Financing for Water and Sanitation

A Primer for Practitioners and Students in Developing Countries

EUWI
EU WATER INITIATIVE

Finance
working group

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Formed in 2003, the EU Water Initiative Finance Working Group (EUWI-FWG) comprises representatives from the public and private sectors and civil society and is focused on helping to shape the financial strategy of the EUWI. The FWG aims to improve the efficiency and effectiveness of existing and future EU aid flows to water, including encouraging innovation, the development of institutional and regulatory frameworks and capacity building, and to enable the use of development funding as a catalyst to leverage other forms of finance, including donor, user and private finance, to improve access of the poor to water and sanitation services.

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Acronyms

AfDB	African Development Bank
ADB	Asian Development Bank
DFID	UK Department for International Development
EBRD	European Bank for Reconstruction and Development
EECCA	Eastern Europe, Caucasus and Central Asia region
EIB	European Investment Bank
EUWI-FWG	European Union Water Initiative Finance Working Group
Forex	Foreign Exchange
IFC	International Finance Corporation
IFI	International Financing Institution
M&E	Monitoring and Evaluation
MDG	Millennium Development Goal
MIGA	Multilateral Investment Guarantee Agency (of the World Bank Group)
NGO	Non-governmental Organisation
O&M	Operation and Maintenance
ODA	Official Development Assistance
OECD	Organisation for Economic Cooperation and Development
PPP	Public-private Partnership
PSP	Private Sector Participation
SFP	Strategic Financial Planning
WASH	Water, sanitation and hygiene
WHO	World Health Organisation
WSP	Water and Sanitation Program (of the World Bank Group)
WSS	Water Supply and Sanitation
W&S	Water and sanitation

1: Preliminaries and Overview

1.1 Policy context

This Primer offers a non-technical introduction to financing for water and sanitation in developing countries. For the last decade (since the Second World Water Forum in The Hague, 2000) finance has been a regular item on the agenda of international discussions of water and sanitation and has been a staple theme of the Global Water Partnership, World Water Council, and the EU Water Initiative Finance Working Group, amongst other networks and fora[1].

The landmark Report of the Camdessus Panel[2] in 2003 stressed the importance of reforms to governance as a precondition for increased funding, and promoted the idea of "sustainable cost recovery", including transparent public subsidies as well as tariff revenues. The Report recommended various measures for mitigating the risk associated with the water sector, especially those operating at a sub-sovereign level of administration. The Panel was mindful of the target of the Millennium Development Goals enunciated in 2000: "By 2015, to reduce by half the world's population without access to safe water and sanitation." In 2006 the Report of the Gurria Task Force broadened the focus to address the demand for water finance and added the reinforcement of local capacity to the agenda. Within the UN umbrella, the United Nations Environment Programme (UNEP) has a Financing Initiative and the UN Secretary-General's Advisory Board on Water and Sanitation includes financing as one of its objectives, with a particular stress on capacity building.

In Africa, the African Ministers' Council on Water (AMCOW) has put financing high on its agenda and it is a regular feature of their annual African Water Week and meetings of ministers.

As a result of these and other initiatives, improvements have been made to the international financial architecture for water (new products, funds, hybrids, more ODA, etc.) but the environment has changed due to international financial and economic events and the emergence of other policy priorities. Adaptation to climate change now overshadows the water agenda, and other pressing topics include promotion of the Green Economy, the implications for water of "land grabs" by resource-poor countries, the health and environmental costs of pollution by wastewater and implications of the human right to water, etc.

1.2 Target readers

Target readers for the Primer are practitioners in developing countries – politicians, officials, professionals, private business people, members of civil society organisations and laypersons – involved in different ways in providing the infrastructure and services for water and sanitation. It is also aimed at students needing a compact introduction to this topic. A Glossary of frequently used terms is included as Annex A and list of useful websites and written material is given in Annex B.

1.3 What is included in the term "water"?

Water is usually perceived through its more tangible forms of infrastructure and services (drinking water, treatment works, irrigation systems, dams, etc.). In fact, water spans a wide range of structures, services and functions which are closely interrelated (Box 1). Some of these are easier to finance than others, either because they generate revenues, or are highly visible public services, whereas other aspects – particularly resource management and governance – are more prone to be neglected and starved of funding. Over time, this neglect will be felt in a lack of, or deterioration in, these functions and services, which will compromise the "front-line" services such as household water, irrigation, hydropower and flood control, as well as impairing natural ecosystems.

[1] www.gwpforum.org; www.worldwatercouncil.org; www.euwi.net/wg/finance.org.

[2] *Financing Water for All: Report of the World Panel on Financing Water Infrastructure.* GWP and WWC, 2003.

Box 1: Elements of the "water sector"

Strategy, planning and policymaking
- Strategy and priority-setting
- Policymaking
- Resource allocation and budgeting
- Systems analysis and planning
- Research and data collection
- Institutional development
- Training and capacity building

Engagement with stakeholders
- Coordination and consultation
- Regulation, monitoring and enforcement
- Public awareness and information
- Conflict resolution and arbitration

Water resource development, allocation and management
- River basin management
- Multi-purpose projects
- Flood control and drainage
- Catchment management
- Environmental and ecosystem protection
- Water quality and pollution control

Water User services
- Household water and sanitation
- Sewerage and wastewater treatment
- Industry and commerce
- Agriculture and livestock
- Navigation
- Thermal and hydro power
- Fisheries
- Mining
- Recreation, sport and tourism, etc.

Ref: GWP Water financing and governance, 2008

This report aims to offer general guidance relevant to all major parts of the "water sector" and sanitation. This includes key parts of governance, resource management, flood control, quality and pollution control and ecological services, as well as the familiar water services such as for households, farmers, hydropower producers, industries, etc. Obviously, these various functions and services have distinctive features relevant to their financing, which cannot be properly dealt with in a report of this length and generality. Although the Primer is biased towards the most familiar realm of household water supply and sanitation, the text includes examples that reflect the greater breadth of this topic.

1.4 Why are water and sanitation (W&S) "a problem" to finance?

Water is generally considered to be the part of public infrastructure posing the greatest financing challenge in developing countries. Water and sanitation services are on the boundary between *economic* infrastructure (e.g. transport, electricity, telecommunications) and purely *social* infrastructure (e.g. health and education). In economic infrastructure there is either a high degree of user charging (e.g. power, public transport, ports, and telecommunications) or substantial public budgetary provision (roads). In social infrastructure there is normally exclusive or heavy reliance on public finance.

W&S falls between these cases; politicians and water users alike are ambivalent about how far water should be treated as a basic right, whether it should be provided free or with a subsidy, or whether it is a commercial service to be charged for. The result is often an uneasy compromise where water services are priced below economic levels and the sector is chronically under financed.

Other features of W&S that affect its financing are:
- Water is often a public monopoly, and there is political interference in its supply and pricing.
- Many of the benefits of water are not reflected in its price[3].
- The infrastructure required for water services is costly,

[3] For three reasons: it is in some respects a "public good" (certain services are not profitable for private firms to supply, because they cannot exclude free-riding consumers from benefiting); it is a "merit good" (users enjoy benefits they don't fully perceive, hence there is a public interest in raising general consumption); and there are external benefits – as well as disbenefits – (e.g. benefits to public health and environment).

amortised over long periods, and its financial returns are often slow to materialise.
- Once built, it is a sunk cost with little or no alternative value, hence cannot offer collateral security for financiers.
- Water revenues normally accrue in local currency – which entails a devaluation risk where debt and equity have to be serviced in foreign exchange.

Water does not have to be the neglected orphan of the financial world. Well-run and financially solvent water undertakings (private or public) have little difficulty attracting finance from external sources (local or international) on suitable terms. In some developing countries public water service providers have become commercially and financially successful, though they are still the exceptions.

1.5 Are water supply and sanitation separate issues?

Ideally, urban and peri-urban household sanitation[4] should be planned, implemented, managed and financed in an integrated manner along with water supply. However, in reality it is common for sanitation to lag behind water supply, and to have its own institutions, management systems and sources of finance.

One basic reason is that sanitation is often a household decision, implemented and funded by individual households. This is determined by the available technological options: disposal of wastes can either be on-site (into septic tanks or pits) or into public sewers. On-site facilities may be self-regulating or may need to be emptied (e.g. by municipal or private tankers). However, the use of water-borne sewerage through public sewers takes the problem onto a different level, where sewerage networks have to be installed, the resulting accumulation of wastewater treated centrally, and the residue (sludge) disposed of. Where population densities or other local factors make public water-borne sewerage and wastewater treatment necessary, major financial resources are called for.

In some respects, sanitation has suffered from its traditional link with water: it has been overshadowed, treated as a "poor relation", and its needs not sufficiently differentiated. Sanitation deserves to be treated as a separate subject, with its own *problématique*, institutions and policies, without losing sight of its close relationship with water supply. Traditional approaches to sanitation have focused on *supply* and financing has been viewed largely as an issue of *subsidising technical solutions*. This has led to the wrong kinds of facilities being provided, that are unused, neglected or even diverted for other purposes (e.g. storage).

To avoid such problems, there is growing support for a step-wise approach involving: examination of the real demand for sanitation in specific locations[5]; promotion of demand through individual incentives or community pressure; devising appropriate and cost effective solutions; and using grant funds to leverage private and community contributions.[6]

Compared to water supply, the benefits of which are largely private, the safe disposal of human waste and household wastewater has large external benefits to society, which would of itself justify either high charges to households (on the Polluter Pays Principle) and/or public subsidies for sanitation targeted at poor communities.

2: Basics of Governance and Financing Issues

2.1 Water governance

"Water governance refers to the range of political, social, economic and administrative systems that are in place to develop and manage water resources, and the delivery of water services, at different levels of society[7]".

[4] Sanitation refers to the disposal of household wastewater, which may or may not involve sewerage, and may or may not involve water. Sewerage is the collection and treatment of wastewater on a collective basis.

[5] See WSP, 2004.

[6] Mehta and Knapp, 2004.

Governance describes the way the water sector is organised, the laws that frame its operations, and how it relates to government authorities, the general public, its customers and workers and – in the case of private companies – owners and shareholders. Good governance has a direct impact on water's financing prospects: for example, a badly run, insolvent water authority, operating with confused objectives and responsibilities, with an opaque relationship to central and local governments, will have difficulty raising the right kind of finance.

The following keynotes of good governance relevant to financing are widely accepted.

Separation of policymaking, regulation and service provision.
These are independent functions, which should be performed by separate bodies in the interest of efficiency, public accountability and transparency. For instance, there should be independent oversight of the performance of agencies and service providers. For water supply an independent regulator is desirable to safeguard public interests in such matters as service delivery, level of investment, and tariffs. This applies to both public and private W&S providers: it is equally necessary to hold public undertakings to account since it is easier to conceal their shortcomings.

Effective subsidiarity.
For W&S services governments may decide to decentralise responsibility to state, municipal or district level. The principle of *subsidiarity* is that a central authority should only perform those tasks that cannot be performed at a more local level. But the transfer of responsibility should be matched by an equivalent transfer of financial powers, and the capacity to exercise these (e.g. control over tariffs, ability to borrow, freedom to sub-contract services). Otherwise, delegation will be a hollow process, and delegated authorities will not have the financial autonomy or strength necessary to fulfil their responsibilities. This is unfortunately a common situation.

Clarity of financial status and objectives.
For water authorities and service providers these should be clear and realistic. In some countries this is set out in statutes, in others it is laid down in performance contracts between the agency/provider and its government sponsor. Is the authority required to cover its costs, and how are these defined? Should it make a profit or a specified return on capital? Has it freedom to set tariffs and can it borrow in its own right? Is the state willing to cover operating deficits; will it finance capital items with grants, loans or guarantees? External financiers and credit rating agencies will scrutinise such details closely.

Accountability.
Accountability to customers and taxpayers is highly desirable. Treating water users as customers and aiming to improve service standards is an important step towards creating a good corporate ethic, which is essential to the performance of a public utility as an efficient, autonomous and creditworthy service provider.

