



DEVELOPMENT

URBAN ENVIRONMENTAL CHALLENGES:

New Directions for Technical Assistance to Cities in Developing Countries

by Carlos A. Linares

Despite increasing recognition of the role that cities play in global environmental matters and economic development, international agencies dealing with those areas have not devoted enough attention to urban environmental issues.

A particularly glaring example is the omission of cities from much of the formal debate leading up to the United Nations Conference on Environment and Development (UNCED). To raise the profile of urban issues in the UNCED agenda, city representatives held more than 13 meetings, which resulted in a series of documents ranging from the Melbourne Declaration, signed in October 1990, to the Curitiba Commitment, endorsed just a few days prior to the UNCED. At these meetings, mayors and other individuals who attended expressed their worries over a seeming lack of interest by the press and UNCED organizers in urban environmental issues. However, they finally got their concerns onto the official agenda. Chapter 28 of *Agenda 21* encourages localities to develop their own environmental action plans through consultation and consensus-building among local civic, community, and business organizations.¹

Recognizing the need to address the problems and challenges posed by urbanization in developing countries, WRI's Center for International Development and Environment has reviewed urban environmental issues with three interrelated objectives in mind:

- 1) Assessing the environmental problems facing cities;
- 2) Identifying the relevant actors and approaches being developed to address these problems; and
- 3) Defining the challenges and making recommendations concerning the supply of technical assistance to cities.

The first section of this paper describes the linkages between urbanization and the environment, highlighting environmental pressures, conditions, and impacts. It also deals with institutional responses and performance in

addressing urban environmental matters. The second section describes the state of the art in terms of views, approaches, and activities of international agencies working in urban environmental management; it also provides examples of successful projects in selected developing countries. Finally, the document offers recommendations on how to direct technical assistance to cities in developing countries in light of the challenges identified.

THE ISSUES

Urban environmental issues encompass all environmental pressures, conditions and impacts that affect productivity and quality of life.²

Urban Environmental Pressures

Environmental pressures include social and economic activities, as well as natural fluctuations that disturb the environment from baseline conditions.

The nature of urbanization, the location of the city, and its level and type of economic activity determine environmental pressures and conditions, especially those relating to population growth and migration, productivity, and economic development. These include income level and distribution, poverty and the informal sector, land markets and land use, shelter, infrastructure and services, industry, energy, and transportation. Key geographical aspects include topography, climate, proximity to natural resources, and environmental carrying capacity.

Population Growth and Migration

Unrestrained rural-to-urban migration has caused rapid urban growth in all countries in the developing world and is expected to continue. Population has grown from under 300 million in 1950 to 1.3 billion in 1990. Projections indicate that about two thirds of the expected worldwide increase in urban population will occur in developing

countries; by the year 2000, an estimated additional 600 million people will be living in urban areas. Even in China and Cuba, where national policies have attempted to curtail the growth of cities, rural-to-urban migration has not been controlled effectively.³ More than half of the world's population will live in cities shortly after the turn of the century.

Productivity and Economic Development

Urbanization is not only a demographic phenomenon, it is also an economic phenomenon. Economic growth has created both push and pull factors: push factors include a decrease in demand for agricultural labor, which displaces rural workers; pull factors involve the better jobs, services, and higher incomes to be found in cities.⁴

A close relationship exists between urbanization and economic development. More particularly, higher aggregate and per capita incomes occur in more urbanized countries. In 1988, for instance, only about 35 percent of the population of the lowest-income developing countries lived in urban areas, compared to 78 percent in high-income developed countries.

Cities contribute up to 70 percent of the Gross Domestic Product (GDP) in most developing countries. By the year 2000, about 80 percent of GDP growth in the Third World will originate in cities and towns. Productivity will be higher in large cities than in small towns or rural areas.⁵

Poverty and the Informal Sector

While urbanization has increased productivity, per capita income, and well-being, critical inequalities exist, and the incidence of urban poverty has risen alarmingly. In 1988, about 25 percent of the total urban population in developing countries (330 million urban residents) lived in absolute poverty. By the year 2000, up to 420 million will. Most of the poorest households are headed by women.⁶ The World Bank's 1992 *World Development Report* concludes that urban poverty will become the most significant and politically explosive problem in the next century.⁷

The informal sector permeates all levels of urban activity. About one half of the urban population in the developing world obtains shelter through informal land and housing markets. Demand for urban services, housing, and infrastructure has outpaced public sector provisions. The number of people in informal settlements is increasing much faster than overall population growth; service deficiencies are worst in the poorest urban areas.

