



Managing Water for All

**AN OECD PERSPECTIVE ON PRICING
AND FINANCING**

KEY MESSAGES FOR POLICY MAKERS



Foreword

Sustaining human and economic development, and maintaining ecosystems, require more effective management of water resources. This need is becoming more urgent as we witness increasing pressure, competition, and, in some regions, even conflict over the use of water resources. Poor governance and inadequate investment are resulting in billions of people not having access to water and sanitation services.

The OECD has been working over the last two years to address these challenges, focusing on areas where it can provide value-added. The results are summarised in *Managing Water for All: An OECD Perspective on Pricing and Financing*, which examines: the economic and financial aspects of water management; the need for a cross-sectoral perspective to address this complex policy challenge; and the importance of establishing a firm evidence base to support policy development and implementation. The key messages of the publication are summarised in this present report: *Managing Water for All: An OECD Perspective on Pricing and Financing – Key Messages for Policy Makers*.

Managing Water for All reviews current approaches in the agricultural sector in OECD countries, including market-based mechanisms for allocating water and cost recovery for irrigation. It concludes that we need to implement integrated water resources management more effectively. The OECD will strengthen its work in this area by examining a wider range of water uses, and the impacts of climate change on this agenda.

It also explores how to strengthen financing for water supply and sanitation, and the related governance issues. Many OECD countries must replace ageing water infrastructure, and ensure that it complies with new environmental requirements. Developing countries face a major challenge to mobilise and allocate financial resources in order to provide access to safe water and basic sanitation for their populations.

This report focuses on the ultimate financial sources of investment for the water sector: taxes, tariffs and transfers – the “3Ts”. It underlines the importance of strategic financial planning to find the right mix of the 3Ts for achieving water and sanitation targets, and for leveraging other sources of finance. The report stresses the vital role that tariffs play in achieving sustainable cost recovery while ensuring affordability. Tariff design is examined while stressing that keeping tariff levels artificially low for all is likely to harm the poor.

The most recent data on aid flows show an increase in recent years, which is encouraging. Aid flows to the water and sanitation sector should continue to increase and align with country-owned strategies. The report also examines the changing role of private sector participation in the water sector. Based on international experience, the report presents an OECD Checklist for Public Action that provides guidance for those governments wishing to engage the private sector.

Managing Water for All has been prepared for the 5th World Water Forum in Istanbul on 16-22 March 2009. I am delighted that OECD is joining forces with other international organisations, governments, business and civil society to address the water challenge. Good water management is so fundamental to human and economic development, and to the maintenance of ecosystems, that we cannot afford to fail.



Angel Gurría
OECD Secretary-General

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Summary of Main Messages

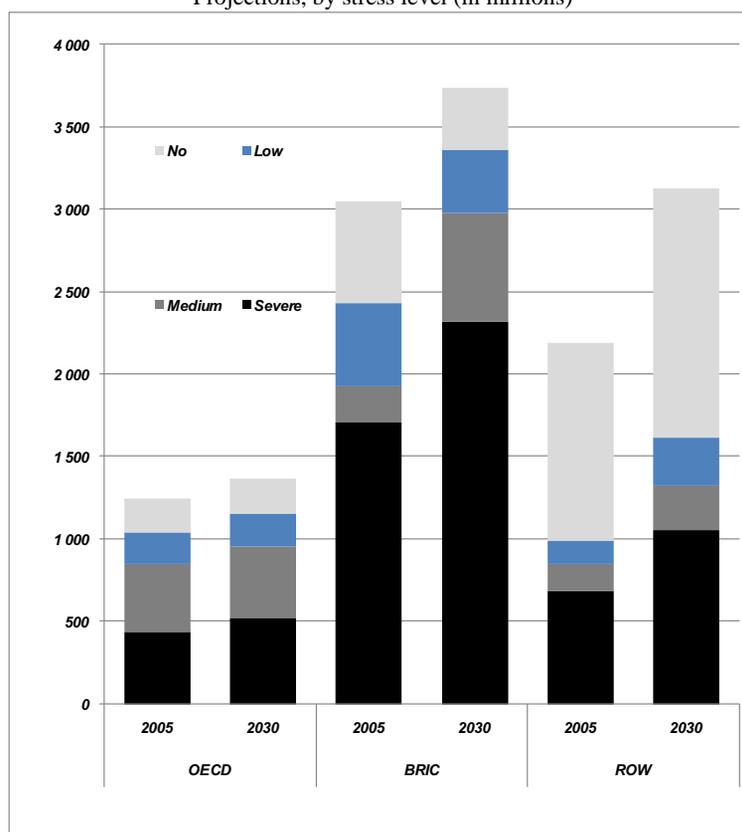
1. Integrated water resources management should be implemented more effectively to manage the increasing competition for water between agriculture, other uses and environmental needs; this requires better information.
2. Substantially more investment is needed in both OECD and developing countries to achieve water and, especially, sanitation policy objectives, and to realise the associated economic, social and environmental benefits.
3. Better governance can optimise investment needs, promote more efficient use of existing resources, enhance the ability of the water sector to attract finance, and harness the efforts of all stakeholders, including the private sector; this requires, amongst other things, improved regulatory oversight, incentives, and accountability of water operators, whether public or private.
4. Strategic financial planning that blends tariffs, taxes and transfers – the “3Ts” – provides an important means for agreeing on water- and sanitation-related investment targets, and how they will be achieved; it can also help to leverage additional sources of finance.
5. Well-designed tariffs are crucial for achieving sustainable cost recovery; they should be established through transparent processes, taking account of local circumstances, and with appropriate measures to ensure that poor and vulnerable groups have access to sustainable and affordable water and sanitation services.
6. Aid flows to the water sector should continue to increase and to align with country-owned strategies; they should be used strategically to complement and reinforce developing countries’ efforts to achieve the water and sanitation targets, and thus contribute to achieving several Millennium Development Goals.
7. The current financial crisis presents risks but also opportunities to reinforce commitments to the water sector, and to invest in water infrastructure as part of fiscal stimulus packages.

Main Messages

1. Integrated water resources management should be implemented more effectively to manage the increasing competition for water between agriculture, other uses and environmental needs; this requires better information.

Many parts of the world are suffering from increased competition for water, as water overuse and pollution reduce available sources. Economic development, population growth, urbanisation and, increasingly, climate change are exerting additional pressures. By 2030, the number of people living under severe water stress, leaving aside possible impacts of climate change, is expected to rise to 3.9 billion, nearly half of the projected world population. Most of these people will live in China and South Asia (Figure 1).

Figure 1. People living in areas of water stress
Projections, by stress level (in millions)



Source: OECD Environmental Outlook baseline in OECD (2007a), *Environmental Outlook to 2030*, OECD, Paris. The OECD baseline used for the *Environmental Outlook* is policy neutral, *i.e.* it assumes no new policies and projects current policies into the future to show what the world will be like in 2030 if currently existing policies are maintained, and no new policies introduced to protect the environment.

Addressing the extreme number of people living under water stress will require more effective implementation of the basic principles of integrated water resources management (IWRM), particularly at the level of river basins. Clearly, more effective policies are needed to better co-ordinate the management of water, land, and related resources in order to maximise economic and social welfare in an equitable manner, without compromising the sustainability of ecosystems. Although the principles of IWRM are increasingly included in national laws, much remains to be done to implement them world wide.

The challenge of implementing more integrated approaches to water management is particularly evident in the agricultural sector. Agriculture uses over 40% of water in OECD countries. Globally that share rises to around 70%. The anticipated growth in world population to 9 billion by 2050 will mean a major expansion in the demand for food, with implications for water resource use. Water used in agriculture will face growing competition from households and from the industry and energy sectors. An expansion of biofuels production would further intensify competition for water within the agricultural sector. Water will also be needed to maintain ecosystems and recreational and cultural uses. Extreme water-related weather events – droughts and floods, regional and seasonal variability of rainfall, and the depletion of groundwater supplies in many countries – are already challenging the ability of societies to effectively manage water resources. This will be further exacerbated by climate change.

More effective integrated water resources management is therefore crucial to ensure that scarce water is supplied efficiently, where and when it is needed. Governments and businesses have a responsibility to ensure that mechanisms are in place so that water is allocated and used as productively as possible to achieve socially and economically beneficial outcomes that are also environmentally sustainable. A strong legal framework, strategic financial planning, and charging farmers for water are important instruments in this regard. Given the importance of agriculture and food in international trade, which embodies water in the production and distribution process, and the cross-boundary nature of the demand and supply of water, there is an international dimension to IWRM.

A critical characteristic of water availability and use in agriculture is diversity. There is a wide range of hydrological conditions, sources of water and farming systems across countries. Property rights vary considerably as well, reflecting long and varying histories of political, cultural, legal and institutional arrangements. Making progress on IWRM will need to take into account these contexts, both across, and within, countries.

