

**Development Committee 2003 Spring Meetings**

**Water Supply and Sanitation and the Millennium  
Development Goals**

**Addendum 3**

## ABBREVIATIONS AND ACRONYMS

<b>AAA</b>	Analytical and Advisory Assistance
<b>GDP</b>	Gross Domestic Product
<b>IBRD</b>	International Bank for Reconstruction and Development
<b>IDA</b>	International Development Association
<b>IFC</b>	International Finance Corporation
<b>IFI</b>	International Financial Institution
<b>IWSSD</b>	International Water Supply and Sanitation Decade
<b>LICUS</b>	Low-Income Countries Under Stress
<b>MDGs</b>	Millennium Development Goals
<b>MIGA</b>	Multilateral Investment Guarantee Agency
<b>NGO</b>	Non-Governmental Organization
<b>OED</b>	Operations Evaluation Department
<b>PPP</b>	Public Private Partnership
<b>PRSC</b>	Poverty Reduction Strategy Credit
<b>PRSP</b>	Poverty Reduction Strategy Paper
<b>SIDA</b>	Swedish International Development Cooperation Agency
<b>UNICEF</b>	United Nations International Children's Emergency Fund
<b>WDR</b>	World Development Report
<b>WHO</b>	World Health Organization
<b>WRM</b>	Water Resources Management
<b>WSS</b>	Water Supply and Sanitation

## TABLE OF CONTENTS

I.	THE CHALLENGE .....	1
II.	RESPONDING TO THE CHALLENGE .....	6
III.	NATIONAL RESPONSES TO THE CHALLENGES.....	6
IV.	INTERNATIONAL ASSISTANCE RESPONSES TO THE CHALLENGE.....	13
V.	WORLD BANK RESPONSES TO THE CHALLENGE.....	16

### **Attachments:**

1.	Estimates of Investment Costs for Water Supply and Sanitation MDG Targets 2000-2015 .....	21
2.	Annual Water Supply and Sanitation Investments by Source of Financing, 1990-2001 .....	22

### **Graphs**

Graph 1.	Growth in Access to Water and Sanitation, 1990-2000 and 2000-15.....	4
Graph 2.	Share of Countries likely to Reach MDG Targets .....	4
Graph 3.	Comparison Between Historical and Needed MDG Investment Levels.....	5

### **Boxes**

Box 1.	Low-Cost Water Supply and Sewerage in El Alto, Bolivia.....	7
Box 2.	China's Rural Water Program: Connecting Improved Service to Sustainable Financing.....	9
Box 3.	Public-Private Partnership in Senegal.....	10
Box 4.	Community-Based Water Supply and Sanitation Project in Uttar Pradesh, India.....	11
Box 5.	Knowledge and Inter-sectoral Collaboration Can Make a Difference.....	12

### **Tables**

Table 1.	Status of Water Supply and Sanitation Access by Region, 2000.....	2
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# Water Supply and Sanitation and the Millennium Development Goals

## OBJECTIVES

1. This paper has three objectives: (i) to demonstrate the challenges and implications of the Millennium Development Goals (MDGs) for water supply and sanitation; (ii) to illustrate national and international responses to the challenges; and (iii) to request the support of the Development Committee for actions to strengthen development assistance for expanding sustainable access to water supply and sanitation services in the developing world.

### I. THE CHALLENGE

2. In the next 15 minutes about 90 children in developing countries — six children per minute — will have died from disease caused by unsafe water and inadequate sanitation. Most will have died from diarrhea that debilitates and makes them vulnerable to other diseases. Mortality is high but morbidity is higher still. In 1990, almost 3 million deaths worldwide were attributed to diarrhea but there were over 4 billion episodes, or more than a thousand times as many. Children under five are the most vulnerable, accounting for 55% of all episodes but for 85% of the deaths from diarrhoeal diseases.<sup>1</sup> The extent of premature death and suffering justify the inclusion of water supply and sanitation as a global target. In addition to the clear health benefits, safe water and sanitation underpin economic growth, environmental sustainability, and poverty alleviation through meeting a most basic human need.

3. A number of the MDGs concern safe water and adequate sanitation. First, there is target # 10 under the Goal to Ensure Environmental Sustainability:

- Halve by 2015 the proportion of people without sustainable access to safe drinking water.

4. Second, there is the sanitation target # 11 as amended by the Johannesburg World Summit of Sustainable Development (WSSD) in August 2002. Reaching it will also underpin the general goal of ensuring environmental sustainability to the extent that the water pollution diminishes:

- Halve by 2015 the proportion of people without adequate sanitation.

5. Third, under the Goal to Promote Gender Equality and Empower Women there are two targets that depend on providing adequate sanitation and better access to an improved water source: (i) the ratio of girls to boys in education; and (ii) the ratio of women to men in wage employment in the non-agricultural sector. Studies demonstrate that enrollment of girls in education rises with the provision of latrines in schools. And

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<sup>1</sup> Murray CJL, Lopez AD, “The Global Health Statistics. Global Burden of Disease and Injury Series,” Volume 2, Harvard University Press, Cambridge, MA 1996.

the improvement of safe water sources free women from spending hours every day drawing and carrying water home. Up to one quarter of household time in rural Africa is spent on fetching water. Meanwhile, it has been demonstrated that higher education levels of mothers will reduce the incidence of water-related disease in children.

6. Fourth, under the Goal to Reduce Child Mortality, two targets — (i) reducing by two thirds, between 1990 and 2015, the under-five mortality rate, and (ii) reducing by two-thirds, between 1990 and 2015, infant mortality — will remain unmet unless water-related disease is reduced, since such disease often ranks among the top three killers of children.

### Present Water Supply and Sanitation Access Levels

7. In the developing world, approximately two out of every ten people are without access to safe water supply; five out of ten people live without adequate sanitation (excreta disposal) and nine out of ten people do not have their wastewaters treated to any degree. In absolute numbers about 1.1 billion lack access to safe water and 2.4 billion are without adequate sanitation. The shares of access vary between regions and between urban and rural areas (*Table 1*).

**Table 1. Status of Water Supply and Sanitation Access by Region, 2000**

Region	Percent with improved water			Percent with improved sanitation		
	Urban	Rural	Total	Urban	Rural	Total
Africa, Sub-Saharan	83	44	57	73	43	53
Middle East/ North Africa	95	77	87	93	70	83
South Asia	94	80	85	67	22	34
East Asia/ Pacific	93	67	76	73	35	48
Latin America/ Caribbean	94	66	86	86	52	77
Europe/ Central Asia	95	82	91	97	81	91
Developing Countries	92	69	78	77	35	52

Source: WHO/UNICEF JMP, [www.childinfo.org/eddb/water/trends.htm](http://www.childinfo.org/eddb/water/trends.htm) and [www.childinfo.org/eddb/sani/trend.htm](http://www.childinfo.org/eddb/sani/trend.htm)

8. The above estimates tend to exaggerate current access levels because they are based on proximity to a physical installation rather than on quality or reliability of service. In actuality, safe water is the result of a chain of conditions where the final outcome is contingent on the strength of each link. First, that consumers must use water to safeguard health confirms the importance of the mother’s education level for teaching safe hygiene habits. A number of studies<sup>2</sup> from different countries report a median

<sup>2</sup> Hutley S, Morris S, Pisana V 1997, “Prevention of Diarrhea in Young Children in Developing Countries,” WHO Bulletin 75 (2): 163-174.

reduction of 33% in the incidence of diarrhea from improved hand washing. Second, in congested urban areas where the risk for epidemics is the highest, consumers need reliable service to be able to change hygiene habits. Intermittent supplies in combination with lack of sanitary excreta disposal contaminate the public water supply. For example, in large areas of South Asia continuous service is the exception and potability is precarious. The poor bear the brunt since they can least afford to pay the costs of coping with the deficient service. Finally, water must be located close to the household and it must be of safe quality. Many households throughout the developing world cope with unsafe drinking water supplies by boiling it. This is costly for poor people and only partially reduces exposure to pathogens. In summary, when the water pipe remains empty most of the time and is infiltrated by groundwater that has been polluted by pathogens from unsanitary sanitation, apparent access to “hardware” does little — parents and children continue contracting water-related disease.