Nevertheless, the urban poor have demonstrated tremendous ingenuity in obtaining what the city cannot supply. They have built settlements; found water, energy, and transportation; recycled materials; and created businesses and informal financial services. In most developing countries, the informal sector employs 30 to 70 percent of the working-age population.⁸

Land Markets and Land Use

Urban areas in the Third World will double in size over the next 15 to 20 years. Such a rate of increase in demand for urban land has no precedent in developed countries. Poorly functioning land markets, plus the lack of financial resources to compete for serviced land and safe, adequate housing force the poor into illegal settlements on hazard-prone or ecologically fragile areas (steep hillsides and floodplains).⁹ This trend, combined with land degradation and improper drainage, makes these areas more vulnerable to natural and environmental disaster.

Shelter, Infrastructure and Services

In cities in most developing countries, severe deficiencies exist in the provision of shelter, potable water, and sanitation services. Not all water supplies are abundant, easily accessible, or even safe. Close to one third of urban residents in developing countries lacks adequate access to potable water. About 254 million urban dwellers worldwide remain outside the reach of public water systems.

Only 45 percent of city dwellers are connected to sewers. The percentage of population with inadequate sanitation is higher and increasing rapidly.¹⁰ In addition, water sources are being depleted or degraded, increasing supply costs. In coastal cities, overpumping of groundwater and expansion of paved and built-up areas have led to lowered water tables, land subsidence, and salinization problems.

Transportation, Energy, and Industry

The rate of motorization is growing by 5 to 10 percent per year in developing countries, and between 10 to 30 percent per year in the rapidly industrializing countries of Asia.¹¹ This increase is higher than overall growth rates of population and road space. Public buses are the only means of transportation that the urban poor can afford. Yet, bus maintenance is a problem, and service so vital to the poor has fallen short of demand. In many areas, the bus systems are often overstretched, overcrowded, and unreliable.¹²

Cities are intensive users of energy, and most industry is located in and around urban areas. Total per capita energy consumption is not only higher in cities, but is expected to grow. This is due to rapid growth in population and energy demand as economic activity shifts from agriculture to industry, and within industry toward production of energy-intensive capital goods.¹³ Economies of scale and the agglomeration of economies also prompt industry to locate in urban areas.¹⁴

Urban Environmental Conditions

Environmental conditions reflect the state of the air, water, and land as wastes pile up or concentrate.

Air Pollution

In cities, both mobile and stationary sources of air pollution are on the increase. Environmental pollution

problems that are otherwise geographically dispersed tend to concentrate in urban areas. Air pollution is growing in large cities with poor natural ventilation and thermal inversions, especially where motor vehicle use, industrialization, and coal consumption are heavy.¹⁵ Most of the developing world is experiencing an increase in levels of carbon monoxide (CO), as traffic congestion rises. Rough estimates by the World Health Organization (WHO) indicate that unhealthy CO concentrations may plague half of the world's cities.¹⁶

Wastewater

In most low-income cities, human excreta is the pollutant of primary concern. Most domestic sewage is discharged directly without treatment onto land or into bodies of surface water. In Latin America, only 10 percent of the sewage collected in urban areas is treated before it is discharged. Worldwide, the treated portion is about 25 percent. In addition, industries discharge untreated effluent directly into surface water, chemically polluting both surface and ground water sources.¹⁷

Inadequate and poorly maintained systems of stormwater drainage cause both floods and landslides. In many cities, drainage systems evacuate sewage from domestic, commercial, and industrial sources and channel street runoff into surface waters. Among the hazards, poorly drained wastewater creates ideal conditions for the outbreak of mosquito-borne disease.¹⁸

Solid and Hazardous Wastes

Municipal solid-waste services cover only 50 to 70 percent of the total urban population; hazardous wastes, mixed along with residential refuse, continue to find their way into inadequate dumpsites. In most developing countries, most collected wastes end up in open dumps, ravines, or drainage systems, threatening the quality of both surface and ground water.¹⁹ In the absence of controls and proper management, hospital wastes and other hazardous materials infiltrate the domestic waste stream. Along with inadequate collection, other problems arise from unsafe transportation, storage, and disposal of these wastes. Typically in poor neighborhoods, the waste-collection services are utterly deficient where they exist at all.

