



Water cost recovery and financing to support the transition to a green economy

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A green economy is one that results in improved human wellbeing and social equity, while significantly reducing environmental risks and ecological scarcities. (UNEP)

To function properly and sustainably, all parts of water resources management and the supply of water related services must be fully funded. This includes not merely the creation and maintenance of physical infrastructure, but also water resource management, environmental protection and pollution abatement measures, as well as the less visible functions such as policy development, research, monitoring, administration, legislation enforcement, provision of public information, and involvement of public stakeholders. (World Bank)

Financing the green economy

The water development agenda overlaps with that of the green economy in areas of pollution mitigation, wastewater treatment, energy efficiency in water and wastewater treatment, distribution and reuse, irrigation, hydropower, and management of natural water ecosystems (including wetlands). Many of these projects could target several objectives simultaneously and therefore, can generate an array of benefits. The financing of such initiatives is attractive. However, designing and implementing projects and programmes with multiple objectives (cross sectoral) is challenging and complex.

UNEP has made an assessment that under a green investment scenario the additional investment needed in the water sector would be US\$ 191 billion per year until 2030 and US\$ 311 billion per year until 2050 (mainly to supply water and sanitation services and meet MDGs and universal coverage). “The Africa Infrastructure Country Diagnostics” (AICD) estimates that US\$ 22 billion per year (approximately 3.3% of Africa's GDP) is the amount required to attain the water and sanitation MDG targets. These estimates, which are based on minimum acceptable asset standards, include an annual capital expenditure of US\$ 15 billion and operating expenditures of around US\$ 7 million. These figures do not include the cost of investment in hydropower or irrigation.

Investment in water infrastructure, in both its physical and natural assets, can be a driver of growth and the key to poverty reduction (UNEP 2011). Although the recent global economic crisis set back investment in water in many countries (Winpenny et al. 2009), the impacts have been varied, and some governments have made determined efforts to compensate through counter-cyclical fiscal measures. Approximately 20% of the \$2 trillion of economic stimulus





packages announced since 2008 is estimated to have been in “green” investment in renewable energy, energy efficiency, more efficient use of materials, clean technology, waste mitigation, and sustainable use and restoration of ecosystems and biodiversity. Water is one of the beneficiaries of these programmes, although its full importance has not been recognised.

The challenges for financing water in the green economy

There are a number of identified barriers to investment that have limited the scale up of investments required to transition to a green economy. These include existing market failures such as access to finance, especially for small and medium enterprises (SMEs) and communities; political interests; limited credit availability and risk-aversion; lack of transparent and enforceable legal and regulatory frameworks (the enabling environment); knowledge externalities; information asymmetries; and policy-induced distortions.

The current financial climate has decreased the availability of liquid financial resources, affecting the supply of risk capital (e.g. equity) and financing for loans and concessional instruments. Many innovative instruments, developed with technical assistance and risk-sharing from donor agencies, are at risk. Low access to financial resources can have a serious effect on the already low level of investments and operation and maintenance faced in most developing countries resulting in deterioration in the infrastructure providing services, and a lack of infrastructure to cope with succession of droughts and floods worsened by climate change (Winpenny et al. 2009).

Achieving the MDGs requires large investments to increase access to safe and sustainable water services in many countries. Yet in itself increased investments in the water sector do not result in improved access to sustainable water services. When large flows of resources in the sector are managed by the government, the efficiency and effectiveness with which these resources are managed becomes a critical factor to ensure the sustainability of the services and the systems. If calls for increased spending on infrastructure are to translate into better services in the developing countries, then it is paramount that the efficiency of public resources and using it to better leverage private sources is improved.

Approaches to financing a greener economy

Closing the financing gap in the water sector and advancing towards implementing the principles of a green economy requires a range of instruments including higher user charges and environmental charges, higher collection rates, more efficient service provision resulting in lower costs, and more targeted subsidies.





The financing report of UNEP proposes a range of potential ways of financing these investments. This includes institutional investors such as pension funds and insurance companies, public financing (from taxation and government borrowing from capital markets), global development institutions (e.g. the IMF, World Bank and other multilateral institutions), and stable and resilient capital markets. It is likely to be a longer-term process in which the appropriate mix of instruments will change over time.