Extreme weather events and climate change further complicate this picture. The impacts on farming show great regional diversity, some of which are harmful, and others beneficial. In the longer term, this implies a shift in locations for the profitable production of agricultural commodities, the mix of products, and the pressures for adjustment. Adopting existing and new technologies, reforming policies, and changing farm practices to improve water efficiency use can offset these impacts to some extent.

All OECD countries have policy strategies to address broad water management issues – water resources, quality and ecosystems. In the agricultural sector, they broadly share a common strategic vision to manage water resources through:

- establishing a long-term plan for the sustainable management of water resources in agriculture taking into account climate change impacts, including protection from flood and drought risks;

- contributing to agricultural incomes and achieving broader rural development goals;
- protecting ecosystems on agricultural land or those linked to farming activities;
- balancing consumptive water uses across the economy, including for the environment;
- improving on-farm water resource use efficiency, management and technologies, including adequate financing to maintain and upgrade the infrastructure supplying water to farms.

An increasingly important impediment to achieving these objectives is the quality of information for decision making. Unless greater efforts are made to improve the information base, policy development and implementation will suffer. Climate change is already undermining the utility of some information systems used for water resource management and requiring the development of new databases.

Until the 1980s, water management in agriculture in most OECD countries largely focused on the physical supply of water, with emphasis on “supply-side” infrastructure, technical solutions and harvesting the maximum amount from the resource, within a command and control institutional structure. This technical-based path to capture and deliver water to agriculture is now being complemented by more emphasis on the sustainable use of water, with a greater reliance on “demand-side” economic solutions. The emerging emphasis is thus on better meeting the diverse demands for water (economic, environmental and social) relative to scarce supplies; embracing participatory and collaborative decision-making and institutional structures; and encouraging a greater role for market-based allocation mechanisms.

2. Substantially more investment is needed in both OECD and developing countries to achieve water and, especially, sanitation policy objectives, and to realise the associated economic, social and environmental benefits.

There are significant but different challenges in financing water and sanitation infrastructure among, and between, OECD and developing countries.

In OECD countries, most people have access to water and sanitation services. However, significant investments are required to rehabilitate existing infrastructure, to bring it into conformity with more stringent environment and health regulations, and to maintain service quality over time. According to recent projections, France and the United Kingdom will have to increase their water spending as a share of gross domestic product (GDP) by about 20% just to maintain water services at their current levels, while Japan and Korea may have to increase their water spending by more than 40%. In the United States, the Environmental Protection Agency has estimated that annual investments of USD 23 billion will be needed over the next 20 years to maintain water infrastructure at the current service level and to comply with stricter standards.

The challenge of financing water infrastructure is more severe in developing countries. Since 2000, the international community has been committed to achieving the Millennium Development Goals (MDGs) that aim, *inter alia*, to halve the proportion of people without access to safe drinking water and basic sanitation by 2015.¹ Progress towards achieving these targets has been disappointing. Overall, the target for access to drinking water may be met, largely because of progress in China; but this masks lack of

progress in other regions, and particularly in Sub-Saharan Africa. From 2004 to 2006, the number of people without access to improved drinking water sources declined from 1.1 billion (WHO-UNICEF, 2006) to 880 million people (WHO-UNICEF, 2008); of these, 84% live in rural areas.

For sanitation the situation is worse: between 1990 and 2006, the number of people without improved sanitation decreased from 2.6 billion to 2.5 billion people (8% of the target). At the current rate, the world will miss the sanitation target by over 700 million people; Southern Asia and Sub-Saharan Africa are especially off track. Providing sanitation in rural areas is the most difficult challenge: it is projected that about 1.7 billion rural people will remain without improved sanitary facilities in 2015 (WHO-UNICEF, 2006).

Achieving the water-related MDGs will require significantly increased financing. Even if they are achieved, millions of people – the “other” 50% – will still not have access to safe water and basic sanitation. A recent World Health Organization (WHO) report estimates that USD 18 billion will be needed annually to extend existing infrastructure to achieve the water-related MDGs, roughly doubling current spending. In addition, the cost of maintaining, rehabilitating and modernising existing systems will grow steeply, and already exceeds the annual costs of extending the networks by several orders of magnitude. Lack of maintenance results in additional investment requirements at a later stage, as infrastructure wears out and requires rehabilitation.

The management of water resources also requires finance, and this should be more closely linked with financing arrangements for water supply and sanitation (WSS). Investment is needed in the institutions and mechanisms needed to allocate water among competing demands in an equitable and sustainable manner. Financial resources are also required to build and operate the hydraulic infrastructure (such as flood protection works), to ensure that water is available for its various uses, including water supply and sanitation.

The economic, social and environmental benefits from improved water supply and sanitation have not been sufficiently realised

Good water services confer many benefits. Conversely, the costs of not providing water supply and sanitation services can be significant, in terms of lost opportunity and adverse impacts on economic and social development, and environmental sustainability.

Inadequate access to water, sanitation and poor hygiene account for 1.8 million child deaths per year – the second largest cause of child mortality after malnutrition – in addition to having other health impacts. Recurrent incidents of water-related diseases (such as the recent cholera outbreak in Zimbabwe) graphically illustrate the price some communities have to pay. The WHO estimates that each dollar invested in water supply and sanitation generates between USD 4-12 in health benefits alone, depending on the type of water and sanitation service (WHO, 2008). This is a substantial return for society as a whole, but it does not accrue directly to investors.

Achieving the water-related MDGs underpins the achievement of several other MDGs such as those on poverty alleviation, health, hunger, education and gender equality. Providing WSS services enables children to avoid illness and to attend school. It frees up the time of women involved in carrying water. These provide important economic and social benefits for society.

Sufficient water of adequate quality is essential for the productivity of various business sectors – food and beverages, manufacturing, mining, energy, tourism, etc. Recognising this, the business sector is becoming more active and vocal in promoting sustainable management of water resources, and is entering into partnerships with government to this end.

The Millennium Ecosystem Assessment (2005) describes how wetlands deliver a wide range of ecosystem services that contribute to human wellbeing, such as fish and fibre, water supply, water purification, climate regulation, flood regulation, coastal protection, recreational opportunities, and, increasingly, tourism. When both the market and non-market economic benefits of wetlands are included, the total economic value of unconverted wetlands is often greater than that of converted wetlands.

Sanitation plays a critical part in these water-related benefits, as it determines the quality of the water that returns to the ecosystem. 2008, the international year of sanitation, has helped raise awareness of this issue. But more should be done to explain the public goods character of investments in sanitation, and to translate the raised awareness into investment, particularly in rural areas.

In sum, greater efforts are needed to document and communicate the economic, social and environmental benefits of investing in water supply and sanitation, and in water resources management, particularly to economy and finance ministers, and to donors. More effective communication with the public is also needed to explain the benefits that consumers receive from the charges they pay for water services.

3. Better governance can optimise investment needs, promote more efficient use of existing resources, enhance the ability of the water sector to attract finance, and harness the efforts of all stakeholders, including of the private sector; this requires, amongst other things, improved regulatory oversight, incentives, and accountability of water operators, whether public or private.

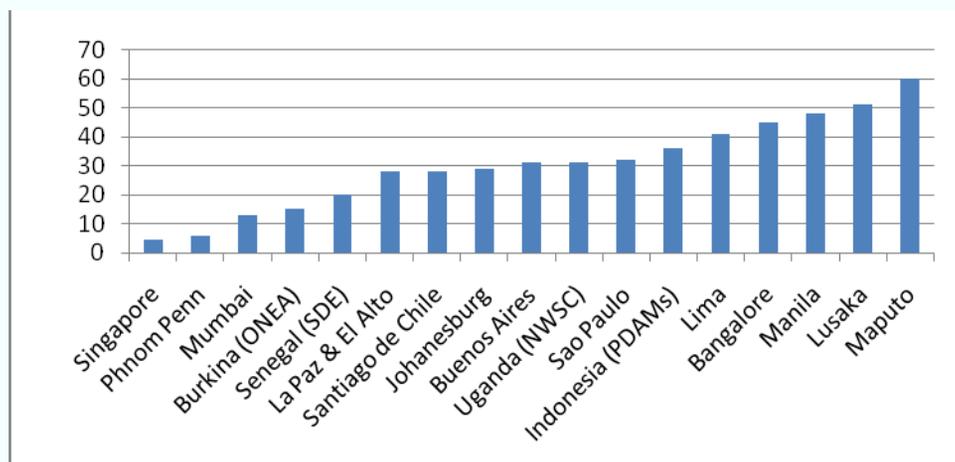
Most countries face a gap between the levels and quality of water and sanitation services they would like to provide and what they think they can afford. Closing this gap requires good information and analysis, discussion among stakeholders, and appropriate measures to reduce the demand for, and increase the supply of, finance.