9. Adequate sanitation is equally important. The greatest impact could be expected from a combination of hand washing with soap after defecation and before preparing food; safe disposal of feces and use of latrines; and safe weaning and food preparation. These demand behavioral change and are modified slowly as a result of effective hygiene promotion pointing to the critical link with primary and maternal education. For these reasons it is unrealistic to expect large investments in wastewater collection and disposal to be followed by sharp reductions in water-related disease. For many low-income countries, the priority remains better hygiene practices through health promotion and relatively modest investment in improved water supply and sanitation particularly in peri-urban and rural areas.

10. In urban areas that have come further in reaching higher and stable levels of water usage, wastewater collection is essential, although environmentally sustainable use of water resources and wastewater disposal may demand priorities other than adding capacity to treat wastewater. In actuality, only about 10% of wastewater in developing countries is collected and only about 10% of existing wastewater treatment plants operate reliably and efficiently. The reduced flow of untreated effluents brought about by treating municipal wastewater often produces only marginal environmental benefits where on-site wastewater disposal and non-point source pollution account for a large share of pollution loads — a common situation. For this reason, effectively arresting further degradation of the water resource base requires concerted actions at the river basin/aquifer level.

### **Implications of Meeting the MDGs**

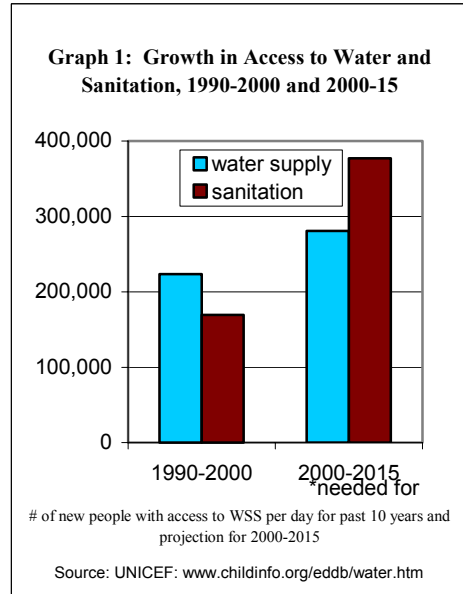
11. It is estimated that in order to meet the MDGs,<sup>3</sup> about **1.5 billion people** (1 billion in urban areas and 0.5 billion in rural areas) will have to be provided **access to safe water** and about **2 billion people** (1.1 billion in urban areas and 0.9 billion in rural areas) will

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<sup>3</sup> “UNICEF:www.childinfo.org/eddb/water.htm,” adjusted to reflect base year as 1990 rather than 2000. “Safe” water includes household connections, public standpipes, boreholes, protected dug well, or spring and rainwater collection. “Adequate” sanitation includes connection to a public sewer or septic system, or possession of a pour-flush, simple pit, or ventilated improved pit latrine.

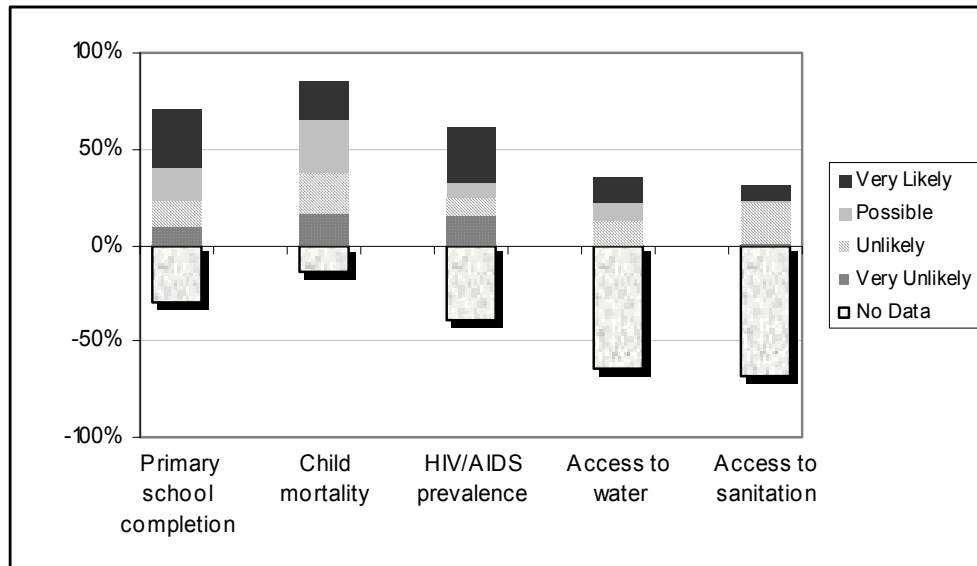
require *basic sanitation* over the period 2000–15. These estimates exclude the much larger potential demand for treating collected wastewater and disposing of it in an environmentally sustainable fashion. In global terms, reaching the MDG targets requires roughly one quarter of a million people per day gaining access to safe water and one third of a million per day getting adequate sanitation.

12. These global estimates mask large regional and country disparities in current access rates for water supply and sanitation services and therefore may engender a degree of complacency regarding the nature of the challenge. At present rates of service expansion, about 37% of the developing world is on track to reach the water supply target and about 16% to reach the sanitation target. When viewed on a country basis, the picture is more dire: As shown in *Graph 2*, no more than 20% of countries are “on track” (i.e., where the rate of historical growth in connections at least equals the growth rate required to meet WSS targets) and less than 10% of the lowest income countries appear to be on track.



Moreover, far fewer countries are “on track” for making significant gains in WSS access than for key health related outcomes. The large size of “gray” bars in the chart points to huge gaps in access information at the country level.

**Graph 2. Share of Countries likely to Reach MDG Targets**



Source: Millennium Development Goals, World Bank, DEC. 2002.