Generating finance for water infrastructure and services

The green economy agenda has serious implications for water infrastructure, adding more weight to the search for greater efficiency in the use of resources, and a reduction in waste and greenhouse gas emissions, all aimed at shifting investment and consumption towards patterns that reduce depletion of natural capital.

All countries, at every level of development, face heavy costs in creating a water infrastructure that is “fit for purpose”. According to a recent World Bank Study (2010b), progress towards fulfilling the Millennium Development Goals (MDGs) has been challenged by the global financial crisis. The crisis will potentially magnify the already large investment needs. According to one of those projections for 2015, 100 million more people will lose access to safe drinking water. A rethinking in financing strategies is required as additional resources will need to be captured from improvement in the efficiency of public expenditures.

Approaches for financing water infrastructure and services

To raise the sums needed for water and sanitation infrastructure, a pragmatic and eclectic approach is required, including the reduction, mitigation and sharing of water financing risks, which are by now widely appreciated.¹ National and international public agencies are the predominant sources of finance for water infrastructure.

National governments may be constrained by their fiscal position, but some of them have greatly benefited from strong commodity prices and have used their fiscal resources to invest in infrastructure, including water.

External Official Development Assistance (ODA) is now on a rising trend. In 2007-8, DAC countries’ bilateral annual aid commitments to water and sanitation rose to US\$5.3 billion. Adding to that the concessional outflows of multilateral agencies, the total ODA for water and sanitation was \$7.2 billion in that year² (compared with \$5.6 bn. in 2006). ODA takes place predominantly in the form of grants. Public international development banks (World Bank, the regional development banks, European Investment

¹ Amongst many references, v. the *Camdessus Report* (2003) and OECD (2010)

² OECD/DAC June 2010. www.oecd.org/dac/stats/water.





Bank, offering loans on attractive terms, are well placed to regain market share for infrastructure finance and are gearing up for this purpose.³

The Asian and Middle Eastern **sovereign wealth funds and publicly sponsored companies** are an additional and increasingly important source of money for the development of natural resources and infrastructure⁴.

Hedging against devaluation risk is not a practical proposition. The more sustainable long term solution is to **generate more internal revenues from tariffs**, and to rely as much as possible on local financial and capital markets.

A number of donors and IFIs offer **risk sharing products** to encourage the growth of local currency finance for water and other infrastructure.

The food crisis, driven by population growth, higher food production and a surge in energy prices leading to higher food prices, brought an estimated 44 million additional people below the poverty line and contributed to the economic woes of most developing nations. Food security is contingent upon a sustainable and efficient water management system. Preventing the food crisis from reaching alarming proportions requires improved water management and the expansion of water access for the worlds' poor. New investments in irrigation infrastructure and improved water management can minimise the impact of water scarcity and partially meet water demands for food production (Falkenmark and Molden 2008). More importantly, sustainable water uses need to be assured through more efficient irrigation technologies and effective water pricing models.

Funding in response to climate change and growing water scarcity

Projections reveal that an annual cost of climate change adaptation in developing countries in the industrial and municipal raw water supply sector would be between \$9.9– \$10.9 billion (net), and \$18.5–\$19.3 billion (gross), while costs for riverine flood protection is projected at between \$3.5–\$5.9 billion (net), and \$5.2–\$7.0 billion (gross). A large and challenging agenda stretches ahead for water infrastructure to cope with greater variability and uncertainty caused by climate change and other change forces.

