

Institutions and the Urban Environment in Developing Countries: Challenges, Trends, and Transitions

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Abstract

The paper discusses challenges, trends, and transitions in the urban environment field and offers an approach to meeting Millennium Development Goal (MDG) targets in water supply and sanitation in urban areas. It updates the author's 1994 publication *Urban Environmental Challenges: New Directions for Technical Assistance to Cities in Developing Countries*, published by the World Resources Institute. This paper begins by describing governance, decentralization, and privatization trends and drawing lessons from international development experiences in cities in developing countries. It argues that pervasive governance problems have led to environmental service deficits, particularly amongst the poor, who, at the same time, have demonstrated tremendous ingenuity in obtaining for themselves what their municipalities have not provided. The paper examines the global urban environmental agenda through a review of summit meetings and key initiatives of major international development agencies. This review of the global agenda – from Rio to Johannesburg – leads to the judgment that the most important urban environmental challenges today are defined by the Millennium Development Goals (MDGs). It argues that meeting MDG targets related to poverty alleviation, access to water and sanitation, and improvements in the lives of slum dwellers will provide the greatest improvement to environmental quality in urban areas.

In light of the current retrenchment of multinationals in the water sector, and the financial limitations faced by governments and international donor agencies, this paper offers an alternative that involves promoting the integration and optimization of water supply and sanitation services being provided by Small Scale Independent Providers (SSIPs) in order to meet MDG targets in urban areas. The paper argues that, to unleash SSIP/informal sector potential and resources, several barriers need to be eliminated – informal sector entrepreneurs operating in a difficult environment, with lack of recognition, police harassment, insecure tenure, and lack of access to credit being among the most common constraints and disincentives. It suggests that national and local governments, with the support of international development agencies, *can* achieve the flexibility in the policies, standards, and regulations that would allow the integration and optimization of informal sector potential. A merger of informal sector “bottom-up” and formal sector “top-down” approaches would mark one of the most significant transitions in the international development field today. Long-term commitments will be necessary from governments, donors, and independent private organizations to implement this approach.

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INTRODUCTION

Background

Ten years ago the World Resources Institute (WRI) published *Urban Environmental Challenges: New Directions for Technical Assistance to Cities in Developing Countries* (Linares 1994a). This publication was the product of an initiative undertaken by WRI's Center for International Development and Environment to bring attention to urban environmental issues in developing countries, since at the time, it was felt that not enough resources were being devoted to these local issues by the international community. In 1994, *Urban Environmental Challenges* presented a brief overview of linkages between urbanization and the environment, highlighting pressures, environmental conditions, impacts, and institutional responses to urban environmental problems in developing countries. Most importantly, it drew lessons for future technical assistance implementation efforts, stressing the need to promote stakeholder participation in project design and ownership of technical assistance projects and outcomes sponsored by international development agencies.

Today, ten years later, while the author was on sabbatical as a candidate for the Master of Environmental Management degree at the Yale School of Forestry & Environmental Studies, it was deemed an appropriate time to take stock of how the global urban environmental agenda had evolved during the past decade.

This paper is the product of an independent research project at Yale, conducted under the guidance of Professor Bradford Gentry during the spring of 2003 and supported by a research grant from the Hixon Center for Urban Ecology at the Yale School of Forestry & Environmental Studies. Its purpose is to review the state of urban environmental affairs and to update the international development issues reported on in the previous WRI article. The paper sets out to identify and discuss the most important challenges and trends that have emerged during the past decade in this field and to identify and propose the most relevant transitions for the future.

Methodology and Sources

The methods and sources used consisted of a) reviews of literature and publications by international agencies, NGOs, and urban and environmental think tanks, including professional associations and other relevant urban sector institutions; b) database searches using the internet and related web sites; c) bibliographic references from the Yale library system, which includes websites, databases, and academic research papers and publications; and d) direct email contacts and personal interviews with experts in relevant international development agencies.

The research methodology included email contacts with and delivery of the 1994 WRI publication to 55 experts in 16 institutions located in six different countries (see Annex I). Twenty-six out of fifty-five people contacted (47%) replied with comments, information, or suggestions for locating additional information.

In addition, during the period of March 10-21, 2003, the author conducted personal interviews with 32 experts from 14 institutions based in Washington, D.C., including NGOs, consulting firms, and multilateral and bilateral development agencies (see Annex II).

SECTION ONE: URBAN ENVIRONMENTAL SERVICES AND GOVERNANCE

“Virtually all of the policies needed to improve the urban environment require more effective urban governance . . .”¹

The cardboard and plastic shacks that line the streets and railroad tracks, the piles of uncollected garbage on the sidewalk, the smell of raw sewage, the lines of women and children standing waiting their turn at the water tap, and the beggars at the intersection – all are common scenes to be found in cities of the developing world and are a direct consequence of poor urban environmental governance.

¹ Source: WRI, *A Guide to World Resources 1996-97: The Urban Environment*, p. xi.

Poverty and Environmental Health

The proliferation of slums, deficits in water and sanitation coverage, and waste collection services are three of the most visible signs of an urban governance problem. Inadequate living conditions, pollution, and service deficits have serious environmental health consequences that threaten the lives and productivity of urban dwellers in low and middle-income cities in Asia, Africa, and Latin America. Most affected by adverse urban environmental conditions are the poor. Environmental health problems are most acute in slum areas where municipal services are lacking.

Official statistics recognize that throughout the developing world at least 220 million urban dwellers lack access to clean drinking water and more than 420 million do not have access to proper forms of sanitation. Municipal waste collection services for cities in low and middle-income countries worldwide only reach on average between 50 to 70 percent of the total urban population (WRI 1996).

Large numbers of urban dwellers continue to live under life-threatening conditions as urbanization and poverty trends continue unabated. The global urban population is expected to grow by 1 billion people in the next 15 years, and a staggering 90 percent of this urban growth will occur in cities of the developing world.

Many of these new and poor urban residents will be living in unsanitary conditions in slum areas and informal settlements (World Bank 2003).

During the past decade, cities have continued to grow, urban poverty has increased, access to water and sanitation coverage have decreased, and in parallel, the state of the urban environment has worsened. Much of today’s urban environmental degradation and the visible decrease in urban livability in cities of the developing world is the result not only of the lack of material resources, but also a persistent problem of poor governance.

Governance is about how decisions are made and who makes them. It is about the exercise of authority. Environmental governance in urban areas is inevitably linked to urban institutions. Municipalities are the primary government institutions where official authority resides to make decisions, allocate resources, and manage city affairs. “How we decide and who gets to decide often determines what we decide, so questions of governance are crucial” (WRI 2002).

Back in 1994, WRI's *Urban Environmental Challenges* (Linares 1994a) pointed out four critical institutional deficiencies:

- Lack of public awareness and political will, coupled with insufficient knowledge and information;
- Inadequate institutional capacities;
- Inefficient and inadequate regulatory and economic policies;
- Inadequate revenue-raising capabilities.

Despite some progress and opportunities provided by democratization and decentralization, institutional deficiencies continue to manifest themselves — especially in low and middle income cities, where local resources and capacities are lacking — affecting the lives of the poor and the quality of the urban environment throughout Asia, Africa, and Latin America. Good governance has proved to be an elusive task for the majority of cities in the developing world.

Decentralization Trends

During the past decade, nations and cities worldwide have experienced an important transition due to the emergence of a strong and sweeping trend toward democratization and decentralization. Central governments are not primary “doers” anymore. This crucial transition is true for most countries. Even the People’s Republic of China has taken important and successful strides toward transferring decision-making authority and resources to the provincial and local levels.

Decentralization has resulted in an increased role for local governments in urban and local environmental affairs, leading to increased opportunities for broader institutional and civil society participation in decision-making and outcomes. According to Tim Campbell (personal communication 2003), democratization and decentralization trends that emerged in Latin America in the past decade have reshaped the very nature of governance at the national and local levels in the entire region.

In *The Quiet Revolution*, Campbell reports many success stories from Latin American countries such as Brazil, Chile, Mexico and Colombia².

² In *The Quiet Revolution*, Campbell argues that Latin America's decentralization process is a decade or more ahead of other regions. “The urban transition is just beginning elsewhere, as in Africa, and has not yet been completed in Asia.” p. 25

One of the most impressive current examples of effective public participation in decision-making (good governance fueled by democratization and decentralization trends) is participatory budgeting.

Participatory budgeting is a process by which neighborhood residents are incorporated into the decision-making process for capital investments in their city. Many cities in Brazil began to experiment with participatory budgeting after the demise of the military government in the early 1980s. None carried the process further than Porto Alegre. Under the leadership of the Mayor, Porto Alegre residents were informed and educated about the process using simple cartoon-like booklets and invited to meetings where the Mayor and staff openly presented and discussed the city's budget on large poster boards. City officials were on hand to explain the costs of services and infrastructure, including the investment preferences of neighboring communities. After the city-wide process of consultation ends, technical staff develop an investment program, the highlights of which are presented at yet another round of meetings until final decisions are made. Participatory budgeting had transformed the idea of best practice about budgeting and even moved it beyond conventional budgeting practice in the region. The technique spread to many cities in Brazil and it now has been exported to cities in Argentina, Chile, and Colombia. A delegation of local government officials from Germany visited Porto Alegre to study participatory budgeting for use in German cities.

Source: Campbell, *The Quiet Revolution*, 2003

Good governance tends to happen in places where there is strong leadership as well as a conducive and enabling environment for urban institutions to perform their duties. Increased local government responsibilities for urban environmental affairs have been met with varying degrees of success. The majority of success stories are to be found in wealthier cities and countries that were able to take advantage of decentralization trends in the '80s and '90s. Despite progress reported by Campbell from countries such as Brazil, Chile, Mexico and Colombia, the desired effects of decentralization have been constrained by the lack of local capacity to cope with increasing responsibilities and the continuation of unequal power struggles between central, regional/state, and local governments.

The author's personal experience from El Salvador confirms that mayors who belong to the opposition party are not likely to receive support from the central government. In 2001, for example, the Ministry of Environment and Natural Resources denied an environmental permit to the municipality of San Salvador for the construction of a solid waste transfer station that had no negative environmental impacts and would have greatly contributed to solving the solid waste problem in the Metropolitan Area of San Salvador (MASS). Not only was the mayor of the capital city a strong presidential candidate, but also the majority of the municipalities that made up the MASS were controlled by opposition parties. The opportunities to improve governance at the local level were limited by national politics as well as national policies.

Decentralization continues to take place within a context of much political controversy. For instance, in Latin America, the job of mayor of the capital city is still perceived as a stepping-stone to the presidency. In many cases, the lack of cooperation between central and local governments is related to the political party affiliations of mayors and the executive branch.

The political willingness of central government to assign resources to municipalities and/or contribute to alleviating environmental health conditions through infrastructure investments is also being affected by the lack of appropriate national urban infrastructure and financial policies to address the needs of the poor at the local level. The complexity of the policy-politics dilemma has consequences for international development efforts.

The World Bank requires national sovereign guarantees from the central government. This requirement can limit the effectiveness of the development assistance that the World Bank can provide to reach the poor at the local level. “When external funding is intended for NGOs or CBOs, central governments are loath to lose control over which groups, cities or sectors receive funding. They are afraid to have international donors fund organizations that are critical of government policies, or fund municipal authorities governed by opposition parties” (Satterthwaite 2001).

Access by local governments to funds from multilateral agencies, such as the World Bank, can be effectively blocked by central government.

Despite progress and increased resources brought about by decentralization, local governments continue to be strapped for cash, have limited revenue-generating capabilities, and are experiencing obstacles to accessing capital markets. Municipal bonds are one option, but they require good ratings that only a few municipalities in poor developing countries can obtain; therefore, many do not have the human or material resources to provide even the most basic environmental services for poor urban residents.

In addition to the political and policy tensions described above, governance problems in urban areas are aggravated due to the interaction of many actors, from both the public and the private sectors (including entrepreneurs from the unregulated informal sector). The urban experiences with water sector reform and privatization of water supply and sanitation services provide a clear example of the difficult challenges posed by this transition.

Urban areas are characterized by the participation of multiple stakeholders who make decisions and allocate resources independently and without regard for local development strategies, plans, and regulations, where they exist at all. Where they do exist, information, communication, and enforcement capabilities are weak. The transition of government’s role — from “doer” to “regulator” — has proven to be a much more difficult challenge than previously anticipated.

Privatization Trends

“The main justification for privatization, advanced by its proponents, is that public utilities are inefficient and that they have constraints on raising the capital needed to expand and improve water and sanitation services.”

(Hardoy et al. 2001)

Many experts and international financial agencies have argued during the past decade that the dismal failure of governments in developing countries to provide services to the poor requires new approaches, and they see potential in privatization. Proponents of privatization recognize that, as official development aid has declined, private investment has increased, offering new hope to development efforts. “Total global flows of private capital doubled in the first part of the 1990’s and private investment in developing countries increased six-fold – exploding from under US \$50 billion in 1990 to over US \$300 billion in 1997 . . . World Bank data indicates that net private flows to developing countries remained between four and five times larger than official flows in 1998 and 1999” (Gentry 2000).

The conclusions of the Second World Water Forum held in The Hague in March 2000 and the 1992 Water Conference in Dublin are a measure of the importance given to water privatization in the global agenda during the past decade. These conferences stressed the need to mobilize new financial resources to solve water problems with private participation and to introduce a (somewhat controversial) principle that water should be treated “as an economic good” (Gleick 2002).