### Approximate Investment Costs for Reaching WSS Targets

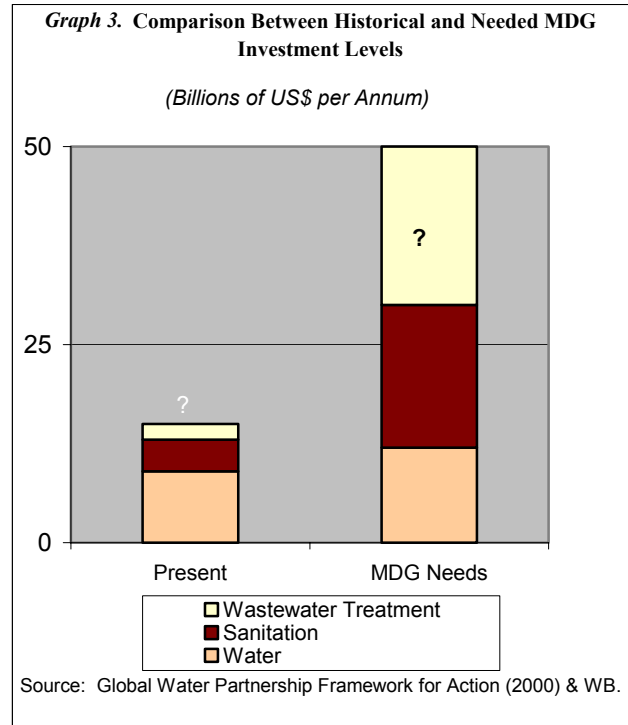
In order to reach the MDGs, it is estimated that annual investments will need to double from historical US\$15.0 billion to US\$30.0 billion (see *Attachments 1 and 2*).

13. Historical water supply and sanitation investments estimated at \$15 billion per annum correspond to an annual per capita investment rate of \$3.0. As a percentage of total Gross Domestic Product for the same countries the investment percentage would be about 0.25%. Domestic sources of annual financing of \$10 billion are double the estimated external support of \$5 billion. The estimated incremental investments<sup>4</sup> of \$15 billion annually

assume good maintenance of existing assets and efficient investment, absent which estimated investment needs will be far higher. In addition, allowance must be made for future investments for wastewater treatment that cannot be deferred indefinitely or environmental degradation would accelerate. For some cities in relatively arid regions with high variability in rainfall, population growth has progressed to the point beyond which freshwater supplies can be tapped solely from local sources. In these circumstances, basic hydraulic infrastructure for water storage and conveyance must be developed and maintained, the costs of which often surpass that of WSS infrastructure itself.

When allowing for wastewater treatment and essential water storage and conveyance facilities, the required investments could be even larger than those needed to reach the MDGs as *Graph 3* shows.

14. In summary, the magnitude of the access gap — the number of households without service and the cost of extending them service — are considerable. The majority of countries do not appear to be “on track” for water supply and even fewer are “on track” for sanitation. These estimates, based on official statistics, tend to understate the extent of the access gap and hence the cost of closing it in that they are derived from



<sup>4</sup> The *additional* \$15 billion per year comprises investment costs only and is comparable to other estimates. For instance, the “Report of the Panel on Financing Global Water Infrastructure,” chaired by Mr. Michel Camdessus, endorses the Global Water Partnership estimates for the *additional* total water sector investment costs of \$90 billion per year, of which about \$15 billion for drinking water, sanitation and hygiene, \$50 billion for municipal wastewater treatment, \$20 billion for industrial effluent, and \$5 billion for irrigation and environmental protection.



proxy indicators of access to physical infrastructure rather than to the service users actually obtain. Moreover, with accelerating urbanization, both sanitation and wastewater disposal will require much greater attention in the coming years. The investment costs of \$30 billion per year represent a doubling over historical levels and are premised on achieving higher operating and investment efficiency than most countries have realized to date.

## II. RESPONDING TO THE CHALLENGE

15. Higher levels of investment are necessary to reach the MDGs, but they will not be sufficient to sustain service and expand access. For this, more efficient and sustainable operation of existing infrastructure deserves priority over capital investment where networks are already developed. Such a shift permits obtaining greater productivity from present investment levels coupled with policies that promote financial sustainability and create national capacity. The international community can support countries in the transformation by aligning themselves with a four-pronged response to the challenge:

- Adopting *policies* that provide incentives to invest and operate efficiently and provide sustainable services that reach the poor;
- Building and strengthening local *institutions* to permit scaling up activities to reach the MDGs;
- Creating and disseminating *knowledge* necessary at all levels — policymakers, managers, staff, and consumers — for setting priorities and using resources to maximum advantage; and
- Securing the necessary *financing* to rebuild infrastructure and expand service coverage and quality.

## III. NATIONAL RESPONSES TO THE CHALLENGES

### *Policies — To Expand Access and Sustain Service*

16. **Serving the Poor:** The focus of the policies must shift from merely building infrastructure to ensuring that existing capacity is optimally used to meeting consumer demand. When service providers understand what demand there is for water supply and sanitation services they could tailor their supply to the preferences and income levels of the poor who are the majority of the unserved. Not much additional production will be needed in many circumstances: Studies on all continents indicate that low-income consumers manage well with 30 to 50 liters per capita per day and that consumption of the poorest 20% of the population typically accounts for about 6% of a city's total water consumption. Such small additional consumption can often be squeezed out of the existing systems through increased operating efficiency. The poor are not shut off from better service because they are not willing to pay for water and sanitation services — unconnected poor households frequently pay many times more per cubic meter than what those who are connected pay. Extending service to the poor often may require special

programs and approaches that will stimulate demand and address their service preferences and means of payment.

17. Demand-driven design permits adapting service standards and costs to income levels and household preferences and the gradual upgrade of service standards in line with the growth of household income and demand. To this end, some utilities in urban areas are increasingly mapping the unserved populace, and providing supply through steadily denser supply points and eventually house connections. This staged approach satisfies demand at the least cost and makes service affordable. (*Box 1* provides an example of how government, donors, and a private operator implemented low-cost water and sanitation programs targeted at the poor in El Alto, Bolivia.) Existing utilities that already supply most of the urban population must concentrate greater efforts and resources on programs targeted to the unserved. In peri-urban areas, such an institutional realignment might include supplying bulk water to small entrepreneurs who distribute the water to the low-income population. Partnerships of this nature between utilities and small-scale providers are facilitated by explicit targets for utilities which oblige them to meet demand of the urban poor at affordable tariffs. Beyond targets, broadening and sustaining such arrangements will often require improvements in governance and performance of the dominant utility, as discussed in the following paragraphs.

***Box 1. Low-Cost Water Supply and Sewerage in El Alto, Bolivia***

The low-income city of El Alto with 600,000 inhabitants now has water and sanitation thanks to support from the government, bilateral support from SIDA, and a private concessionaire. The government bid a concession that was won by the operator, Aguas del Illimani, who committed to connecting the greatest number of households. The connections were “condominial” low-cost technology that had been promoted under the Water and Sanitation Program, with support from SIDA. Investment costs were reduced by laying small-diameter pipe at shallow depths within sidewalks and yards rather than down streets and drawing communities themselves into all phases of planning and execution. The concessionaire was successful in connecting all households in El Alto. Subsequently, the government modified its sewerage standards to allow condominial technology that is affordable for low-income households. Condominial systems were pioneered in Brazil and this approach has since been employed in a number of countries. They have proved to be cost-effective compared to conventional water supply and sewerage technology as well as affordable and desirable by poor households.

18. In rural areas and for sanitation programs the challenge is greater because there are few possibilities for cross-subsidizing the poor from wealthier, connected consumers and because there is no unused supply capacity from which the additional consumers could be served cheaply. Sanitation programs present a particular challenge as household demand for sanitation often lags that for water supply. It is therefore more difficult to motivate consumers to contribute to the cost of sanitation, either during the construction or during the operational phase. Demand must be stimulated for this crucial service through health promotion and social marketing-activities outside the traditional purview of utilities, in tandem with staged sanitation programs that start with latrines and gradually upgrade service levels. In parallel, granting greater property rights and tenure security to low income households can also stimulate demand for sanitation, particularly in informal settlements in peri-urban areas.