On the demand side, better governance of the sector can help optimise the amount of investment required. For example, incentives for better management of water services provision can reduce water consumption and boost the operational efficiency of water operators. This can be achieved by reducing leakage and energy use, increasing bill collection rates, choosing appropriate technologies, and encouraging better investment planning (see Box 1). Such measures can reduce investment needs and increase internally generated revenues to finance investment. Some recent reports have emphasised that the costs of the water sector could be significantly reduced in many countries by more effectively combating corruption (Transparency International, 2008; UNESCO, 2006). In addition, economies of scale and scope can be realised by organising the water sector so that providers do not have to serve too few or too many customers.

Box 1. Financing needs can be reduced by improving the efficiency of water utilities

The operational efficiency of many water utilities is often very low compared to best practice. For instance, leakage in well-run water utilities in OECD countries is usually in the range of 10%-30% of water production. In developing countries it frequently exceeds 40%, and sometimes reaches 70%. As a result, significantly more water needs to be produced and transported than finally reaches the consumer. This increases investment and production costs: infrastructure is oversized and operating costs, both in absolute terms and per unit of water sold, are higher than they should be. Relatively small investments are needed to realise these efficiency gains, but the payback period is usually short, and the returns positive.

Unaccounted for water (%)



Source: OECD (2009a), *Private Sector Participation in Water Infrastructure: OECD Checklist for Public Action*, OECD, Paris, www.oecd.org/daf/investment/water.

Experiences with private sector participation

Over the last 20 years, many governments have involved the private sector in the management and development of water infrastructure. Private sector involvement was seen as a way to improve the often poor operational performance of publicly run utilities, and/or to inject much-needed investment capital. However, experience has not always matched expectations. In particular, the hoped-for surge in private investment flows has not materialised.

The difficulties encountered in the past with private sector participation were often not project-specific, but linked with poor risk management, shortcomings in investment environments, and lack of capacities in host countries. These experiences underlined the complex organisation and limited creditworthiness of the water sector, as well as the risks faced by potential investors. These factors undermine sustainable financing of water service provision, regardless of the ownership of water operators.

The focus has now shifted and is more concerned with identifying the conditions under which water services can be provided safely, efficiently, affordably and sustainably, irrespective of whether ownership is public or private. This requires better risk management and strengthening the creditworthiness of the water sector. Promoting greater operational efficiency, and thereby reducing investment needs, is central to these efforts. This is particularly important for publicly owned operators which are, and for the foreseeable future will continue to be, the dominant service providers. The recently launched Water Operators Partnership² to promote sharing of experience among water operators should be helpful in this regard.

In developing countries, the forms of private sector participation have evolved significantly in recent years. “Traditional” international players have generally entered into shorter contracts, into arrangements that involved less risk transfer (green-field, ring-fenced projects and joint ventures with local partners), and lower or no investment obligations (such as lease and management contracts). New actors are also emerging. Between 1990 and 1997, five international companies participated in 53% of all sizeable contracts awarded to private water operators in developing countries. In 2002, those companies won 23% of new contracts. The new “private” water operators include a growing number of local and regional actors, and hybrid arrangements that are neither entirely public nor private (*e.g.* joint ventures and public companies operating abroad as private companies).

Developing an enabling legal and regulatory framework

OECD has developed a Checklist for Public Action (OECD, 2009a), building on the 24 key issues raised by the OECD Principles for Private Sector Participation in Infrastructure (OECD, 2007b), to assist governments wishing to engage the private sector in the water sector. It provides a coherent set of policy directions that address the allocation of roles, risks and responsibilities, as well as the framework conditions necessary to make the best of private sector participation. It emphasises the importance of choosing the mode of water provision locally and of designing business models adapted to the local context.

Whether water services are publicly or privately provided, the government is responsible for defining and establishing the institutional framework, overseeing its functioning and ensuring the provision of water-related public goods. This involves clarifying the allocation of responsibilities across government; horizontally across different ministries, and vertically across national, regional and local authorities. It also involves clearly delineating different public sector roles: political functions, administration, regulation, and service delivery. In view of the monopolistic character of the water sector, oversight of tariff setting is a particularly important task (discussed below).

Beyond establishing an enabling environment, governments need to ensure that water service providers are accountable, and that all stakeholders can contribute to improving service delivery in the public interest. In particular, contractual arrangements in the water sector are typically long term. As a result, it is very difficult to foresee and to make provision for all of the issues that might arise in the complex relationship between private operators and the responsible public authorities over time. Nevertheless there are mechanisms that can help reduce uncertainty:

1. strengthening competition not only in the bidding process, but also in the contractual phase by using benchmarking processes (*e.g.* as in Chile, Indonesia and the United Kingdom);
2. allocating risk to the party best able to manage it (*e.g.* affermage contract in Senegal);
3. performance-based contracts focused on a small number of clear, easy-to-measure indicators (*e.g.* the management contract for water in Yerevan, Armenia);
4. clauses and mechanisms to frame the discussions on unforeseen or emerging issues as well as formal dispute resolution mechanisms (*e.g.* the use of an Expert Panel in Chile);
5. monitoring processes, based on appropriate information, combined with penalties and rewards (*e.g.* Chile and Senegal).

Good faith and willingness of the parties to co-operate and find solutions remain crucial. In this regard, commitment to responsible business conduct³ by service providers, whether public or private, is important. This should include a determination to combat corruption, to communicate with consumers, and to effectively manage the social and environmental consequences of their actions.

Finally, past experience has also shown that effective partnerships in practice are tripartite relationships between public authorities, operators (public or private) and the communities. Promoting an informed involvement of civil society (non-governmental organisations [NGOs], consumer groups) can help establish constructive relations between consumers and operators, and enhance monitoring of water service provision. It can facilitate the task of regulation and strengthen accountability mechanisms by allowing better information flows and greater adequacy of services to needs. It requires that consumers are able to have an informed opinion – implying availability of information and capacity to treat that information – and that they have a voice and the capacity to influence decision making.⁴

4. Strategic financial planning that blends tariffs, taxes and transfers – the “3Ts” – provides an important means for agreeing on water- and sanitation-related investment targets, and how they will be achieved; it can also help to leverage additional sources of finance.

Reducing the need for investment through demand-side measures is crucial for establishing realistic and affordable objectives for providing water and sanitation services. Ensuring an adequate supply of finance is essential for meeting those objectives and for establishing the water sector on a financially sustainable basis. Strategic financial

planning can help to build consensus on targets, and on how the demand and supply sides can be balanced.

Establishing the water sector on a financially sustainable basis requires finding the right mix between the ultimate revenues for the water sector, the so-called “3Ts”: tariffs, taxes and transfers (primarily official development assistance [ODA] grants). Revenues from these sources need to increase to cover the costs of achieving agreed policy objectives for the provision of water supply and sanitation services to be met. This contributes to “sustainable cost recovery” which, on the basis of country experience, is now considered a more realistic and practical policy principle than “full cost recovery” based on tariffs alone. Even in the most developed countries, covering costs solely on the basis of tariffs may not take sufficient account of the burden this would place on the poorest consumers, or of the merit or public goods character of some WSS services, particularly sanitation. In less developed countries, the absence, or inability, of capital and financial markets to provide the resources required to cover the high, upfront costs associated with investments in water and sanitation infrastructure also limits reliance on tariffs as the exclusive source of revenue. Support from public budgets (or ODA) may be justified to address these issues.

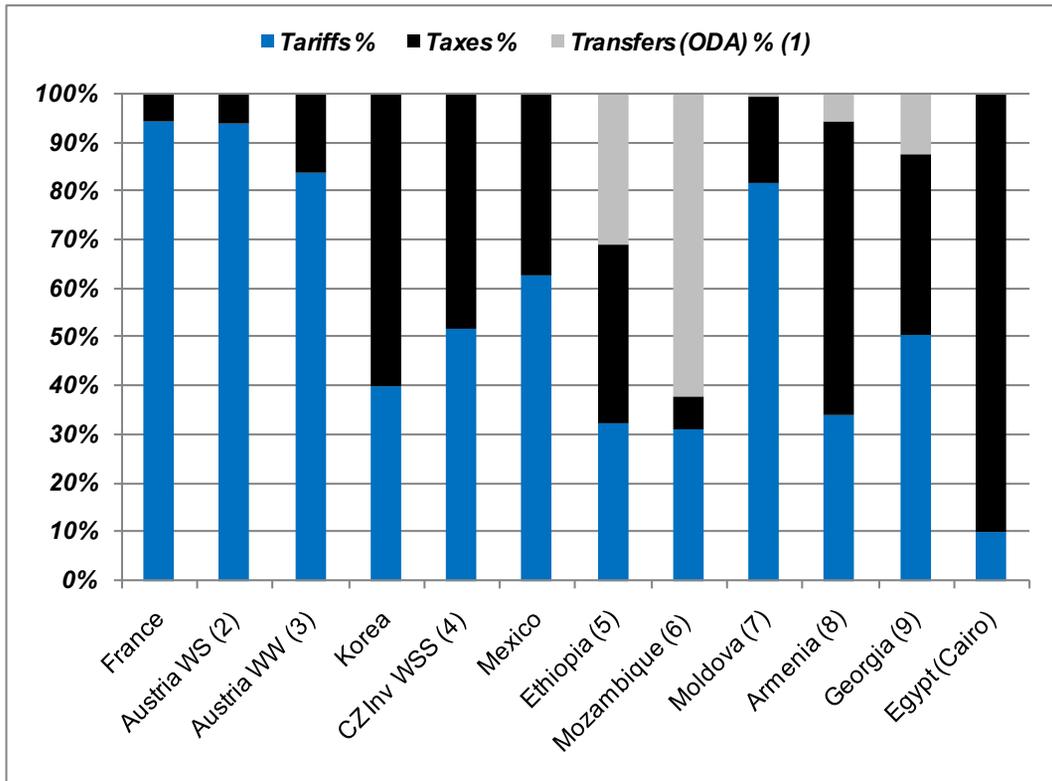
The concept of “sustainable cost recovery” was formulated by the Camdessus Panel. The panel’s report (Winpenny, 2003) identified three main characteristics of sustainable cost recovery:

1. an appropriate mix of the 3Ts to finance recurrent and capital costs, and to leverage other forms of financing;
2. predictability of public subsidies to facilitate investment (planning);
3. tariff policies that were affordable to all, including the poorest, while ensuring the financial sustainability of service providers.