During the past decade there have been many international efforts to privatize water systems and to create water markets. Most of the success stories are to be found in developed countries. By the end of 2000, at least 93 countries had partially privatized water systems, including Argentina, Chile, China, Colombia, the Philippines, South Africa, and parts of central Europe, although, today still less than 10 percent of all water systems are being managed by the private sector. By 2000, almost all countries in the Latin American region had begun to consider (and some to commit) to long-term private concessions. Some were shifting for ideological and financial reasons from public to private ownership and management of water and sanitation services (Gleick 2002).

Privatization trends have run up against stumbling blocks, however. One important obstacle is the view of “privatization” among ordinary citizens in developing countries. Street protests against privatization in Panama City and the author’s personal experience in failed water sector reform efforts in El Salvador, in addition to riots in Cochabamba, Bolivia, attest to this fact.

There is a wide range of options – including full privatization (divestiture), concessions, more modest forms of joint venture and partnership, or transfer of some operational responsibilities to private companies (many of which have been created by former employees of disbanded central government utilities). In addition, there are several regional and municipal decentralization models that include participation of the private sector, such as autonomous agencies, water and sanitation operations under management by NGOs, and water user associations. This paper will not describe these models, since they are well known and extensively discussed in the

literature. (Gentry 2000, Walker 1993, and Rosensweig 2001 are three sources that describe the range of models).

One of the main fears that promotes social and political opposition regarding privatization is that privatization is equated with multinational corporations.³ In reality, private sector participation in service delivery can take many forms.

³ There are only a handful of major international private water companies (multinationals). Two French corporations, Vivendi and Suez Lyonnaise des Eaux (now called Odeo), are the largest. These two companies together own or have interests in water projects in more than 120 countries, and each claims to provide water to around 100 million people . . . “Their total annual revenue in 2000 exceeded \$37 billion, of which more than 25 percent came from water business.” Other giant companies include Thames Water and United Utilities in the U.K., Bechtel in the U.S., and Aguas de Barcelona in Spain (Gleick 2002).

⁴ Despite the generalized statement, there are a few cases of private sector concessions reaching the poor. The water concession granted to serve the La Paz-El Alto low income settlement in Bolivia is one such example. This settlement has received much international aid for many years.

⁵ A noteworthy exception is the Manila, Philippines concession, which includes an innovative formula to calculate coverage targets. See p. 43.

Many experts, including non-critics of privatization, recognize that private sector participation – when this means “participation of multinationals” – has effectively bypassed under-represented and under-served communities, and failed to reach the poor for a number of reasons⁴ (Gleick 2002). One of the reasons is the lack of clarity in many of the contracts signed between governments and multinationals with regard to serving marginal areas where the poor live⁵. Marginal areas tend to be larger and more complex than official estimates, because these settlements tend to be invisible to governmental statistics. These marginal areas are “noticed” when their inhabitants come out on the street to protest against decisions made by government that have (or are suspected of having) negative impacts on their livelihoods.

Other reasons stated in the literature for why marginal areas are by-passed are up-front hookup/connection fees, standard one-size-fits-all solutions, strict compliance with high international standards, and the fact that slums, illegal settlements, or other marginal areas are hard to access and to recognize, especially if there are no official records of their existence (Gleick 2002).

In addition, there are bureaucratic constraints. Formal sector utilities require customers to produce papers that the poor cannot produce, such as land titles, tax declarations, affidavits of house ownership, plumbing permits, identification cards, and properly filled-out (long and complicated) application forms. These requirements are self-imposed formal sector constraints to reaching the poor with water and sanitation services.

Conventional water delivery systems are not only inflexible, but are also too expensive for the poor. They offer a single, standard piped, high priced option – a household with a metered water and sewer connection. Standard infrastructure costs increase in slum areas where streets are not lined up and where houses are located in difficult topographical terrain (Hardoy *et al.* 2001).

Multinationals, as well as government utilities, have found it difficult to sell water and sanitation services to poor neighborhoods where property titles do not exist (dwellings are often located in parcels without regular title, or with insecure title), where there are no officially-built roads and no street nomenclature, and where making standard house connections requires non-standard approaches.

Finally, recent fiascos and well-publicized derailments of privatization in many places, including Indonesia, the Philippines, Argentina, and Bolivia, have triggered a reduction in multinational plans for investment. During the past decade, the privati-

zation movement made an impact in every region of the world, even in Sub-Saharan Africa where about 400 privatization transactions per annum were registered in the mid 1990's "However, these have been tapering off to about 100 privatization transactions at present, reflecting a decrease in the number of operators as well as recent changes in the global investment climate" (BNWP/World Bank 2002).

Experts from the World Bank's Public-Private Infrastructure Advisory Facility (PPIAF), which supports and provides assistance to privatization efforts, have expressed doubts about the willingness of multinationals to participate in future bids for water concessions in developing countries (Muir 2003).

Environmental Service Deficits

Governance problems and the current scenario described above have contributed to producing and maintaining urban environmental service deficits. But at the same time, deficits have created opportunities for the informal sector to "fill the environmental service gaps left by government authorities." In urban areas, the poor are providing services and creating business opportunities for themselves that national and local government and/or other formal sector⁶ service providers (including formal sector businesses, concessionaires and utilities) cannot provide.

⁶ The term "formal sector" is used throughout this paper not only in reference to developed countries, but also to identify formal private and public sectors in developing countries. It implicitly recognizes the existence of a "formal" world in low and middle-income developing countries. The use of the term should contribute to further defining "informal sector" (the poor/marginalized sectors of society in developing countries).

SECTION TWO: THE ROLE OF SMALL SCALE ENTREPRENEURS

*“The water is ours, damn it!”*⁷

Back in 1994, WRI’s *Urban Environmental Challenges* stated that “the urban poor have demonstrated tremendous ingenuity in obtaining what the city cannot supply In most developing countries, the informal sector employs 30-70 percent of the working-age population.” This trend continues throughout the developing world. Informal sector operations in water supply and sanitation and waste recycling illustrate this ongoing trend.

In most cities in developing countries, more than half the population gets its basic supply of water from sources other than the official utility, and municipal systems handle only a small percentage of total wastes generated. Peri-urban settlements are the last to receive services from water and sanitation utilities (Snell 1998). In Africa, it is estimated that over 75 percent of the urban poor get water directly from a range of private Small Scale Independent Providers⁸. Sanitation services are in most cases supplied exclusively by such providers (Collignon 2001).

In addition, in many cities in Africa, Asia, and Latin America, a large percentage of wastes with economic value are collected and pulled out of the waste stream by scavengers or waste pickers (WRI 1996).

It has been estimated that in Africa, Asia, and Latin America, up to 2 percent of the urban population makes a living by recovering materials from waste. This means that 30 million people in urban areas of the developing world are in the business of recycling materials taken from the waste stream (Downs and Medina 2000).

Informal sector service providers and informal sector businesses are not new phenomena. They have been around for as long as cities have been. Informal sector studies were popular back in the 1970s. The Institute for Freedom and Democracy in Lima, Peru, headed by Hernando De Soto, was — and still is — one of the leading research centers on this subject.

In *The Other Path*, De Soto (1989) outlines some of the consequences of excessive regulation and lack of a strong rule of law. In three distinct industries (transportation, housing, and commerce), De Soto shows how productivity and wealth generation are hampered by a weak legal system (poor governance). Recent events — discussed throughout this paper — have propelled a renewed interest in the informal sector’s activities and operations. The resurfacing of the informal sector as a subject of discussion marks a major transition in the fields of international development and the urban environment, a pendulum swing back to an issue that 30 years ago was regarded as important but has lain dormant since then.

Water Supply and Sanitation

Recent World Bank studies in Africa and Latin America suggest that Small Scale Independent Providers (SSIPs), or informal sector entrepreneurs, in water and sani-

⁷ A banner hanging in the central plaza of Cochabamba, Bolivia on April 6, 2000. Taken from Tam, Laura, “A Glass Half Full: Lessons from Water Privatization in Cochabamba, Bolivia, 2002.” Unpublished paper.

⁸ The terms informal sector entrepreneurs, small scale informal sector entrepreneurs and/or small-scale independent providers and small-scale private providers are used interchangeably in this paper. They refer to the same group of “unofficial” actors in water supply and sanitation and/or recycling operations.

tation are delivering services to the poor by responding to local conditions with great flexibility and affordability (Collignon 2001). Small-scale providers are filling the service gap left by formal public sector monopolies. They are competing for market niches and delivering services under a wide variety of delivery models. Large numbers of poor households in Latin America not connected to the official system of pipes are obtaining water through these alternative means – and not only or always from water carts and water trucks.

World Bank studies describe who these small-scale providers are and what they can offer. Twenty profiles, drawn from information provided by the UNDP/World Bank Water and Sanitation Program, are included in a report by Snell (1998) that includes six cities in Africa, eight from Asia, and six from Latin America and the Caribbean.

In addition to mobile water truckers, the study identifies five types of informal sector providers:

- providers in partnership with water utilities;
- pioneers who bring water from their own sources to neighborhoods not covered by utilities;
- entrepreneurs who build their own systems connected to the utility mains;
- owner/operator/franchisers of public toilets and bathing facilities;
- community-managed latrines (Snell 1998).

Another World Bank report by Solo (1998b) describes many delivery models:

- residential re-sales (through garden hose or garden faucet);
- private wells (where bulk water is sold to mobile vendors or distributed by means of small networks of pipes with house connections);
- housing developers (from both the formal and informal sectors, who not only build houses and infrastructure but also operate their own water and sanitation systems);
- water kiosk or stand pipe operators. These account for the vast majority of informal sector service providers to the poor in third world cities around the globe (Solo 1998b).

In fact, these small-scale, informal sector operations may very well be the only option for many poor urban households.

According to Solo (1998b), 25 percent of the city of Bamako, Mali's water supply moves through residential re-sales. Water from private wells to secondary vendors accounts for more than 30 percent of supply in Tegucigalpa, Honduras, in Guatemala

City, and in Lima, Peru, and is a growing market share in Turkmenistan and Uzbekistan. In Manila, until recently, more than a third of residents lacked a connection to the city's water network. Sewerage services are accessible to only 7 percent of the total population (Rosenthal 2002).

Lima and Guatemala City have major utility companies charged with universal coverage that offer subsidized tariffs for residential consumption. Yet in both cities most poor families depend on private informal sector providers for water and sanitation services they can afford. In Guatemala City, some 200 independent operators – ranging from truck vendors to private aqueducts – provide services to a third of the total urban population (Solo 2003).

In Lima, more than 40 percent of the population depends on independent water providers. In Port-au-Prince, Haiti, small-scale entrepreneurs produce about 10 percent of the urban water supplied, distribute about 20 percent of the city's water, and reach some 70 percent of the households. More than 20 percent of water delivered in Asuncion, Paraguay, comes from over 200 independent entrepreneurs who build and operate aqueducts drawn from ground wells, each serving between 50 and 1,000 families (Solo 1998b).

The World Bank African cities study reveals that independent water and sanitation entrepreneurs provide jobs for several thousand people in each city. These account for 1 to 2 percent of the labor force and from 70 to 90 percent of those employed in the water sector. In addition, they provide a principal source of income for thousands of low-income families and generate a volume of business comparable to that of the city water companies, despite the fact that they operate in a difficult and repressive environment. They are perceived as operating outside the mainstream and are often subjected to hostility by government authorities and police harassment (Collignon 2001).

In Paraguay, there are some 500 small, competing water companies that provide water to half a million low-income families. They are operating in place of large monopolies with government-regulated prices. "The independent private water sector in Paraguay evolved mostly from water truckers who a generation ago brought water out to neighborhoods not serviced by public companies. It was the truckers themselves who made the change to a network of pipes These are 'mom and pop' aqueducts which average two employees per 300 to 800 households" (Solo 1998a). Small off-grid solutions for the water sector can make sense in slum and peri-urban areas due to the physical, social and economic conditions.

One additional point to make with respect to small-scale local independent entrepreneurs in the water sector is about the conflicting reports that exist about water vendors charging exorbitant prices for reselling water.

Independent providers are criticized by public authorities, NGOs, and in international agency reports for reaping high profits on the backs of their low-income customers. However, the surveys conducted for the ten cities in the World Bank African cities study found no evidence to support this . . . "On the contrary, the survey results indicate that the market for water and sanitation services is extremely competitive and profit margins are low" (Collignon 2001).

Studies by Tova Solo (1998 and 2003) in Latin America support the finding in Africa. They show that competition in Guatemala and Paraguay in an unregulated informal sector market holds prices down to a maximum of 2.5 and 1.4 times the official utility price, far from the exorbitant rates commonly attributed to private vendors. Solo, a World Bank expert, states that the Buenos Aires concession demonstrates that conflicting information and simplistic analysis can sometimes have serious consequences:

“When Aguas Argentinas moved to extend water services to the peri-urban neighborhoods of Buenos Aires, it relied on widely circulated accounts of the practices of private water vendors. Believing that the truckers resold water at fifteen to fifty times its bulk price, Aguas Argentinas had every reason to expect low-income families to be eager to connect to its service. Although there were local reports of annual family expenditure on water and sanitation in peri-urban areas at less than \$150, about a tenth the amount of the average Aguas Argentinas bill, the reports of the water vendor’s high rates prevailed – right up until the low-income families refused to hook up to the water main. Their resistance helped lead to the renegotiation of the Aguas Argentinas concession.”