19. **Clear Accountability and Incentives.** Effective accountability for performance requires a clear separation of functions and responsibilities with policymakers specifying goals and standards. This permits actual service delivery to be compared to performance standards. Public service providers rarely operate under specific targets with sanctions for failure to meet them. Where public contracts have been tried the experience has not been encouraging because of the lack of incentives and sanctions for public sector monopolies. For instance, when a public operator incurs losses, the manager may not suffer financially but will rather seek a tariff increase or additional budget support. In contrast, with a properly drafted contract a private operator will suffer financially for poor performance. Similarly when utilities shoulder the costs of investment and for unaccounted water, they are more motivated to invest and operate efficiently. Such utilities typically concentrate on metering, demand management, better maintenance, and cost effective rehabilitation before adding capacity. Many utilities presently operate with levels of unaccounted water in excess of 50%, and with collection efficiencies below 70%. The result is that only about one-third of the water produced generates revenue. Utilities need incentives to convert the “lost” cubic meter into a cubic meter consumed, billed, and collected.

20. **Sustainable Financial Policies.** Expanding and sustaining service requires clear, consistent financial policies for which the extent and manner of cost recovery is central. Policymakers face essentially three choices: (i) user charges that depend on the level of costs, on the demand for services, and on the level of consumer income; (ii) generalized subsidies financed by taxpayers; or (iii) deferring expenses necessary for sustaining service, the consequence of which is deteriorating infrastructure where consumers wind up paying coping costs to compensate. Under the latter case, it is the poor who pay the highest costs relative to their income through coping costs, water vendor tariffs, and through disease and inconvenience. The choice among the three options will therefore have far-reaching economic consequences. Reliance on user charges to recover costs offers the best prospects for aligning service with demand when the operator’s remuneration is tied to revenues. Generalized subsidies financed by tax receipts carry the risk of supply-driven investments and more generally dilute provider accountability to consumers. The option of simply cutting expenditures (rather than costs) perpetuates unsatisfactory service and ultimately widens the access gap.

21. Policies for cost recovery promote efficiency and sustainability but must also account for the wide variations in payment capacity. It is useful to distinguish between urban, peri-urban, and rural consumers. Many urban utilities offer the promise of achieving full cost recovery for water supply systems but most peri-urban utilities require a partial subsidy of their investment costs. For rural water supply and sanitation systems, the very low levels of household income often preclude recovering more than a small portion of investment costs, although there are examples to the contrary (*see Box 2 on page 8*). There is ample experience across all regions that rural communities can and will cover operations and maintenance costs and will manage their systems well when they are permitted to make critical decisions, given ownership of the scheme and control of the local water resource.

**Box 2. China's Rural Water Program: Connecting Improved Service to Sustainable Financing**

Approximately 6 million households have benefited from improved services under China's rural water supply and sanitation program. Central government loans finance 50% of the capital cost while the provincial and county governments jointly finance 25% as grants and the users contribute a full 25%, usually in the form of a cash and labor combination. Users pay operating costs and debt service, effectively raising their overall contribution to 75%. Households are metered and a strong incentive system exists where the salaries of the operations staff are tied to bill collection monthly. Payment compliance is usually over 90 percent; non-payment is rare. When existing tariffs do not cover operating costs, they are raised. The key to the success is the government's willingness to price, and enforce, rural water supply service at financially sustainable levels. In addition, households with individual piped water connections pay more than households receiving lower levels of service. Finally, legitimate regulation is practiced by the County Price Bureaus, which play a watchdog role that protects the interests of consumers, the rural poor, and providers.

22. The financing of sanitation and wastewater investments presents particular challenges because costs cannot be easily recovered from users and least of all from low-income households. Yet the economic returns from providing these services are high. To keep subsidies at reasonable levels, experience across regions indicates that community involvement in all phases helps ensure service levels are in line with what people actually want to use and to which they are prepared to contribute. Consumers' willingness to pay is greater for wastewater collection and for sanitary excreta disposal since these services represent a tangible improvement of living conditions in their vicinity. However, costs of conveyance and treatment are more problematic to recover because consumers do not readily perceive the benefits of such investments and because they are significantly more costly.

***Institutional Capacity — Incentives to Improve Service Delivery***

23. **Dealing With Service Monopolies.** Institutional incentives and regulation are essential for services with natural monopoly elements such as urban water supply and sewerage networks. Service monopolies breed lack of accountability and inflate costs in the absence of effective regulation. Remuneration of operators should be linked to costs only insofar as comparative regulation demonstrates that the provider compared favorably with other service providers as far as efficiency goes. Consumers should not be forced to pay for the inefficiencies of service providers. Correcting for these deficiencies requires separating the functions of service provision and regulation in order to maintain clear accountability for performance. The "self-regulation" common to public sector monopolies means that standards adapt to performance rather than the other way round. The accountability afforded by impartial sector regulation must be matched by sanctions. This can be achieved through contestability where government (usually local) competitively outsource for the water and sanitation services they require.

24. **Expand Private-Public Partnerships.** PPPs grew rapidly in the 1990s in most developing regions. Governments sought private financing to substitute for scarce public funding and private management to improve service efficiency and quality. The number of large-scale PPPs in water supply and sanitation grew from a handful in the

1980s to about 200 over the 1990–2001 period.<sup>5</sup> These arrangements are estimated to serve cities with an aggregate population in excess of 250 million people. This figure does not include the many local tenders issued by medium-size cities nor the multitude of small-scale providers working with and through local governments and utilities. At the same time, it is clear that PPPs are not a panacea for resolving all the sector’s performance shortcomings. The multitude and severity of risks operators (public and private) face has limited the extent of funding from private sources, both domestic and international.

25. As indicated in the foregoing discussion, changes in policies, institutional arrangements, and incentives are central and these are clearly the purview of government. Second, the present capacity of private operators is quite limited in relation to needs and public sector provision therefore remains dominant. Third, the success of PPPs in bringing sustained benefits to consumers rests on appropriately allocating and managing risks and responsibilities between the government and the private sector. A partnership means that risks and rewards are shared. Only the public partner, government, can manage political risk, including setting clear rules for adjusting tariffs. Moreover, currency risk is considerable where investment programs are financed by external non-concessional borrowings. On the other hand, the private partner must fully bear performance risks (e.g., construction, operational, commercial) if taxpayers and consumers are to benefit from the partnership. To do so, private partners must be permitted the leeway to increase investment and operating efficiency — if they are guided by appropriate incentives. To this end, regulation and oversight have to be grounded in “regulation by results” rather in micro-managing inputs. Well-structured PPP prompts clarity of goals and performance targets and makes accountability explicit through the contractual arrangements. This in turn allows public scrutiny and promotes a culture of public accountability. *Box 3* provides an example of a PPP in Senegal that has evolved to serve all classes of consumers.