Urban Environmental Impacts

Environmental risks resulting from the degradation of natural resources and exposure to pollutants affect public health, the economy, aesthetics, and the ecosystem.

Urban development has significant on-site and off-site environmental impacts. Cities make a two-pronged demand on the environment: inputs that urban activities require and disposal of residuals from these same activities.²⁰ Impacts include loss of prime agricultural land; land degradation; peri-urban deforestation due to commercial consumption of wood fuels; increased runoff, erosion, and siltation; degradation of downstream watersheds and coastal resources; forest and crop damage due

to acid rain, and reduction of natural habitats caused by the increasing supply of energy to meet urban demand.²¹ Urban expansion has diminished open space and adversely affected the quality of life and aesthetic value of natural landscapes.

The severity of pollution from wastes and discharges threatens to overwhelm the capacity of natural environments to recover, interfering with the productivity of cities and with national economic development goals. Lost tourism revenues and reduced income from fisheries may result from coastal discharges of raw sewage.²² Contamination of groundwater can permanently shrink supplies of valuable high-quality drinking water. In addition, polluted rivers, lakes, and coastal waters have resulted in losses in amenities and recreational opportunities.

Urbanization pressures severely impact health and economic productivity. In Jakarta, Indonesia, it is estimated that households spend more than US\$50 million each year in boiling impure water. In Bangkok, Thailand, excessive exposure to lead causes 200,000 to 500,000 cases of hypertension resulting in 400 deaths per year; children seven years and younger lose an estimated average of four IQ points to lead exposure. Each car in Bangkok spends an average of 44 days annually, stuck in traffic jams.

In Mexico City, abnormally high levels of suspended particles have caused an average loss of 2.4 work days per person and 6,400 deaths annually. Studies show approximately 29 percent of all children have unhealthy levels of lead in their blood; annual health costs from air pollution exceed US\$1.5 billion. In Lima, Peru, the cholera epidemic of 1991, due to inadequate sanitation, caused an estimated US\$1 billion in losses from reduced agricultural and fisheries exports, and in tourism, in just the first ten weeks.²³

Impacts on human health and the economy also stem from urban transport deficiencies. Traffic accidents are a primary cause of death in the developing world. The costs of road accidents equals 2 percent of the GDP, if both high fatality, injury rates, and property damage are taken into account. Two thirds of road accidents occur in urban areas.²⁴

Most affected by adverse urban conditions are the urban poor. Health problems are more acute in squatter settlements, where sanitation is inadequate and services lacking. Many studies confirm that both mortality and morbidity from environmentally-related diseases are significantly higher for the urban poor than for others. WHO reports that 3.2 million children under five die each year in the developing world from diarrhea, largely as a consequence of poor sanitation, contaminated drinking water, and poor food hygiene.²⁵

When natural disasters occur in or near cities, they result in concentrated human suffering and economic losses. In the many areas and regions subject to severe natural events (storms, floods, and earthquakes) and to

man-made hazards (chemical spills, explosions), informal settlements located in low-lying areas, steep hillsides, or clustered around industrial areas or waste-disposal sites are at particular risk.

Environmental Responses and Performance

Institutions may respond to environmental impacts by reducing pressures, improving conditions, or taking defensive action against impacts. But in many developing countries, institutions face serious political and technical constraints. Where the central government is strong, localities have little power and control over the resources allocated to the city.²⁶ Even in cities where local governments have most responsibilities for infrastructure, services, and pollution control, national governments continue to control the power, financial resources, and level of representation needed for effective government. Increased responsibilities granted to local governments by a new generation of municipal laws have not included control over revenues and budget allocations.

Cities in developing countries must also deal with new problems of industrial pollution even before solving the traditional problem of human waste disposal. Institutions and agencies face a two-fold demand: first, from the traditional biological pollution due to inadequate sanitation, shelter, and infrastructure; and, second, from a modern, hazardous chemical pollution due to increased industrialization and motorization.²⁷

Rapid urban growth has outstripped the capacity of authorities to manage development and respond to demands for infrastructure, services, and land. While municipal governments spend between 20 to 50 percent of their operating budgets collecting and disposing of household garbage, municipal solid-waste services reach only about half of the total urban population.²⁸ Inadequate pricing policies, poor maintenance of existing systems, and lack of conservation and control make it impossible to provide adequate water supply services. On the urban periphery where most urban growth occurs, the problems are particularly critical, for these areas often fall under the jurisdiction of governmental authorities that are economically, politically, and technically weaker.