Source: Solo, *Competition in Water and Sanitation* 1998b

There are many other examples of small-scale local entrepreneurs’ involvement in sewerage and sanitation as well as participation by slum dwellers in sanitation solutions. In Malang, Indonesia, a small-bore independent entrepreneur put together a private sewerage system that ended up serving more than 1,000 families. In many cities in Africa, private entrepreneurs own and manage water kiosks and public latrines and empty people’s septic tanks (Solo 1998b). In the absence of sewage systems, close to 40 percent of the total population of Katmandu, Nepal, depends on small-scale entrepreneurs to manually clean septic tanks.

Creative solutions to sanitation also include users’ involvement in their operation and maintenance in marginal areas. The “condominial sewer” is one example.

The “condominial” sewer system developed (by Carlos De Melo) in the slum areas of northeast Brazil is a system that involves community residents in the operation of sewage disposal. It is cheaper than the conventional system because it requires social capital investment for maintenance by the community. The condominium system is an ingenious design that scales down standards of service (such as reducing the need for excavation, fewer clean-out traps and manholes, and smaller-bore pipes) reduces costs to one third and increases affordability to the poor. In order to achieve these cost reductions, community members have to participate in maintenance by keeping waste traps clear of debris.

Source: Gleick, *The World’s Water* 2002-2003

Solid Waste Management

“Garbage is good . . . Garbage has been my life and I prefer you take away my life than take away my garbage!”⁹

Recognition that garbage is a valuable resource is growing, and there is increasing recognition of the “waste economies” that exist in many countries. In developing countries, scavenging plays an important role in supplying raw materials to industry and represents a common survival strategy for the poor. As in the water sector, service deficiencies are opening business opportunities for informal sector entrepreneurs.

⁹ A recycling entrepreneur interviewed by the author at “Mariona” Landfill in San Salvador, El Salvador, 1994.

Since third world cities usually lack formal recycling programs, the bulk of recycling is carried out by scavengers and informal sector independent providers of recyclables to industry.

Downs and Medina (2000) estimate that in Bangkok, Jakarta, Kanpur, Karachi, and Manila, scavenging saves each city at least US \$23 million/year in lowered imports of raw materials and reduced need for collection, transport, and disposal equipment, personnel, and facilities.

Throughout cities in developing countries, armies of scavengers work hard to extract from the waste stream recyclable materials such as glass, paper, cardboard, aluminum and other metals, wood, rubber, bones, cotton, and other textiles. Contrary to popular belief, informal sector entrepreneurs can be very sophisticated.

Studies in Jakarta and in San Salvador show that scavengers sell recyclables to small entrepreneurs who sort, clean, and bundle them. In Jakarta these are called “lapaks.” The lapaks sell these to intermediaries known as “bandars,” who are more specialized middlemen. “Bandars” are the ones who transport the materials and resell them to factories — where materials are re-used in the manufacturing process (CPIS 1992).

Informal sector intermediaries, who operate from slum areas of marginal settlements and along major transportation routes, either sell recovered materials to formal companies who buy the wastes from the informal sector and recycle them into finished products that they sell to different local, regional or international markets or sell them to industries that utilize them to manufacture other products. The recycling market study conducted in San Salvador revealed that the system is multi-layered, with many actors at different levels (scavengers who work for bosses at the landfill, intermediaries who buy from bosses and accumulate cleaned and packed products, and final intermediaries who sell in bulk to industries and local businesses) (Linares 1994b).

The San Salvador study found an unsuspected level of sophistication among recyclers. Informal sector entrepreneurs even export recyclables to developed countries, depending on international market prices, including plastics, glass, aluminum, paper and other inputs for industry. The study revealed that five local formal-sector industries included in the survey purchased 854 tons of paper, 88,000 glass bottles, 20 tons of aluminum cans, and 58 tons of plastic on a monthly basis from informal

sector entrepreneurs. Purchases of recyclables amounted to approximately US \$100,000/month from these five industries alone. This amount represents considerable income for these entrepreneurs since they operate with low overhead costs (Linares 1994b).

Waste pickers are highly organized and can account for a large share of waste collection. In Indonesian cities, estimates suggest that waste pickers reduce total urban refuse by one-third. In Bangalore, India, street and dumpsite pickers gather an estimated 500 metric tons of post-consumer wastes daily, compared with only 37 metric tons gathered by municipal workers.

In Dar es Salaam, Tanzania, industries purchase 50 to 65 percent of their raw materials from waste pickers working out of landfill sites (WRI 1996). Small-scale informal sector businesses are a profitable venture for the poor, many of whom have moved up the income ladder due to the business opportunities presented by the waste economy.

Many developed countries, such as Korea, import huge amounts of waste as raw material for industry. These studies have found that informal sector entrepreneurs are taking advantage of municipal service deficits to make money and get out of poverty.

Limits to Service Optimization

The main characteristics of informal sector providers, whether in potable water and sanitation or solid waste management, are individual initiative, creativity, flexibility, market adaptability – in terms of financial arrangements, technical options, and outreach – and low cost operations due to low overhead.

One of the most important characteristics of the informal sector is “entrepreneurship.” The literature and proposed solutions to urban environmental problems tend to ignore the fact that informal sector actors are indeed private sector entrepreneurs. They are poor and do not conform to the standard profile of the formal private sector, but they are private sector nonetheless. Solo (2003) calls them the “other private sector.”

The formal sector’s professional and political mind sets with regard to the informal sector have economic, social and environmental implications that are discussed in the last section of this paper.

Despite a significant contribution in providing services to the poor, there are limits to the informal sector’s ability to adequately “fill the gap.” First, due to lack of official recognition by the formal economic system, informal sector businesses operate at a cost to the poor, to the state, and to society. Second, there are no rules for the quality of services they provide, nor guarantees that protect consumers from abuses, high charges, and poor quality (discontinued or irregular) services. Since water quality is not often supervised by Ministries of Health or any other authority, a particular and important concern relates to the quality of water delivered by SSIPs. Water can also be contaminated by the means by which it is stored by households. In the solid waste and recycling sector, continued contact with wastes contributes to the spread of diseases (chagas, dengue, and others) among the scavenger population.

Small-scale entrepreneurs – whether in water supply and sanitation or recycling operations – operate in a difficult environment. There are a number of popular and widespread misconceptions about who they are and how they operate. Barriers they experience from the formal sector include lack of recognition and communication with public authorities, a hostile attitude from police and formal city concessionaires or public sector utilities, lack of access to capital from banking and savings and loans systems and multinational donor agencies, lack of access to civil works contracts and concessions, and insecurity (lack of secure tenure) around the infrastructure they build (mostly on unrecognized slum areas, public lands and rights-of-way). Two main constraints are the lack of official recognition and – related to the first – the lack of access to financial resources. Both factors have prevented informal sector operators from building big infrastructure projects. Their operations remain small and dependent upon government or formal sector utilities investments for pumping stations, wells, holding tanks and other water storage facilities, water mains, and other large investments.

Informal sector entrepreneurs are seldom recognized as “private sector actors” by the authorities. Informal sector entrepreneurs in the recycling business are called “scavengers” in the conventional literature and have been subjected to police harassment everywhere. The Jakarta study found that scavengers were officially classified as “gelandangan” or tramps, beggars and people from the street, whose jobs are “of an improper nature” (CPIS 1992).

Many sources have reported on informal sector activities in other urban economic and environmental sectors, including transportation, housing, commerce and trade, and land development, but no matter how much is reported, there are good reasons to believe that this is only “the tip of the iceberg.”

No one knows this better than the Institute for Freedom and Democracy, an NGO based in Lima, Peru, which has been advocating on these issues for 30 years:

“The entrepreneurial ingenuity of the poor has created wealth on a vast scale – wealth that also constitutes by far the largest source of potential capital for development. These assets not only far exceed the holdings of the government, the local stock exchanges, and foreign direct investment; they are many times greater than all the aid from advanced nations and all the loans extended by the World Bank” (De Soto 2000).

SECTION THREE: URBAN ENVIRONMENT IN THE INTERNATIONAL AGENDA: GLOBAL SUMMITS AND INTERNATIONAL DEVELOPMENT AGENCIES

The first section of this paper described urban environmental governance problems in light of decentralization and privatization trends. The second section showed how the poor have coped with the service gaps created by the failure of governments and multinationals in reaching the poor in urban areas, and how informal sector providers have filled the service gap, turning this problem into a business opportunity. However, both service delivery models (formal and informal) have up sides and down sides and one model cannot substitute for the other. Both sectors maintain certain boundaries (although permeable at times as shown in the above discussion).

This section brings a third important area of focus and perspective into the urban environmental scenario, namely, international conferences and institutions. International development agencies provide information, advice, and financial resources to developing countries, and global summits provide the space where world leaders and experts debate and reach consensus on approaches to environmental and developmental issues, which in turn help orient resources for development assistance.

During the past decade, the international community has devoted billions of dollars to efforts aimed at alleviating poverty and improving environmental conditions around the world. The needs of developing countries have been widely recognized as a top priority – for social, economic and environmental reasons – within the global sustainable development agenda.

Globalization trends and the “shrinking of the globe” brought about by technological advances in telecommunications and transportation have led to a string of international summits on environment and development issues. These summits, including the resulting advances in international environmental law, have stimulated the exchange and cross-fertilization of ideas and helped create some consensus on many important challenges, trends, and transitions that are shaping the future. This section explores the ways in which the official global agenda and international institutions have addressed key urban environmental issues.

Global Summits

Rio Earth Summit/UNCED (1992) – Local Agenda 21

WRI's *Urban Environmental Challenges* (1994) argued that not enough attention was being given to urban environmental issues in the global agenda. During a number of preparatory meetings leading up to the UNCED Summit in 1992, mayors and other city representatives expressed worry over a seeming lack of interest by the press and UNCED organizers in urban environmental issues. Their concerns were finally incorporated into the official agenda. “Chapter 28 of Agenda 21 encourages localities to develop their own environmental action plans through consultation and consensus-building among civic, community and business organizations.”¹⁰

Many cities have responded to Agenda 21 and prepared local action plans. WRI's World Resources Report 1996-97 indicated that since 1992, approximately 1,200 local

¹⁰ Linares, Carlos, 1994. “Urban Environmental Challenges: New Directions for Technical Assistance to Cities in Developing Countries.” World Resources Institute, *WRI Issues in Development*. Washington, DC.

authorities in 33 countries had established Local Agenda 21 campaigns (WRI 1996). In 2003 – ten years later – WRI’s *Guide to World Resources 2002-2004* indicates that “more than 6,400 local governments in 113 countries have adopted or are in the process of formulating ‘Local Agenda 21 Plans’” (WRI 2002). World Resources figures come from worldwide surveys conducted by the International Council for Local Environmental Initiatives (ICLEI). Local Agenda 21 plans are largely self-motivated and self-financed, and show that much creative energy for the integration of environmental concerns is being generated at the local level.

Habitat II Conference (1996) – The Habitat Agenda

The importance of urban issues to national and global goals for sustainable development was acknowledged at the Habitat II Conference. The Heads of State or Government and the official delegations of countries, assembled at the United Nations Conference on Human Settlements (Habitat II) in Istanbul, Turkey, in June 1996, endorsed the universal goals of ensuring adequate shelter for all and making human settlements safer, healthier and more livable, equitable, sustainable and productive. The two major themes of the Conference were adequate shelter for all and sustainable human settlement development in an urbanizing world. The objectives, principles, and recommendations contained in the Habitat Agenda were adopted, and political support for implementation was pledged. Technical assistance programs were developed by international donor agencies such as UN-HABITAT and the World Bank as the result of these pledges for support.

The Habitat Agenda is a global call to action at all levels. It offers, within a framework of goals, principles and commitments, a positive vision of sustainable human settlements, where all have adequate shelter, a healthy and safe environment, basic services, and productive and freely chosen employment. Participants at the Conference expressed hope that the Habitat Agenda would guide all efforts to turn this vision into reality. The Habitat Agenda’s Global Plan of Action includes objectives, principles, and recommendations for adequate shelter, sustainable human settlements development, and for capacity-building, institutional development, and increased international cooperation and coordination.

The UN Millennium Summit (2000): The Millennium Declaration and the Millennium Development Goals

The Millennium Declaration was adopted at the 55th session of the UN General Assembly held at United Nations Headquarters, New York, in September 2000. Article No. 19 of the Millennium Declaration is the basis for the Millennium Development Goals (MDGs). The Millennium Declaration was adopted by the 189 members of the United Nations General Assembly. Later these were developed to include specific targets and indicators and endorsed at the World Summit for Sustainable Development (WSSD) in Johannesburg in 2002.

The MDGs are an ambitious agenda for reducing poverty and improving the lives of the poor. Following consultations among international agencies, including the World Bank Group, the Organization for Economic Cooperation and Development

(OECD), and the specialized agencies of the UN, the General Assembly recognized the MDGs as part of the road map for implementing the Millennium Declaration.

Millennium Development Goals (MDGs)

The MDGs include eight goals, with 18 targets and 48 indicators (for a convenient and complete listing of MDG goals, targets, and indicators, go to www.sima.worldbank.org/mdg/goals/htm). For each goal, one or more targets have been set, most for 2015, using 1990 as a benchmark. The link between improved water supply, safe sanitation, poverty and sustainability is recognized. The fact that MDGs include targets and indicators sets them apart from the more general statements of previous summits. For the purposes of this paper – focused on the urban environment – the most relevant Millennium Development goals, targets, and indicators are presented below.