"Joined-up" policies.
Policymaking for water should recognise the wide scope and coverage of this sector, and the impact of actions in one part on another, and on the wider economy. It is also important to understand how the water sector is affected by trends in other sectors, e.g. agriculture, tourism, trade, housing, etc. Inconsistencies and unintended impacts should be avoided as much as possible. One step towards this is to adopt Integrated Water Resource Management (IWRM) principles into water governance structures. IWRM has been defined as: *"A process which promotes the coordinated development and management of water, land and related resources in order to maximise the resultant economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems"*. IWRM is a mindset

[7] Rogers P and A W Hall, 2007.

which views the water sector as a whole and takes account of the interactions between its different parts. The various elements of an integrated approach are described in the IWRM ToolBox (www.gwptoolbox.org).

Legal recognition for the role of private and other non-state actors.
Between different countries, the organisation of the water sector is very varied and involves many different agents. A pragmatic approach is highly desirable, requiring a legal framework that recognises the role of all types of non-state agents.

2.2 Financing policy issues

There is no blueprint for an "ideal" system of water financing, just as there is no blueprint for a model organisation of a water sector. Every country is different. With this in mind, the following are some of the *financing issues* that may arise in specific situations:

Coherence, uniformity or variety.
Countries organised along statist lines may opt to fund all water services through central government, with or without contributions from consumers. Others may find this solution unaffordable or undesirable, and opt for a hybrid system. Some countries (e.g. France) adopt the view that "water should pay for water", meaning that water consumers and polluters should provide the bulk of finance for water services. This is one approach to financial sustainability, though there are others. Financing of the whole water sector should be coherent, but different parts of it are likely to need different financial solutions. The sector should "hang together" financially – since the impoverishment of one part can seriously affect others. A variety of sources and solutions can be a healthy sign, provided it results in all important parts being adequately funded.

Public finance for public goods.
There are good reasons for public budgets to prioritise *public goods* and activities with strong *external benefits*. A public good is a good or service that can only be provided by public authorities, since it is not profitable for a private agent to supply (e.g. because it is not feasible to charge, or because no one can be denied access to it because of non-payment). Examples would be flood protection and the clean-up of polluted rivers. Goods and services with external benefits include clean water, sanitary disposal of waste, promotion of household hygiene, sewage collection and treatment, etc. All these cases confer wider social benefits, such as improved public health and the avoidance of epidemics. There are also external *costs* arising from the use of water (e.g. pollution), which can be penalised through taxes and charges according to the Polluter Pays Principle.

Financial self-sufficiency.
Providers of water services should be able to count on sources of income from tariffs, budgetary allocations and ODA and other philanthropic sources for a sufficient future period to enable them to carry out their functions, including investment, efficiently. Agencies need freedom from political interference in their day-to-day business. Whether tariff income should cover full costs (however defined) is a matter for public policy; if subsidies are to be provided they should be transparent, reliable and predictable[8], otherwise the water authority will be condemned to a hand-to-mouth existence, dependent on the whims of political patrons.

Cost recovery from users.
The Rio and Dublin Conferences of 1992 recognised that water is an economic and social good and has to be paid for. Cost recovery from users should, however, be subject to affordability, with appropriate use of tariff structures, targeted subsidies and cross-supports to reduce any hardship amongst vulnerable populations. Some people consider water a 'human right', though this need not

[8] The (Camdessus) Report of the World Panel on Financing Water Infrastructure, 2003 advocated "sustainable cost recovery" which allows a place for budgeted subsidies in justifiable cases.

preclude payment for services. Subsidising water for social reasons is a matter for national political decision.

However, where the national treasury cannot or will not provide the required funds, the water sector becomes starved of finance. The offer of free or cheap water may be a populist gesture that actually benefits the rich, impoverishes water infrastructure and services, and makes their proper financing impossible. Genuine social needs can be addressed through properly budgeted direct measures (e.g. targeted subsidies, free or cheap basic water quotas, support of promotion of sanitation demand, etc.). Within this policy framework, services can and should be conducted on commercial principles.

Co-financing for trans-national projects.
Co-financing from neighbouring countries and international funds should be sought for trans-border schemes and projects with a cross-border dimension.

Cost sharing for multi-purpose projects.
Cost sharing with agencies in related sectors should be considered for multi-purpose schemes where water functions are mixed with other products and services. Services can be "bundled" together in a multi-functional agency, with the profitable parts cross-subsidising others.

Partnerships to tap new sources of finance.
The public sector can form partnerships with private firms and other organisations from civil society to raise funds for specific projects and programmes. Public-private partnerships are widely used for financing public services in some countries, wherever they can demonstrate comparative advantage by the respective partners, efficient risk allocation between them and clear accountability for the results.

2.3 The difference between "investment" and "financing"

Although "investment" is often used in the financial pages of newspapers to refer to any financial transaction involving parting with money, in economic terms "investment" is the creation of a productive asset to yield future income. "Financing" is the means by which such investment is paid for. Some examples will make this clearer.

- A business *invests* in the purchase of new equipment. It *finances* this by raising a bank loan.
- A farmer *invests* by buying more cattle and a new irrigation system, and *finances* this by drawing down savings.
- A water company *invests* in the construction of a new wastewater treatment plant, and *finances* this through government loans and subsidies from tax revenue.
- A national government *invests* in water development and management projects (e.g. dams, watershed conservation, flood protection works) and *finances* these by making a bond issue.

In this Primer, *investment* will be used in its economic sense, for the important practical reason that the availability of finance is only one of the factors affecting real investment in water assets. In many circumstances such investment is held back by other factors, such as administrative capacity, construction bottlenecks, logistical difficulties, limits on the absorptive capacity for aid and other external finance, etc. Focusing exclusively on financing may obscure other more important factors holding back investment.

In financial circles, the term "investor" is applied to anyone buying equity shares, bonds, or other financial securities. Any finance for water, including bank loans, is often loosely called "investment", though in the financial sense it is better to limit the term to funding methods involving a degree of risk (Box 2).

Box 2. Riskiness in financial products

Financing a sound and reputable borrower with a bank loan, or buying a bond, is not inherently risky, since the financial return expected is specified at the time of the transaction[9]. However, buying an equity stake in a venture is risky since its future value depends on the performance of the business concerned. The latter kind of financing is referred to as *risk capital*.

However, the distinction between risk-free finance and risk capital is seldom clear-cut. Even "risk free" finance can incur losses for providers when default occurs, which they try to minimise by obtaining security (land, buildings, animals, equipment, financial securities), by seeking guarantees, taking out insurance, etc. Certain types of finance such as microcredit (where borrowers typically have no credit record, nor can offer any security) provide for their extra risk and higher transactions costs through interest rates that are higher than those on conventional loans.

Bonds issued by a company or authority with a dubious credit rating ("junk bonds") need to offer a higher interest rate to attract buyers. Depending on the strength of their legal claim to a company's financial resources, different kinds of debt can be referred to as *junior, senior, subordinated, mezzanine,* etc.

2.4 "Private" and "public" solutions

The phrase "private investment in water…" is constantly used, and abused. We saw above that the term "investment" needs to be used much more carefully. Likewise, a cavalier use of the terms "private" and "public" is apt to mislead.

Lenders can be either private or public. Loans on market, or market-related terms can be from private, public or public international development banks or other financial intermediaries. Portfolio investors, such as bondholders, and equity investors can likewise be from across the public-private spectrum. There is a further complication where banks are state-owned, but act in a fully commercial manner (and there is a corresponding situation amongst investing companies, which have a mixed or public ownership, but which have a strongly commercial ethos).

Borrowers can also come from any part of the ownership spectrum, whether it is for commercial bank loans or the issue of fixed-interest securities, e.g. corporate debentures[10] or municipal bonds. The movement for *private sector participation* (PSP) and *public-private partnership* (PPP) has also caused a blurring of the basic public/private divide. In infrastructure concessions, the assets formally remain in public ownership, though in other key respects the operation can be considered private, while in BOT and BOOT[11] contracts the asset starts in private ownership, but then transfers to the public domain.

"Privatisation" and private operation.
Yet another source of confusion is the indiscriminate use of the term "privatisation" to describe any involvement of private companies in the management or operation of water services. It is more appropriate to use the term *privatisation* to refer to the sale (*divestiture*) of formerly publicly-owned assets to private owners, which is still comparatively rare. Other kinds of private involvement (*PSPs, or PPPs*) do not involve a change of asset ownership, for example management contracts, sub-contracting specialised services, leasing the assets – while, as noted above, the growing number of BOTs involve the reverse process, starting with private ownership, later transferring to public.

[9] Loans and bonds become "investments", in the ironic sense, when the borrower defaults. They may literally become risk capital if they are converted into equity as part of a financial restructuring.
[10] A long-term security issued by a company yielding a fixed rate of interest and normally secured against the company's assets.
[11] Build, Own and Transfer (BOT); Build, Own, Operate, Transfer (BOOT).

A growing number of water operating companies are based in China, Southeast Asia, Russia, Latin America and the Middle East, having a commercial business model and similar operating practices to their older-established European and North American counterparts, but which are wholly or predominantly publicly owned. A number of these have opened up their equity capital to private stakeholders, and some have gone all the way to full private ownership.[12]

Whatever the legal or contractual form, the involvement of private companies in water operation can facilitate financing in various ways. One way is through the direct injection of private equity, or by raising other types of commercial finance through their own balance sheets, or through the cash flow of the project. These are dealt with further in Part Seven. But private involvement can bring other indirect benefits for finance. *Management contracts* with private operators can improve an undertaking's efficiency and finances, and should enhance its creditworthiness.

There is a growing body of small and medium-scale local private water operators in developing countries, some of which are able to tap local sources of finance (Box 3).

Box 3. Small private operators in Uganda and Mauritania

Although the local private operators (LPO) in Uganda's local government contracts are relatively small (typically serving towns of 10,000+ population), the experience yields positive lessons for larger-scale ventures. Local governments are grouped into Urban Water & Sewerage Authorities (UWSA), each of a minimum scale ("cluster") to make the arrangement viable. UWSAs sign performance contracts with LPOs, typically of 1-2 years, with management fees made up of five components: base fee, water sales, billing, network maintenance, and new connections. Despite teething troubles of some operators, the overall progress of this programme has been encouraging. The government's strategy is to put more emphasis on demand-driven approaches, setting clear rules of the game and clarity of access to funds, placing local governments in the driving seat over design and procurement, and progressing from management contracts to leases.

In Mauritania, towns with populations over 20,000 are managed by the national water company, SNDE. In smaller towns local operators are engaged under 3-year delegated management contracts with a central body, ANEPA. Currently 300 independent operators serve more than half of the national population. These operators out-perform water services in larger towns on key measures and have extended the systems they run. They have invested over $5 million in their networks, even though such investment is not factored in to the water tariff, and nearly all is recovered from tariffs.

There is also growing evidence of the role of private operators in distribution networks for informal (and often illegal) urban settlements, and amongst rural communities[13].

A good *independent regulator* is key to ensuring that private operators perform in the public interest[14]. In practice, regulation is an evolving art even in mature economies, and many countries manage with imperfect forms. A second best alternative to a good independent regulator is regulation by contract, with appeal to an independent arbitrator or access to international law. A third option, based on experience in some cases, is the use of local governments and communities to monitor compliance by private operators.[15]

To summarise the main points of this section:

- It is more accurate to talk of *commercial*, rather than *private*, finance because the providers of commercial finance come from the full range of the ownership spectrum, private, public and mixed.

[12] Described in Winpenny, *Opportunities and Challenges Arising from the Increasing Role of New Private Water Operators in Developing and Emerging Economies*. Paper for the OECD Global Forum, Paris, Nov 2006.
[13] WSP, 2009 and WSP, 2010.
[14] Regulation and accountability are also needed for publicly owned enterprises.
[15] WSP, 2010.

- *Privatisation* should be used only to describe the private ownership of infrastructure assets, which is still rare. Other private services for systems that remain in public ownership can be described as forms of *public-private partnership* or *private sector participation*. Build-Operate-Transfer concession projects are a hybrid type, starting in private ownership, and later transferring back to public authorities.

2.5 NGOs and civil society partnerships

In developing countries, a high proportion of W&S programmes in rural and peri-urban areas are undertaken with the involvement of NGOs (a broad term that would include community based organisations, church groups, charities and other philanthropic bodies). Some of the most active players in this "third sector" are UN agencies such as UNICEF, or branches of the International Red Cross. Some NGOs specialise in W&S and have extensive programmes and experience e.g. Eau Vive (eauvive@wanadoo.fr) and WaterAid (www.wateraid.org).