In urban areas, numerous actors from the public and private sectors interact. The varied and sometimes conflicting interests and responsibilities of the different players augment constraints impeding performance responses to urban environmental problems. Actors include: central government ministries that make rules, wield power and allocate funds in urban areas; state governments that have budgetary authority and play a critical role in regulatory activities and control; metropolitan authorities that are responsible for planning and land-use zoning regulations and permits; local authorities in charge of health, infrastructure services, and control of land development; local politicians who mobilize financial resources for investment projects; formal and informal market forces influencing investments; and community organizations,

NGOs, and the media—which provide services, apply political pressure, and perform other functions.²⁹

Urban areas also have a highly complex planning and management framework, cross-jurisdictional, and central-local conflicts. Tensions between the forces for centralization and decentralization can be great, and many environmental problems cut across political boundaries and administrative mandates. In many cases, administrative and political jurisdictions do not correspond to ecosystem boundaries or ecological zones.³⁰

Issue-oriented or sectoral responses tend to address only the symptoms and not the causes of environmental degradation. For example: a Ministry of Health launches a massive vaccination program for children to control a gastrointestinal disease. Vaccination deals with the effects, but fails to address the root cause of the outbreak, which could be resolved by getting the local Sewage and Water Authority and the Ministry of Agriculture together to stop the use of domestic wastewater to irrigate vegetable crops sold in the city.

Along with inadequate management responses, four institutional deficiencies are key components of environmental pressures:³¹

1. Lack of Public Awareness and Political Will, Coupled with Insufficient Knowledge and Information.

Often, the lack of data and information about conditions and impacts hampers the ability to make sound decisions, build consensus, and set priorities. Similarly, where there is no public pressure, government inaction is all but inevitable, and social and private interests diverge.

2. Inadequate Governance. A lack of municipal autonomy and adequate institutional capacity to carry out planning and management functions and provide services often reflects jurisdictional complexity, which in turn occurs because a multiplicity of actors have overlapping or poorly defined management responsibilities, or because effective coordination and public accountability are absent. In addition, government agencies often fail to include the private sector in the definition of policies, priorities, and the design and implementation of services.

3. Inefficient and Inadequate Regulatory and Economic Policies. In many cases, laws and regulations are either inadequate or good on paper only—failing to designate responsibilities for monitoring and enforcement. Unclear property rights and lack of secure land tenure make it difficult to mobilize resources. More important, ineffective economic and fiscal policies permit the incorrect pricing of resources and services and the misallocation of subsidies, and make it impossible to recover investment costs.

4. Inadequate Revenue Raising Capacity. Even local governments that have the authority to levy property taxes may face other problems: weak cadastral systems, inadequate records of land and building ownership in urban areas, and faulty procedures for appraising values, all of which result in loss of potential revenue from property

taxes. Then too, little consideration has been given to other possible revenue sources: user fees, effluent charges, pollution taxes, and other green fees.³²

However inadequate investment in the urban environment by local and central governments in the Third World, it is still thirty times higher than the funds provided by international agencies.³³ On the other hand, though international agencies have played only a minor role in funding urban development, their support has stimulated action and influenced new directions and policy decisions that are having a positive impact in cities of developing countries.

CURRENT EFFORTS

Most multilateral and bilateral agencies, NGOs, consulting firms, international networks, and professional organizations are just starting to formulate their urban environmental agendas and build the capabilities needed to carry them out. Of the different agencies getting involved in urban environmental issues, one in particular is spearheading research, approaches, and action in this area—the Urban Environmental Management Component of UNDP/World Bank/UNCHS (Habitat's) Urban Management Program (UMP), housed within the World Bank. In numerous cities around the world, UNCHS' Sustainable Cities Programme (SCP) serves as the operational arm of UMP's Urban Environmental Management Component.

The World Bank

The latest World Bank reorganization in January 1993 created a Vice Presidency for Environmentally Sustainable Development (ESD). Three departments fall within this new Vice Presidency: Agriculture and Natural Resources; Environment; and the Transportation, Water and Urban Development Department, which includes the Transport, Urban Development, and Water and Sanitation Divisions.