***Box 3. Public-Private Partnership in Senegal***

Senegal has made remarkable progress in bringing water and sanitation services to low-income areas in Dakar and in secondary cities. A private operator improved service through investment and through applying modern management and know-how. As a result, it became possible to balance the cash flow for the first time in decades, permitting the utility to access commercial finance for a major investment. A second phase of the program focused on (a) further institutional and regulatory reform under the performance-based contract; (b) increases in the water production and distribution capacities; (c) rehabilitation of sewerage networks and the implementation of demand-driven and community-based programs for on-site and neighborhood sanitation services; and (d) technical assistance to strengthen the capacities of sector agencies and communities. The program was successful in connecting about 60,000 low-income households under a comprehensive program of public standpipes and economical house connections. Unaccounted water decreased from 31% in 1996 to 22% in 2001 and the private operator has improved the quality of water supplied.

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<sup>5</sup> World Bank PPI Database.

26. **Rural Services Require Specific Solutions.** Rural water supply and sanitation programs work best when they are demand-driven and community management is key to sustainability. Such an approach has characterized successful rural programs for many decades and put a premium on social mobilization in order to release latent demand for services; in order to reduce investment and operating costs, and so that sustainability becomes possible. A series of studies<sup>6</sup> have demonstrated ingredients for success of rural water supply and sanitation systems: “projects must be demand-responsive which implies that the community initiates, and helps plan, implements, maintains and then owns the systems. Women should play a key role since they stand the most to gain if the system becomes successful. The private sector can provide the goods and services, possibly under performance based arrangements in order to speed up project implementation and introduce clear accountability for the quality of equipment and workmanship.” What motivates communities to take on responsibility for keeping costs down and keeping the system running is that systems are designed with their input to meet their particular needs, they manage execution of the works and contribute to the capital costs, and they are given ownership rights the assets. *Box 4* on page 10 gives an example of this for a large-scale program in India.

**Box 4. Community-Based Water Supply and Sanitation Project in Uttar Pradesh, India**

The rural water and sanitation project known as Swajal is based on a community-based, demand-responsive approach. The project has established full cost recovery for operation and maintenance, and partial cost recovery for capital costs — major departures from past practice in the Indian water sector. Implementation of water supply, sanitation, and such community empowerment activities as health awareness, women’s development, and non-formal education are undertaken by a partnership of village committees, NGOs, and a project management unit. Giving user communities control over financial resources is a key feature of community-driven development, and Swajal was one of the first major rural water and sanitation projects to shift from centralized procurement and transfer investment funds to user communities, enabling them to procure materials, services, and works by themselves, assisted by support organizations. Support organizations include NGOs who assist with community mobilization, establishment of a Village Water and Sanitation Committee and development of design choices, and private firms who provide technical design, inspection and monitoring services. Recent appraisals of sustainability have shown that up to 97% of schemes are fully functional, and that there is a high rate of latrine use in villages that participated in the project. The Swajal project is now being used as a model by the Indian government in its National Water Sector Reform Program.

27. **Professional Services.** Policies, institutions, and financial arrangements are only as good as the people who implement them. Water and sanitation present a challenge since the responsibility for service provision, and to a large degree policy setting and oversight, is a local responsibility. Developing local capacities comprises a range of technical, managerial, and operational disciplines. Large urban areas are better positioned to attract and retain such expertise relative to towns and rural areas. Because it is at the local level that capacity needs to be build up most, traditional formal training programs for national cadres of civil servants have given way to building on expertise of local entrepreneurs, commercial establishments and community/civic groups. The focus is on programs to develop small and medium enterprises, local capacity enhancement

<sup>6</sup> See for instance “Rural Water Projects — Lessons from OED Evaluations,” OED Working Paper Series No. 3, March 2000.

through NGOs, and micro-credit facilities. Ongoing technical and operational support systems are also needed to provide professional support to local operators, whether public or private. This is especially crucial to smaller operators in small cities and towns and which have limited in-house resources.

***Knowledge — Empowering Consumers, Challenging Operators, Informing Governments***

28. Strengthening the capacities of local water operators must be matched by empowerment of consumers. Consumers need information: how to draw and consume water safely, about safe habits of defecation and excreta disposal, and how to convey good hygiene habits to their families. And information must be conveyed in a manner that prompts behavioral change. Hygiene/sanitation promotion programs have had a very mixed record in this regard. Those that have been successful in stimulating demand and behavioral change have focused on what households/communities wants and are motivated to invest in (i.e., demand-based), identified core messages (sanitation as a consumer good, rather than a “health benefit”), sharply targeted the clientele (those whose behaviors or spending decisions are most critical—often mothers and children), and aggressively marketed “the product”. Consumers, especially poor consumers, are potentially paying and profitable consumers, which could empower them to demand service in return for their payment. *Box 5* provides an example of a program in Central America that brought together governments, private soap companies, and donors and was successful in marketing improved hygiene practices.

***Box 5. Knowledge and Inter-sectoral Collaboration Can Make a Difference***

In the 1990s, an initiative in Central America showed that soap companies were capable and willing partners for health promotion. Four private soap companies launched hand washing campaigns in Guatemala, Costa Rica, and El Salvador in collaboration with the public sector. Behavioral research was carried out to determine consumers’ hand washing habits, and then a communication program was launched, and community activities carried out. The documented results included a 30% increase in correct hand washing behavior in mothers, and 320,00 fewer cases of diarrhea per year in poor children under 5 in Guatemala.

The World Bank, the London School of Hygiene and Tropical Medicine and private sector soap companies, in collaboration with USAID, UNICEF, and the Centers for Disease Control and Prevention, are developing a global initiative aimed at promoting the use of hand washing with soap in developing countries. Public-private partnerships have been established in Ghana and India and are being set up in Senegal, Peru, Nepal, and China. At the global level, the partnership is focusing on cross-country learning activities, developing standard protocols for formative research and monitoring and evaluation, and undertaking international advocacy.

29. Local authorities are ultimately responsible for providing water supply and sanitation services rather than national governments and they require access to meaningful information for informed decision making. Knowledge sharing among them on how to improve the quality of water supply and sanitation services is more effective than relying exclusively on international consultants: for example on their experience in allowing flexible urban codes to stretch scarce investment funding or in adopting stable financial policies. They also require information about setting practical goals, alternative

service delivery arrangements, and outsourcing methods to get the greatest value. Knowledge is empowerment and this is clearly seen when experienced private operators negotiate with insufficiently informed city managers.

30. Local authorities also require information on service quality and efficiency to even begin to hold their service providers accountable. Benchmarking performance and public disclosure permits municipality and consumers to compare the service they receive against performance in other towns and cities. In particular, they can determine if they are paying for inefficiencies or for poor quality service. Comparative regulation will bring benefits over time as consumers and governments become better informed. In the meantime, “regulation by “sunshine,” with transparency of the details of service provision, can provide local operators with some modest incentive to improve service access and quality.

#### **IV. INTERNATIONAL ASSISTANCE RESPONSES TO THE CHALLENGE**

31. The MDGs represent a second international initiative to raise access levels for water supply and sanitation in the developing world. In 1977 at the Mar del Plata Conference the International Water Supply and Sanitation Decade (IWSSD) was proclaimed, aiming to bring universal water supply and sanitation services to all within the target decade 1981–1990. Notable progress was made, but well short of the proclaimed targets: on the global level, roughly 350,000 people per day were provided access to some form of improved water supply and 200,000 additional people were counted as gaining access to on site sanitation. However, in many instances, these gains were momentary as the focus was on rapid installation of “hardware” with insufficient attention to policies, institutional roles and incentives to sustainably manage the infrastructure.<sup>7</sup>

32. The lessons of the 1980s “drinking water decade” are relevant to current international initiatives embodied in the Millennium Development Goals. First, in translating global goals into quantitative targets at the country level, care must be taken to avoid the "performance by target" syndrome in which the time consuming and often politically difficult processes of realigning policies and institutional roles necessary to sustainable improvements in service quality and access are bypassed in an effort to quickly "show results" and thereby make the case to increased domestic budgetary resources and concessional aid. Second, by extension, it is policies and programs of the recipient countries themselves which determine whether sustained progress can be made. Third, it is critical to focus from the start on capacity building at the local level, and identifying specific poverty groups to be served within subregions with a clear understanding of their preferences, willingness to pay/contribute and specific mechanisms for reaching them.