Although the largest NGOs are of international origin, most of them have strong local "ownership". Most of them act as channels for decentralised donor funds. Partnerships usually involve some of the following: local government; community organisations; NGOs or charities; external donors; private companies; and banks or microcredit organisations. The functions of sponsorship, political advocacy and backing, professional steering, funding, implementation, etc. have to be allotted on the basis of comparative advantage. Funding normally involves combining grants for seed capital, provision of security and guarantees, and the use of commercial finance – often in a revolving pool format.

Box 4 sets out some of the considerations involved in encouraging civil society partnerships as sources of finance for W&S.

Box 4. Civil society partnerships: pros and cons

Pros	Cons
Operate in regions where official administrations are thin on the ground.	However successful in their own terms, their projects may not be replicable (or scaled up) because they are privileged in various ways.
Active in sectors such as sanitation that have lacked priority for governments and others.	Presence of foreign workers outside the direct control or accountability of national governments could cause suspicion or resentment.
Flexible operators; can adapt to what the situation requires.	May attract staff away from local institutions, thus weakening the latter.
Able to form partnerships with disparate bodies depending on what the local situation demands and how risks need to be shared.	May be a disincentive for the development of sustainable local institutions and financing systems.
Can bring in additional external funds through their "halo effect".	Lack of sustainability and poor operation and maintenance of facilities once they leave.
Staff can work in situations that are effectively 'no-go' areas for government officials or external official donor agencies.	Inadequate mechanism for collecting revenues to pay for repairs and/or upgrading.

3: The Planning Framework

This section introduces the basic planning framework for water financing – strategic financial planning[16] – followed by the estimation of financial needs, and finally the 3Ts financial model.

3.1 Strategic financial planning

Strategic financial planning (SFP) matches national water policy to local resources, capacity, and available finance. A key part of SFP is the production of a national consensus on what water supply and sanitation (WSS) services the country can or should afford in the long term, and how it will pay for them. It proceeds by building a consensus around:

i) Agreement on the baseline situation for WSS;
ii) Estimation of the projected financing gap implied by current plans and ambitions;
iii) Identifying policy options that could help to close the financing gap;
iv) Development of alternative future WSS scenarios;
v) Production of a Financing Strategy that is realistic and affordable.

SFP comprises an *approach* and a *process*, at the heart of which is dialogue and iteration. It also usually leads to a *product* in the shape of a document (e.g. a *Financing Strategy*). The aim of SFP is to become fully embedded into the host government's budgetary and financial procedures.

SFP requires both an open policy dialogue and a sound analytical base that can be accepted by all stakeholders. An important part of SFP is the assembly of comprehensive data on existing WSS, its costs – both for operation, maintenance (O&M) and replacements needs – and current and future financing for both capital and running costs from different sources. The SFP assesses alternative future options for service levels and funding.

Where appropriate, SFP can be supported by the use of methodologies, such as FEASIBLE, for estimating financing requirements and funding gaps from different policy scenarios. FEASIBLE is a generic tool available in the public domain, developed and maintained by the OECD. The model has the advantage of treating WSS as a coherent whole from the financing point of view, with the possibility of separate or distinct treatment of the urban and rural sub-sectors. They are iterative, which allows the testing of different policy targets for their financial implications. The models also give some flesh to the notion of affordability, and can rank different financing options for filling the funding gaps[17]. In order to provide credible and transparent estimates for the water sector that are useful in policy dialogue, such planning tools should correspond to local planning and budgeting frameworks. Like all computer models, FEASIBLE is not universally applicable and it may be necessary to develop purpose-built estimating tools, using spreadsheets, based on the specific features of the water sector in the country concerned.

3.2 Estimating financial needs

Water infrastructure and services incur both regular and one-off financial costs, requiring separate financing provision:

Recurrent costs are the continuous expenses involved in operating water systems, including wages and salaries, fuel, electricity, chemicals and other materials, spare parts and minor capital items necessary to maintain and repair systems. Some recurrent costs are *overhead* items, which are fixed and do not vary with the level of service (e.g. administration salaries, office rent, research, monitoring, meter reading, routine maintenance). Other items are *variable* and rise and fall with the volume of service provided (e.g. chemicals for treatment, electricity used for pumping). The most sustainable source of finance for variable costs is user charges, including cross-subsidies between different consumer categories. Where governments

[16] EUWI-FWG, 2010.
[17] For information about the FEASIBLE tool visit www.oecd.org/env/eap.

are willing and able to subsidise water services, funding can also be made through annual budgets.

Capital costs are for large items of investment, including major repairs and replacements, modernisation and rehabilitation. These normally need specific financing provision. In a mature and well-run water system, capital costs are also met from present or future-user charges. In developing countries government grants, soft loans and ODA are commonly used. Other financing options are discussed later.

The context of investment is vital. The key factors affecting investment in water services include: geographical and hydrological features – climate, water resources (surface or ground), the level of economic and social development, the size of settlement to be serviced, the quality of raw water and gradient from source, the status of existing infrastructure and services, whether they are urban, peri-urban or rural situations, and the level of service to be provided – individual household or communal, etc.

There are many estimates of investment requirements for W&S. Some of these relate to water in its broadest sense[18], but the most detailed are those relating to the cost of MDGs for water supply and sanitation[19]. Different estimates tend to vary by large margins (Box 5).

Box 5. Reasons for variations in different investment estimates for W&S

The following are some of the main reasons for variation in different estimates of the cost of providing water supply and sanitation in fulfilment of MDG targets:

- Differences in the chosen standard of service and mode of delivery (e.g. individual household connections, or village wells and public standpipes; whether wells are lined/unlined, hand operated or motorised, etc.).
- Local geographical and hydrological conditions (presence of adequate amounts of water, how far it needs to be transported, availability of groundwater at reasonable depth, quality of water and need for treatment, need for storage, etc.).
- Amounts allowed for per capita use (20 litres per head per day is often quoted as a basic needs minimum, but much higher figures are often planned, requiring more elaborate distribution networks. Also, in rural households water has multiple uses, including for livestock, agriculture and rural crafts, implying a need for higher volumes).
- Definition of "access". Some countries adopt their own definition of access, which differs from that used internationally (e.g. by the Joint Monitoring Programme). Changing the target definition (e.g. from 1 km walk to a safe water point, to 200 m) can make a dramatic difference to costs and performance towards goals.
- Economies of scale in water supply. Unit costs are likely to be less in urban and peri-urban locations than in remote and dispersed rural communities.
- Costs can be spread out over time by moving towards a target level of service by increments staggered over time, rather than all at once. This avoids incurring large initial debts, which weigh heavily on finances, and allows time for consumers to get used to paying for improved services. As consumers' incomes rise, they will demand better services, and be more willing to pay for them.
- Upgrading well-developed, but ageing, infrastructure is particularly costly. Some regions (e.g. EECCA) already have extensive water and sewerage networks that have been badly maintained, and which can no longer deliver reliable safe water and sanitation. Service coverage data is seriously misleading in these situations. Such systems are now oversized and unaffordable, leaving policymakers with an unenviable choice between large expenditures, or reducing the standard of service.

[18] E.g. in the *World Water Vision, the Camdessus Report, the Africa Regional Paper, the AICD Report (World Bank, 2010)*, etc.
[19] These are reviewed in Toubkiss, J, 2006.

Estimates are typically concerned with the cost of *expanding* water systems to provide for previously not *served* populations. What they often omit is the cost of maintaining and modernising *existing* systems. Water infrastructure depreciates over time. In order to keep it functioning as intended, money has to be spent on routine repairs, servicing and replacement of worn parts. These items, which are easy to postpone, are widely neglected and under-provided for. The result is infrastructure that deteriorates and fails to provide regular clean water to those who are nominally receiving the service. As countries make progress in overcoming the deficit of the populations not served, it is common to find that service standards for those nominally connected are in decline – a case of two steps forward, one step back. The solution is either to increase operation and maintenance (O&M) budgets to adequate levels, or to replace unaffordable installations with something more appropriate.

3.3 The basic water-financing model

Ultimately, W&S is paid for by tariffs from water users, subsidies (from taxes) from national taxpayers or grants (transfers) from external sources or philanthropists[20]. All loans, bonds and equity investments have to be serviced and repaid from the future revenue stream from these sources – they are not alternatives to tariffs and subsidies, merely ways of deferring the impact of these financial costs on society. Spending on water infrastructure and services is an investment and, in a growing economy, it makes sense to use repayable funding sources, provided these can be repaid from expected future revenues.

There are various ways of increasing the *leverage* exerted by the 3Ts (Taxes, Tariffs and Transfers) in attracting repayable funding sources. These mostly involve reducing the risks posed by the water sector to potential funders. These *levers* include guarantees, insurance, co-financing, output-based aid, and other devices described below. These levers make the 3Ts go further (Figure 1).

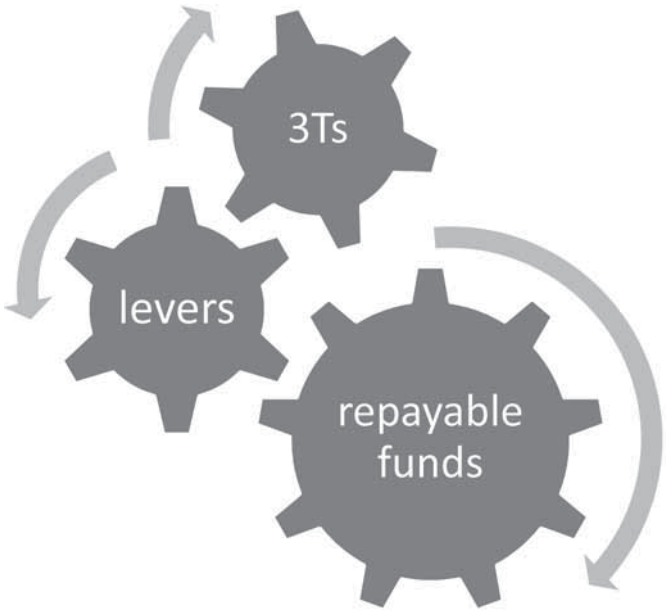

Figure 1. The water-financing model

3.4 The 3Ts – tariffs, taxes and transfers

Tariff revenue is the foundation of future cash flows, and will always be the main source of funding for recurrent O&M expenses. In well-managed services with a good revenue base (e.g. in sizeable urban areas) tariff revenues from user charges should contribute to investment costs too.

Tax-funded subsidies are widely used to supplement tariff revenues. They can be applied predictably and transparently – e.g. to support specific groups of deserving consumers, or as part of a performance-related agreement between the government and the utility. Or else they can be used *ex post facto* to cover operating deficits as they arise. Government

[20] Voluntary charitable contributions from individuals channelled through NGOs are another source which is minor in overall size, but important for specific projects and some countries.

grants and loans on concessional terms are also widely used to fund capital investment. Subsidies may be wrapped into "soft" loans, which have the merit of containing signals and incentives necessary to nudge utilities towards greater financial autonomy.

Transfers originate from external ODA, supplemented by national and international philanthropic donations. The latter involve private, non-tax sources of revenue.[21] International solidarity from non-governmental sources provides major volumes of grant support for WSS projects. A number of large foundations are active in the area, transferring annual sums that rival those of official aid agencies. There is also a plethora of NGOs working mainly at local project levels, many with overseas links, but with others drawing on national charitable, religious and community movements. Recently, a number of companies have also become active in providing water services as part of a Corporate Social Responsibility agenda.

3.5 Repayable funding sources

Loans are of various kinds. Short-term loans to cover working capital requirements and to cushion irregularities in cash flow are normally available from local banks. Medium and long-term bank lending for the development of water infrastructure is uncommon in Africa, and where it arises, tends to need government guarantees. Foreign currency lending is more rare still and risky for the borrower. Lending from IFIs (e.g. AfDB, IDA, IFC, and EIB) is more attractive since the terms, and length, of the credits are more appropriate to the cash flow of the underlying assets, though they typically entail forex risk.[22]

For local and community projects, *microfinance* (MFI) is another source of funding, especially for schemes with a short payback period. Although MFI agencies have made limited inroads into the water sector, there are niches where it could play a vital complementary role.[23]

Bond issues for municipal water projects are the exception in Africa. The few cases so far have depended on credit enhancement of various kinds.[24]

Private equity has been involved in concessions in some West African countries, but successful projects elsewhere have been rare.[25]

Sharia-compliant *sukuk* bonds are another variant, in which repayments are linked to returns on the underlying asset.