Approaches for financing responses to climate change and water scarcity

The investments required will pose high financing demands from governments, public agencies and international research institutes. Their efforts will need to be supplemented with those of private, non-governmental bodies of all kinds, who can add value though extra resources, different ways of working,

³ E.g. World Bank 2010a

⁴ ICA 2007





new approaches and innovative products. Adaptation and mitigation projects implemented by public agencies can draw on:

- **A range of development funds, including new adaptation funds** created for this specific purpose, to which public agencies have access. There are currently over around a dozen funds available for adaptation for water, amongst other sectors. Particularly relevant is the funding provided by the Pilot Program for Climate Resilience (PPCR), sponsored by the World Bank and other major IFIs. “The pilot programs and projects implemented under the PPCR are country-led, build on National Adaptation \programs of Action (NAPAs) and other relevant country studies and strategies. They are strategically aligned with other donor-funded activities to provide financing for projects that will produce experience and knowledge useful to designing scale-up adaptation measures.” (www.cif/ppcr.org).
- For sub-sovereign agencies who cannot tap into development funds, **commercial financial sources** are critical.
- Much of the adaptation/mitigation efforts will fall to private companies, farmers and households. A different kind of finance is required for adaptation carried out by commercial entities (including farmers) or other water users.
- **Microfinance** is particularly suitable for improving irrigation efficiency for small farmers.
- Certain forms of contract can also be funded by *quasi-equity*, in which rewards depend on the successful achievement of project aims, e.g. **performance-related contracts** for water leakage reduction.

Funding diversification and demand management

Diversifying the sources of water by increasing the use of technologies, such as desalination and reclaimed water and promoting self-supply by users (farmers, households and companies) can reduce and distribute risk by relying on different sources of water. Funding for these activities follow more of the traditional financing approaches.

Improvements in resource and eco-efficiency, especially in the manufacturing industry, offer huge potentials for improving competitiveness in local, regional and global markets, as well as achieving more sustainable solutions. Increasing resource efficiency can achieve cost reductions and decrease the environmental impact of industrial activities from enhanced resource and energy use. These actions are increasingly necessary to deliver sustainable growth and jobs and to gain competitive advantage in response to increasing global competition for resource and environmental constraints.





Approaches for financing diversification and demand management

Desalination plants and some projects for the **use of reclaimed water** (entailing sizeable investment in wastewater treatment plants – WWTPs) lend themselves to stand-alone commercial ventures funded from equity and commercial finance, typically under a concession form of contract. The main challenge lies in the financial sustainability of these schemes and more efforts should be devoted to devising sustainable solutions.

Demand management needs a different approach to financing. Much of the cost of demand management falls on and is financed by consumers – households, farmers and industries –, though governments can help with subsidies and tax breaks (McKinsey & Co. 2009).

Funding governance, institutional reform, management and information

Adequately funded water governance is essential for reducing uncertainty and managing risks. Generating data for policymakers and managers (observations, analysis, modelling, scenario building) will help inform decision makers and hence reduce decision-making uncertainty. Effective governance in areas such as environmental controls, groundwater monitoring and abstraction licensing, and monitoring and policing of pollution can reduce the risk of overexploitation of water resources or of surface water pollution and irreversible contamination of aquifers. Many water governance problems arise at the transboundary level, which is fraught with potential risks and conflicts. Capacity building and management support for transboundary water institutions needs proper funding.

Investment in strengthening the information base and data collection of hydrological information will result in positive returns but it is an area currently underfunded. Furthermore, transboundary cooperation is influenced by political and sovereign issues that affect cooperation. The attribution of benefits to the different partner countries is difficult, hence sharing costs is problematic, and hampers setting realistic budgets and funding modalities.

Approaches to financing governance

Some of these governance functions can be self-financed through abstraction and pollution charges. Other sources would be from multilateral and bilateral agencies, local governments, usually in combination.

Supporting technology development and adaptation

Specific enabling technologies that have substantial potential have been identified in various sectors. However, many of these technologies are still very costly or are at an early stage of development. Furthermore, the transfer of technology is a complex issue that is constrained by regulatory factors, technical capacities and political interests. ICT should be in the list of the





sectors that are likely to play a leading role in a green economy. At a global level there is a need to increase environmental research and development (R&D) and encourage the international transfer of cleaner technologies.

Approaches to financing technology

- Governments should invest in ICT infrastructure, foster broadband deployment and try to accelerate the digital economy.
- Public funds should be made available for investment in technology adaptation and adoption.
- There is a need for different types of patent franchise and access mechanisms for developing countries.