The 3Ts should be distinguished from other forms of finance such as loans, bonds or equity. The 3Ts can serve to mobilise additional domestic or other sources of capital to help cover the costs of upfront investment by extending financing over the repayment period. However, unlike the 3Ts, these forms of finance need to be repaid or to receive a return. Thus instruments such as loans, bonds and equity help to bridge the finance gap, whereas the 3Ts provide the future cash flows that close it.

Every country must find its own balance among the three basic sources of finance. As Figure 2 shows, this can be achieved in various ways. Typically the most developed economies, with most of the population connected to water and sanitation infrastructure, rely largely on tariffs. But even in these economies, public budgets based on taxes often continue to play a role. Indeed public budgets have played a major role in financing initial investments in water infrastructure in virtually all countries. Figure 2 shows that public budgets in countries like the Czech Republic, Korea and Mexico account for between 40% and 60% of water-related investments. OECD EAP Task Force analysis suggests that low-income countries like Armenia, Georgia and Moldova would need to spend 2%-5% of their public budgets in order to achieve the water-related MDGs (EAP Task Force, 2008a; Box 2). ODA can be an important source of investment capital, but in many developing countries it plays a marginal role.

Figure 2. Shares of tariffs, taxes and transfers (official development assistance) in financing water supply and sanitation



1. Includes ODA grants as well as private grants, such as through non-governmental organisations.
2. WS = water supply.
3. WW = wastewater.
4. CZ Inv WSS = Czech Republic, composition of capital investment for water supply and sanitation.
5. 2005/06.
6. Rural WS, 2006.
7. 2006.
8. 2005.
9. 2007.

Source: OECD (2009b), "Strategic Financial Planning for Water Supply and Sanitation", OECD internal document, www.oecd.org/water.

Box 2. Financing water supply and sanitation in Moldova

A study in Moldova, a low-income country in the former Soviet Union, suggests that tariffs could only cover 50% of operation, maintenance and capital expenditure costs of existing water infrastructure for the foreseeable future. This is on the assumption that tariffs would increase to an average of 5% of household income, which would place a significant burden on many households, and require important financial measures to protect the poorest sections of the population. Only in 2028 would tariffs cover 95% of costs. In the interim, public budgets and ODA would have to make up the shortfall. The study concluded that this would imply a four-fold increase in the budget allocation for water, and a three-fold increase in ODA. If this does not happen, the level of ambition of water services provision would have to be scaled back. More ambitious sector targets, including the achievement of the water-related MDGs (which requires significant infrastructure developments in rural areas), or better wastewater treatment levels to approximate requirements of the European Union's Water Framework Directive, would cost more. Given that no additional contribution could be expected from tariffs, this implies additional support from the public budget and ODA would be required if these targets were to be met.

Source: EAP Task Force (2008a), "Financing Water Supply and Sanitation in Moldova", OECD.

It is not only central government budgets that finance water infrastructure. In many OECD and developing countries, local governments can also play an important role. In decentralised governance systems, local authorities may be authorised to raise taxes and/or incur debt, usually within prescribed limits. Mature capital and financial markets may provide creditworthy municipalities with capital for investment in water and sanitation infrastructure. Fiscal transfers from central budgets are also a source of investment capital in some countries. Well-designed inter-governmental transfers can create incentives for improved financial sustainability and creditworthiness of local jurisdictions, thereby eventually helping to decrease demands on central budgets. As with central authorities, the 3Ts, including inter-governmental transfers, are the ultimate source of finance, and other forms must be repaid or compensation provided.

The 3Ts are not simply interchangeable: the impact of water sector spending may be sensitive to the sources of funds, and to the modalities of their delivery. Tariffs will provide incentives for more efficient use of water, whereas subsidies generally will not. Loans from international financial institutions or donors are often linked with capacity development, and usually require a government guarantee. In the United States, public subsidies were provided in the form of grants for the construction of water facilities in the 1980s. This changed in the 1990s, and investments were financed more by subsidised loans with long maturities, low interest rates and tariffs. The evidence suggests that this change resulted in improved capital investment efficiency. Thus the mix of the 3Ts, the ways in which the revenues are delivered to the water sector, and the funds that they leverage, require careful consideration by governments.

Strategic financial planning is one way to develop a consensus on a sustainable cost recovery strategy based on the 3Ts. Strategic financial planning is a multi-stakeholder policy dialogue process. It aims to develop a national consensus on the levels and quality of water supply and sanitation services a country will provide over a period of time, and how it will pay for them. This may involve not only a mix of the 3Ts, but also a strategy

to leverage loans and other forms of “bridging” finance. The results of strategic financial plans for the water sector can be integrated into medium-term budgets, providing a measure of predictable financing over time, and thereby support sustainable cost recovery.

When based on robust data and sound analyses, such plans can help the various stakeholders involved in water supply and sanitation service provision to achieve a common understanding of the status of the water sector and its possible evolution; make the allocation of scarce resources more efficient; identify ways of mobilising additional finance; improve the implementation of sector plans by making them more realistic; and make the sector a more credible partner for ministries of finance, donors and private investors (Box 3).

Box 3. Strategic financial planning for water using the OECD’s FEASIBLE methodology

In order to support the policy dialogue processes that underlie strategic financial planning, the OECD, with the support of the Government of Denmark, has developed a decision-support tool called FEASIBLE. The basic approach underlying FEASIBLE is to collect detailed technical data on existing infrastructure, select public policy targets in water supply and sanitation – usually the Millennium Development Goals – determine costs and timetables for achieving them, and compare the schedule and volume of expenditure needs with available sources of finance. This reveals any financial deficits likely to arise along the way. FEASIBLE can be used to develop various scenarios to determine how the gaps might be closed, such as identifying ways to help achieve the targets at lower cost or to mobilise additional finance; setting less ambitious targets, or rescheduling the programme. To date, the FEASIBLE tool has been used in more than 15 countries, mainly in the former Soviet Union

In Moldova, policy dialogue to develop a financing strategy for water supply and sanitation took place over an 18-month period, and was led by the Minister for Local Public Administration. It provided important input to the National Water Strategy, initiated by the president. The process helped to inject realism into these plans and led to a demand to translate the financing strategy into an action and investment plan, and to link it into the Medium-Term Expenditure Framework.

In Armenia, policy dialogue on water supply and sanitation sector financing has been going on for several years under the leadership of the State Water Committee and with strong involvement of the Ministry of Finance. The dialogue and analysis that it produced led the Ministry of Finance to recognise the sector’s need for prolonged public subsidies and to an extension of public subsidies that were meant to be phased out. The dialogue also identified realistic policy objectives for minimal water supply standards in rural areas. A law incorporating these conclusions is in the process of adoption.

The FEASIBLE tool is currently being applied in a number of countries in the former Soviet Union (Moldova, Georgia, Kyrgyzstan), but also in Egypt (with support from the OECD and the Mediterranean Component of the EU Water Initiative), in Lesotho (with support of the OECD and EU Water Initiative Finance Working Group), and Cambodia (with support from the Water and Sanitation Programme).

Source: EAP Task Force (2007), “Implementation of a National Finance Strategy for the Water Supply and Sanitation in Armenia”, OECD; EAP Task Force (2008a), “Financing Water Supply and Sanitation in Moldova”, OECD; EAP Task Force (2008b), “National Policy Dialogue on Financing Strategy for Rural Water Supply and Sanitation in Armenia”, OECD.

5. Well-designed tariffs are crucial for achieving sustainable cost recovery; they should be established through transparent processes, taking account of local circumstances, and with appropriate measures to ensure that poor and vulnerable groups have access to sustainable and affordable water and sanitation services.