3.6 Levers

Levers magnify the ability of future cash flow to attract repayable sources of finance. They work either by mitigating specific risks that would otherwise hamper financing, or by packaging the finance in a form that is more attractive to potential suppliers. There are various types – financial guarantees and insurance products, B-loans, blending, output-based aid, etc., discussed more fully in Part Eight.

The next five chapters deal respectively with each of the 3Ts in turn, followed by repayable sources, and finally the levers.

4: Tariffs: Affordability, Cost Sharing and Cost Recovery

Large estimates of financial requirements can be intimidating. However, it is difficult to grasp the size of the challenge they pose without considering how the costs are shared between different parties.

The distinction between recurrent and capital costs is important. A number of donors now offer aid to directly support the national budgets of recipient countries. However, it is risky to rely on this as a permanent means of support. The same is true of national subsidies, which could fall prey to budgetary cuts at any time. The main source of

[21] The use of differential tariff structures and levels to cross-subsidise some consumers from others is better regarded as a tool of tariff policy, though it may have "solidarity" motives too.
[22] Some agencies lend in certain local currencies, usually where they can raise bonds in the same currency.
[23] See Tremolet and Scatasta, 2009 pp 35-38 for examples.
[24] The Johannesburg city bonds were supported by guarantees from IFC and DBSA.
[25] Kauffmann and Perard, 2007.

finance for *recurrent costs* (O&M) in the long term is likely to be user payments, though some donors are willing to provide assurances of budgetary support for basic services extending to 10 years in certain cases.

Capital costs, which are usually larger and less frequent, can be funded from a larger range of sources, including contributions in kind, charges levied on users and their communities, full cost recovering tariffs, governments, external donors, NGOs, banks, etc. The range of options will be explored in the rest of this Primer.

4.1 Who bears the cost?

The impact of costs depends on the following factors:

- *Doing nothing* itself has a cost, in worsening public health and environmental problems. For example, carrying water over long distances and boiling dirty water has a heavy cost in the health, time and energy input of women and children, and in their educational deprivation. Recognising this, it may be appropriate for water authorities to share the cost of W&S improvements with other departments of government (e.g. sanitation programmes with Ministries of Health, wastewater collection with Ministries of the Environment).
- Certain kinds of system lend themselves to inputs in kind from the beneficiaries – e.g. construction, or self-help schemes. The condominium system of sewerage[26] in some large cities keeps cost down and permits cost sharing with communities and contributions in kind.
- Private operators can provide services, using their own funds and recovering costs from users. Examples include building village tube wells and selling water to neighbours, construction of local piped distribution systems, private firms with their own water sources selling water to households in the vicinity, emptying latrines, etc. The widespread presence of small-scale local private water operators is now widely recognised.[27] They are increasingly seen as part of the solution. One possible service model is for a public water utility to "wholesale" water to local private operators, who would sell it on to users by tanker or their own pipe networks. This would incur less initial cost to the public authorities, though the operations of their sub-contractors (especially price and quality) would need close regulation.
- The prospects for cost recovery vary between different types of project. Cost recovery from users is more difficult for wastewater collection and treatment than for water supply. It is common for wastewater services to be charged through a surcharge on freshwater tariffs.

Ultimately water has to be paid for from users, taxpayers or philanthropists. A prior question is therefore whether a desired standard of service, or a new piece of infrastructure, can be afforded within the financial means that are likely to be available. Projects that are not perceived as affordable by potential financiers will not be able to attract funds. Over-designed and ambitious projects will either run out of money or become "white elephants" which drain budgets at the expense of more sensible schemes. The water landscape is littered with projects that are unfinished or which have failed because of their excessive appetite for maintenance.

4.2 Tariffs

Water tariffs have three main purposes:

- Cost recovery: generating revenue for the efficient operation of water services and contributing to their cost of investment and ensuring long term functioning of the service.
- To reflect costs of provision, giving signals to users about the true scarcity of water and the costs of supplying it. Volumetric tariffs give users an incentive to use water carefully.
- Environmental protection. Encouraging conservation, and penalising the discharge of untreated wastewater.

[26] A system in which local communities at district level take responsibility for planning and implementing their sewerage networks using low cost and appropriate technology.

[27] The Water and Engineering Development Centre (WEDC) at the University of Loughborough has produced a series of African country studies of small-scale local private water operators (www.Lboro.ac.uk/wedc/).

This section is mainly concerned with the first of these purposes. A f*lat rate tariff* (which does not vary with use) would suffice to raise revenue, but a volumetric tariff (which varies with the amount consumed) is necessary to fulfil the other purposes above. A *volumetric tariff* requires metering (or other cruder methods of measuring usage), which may not be necessary or feasible in every situation – such as rural connections or where there are low supply volumes to poor urban users.[28]

The most common form is the *two-part tariff*, consisting of a flat rate charge (to cover the fixed overhead costs of supply) and a variable part based on the amount consumed. The variable element can be the same for all units, or it can be *progressive*, in which case it rises for successive increments of consumption. A further refinement is to provide a basic amount of water (e.g. 20 m^3 per household per month) free of charge, and introduce the volumetric rate for amounts exceeding this.

Where wastewater services (sewerage, wastewater treatment and/or removal of sludge[29]) are provided, their costs are normally recovered through a surcharge on the tariff for drinking water. This is partly because the volume of wastewater is highly correlated with the use of clean water, and partly because of consumer resistance to paying for wastewater services separately.

The government or municipality may decide that it can afford to *subsidise* water or sanitation on a permanent basis from the public budget. Subsidies are, however, well known to have negative side effects. They may distort the market in favour of inferior or unwanted solutions or they may even discourage demand.[30] They may be misused ("subsidising toolsheds not toilets"[31]) or misappropriated through corruption. Subsidies are difficult to sustain in poor countries, and donor agencies cannot always direct budgetary aid accurately to their intended beneficiaries.

The choice of whether to, how and how much to subsidise should be taken pragmatically. The need for subsidy can be minimised by the choice of low cost technology and providing credit lines to satisfy affordability. It is significant that one of the most successful programmes of latrine construction (the Community-led Total Sanitation movement in Bangladesh, Ethiopia and other countries) uses little or no direct public subsidy.

In short, if subsidies are used, they should be:

- Predictable – so that the water authority can plan its investment and operations ahead, and plan finances accordingly;
- Transparent – so that the subsidy appears clearly in the public accounts, and can be accounted for by the Minister of Finance;
- Targeted – aimed at sections of the population considered to be in most need of relief, rather than spread across all consumers;[32]
- Sufficient – covering all the necessary costs of water provision not funded by the tariff.

It is also normally desirable, in the interest of sustainability and sound public finance, to design *tapering* subsidies, which diminish over time. These would give the provider time to introduce tariffs that gradually rise to the economic rate.

4.3 Affordability

Affordability is based on the potential for local cost recovery, plus whatever national subsidies and external grants are likely to be available.

There are various ways to make tariffs affordable to poorer consumers:

- Cross-subsidies can be effective, for example, where richer consumers pay more for services than the poor.
- Progressive tariff where charges increase with the volume consumed.

[28] Conventional meters can cost upwards of $100.

[29] The residue after wastewater treatment – which is either dumped, used on fields, or in road construction.

[30] The Ethiopian National Sanitation Strategy reports that subsidised latrine slabs create unrealistic local expectations. Unless subsidised slabs are made available to all, they will depress demand (since disappointed potential buyers will wait to get their cheap slabs).

[31] Kolsky and Perez, 2007.

[32] Because a general subsidy will be of most benefit to high consumers and those already with connections, such a subsidy will be regressive in its impact.

- Varying tariffs for different consumers for example, industrial and commercial users.
- Ideally, to avoid any distortion in consumption, the water bills of poor households should be covered from social security payments, but this is not feasible in many countries.

In setting tariffs, it is common to take an "affordability" yardstick of 3-5% of average household income for W&S. In practice, wealthier people (with connections) normally pay less than this, and poorer people (who supplement their consumption from informal providers) more. There is no objective "ability to pay" for something as essential as water, though "affordability ratios" are widely used for planning purposes, despite their shaky empirical basis.

There is, however, substantial evidence of Willingness to Pay (WTP) for access to water or improved levels of service. A WTP survey assesses the views of consumers and the evidence of what they currently spend on water from different sources. WTP surveys are expensive to do properly, but can provide useful information to water policymakers if they are well-designed and if their results are credible and avoid bias. Apart from WTP for regular water bills, currently not served consumers may also be willing to pay towards the cost of making new household connections. These payments can either be in cash or in the form of labour or materials.

5: Taxes: National Government Finance

5.1 Central government as financial provider

Central governments typically channel finance (grants, soft loans, proceeds of bond issues) for capital spending on water to local authorities or public water companies. A common choice is between using grants and subsidised (soft) loans; repayments from the latter can be recycled back into new lending through a revolving pool – several countries use this model. Where foreign aid is available, it is usually provided to central government before being passed on to local government or public authorities. Tariff revenue from the provision of water may either be retained by the local water undertaking, or returned to the Treasury to general public coffers. Central governments may also provide *sovereign guarantees* to sub-national agencies to assist their financings.

One surprising and disturbing trend is the high level of unspent budgets for W&S. In a survey of a number of countries, WaterAid found that actual disbursements of water budgets were routinely only a fraction of the allocated amounts.[33] This may reflect a difference in priorities between the central and local levels of administration, bureaucratic blockages in the system, or the presence of other, non-financial, constraints on higher spending. In such cases, finance may not be the most urgent problem to deal with.

The pros and cons of this model are summarised in Box 6.

Central governments may prefer to provide finance to minimise the risks of financial decentralisation. Local indebtedness can get out of control, through incompetence, political opportunism and irresponsibility. This then gives central governments a dilemma, whether to bail out insolvent local authorities or to let then face the consequences of their actions, with the resulting hardships to local residents (and electors). Loans contracted in foreign currency are particularly risky for projects whose revenues are in local currency, which includes most types of infrastructure. Central governments have greater means, and more diverse revenue sources, to offset risks of this kind.

Central governments can normally raise funds on more advantageous terms than local bodies (though some cities have a credit standing equal to sovereign). The expertise

[33] Redhouse et al., 2005.

and experience available to central governments can stand them in good stead when dealing with international bankers and prospective private investors, while local bodies might strike poorer deals. The reverse side of the coin is that local negotiators tend to be more familiar with the projects to be financed, and hence have greater credibility and commitment to arriving at a deal.

There are various ways in which the central government's annual budget can be used to support the *recurrent costs* of W&S:

- To cover recurrent overhead costs of public water services (e.g. salaries, vehicles, offices).
- To provide the variable costs of operating water services (power, chemicals etc.). This is more problematic; wherever possible, such costs should be covered by user charges.
- To underwrite any financial deficits incurred by local water undertakings. If this becomes a "blank cheque" it removes any incentive on the undertaking to improve its finances.
- To provide subsidies to cover stated and specific purposes (e.g. free water for deserving cases, the cost of a sanitation programme, emergency provision for drought areas, etc.). *Targeted* or *smart subsidies* (see above) avoid some of the disadvantages of general subsidies, particularly if they are predictable and transparent.

A common issue arising is that of *earmarking* revenues from water service users for specific items (e.g. for reuse in the sector concerned) rather than returning them to the general Exchequer. Earmarking (also called "ring fencing") water user revenues for retention by the agencies concerned is unpopular with Ministries of Finance because it complicates national fiscal management and sets a precedent for other sectors. However, it can be a pragmatic solution for raising finance for water, starting from a low baseline, and where other solutions are unpromising.[34]

Box 6. Central government as provider and guarantor of finance	
Benefits	Disadvantages
Related to national financial capacity, avoids local over-borrowing and debt problems.	Decisions on water funding become more politicised.
National Treasury can get better terms in financial markets.	May give lower priority to water sector than local governments.
Can set national priorities and steer funds towards urgent/ priority cases.	Funding may be unreliable, a hostage to national fiscal situation.
Can ensure equity between richer and poorer parts of the country.	Local service providers prevented from developing financial self-sufficiency.
Foreign exchange risk of foreign loans is borne by central government.	External donors/financiers unable to develop close contacts with actual providers.