Goal No. 7: “*Ensure environmental sustainability*” is the goal that primarily addresses water and sanitation issues in two targets:

- Target No. 10: “*By 2015, reduce by half the proportion of people without access to safe drinking water.*”
- Target No. 11: “*By 2020 achieve significant improvement in the lives of at least 100 million slum dwellers.*”

There is one indicator for Target No. 10

- “*The proportion of population with sustainable access to an improved water source.*”

There are two indicators for Target No. 11

- “*The proportion of people with access to improved sanitation.*”
- “*The proportion of people with access to secure tenure.*”

It is important to note that, originally, the MDGs did not include sanitation. This is consistent with the fact that policies and investments regarding sanitation have always lagged behind those regarding water supply. The sanitation component within the scope of the MDGs was added later at the World Summit for Sustainable Development (WSSD) in Johannesburg. The topic of sanitation was included in the Framework for Action on Water and Sanitation (WEHAB – Water, Environment, Health, Agriculture and Biodiversity), as Action Area 2: “*Halve the proportion of people without sustainable access to improved sanitation*” (United Nations 2002c).

The adoption of the Millennium Declaration, in September 2000, provided a significant boost to the preparatory process leading up to the “Monterrey Consensus” reached at the International Conference on Financing for Development a year and a half later.

International Conference on Financing for Development (2002) – The Monterrey Consensus

The International Conference on Financing for Development held in Monterrey, Mexico in March 2002 has been widely regarded as a turning point in the approach to development cooperation by the international community. It was the first UN-sponsored summit-level meeting to specifically address financing issues pertaining to global development.

This conference was attended by 50 heads of state, over 200 ministers of finance, foreign affairs, finance, trade and development cooperation and representatives of civil society organizations and business sector. The most important recurring issues in roundtable discussions were, among others: partnerships, coherence, monitoring progress, implementation, ownership, participation, transparency and accountability, private sector investment, enabling environments, and grants for capacity building to developing countries.

The Monterrey Consensus is a document – the main proceeding of the Conference – which embodies a “global response” to the challenges of financing for development. Participants stressed the need to increase official development assistance substantially to 0.7 percent of GDP¹¹, in particular for the least developed and other low-income countries. The Millennium Development Goals, especially the objective of halving world poverty by 2015, were the basis for much of the work at the Monterrey Conference (United Nations 2002).

¹¹ This increase in development aid was also a target set at Rio in 1992.

The World Summit for Sustainable Development, Johannesburg (2002)

The United Nations’ World Summit on Sustainable Development (WSSD) took place in Johannesburg, South Africa, August 26 to September 4, 2002. There were 21,000 registered participants (9,000 national delegates, including 104 heads of state; 8,000 representatives of Major Groups and agencies; and 4,000 journalists). The two documents adopted by national governments at the Summit are the *Johannesburg Declaration* and the *Plan of Implementation*.

In reality, Johannesburg failed to prepare a plan of implementation. The 77 page *Plan of Implementation* falls short of being a plan in technical terms. It is an extensive wish list of 153 objectives that includes all important matters. No priorities are discussed, no targets are set, no timetables are identified, and no commitments are made.

Despite the weaknesses, several points need to be noted, relevant to MDGs. Point No. 7 of the *Plan of Implementation*, endorses MDG No. 7: “We agree to halve, by the year 2015, the proportion of people who are unable to reach or to afford safe drinking water (as outlined in the Millennium Declaration) and the proportion of people who do not have access to basic sanitation.”

Objective No. 149 of the *Plan of Implementation* addresses the plight of cities with the following statement: “Enhance the role and capacity of local authorities as well as stakeholders in implementing Agenda 21 and the outcomes of the Summit . . . and encourage, in particular, partnerships among and between local authorities and other levels of government and stakeholders to advance sustainable development as called for in, *inter alia*, the Habitat Agenda.”¹²

¹² United Nations, *Plan of Implementation*, 2002. World Summit on Sustainable Development.

The Local Government Summit Meeting, Johannesburg

After a two-year preparatory process leading up to the WSSD, local governments held a parallel Summit – the Local Government Session – with an estimated 1,000 local government delegates attending from 69 countries. Through this preparatory process and their presence at the parallel meeting, local governments and their associations set out to evaluate their successes as laid out in Chapter 28 of Agenda 21 drafted ten years earlier.

Preparations leading up to the Local Government Session at Johannesburg included, among other activities, 13 regional consultation meetings and a review of local government action during the decade after Rio. Key findings: a) a significant movement toward sustainability at the local level; b) advances made through good governance and changes in the role of local governments; and c) partnerships developed with other spheres of government and major groups to accelerate the transition toward sustainability (ICLEI 2002).

The results of the review process are contained in a Local Government Dialogue Paper, prepared and submitted to the UN prior to the Summit. The main conclusion and recommendation of this paper is that “If national governments want to succeed in meeting their commitments under Agenda 21 they must give local governments adequate legislative and constitutional authority and access to resources to fulfill their role” (ICLEI 2002). At the Summit, local governments pushed for support from national governments and international organizations to strengthen local level institutions and build local capacities.

From local government’s perspective, the inclusion and recognition of local government’s role in official Summit texts was a success. However, many local leaders expressed their dissatisfaction with the inability of central governments at the Summit to come to agreement on specific, time-bound targets or to commit to concrete actions that could strengthen local governments, improve governance, and build capacity at the local level (ICLEI 2002).

World Water Summits

Six years ago, the First World Water Forum, held in Marrakech, Morocco, signaled a growing global awareness of water issues. In March of 2000, some 4,500 international water specialists, politicians, officials, and journalists from across the globe convened in The Hague, The Netherlands, for the Second World Water Forum. The Third World Water Forum was held in Kyoto, Osaka, and Shiga, Japan, from March 16-23, 2003. Some 24,000 participants from 182 countries attended the sessions. Some consider the Third World Water Forum the most important international water meeting ever held. At the Forum, 351 separate sessions on 38 interlocking themes dealing with water were convened. According to an official press release, the Third World Water Forum concluded with 100 new commitments made on water, especially for how to bring safe water and sanitation to the entire world (World Water Council 2003).

The Forum engaged major themes such as Water and Climate, Water Supply, Health and Sanitation, Water Pollution, Water and Energy, Water and Cities, and many others. Under these umbrella themes, discussions around specific topics,

special programs, and major groups were set up. An important outcome of each session was the drafting of a statement to the Ministerial Conference that highlighted critical water issues, drawing global attention to local, national, and regional perspectives on problems and best practices. Senior water management officials met on March 19 and 20, 2003, before the Dialogue between Participants and Ministers and the Ministerial Conference, to prepare the final draft of the Ministerial Declaration. On March 21, 2003, the Dialogue between Participants and Ministers was held to link Forum outcomes and the Ministerial Conference. Ministers in charge of water resources met on March 22 and 23, 2003, in Kyoto, to discuss solutions to global water issues.

At the conclusion of the Forum, the Organizing Committee issued a preliminary Forum Statement, in which the Committee agreed that they will be “solemnly committed to facing the global water challenges and to meeting the goals set forth at the Millennium Summit: cutting in half the proportion of poor people without secure access to water and sanitation by 2015.”

The Third World Water Forum included a session, held in Osaka on March 19 hosted by the Asian Development Bank (ADB), on Small Scale Independent Providers (SSIPs) in Asian cities. This session was held as part of the Water and Cities thematic agenda.

¹³ References to MDGs are made upon review of international development agencies, since it is evident that MDGs have made an impact in shaping the international agenda above and beyond any other global agreement made during the past decade.

¹⁴ Thirty-two representatives from Washington, D.C.-based agencies were interviewed between March 10 and March 21, 2003. Another thirty representatives from other agencies were contacted through email. Research was conducted visiting Web sites of all agencies and programs involved in urban environmental issues, including the Canadian International Development Agency (CIDA), Asian Development Bank (ADB), African Development Bank (AfDB), Swiss Agency for Development and Cooperation, and others such as DFID, GTZ, JICA, UN-HABITAT, UNDP, UNEP, OAS. Research included city level associations and other independent groups.

As a result of the discussions of this session, two recommendations are made in the Water and Cities Thematic Statement that are truly innovative. These recommendations link improved governance with the role of Small Scale Independent Water Providers. Recommendation 5: “Promote improved governance in urban service delivery, ensuring cost-efficiency, transparency and accountability through increased stakeholder participation and involvement of civil society and public-private partnerships. Recommendation 6: “Support initiatives and activities of community-based organizations, including women’s groups and small-scale independent water providers, in the provision and management of water and sanitation services for the urban poor.”

Global summits and agreements mentioned above have meaning to the extent that they are adopted and implemented through the initiatives and programs of international development agencies. These agencies have the resources and expertise to assist developing countries and cities in the implementation of agreements reached on these critical issues at summit meetings. This is the topic of the next section¹³.

International Development Agencies and Global Initiatives

A brief sampling of multilateral and bilateral agencies was conducted for this study¹⁴ in order to identify agendas, programs, and specific initiatives that address urban environmental issues and MDGs. The research covered only a small percentage of the more than 50 bilateral and a dozen multi-lateral national aid programs that operate globally and/or in different regions around the world. To provide an in-depth description of these agencies and initiatives is beyond the scope of this paper. The focus has been placed on the major international development agencies with headquarters in Washington, D.C. Personal interviews conducted were with representa-

tives of the United States Agency for International Development (USAID), the Inter-American Development Bank (IDB), and the World Bank.

The United States Agency for International Development (USAID) has been supporting local democratization and capacity building through environment and poverty programs and innovations in municipal finance. It has been a particularly important partner with the World Bank on housing and municipal policy reform programs. Its new urban strategy, issued in 1998, emphasizes the need for greater agency-wide awareness and for synthesizing activities aimed at improving the function of cities as engines of economic development. USAID has reduced its assistance to low-income housing and slum upgrading programs (Painter 2003), but has increased its support for health and decentralization of water supply and sanitation throughout Latin America, the Caribbean, and other regions.

USAID is currently focusing on increasing knowledge and launching initiatives on improving sanitation in developing countries through its Environmental Health Project (EHP), which evolved from the WASH program (reported as a key water and sanitation initiative for the urban environment in WRI's '94 publication). USAID is now undergoing an important transition to increase its assistance to the rural environment (Israel 2003).

“USAID is a founding member and annual contributor to the Cities Alliance. In addition to its regular annual contribution to the Cities Alliance Trust Fund, USAID has created a special fund known as the Community Water and Sanitation Facility, within the Cities Alliance, specifically to encourage partnerships between slum communities, their city governments, and the local private sector. These partnerships receive funding through the Cities Alliance for the construction of water and sanitation infrastructure within slum communities. In addition to USAID support for the Cities Alliance from Washington headquarters, USAID missions are implementing a wide variety of programs that target the needs of the urban poor and address the need for slum upgrading. Programs in India, Indonesia, South Africa, and Egypt are especially notable.” (Painter 2003)

The Inter-American Development Bank has been increasingly active in urban and urban-related sectoral assistance to cities of Latin America and the Caribbean. The IDB is refining its urban strategy to increase support for building the capacity required for decentralization. The final draft of IDB's most recent environmental strategy has been approved by the Bank's Review Committee and is now in the approval process by IDB's Board of Directors (Wilk 2003).

The IDB's Environmental Strategy focuses on three MDGs that directly relate to environmental considerations . . . “In the context of specific Country Strategies, the IDB will assess and consider ways to support countries in fulfilling their commitments regarding the MDGs.” It states that “references will be made as to how each country is advancing to meeting the MDGs in these three categories involving environmental indicators.” These include improving access to sources of safe and clean water, with specific targets to halve by 2015 the proportion of people without sustainable access to safe drinking water; improving living conditions in marginal areas,

with targets and indicators to improve the lives of slum dwellers; and improving sanitation and increasing access to secure tenure.

The IDB Strategy includes a statement on “Monitoring results and impacts in the context of Millennium Development Goals . . . In the context of developing Country Strategies, references will be made as to how each country is advancing to meeting the MDGs and the type of support that the Bank provides in this regard” (Wilk 2003).

The World Bank. In 1999, the World Bank’s Urban Department conducted a review of other major international agency’s urban strategies, including IDB, UNCHS, ADB, The Swiss Agency for Development and Cooperation, USAID, and CIDA (World Bank 2000). The conclusions of this review (on issues related to the urban environment) are that:

- sustainable urban development requires multidisciplinary and pluralist approaches;
- solutions must be based on community participation and empowerment and must strengthen local government in accordance with principle of subsidiarity;
- sector-specific assistance is necessary but not sufficient . . . more integrated approaches are needed, moving from infrastructure provision to capacity building; and
- developing the institutional frameworks and capacities requires longer term assistance.

“None of these urban strategies appears to propose a narrowly focused or highly selective role for the agencies. All favor “holistic” approaches and the agencies seek greater partnership and knowledge sharing as ways to furthering integrated assistance programs with their limited internal resources and capacities” (World Bank 2000).

Research revealed that the World Bank is the most prolific international development institution on the subject of urban environment. In terms of global knowledge, publications, capacity building, assistance and investments, no other international development agency has advanced as much as the World Bank on this theme¹⁵. Back in 1994, the Urban Management Program (a multi-donor initiative), housed within the Bank, was leading the way through its Urban Environmental Management Component. Now, there is a new multi-donor initiative – Cities Alliance – also housed within the World Bank that had an important role to play in shaping key MDGs focused on the urban environment. Cities Alliance is hard at work providing technical assistance and resources to cities in developing countries to address these issues. Cities Alliance is described at the end of this section.

The World Bank has organized an Urban Environment Thematic Group (albeit with a small staff) that has produced the first accounting of urban environmental investments.