Investing in environmental assets and pollution reduction

Investing in environmental assets and the management of those assets can help achieve national goals for relief from poverty, hunger, and disease. Investments in improved agricultural practices to reduce water pollution can boost coastal fishing industry. Wetlands protection can help meet needs of rural communities, while avoiding costs of expensive flood control infrastructure. Both the UN Millennium Project and Millennium Ecosystem Assessment (MA) highlight the interdependencies between economic development and environmental management for poverty reduction and general wellbeing. Due to a combination of poverty, vulnerability to drought and crop failure, lack of safe drinking water, and other environment-related ills, millions of people die each year. Over a billion people suffer from diseases due to the lack of clean water, resulting in losses in productivity that affects growth.

Approaches for investing in environmental assets and reducing pollution

- Public policies should give incentives for private sector decisions regarding investment, production and consumption patterns that reflect the social benefits of environmental sustainability and the costs of various forms of environmental protection.
- Payment for environmental services to protect upper watersheds and preserve ecosystems services downstream.
- Unitary tax over agrochemicals.
- Pollution fees as a mean to finance effluent collection systems and water treatment plants.
- Mark-ups over water prices to finance river restoration programmes or to create water protection funds.





- Trust funds formed with voluntary contributions from firms and individuals.
- Reductions of risk premiums over loans to finance water infrastructure by means of loan guaranties to help the projects tap debt markets in local currency.
- Performance based price rebates (provided water users demonstrate a sizeable reduction in pollution loads or water consumption).

Approaches for addressing the challenges of financing

Improving efficiency in public spending

Much can be done to reduce the financing gap in the sector, while at the same time ensuring that the funds that come from government are efficiently used. Sector authorities will have to prioritise their efforts, but also be aware that in the absence of full cost recovery for water service delivery, implicit trade-offs are made between current and future users, and current and future taxpayers. Public Expenditure Reviews are a promising tool to shed light on how public resources are utilised in the sector. Also, results-based financing could prove an essential mechanism to improving efficiencies in a resource-constrained, inefficient sector. Ensuring that institutional capacities are strengthened to implement some of the new methods and tools becomes a priority. The challenge of scaling up in countries with weak institutional capacities is enormous but a transformation is required in the sector to accelerate progress. Making these trade-offs more explicit might be an important tool to increase accountability and transparency in the sector. They may also provide an incentive to create support for the necessary changes that are still needed in large parts of the sector.

A proactive role of government in major infrastructures

A proactive role for government is necessary in the context of relatively higher start-up costs compared to the longer-term benefit stream, positive externalities, and the commercial risks related to green investments and new technologies. This is particularly relevant to achieving a competitive outcome. Utilised with care, some state or public intervention may have a positive effect, for instance in supporting agri-environmental measures, development of renewable energies for desalination or other necessary infrastructure.

Reducing costs

A major source that needs to be tapped to close the financing gap is reducing the cost of the service providers. The most common factor of operational inefficiencies in utilities that can have important environmental impacts is non-revenue water (NRW) losses. Measures to address NRW should aim at reducing losses due to metering inaccuracies and unauthorised consumption and leakages in the network and in the household. Such a strategy needs to be based on an





understanding of the full scope of the problem. In addition to taking the critical step of understanding the baseline situation, building capacity including use of appropriate technologies are also fundamental to an effective reduction programme. More importantly, implementing a reduction programme requires consideration of NRW within the broader context of utility reform. Thus the NRW reduction programmes must ensure an alignment of all objectives of developing an efficient and effective utility that meets the needs of its customers.

Approaches to NRW reduction could involve the private sector which can assist with providing services such as new technology development, investment, and incentives for project performance. Options for private sector involvement range from delegated management under Public Private Partnership (PPP) contract, to outsourcing of NRW reduction activities, and technical assistance contracts (Kingdom et al. 2006).

