve the targeting of pro-poor subsidies.

What is a Good Subsidy?

A good subsidy has five characteristics. It is based on an assessment of genuine need. It accurately targets the intended beneficiaries. It is simple to administer and low cost. It avoids creating perverse economic incentives that might, for example, encourage customers to waste water. And it can be scaled up to achieve significant coverage levels. Some of these objectives clearly are interrelated. For example, better targeting measures generally require higher administrative costs. But accurate targeting also brings down the cost of subsidies and extends them to more people.

In designing a subsidy to meet these criteria, it is important to answer four questions: what is subsidized, who is subsidized, to whom is the subsidy provided, and how is the subsidy funded. As for what, subsidizing access to services is generally preferred to subsidizing consumption, and services with greater public incidence of benefits are preferred to those whose benefits are primarily private. When it comes to who the typical candidates are high-cost service areas or the poor. In either case, subsidies can be provided directly to consumers or to service providers. And finally, there are generally three options for funding a subsidy: (a) payment by the service provider through cross-subsidization (b) governmental allocations and (c) a hybrid version where the service provider pays a government-set fee that can be used to fund subsidies.

· What is being subsidized? The literature generally favors subsidizing access to services over subsidizing consumption (the rationale being that without access to the system, the poor are not likely to derive any benefit from consumption subsidies). In addition, services with a greater public incidence of benefits are preferred to those with primarily private benefits.

· Who is being subsidized? The typical candidates are high-cost service areas or the poor.

· To whom is the subsidy being provided? Subsidies can be provided directly to consumers or to service providers.

· How is the subsidy being funded? Options include payment by the service provider through cross-subsidies, governmental allocations, and a hybrid where the service provider pays the government a fee that can be used to fund subsidies.

Pro-Poor Subsidies for Water and Sanitation

Five characteristics of good water and sanitation related subsidies are: genuine need, simple to administer, low cost, provides right incentives and can be scaled up in a sustainable manner.
Discussed here are three types of subsidy schemes: access subsidies, cross-subsidies, and incentive-linked subsidies within the output-based aid framework.

**Improving Access Subsidies**

Access subsidies can be capital grants to defray local infrastructure costs. Or they can promote demand, especially for sanitation, to meet the costs of social mobilization, education, and awareness. Or they can be grants for social connections to ensure access to municipal or utility infrastructure network systems for the poor. All three schemes have proven at least partly effective in increasing access for the poor. But they can be improved.

**Contributing to capital costs**

Over the last decade, governments in several countries have used partial capital grants to help rural communities develop water supply schemes. This approach is based on the premise that the community’s financial participation—which includes full responsibility for the costs of operation and management—reflects an articulation of demand. Capital grants have also been used in low-income urban settlements to improve infrastructure services, including water, sanitation, streets, solid waste management, and restructuring of housing. But there has been little emphasis on cost recovery from low-income urban settlements.

Some common lessons can be drawn from efforts to use access subsidies in both rural and urban settings. One is having uniform rules. In the rural context, there is increasing recognition of the need for uniform cost-recovery policies across different projects and sources of funds. Simple, uniform, and transparent rules have also been important in helping urban low-income communities bear a larger share of capital costs. Similarly, rural and urban projects have both used per capita grant or cost ceilings to reduce costs. These ceilings have been particularly successful in promoting the innovative use of appropriate technology in urban settlements.

**Building demand for services**

Capital grants can help communities build the infrastructure necessary to provide basic water and sanitation services. But they cannot ensure that those services will be used. This is particularly true in sanitation, where experience shows that large-scale subsidization of household-level facilities that lack backing by effective demand (such as latrines) usually results in wasteful investments, with facilities largely unused. So, attention has turned to subsidies to promote demand through social mobilization, education, and awareness.

Three lessons can be drawn from demand promotion projects in South Asia and Central America. First, subsidies should be focused on public activities and on the community, not on the household level. Second, subsidies should be designed to provide incentives for leveraging community and private resources. And third, it may be necessary to link demand-promotion subsidies to other programs, such as partial subsidies for household or institutional facilities, to have the greatest impact.

**Connecting the poor**

A third challenge subsidies can address is connecting the urban poor to city-level utility networks. The poor in urban settings may be able to afford water (they generally pay high prices from alternative sources), but they cannot
invest in water infrastructure, and thus require a subsidy for this. Private operators in Côte D’Ivoire and Senegal, as well as the Indian state of Andhra Pradesh, have used state-provided funds to connect tens of thousands of households to existing infrastructure. But improvements can be made in targeting, coverage, and linking with the informal sector.

**Designing better access subsidies**

Several issues still require attention if access subsidies are to be demand-responsive.