Tariffs levels should not be kept artificially low, as this would hurt long-term sustainability of providing services for all

Requiring users to contribute to sustainable cost recovery for water services through tariffs is fundamental to achieving financial sustainability in the water sector, as well as providing incentives to use water efficiently. Tariffs account for the lion's share of recurrent expenditure in both OECD and developing countries. In recent years, there have been considerable increases in revenues from tariffs, both in OECD and non-OECD countries. Nevertheless, as indicated above, even in many OECD countries it is unusual for tariffs to cover the full costs of providing water and sanitation services, including the cost of replacing or extending infrastructure, let alone the opportunity and environmental cost of using the resource.

Keeping tariffs artificially low for all consumers may result in a vicious circle of underfunded service providers, insufficient investment, and deteriorating infrastructure and services that further reduce the benefits that users receive from them, and therefore reduce their willingness to pay. Some poorer developing countries have to rely largely on taxes and transfers to finance investments in water infrastructure. However, they do not provide incentives for efficient water use. Malfunctioning water systems hurt lower-income users the most, and especially those who currently do not have access to water services. Low tariffs prevent extensions of networks to poorer communities, forcing them to continue paying much higher prices to obtain water that may be of inferior quality to piped water from other sources, including informal providers.

Tariff setting requires reconciling competing policy objectives through an appropriate process

There is often public opposition to paying for water and to tariff increases, especially when water prices have been kept artificially low. This is one reason why politicians, especially at the local level, are reluctant to increase tariff levels to financially sustainable levels. This opposition stems in part from a lack of awareness of the broader economic benefits of water services, particularly sanitation, as its benefits extend beyond the household to the community or regional level. Opposition to tariff increases is also linked to concerns about adverse impacts on poorer households, and to the idea that everyone should have access to a minimum amount of safe water. These are legitimate concerns that need to be addressed, but they should not preclude reliance on tariffs as the main component of sustainable cost recovery policies.

A key challenge in setting tariffs therefore is the clarification and reconciliation of different policy objectives: financial sustainability of water utilities; efficient allocation of water and other resources; environmental sustainability of water use; and ensuring affordable access to water services for all sections of the population, including the poorest. This is ultimately a political task and should be addressed through a transparent, democratic, participatory process.

Such processes are more likely to be effective if they include discussion of: (i) service quality and coverage, as proposed tariff increases should be linked to improvements in service quality; and (ii) the efficiency of service providers, as consumers are often unwilling to pay utilities that are inefficient. An important, relevant challenge is to collect accurate information on the costs of service provision (which can differ substantially across geographic locations).

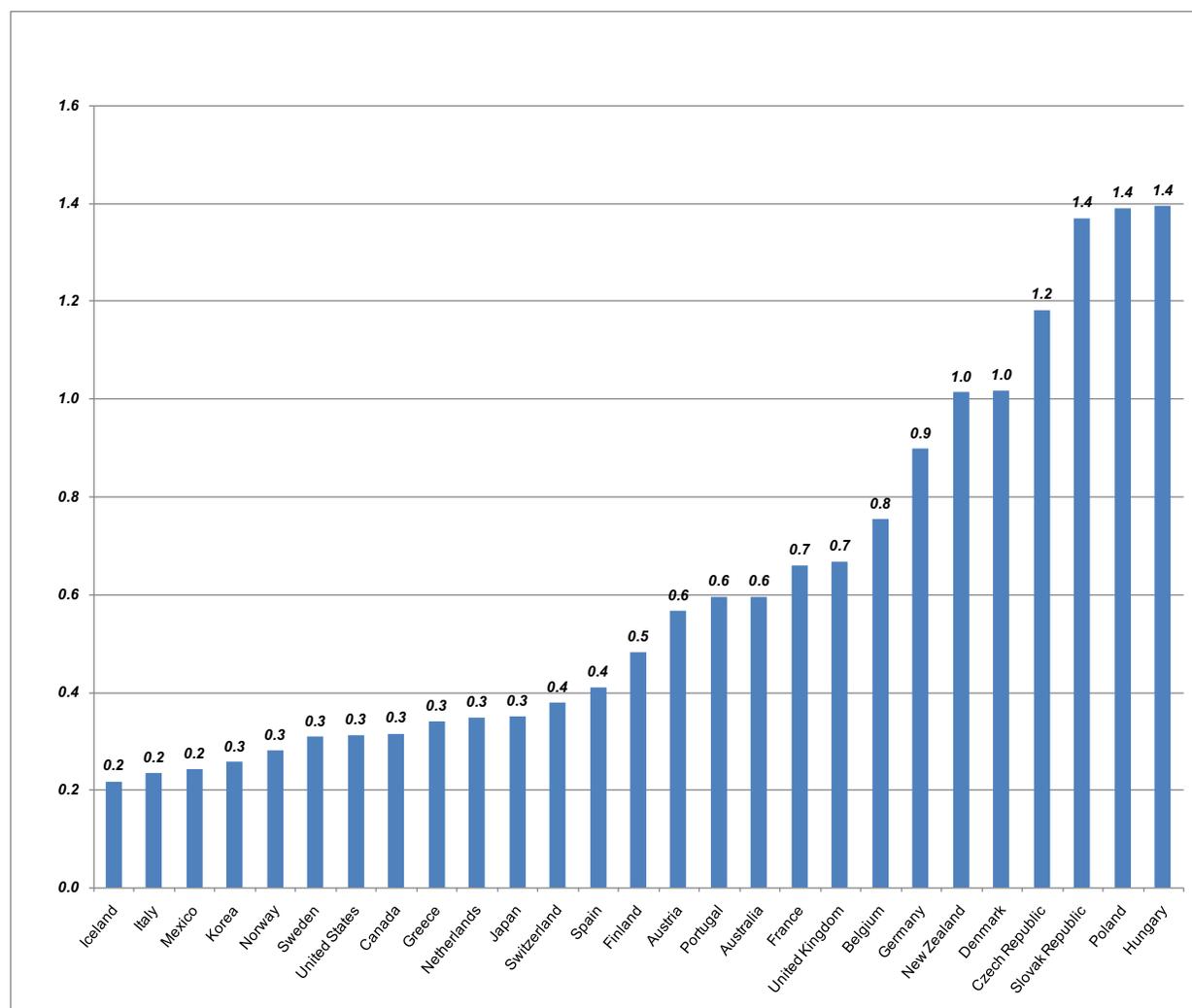
Access and affordability constraints should be defined locally

Striking a balance between the financial sustainability of the service provider and the affordability of the service for low income households is seen by many as the key challenge of tariff setting. But the two goals are not mutually exclusive. Two issues need to be addressed: (i) the tariff level, the portion of the overall cost of providing the service that can be covered through tariffs; and (ii) the tariff structure, how the costs for different services will be allocated among different consumers.

Figure 3 shows that average water and wastewater bills in OECD countries are generally less than 1.4% of average household income. However, Figure 4 suggests that this can represent a considerable share of disposable income for poorer families in many countries.⁵

Affordability of water bills needs to be assessed locally. For example, during a reform of tariffs in Portugal, a study showed that 10.5% of households would face bills in excess of the national affordability threshold. However, most were concentrated in 60 out of 309 municipalities. As a result, the proposed tariff reform identified flexible solutions in different municipalities to address localised affordability problems, including support to local service providers.