A good example of a well designed performance based contract is the **Manila Water Company in Philippines** which received a concessionary contract from the Manila's Metropolitan Waterworks and Sewerage System (MWSS) in 1997 and successfully reduced NRW from 63% to about 15% by 2009. This was accomplished through the implementation of efficient NRW management programmes that combined technical and social interventions. Illegal connections and meter tampering were addressed through community dialogues and "Water for the Poor" programmes.

Source: Kingdom et al. (2006)

Technology selection

Technology selection also plays an important role in reducing the cost of services. Technology choice will affect initial investment costs and hence the capital costs of the service, but also the operation and maintenance cost of the service over time. Both of these costs need to be taken into account when selecting technologies as lower capital costs may not necessarily go hand in hand with low operation and maintenance costs. Also important is the need to standardise the use of technologies in a country. The wide dispersion of technologies poses costs in terms of availability of spare parts and the local knowledge to deal with the different technologies. Standardising technologies and setting minimum standards, such as hand pumps should be considered.

Pro-poor tariffs and financing of water utilities

Local governments and service providers can consider increasing the design and implementation of successful policy instruments such as Social Safety Nets (SSN). SSNs are part of a broader poverty reduction strategy and are used as social tools to help facilitate productivity, redistribute resources to the poorest and most vulnerable, and protect low-income households from the





effects of economic shocks or inequities. SSNs tend to have a better targeting performance than consumption or connection subsidies and they are offered through cash or non-cash instruments. Cash instruments include programmes that provide transfers in cash such as income support programs, non-contributory pensions, and disability benefits. Non-cash programmes on the other hand include food transfers, training opportunities for beneficiaries, and subsidies. Public-works and micro credit are other forms of SSN instruments. Public works typically provide low skills employment opportunities (for example, construction or rehabilitation of much needed public infrastructures) to the poor willing to work for a low wage payment in cash or in-kind (Milazzo and Grosh 2008).

Lessons learnt from the application of Social Safety Nets and investments for poor communities

The World Bank has actively incorporated SSN components into its lending and analytical work activities. In its water lending operations, SSN interventions have ranged from conditional cash transfers to grants and training opportunities. For example in the Indonesia Third Water Supply and Sanitation for Low Income Communities project, the World Bank is supporting the Government of Indonesia's commitment to achieving the water MDGs, by providing community block grants to deliver water supply and sanitation infrastructure, community empowerment and local institutional development including incentive grants which would increase the number of low-income rural and peri-urban residents with access to improved water and sanitation facilities. The project is being implemented on a programmatic basis to provide assistance to selected villages that meet the project's targeting and section criteria. Through this mode of delivery, project funds are directly allocated to the participating villages.

Quantity-based subsidies are, however, not the only type of subsidies that are being provided in the residential water sector. Many utilities offer connection subsidies, targeted by geographic or proxy means-test criteria. In addition, self-selection is used to target subsidies for lower-quality services such as public standpipes. These schemes perform somewhat better than quantity-based ones. The geographic schemes examined present an almost neutral distribution, while proxy means-testing and self-selection present relatively progressive distributions. Still, these schemes exclude a substantial proportion of poor people – due to low utility coverage for this group. In irrigation, subsidies are delivered either through area-based pricing or volumetric pricing. Area pricing tends to promote little conservation, whereas volumetric pricing helps to limit water use but has high transaction costs.





Results Based Financing

In Results Based Financing (RBF), resources are disbursed not against individual expenditures or contracts on the input side (as traditionally done), but against demonstrated and independently verified results that are largely within the control of the recipient.

Examples of RBF structures:

- **Output-based Aid (OBA).** Typically OBA involves payment of a subsidy to cover a funding gap to access basic services by the poor. OBA can also be used for more efficient delivery of services that exhibit positive externalities. Service delivery is contracted out by the entity providing the public funds to a service provider (a private enterprise, a public utility, NGO, community-based organisation), with payments tied to achievement of specified service performance or outputs. OBA subsidies can either buy down the capital cost of investments required to deliver the service or can cover the difference between an affordable user fee and a cost-recovery user fee, for example a consumption subsidy.
- **Output-Based Disbursement (OBD).** OBD involves payment of a subsidy to a service provider or a contractor for improvements in the efficiency of service-related assets, systems, or recurrent government activities.
- **Performance-Based Financing for Health (PBFH).** PBFH involves payments to a provider, payer (e.g. government entity) or consumer when measurable actions are taken or defined performance targets are achieved.
- **Conditional Cash Transfers (CCT).** CCT programmes provide cash payments to poor households that meet certain behavioural requirements, generally related to children's health care and education.
- **Cash-on-delivery Aid (COD).** Proposed by the Center for Global Development, COD involves payments to the recipient government after measurable progress, only for as much as is verifiably achieved (e.g. a fixed amount for every student that takes a standardised competency test in their last year of primary school, or for each additional child over an enrolment baseline who takes the standardised competency test).
- **Advance Market Commitments (AMCs).** AMCs are a range of mechanisms which aim to create sustainable markets by providing a guarantee of future revenues to service providers for a limited period of time. AMCs act by guaranteeing service providers a price on delivery





of a pre-defined output and/or that they will be able to sell a minimum number of units for a limited period of time.

- **Carbon Finance (CF).** CF is an instrument for leveraging private and public investment into projects that reduce greenhouse gas emissions. It involves contracts to purchase emission reductions similar to a commercial transaction, paying for them annually or periodically once they have been verified by a third party auditor (World Bank 2010c).

RBF mechanisms such as OBA, OBD, AMCs, and some types of PBFH link service outputs with associated unit costs and disbursements reflect the actual cost of service. Other RBF mechanisms such as COD, PBFH, CCT, and CF, where the costs cannot easily be predetermined (e.g. school enrolment numbers), consider output delivery or achievement of specific milestones or measured outcomes as a condition for funding without the unit cost linkage.

Lessons from implementation of Results Based Financing of water projects

The application of RBFs in the water sector has been quite limited, but in recent years, these instruments have emerged as an important new way of financing basic services. Output-Based Aid (OBA) is one of the mechanisms that have been used in the water supply and sanitation sector in the last few years with promising results. Most of the financing has been channeled through the Global Partnership on Output-Based Aid (GPOBA), a partnership of donors and international organisations working to promote the concept of OBA. There are currently 22 projects with World Bank participation with approximately US\$ 140 million allocated to subsidies: 15 water supply schemes, three sanitation schemes, and four providing both water and sanitation (Kumar and Mugabi 2010). Many of these projects are already showing promising results: in a span of less than a year 6,700 connections were made in Cameroon (project target at completion is 40,000); in India 77,000 connections in rural communities in Andhra Pradesh were completed. In most of the schemes a one-time subsidy is provided for access to service. Most cases financed so far involve piped-water schemes, with access defined as the delivery of a working connection to the network.

In an evaluation of the implementation of OBA projects in the water sector, Kumar and Mugabi (2010) draw some key elements for success necessary early in the process: i) market structure and experience with competitive processes to encourage efficiency; ii) regulatory or legal and contractual framework, including policies for setting and adjusting tariffs; iii) capacity of implementing agencies – for example, to handle transaction processes, monitoring and verification, and the flow of funds as well as an understanding of and willingness to work with performance-based arrangements, and iv) extent of experience with the private sector in service provision, where relevant.





The formulation of clearly defined incentives requires reporting systems that generate systematic and reliable information to benchmark and monitor the efficiency with which resources are being used in terms of outputs and outcomes. Governments must understand the benefits of being able to clearly monitor and measure the impact of its investments.