¹⁵ This is true at the global scale. The Inter-American Development Bank invests three times more than the World Bank in Latin America and the Caribbean.

A recent – yet unpublished – study by the World Bank’s Urban Environment Thematic Group reveals a \$12 billion dollar investment in urban environment (lending and grants) and 279 projects in the active portfolio during the 1993-2002 period addressing urban environmental issues. This represents an annual investment in urban environment of US \$1.2 billion dollars. Ninety-two percent of total urban environment investments were provided by investments in water, urban development, environment, and energy (Bigio 2002).

The sectors that contribute to this level of investment in the urban environment are investments in:

- Water Supply and Sanitation, including water supply, sanitation, sewers, waste water treatment, storm water, and water quality;
- Urban Development, including water, sanitation, drainage, sewers, solid waste and disaster management;
- Environment, including waste management and re-use, ODS phase-out, industrial effluent treatment and GHG (Greenhouse Gas) reduction;
- Energy, including energy efficiency, district heating, GHG reduction, and renewable energy.

Water supply and sanitation is a priority area of investment for the World Bank. This sector accounts for the largest share of total investment (47%) and of projects (31%). Institutional strengthening is included as an urban environmental objective in 180 out of 279 projects (65%) (Bigio 2002).

The World Bank has produced and published two new interrelated strategies that address urban environmental issues. The Bank’s environmental strategy: *Making Sustainable Commitments* and the Bank’s urban and local government strategy *Cities in Transition* are both products of a coordinated cross-sectoral, multi-year effort that involved many key urban and environmental experts inside and outside the institution.

The Bank’s environmental strategy recognizes that environmental problems are inherently cross-sectoral. The need to integrate work on environmental problems closely with sectoral work is a key theme of this strategy. The Strategy stresses improvements in three areas: strengthening analytical and advisory activities; addressing environmental priorities through project and program design, which includes supporting capacity development; and improving the safeguard system¹⁶ to insure increased attention to results on the ground from Bank operations (World Bank 2001).

The Bank’s environmental agenda has evolved from a focus on safeguards in the ‘70s and ‘80s to a more comprehensive approach to the integration of environmental considerations in economic development. Its main focus – and perhaps the most important one – is the emphasis that it places on “mainstreaming environment into development.” Much progress on the ground is currently underway at the Bank leading to the introduction of environment into regional and sectoral development policies, plans, and programs.

¹⁶ The safeguard system provides minimum requirements that all Bank-supported operations must meet to do no harm to the environment.

Despite progress being made, there is still much more that needs to be done. The World Bank recognizes that environmental aspects have not been given the attention they deserve in Country Assistance Strategies (CASs), which form the central instrument for the Bank's development assistance dialogue. Many CASs treat environment as a distinct sector – with separate funding, objectives, activities – rather than a cross-sectoral theme to be introduced at the outset.

The Bank's environmental strategy includes an Annex dedicated to urban environmental priorities: “. . . meeting the urban environmental challenge requires a focus on two basic areas: a) provision of basic environmental services to the poor in a way that most effectively protects health, including water supply, sanitation, solid waste collection and disposal, education, improved municipal and industrial waste disposal and reduced indoor air pollution; b) implementation of integrated approaches to urban air quality management and watershed and aquifer management” (World Bank 2001).

The World Bank's Urban and Local Government Strategy recognizes a transition from supply-driven projects in the '70s, '80s and '90s, to strengthening urban institutions today – a focus on improving “urban governance” in developing countries.

The Bank has adopted a set of Comprehensive Development Framework (CDF) Principles which emphasize a long-term, holistic, client-focused and participatory approach to development assistance. It includes strengthening country ownership, partnerships, and results-oriented development outcomes. “This approach in practice requires a transition from donor-led development assistance strategies to the development of a country strategy led by the country itself, with vigorous participation by civil society and the private sector and the support of bilateral and multilateral organizations” (World Bank 2000).

Four main activities are proposed for emphasis in the renewed program of World Bank urban support: a) formulating national urban strategies; b) supporting city development strategies; c) scaling up services to the poor, including upgrading low-income neighborhoods; and d) expanding assistance for capacity building (World Bank 2000).

On the issue of capacity building, the World Bank Institute (WBI) is breaking new ground in developing countries. The WBI currently delivers nearly 600 learning programs and reaches over 48,000 participants in 150 countries through collaboration with more than 160 partner institutions¹⁷. Institutional capacity-building (to promote good governance) is considered today the key element of development assistance. The Economic Development Institute (EDI) was transformed into the WBI because the problem of development is more than just economics. The World Bank Institute was created to help share the World Bank's expertise and that of its member countries with decision-makers throughout the developing world.

The United Nations Center for Human Settlements (UN-HABITAT). In addition to the three Washington-based agencies described above, it is important to note the specific urban environmental focus provided by the United Nations Center for Human Settlements (UN-HABITAT) programs. Through its Sustainable Cities Program, sup-

¹⁷ The UNDP-sponsored Public-Private Partnerships for the Urban Environment (PPPUE) Program is also providing leadership in knowledge sharing and distance learning in developing countries.

port for Local Agenda 21, action plans (with UNEP), Best Practices Database, and Urban Indicators Program, UNCHS/UN-HABITAT has created valuable precedents and tools for participatory strategic planning by cities.

Its new strategy commits it to undertaking high profile advocacy for cities and for the urban poor and proposes two global campaigns – one for secure tenure (in line with MDGs) and the other for improved urban governance. The Urban Management Program supported by UNCHS and UNDP has helped build regional urban management capacities in these areas.

Cities Alliance is a global coalition of cities and their development partners committed to improving the living conditions of the urban poor by implementing a two-fold approach: city development strategies (CDS) and city-wide and nation-wide slum upgrading programs (Cities Alliance 2001).

In creating Cities Alliance, multilateral and bilateral agencies joined forces with development banks and associations of local authorities to achieve a greater impact through cooperation in addressing urban development and environment challenges. Cities Alliance is not a stand-alone program in that it does not have a separate implementation capacity, but rather works through the capacity of City's Alliance members and their programs¹⁸.

City Development Strategies are defined by the cities themselves, but the process is expected to involve three broad phases: a) framing the process phase; b) analysis; and c) building consensus. By engaging potential investment partners from the outset, the process encourages development of innovative investments to expand the levels of resources reaching local authorities and the urban poor.

Cities Alliance-supported CDS processes illustrate several key lessons. First, to be effective, participants need to see implementation, rather than the development of CDS, as their primary goal. Second, implementation should not be limited to new investments. It needs to include the adoption of new policies and the enhanced capacity of citizens and local authorities to make informed choices and achieve greater equity in sharing costs and benefits.

Since its inception, the Alliance has mobilized US \$50 million to date, with funding targets of US \$25 million per year over the next three years in accordance with the *Cities Without Slums* Action Plan. It supported the establishment of a Community-Led Infrastructure Finance Facility (CLIFF). The Alliance is now mobilizing for the goal of US \$115 million in grant support (Cities Alliance 2001).

Cities Alliance's work on slum upgrading and CDS are also in close alignment with the two main objectives of Habitat II and the Habitat Agenda: "Shelter for All" and "Sustainable Development in an Urbanizing World" (Hildebrand 2003).

The Citywide Slum Upgrading component of Cities Alliance has already achieved significant results. The adoption of *improved sanitation and secure tenure* as the two indicators to measure progress in MDG Target No.11 (achieving improvements in the lives of slum dwellers) has greatly empowered Alliance partners worldwide who are already striving to meet this target (Cities Alliance 2002).

¹⁸ The Partnership umbrella that created the Cities Alliance consists of The World Bank and the U.N. Center for Human Settlements (UNCHS/Habitat). Since its inception in 1999, The Alliance includes the world's major global organizations of local authorities and the governments of Canada, France, Germany, Italy, Japan, Netherlands, Norway, Sweden, UK, and USA. The Asian Development Bank joined the Cities Alliance in 2002; and UNEP joined in 2003.

The commitment to provide secure tenure directly responds to a key causal factor of poverty, social exclusion and the continued proliferation of slums all over the world. The provision of secure tenure enables the poor to build their assets and income, and is fundamental to distributing the benefits of economic growth” (Cities Alliance 2002).

Secure tenure brings about enormous and unsuspected urban investments by the poor. The author conducted research on this subject in low-income housing projects funded by the World Bank in El Salvador, between 1975 and 1978. Field research and interviews revealed that the poor made substantial financial investments in improving their lot due to secure tenure. Sites and Services housing projects delivered initial built-up areas of between 12 to 30 square meters. In a period of two years, built-up areas had doubled in 40 percent of all cases. The investment was considerable and surprisingly high for people who were at the bottom of the income scale when they moved into their new housing projects. Reduced infrastructure and construction standards were also the key to affordability and resource mobilization among the poor (Linares 1978).

The Urban Management Program (UMP) is another major global urban environmental initiative with many years of experience. The program continues today housed within UN-HABITAT in Nairobi. The UMP was created in 1986 as an UNDP/UNCHS/World Bank initiative. It focused on the development of urban management frameworks and tools for land management, municipal finance and administration, and infrastructure and the urban environment. Phase 2 (1992-1996) used the frameworks and lessons learned to build capacity at the regional level, using mechanisms such as regional panels of experts and workshops and consultations to introduce new urban development policies and tools.

Following the Habitat II Conference in Istanbul in 1996, Phase 3 (1997-2001) was initiated. It built on and re-focused the work of the first two phases to the local level. Phase 3 had three themes: urban poverty alleviation, urban environmental sustainability, and participatory urban governance. One hundred and twenty city consultations were undertaken during Phase 3. The underlying premise of a UMP City Consultation is that poor city administration is often the result of weak rapport with civil society. The UMP City Consultation approach was designed to bridge this gap so that city administration and key stakeholders in the civil society could participate in decision-making.

Phase 4 (2001-2006) is currently underway. This phase brings a stronger focus on pro-poor urban governance and knowledge management activities that have direct impact on the urban poor. It is focused on synthesizing the experiences of the first three phases and further institutionalizing the participatory consultation process. During this phase, UMP has joined in the implementation of City Development Strategies (CDSs). UMP's experience with consultations provides the following three key insights: a) strong leadership is an essential part of success; b) a strong sense of ownership in the process is required – it is critical to ensure that ownership is pro-

moted at various levels of government and civil society; and c) capacity-building at both the local and higher levels of government and the capacity of civil society organizations needs to be strengthened (UMP 2003). These lessons learned suggest that weak institutional performance (poor governance) continues to hamper efforts to reach the poor in urban areas and limits sustainable outcomes on the ground.

International Agenda Overview: Summary and Conclusions

Global summits and international agency initiatives were briefly reviewed here in order to explore the ways in which the official international agenda has addressed urban environmental issues, principally relating to the challenges posed by the provision of environmental services to the urban poor. Four main conclusions are presented below.

Conclusion 1: *The urban environment theme has not yet been fully “mainstreamed” into the global-urban or global-environmental agendas.* The global agenda’s anti-urban bias persists (as discussed in WRI’s 1994 *Urban Environmental Challenges* paper). The Habitat Agenda is the only global agenda that explicitly and directly addresses urban environmental issues. However, it does so in the broad context of urban development planning and management, and more specifically in the fields of housing and infrastructure service provision. The global agenda provides evidence of tensions that exist between rural and urban environmental priorities (Hardoy *et al.* 2001). Even though the Rio Earth Summit ten years ago proved to be more relevant to sustainable development efforts than Johannesburg, neither Summit gave adequate attention to urban environmental issues.

According to Joan Clos, President, World Association of Cities and Local Authorities Coordination: “. . . Most urban areas in Africa, and throughout Asia, already struggling to manage their existing development challenges, are going to double in size within the next two decades. Yet, while most directly affected by the negative consequences of globalization, local governments have traditionally been marginalized in the international developmental debate” (Cities Alliance 2001).

Finally, with regard to the urban environment theme, no international development agency has produced an urban environment strategy per se, nor created an urban environment department within its organizational structure. Most agencies have prepared independent urban and/or environmental strategies that incorporate urban environmental components and specific references to addressing MDGs.

Conclusion 2: *In terms of having an explicit international agenda, MDGs and targets Nos. 10 and No. 11 are the most powerful global mandate today for action on the urban environment.* MDGs do not explicitly indicate an urban focus. It is evident that MDGs in water and sanitation and secure tenure are as important to cities as they are to rural areas. However, at the Millennium Summit, the “Cities Without Slums” initiative¹⁹ was endorsed as a new international development target (Target No. 11: “By 2020 achieve significant improvement in the lives of at least 100 million slum dwellers”) (Cities Alliance 2001).

¹⁹ The initiative was launched by President Nelson Mandela and World Bank President James Wolfensohn at the inaugural meeting of the Cities Alliance’s Consultative Group in Berlin in December 1999.

Developing countries have had a positive impact at different summit meetings by introducing a human poverty focus into the global environmental agenda. There is growing worldwide consensus that access to water and water services is essential to development and poverty alleviation. All major international poverty reduction agreements, summits, and declarations of the past couple of years recognize the link between poverty alleviation and the importance of access to water and sanitation for sustainable development. Water evolved as a major topic at the Monterrey Conference, and according to a GlobeScan Survey undertaken by Environics (a public opinion firm) more than 80 percent of the decision-makers who participated in the 2002 WSSD in Johannesburg identified water as a key global issue with utmost priority (World Bank 2003).

Given commitments and consensus reached at various summits meetings during the past decade, there is no doubt MDGs are the most relevant framework for development today. The strong political process that backs the MDGs raises hopes that the water and sanitation sector will increasingly receive the political attention it has lacked in the past few decades.