5.2 Sub-sovereign finance

Triggered by the Camdessus Report and other underlying trends, there has been a major growth of interest in financing water at the *sub-sovereign* levels of administrations – regional and state governments, municipalities, specialised infrastructure financing agencies, utilities, etc. It is recognised that this is the level of society at which decisions on water are normally made, and in the majority of countries responsibility for water services is effectively devolved to sub-sovereign layers of administration.

The International Financing Institutions (IFIs) have been revising their policies on sub-sovereign risk and their attitudes to sub-sovereign lending and guarantees. The European Bank for Reconstruction and Development (EBRD) has a well-established portfolio of loans to sub-sovereign

[34] In certain jurisdictions, there is an important distinction between user charges (which are normally retained by the service provider) and abstraction or pollution charges, which are treated as general taxes that have to be returned to the general Exchequer.

administrations and utilities. The Municipal Department of the World Bank and IFC have been set up for this purpose, and other development banks have also taken steps to facilitate sub-sovereign operations.

The feasibility of injecting more finance at sub-sovereign levels depends crucially on the status of the sub-sovereign institutions concerned. A number of countries have decentralised entities with sufficient financial standing to attract loan finance or even issue their own bonds, and a significant proportion of the population not served lives in such countries. However, such cases are rare in sub-Saharan Africa or poorer countries elsewhere. Municipal finance is recognised to be crucial in local anti-poverty strategies. The agenda of actions for capacity-building in pro-poor municipal finance includes revenue raising, targeting expenditure, budgeting, and financial management.[35]

Central governments are, however, wary of offering *sovereign guarantees* for borrowing and bond issues by sub-sovereign agencies, since these represent a *contingent liability* that counts against government borrowing and affects national creditworthiness.

Some governments (e.g. Mexico) offer a form of guarantee to sub-sovereign authorities through the use of *fiscal intercepts*. This arrangement in effect uses normal budgeted fiscal transfers from central to local governments (or states) to underwrite debt servicing by the latter: if a default happens, part of the normal fiscal transfer is used to make the payment.

5.3 Specialised national financial intermediaries

There are many examples of financial agencies occupying an intermediate position between central governments and local service providers. They may be national development banks, infrastructure development corporations, water banks, municipal development corporations, environmental funds, or other types of intermediaries. They funnel "wholesale" money down to regional and local borrowers. Ideally, they offer specialised knowledge of local or sector borrowers and experience of dealing with them. Faced with an urgent need to develop specific sectors many politicians are tempted to create a new specialised financing institution. Box 7 discusses the pros and cons of these institutions.

Box 7. Specialised national financial intermediaries

Benefits	Disadvantages
Able to get wholesale finance on good terms because of government backing and sovereign guarantees.	Many of these bodies have a poor track record.
Diversified sources of funds.	They are prone to become politicised and bureaucratic.
Closer to grass roots than central government.	If no value added, an unnecessary layer between government and service providers.
Can develop expertise in specific sectors and experience dealing with local clients.	Poor choices and bad management leave them insolvent; funds fail to revolve.
Can get access to commercial expertise, in equity and management.	
Credit repayments can revolve back into sector, with aim of self-sufficiency.	
A successful financial intermediary can exert real financial muscle and exploit synergies from other municipal sectors.	

[35] Blore, Devas and Slater (2004).

6: Transfers: Official Development Assistance (ODA) and Philanthropy

Grants or concessional[36] loans are available for W&S from a wide variety of international agencies. As a general principle, it is sensible for developing countries to maximise their uptake of ODA, which is grant money, before contemplating commercial finance for this sector. However, even grants may have significant transaction costs and inconveniences, and attracting aid from many different sources can tax the management abilities of national authorities.

This section discusses ODA, specialised international water and infrastructure funds and facilities, and finance from philanthropic sources.

6.1 Official development assistance (ODA)

It is normally rational for a country to maximise the take-up of ODA available for water before seeking other financial sources. However, the decision to take up aid is not totally straightforward (Box 8).

The *European Development Fund*, administered by the European Commission in partnership with ACP countries under the Cotonou Agreement, is also an important source of grant aid for W&S. The EDF agrees a National Indicative Programme for each ACP state, which stipulates two priority sectors, one of which may be water. Some part of the EDF budget is available as budgetary aid, which is potentially available to support the recurrent costs of W&S.

Output-based aid (OBA) is often advocated as an appropriate solution for the water sector. OBA has been defined as, "A strategy for using explicit performance-based subsidies to support the delivery of basic services where policy concerns would justify public funding to complement or replace user-fees. The core of the OBA approach is the contracting out of service delivery to a third party, usually a private firm, where payment of public funds is tied to the actual delivery of these services". OBA is discussed

Box 8. ODA: looking a gift horse in the mouth

Advantages	Disadvantages
Transparent and simple: grants have no repayment obligations, no debt overhang.	May carry political and commercial obligations, explicit or implied.
Technical assistance and informal advice normally available.	Each donor has a different procedure, which can be onerous, and prolong the disbursement period. They also use different technical products, which complicates procurement and spares.
Can be blended with other kinds of finance to produce a suitable financing package for a particular project.	Part of grant absorbed in consultancy and administrative costs.
Some agencies provide aid for O&M as well as capital investment items.	Can create aid dependency.
	Donors may insist on their own institutions and special project units independent of national systems; hard to integrate, and re-entry problem when aid ceases.
	Appraisal requirements, due diligence and conditionality more onerous than for commercial finance.

[36] A concessional loan is one that is available on better terms than those provided by private financial markets – lower interest, longer maturities, and/or grace periods before interest or repayments are due. In order to qualify as ODA recognized by the OECD's Development Assistance Committee, concessional loans have to contain a "grant element" of at least 25%. In technical terms, the grant element is the discounted value of the loan's repayment stream, at the DAC's standard discount rate, expressed as a percentage of the face value of the loan.

further in Part Eight and more information is available on the website of the Global Partnership for Output-based Aid (www.gpoba.org).

6.2 International funds and facilities

There are few sector-specific funds or facilities wholly devoted to W&S, and relevant for developing countries. Most existing water funds[37] buy shares in water companies and utilities that are listed on public stock markets. Unless the shares are part of an IPO[38] this is not new money. There are very few water or infrastructure funds that are willing to place funds in developing countries[39], and very few of these countries have suitable securities to offer.

The ACP-EU Water Facility is a dedicated water fund for ACP countries, and another fund with similar aims is the African Water Facility administered by the African Development Bank (www.africanwaterfacility.org). Both facilities require co-funding from sponsors, partners or recipients.

External grants can, and should, be used in combination with other sources of funds to maximise financial flows into water. Grants can, for instance, be used to soften project finance terms in accordance with local affordability, as guarantees for commercial loans and bonds (see Part Seven), as part of trilateral partnerships (with NGOs and private companies), to cover the threshold costs of project finance transactions or privatisation contracts, etc.

6.3 Philanthropic sources

There are now many so-called "solidarity" funds, with philanthropic intent, using private, non-tax sources of revenue. International solidarity from non-governmental sources provides major volumes of grant support for WSS projects. A number of large foundations are active in the area, transferring annual sums that rival those from official aid agencies. There is also a plethora of NGOs working mainly at local project levels, many with overseas links, but with others drawing on national charitable, religious and community movements. Recently, a number of companies have become active in funding and providing water services as part of their Corporate Social Responsibility commitments.[40]

Projects funded from philanthropic sources often (though not always) need to demonstrate some kind of feature or outcome acceptable to the donors – which might not be present in mainstream national programmes. Thus, while these funds have an important contribution to innovation and diversity, this may come at a cost – limited replicability and high administrative burdens in dealing with, and reporting to, scores or hundreds of NGOs and other charities.

7: Repayable Funding Sources: Loans, Bonds and Equity

7.1 Bank loans

Bank loans for infrastructure are of two main types, depending on how risks are born:

Corporate finance – the loan is made to a company or public corporation, which undertakes the servicing of the debt. The loan may be used for spending on specific projects, but it is the overall balance sheet of the borrower that is the concern of the lender.

Project finance – the loan is made to a "special purpose vehicle" undertaking the project, and the security for the loan is the expected cash flow from the project. Project finance is also referred to as *non-recourse* lending, because the lender cannot have recourse to the balance sheet of the sponsor in the event of a default.

The pros and cons of bank loans are summarised in Box 9.

[37] E.g. Pictet, Macquarie, Goldman Sachs and other investment funds have large sums available for buying water companies.
[38] Initial Public Offering.
[39] SNS Reaal in the Netherlands is an exception. (www.snsreaalgroep.nl).
[40] These are sometimes called "blended value" funds, which are operated in the expectation of some financial return, though less than normally required.

Box 9. Bank loans	
Advantages	Disadvantages
In most countries banks have ample funds for lending to creditworthy borrowers.	Banks normally need some form of security for their loans; water infrastructure is not ideal collateral.
The terms of the loan can be tailored to the needs of the borrower.	Interest rates may vary according to market conditions (though interest rate hedging is possible – at a price).
	In most countries banks are unwilling to lend long term without guarantees.
	Loans need to be repaid – and many water undertakings don't generate enough cash flow.
	Loans from external banks and IFIs are usually in foreign currency and hence expose the borrower to foreign exchange (forex) risk (though in some cases local currency-denominated loans are available).

Bank loans are suitable to cover short and medium-term variations in cash flow. For periods longer than this banks would look for good liquid security or guarantees from external agencies or the borrower's balance sheet.

Project finance is typically used for identifiable stand-alone items such as water and wastewater treatment plants and major pipelines (Box 10). The project may be implemented wholly through the public sector, or it may take the form of a public-private partnership. A common form of the latter is the Build, Own and Operate[41] type of contract, in which a private firm raises the finance, builds the project and recovers its costs from operating the project for period of years, before handing it back to the public sector sponsor.

Box 10. Project finance	
Advantages	Disadvantages
Can raise large sums for major infrastructure.	Heavy overheads on each transaction (legal and due diligence fees) means a high minimum size per deal ($50-$100 million).
Security consists of project revenues, without recourse to sponsor's balance sheet.	If finance available in forex (a common situation), it entails foreign exchange risk for borrower.
	Despite contractual terms, risks are prone to "leak" onto balance sheet of sponsor.

Some of the merits of *corporate finance* are the mirror image of the disadvantages of project finance, and *vice versa* (Box 11)

[41] Other variants are the Design Build Operate Transfer, Rehabilitate Operate Transfer, Transfer Operate Transfer, etc.

Box 11. Corporate finance	
Advantages	Disadvantages
Borrowers can pool risks between different projects and different parts of their business, lowering overall risk.	Unsuitable for new ventures.
They have a track record and an existing cash flow, reducing risks to the lender and giving the option of cross-subsidy.	Borrower may wish to protect its balance sheet and core operations from risks of a new project.
A corporate borrower with a good credit rating can in effect obtain credit for projects that would be risky on a stand-alone basis.	
Several different projects can be wrapped into a corporate structure that is eligible for corporate finance, and which is above threshold size.	

7.2 International financial institutions (IFIs)

Medium/long-term loans are available from IFIs. Their terms are normally more favourable than those on offer from commercial sources and borrowers would be sensible to see what the IFIs can offer before opening discussions with commercial banks (Boxes 12 and 13).

Box 12. Main IFIs for the water sector	
International Development Association (IDA), Washington DC	Affiliate of the World Bank. Offers loans of up to 50 years at zero or low interest to poorest countries.
African Development Bank, Tunis	Medium-long-term loans at interest rates to cover its own cost of borrowing plus administration. Can take equity and offer guarantees. Limited scope for dealing directly with sub-sovereigns.
Caribbean Development Bank, Barbados	As above.
Inter-American Development Bank, Washington DC	As above.
Asian Development Bank, Manila	As above.
European Bank for Reconstruction and Development, London	As above, with mission to lend to private investors as well as government agencies, and able to operate at sub-sovereign level.
International Finance Corporation, Washington DC	Affiliate of the World Bank with a mission to promote the private sector. Commercially oriented, with a variety of instruments. Can take sub-sovereign risk through new Municipal Department.