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<sup>7</sup> Global Consultation on Safe Water and Sanitation organized by UNDP and hosted by the Government of India in New Delhi in September, 1990.



33. The MDG targets provide an indication of the magnitude of the global challenge and focus attention on providing service to those without. However, sectoral goals and priorities must be set locally by responsible authorities in the recipient country. The international community can and should scale up support to developing countries and must do so in a coherent, consistent, and persistent manner. Supporting developing countries in making more rapid progress toward the MDGs (not only WSS) will require above all better aligning development assistance programs and procedures with country capacities and program requirements on the ground. The substantial effort development agencies have devoted to global networking, international forums and multi-party task forces should now be redirected toward tangible support for building and expanding effective WSS policies and programs at the country level.

34. **Providing Support within Common Country Framework.** Recipient countries and donors must buy into a common framework for sector development led by the recipient country. Such a framework would include not only key sectoral policies but also institutional reforms to improve service delivery to the poor and domestic resource mobilization targets (public and private). For IDA countries, an initial indicator of such a framework is the Poverty Reduction Strategy. While many PRSPs refer to water supply and sanitation, few have elaborated specific policies, program priorities, and budgetary implications with enough clarity to guide external assistance. In other countries, such a framework may be embodied in strategic analytical studies (often supported by donors). Investing sufficiently in preparing such a common framework is essential for reducing the diversion of scarce resources to deal with disparate conditionalities and policies of international aid agencies. It is also a useful vehicle for the recipient countries to clarify how they use international assistance.

35. **Pooling Aid at the Country Level.** Development assistance would have greater impact if it were focused on those countries where sound sectoral frameworks (policies, institutional arrangements, and domestic resource mobilization) are in place. This argues for international financial institutions (IFIs), bilateral, and global networks to come together on common set of countries to support common programs rather than enclave projects scattered across the globe. This will permit expansion of sector-wide approaches and will reduce the high, often hidden transaction costs and leakages that characterize the current atomistic approach to development assistance. Beyond coalescing around a common set of countries, efforts to harmonize donor procedures and regulations urgently need to be accelerated. Consolidating reporting and fund management procedures, budget structures, regulations surrounding procurement of goods/services and disbursement cycles across aid agencies will dramatically reduce the demand on scarce country administrative capacities which would better be directed at policy execution and service delivery than “donor management.”

36. **Continuity of Support.** Development assistance needs to be sustained. Sound policies will remain on paper and incremental assistance will go unused unless recipient countries have the institutional capacity to prepare and implement action plans and operate and maintain the systems built. Many of the countries that have the greatest need for external funding also have very limited implementation capacity. Capacity is developed gradually. Countries that have managed to sustain improvements in sectoral performance,

such as Chile and China, required about a decade under privileged circumstances in terms of professional capacity and political stability before they arrived at self-sustaining models. International donors can play an important role in institution building alongside financing of capital investments. For IFIs and bilaterals to be effective in building local capacities, long-term partnerships with client countries are essential. This means longer than the five-year implementation period typical of IFI projects through the year 2015 and beyond.

37. **Building on Local Solutions.** For long-term assistance to genuinely enhance local capacities to manage WSS services, the manner in which development agencies provide support must shift. This means first reducing the preponderance of tied aid to permit local operators the choice of technology appropriate to local circumstances and to stimulate the development of local technical and managerial capacities rather than relying on specialized services purchased in the donor country. These are indispensable ingredients for building water and sanitation industries in the recipient country, especially in IDA countries, which are highly dependent on aid flows.

38. **Common Metrics for Monitoring Progress.** The adoption of common country frameworks among donors for providing assistance to recipient countries should be accompanied by common approaches for fixing baselines and measuring progress of the programs supported. This requires support for building local capacity for benchmarking operator performance as well as for improving the quality and timeliness of household-level socioeconomic surveys and other poverty mapping techniques. At the global level, concerted support is needed to upgrade the relevance and timeliness of global measures of WSS access, such as those reported by the Joint Monitoring Program (WHO/UNICEF).

39. **Mobilizing External Resources.** In the early years of those that remain until 2015, it is crucial that available funding be mobilized for those countries ready to scale up. While such support could be scaled up rapidly in a small number of countries at present aid levels, others will require long-term assistance in developing the institutional capacities to use resources they already have. The costs of capacity building are considerable, as are the transition costs for moving to more responsive and efficient service delivery models. Low-income countries (especially those under stress, the LICUS countries) are rarely in a position to bear these costs up front. Development assistance has a catalytic role to play here, not just in terms of financial support but also in sharing knowledge about what works and what does not and in providing support for demonstrating, in country, new ways of doing business.

40. In parallel, there is great scope for expanding public-private partnerships. Such partnerships are useful for generating investment funding through improved operations. To date, financing under PPPs has accounted for only about 5% of total sectoral financing in developing countries. Aid agencies have an important role to play, not only in financing government programs, as noted above, but also in mitigating some of the political risks that hinder private capital flows. This includes export credit agencies, bilaterals, and multilateral agencies. Many of these agencies recently have established and expanded guarantee programs, and created new risk mitigation products to respond to this growing need. Particularly important are instruments to mitigate sub-sovereign risk

as it is often local governments which are responsible for water supply and sanitation services. Also, a number of bilateral and multilateral agencies are exploring new ways of catalyzing local financing resources, as a way to mitigate the foreign exchange risk associated with local currency earning projects. These measures are highlighted in the report of the World Panel on Financing Water Infrastructure, issued at the Third World Water Forum in Kyoto (March 2003). The report contains a series of proposals for actions that multilateral financial institutions, bilateral agencies, and recipient countries can take to attract and better manage the quantum increase in financial resources required to make concerted progress.

## **V. WORLD BANK RESPONSES TO THE CHALLENGE**

41. World Bank assistance, across developing regions, has aimed at improving the sustainability and affordability of water supply and sanitation services, drawing on a combination of approaches: (i) incorporating community preferences regarding service levels, delivery modalities, and management arrangements; (ii) building local capacities to support communities in expressing their needs and managing services; (iii) broadening the scope for public-private partnerships in service delivery to improve responsiveness to users and operating efficiency; and (iv) strengthening sector governance and oversight. Each of these approaches requires both concerted sector specific interventions as well as work with and through other “sectors”; e.g., city governance and services, public health, water resource management, municipal finance, and environmental management.

42. The emergence of the MDGs as international priority prompted an institution-wide review and business planning process for water supply and sanitation this past year. A sectoral business strategy was recently prepared for internal management purposes to consolidate approaches, instruments, and resource requirements. It identifies region and country-specific priorities among the many units supporting water supply and sanitation interventions in Bank client countries. Some highlights of the strategy are provided below.