- **Household versus community approaches.** The initial focus should be on community approaches. While there is evidence to suggest that community-level activities create the necessary environment for increased demand and utilization of household facilities, providing subsidies for household facilities without investing in demand promotion has generally failed.
- **Linking subsidies to basic service levels.** Capital subsidies should be linked to some notion of a nationally agreed basic service level, and the maximum subsidy should be fixed in relation to the cost of providing this service. Communities should self-finance higher levels of service—and retain any savings achieved through efficiency or innovative design.
- **Balancing supply-driven and demand-driven features.** Effective service delivery requires a balance between supply-driven and demand-driven approaches in any program. For example, effective demand-responsiveness requires that the rules guiding the subsidy design are developed transparently and disseminated, while supply-driven features require flexibility for adapting the rules among community members through consultation.
- **Multiple and conflicting subsidy rules.** Uniform rules should be adopted across all sources of funds as far as possible to minimize conflicts and confusion among possible beneficiaries.
- **Temporal stickiness and expansion of targets.** A good monitoring system is needed to ensure that subsidy schemes can evolve appropriately over time.

**Improving Cross-Subsidies**

Cross-subsidies—by setting different prices for different consumer categories—provide a second and very common set of tools for helping the poor gain access to services. Most utilities use cross-subsidies in some form. Some service providers, for example, implement a uniform price system, which uses revenues from low-cost regions to subsidize service in high-cost areas. Others use an increasing block tariff, which sets very low tariffs for a minimum consumption block and higher rates for additional consumption. Still others impose varying tariffs across consumers, using the high rates paid by commercial customers to subsidize households’ water use.

**Disadvantages of cross-subsidies**

Despite their attractiveness, cross-subsidies have problems in practice that make it difficult to achieve the two objectives of affordability for households and financial viability for the utility within a universal service framework. They tend to distort consumption and investment decisions by de-linking prices from actual costs. Lacking transparency, they are difficult to monitor and assess. They also create disincentives for suppliers to provide service to poor and high-cost areas. And depending on the specifics of

Cross subsidies are very commonly used by local service providers globally, but need to be better designed through improved rules and through mechanisms such as universal service funds.
Use of output based aid in water and sanitation can help improve design of subsidies by supporting reforms, improving incentives for improved services and selecting appropriate service providers.

the subsidy scheme, they may be poorly targeted, encourage customer defections, and prove difficult to apply.

**Advantages of cross-subsidies**

But cross-subsidies also have advantages, as their popularity suggests. They allow the utility to meet its universal service obligation without relying heavily on unpredictable and unreliable government grants. When compared with alternative funding mechanisms, such as redistribution through the tax and transfer system, they may be more efficient. And they may give service providers incentives to invest in technological change.

**Designing better cross-subsidies**

Whatever the specific balance of advantages and disadvantages, subsidies are here to stay because it is politically and administratively imperative to continue them. But observing some simple rules can improve their use. Subsidies must be accurately targeted, for example, though the level of targeting needs to be balanced against the cost of implementation. The size of the subsidy must be carefully determined in relation to willingness to pay and macro fiscal sustainability. And when subsidy schemes involve multiple tariffs, prices at each level must be set both to protect the poor (including those who service multiple households from one connection) and to prevent customers from seeking alternative sources of supply.

Beyond these simple rules, two innovative financing mechanisms, primarily used in the telecommunications sector, can help water and sanitation service providers overcome many of the shortcomings of cross-subsidies. The first option is to create a universal service fund, which levies a charge on all relevant service providers, generally as a proportion of total revenues, and provide resources to those serving low-income or high-cost groups.

The second is to run an auction for minimum subsidy concessions by inviting service providers to bid on contracts in difficult areas and awarding the contracts to bidders willing to accept the lowest subsidies. Its main advantages are to facilitate a better assessment of the level of subsidies required without crowding out potential private resources.

For example, in Peru and Chile, the winning bids for rural telecommunications contracts have averaged one quarter to one half of the maximum offer.

**Implementing output-based aid**

The third set of options, output-based aid mechanisms, delegates service provision to third parties through contracts that link the payment of subsidies to the delivery of specific outputs or results. This approach is designed to correct the deficiencies of traditional subsidies, which typically focus on the inputs consumed by public water utilities and lack any close correlation with the actual services delivered.

While promising, these are new instruments for the water supply and sanitation sector, and their use will need to address the high cost of implementation.

**Auctioning Minimum Subsidy Concessions for Telecommunications: Peru**

In the 1990s, the government began auction 20 year renewable concessions to provide payphones in 5,000 towns, as well as public Internet access points in district capitals. Bidding on the pilot project resulted in a subsidy 41 percent lower than the regulator’s estimate, and 74 percent lower than the incumbent operator’s offer. A year into the project, the average distance to a phone had fallen by 90 percent, and the number of people with phone access had doubled. Modest progress had been made in service outages, hours of service, and customer education and 74 percent of the population were satisfied with the overall service.
universal service in this sector, the scarcity of formal private sector service providers, and the need for an appropriate and functioning regulatory and monitoring framework involving communities and consumers.