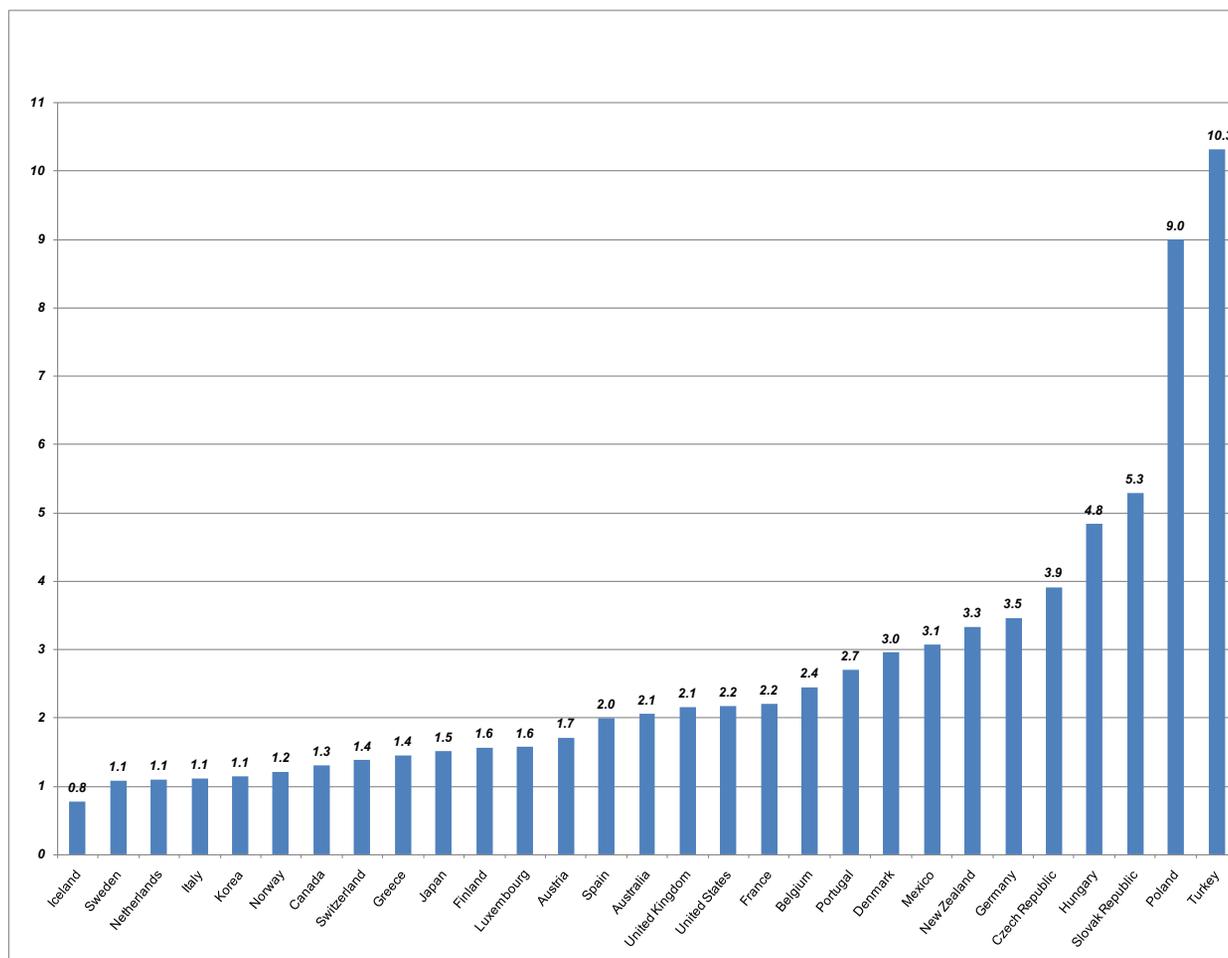
Criteria of affordability also need to be defined locally. National or international affordability criteria (3%-5% of household income is an often quoted figure) may not reflect the share of income currently spent on water and sanitation by households. The actual share could be much higher, for example when unserved households rely on vendors who charge prices higher than those for network services. In these cases, charging for water at levels above international thresholds, but below actual expenditure on water, would represent an improvement. International criteria also do not take account of the actual willingness and ability of local populations to pay for improved services. This can be important in developing countries with incomplete service coverage where willingness to pay for improved services may be higher than expected, even for sanitation services (Box 4).

Figure 3. Average water and wastewater bills as a share of average net disposable income (USD)¹

1. Data for water and wastewater bills are per capita figures based on a tariff that was computed by Global Water Intelligence (GWI) for a household consuming 15 m³/month; and a level of per capita consumption that assumes an average three-person household. Bills are in local currency for 2008 and were converted into USD using OECD's 2007 exchange rate adjusted for consumption purchasing power parity. Data for net disposable income per capita refer to 2006 and are expressed in USD using the OECD exchange rate adjusted for consumption purchasing power parity.

Source: OECD (2009c), "Pricing Water Resources and Water and Sanitation Services", OECD internal document, www.oecd.org/water.

Figure 4. Average water and wastewater bills as a share of income of the lowest decile of the population (USD)¹



1. Data for water and wastewater bills as detailed in Note 1 of Figure 3. Income data is for 2005 and is in USD at the OECD exchange rates adjusted for purchasing power parity.

Source: OECD (2009c), "Pricing Water Resources and Water and Sanitation Services", OECD internal document, www.oecd.org/water.

Box 4. The Mumbai Slum Sanitation Project

In Mumbai, an estimated 5% of the population defecate in the open. The Water and Sanitation Program based at the World Bank worked closely with community-based organisations, private contractors and NGOs to address this issue. Users were willing to contribute to the capital costs of constructing toilet facilities, and operation and maintenance cost recovery was ensured through memberships and user fees. As a result:

- 330 community toilet blocks were constructed with more than 5 100 seats; and an estimated 400 000 beneficiaries.
- Mumbai now allocates USD 10 million/year from its own budget to scale up this project city-wide.
- The approach has been widely disseminated and is incorporated in India’s National Urban Sanitation Policy.

Source: Revels, C. (2007), “Implementing the OECD Water Project – Trends, Opportunities and Challenges: Lessons Learned from Three Projects”, presented at the OECD Expert Meeting on Water Pricing and Financing, 14-15 November, Paris, available at www.oecd.org/water.

Tariff structures can then be designed to ensure access and affordability for vulnerable groups

A well-designed tariff structure provides a better solution to affordability constraints than low average tariff levels for all consumers. Appropriately designed tariff structures allow poor and vulnerable groups to be cross-subsidised by higher-income consumers. The design of tariff structures should also be tailored to specific contexts and different services. For example, a number of countries are now charging for water supply and sanitation services separately.

The effectiveness of some tariff measures to target the poor has been questioned. For instance, in some countries, increasing block tariffs (IBTs) had an adverse impact on large, poor families that consume more than smaller high-income households. Experience in some OECD countries (*e.g.* in the Flanders region in Belgium, Luxembourg, Spain, Greece), however, shows that IBTs can be modified to address these concerns. Doing so, however, requires information about household occupancy that may not be available in all countries.

In order to address affordability problems for the poor, over 45 countries have put “social tariffs” in place while still trying to move towards tariff levels that improve cost recovery. In addition to IBTs, this could take the form of lower volumetric rates or flat fees for specific population groups.

An alternative to cross-subsidisation through tariff structures is direct support to low-income households. Some countries use non-tariff mechanisms to ensure continuing access to water services for the poor, such as coupons or targeted income support. Their use, however, requires the clear identification of beneficiaries, and therefore may entail significant administrative costs. In addition, the social stigma that some households might feel when declaring themselves as “water poor” may reduce the uptake of some measures

that are available on a voluntary basis. Linking non-tariff measures to related schemes such as housing support can help to offset some of these disadvantages.

Finally, in many developing countries, subsidising access rather than consumption has been demonstrated to be more effective in targeting the poor, particularly in developing countries where access to piped services is still low. In such cases, the charge for connecting to the network, which can be significant, is waived or reduced. Consumers then pay for the water they consume which contributes to the financial sustainability of the system and provides incentives for efficient water use.

6. Aid flows to the water sector should continue to increase and to align with country-owned strategies; they should be used strategically to complement and reinforce developing countries' efforts to achieve the water and sanitation targets, and thus contribute to achieving several Millennium Development Goals.

Overall ODA spending on water supply and sanitation has significantly increased in recent years

Transfers from one country to another can help close the financing gap for investments in water and sanitation infrastructure. Transfers can take the form of ODA or charitable donations. ODA grants can help close the financing gap whereas ODA loans lower the cost of capital and must be repaid. But ODA is not just a source of finance: it is also a source of much-needed institutional reform and capacity development.

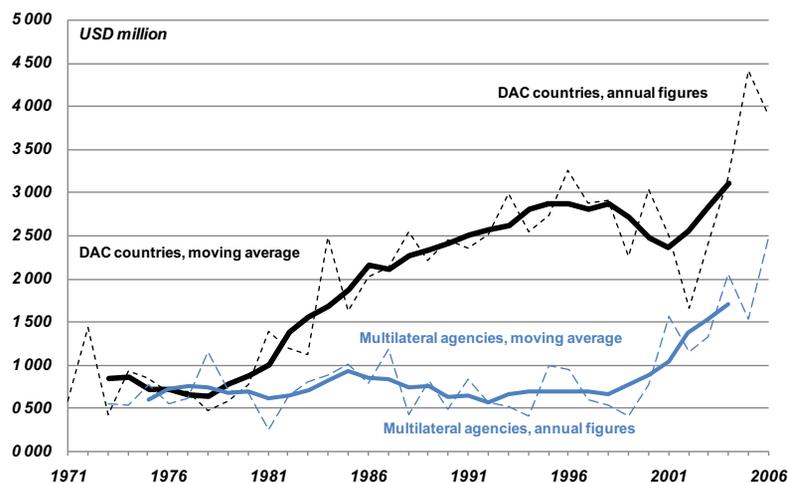
Aid for water supply and sanitation has been rising since 2001. This followed a temporary decline in the 1990s (Figure 5). Over the period 2002-06, bilateral aid to water increased at an average annual rate of 24%, with multilateral aid increasing 21% annually. As a result, in 2005-06 Development Assistance Committee (DAC) members' bilateral annual aid commitments to the water sector and sanitation rose to USD 5 billion, double the 2001-02 figure in real terms. Taking into account multilateral agencies' outflows, the total was USD 6.2 billion. ODA transfers to the water sector are in the form of both grants and loans, with the latter representing almost 40% of the DAC total.