Lessons learnt from specific cases

Lessons learnt from ‘Output-based Aid: extending water and sanitation services to the poor in peri-urban Morocco’:

- The use of performance-based subsidies helped refocus service provision on household demand, which increased accountability, strengthened partnerships between local authorities and operators, and made monitoring of service delivery a priority.
- The OBA approach proved an efficient and powerful tool to extend services to poor peri-urban areas in a cost-efficient and sustainable manner.
- Participation was strictly demand-driven. This created an incentive for the operators to carefully assess demand from targeted beneficiaries during preparation and work with local authorities and partners during implementation to raise awareness and promote the programme.
- Operators reached potential customers by sending dedicated teams to marketplaces or the centre of targeted neighbourhoods to record demand from beneficiaries who might not easily travel to one of the operator’s agencies.
- The OBA approach was seen to play an important role in overcoming financing blockages, mobilising stakeholders, and making sure funding reached the targeted people.
- The quarterly inspections by an independent technical reviewer helped improve the operators’ progress reporting requirements and implementation methods.
- The OBA is seen as strategically relevant to Morocco, given the lack of targeted subsidy mechanisms for poor households, especially in informal urban settings. Despite the maximum number of connections being made through the pilot project, the need for additional connection remains great. The operators continue to deliver connections under the same conditions, but without the subsidy; there is an immediate need for concrete action from the government to implement a programme which continues to address the persistent service deficit in low-income peri-urban settlements throughout Morocco.
- The Government of Morocco has expressed interest in replicating the OBA approach on a citywide or nationwide scale. The World Bank is now working with the government to plan a scale-up programme that could be adapted to address the needs of several large municipalities. Such a programme would also aim to strengthen coordination between institutions in charge of the different aspects of peri-urban utility service, and reform tariff





and connection fee structures, so as to prevent an expansion of unserved peri-urban neighbourhoods.

Lessons learnt from 'Social contract formulas in rural areas: the India Naandi Foundation water treatment plants':

- An OBA approach has promoted participatory community involvement and capacity building in the villages for managing and delivering efficient services. A grassroots fee-for-service model coupled with a sense of community engagement and ownership will help ensure the long-term sustainability of the water supply schemes.
- Rural households are willing and able to pay for clean drinking water; however, in most cases this demand has to be created through community awareness campaigns. In this case, a cost recovery tariff was a new concept for the beneficiaries and willingness to pay had to be generated. This was made possible by the community awareness and social marketing campaigns carried out by the implementing agencies, and a high level of transparency and accountability ensured through the OBA approach.
- A win-win strategic partnership between the grant recipient and the technology provider/operator is critical to success. The partnership resulted in a win-win situation whereby WHI (the technology provider) benefited from increased demand generated by Naandi's safe-water education campaigns, and Naandi benefited from linking its traditional health education work to new and reliable clean water supplies. However, as operators increase their capacity in using the community approach, a direct contractual agreement between the Panchayat and the operator is likely to be more efficient.
- Small grant-financed pilot projects can stimulate discussion amongst government agencies on wider sector issues (e.g. appropriate water treatment technology for rural water supply, institutional arrangements for O&M, and improving accountability and transparency in service delivery). But project implementers must be flexible enough to respond quickly and appropriately to take advantage of opportunities.
- Paying on outputs effectively transfers procurement and financial management-related risks to service providers.

Lessons learnt from 'Pro-poor financing and tariffs in Medellin, Colombia':

- Know your target population well. Programmes addressed to the poor must be built on a thorough analysis of the target beneficiaries' conditions and their local particularities in order to structure flexible and custom-made options for social improvement. This requires interdisciplinary study of economic, social and psychology behaviour, as well as the rules, regulations and institutions that affect social behaviour.





- A successful programme in one particular context does not necessarily guarantee success when the practice is transferred to a similar context. As initiatives are designed to solve a specific situation, what can be transferred is not the practice itself but the building and conceptualising processes involved in its design and initiation.
- Do not think the target has been already met. Constant monitoring and evaluation is essential to identify changes or deviations from the expected outcomes or to introduce improvements leading to increased efficiency and effectiveness of measures.
- Investment in social capital in the community contributes to economic development and generates positive externalities.
- Credit is not the solution when it does not contribute to income generation or savings for consumers. Thus, credit options for delinquent accounts must be considered just as temporary measures in order to avoid consumers' dependency or poverty traps.
- Joint efforts generate high impact. Collaboration and cooperation between governments (both municipal and national), private and public entities is the best way to support the expansion of water and sanitation services and invest in social welfare, through joint commitment to the achievement of a common target. The responsibilities and roles of each actor should be identified.

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