43. In historical terms, total annual IBRD/IDA financing commitments for water supply and sanitation declined in recent years — from a high of \$1.6 billion in 1995-97 period to \$1.0 billion in the 2000-2002 period. IDA allocations have fallen by 50%, and from 3% to 2% of the total IDA commitment. At the same time, the quality of new projects and performance of existing projects have improved significantly. With renewed focus on the WSS sector’s contribution to development outcomes, sector assistance is currently projected to increase modestly over the next three years.

44. At the country level, development is managed in a holistic manner and planned multi-sectorally. This reality is reflected in the Bank’s WSS portfolio: Water supply and sanitation features prominently in a diverse range of operations across practices/sectors: social protection, health and education, rural development, city management, slum upgrading, etc. The broad thematic areas through which the Bank will support countries in improving WSS services are:

- *Serving and Empowering the Urban Poor*: Rapid urbanization in the developing world calls for increasing attention to the needs of unserved and underserved populations in urban areas. Reaching poor urban populations requires both targeted interventions and broader actions at the municipal level. Key elements include: (i) reliance on local, small-scale service providers; (ii) offering communities a menu of service options of differentiated costs that reflect their preferences and willingness to pay; and (iii) increased emphasis on both hardware and software elements of sanitation. Among the vehicles for introducing such interventions are city development strategies and slum upgrading initiatives such as those supported by the Cities Alliance and UN Habitat.
- *Expanding Rural Access and Use*: The shift from centralized, government-managed upgrading of RWSS systems toward demand-driven, community-managed service requires distinct approaches and instruments. These include (i) “community contracting”—user groups manage investment funds and directly contract goods and services from local suppliers; (ii) focusing capacity building efforts on local agencies and entrepreneurs (rather than centralized ministries) to support communities in delivering services; and (iii) channeling central government/donor financing to local governments based on performance (e.g., conditional grants) to support scaling up successful community-managed schemes.
- *Responsible Stewardship of Water Resources*: Water scarcity is an increasing concern for countries with growing urban populations. Recognizing the interdependence of WSS and Water Resource Management (WRM) initiatives, joint strategies are under preparation in a number of countries. The Bank will also step up work on sanitation and waste management in order to reduce environmental degradation and the risks it poses for health and livelihoods of the populace. Central to this will be advisory work on effluent standards and economic control options, performance-based contracting for sanitation and sewerage services, lending to support gradual, step-wise approaches to sewerage and water pollution control while building local technical, management, and financial capacities. Responsible development and sound management of basic hydraulic infrastructure for water storage and conveyance will also receive renewed emphasis, especially in regions subject to high climatic variability.
- *Building Sustainable Utilities*: Well-functioning utilities are essential to upgrade service quality and extend access to poor communities. An ongoing challenge across all regions is transforming traditional state-owned monolithic water companies into more responsive service delivery systems. Policy and institutional reforms that create incentives for service providers to be more commercially oriented, creditworthy, and customer focused are central features of most WSS programs. These include better contract design, risk mitigation instruments, and building local capacities for impartial, transparent regulation. Broader reform in fiscal management, local capital market development, city governance, and municipal finance are key to securing appropriate investment financing and are areas where the WSS practice will contribute to a greater degree than in the past.

The Business Strategy anticipates several key shifts aimed at increasing the effectiveness Bank assistance to country clients. These include:

45. **Broadening action on sanitation and hygiene.** Household demand for sanitation and hygiene behavior varies widely across income strata and regions. For this reason, the local populace has often rejected even heavily subsidized sanitation and sewerage programs. The magnitude of the sanitation gap and the paucity of successful, sustainable programs for addressing it requires concerted attention, across business lines. Given the scale of the challenge in urban areas, increasing emphasis will be placed on building sanitation more firmly into broader city management and public health agendas: land use planning and tenure security, slum upgrading, building codes, and housing development and finance. Increasing support will also be provided to public private partnerships for hygiene promotion and low-cost sanitation in rural areas and small towns as well.

46. **Better integrating WSS into country programs.** A clear indication of the priority that government and World Bank managers accord to the sector is the extent to which sound sectoral policies and programs are reflected in country strategies and budgets. However, scaling up WSS must take place as part of a holistic country prioritization and planning effort that recognizes the interdependence of WSS health, education, environmental outcomes. More coordinated efforts across sectors and agencies involved in WSS development will therefore be stepped up.

47. **Strengthening analytical and advisory work.** A sound knowledge base and understanding of the WSS sector is essential for informed planning and decision making. Addressing gaps in knowledge at the country level often requires joint work with other sectors (e.g., public expenditure reviews, municipal finance assessments, environmental health strategies) to prioritize and sequence interventions at the country and district levels. Joint reviews, carried out with external partners, are important to ensuring consistent advice and better coordination of policy support and investment programs among development partners.

48. **Strengthening partnerships.** Governments and IFIs cannot meet existing demand for basic WSS services alone. Partnerships with other actors are therefore critical for leveraging resources of bilateral agencies, the private sector, and international organizations; building consensus on effective policies and ways of doing business; and supporting common programmatic approaches at the country level. The World Bank Group is active in a broad range of external partnerships at global, regional, and country level. These partnerships need to be sustained and strengthened through joint activities in relation to advocacy, knowledge generation, financing, and capacity building. At the regional level, the World Bank is working with regional development banks that may take the lead in WSS financing. Building partnerships with regional (and country) networks of professionals (e.g., regulators in Latin America and utilities in Africa) is key for building local capacities.

49. The mix of instruments — for building institutional capacity and financing infrastructure — will be geared to country-specific needs, capacities, and commitment to sound policies. In low-income countries, assistance will focus first on policy and institutional reforms, then on investment financing to scale up on various fronts (urban, rural, and small towns) in accordance with country capacity; and will do so increasingly through programmatic operations such as PRSCs. In middle-income countries with greater resource mobilization capacity, Bank assistance will be highly selective and catalytic, directed at leveraging private financing through IFC, MIGA, and concessional lending through regional banks, and will address “poverty pockets” through the design of poverty targeting policies and mechanisms, and strengthening local government institutional and financial capacity. In low-income countries under stress (LICUS), first priority will be to advocate for and establish basic policies, and building institutional capacity for modest investment programs that will be implemented in partnership with communities and the local private sector.