Analysis of ODA flows show that the priority assigned to water and sanitation is increasing in donor programmes. The share of aid to water supply and sanitation in total aid (sector-allocable aid) regularly increased over the period 2001-06, rising from 6% in 2001-02 to 9% in 2005-06.

But there are concerns about the regional and country distribution of aid for water. Much of it flows to countries that already have relatively good access to water supply and sanitation, or have enjoyed a favoured relationship with a particular donor. For example, Albania, Costa Rica, Iraq, Jordan, Lebanon and Malaysia all received at least USD 13 per capita of water aid, while Angola, Central African Republic, Republic of Congo, Somalia and Togo received less than USD 0.5 per capita (see Figures 6 and 7). Overall, the least developed countries received just one-quarter of total aid for water supply and sanitation, other low-income countries a further quarter, and middle-income countries about half. The share of aid to the water sector in Sub-Saharan Africa has declined from 27% in 2001-04 to 22% in 2005-06.

Figure 5. Trends in official development assistance to water supply and sanitation

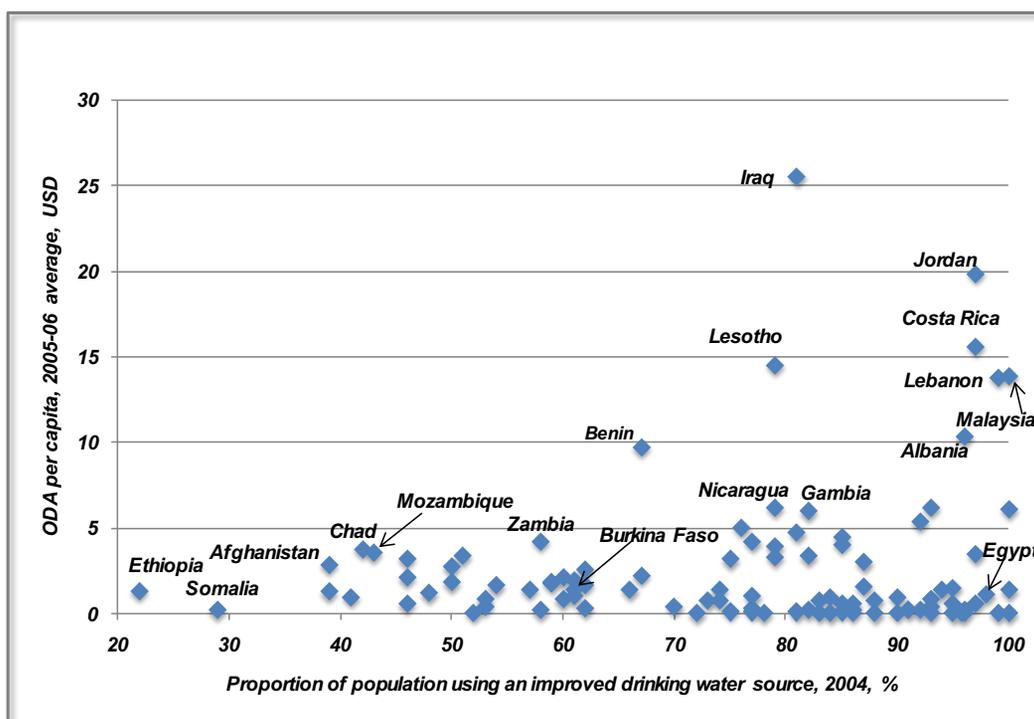
1973-2006, commitments, five-year moving averages and annual figures, constant 2006 prices¹



1. Figures based on five-year moving averages take into account commitments' volatility, thus facilitating the analysis of long-term trends.

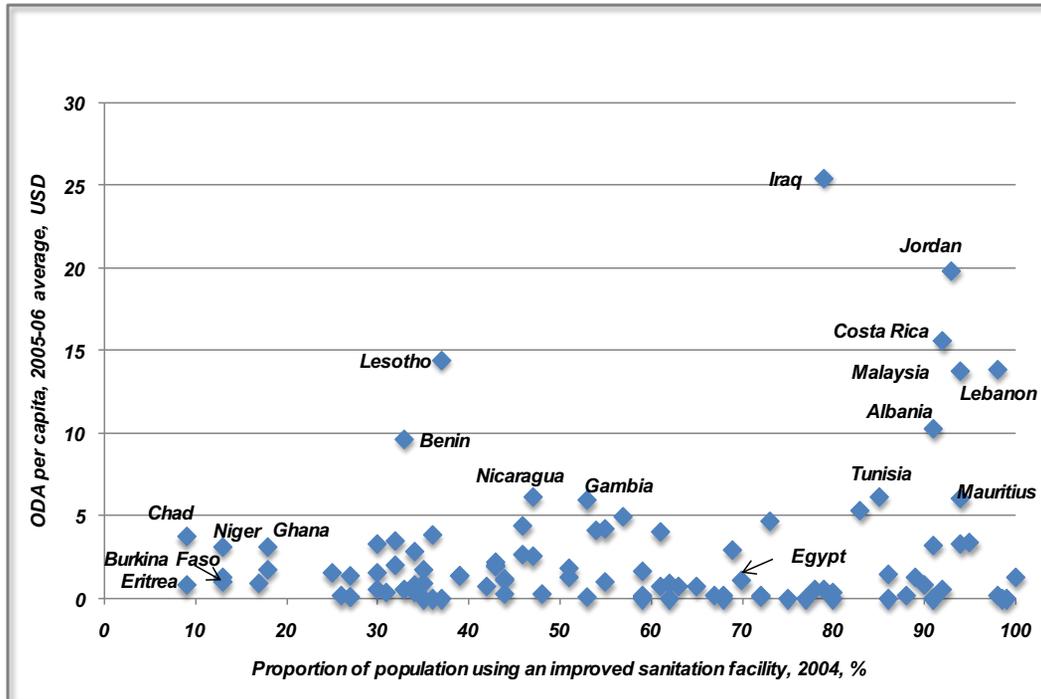
Source: OECD/WWC (2008), *Creditor Reporting System: Aid Activities in Support of Water Supply and Sanitation - 2001-2006*, OECD, Paris.

Figure 6. Aid for water and sanitation vs. access to improved water supply in recipient countries



Source: OECD/WWC (2008), *Creditor Reporting System: Aid Activities in Support of Water Supply and Sanitation - 2001-2006*, OECD, Paris.

Figure 7. Aid for water and sanitation vs. access to improved sanitation in recipient countries



Source: OECD/WWC (2008), *Creditor Reporting System: Aid Activities in Support of Water Supply and Sanitation - 2001-2006*, OECD, Paris.

Making ODA for water supply and sanitation better and more effective

According to current trends, ODA by itself is not sufficient to achieve the MDGs. The share of ODA allocated to water supply and sanitation varies across recipient countries. In some countries, ODA subsidises most investments, while in most other countries it plays a more marginal role. Nevertheless, ODA has an important role to play both as a source of finance for water and sanitation infrastructure and of capacity development for the provision and financing of water services. If the MDG targets are to be achieved, the increasing levels of ODA to the water sector need to be sustained, together with increased mobilisation of financial resources within developing countries.

In addition to providing finance directly for the water sector, donors can also help to leverage additional sources of finance at the project level, for example through guarantees, by enhancing the creditworthiness of operators, and by facilitating improved performance of operators to help justify increasing tariffs to financially sustainable levels. ODA may also be used to build local capital and financial markets to support long-term investment in water and sanitation infrastructure.

As well as increasing aid flows to the water sector, continued efforts are needed to ensure that ODA funds are used in an efficient and effective manner. Aid is more effective when partner countries exercise strong and effective leadership over their development policies and strategies, as set out in the Paris Declaration on Aid Effectiveness and recently emphasised in the Accra Agenda for Action. Further efforts are needed to implement the recommendations in these policy documents in the water sector.

There is still much that could be done by donors to co-ordinate and harmonise their support for the water sector, and to align their projects with developing countries' sectoral

strategies (ODI, 2008). Donors should actively support the development and implementation of national strategies for the water sector, and associated strategic financial plans. These efforts are more likely to be successful if water and sanitation are identified as priorities in national development strategies. Experiments with new approaches, such as output-based aid that links support for the water sector with achieving specific outcomes, seem promising and could be scaled up.

Aid for water and sanitation should be used strategically. ODA-funded investments should follow good public finance management principles and be used to pay for public goods (such as health benefits derived from sanitation at community levels) and other public policy objectives (such as providing access for the poor). In this regard, the challenge of providing access to water and sanitation in rural and peri-urban areas in developing countries merits more attention. In addition, aid for water and sanitation could help:

- to reduce the capacity bottlenecks faced by different actors, from national public authorities to local operators;
- to develop innovative approaches and disseminate good practices beyond project boundaries.

7. The current financial crisis presents risks but also opportunities to reinforce commitments to the water sector, and to invest in water infrastructure as part of fiscal stimulus packages.