The design of successful output-based aid mechanisms requires attention to several issues. Perhaps most important, it is critical to define the appropriate output indicators; otherwise the contractors’ incentives may be skewed. It is also necessary to decide whether service will be provided monopolistically or competitively. Eligibility criteria for service providers must be determined, together with the form, level, and structure of subsidy payments. For example, how tightly should payment be linked to performance, and should the service provider receive some payment upfront?

Finally, administrative arrangements must be designed to win the confidence of service providers and funders, as well as to ensure effective operation of the subsidy scheme.

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<th>Illustrative Examples Pro-poor Subsidies for Water and Sanitation</th>
<th>Subsidies for Access to Water and Sanitation</th>
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<td>Partial capital grants for access to RWSS and slum improvement</td>
<td>Partial capital grants (25 to 95 percent) in various World Bank-funded RWSS projects under a demand-responsive approach.</td>
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<tr>
<td>Demand promotion for sanitation and hygiene</td>
<td>Subsidies to support staff and technical assistance costs of sanitation demand promotion through innovative mechanisms for global handwashing initiative, village rewards for sanitation in India, and provision of toilets in Burkina Faso and India.</td>
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<tr>
<td>Social connections for the urban poor</td>
<td>Subsidies for private water service providers in Côte d’Ivoire and Senegal to provide connections to utility systems.</td>
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<th>Improving Cross-Subsidies for Water Tariffs</th>
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<td>Principles for improved cross-subsidies</td>
<td>Rules suggested on the basis of analysis of assessment in Guayaquil, Ecuador.</td>
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<td>Universal service funds used particularly in telecommunications sector in several countries, such as USA and in Europe.</td>
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<td>Several examples from the telecom and energy sectors particularly for service provision in rural areas in Peru.</td>
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<td>For consumption through direct subsidies</td>
<td>Output-Based Aid Direct subsidies to privately managed utilities in Chile and Panama to meet the net costs for providing services to identified low income groups at affordable prices.</td>
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<td>Pilot applications for fixed subsidy-linked concessions being explored in Paraguay through aguateros.</td>
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<td>For supporting transition to critical sector reforms</td>
<td>Support through special funds to meet the transition costs of critical institutional reforms in relation to agreed milestones and support to implement gradual tariff reforms in Guinea leading to full cost recovery tariffs over an agreed timeframe.</td>
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<td>Sanitation demand promotion</td>
<td>Village rewards for overall sanitation improvements achieved through promotion and investments by village LG and community.</td>
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Potential applications of output-based aid

The output-based aid framework has many potential applications within the water supply and sanitation sector. Governments, for example, can subsidize consumption by choosing water use by poor households as the key output indicator. Output-based subsidies can also be used to support enhanced access to services or to promote access and consumption together through subsidy-linked concessions. They can also help achieve sanitation and environmental targets if payment is delayed until after upfront investments have been made. And subsidies can support critical reforms in the sector if payments are linked to specific milestones in the process of reform.

Issues in applying output-based aid

The concept of using output-based aid to improve the use of subsidies is relatively new, and there have been few pilot schemes in the water and sanitation sector. Based on these efforts, a conceptual assessment of the key issues in the use of output-based aid identifies three particular challenges.

First, measuring outputs can be difficult and very expensive especially when measures such as service quality, reliability or sustainability are involved. If effective monitoring systems do not exist or cannot be readily introduced at reasonable cost, output-based aid schemes may not be viable.

Second, relatively complex output-based systems such as means-tested subsidies, may not be viable when costs are high and the necessary administrative capacities do not exist. Simpler, if less effective, targeting mechanisms may be necessary instead.

Finally, the availability of private providers to participate in subsidy-linked concessions may be a particular concern in this sector. This makes it particularly important to develop a framework that also defines the roles of other service providers such as community-based service providers or local governments.

Properly designed output-based aid structures can provide better incentives, enhance sustainability through selection of more appropriate service providers, and avoid the crowding out of private and community resources. But experience is still limited. Particular attention should be paid to the challenges in measuring outputs, the effect of local institutional capacity and administrative costs on the viability of different programs, and the choice of appropriate service providers.

Summary

This review shows how subsidies in the water supply and sanitation sector have promoted access for the poor. It underlines the importance of context-specific choice and design. Well-designed subsidy mechanisms must be developed and structured in relation to the real situation in a given context, with particular attention to such considerations as coverage for access to the utility networks, the administrative capacity available for identifying and reaching the poor as well as the cost of such efforts, and the existence of or potential for using private or community-based service providers. More broadly, the choice of any particular mechanism must be sensitive to the political and economic context that defines the framework for actually designing and implementing subsidy instruments.
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The summary has been prepared by Communications Development Incorporated.

The full report “Meeting the Financing Challenge for Water Supply and Sanitation: Incentives to Promote Reforms, Leverage Resources, and Improve Targeting,” is available on the WSP website: www.wsp.org