European Investment Bank, Luxembourg	Lends to ACP countries under Cotonou Agreement through the Investment Facility and the EU-Africa Infrastructure Trust Fund. It also has funding facilities for the EU "Neighbourhood" countries and the Mediterranean region. A range of instruments is available, including risk sharing and local currency loans.
International Bank for Reconstruction and Development, Washington DC	Affiliate of the World Bank for lending to higher-income developing countries.
Islamic Development Bank, Jeddah	Operates in countries with an Islamic orientation using Islamic financial modalities.

The IFIs listed here are international organisations whose shareholders are made up of national governments, and which operate widely in many different countries. Some of them are obliged by their statutes to lend only to national governments, others have the means to deal with private borrowers.

Alongside them are another group of development banks and corporations with aims and modalities similar to those of the IFIs, but with a more limited range of bilateral or regional sponsors. This is a very large group and includes the Nordic Development Bank, German DEG[42], Dutch FMO, French AFD, British CDC and Kuwait Fund, Southern African Development Bank amongst many others.

IFIs offer advantages compared to commercial banks, but do have drawbacks (Box 13).

Box 13. Dealing with the IFIs	
Advantages	Disadvantages
Loan terms better than commercial banks because can borrow with the sovereign guarantees of their Member States.	Processing slower and more cumbersome than commercial lenders because of need for thorough appraisal and due diligence enquiries.
Can provide impartial advice to borrower and arrange technical assistance and capacity building.	Lending decisions may be subject to political influence from shareholder governments and NGOs.
Confer prestige ("halo effect") on a project or borrower, which makes commercial banks more ready to co-finance (e.g. on syndications).	Loans usually carry more onerous conditions than those made by commercial lenders.
A range of products and services on offer: financing package can be tailored to client's needs.	

7.3 Microfinance

For local communities, individuals and small businesses (including farmers), microfinance is another potential source of funding. Its characteristic features are the small size of typical loans, the short payback period for lending projects, and the difficulty of obtaining normal collateral such as land title, financial securities or machinery. Some microfinance companies or networks rely on collective group guarantees (the best known case being the Grameen Bank in Bangladesh). The context for microfinance is somewhat

[42] An organization in the KFW banking group.

different in Africa and the Indian sub-continent. In Africa, many microfinance schemes involve grant funding or seed finance from donors and NGOs, whereas in India and Bangladesh there is an extensive and thriving commercial microfinance industry, not reliant on subsidies.

Several factors cause microfinance interest rates to be higher than those of conventional commercial banks. The average transaction is small and has a relatively high unit cost of processing. Moreover, the absence of normal collateral security, the lack of borrowers' credit history, and the precarious economic circumstances in which they operate, makes for a higher level of risk in this type of lending. The size of microfinance interest rates has attracted adverse comment from politicians and regulators. In judging such comments, in addition to the factors mentioned above, it needs to be borne in mind that the alternative for most small borrowers would be informal money-lenders, who invariably charge even higher rates. If microfinance interest rates were capped at uneconomically low levels, it is likely that this form of finance would soon dry up.[43]

Countries where microfinance has been successful in rural areas, such as Bangladesh, Bolivia and Indonesia, have allowed "policy space" to decentralised finance, have an adequate legal and regulatory framework, and possess the necessary density of market for its services.

In a rural context, microcredit overlaps with other credit sources such as credit unions, mutual/cooperative societies, village and rural banks, etc. Many of these operate on the fringes of the formal financial sector, and need an "enabling environment" distinct in certain respects from the regulations applying to commercial banks and formal financial institutions. In the past much money has gone from donor agencies to microcredit schemes, many of them operated by NGOs, in the form of recurrent subsidies. These risk crowding out commercial finance and prevent microcredit schemes from becoming self-financing.

7.4 Bonds

A bond (or *fixed interest security*) is a method of raising a capital sum by offering the purchaser (bondholder) the promise of repayment at a specified future date, in the meantime paying a fixed rate of interest. The bondholder can sell the security at any time (unlike a loan) provided a market exists.[44] Movements in the market rate of interest are reflected in changes in the price of the bond.[45] Pros and cons of bonds are mentioned in Box 14.

Box 14. Bonds

Advantages	Disadvantages
In a well-developed financial market, with sufficient buyers and sellers, a bond is a liquid asset, which can readily be cashed (though its future market price will vary). Its liquidity makes it attractive to buyers.	The transaction is very transparent and credit rating agencies will scrutinise the financial affairs of the issuer very closely. (From another point of view, this is beneficial). Any deterioration in the issuer's finances (particularly anything that causes a loss of *investment grade status*) could make future bond issues more costly – requiring the offer of a higher interest rate.
Savings and other financial institutions like to hold part of their assets in fixed-interest securities, to balance their holdings of cash, property and equities.	The bond issuer has to have a good credit standing, which normally limits the use of bonds to larger and financially solvent cities (e.g. Johannesburg recently made a $150 million local bond issue, with a Partial Credit Guarantee from IFC and DBSA). However, see below on pooling resources:

[43] In India politicians are often tempted to intervene in rural credit for electoral reasons, though there are undoubtedly many cases of real hardship caused by high indebtedness and unaffordable interest. One suggestion is for greater beneficial regulation by the Reserve Bank of India, with rules on appropriate capital buffers for microcredit institutions, and allowing these bodies to accept public deposits. (Letter to *The Economist* from Sanjay Sinha, Dec 4, 2010).

[44] Loans can, however, be packaged into bonds through *securitisation*. The repayments expected from the loans are capitalised, and sold as a bond.

[45] A rise in interest rates causes a fall in the bond price and *vice versa*.

Advantages	Disadvantages
The terms of the bond (length of maturity – *tenor* – and any intermediate repayments) can be adjusted to match the expected cash flow of the issuer. Water investments typically have a lengthy payback period and predictable cash flow, which lend themselves	The overhead cost of making a bond issue implies that there is a minimum economic size of bonds (probably $50-100 million). Bonds are uneconomic for small and medium-sized towns, unless they can *pool* resources with other similarly placed municipalities (which happened recently in Tamil Nadu, India, and the Philippines, in both cases supported by a USAID partial guarantee).

Governments and sub-sovereign bodies entering the bond market expose themselves to the scrutiny of *credit rating agencies*, of which the largest are Standard & Poor's, Moody's and Fitch Ratings, and their local equivalents and affiliates. These agencies subject the financial status of bond issuers to rigorous and comprehensive assessment, in order to give the bond a rating, which is a key indicator used by financial markets and potential buyers. Bonds with an *investment grade* rating of BBB or higher on the Standard & Poor's scale can legally be bought by local pension funds and other institutional investors with a legal responsibility to their savers. Credit rating adds greatly to the transparency of sub-sovereign finance, permits peer comparisons, and creates a market discipline on local officials and politicians.

7.5 Equity finance

Equity is a form of finance in which suppliers ("investors") share the risks of the undertaking in return for the prospect of sharing its profits too (Box 15). Equity does not necessarily have to be private – shares can also be issued by a public corporation or one with majority public ownership (a *partial floatation*) and they can be held by public agencies as well as by private individuals and

Box 15. The charms and risks of equity

Advantages	Disadvantages
Financial risks are shared with the equity holder. Dividend payments can be deferred in years with poor financial results.	Taking one year with another, shareholders will expect to earn at least the market rate of return on their shares – which will usually be higher than the yield on bonds or bank loans. Equity in itself is an expensive form of finance for public infrastructure[46].
Equity acts as a financial "cushion" between a corporation and its lenders: the latter draw comfort from the existence of adequate equity finance, which takes the brunt of bad results. A well-leveraged[47] concern can raise loan finance on better terms than one that isn't.	Shares can be bought and sold, hence ownership or controlling interest can change. This may be a sensitive political issue for basic public services.
Equity issues make the corporation more transparent to financial markets. The regular scrutiny of credit rating agencies can act as a stimulus to good practice.	

[46] The cost of equity has to be considered as part of the whole financing structure of the enterprise. Although a substantial equity "cushion" is expensive in itself, it does provide reassurance to lenders, which would bring down the cost of borrowing, other things being equal. Under certain theoretical conditions, the Modigliani-Miller economic theorem states that the overall cost of capital to a business is unaffected by the ratio of equity to debt.

[47] Leveraging is also known as gearing: the ratio of debt finance to equity capital.

companies. Certain international public financial agencies (IFIs) can take equity holdings (e.g. IFC, EIB, EBRD, and AfDB).

Equity has attractions as a potential source of finance in certain situations:

- For water utilities with sound finances, good cash flow and a good credit standing. This usually means large urban utilities with financial autonomy and a strong commercial status and orientation.
- Where full privatisation is being considered, involving either divestiture of infrastructure assets or the formation of a company to operate publicly owned assets.
- The local capital market should be of a sufficient size and liquidity to ensure adequate and diversified take-up of shares. Institutional investors such as pension funds tend to be key players.

Some of the advantages of private equity (access to additional funds, commercial orientation, and market disciplines) can be obtained without ceding public asset ownership.[48] If preferred, infrastructure assets can remain in public ownership, and private companies can be awarded contracts for operation and management. Alternatively, private capital can be involved in joint ventures (with minority or majority holdings) with public agencies for either (or both) asset ownership or operation.

Concessions for the operation of entire water systems typically entail the concessionaire using its own finance for essential maintenance and investment during the period of the concession. BOTs[49], a common way of funding single asset or greenfield items (e.g. water and wastewater treatment works, or major pipelines), entail the private partners raising finance on their own account and recovering their costs from operating revenues, before eventually handing the asset back to the public client.

8: Leveraging the 3Ts

In order to attract commercial finance in its various forms, water undertakings must ensure they have sufficiently strong future cash flows in order to service such finance. Their cash flow in effect leverages repayable funds. Box 16 illustrates this process in operation.

Box 16. Kenyan water utilities prepare for commercial financing

Four medium-sized Kenyan urban water utilities are preparing themselves to receive commercial finance to expand their operations and upgrade their distribution infrastructure.[50]

Kenya's recent water sector reforms created autonomous, though still publicly owned, utilities pursuing cost recovery policies and seeking to raise commercial loans on the strength of their own future cash flows. The utilities are overseen by a Regulatory Board to ensure their compliance with due operational, governance and financial standards and practices. The cost of debt servicing can be recovered from tariffs, which are now regularly adjusted (after being unaltered for more than a decade).

Commercial banks in Kenya have plentiful funds, but complain of a lack of good, bankable, projects in the water sector. It is believed that banks would start lending for water projects following the lead of a reputable international financing institution. The IFC is fulfilling that role as part of its joint programme for sub-sovereign lending with its parent, the World Bank. IFC is willing to forego sovereign risk, and instead lend against the security of well-managed utilities that meet its criteria for proper regulation, sound management and governance, and operational and financial performance sufficient for debt servicing. In order to ring-fence revenues to cover debt servicing, they are to be paid into escrow accounts.

[48] Muhairwe W, 2009 gives a vivid account of one such case.

[49] Build, Own, Operate contracts. Other similar types are the BOOT, DBOT, ROT, etc.

[50] Including Malindi, Nakuru and others. Based on presentations made at the Third African Water Week, Addis Ababa, November, 2010.

The following background factors are important to the success of this policy:

- The Kenyan government is keen to minimise the use of its sovereign guarantee for water services, which affects its own credit rating.
- IFC will lend up to 50% of the cost of a project, taking full project risk on this amount. It can also help commercial banks through its B loan-scheme, which gives them an indirect guarantee of repayment.
- Elements of water infrastructure not considered suitable for commercial finance, such as bulk water supply and sewerage, are financed as before from public loans and subsidies.
- Rural water supply schemes are also subject to a separate policy, which includes the potential use of output-based aid.
- Using the IFC rather than commercial banks involves a slower process of negotiation and due diligence. However, this process should pay off if, as expected, banks come in behind IFC with their own funding. Hence the two sources are likely to be complementary, not competitive. The intention is that IFC should supplement, rather than supplant, funding from commercial banks.
- The utilities concerned regard commercial loans as an opportunity to make the desired upgrades to their infrastructure earlier than if they had to wait for public funding, which, in any case, is insufficient to meet national requirements in full.

The above example (Box 16) mentions several "levers" that enhance the appeal of a given cash flow for commercial funding: an IFI prepared to accept sub-sovereign guarantees; the "halo effect" of IFC involvement for commercial banks, including potential use of B Loans; the prospect of using output-based aid; and the use of an escrow account for holding revenues sufficient to meet debt servicing. This chapter discusses a number of methods of leveraging the 3Ts to maximise their attraction for commercial, repayable, funding: financial guarantees, umbrellas of comfort, output-based aid, blending and co-financing, bond pooling, and other methods of mitigating risks.