In contrast to other international meetings, the Millennium Summit reached farther than any other. By stating quantifiable commitments with benchmarks, time-frames, and specific targets. The MDGs represent the most important commitment to action for poverty alleviation (Goal No. 1), human health (Goal No. 4), and urban environmental services (Targets No. 10 and 11 of Goal No. 7). Many years and many meetings were needed to build consensus around these basic goals, targets, and indicators. In addition, given the limited results at Johannesburg, the MDGs should be considered a landmark achievement and the touchstone for future worldwide collaborative action in the urban environment field.

Conclusion 3: There is overwhelming agreement on the need to build and strengthen capacity in developing countries. Capacity-building is the most recurring theme in international development agencies plans, strategies, and statements. Investments in capacity-building today are higher than in the past. Urban strategies reviewed here conclude that: a) sustainable urban development requires multidisciplinary and pluralist approaches; b) solutions must be based on community participation and empowerment and must strengthen local government; c) sector-specific assistance is necessary but not sufficient – more integrated approaches are needed, moving from infrastructure provision to capacity-building; and d) developing the institutional frameworks and capacities requires longer term assistance (World Bank 2000).

Within this capacity-building framework, Cities Alliance's global initiative provides a good model and a strong foundation for addressing environmental challenges at the local level and increasing the chances for meeting MDGs. It provides a model for coalitions between cities and development agencies that could provide lessons for improved donor coordination. Cities Alliance may signal the beginning of a new type of cooperation and resource pooling that will be needed at a large scale to meet the challenge of MDGs.

Cities Alliance (as well as other networks and partnerships promoted by international development agencies²⁰), provides a model for the complicated networks that will be required from city governments to reach down into, and support, informal sector operations and services that are able to reach the poor.

Conclusion 4: The review of the international agenda reveals two great challenges for international development agencies and their development partners (governments, private sector and other agencies): first, how to work together in a concerted and collaborative fashion, to move forward toward the integration of environmental and developmental concerns in the context of urban poverty alleviation and environmental service improvements, as per MDGs; and second, how international development agencies and their development partners can work together to provide support to initiatives and activities of Small Scale Independent Providers in water and sanitation. Meeting MDG challenges and Third World Water Forum recommendations will require a transition toward more inclusive development processes. This is the topic of the next section.

²⁰ Other promising initiatives and programs – not described in this paper, but reviewed as part of research activity – include, among others: Global Water Partnership; Business Partners for Development; UNCHS/UNEP's Water for African Cities Program; and UN-HABITAT/ADB/ Government of Netherlands Water for Asian Cities Program.

SECTION FOUR: LOOKING AHEAD – EFFORTS TO MEET MDGs IN URBAN AREAS

This final section discusses the efforts needed to meet Millennium Development Goals (MDGs) in urban areas. It argues that the major thrust should be placed on water supply and sanitation, and discusses the most important constraints for meeting MDG targets according to traditional (formal sector) approaches. It reviews stakeholders priorities and discusses constraints due to the ways in which access to water supply and sanitation is measured, reported, and monitored. It reviews financial challenges estimated to meet MDG targets and explores the limitations being experienced by governments and multinational corporations in reaching the poor. It points to evidence that suggests that multinationals and governments acting alone are ill equipped to serve the needs of the poor in cities of developing countries.

This section suggests “Another Path” leading to the integration and optimization of Small Scale Independent Providers (SSIPs, or informal sector entrepreneurs) that are already providing affordable water and sanitation services to the poor in many cities in the developing world. It proposes to unleash SSIPs’ potential and to link formal and informal sector capacities and resources to benefit the poor with affordable water and sanitation solutions to meet MDGs. The proposed solution suggests that neither sector acting alone will be able to meet MDGs or alleviate poverty. A coordinated approach, where each partner does what it can do best, has a better chance of success.

Finally, the section argues that barriers to integration and optimization need to be removed. The steps described include actions to: a) understand and recognize SSIPs and improve communication with government authorities; b) formulate flexible and inclusive policies that reduce bureaucratic procedures and include efficient and appropriate standards and regulations; c) provide secure tenure arrangements for land and infrastructure; and d) provide access to financial resources.

The Major Thrust of MDGs in Urban Areas

“The Millennium Summit provides us with clear goals to set our priorities. Improving the living conditions of 100 million people living in slums by 2020 will remain a distant dream if we are unable to help them access safe water and adequate sanitation.”

Anna Tibaijuka, Executive Director, UN-HABITAT.

MDGs carry much political weight. Water and sanitation has been endorsed as a priority sector by every state or government at the most important summit meetings of the past decade. In the midst of an already full international development agenda, meeting MDGs is a daunting challenge for developing countries, cities, and the international community today. However, meeting MDGs in water and sanitation offers an opportunity to address interrelated social, economic, health, and environmental problems and to have a positive impact on poverty alleviation. Lack of access to clean water and lack of options for sanitation only leads to more poverty and more environmental degradation.

Questions related to meeting the water and sanitation target in urban areas are: Have MDGs been adopted by international development agencies and their government partners to the same degree? Are their priorities “in sync”? If there is agreement on this priority, how best to meet this challenge?

Are Stakeholder Priorities “In Sync”?

An initiative focusing on “MDG awareness” has already been launched by the UN. It is a broad initiative focused on all MDGs. At the time of this writing, the United Nations was seeking to fill the position of Director of the Millennium Campaign – “a special initiative aimed at building awareness of the Millennium Development Goals (MDGs) and creating coalitions for action across developed and developing countries.” The job description states that the Millennium Campaign will be geared toward a wide range of groups, from civil society organizations to legislatures. “In developed countries the focus will be primarily on collaborating with civil society organizations to raise awareness about the MDGs. In developing countries, the Director will be responsible for building partnerships with and assisting organizations that can launch national campaigns to influence policies, programs and resource allocations” (UN 2003). The Millennium Campaign will certainly contribute to synchronizing and harmonizing priorities and generating better results on the ground. To be successful, the Campaign will need adequate funding.

Formal Sector Constraints and Opportunities

Past performance suggests that meeting MDGs will be difficult. The United Nations launched a Drinking Water and Sanitation Decade (1981-1990) with specific goals to alleviate the lack of water and sanitation for millions of people around the world, but these goals were not met. The Decade began with 180 million urban dwellers unserved by a safe water supply and at the end of the decade, 254 million urban dwellers were still unserved, 74 million more urbanites than at the beginning of the decade. In sanitation, the numbers of people not covered went from 308 to 400 million in urban areas (WASH 1991).

Three key constraints being faced by the formal sector related to meeting MDGs have been identified. The first constraint relates to the challenge of statistical data – how “access” to water, or coverage, is monitored, reported, and measured. The second constraint is money (investment estimates to meet water and sanitation targets from several sources); and the third constraint is the limits posed by the outcomes of sectoral reform and privatization in developing countries. Each of these is described below.

Access to Water: What is the Status of the Data? How is it Measured?

“Despite significant investments and substantial aid allocated to the water and sanitation sector, coverage rates remain unsatisfactory and the MDGs seem all the more daunting: Nearly 1 billion city dwellers are to be supplied with drinking water by 2015” (WHO 2000).

- **Water supply and sanitation coverage**

The most commonly used indicator for measuring and reporting access to water supply and sanitation (sewerage) services is the percentage of the population served by the official (formal sector) piped system. The population served in absolute or relative numbers is commonly known and reported as *water and sanitation coverage*. This usually means the number of households connected to, or with service from, the official piped water delivery system. Those outside the system make up the coverage *deficit*. Those who make up the deficit obtain water through their own means and/or are being served through other unofficial, officially unrecognized, or unregulated means.

- **Accurate baseline conditions are necessary to measure progress**

“One billion” is such a big number that statistical differences in data reported of, say, 10 million would only represent a one percent variation. By the same token, when the needs baseline is reported as *1 billion people* all over the world, achieving a significant improvement in the lives of 100 million slum dwellers only represents an achievement of 10 percent of the total need for water supply (is ten percent a significant or an insignificant amount?). A commonly agreed breakdown of the situation is needed and it does not exist today.

There is no international consensus on a baseline that shows water supply and sanitation needs by location in every city, or country, or region anywhere – such a baseline has not been prepared. It is difficult to report progress at a global scale. Preparing a workable geographical breakdown would be an important initial task. The lack of homogeneous definitions contributes to the difficulties of this task.

- **Statistical data reporting shows inconsistencies from country to country and from agency to agency**

There are persistent and generalized problems with water and sanitation coverage data. Coverage data is incomplete and inconsistent. Different sources report different coverage data for the same city, country, or region. Official statistical data may or may not include communal standpipes or wells as adequate access to clean water and may or may not include pit latrines (or other non-waterborne excreta disposal systems) as adequate access to sanitation.

- **Universally agreed definitions are needed for common baselines and for reporting progress**

What gets measured in terms of urban and rural coverage varies from country to country and from agency to agency. For instance, there is no universal definition of what an urban area is or what a city is (Hardoy *et al.* 2001). Each country has its own definition. For instance, in 1990, the World Bank reported that China’s urban population jumped from 18 to 50 percent between 1965 and 1988. This “explosive” urban growth is largely explained by the Chinese government’s adoption of a new definition of “urban” in 1986 which included many agrarian communities. Since 1986, China has again changed the definition and in 1990 China’s total population was considered 26 percent urban (WRI 1996).

One of the main problems reporting progress in serving the needs of the poor – which is the key to meeting MDGs – is that official statistics do not disaggregate data for slum areas or informal settlements where the majority of the poor population actually lives.

“The poor often do not show up on consumer databases or even in survey and census information” (BNWP 2002b).

Household surveys provide a better picture at the local level, but household surveys are limited, they do not coincide with the years that official censuses are conducted, and are not applied under universally accepted standards of measurement for access to water and sanitation services. Discrepancies between household surveys and census data are very common in developing countries, which makes comparisons between countries more difficult.

The World Health Organization (WHO) sets standards that define access. For instance, a standpipe one kilometer away from a place of residence is considered “access” according to the WHO. This is an internationally accepted definition. However, many believe that this standard is an inadequate measure of access in squatter settlements due to higher population densities in these settlements than those found in rural areas, evidenced by the long lines of women and children waiting their turn at the water tap in slum areas around the world. Official statistics do not include service quality, frequency of service, or water quality indicators in cities or service coverage areas. The terms “*potable*” or “*safe*” or “*clean*” or “*adequate*” or “*improved*” are used by different agencies. The use of these different terms demonstrates the lack of common definitions. These are obstacles that will make progress in meeting MDGs very difficult to measure at a global scale. Reports to be made under a status quo scenario will probably be best *guesstimates* based on generalizations and some specific examples of progress in some cities. Movement up or down depends on having a horizontal axis, namely, a baseline.

• **Over-reporting and under-reporting**

In addition to the above, other water and sanitation measurement and monitoring concerns are related to the validity of the numbers reported. Several factors contribute to uncertainty: a) political pressure to inflate (or deflate) the results, depending on expectations; b) inherent difficulties in reaching consensus on definitions and standards; c) persistent methodological problems that include hardware (equipment and resources) and software (knowledge and tools); d) lack of sanitation monitoring; and e) lack of economic and financial resources for measurement and monitoring, which is a costly process.

“No single international organization has a clear and undisputed role for monitoring water . . . none has the key mandate of being a global ‘control tower’ systematically collecting, evaluating and publishing data on the performance of the various parties.”

World Water Council, 2002

• Better indicators and common indicators

There is a promising effort currently underway among international donor agencies and WHO to define better water and sanitation coverage indicators (Janssens 2003). If international agreement is achieved on sets of standard indicators, it will be a major breakthrough that will allow the international community to better understand progress toward meeting MDGs.

A recent study by Rosenthal (2002) in Manila reports an important breakthrough in the way coverage is being measured and reported that includes flexibility and a more inclusive approach that takes into account alternative water and sanitation providers. This is an unprecedented approach that is written into concessionaire contracts.

Through the use of the formula below, concessionaires in Manila, Philippines, take into account other providers to achieve their coverage targets. Contracts calculate “coverage” using the following formula (Rosenthal 2002):

$$\text{Coverage} = \frac{\text{Number of individuals served by the concessionaire}}{\text{Total population, less the number obtaining water from an alternative legal source}}$$

Universal use of this alternative formula would reveal different outcomes for coverage figures around the world. The only word that needs to be changed for universal application of this formula would be for “concessionaire” to be replaced by the words “public utility,” “municipality,” or any other formal sector delivery model. The identification and common definition of what constitutes an alternative legal source of water may be difficult. In practical terms it indicates the need to define or redefine what legal sources are and to track official and unofficial water supply and sanitation service providers.

The introduction of innovative ideas always and inevitably requires a change of mind in decision-makers and changes are always difficult (not impossible) to introduce. As a final note, it is important to recognize that resources going into measurement and reporting should not impede the amount of progress actually being made in meeting targets.

Investment Estimates

Financing to meet MDGs is probably the most important challenge that governments and international development agencies will have to face over the next 15 to 20 years. Experts believe that to reach these ambitious targets, massive amounts of international aid, public sector budgetary allocations, and private sector investment will be necessary.

Investment estimates vary from one agency to another. For the past ten years, official development aid – from developed to developing countries – has flowed at a rate of about US \$60 billion per year, well below the US \$125 billion target set at the 1992 Earth Summit (Gentry 2000).