50. Beyond the shifts in approaches outlined above are several broader issues that Bank shareholders may wish to consider for the Bank to contribute more fully to supporting its clients to improve WSS service delivery:

- **Expanding IDA resource envelope and leveraging other sources of aid.** Intensifying support in countries ready to scale up will help ensure greater development effectiveness of current domestic and external resources. However, as mentioned above, at present less than 1 in 10 low-income countries are on track to meet the WSS MDG targets.<sup>8</sup> With current levels of aid resources, even with improved policies, institutional arrangements, and with harmonization of donors’ procedures/better coordination at the country level, up to seven may be brought on track. IDA countries, in particular, face severe domestic resource mobilization constraints and many calls on aid resources for which they have already received commitments. While there is a strong justification for expanding concessional aid (IDA and bilateral) for WSS investments in low-income developing countries, it is difficult to justify doing so at the expense of support for critical investments in health systems, primary education, and other essential social services. Effectively supporting a larger number of low-income countries will therefore require an expansion in concessional finance in the medium term.
- **Leveraging greater private capital flows to the sector.** Even where creditworthy water operators are functioning, shallow domestic capital markets preclude accessing long-term financing required for the long asset lives that characterize WSS infrastructure. Accessing long-term finance from international sources for this industry requires appropriate instruments to mitigate currency risk (devaluation), policy, and regulatory risks (breach of contract, government non-payment). The IFC, World Bank, and MIGA provide partial risk and credit cover, but their utilization for investments in water supply and sanitation so far have

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<sup>8</sup> Weighted by population size, 37% are on track to reach the water supply target and 16% to reach the sanitation target.

been very limited. Of equal importance is the deployment of lending and guarantee instruments to facilitate access to domestic private sources of funding since WSS revenues are denominated almost exclusively in domestic currencies. As WSS is a local responsibility in many developing countries, increasing attention is now being given to deploying instruments to mitigate sub-national risks, whether policy, payment, or credit risks. The IFC and MIGA recently began to provide local currency loans and partial credit programs to extend the maturity of local borrowing. The need for concerted action by multilateral financial institutions, bilateral agencies and recipient governments in developing and deploying such instruments was underscored in the recently issued report by the World Panel on Financing Water Infrastructure (the “Camdessus Panel”).

**Estimates of Investment Costs for Water Supply and Sanitation**  
**MDG Targets 2000-2015**

1. The annual investment cost estimates for meeting the MDGs in water supply and sanitation are provided in the table below by region, and category of investment.

US\$ billion, 2001 prices

Region	Water Supply	Sanitation	Total	
			US\$	Share, %
Africa	1.9	3.3	5.2	17
East Asia & Pacific	2.6	6.9	9.5	32
Europe & Central Asia	0.2	0.4	0.6	2
Latin America & Caribbean	0.8	1.5	2.3	8
Middle East & North Africa	0.6	1.2	1.8	6
South Asia	2.1	6.7	8.8	29
Additional Production	1.8	-	1.8	6
Total Developing World	10.0	20.0	30.0	100

2. After adjusting for additional costs to water supply production capacity to accommodate the additional connections *the annual investment requirements are approximately US\$30 billion annually which implies a doubling of present investment rates*. This estimate assumes higher investment and operating efficiency than in the past and must be considered the lower end of what meeting the MDGs will take for a number of reasons. Foremost the costs of rehabilitating run-down water and wastewater systems have not been included in the estimates. It is estimated that such rehabilitation and maintenance will demand no less than 2% of the replacement value of assets indefinitely. However, it is suggested that this additional investment will have to be financed out of rising levels of international cash generations, made possible by improved governance and operational efficiencies. As a consequence, they need not enter the financing considerations of capital investment.

3. The regional breakdown of required investment follows largely the regional shares of population. East Asia & Pacific and the South Asia regions will account for one third each with remaining regions requiring the remaining third. Water supply investments will demand one third of total annual investment and sanitation two thirds, a reflection of the higher incremental costs of sanitation and of the relative lag between water supply and sanitation works.



**Annual Water Supply and Sanitation Investments by Source of Financing,  
1990-2001 (\$ billion in 2001 prices)**

<b>Source of Financing</b>	<b>Annual Investment</b>	<b>Percentage</b>
<i>Domestic Sources:</i>		
National Budgets	6.6	43
Internal Cash Generation	1.0	7
Self Provisioning	2.5	17
Sub-total	10.1	67
<i>Foreign Sources:</i>		
IFIs	2.2	15
Bilateral Donors	2.0	13
Private Investors	0.7	5
Sub-total	4.9	33
<b>Total Major Sources</b>	<b>15.0</b>	<b>100</b>

Sources: [http://www.who.int/water\\_sanitation\\_health/Globassessment/Global3.2.htm](http://www.who.int/water_sanitation_health/Globassessment/Global3.2.htm) (slightly adjusted for double-counting), Report of the Panel of Financing Global Water Infrastructure for IFI lending

1. Investment could be estimated either from the financing side, or from the uses side. Both introduce the risks of double counting. **It would be desirable to estimate historical investment both from the financing and uses sides for crosschecking but this proved impossible since only financing data are available.** There are six major financing sources:

- **Central and local government budgets** — No reliable official data exist as water and sanitation investments are often financed through budget line items not identified with a specific sector (e.g. under “social infrastructure”, “general services” etc). In addition, there is the problem of separating budgeted and executed investments. Based on partial surveys and extrapolations, WHO in its Global Water Supply and Sanitation Assessment 2000 Report estimates total national investments at \$9.2 billion per year. This amount is likely to overestimate substantially the funds financed by the national budgets. Correcting for double-counting it is estimated that the budget-financed investments have amounted to roughly \$6.6 billion annually;
- **Private sector** with or without government guarantee — The World Bank’s Private Participation in Infrastructure (PPI) database reports annual investments, net of cancellations of \$35 billion over the 1990-2001 period, equivalent to annual investments of \$2.9 billion. However, the PPI database books as annual investment the estimated total commitments during the entire private operator contract at the time of signing and includes internally generated funds. This practice overstates the annual private investments. A more conservative annual amount is estimated to be the order of \$0.7 billion given that many of the reported PPI investment commitments will disburse over contract periods that range from 10 to 25 years;

- **International finance institutions (IFIs).** Over the 1990-2001 period the average annual commitments are estimated to have been about \$1,100 million from the World Bank; \$600 million from the Inter American Development Bank; \$250 million from the Asian Development Bank; and possibly another \$250 million from the African Development Bank and the European Bank for Reconstruction and Development (in non-EU accession countries). The trend for IFI commitments has been downward. The World Bank committed on average \$1.5 billion annually in the FY 90-98 period but only half as much (\$0.8 billion) in the FY 1999-2002 period. Similarly, the IADB committed \$0.64 billion annually in the 1991-95 period but only \$0.4 billion in the 1996-2001 period. On average, Total IFI financial assistance is estimated at \$2.2 billion annually.
- **Bilateral donors,** encompassing a range of programs of different concessionality, **including export credits.** Partial estimates indicate that the consolidated annual investment estimates might have been in the order of \$2.0 billion annually;
- **Internal cash generation (ICG)** from utilities and communities, which is impossible to estimate in the absence of recent sector studies. A recent OED review<sup>1</sup> finds that pricing policies often failed to recover investment costs which accords with other studies' findings. Using extrapolation from major countries in each region, it is estimated that ICG from operations might be in the order of \$1.0 billion and would be lower if costs associated with necessary maintenance were actually incurred;
- **Self-provisioning.** These sources might comprise costs paid by small-scale (private and faith-based) and community providers and by households. Out of these different sources household self-provisioning is the most significant but exceedingly difficult to estimate. However, some estimates of consumer coping costs show that these investments can be higher than public sector investments in poorly functioning systems.<sup>2</sup> Notionally the total financing for self-provisioning is estimated at \$2.5 billion annually.

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<sup>1</sup> "Efficient, Sustainable Service-for-All ?—An OED Evaluation of the Bank Assistance to the Urban Water Supply and Sanitation Sector", Draft dated January 21, 2003.

<sup>2</sup> Choe, Kyeong Ae, Robert C.G.Varley and H.U. Bilani, "Coping with Intermittent Water Supply: Problems and Prospects", Environmental Health Project, Activity Report No. 26, USAID, October 1996.