8.1 Financial guarantees

Guarantees offer insurance against specific risks, such as default on credit or bond repayment, regulatory difficulties and political risks (war, civil disturbance, nationalisation, restrictions on foreign exchange availability, etc.). Bond insurance is available from private companies (*monolines*) at commercial rates, but in a development finance context, the more relevant guarantee products are those offered by IFIs such as the World Bank, IFC, regional development banks such as the African Development Bank, the European Investment Bank, and certain bilateral development agencies.

Insurance and guarantees are available to cover political, contractual, regulatory and credit risk[51] from both multilateral and bilateral development agencies. These guarantees have a *development* motive, as opposed to export credit and investment insurance, limited to firms domiciled in the country offering the guarantee, which has a *commercial* aim. There is also a large and active *private* market offering insurance against political, contractual and credit risks. This section considers external guarantees, rather than the *sovereign* guarantees offered by *national* governments to their own citizens, companies or sub-sovereign bodies when they borrow or attract direct investment.

Certain other instruments have a *quasi-guarantee* status, such as the "umbrellas of comfort" which IFIs and other agencies erect over other lenders and investors through participations ("B loans") and Municipal Support Agreements.[52]

One important aim of guarantee programmes of IFIs and bilateral donors is the promotion of local capital markets

[51] The study also discusses exchange rate risk, but concludes that insurance against this is currently not a practical proposition, though pilot testing of a possible scheme is under way.
[52] A formal agreement between the lender (e.g. an IFI) and the host municipality that the latter will ensure by all means within its power that subsidiary public service agencies such as water utilities will continue to honour the terms of their loan from the IFI.

as safe outlets for local savings and sources of longer-term capital for local businesses, microenterprises and other purposes.

The main risks entailed by lenders and equity investors in developing countries are:

Political (war, civil disturbance, terrorism, kidnappings, nationalisation, expropriation without adequate compensation, restrictions on the conversion and transfer of foreign exchange needed for the project). Insurance cover is available from the Multilateral Investment Guarantee Agency (MIGA) of the World Bank, other IFIs (through B loans[53]), bilateral official agencies and private insurers. This is a large, well-established and active market, with supply well matched to demand.

Regulatory and contractual (breach of contract by public offtaker[54], adverse decisions by regulators or other public agencies due to political pressure). Cover is available from MIGA Breach of Contract policies and the World Bank's Partial Risk Guarantee. Few policies have been issued so far. The product is case-specific, complicated to draw up and recovery is normally difficult.

Credit (late payment or default on loans made, or goods and services provided, for commercial reasons). *Partial Credit Guarantees*[55]are offered by IFC and other IFIs; some bilateral donors have *Partial Loan Guarantees*[56], and insurance policies are also sold by private *monoline* companies (specialising in providing financial guarantees).

Foreign exchange (devaluation which increases the local currency cost of debt servicing, dividend remittances and other commitments in foreign exchange). This is not widely insurable from either private or official agencies. A more realistic alternative is the use of local finance, assisted where available by local currency guarantees to enhance the status and rating of local borrowers and bond issuers (e.g. IFC local currency PCG, and the Guarantco[57]).

Guarantees work by:

- Mitigating specific risks that are the critical sticking points on a project.
- Enhancing securities (e.g. bonds) to take them over a critical threshold of creditworthiness.
- Improving the terms on which borrowers and project sponsors can get access to loans and investment.
- Giving lenders and investors exposure to previously unfamiliar markets and products.

A number of cities in emerging markets have started issuing bonds for municipal development. In recent years, Johannesburg made a bond issue, with the help of guarantees (Box. 17).

Box 17. Bond issue in Johannesburg with a Partial Credit Guarantee (PCG)

IFC provided a PCG for the rand equivalent of $30.4 million for a 12-year domestic bond issue by the City of Johannesburg. The value of the whole bond issue is $150 million. The issue was also supported by a local currency PCG extended by the Development Bank of Southern Africa, which raised the total PCG to 40% of the total issue.

The bond's proceeds will be used to fund essential investment in infrastructure, especially water, electricity and roads. Part of the bond proceeds will also be used to restructure the city's existing debt to improve its debt profile. The joint PCGs will help the city to diversify its investor base by upgrading the bond's local rating by three notches in the Fitch scale, from 'A-' to 'AA-'.
Source: IFC

[53] Syndicated loans organised by the IFIs, and offered for *participation* by commercial banks and other institutions, and guaranteeing the latter the same *preferred creditor status* as the IFI.
The public sector sponsor or client for which the project is implemented, and which purchases the output of the project (e.g. water or wastewater treatment). These purchases may be guaranteed through a *take or pay* deal which indemnifies the operator in case demand is less than expected.
[54] The public sector sponsor or client for which the project is implemented, and which purchases the output of the project (e.g. water or wastewater treatment). These purchases may be guaranteed through a take or pay deal which indemnifies the operator in case demand is less than expected.
[55] Defined in Annex A
[56] Defined in Annex A
[57] A new scheme promoted by the UK DFID and other agencies targeted at low-income countries and offering guarantees and counter-guarantees to institutions and companies raising local currency finance

8.2 The "halo effect", "umbrellas of comfort" and B loans

Involving a major IFI in a water financing operation provides reassurance to potential commercial financiers, which can be important for the financing of large infrastructure projects. This involvement works in two main ways.

Firstly, there is the general "halo effect" arising from confidence created in the financial community from the involvement of an AAA rated international institution, which conducts thorough due diligence enquiries on the borrower and has clout with that borrower and its central government.

Secondly, IFIs can provide a specific "umbrella of comfort" through their B loan system. An IFI making a loan to a country may open up *participation* in the loan to commercial banks, giving the latter the same status and privileges as enjoyed by the IFI. In a *syndication* the IFI will make an A loan and commercial bank participants extend B loans (Box 18).

Box 18. Preferred creditor status and participations

IFIs such as the World Bank, IFC, and the leading regional development banks such as ADB, AfDB and IADB, enjoy *de facto* preferred creditor status. This means:

- Governments having a treaty relationship with the respective institution grant the latter's loans preferential access to foreign exchange in the event of a foreign exchange crisis.
- These loans are exempt from automatic country risk provisioning applied by banking regulators.
- Interest on the loans is exempt from tax, including withholding tax.
- The loans are excluded from general country debt rescheduling as part of the London Club, and are not subjected to mandatory new money obligations under a general country debt rescheduling.

An IFI making a loan can open up *participation* in that loan to other banks, in a *syndication*. A good example is IFC: loans made on its own account are termed A loans, while B loans are those made on the account of banks taking part in the syndication. B loans have the same status as A loans in the following respects:

- IFC is the "lender of record", administers the entire loan and collects all repayments from the borrower.
- IFC is committed to distribute payments *pro rata* among itself and the participating banks.
- IFC cannot be repaid in full unless and until all participants have been paid in full.
- Any default to a participant is regarded as a default to IFC.

Source: IFC Syndications (undated) a regular publication; www.ifc.org/syndications

8.3 Output-based aid (OBA)

OBA is grant aid offered for specific projects or programmes, but is not disbursed until the sponsor can show the project is successfully completed and is up and running. OBA provides an incentive to early and effective project completion, and is intended to provide comfort for commercial financiers during the project implementation phase (Box 19).

Box 19. Output-based aid in Uganda and Kenya

As part of the Sustainable Water and Sanitation in Africa (SUWASA) programme, supported by USAID, a scheme is being worked out for the financing of Design-Build-Operate contracts between local private water operators and small and medium municipalities in Uganda. At present, contracts with private operators are very short term (1-3 years) and exclude arrangements for capital funding, which is still provided by government and donors. The scheme would

involve local commercial bank(s) funding of DBO contracts by private operators, with partial risk guarantees from the USAID's Development Credit Authority, and in conjunction with output-based aid from the GPOBA. (*SUWASA project documents*)

In Kenya, the World Bank is using OBA to provide a guarantee to K-Rep, a local commercial microfinance agency, to lend to community piped water programmes. The OBA, equal to around half the loan value, is paid to the bank when the facilities have been satisfactorily built and have started operation: up to that point, risk is borne by the bank and the borrowing community. This "guarantee" avoids *moral hazard* by giving the bank a positive incentive to see the projects are successfully completed on schedule.

8.4 Blending and co-financing

Blending a grant with loan finance is an aspect of co-financing which is often useful in softening the overall terms of a financing package, to make it more viable for water infrastructure projects with a delayed or drawn-out financial return. Alternatively, grant finance can be applied to items in the project package (e.g. studies, capacity building) that would not easily attract commercial funding. A number of *blending platforms* exist in which grant and loan funds from various sources can be combined (e.g. the EU-Africa Infrastructure Trust Fund).

8.5 Bond pooling

Bond pooling operates where a number of municipalities (usually of small or medium size) collaborate in issuing a single bond, the proceeds of which are distributed between them. This saves on costs of the transaction, which could otherwise be prohibitive, and enhances the quality of the bond by offering a collective guarantee on repayment. The bond may receive additional enhancement from an external guarantee (e.g. the Development Credit Agency (DCA) of USAID, which has a sizeable programme of risk sharing, including guarantees for bond pooling). There are recent examples of bond pooling in the state of Tamil Nadu (India), Philippines, and Colombia (Box 20).

Box 20. Bond pooling, with and without external credit enhancement

In *Tamil Nadu, India*, the investment programmes for water supply and sanitation of 14 Urban Local Bodies have been combined in a Water and Sanitation Pooled Fund, which has been given credit enhancement through a 50% DCA guarantee. The Fund has issued 15-year bonds totalling $7 million with a 9.2% coupon, initially subscribed by five leading financial institutions, and subsequently disposed of at a premium in the secondary market. The majority of the investment is funded from borrowing, and will provide for the upgrading of water supply to very poor urban communities. *DCA information briefings and presentations*.

In 2010 a group of communities in *Colombia* clubbed together to form a trust, which in turn issued a $92 million peso-denominated bond to domestic investors on the Colombian stock exchange. The deal, done under the auspices of Colombia Infrastructure Group LLC, allowed small and medium-sized municipalities to access long-dated funds at competitive rates, with the express purpose of funding local water and wastewater projects.
Source: Global Water Intelligence Briefing, Dec 9, 2010.

8.6 Other methods of reducing risk

The above mentioned do not exhaust the menu of possibilities open to water authorities to reduce their financial risks and improve their ability to attract external funds. Projects can be designed or implemented in ways that make them less risky (e.g. simpler and cheaper, built incrementally in phases, delayed until more information is available). Insurance can be taken out against highly

specific risks (e.g. *weather risk insurance* available for farmers in some countries). *Currency hedging*[58] is possible (at a cost) where forex risk is particularly important. There are also financial products with terms that change according to the performance of the underlying asset or project, e.g. loans that can convert into equity, loans that are *index-linked* to the output or prices of the venture, or Islamic *sukuk* bonds that pay according to the profit of the underlying asset.

[58] Taking up an opposite position in the market that would neutralise the impact of a foreign currency movement on a project.

ANNEX A: Glossary of Financial Terms

Affermage. A type of leasing arrangement under which an operator takes over and runs public infrastructure (e.g. water services) and collects revenue from customers, but does not undertake and finance new investment. The operator either makes a specified lease payment to the contracting authority (under a simple lease), or shares revenues according to a predetermined formula (under an *affermage*).

B Loan. A loan syndicated by an **international financing institution** in which the participating bank or other lender receives the same legal *preferred creditor status* as the MFI. This reduces the risk to the lender and improves the terms of the **bond** issue from the borrower's point of view.

Bond. A method of borrowing used by private companies, governments or municipalities consisting of the issue of fixed-interest securities, repayable on a specified date. Certain government bonds have no fixed redemption date, and can be sold at their prevailing market price.

BOOT, BOT, BOO, DBOT, TOT and ROT. Forms of **concession** in which a public authority contracts with a private company to **B**uild, **O**wn and **O**perate a specified piece of infrastructure (BOO), and possibly later **T**ransfer it (BOOT) back into public ownership. The contracting firm expects to recover its outlays from charges to customers or to the public authority (*offtaker*) buying its services. In a BOT the operator **B**uilds, **O**perates and eventually **T**ransfers the assets back to the public authorities, without legally owning the assets. Related forms include **D**esign BOTs (DBOTs), **T**ransfer Operate Transfer (TOTs), **R**ehabilitate Operate Transfer (ROTs), etc.