A report by the World Panel on Financing Water Infrastructure, known as the “Camdessus Report,” notes that many published estimates of official development

assistance (ODA) investment in water are on the order of about \$15 billion a year (World Water Council 2002). But the report argues that these figures include amounts invested in big infrastructure projects like water dams. In reality, investment amounts in potable water supply and sanitation services are only on the order of about 3 billion dollars a year²¹.

²¹ Three billion dollars is an amount equivalent to the cost of three medium-sized satellites.

Not only is this a small amount compared to what is needed to meet a basic human need, but also, for the past ten years, official figures indicate that foreign aid has decreased rather than increased. The Camdessus report indicates that ODA has been effectively declining in recent years not only because of a general decline in international aid, but also because there has been a decline in financial assistance for large dams and other big infrastructure projects such as water storage facilities (World Water Council 2002).

The World Bank estimates that annual investments to meet the MDG target of halving the population without access to water and sanitation by 2015 would require annual investments of approximately US \$30 billion (World Bank 2002). Other estimates from the Water Supply and Sanitation Collaborative Council and the Global Water Partnership are much higher – up to US \$60 billion, double the amount estimated by the World Bank.

Total funding requirements for the whole water and sanitation sector are estimated by three sources as ranging from approximately US \$110 billion to US \$180 billion every year. The African Ministerial Conference on Water recently announced that Africa requires US \$10 billion a year to meet urgent water needs and an overall investment of US \$20 billion a year for the development of water infrastructure in order to meet the MDGs by 2015 (UN 2002a).

It is important to note that these investment estimates are not about external financial aid (ODA) only. According to the World Bank, national and local governments should be responsible for close to 75% of financing needs, the private sector for about 11%, with the remaining 14% financed by external support agencies (World Bank 2002).

A sensitive issue regarding funding and investments arises at international conferences. The author's experience is that government representatives at these international meetings attend with the expectation of obtaining additional support from international financial agencies, and international donors who attend are very careful not to raise false expectations in terms of the amount of funds they can pledge to developing countries. This tension may lead to both over-reporting and under-reporting of needs and lack of consensus on investment amounts.

The Camdessus Report concludes that there is clearly going to be a large gap between current financial flows and investment estimates required to meet MDG targets for 2015 and 2020. "The annual funds going into the sector as a whole would need to roughly double . . . This is the benchmark to keep in mind" (World Water Council 2002).

This statement supports the argument that all available resources – international and local, formal and informal – will need to be included and optimized for the MDGs to be met.

• A Common Baseline

Different investment estimates point to the lack of a common baseline for investment needs. An important next step in the process of meeting MDGs will be to prepare a common needs and investments baseline. This should include a formal breakdown and accounting of water supply and sanitation coverage in different cities and regions, including formal and informal sector providers. The data from World Resources reports are a good starting point. The exercise should show an accurate and homogeneous breakdown by location, city, and country where the MDGs apply (with a focus on inner city and peri-urban slum areas, illegal subdivisions, and other marginal areas where the poor live). This will have to be an exercise where the most knowledgeable and trustworthy sources of information and expertise can come together and reach consensus, including experts from international development agencies²².

²² Including, but not limited to, the UN and the UN system organizations, WHO, World Bank, IDB, ADB, AfDB, USAID, GTZ, CIDA, and other bilateral agencies.

• Subsidies

Increasing the supply of potable water and sanitation in urban areas is a challenge to developing countries at the national, state/provincial, and city levels. New and more creative national urban and financial policies for the water sector will be necessary for the comprehensive approach needed to meet MDG challenges.

Common wisdom now widely recognizes that subsidies to the water sector have benefited the middle and upper class but have not contributed significantly to alleviating poverty. Targeted and transparent subsidies will be necessary to provide for sanitary infrastructure needed to reach the poorest neighborhoods in many cities (World Water Council 2002).

National Sovereign Guarantees

According to World Bank staff and authors such as Campbell, Hardoy, and Satterthwaite, the need for sovereign national guarantees is a constraint to reaching the poor. Experts recognize the influence that many bilateral agencies – which do not require sovereign national guarantees – have had in supporting initiatives at the local level. They argue that many international development agencies and other donors that are having an impact in reaching the poor do not require sovereign guarantees. Multilaterals, such as the European Bank for Reconstruction and Development and the European Union, have more flexibility in the forms of financing they can offer and the beneficiaries or partners they can work with, including community-based organizations (CBOs) and NGOs that can reach the poor in marginal areas and squatter settlements (Hardoy *et al.* 2001).

The experience of European donors demonstrates that central government control of external funding can be an obstacle to addressing urban environmental problems such as lack of access to potable water and sanitation. Campbell calls these donors “bilateral democracy builders.” Among the most influential are Spain, France, Canada, Sweden, Holland, and the United States through implementation of USAID’s strategic objectives that include promoting democratic governance (Campbell 2003).

Germany's GTZ has over 40 years of experience providing support to NGOs and local community development initiatives in Bolivia, Ecuador, Peru, Paraguay, El Salvador and the rest of Central America, among many other countries. Private foundations and international NGOs from the U.S., Holland, Germany and many other countries have all launched successful programs addressing issues of poverty eradication and local empowerment.

Work is currently ongoing at the World Bank to forge sub-national guarantees in order to increase the ease and effectiveness of interventions for allocating resources and funding at the local level. This will be an important breakthrough when it happens.

Finding ways to overcome the need for sovereign national guarantees will open the door for institutions like the World Bank to increase support for bottom-up solutions to the water and sanitation crisis and to contribute to the integration of the informal sector's entrepreneurial capacities and resources to meet MDGs.

The Camdessus Report includes a discussion of obstacles and opportunities for sub-sovereign entities. It highlights the "opaque/unclear" fiscal relationships between central governments and its sub-sovereigns and the need to create incentives for good governance and disincentives for bad, among other issues (World Water Council 2002).

Sectoral Reform and Privatization: Constraints to Reaching the Poor

The first section discussed privatization constraints to reaching the poor with water and sanitation services. This formal sector response to the gap in government services mushroomed during the past decade and has now recently stalled. The private sector approach is now being reviewed to see how it best fits into the realities, constraints, and opportunities of cities in developing countries.

No one really knows for sure whether the current retrenchment of multinational plans for investment in water systems in developing countries is a short term situation that will only last a couple of years, or whether it marks the end of the privatization trend involving multinationals.

This situation may mark an important transition to other forms of participation based on new understandings of what private sector participation really means at the local level.

Increased foreign private investment may not be the panacea that the international community hoped for a decade ago. Foreign private investment in developing countries is beneficial for many sectoral development purposes, but it should not be expected that it will alleviate poverty. Important governmental inputs are necessary to bring about improvements in the living conditions of slum dwellers. Jobs and employment generation investments are certainly a priority for developing countries, but improving the living conditions of the poor requires providing affordable environmental services and creating an enabling environment for the poor to come out of poverty.

One of the key ingredients of the success of the capitalist system in the United States is home ownership, which is supported by a sound and efficient system of property registration. The U.S. experience proves that “secure tenure” is both one of the most powerful and one of the quietest engines of national development. Secure tenure or tenure regularization programs are strictly a governmental responsibility!

It is clear that governments and multinational corporations acting alone are ill prepared to meet the challenges posed by MDGs. On the other hand, there is increasing recognition of the fact that informal sector entrepreneurs (“the other private sector”) offer resources and experience that may be helpful in meeting these targets. Local private investment needs to be harnessed in order to meet MDGs.

“Despite sector modernization and reform, the urban poor are still without adequate services. This has raised interest in small scale and informal sector providers which have the potential to deliver improved services to low-income areas at comparatively low investment costs” (Snell 1998).

If there are no breakthroughs in the ways in which additional resources can be redirected to alleviate poverty and related deficits in water and sanitation within the next 15 years, it is very likely there will be further environmental damage, and hundreds of millions of people without access to safe water and sanitation will face ongoing health risks. Service coverage deficits – that accumulate annually with population growth – could trigger more social unrest. Given the “water war” potential in many places, it is likely the process of unrest may have already started. This paper offers another way.

An Alternative Path: Optimize and Integrate Small-Scale Independent Providers

The MDGs reflect consensus on a global agenda for poverty alleviation. The global agenda for cities may be summed up as *increased access to water and sanitation in slum areas*.²³ The MDG agenda is about poverty alleviation and environmental improvement through the supply of water and sanitation services. In order to halve the number of households without access to water and sanitation in marginal urban areas, national and local governments, the private sector, and international development agencies²⁴ need to recognize and integrate the knowledge and resources of the informal sector (SSIPs).

However, this paper does not suggest – as others do – that the solution lies in “formalizing” the informal sector. Experience and in-depth studies by Hernando De Soto have demonstrated that the costs of operating in the formal sector (due to bureaucratic procedures, legal requirements, extensive forms to fill out, taxes and red tape) are higher than the costs of operating in the informal sector. This is the reason why SSIPs and other informal sector entrepreneurs in other sectors continue to exist and flourish in urban areas.

²³ “Slums” is used as a general term that includes inner city and peri-urban slum areas, illegal subdivisions, and other marginal settlements, including tenements and abandoned buildings that developed and/or are inhabited without compliance to urbanization standards or legal requirements. Satellite technology has become a very useful tool in identifying these settlements in cities all over the world.

²⁴ NGOs are already working with the informal sector, most of the time with insufficient resources.

The solution proposed here is to unleash SSIPs' potential by providing an enabling environment where they can expand and improve operations, and to link with formal sector capacities and resources to benefit the poor with affordable water and sanitation solutions to meet MDGs in urban areas.

Given the current global scenario described above, maintaining the status quo will not achieve MDG targets. Sectoral reform and modernization efforts that do not provide space for informal sector participation will also produce limited results. A collaborative effort, where each partner does what it can do best, has a better chance of success. It will eventually become evident that SSIPs can make a substantial contribution to the achievement of MDGs at a lower cost than current investment estimates – which are prepared based on formal sector costs in compliance with international technologies, standards, regulations, and overheads.

Increased attention must be paid by policy-makers to the potential contribution that local private sector entrepreneurs – “the other private sector” – can make in achieving MDGs. SSIPs have not been seriously taken into account by governments in the past, but this time they can make the difference between success and failure. Meeting MDGs and targets will require these additional resources to be brought into the picture. SSIPs are already providing services to the poor and they have expertise in reaching the poor. Incorporating their expertise and resourcefulness will require creativity, flexibility, and an open mind on the part of decision-makers. It will require the practice of good governance.

SSIPs can contribute with creativity, flexibility, adaptability, low-cost technical alternatives and outreach capacities. But in order to unleash their potential, enhance their contribution (optimization), and allow for their participation (integration), several barriers need to be eliminated:

- **Lack of understanding and recognition from public authorities, which includes lack of communication with public authorities;**
 - **A hostile attitude from police and formal city utilities and concessionaires;**
 - **Lack of explicit policies or bad implicit policies that increase delivery costs;**
 - **The need to comply with high standards, and complex and costly bureaucratic procedures;**
 - **Lack of secure tenure for the infrastructure they build (mostly on unrecognized slum areas, public lands and rights-of-way), leading to insecurity and eradication threats that discourage investment;**
 - **Lack of opportunities to access civil works contracts and concessions; and**
 - **Lack of access to capital (credit, grants, loans) from banks and international development agencies.**
-

The proposed optimization and integration doesn't mean moving small-scale providers from the informal into the formal sector. As stated before, attempts to formalize the informal sector have failed in the past. There is no indication that bring-

ing the informal sector into the formal sector has a better chance today than in the past 30 years.

Optimization and integration would require that governments (assisted and motivated by international agencies):

- **Understand and recognize SSIPs, and improve communication;**
 - **Formulate flexible and inclusive policies that reduce bureaucratic procedures and include efficient and appropriate standards and regulations;**
 - **Provide secure tenure arrangements for land and infrastructure. The above measures will contribute to stopping police harassment and threats and permit SSIPs to be included in civil works contracts and concessions; and**
 - **Provide access to financial resources.**
-

Recognize and Enhance Communication with Public Authorities

The whole process begins with recognition. It begins with accepting the fact that informal sector entrepreneurs are private sector actors, not “gelandangan” (Indonesian for tramps, beggars and people from the street, whose jobs are “of an improper nature”).

The second step is inclusion. Private sector participation in the water sector has been traditionally equated with “multinationals.” This is a barrier that needs to be overcome conceptually and in practice. This paper has demonstrated that there is a thriving local private sector that has been delivering services to the poor for decades (however much ignored by the formal world). Authorities need to include them in the definition of the private sector and open channels of communication to work out mutually agreeable solutions, provide incentives, and facilitate their operations – just as they would with any other private sector business – so the informal sector entrepreneurs can optimize the delivery of their products and services, generate employment, and make enough money to emerge from poverty.

Provide Secure Tenure

Small scale entrepreneurs that operate from and in marginal areas are faced with eradication threats due to lack of secure tenure on the infrastructure they build on unrecognized (untitled) slum areas, public lands, and rights-of-way. The threats posed by lack of legal recognition are real.

“In Paraguay, the government is considering legislation which would, in effect, appropriate all the network and well investments sunk by ‘aguateros’ over the last 15 years and hand it over to large new private concessionaires” (Snell 1998).

There is evidence to suggest that this issue contributed to fuel riots in Cochabamba, Bolivia (Nickson and Vargas 2002).

In addition, “aguateros” in Paraguay also assert that they are systematically excluded from bidding on civil works contracts and concessions. They believe they can be competitive, but are kept from participating by an exclusionary government system (Camara Paraguaya del Agua, CAPA).