The financial crisis represents both a challenge and an opportunity for the water sector. In general, the pressure to reduce costs associated with the economic downturn may well provide extra incentives for operational (technical and commercial) efficiencies. It may also reduce the pressure on energy prices – not negligible, as electricity is an important cost element – though this could also reduce incentives for energy saving.

The impacts of the financial crisis will affect the ultimate sources of financing for the sector – the 3Ts – in different ways.

Tariffs provide the major source of revenue for the water sector. In many countries there is scope to increase tariffs, but concerns about affordability, and the impacts that higher tariffs could have on the poor, may limit the extent to which governments are willing, or able, to raise user charges.

Reduced economic activity is decreasing government revenues and increasing public expenditures. As a result, there will be severe pressures on public budgets. Nevertheless, many governments are trying to boost demand and stimulate their economies through fiscal stimulus packages. This provides a unique opportunity: as argued above, investing in the water sector offers substantial economic, social and environmental benefits and merits careful consideration to be included in such packages (Box 5).

Box 5. Water as part of a fiscal stimulus: China and the United States

China announced in November 2008 that it would spend an estimated USD 586 billion over the next two years – roughly 7% of its GDP each year – on measures to boost the economy, with an important component addressing rural water supply and sanitation and environmental projects.

In the United States, the Alliance for Water Efficiency has examined the potential short-term economic growth impacts of water/energy efficiency investments. The study suggests that such programmes could be implemented quickly and that the economic benefits would be broadly distributed throughout the national economy. The study estimates that the economic output benefits would range between USD 2.5 million and USD 2.8 million per million dollars of direct investment; that GDP benefits would range between USD 1.3 million and USD 1.5 million per million dollars of direct investment; and that between 15 and 22 jobs per million dollars of direct investment could be created.

Source: China Daily (2008), “Premier Wen Seeks Prompt Response”, 11 November; Alliance for Water Efficiency (2008), “Transforming Water: Water Efficiency as Stimulus and Long Term Investment”, Position Paper, December.

Regarding transfers (ODA grants), donors may be tempted to reallocate resources that had been earmarked for development co-operation for domestic purposes. In the short term, the credit crunch will make it more difficult, or even impossible, for water operators to raise funds in markets – whether through loans, bonds or capital injections. The resources of charities may also be reduced because of lower donations. However, in November 2008, in response to an “Aid Pledge” put forward by the OECD Secretary-General and the DAC Chair – and backed by subsequent recommendations from the G20 – governments belonging to the OECD Development Assistance Committee reaffirmed their aid commitments and agreed to maintain aid flows in line with their commitments. The international community further reaffirmed this pledge at the November 2008 Doha Conference on Finance for Development. Box 6 presents another initiative to counteract expected drops in charitable donations.

Box 6. The Mirrlees/Mehta proposal

The UK Treasury is considering a scheme to counteract an expected sharp drop in charitable donations following the financial crisis. The scheme, which was devised by Sir James Mirrlees and Renu Mehta, would provide incentives for philanthropists to make donations to relieve world poverty. It would involve 50% tax relief on donations towards the MDGs. Currently the maximum level of tax relief is 40%. The cost of the tax relief would be met from the government’s overseas aid budget. Donors would be able to specify the development sector to which their contribution would be allocated, including water supply and sanitation. If adopted by all G8 countries, it is estimated that the scheme could raise more than USD 78 billion.

Source: Financial Times (2008), “Treasury Looks at 50% Tax Relief Plan to Raise GBP5bn for Charities”, 24 December.

Once financial stability is re-established, the effects of the financial crisis in the real economy will be the next hurdle. However, in the longer term, market-based finance for the water sector may rebound. With time, there may be more appetite for the kind of low but stable returns that the water sector can offer. This may eventually result in a reliable source of market-based finance at a reasonable cost that could help to achieve the economic, social and environmental benefits associated with investments in water and sanitation. However, realising these benefits would also depend on strengthening the fundamentals of the sector.

Notes

1. The sanitation goal was agreed at the 2002 World Summit on Sustainable Development in Johannesburg.
2. The United Nations Secretary-General has mandated the United Nations Programme on Human Settlements (UN-HABITAT) to promote and co-ordinate activities related to collaboration and sharing of best practices among water operators.
3. The principles of responsible business conduct are embodied in the OECD Guidelines for Multinational Enterprises (OECD, 2000) and the ILO Tripartite Declaration of Principles Concerning Multinational Enterprises and Social Policy (ILO, 1977).
4. Countries have had different ways of engaging consumers in the water sector. In Senegal, it takes the form of membership in the administrative board of the water company. In Zambia, consumers are part of the regulatory board through a Water Watch Group. The United Kingdom developed consumer consultative committees, and Mexico established State-Citizen Water Councils. In Bangalore, the use of citizen report cards was developed to provide agencies with qualitative and quantitative information about gaps in service delivery, but also to measure the level of awareness about citizens' rights and responsibilities.
5. The methodology used to make the calculations is presented in the companion technical report (OECD, 2009c). In some circumstances, the methodology results in an overestimation of the share of water in household income, particularly for large households or where per capita consumption is lower than the consumption levels used to compute the "representative bill".

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Future Work

This report is based on the results of a two-year programme of work carried out in OECD in 2007-08. The OECD Council has approved a further two-year programme of work on water for 2009-10. This work will be organised around two main issues: the implementation of recommendations on financing of water supply and sanitation; and more effective water resources management.

Regarding water supply and sanitation, further work will be carried out to support strategic financial planning in the water sector in several countries including Egypt and Lesotho, as well as several countries in the former Soviet Union. The analytical tool used to underpin policy dialogue on strategic financial planning – FEASIBLE – will be updated. Further analysis will be conducted on the economic benefits of investing in water supply and sanitation, and how this information can better inform decision-making processes. Good practices for tariff setting will be identified. Further analysis of aid flows will be conducted, if possible deepening the analysis of flows for water supply and sanitation separately. Several projects will be carried out to apply the OECD Checklist for Public Action that was developed to optimise private sector participation in the water sector. This would be dependent on a strong demand from interested countries, as well as co-operation with other partners.

The first phase of work related to water resources management focused largely on agriculture. In part this reflected the importance of agricultural uses of water, but also the expertise that was available in OECD. In the next phase of work, further analysis of agricultural uses of water will be conducted. However, more emphasis will be placed on IWRM, particularly financing issues. This will include an analysis of how adaptation to climate change could affect financing IWRM. Greater emphasis will be placed on the governance issues related to IWRM. Guidance will be developed to promote more effective governance across different levels of governance, and on promoting greater coherence between policies that impact on water usage (agriculture, energy, industry, tourism, etc.).

In these ways, OECD intends to continue to support the broader international effort to improve access to water and sanitation services for the billions who do not yet have it, and to better manage the increasing competition for scarce water resources. In so doing, OECD will continue to focus on activities where it has a comparative advantage: analysing the economic and financial aspects of water management; developing cross-sectoral and whole-of-government approaches for addressing the water challenge; and helping to establish an objective information base to support policy development in this area.

Further Reading

The main findings and policy recommendations found in this report and in its companion report, *Managing Water for All: An OECD Perspective on Pricing and Financing*, are based on:

- OECD/WWC (2008), *Creditor Reporting System: Aid Activities in Support of Water Supply and Sanitation - 2001-2006*, OECD, Paris.
- OECD (2009), *Private Sector Participation in Water Infrastructure: OECD Checklist for Public Action*, OECD, Paris, www.oecd.org/daf/investment/water.
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- OECD (forthcoming), *Sustainable Management of Water Resources in Agriculture*, OECD, Paris, www.oecd.org/tad/env.

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Managing Water for All

AN OECD PERSPECTIVE ON PRICING AND FINANCING

KEY MESSAGES FOR POLICY MAKERS

Water is vital for human and economic development, and for maintaining ecosystems. However, billions of people lack access to water and sanitation services, mainly due to poor governance and inadequate investment and maintenance. The situation is becoming more urgent due to increasing pressure, competition and even conflict over the use of water resources.

The OECD has been working for many years to address these challenges. The results of recent work are summarised in *Managing Water for All: An OECD Perspective on Pricing and Financing*, which emphasises the economic and financial aspects of water resources management and water service provision, the need for an integrated approach (including governance considerations) to address these complex policy challenges, and the importance of establishing a firm evidence base to support policy development and implementation.

The report examines: strategic financial planning for water supply and sanitation that balances the key sources of revenues for the water sector – the “3Ts” of taxes, tariffs and transfers; the design and implementation of water pricing strategies that balance financial sustainability with other policy objectives; recent developments in private sector participation in the water sector; and trends and the future outlook of water use in agriculture. It considers both developing and OECD countries and offers concrete recommendations and checklists for action. The report is an invaluable resource for policy makers, academics, NGOs and all others interested in the challenges facing the water sector today.

The key messages for policy makers are summarised in this volume.

For more information, please visit: www.oecd.org/water.