Concession. A contract between the authority owning the public service infrastructure (e.g. roads, power, water, telecommunications) and another party (usually private) which allows the latter to operate the public assets and retain the revenues for a specified period (usually 20-30 years). The contract typically requires the concessionaire to invest in extending or modernising the assets, which revert to the authority at the expiry of the contract period. The operating company arranges its own finance, which does not appear on the authority's account (see **BOOT** and **BOT**).

Contingent liability. A potential claim on the financial resources of (usually) central government in case a particular adverse event occurs. Governments normally include an item in their annual budgets to cover such eventualities.

Credit rating. An independent assessment of the creditworthiness of a borrower or **Bond** issuer undertaken by a credit rating agency, of which the three best known are Standard & Poor's, Moody's and Fitch. Each agency has a slightly different scale for rating, using A, B and C categories, with fine gradations of each, and different criteria are applied to assessment of national and international borrowings. Securities with a rating of BBB and above (on the Standard & Poor's scale) are considered to be "investment grade", while those below are reckoned to be "speculative" and attract financing on inferior terms.

Cross subsidisation. Using the revenues from one consumer category to subsidise the tariffs paid by another. A method widely used in water, power and other public services to ensure affordable tariffs for poorer or smaller consumers.

Derivatives. Financial instruments such as *futures contracts, hedges* or *options* that are intended either to reduce the uncertainty of future transactions or to speculate for gain on future outcomes. A *put option* is the right to sell an asset at a fixed predetermined price during a particular period. A *call option* is the right to buy at a specified price during a future period.

Devaluation liquidity backstopping facility. A possible method described in the Camdessus Report of alleviating

devaluation risk. The facility would be a fund created to make payments in local currency to projects or borrowers unable to meet their overseas financial commitments because of a major devaluation of the local currency. Repayments into the fund would be made over a period of time by raising local tariffs.

Devaluation risk. The possibility of a fall in the exchange value of the local currency relative to foreign currency, which would make it more expensive for local entities to service their foreign debts, make overseas dividend payments and meet future service fees or payments for essential imports.

Direct foreign investment. Situation where a foreign investor (individual, company or public enterprise) owns 10% or more of the ordinary shares or voting power of a local company.

Divestiture. The sale of publicly-owned assets (e.g. water infrastructure) to private owners.

Efficiency ratio (also known as **Working ratio**). A measure of financial performance which expresses the total annual operational expenses as a per cent of pre-tax revenues. A ratio greater than 1.0 indicates a loss on the current account. A ratio well below 1.0 is needed to contribute to capital investment.

Equity. Shares in a company, owned by **equity investors**, entitling them to dividend payments out of profits. *Ordinary shares* entitle their owners to vote at the company's Annual General Meetings, but have a residual claim on profits available for distribution. *Preference shares* have a prior claim on profits, but their dividend level is capped.

Escrow account. Deposit held in trust by a third party available to pay debt service.

Fiscal transfer. A financial transfer from the national budget to **sub-sovereign** bodies such as local governments, parastatal bodies, regional development authorities, etc. Such transfers may be an instrument of subsidy to specific types of public services, a means of redistributing tax revenues from richer to poorer regions, etc. **Fiscal intercept** is a form of **guarantee** given to borrowings made by sub-sovereign bodies: any default on their debt servicing is recovered from their fiscal transfer from central government.

Governance. The political, social, economic, institutional and administrative systems and policies that affect the supply of public services. Increasing the flow of finance into public services such as water usually entails reforms to governance of the sector to enable it to make effective use of the resources and make it more attractive to suppliers of funds.

Guarantee. A contract by a third party C to underwrite a financial commitment entered into by A to B. Used by national governments to reduce the risks of borrowing and bond issues by their sub-sovereign bodies, and by international agencies to increase the creditworthiness of developing country institutions and to support specific projects within them. Common types of guarantees are **Political Risk Insurance, Partial Credit Guarantees, Partial Risk Guarantees** and **Participations**.

Institutional investor. Institution such as an insurance company, pension fund or fund manager holding the savings of others and able to invest in bulk in suitable outlets.

Leveraging. Using an injection of finance to induce other contributions, thereby generating a multiple of the original amount. Also the ratio of loan finance to equity in a company's capital structure.

Micro-credit (and micro-finance). Schemes for extending loans to small businesses, farmers and other borrowers who cannot get access to normal bank loans.

Multilateral financial institutions. International agencies set up for the purpose of promoting economic development, whose shareholders are national governments. The largest and best known are the World Bank and the main regional development banks (Asian Development Bank, Inter-American Development Bank, African Development Bank, Islamic Development Bank, European Bank for Reconstruction and Development, etc.). Also called multilateral development banks and international financial institutions. All the above borrow most of their funds and offer long term loans to their clients, who include governments, sub-sovereign agencies and private companies. May also include the International Monetary Fund whose main purpose is to promote international financial stability by lending to countries in financial difficulty in return for agreements on measures to remedy the situation.

Non-recourse lending. A form of project financing in which lenders looks solely to the cash flow of a project to repay their debt (avoiding *recourse* to host governments or other guarantors).

Off-balance sheet finance. Finance that does not need to be reported as a debt obligation on a sponsor's balance sheet. An attraction of **concessions** and other forms of **private participation** from a government's point of view is that the initial investment does not register in the national budget. Finance is raised on the account of the private partner, and the cost to the nation arises in future, through *offtake* payments and customer charges.

Overseas development assistance (ODA). The formal term for "aid". Most of this is of the *bilateral* variety, namely, government-to-government transfers from OECD member states to developing countries. Some ODA is channelled through *multilateral* sources such as the United Nations, the European Development Fund and special funds of the World Bank and elsewhere. To qualify as ODA, the finance has to include a minimum 25% *grant element*.

Partial credit guarantee. Subject to a limit on the amount of cover, expressed as a per cent of the total amount borrowed, the PCG covers against non-payment of a portion of debt service due at any specified time, which may include that portion of debt service falling outside the normal tenor of loans available from commercial lenders. In effect, the PCG can stretch loan maturities for the greater convenience of the borrower, and soften their overall terms.

Partial loan guarantee. A device used extensively, though not exclusively, by the USAID's Development Credit Agency to provide cover for 50% of a commercial loan or bond, typically used to create a revolving fund for infrastructure finance.

Partial risk guarantee. This covers commercial loans, typically to infrastructure projects, against the risk that the host government may fail to carry out its contractual undertakings in connection with the project.

Pension fund. A scheme for collecting contributions from, or on behalf of, employees during their working lives and investing them to yield a return to finance their retirement pensions. Pension funds have to take a long-term view, and are potentially interested in investing in infrastructure, provided it offers a safe and adequate return. **Guarantees** can enhance the credit rating of infrastructure bonds to the point where they can legally be bought by pension funds.

Pool financing. Collaboration amongst different borrowers to obtain better financial terms on loans or bond issues. Used by a group of municipalities, each of which is too small to raise finance on affordable terms, but which collectively can achieve critical mass. Collective security for a loan or bond can be provided either by creating a reserve fund or by mutual underwriting of each party's debt (*joint and several liability*).

Portfolio investor. Person or institution holding a fixed-interest security, such as a **bond** with a predetermined yield. Also applies to a minority **equity holder** with less than 10% of the ordinary shares or voting power in a company.

Private participation (also known as **Private sector participation (PSP)**). Situation where a private company or investor bears a share of the project's operating risk. For this purpose a foreign state-owned enterprise is considered to be a private entity.

Privatisation. Situation where public assets and all responsibilities for operation and management of the asset are sold to a private company. Government retains regulatory responsibility. Often used incorrectly to mean **public-private participation (PPP)**.

Public-private partnership (PPP). The involvement of private companies in the operation, management, financing and/or ownership of public service providers. This can take various forms, such as service and management contracts, **leases**, **concessions**, etc.

Risk mitigation. Financing long-term infrastructure such as water supply incurs risks of many kinds, such as country (*sovereign*) default, devaluation, foreign exchange transfer restrictions, expropriation, breach of contract, regulatory failure, commercial misjudgement, etc. lenders, investors and suppliers can *insure* against many of these risks through official agencies or private markets. Development agency **guarantees** have a similar purpose.

Seed capital. Initial equity capital provided to start a new enterprise and to provide a basis for attracting commercial finance.

Solidarity mechanisms. Schemes enabling affluent citizens to provide aid and subsidies to less fortunate citizens in their own or some other country. Within the water sector, these can take the form of a surcharge on the bills of consumers in a particular social group or country, the proceeds of which are used to subsidise the consumption of the target group.

Sovereign risk. Financing made with the national government as contracting party. This is normally less risky than dealing with *sub-sovereign* bodies or local private companies (depending on the creditworthiness of these bodies). However, lenders are exposed to such acts of government as expropriation, transfer restriction, contractual and regulatory interference, breach of contract, devaluation and sovereign default, as well as political instability and civil commotion. Some of these risks can be insured, e.g. through the Multilateral Investment Guarantee Agency of the World Bank.

Sovereign guarantee. A guarantee provided by central government that financial obligations undertaken by the agency in question will be fully honoured in the event of inability to pay by this agency.

Structured finance. Usually refers to the various kinds of credit enhancement made to improve the attractiveness of financial deals to external parties, e.g. guarantees, placing revenues into **escrow accounts, fiscal intercepts, pool financing**, etc.

Subordinated loan. Loan having a lower priority in the event of repayment difficulties, compared to other categories of lender.

Supplier credit. Offer of credit as part of a contract for the export of goods and services. Such a contract is often insured by an official export credit agency.

Swaps. Opportunity to change key terms of a financing transaction, in pre-defined circumstances, e.g. interest rates, currency used for repayment, maturity of the loan, etc. (Not to be confused with SWAps meaning Sector Wide Approaches to planning investments in the water sector).

Syndication. Financing by a group of lenders, usually financial institutions, combining to make up the total sum required for a project or bond issue.

Take or pay agreement. Common form of concession contract for BOOT, BOT, BOO in which the purchaser (*offtaker*) of the service (usually a public authority) undertakes to buy a predetermined amount at an agreed price, failing which the purchase has to compensate the supplier for the full agreed amount.

ANNEX B: Sources of Advice and Information

B.1 Useful websites

Water and Sanitation Programme (WSP)
www.wsp.org
EU Water Initiative (EUWI)
www.euwi.net
IRC (International Water and Sanitation Centre), Netherlands
www.irc.nl
ACP-EU Water Facility Key Sheets
europeaid-water-facility@ec.europa.eu
Global Water Partnership
www.gwp.org
World Water Council
www.worldwatercouncil.org

For other references refer to the website:
www.financingwaterforall.org

Advice from professional peer groups is available from a new programme, Water Operators' Partnerships (WOP), under the auspices of UN Habitat, Nairobi. Amongst other things, the WOPs organises *twinning* schemes between water utilities: www.unhabitat.org

Various databases exist to enable *benchmarking* between different water utilities so they can compare their performance with others. The Water Utility Benchmarking Association draws data mainly from its members in developed countries (www.waterbenchmarking.com). For developing countries the International Benchmarking Network (www.ib-net.org) is supported by the World Bank, and programmes operated by the Water and Sanitation Programme for Africa (www.wsp.org) have similar aims.

Several websites provide advice and information on commercial finance and private operators:

- Public Private Infrastructure Advisory Facility (PPIAF) www.ppiaf.org
- Private Infrastructure Development Group facilities: (PIDG) www.pidg.org
- Community-Led Infrastructure Finance Facility (CLIFF) www.homeless-international.org
- Water and Sanitation for the Urban Poor (WSUP) www.wsup.com
- Aquafed, the international federation of private water operators www.aquafed.org

Several international networks of NGOs exist that could advise on potential partners in specific countries:

- PsEau www.pseau.org
- WaterAid www.wateraid.org
- International Secretariat for Water/Secretariat International pour l'Eau www.oieau.fr
- Women for Water Partnership www.womenforwater.org

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EUWI Finance working group
EU WATER INITIATIVE

Global Water Partnership