In addition, the World Bank’s Ten African Cities study reveals that this exclusionary process by the formal sector is also happening in Africa. Many independent entrepreneurs would like to be able to participate in bidding for civil works and for service contracts, but they are kept from doing so, based on the nature of their legal status and lack of recognition.

“The lack of fair competition in bidding hurts not only the independent operators but also the consumers and those paying for the works, since it results in higher costs for works and services” (Collignon 2001).

Secure tenure, and land and infrastructure legalization programs, should bring about increased benefits to the poor and environmental conditions in line with MDG targets and indicators. Legal recognition reflecting the new legal status of small-scale operators would have to be reflected in a “deed” or a “permit” to be issued by governments. Work is ongoing in the preparation of contractual arrangements for delivery of water and sanitation services under “licensing” or “franchising” agreements. This is a promising field of future research that will involve inputs from researchers. Environmental and urban lawyers and land and housing development practitioners have much experience to offer.

In cases where private property is concerned, landowners’ rights can be protected through compensation mechanisms. Tenure regularization programs have already been implemented in several Latin American cities through squatter upgrading programs sponsored by the IDB and the World Bank. In addition, important lessons are being derived from the experiences already being implemented by Cities Alliance in Brazil and other places (Cities Alliance 2002). More flexible legal requirements (parallel regulations) will bring about enormous benefits and could make the difference between meeting and not meeting MDGs, especially because of the enormous financial obligations being faced by governments and international development agencies.

Based on the success of the home ownership/property registration model in the U.S., in order to alleviate poverty in developing countries, employment generation programs need to be supplemented with secure tenure programs.

Ownership is the one key ingredient necessary for meeting MDG targets.

Secure tenure and legal recognition of SSIPs will open doors for them and increase their opportunities to be included in civil works contracts and concessions. Secure tenure will, in part, provide more stability to SSIPs operations and allow them to optimize their services. Other issues related to flexibility in policies and regulations (permits, standards and procedures) need to be dealt with in order to make progress on all fronts.

Formulate Appropriate Policies and Reduce Standards and Regulations

The regulatory and public policy environment constrains small provider operations. Their success has much to do with the fact that they do not comply with expensive formal policies, standards, and regulations.

When imported high standards are equated with adequate standards, the poor are left out simply because “adequate” standards are not affordable to the poor.

In these cases, permissive approaches and flexibility toward alternative providers will have to be considered, and water quality monitoring services provided by government authorities. Water quality standards should not be imposed according to international mandates. Instead, appropriate standards and different levels of service should be formulated and implemented according to local conditions.

Small-scale independent providers operate successfully and profitably in urban areas of developing countries all over the world in large part because they offer a wide variety of services the poor can afford. They compete and adapt to local conditions and cultural patterns of water consumption. They offer many water supply and sanitation alternatives and provide services using appropriate technologies that apply realistic and reduced infrastructure standards. They avoid bureaucratic red tape and avoid complying with unrealistically high (imported) standards and regulations that increase operation and maintenance costs and limit entrance to the system.

The experience of low-income housing projects funded by the World Bank in the ‘70s and ‘80s demonstrated that reduced infrastructure standards were the key to affordability and secure tenure arrangements were the key to increased resource mobilization among the poor. Integration and optimization can be made possible by adopting flexible and realistic standards and regulations.

The implementation of such initiatives will need the cooperation of national and local authorities, who need to establish (explicit or implicit) policies that would allow for new and better modes of collaboration with “the other” private (informal) sector.

Anti-poor policies and regulations – represented by strict and high (imported) standards – need to be transformed into pro-poor policies and regulations, i.e. reduced standards and flexible parallel regulations. This will require new understanding and willingness by decision-makers. Allowing for change and implementing innovations will be an important benchmark in the process of building good governance. International development agency investments in capacity-building can contribute to meeting this goal.

Provide Access to Financial Resources: Scale Up Current Successes

Lack of access to capital from banks and multinational donor agencies is related to the unrecognized status of informal sector entrepreneurs. There are many sources of financing for the poor in cities around the world modeled after Bangladesh’s

Grameen Bank, established in 1976 to provide credit to the landless without collateral. There are many success stories of NGOs and private foundations actively serving the needs of the poor in cities by providing small loans to individuals and micro enterprises, which use peer pressure to insure repayments. The IDB has a successful record of providing support to micro enterprise initiatives in Latin America, and other international bilateral agencies, such as USAID and GTZ, have been actively supporting local NGOs and CBOs in water and sanitation programs. CARE, World Vision, Habitat for Humanity, Save the Children, and many others are already having an impact, improving and expanding shelter, water, sanitation, and moving toward the achievement of MDGs.

All of these initiatives need to scale up under the common agenda of MDG and access larger amounts of available resources in local capital sources (pension funds) and multilateral agencies such as the World Bank and the IFC. These agencies need to find solutions to bypass national sovereign guarantees and enter into sub-national guarantee arrangements that will bring them closer to the local level.

The Community-Led Infrastructure Finance Facility (CLIFF) being implemented in India as a pilot case, with financial support from DFID, provides a good way to overcome the challenge big financial institutions face by having to service many small loans rather than fewer big loans.

Conclusions

The goal should be to integrate top-down (formal sector) approaches with bottom-up (informal sector) operations in water supply and sanitation. This paper concludes that this is the way that MDGs and targets can be met. The recognition and enhanced level of cooperation between the formal and informal sectors may be the most important challenge facing institutions today in the field of water and sanitation and the urban environment. If the two sectors can meet in the middle, and work effectively, this will mark one of the most significant transitions in the international development field. Thirty years of experience with international efforts to improve water and sanitation services prove this will be no easy task. Long-term commitments will be necessary from governments, donors, and independent private organizations to implement this approach.

Hardoy and Satterthwaite – the most prolific and persistent authors on the urban environment theme – argue that it has taken 30 years for many governments to accept that informal or illegal settlements are not a threat to established order, but instead a symptom of the lack of alternative means for low-income urban residents to secure shelter and services.

“Let us hope that it does not take another 30 years for government to learn how to work with the informal sector . . . and to understand how much improvement can be made at relatively low cost” (Hardoy *et al.* 2001).

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**ANNEX I:
LIST OF PEOPLE AND INSTITUTIONS CONTACTED
JANUARY TO APRIL 2003**

NAME	INSTITUTION	POSITION/PROGRAM/DEPARTMENT
Pardeep Ahluwalia	Canadian International Development Agency (CIDA)	Director, Policy Branch
Graham Alabaster	UN-HABITAT	Human Settlements Officer and Programme Manager, Water for African Cities Programme
Ingvar Anderson	United Nations Development Programme (UNDP)	Water Supply and Sanitation Specialist, Environment Group
Walter Arensberg	Inter-American Development Bank (IADB)	Former Environment Division Chief, Independent Consultant
Tony Bigio	The World Bank	Coordinator, Urban Environment Thematic Group, Transport & Urban Development Department
Jeb Brugmann	City-States	Urban Strategies Consultant
Tim Campbell	The World Bank	World Bank Institute
Roberto Chavez	The World Bank	Principal Urban Planner, Knowledge and Learning Program, Transport & Urban Sectors
Robert Daughters	Inter-American Development Bank (IADB)	Urban Sector
Ousseynou Diop	The World Bank	MELISSA Program
Barbara Evans	The World Bank	Water Supply and Sanitation Program
John Flora	The World Bank	Director, Transport & Urban Development Department
Maria Emilia Freire	The World Bank	Manager, Urban Sector Unit, Latin America and the Caribbean Regional Office
Bjorn Frostell	Royal Institute of Technology, Stockholm	Associate Professor of Industrial Ecology

NAME	INSTITUTION	POSITION/PROGRAM/DEPARTMENT
Sarah Fry	CDM International, Environmental Health Project (EHP)	Urban Health Program
Kristalina Georgieva	The World Bank	Director, Environment Department
Mark Hildebrand	The World Bank	Manager, Cities Alliance
Morris Israel	U.S. Agency for International Development (USAID)	Bureau for Latin America and the Caribbean
Jan G. Janssens	The World Bank	Program Manager, Bank-Netherlands Water Partnership, Water Supply and Sanitation Department (BNWP)
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Mukami Kariuki	The World Bank	Senior Water Supply and Sanitation Specialist, Energy and Water Department
Bodwin King	International Council for Local Environmental Initiatives (ICLEI)	Director, Local Action 21
Pierre-Joseph Kingbo	The World Bank	Operations Evaluation Department
Anne Klen	UN-HABITAT	Best Practices Officer, Best Practices and Local Leadership Programme (BLP)
Ole Lyse	UN Center for Human Settlements (UNCHS)	Coordinator
Barjor Mehta	The World Bank	World Bank Institute
Dinesh Mehta	UN-HABITAT	Urban Management Programme (UMP)
Russell Muir	Public-Private Infra- structure Advisory Facility (PPIAF), The World Bank	PPIAF Program Manager
Michael Mutter	Department for International Development (DFID/UK)	Urban Development Adviser
Wassala Nimaga	Canadian International Development Agency (CIDA)	Urban Specialist

NAME	INSTITUTION	POSITION/PROGRAM/DEPARTMENT
David Painter	U.S. Agency for International Development (USAID)	Director, Office of Urban Programs, Economic Growth, Agriculture and Trade (EGAT) Bureau
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Jonas Rabinovitch	United Nations Development Programme (UNDP)	Urban Governance Specialist, Governance Group
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Mauricio Silva	Inter-American Development Bank (IADB)	Urban Sector
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Anna Tibaijuka	UN-HABITAT	Executive Director
Jenny H. R. Tough	United Nations Development Programme (UNDP)	Environmental Services Specialist, Public-Private Partnerships for the Urban Environment Program (PPPUE)
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**ANNEX II:
LIST OF INTERVIEWS
MARCH 10 TO 21, 2003**

NAME	INSTITUTION	POSITION/PROGRAM/DEPARTMENT
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Anthony Bigio	The World Bank	Coordinator, Urban Environment Thematic Group, Transport & Urban Development Department
Bruce Cabarle	World Wildlife Fund	Director, Global Forest Program
Tim Campbell	The World Bank	World Bank Institute
Roberto Chavez	The World Bank	Principal Urban Planner, Knowledge and Learning Program, Transport & Urban Sectors
Cristiana Figueres	Center for Sustainable Development of the Americas	Executive Director
Sarah Fry	CDM International, Environmental Health Project (EHP)	Urban Health Program
Kristalina Georgieva	The World Bank	Director, Environment Department
Roy Gilbert	The World Bank	Operations Evaluation Department
Mark Hildebrand	The World Bank	Manager, Cities Alliance
Richard Huber	Organization of American States (OAS)	Director, Unit for Sustainable Development & Environment
Timothy Irwin	The World Bank	Senior Economist, Public Private Infrastructure Advisory Facility (PPIAF)
Morris Israel	U.S. Agency for International Development (USAID)	Bureau for Latin America and The Caribbean
Jan G. Janssens	The World Bank	Program Manager, Bank-Netherlands Water Partnership, Water Supply and Sanitation Department (BNWP)

NAME	INSTITUTION	POSITION/PROGRAM/DEPARTMENT
Todd Johnson	The World Bank	Senior Economist, Environment Department
Alcira Kreimer	The World Bank	Manager, Disaster Management Facility
Jonathan Lash	World Resources Institute	President
Thomas Lovejoy	The Heinz Center for Science, Economics & Environment	President
Barjor Mehta	The World Bank	World Bank Institute
Aurelia Micko & Jonathan Pundsack	National Oceanographic and Atmospheric Administration (NOAA)	Office of Global Programs, Program Specialists
Russell Muir	Public-Private Infrastructure Advisory Facility (PPIAF), The World Bank	PPIAF Program Manager
David Painter	U.S. Agency for International Development (USAID)	Director, Office of Urban Programs, Economic Growth, Agriculture and Trade (EGAT) Bureau
Eduardo Perez	CDM International, Environmental Health Project (EHP)	Technical Director, Engineering and Technology
Fred Rosensweig	Training Resources Group (TRG)	Vice President
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Manuel Sevilla	The World Bank	Finance, Private Sector & Infrastructure, Latin America and the Caribbean Region
Mauricio Silva	Inter-American Development Bank (IADB)	Urban Sector

NAME	INSTITUTION	POSITION/PROGRAM/DEPARTMENT
Tova Maria Solo & Alexandra Ortiz	The World Bank	Finance, Private Sector & Infrastructure, Latin America and the Caribbean Region
Peter Veit	World Resources Institute	Governance & Institutions Program, Regional Director, Africa
David Wilk	Inter-American Development Bank	Sustainable Development Department
Aaron Zazueta	Global Environment Facility (GEF), The World Bank	Senior Monitoring & Evaluation Specialist

Carlos A. Linares has 20 years of experience in international development. During his professional career, he has been responsible for the design and implementation of technical assistance programs and projects for environment and development sponsored by international development agencies, including the World Bank, Inter-American Development Bank, United States Agency for International Development, Organization of American States, United Nations Development Programme, and the European Union. He was an Associate at both World Wildlife Fund and World Resources Institute's Center for International Development and Environment, working primarily on environmental information, planning, and management issues in Latin America. He has a Master of Environmental Management degree from the Yale School of Forestry & Environmental Studies, a B.S. degree in Architecture from the University of Notre Dame, and he was an International Fellow at MIT's Special Program for Urban and Regional Studies of Developing Areas (SPURS). His recent research, while at Yale, has focused on water resources, urban water and sanitation, and the intersection between development and environment in developing countries.

Hixon Center for Urban Ecology

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