The Urban Development Division and The Urban Management Program (UMP)

A new policy³⁴ broadens the World Bank's urban agenda to include four major issues: improving urban productivity, reducing urban poverty, strengthening management of the urban environment, and increasing the developing world's intellectual investment in research and consultation on urban issues. UMP is a ten-year global program of technical support begun in 1986 with funding from UNDP and several bilateral agencies. It is jointly executed by UNCHS (Habitat) and the World Bank. The Program has five components: urban land management, urban infrastructure, municipal finance, urban poverty, and urban environmental management.³⁵

The Urban Environmental Management Component was initiated in 1990. Its first phase involved research, background studies, and fieldwork to define approaches

for dealing with critical urban problems. Its second phase (1992–96) is supporting the preparation of urban environmental strategies in selected cities; regional, national, and local capacity building for urban environmental management; research; and documentation of "best practice" approaches. This phase of the project is being implemented through regional offices in Quito, Ecuador; Kuala Lumpur, Malaysia; Accra, Ghana; and Cairo, Egypt.

One of the key outputs of the Urban Environmental Management Component is the development of the Rapid Urban Environmental Assessment (RUEA).³⁶ The RUEA method encompasses three steps: (a) the application of a questionnaire of urban environmental indicators, (b) the preparation of an urban environmental profile, and (c) a local public consultation process to validate the results of the questionnaire and the profile.

The results of using this method in seven cities, along with the work experience of the Urban Development Division, are being synthesized into a major UMP publication titled *Toward Environmental Strategies for Cities*. This presents key findings, conclusions, and recommendations concerning the underlying causes of urban environmental degradation, priority actions and alternative instruments for adequately addressing urban environmental challenges, and a city-specific approach to urban environmental planning and management.³⁷ The following causes for urban degradation have been identified:

- Lack of public awareness of environmental problems and the political will to address them;
- Poor governance (weak institutional capacity and lack of participation in planning and implementation);
- Inadequate policy interventions;
- Economic and regulatory distortions; and
- Insufficient knowledge and understanding of the nature, causes, and effects of environmental degradation.

Priority actions and alternative instruments to address urban environmental challenges adequately include:

- Mobilizing public support to make environmental decisionmaking more effective by raising awareness, building constituencies, and promoting NGO and informal participation;
- Improving policy interventions and implementation, including regulatory, economic, property rights, land management, and policy-making information;
- Improving the operation of urban systems by upgrading service management and delivery, increasing investments in infrastructure needs, and promoting public/private partnerships;
- Strengthening institutional capacity by clearly defining institutional arrangements and developing managerial and technical capacities, and by increasing financial resources; and
- Reducing the knowledge gap by gathering and using adequate data and information to improve policy-making and priority-setting.

The city-specific approach to urban environmental planning and management involves four key phases:

- 1) *Rapid Urban Environmental Assessment and Consultation.* In the assessment and start-up phase, environmental issues are identified, key actors drawn in, political commitments made, and priorities set after informed consultation.
- 2) *Urban Environmental Management Strategy.* This integrated strategy for urban environmental management embodies negotiated, issue-specific strategies, long-term goals, and phased targets for meeting those goals.
- 3) *Urban Environmental Action Plan.* Based on agreement on issue-oriented action plans for achieving the targets, this plan specifies project options, policy reforms, and institutional commitments.
- 4) *Sustained Investment Program.* In this consolidation phase, programs and projects are initiated, policy reforms and institutional arrangements are solidified, the overall process is made routine, and monitoring and evaluation procedures are set.

Within the overall urban mandate of the World Bank, UMP attempts to influence cooperation, for instance, in the dissemination of good practices. One of the most promising initiatives of the Urban Development Division is the newly created cross-regional and cross-thematic coordination office on Urban Environment.³⁸ This office identifies opportunities for integrating the Bank's urban-related operations strategically by increasing coordination among the different regional and technical departments and the thematic divisions. The Bank's Environment Department echoes UMP's conclusions and approaches:

"A number of obstacles—informational, political, institutional—have in too many cases prevented or held back the necessary reforms needed to

implement win-win solutions to environmental problems ... one of the four components of the Bank's strategy to assist member countries to protect and enhance the environment while reducing poverty and developing in a sustainable manner, includes assisting member countries in setting priorities, building institutions, and formulating policies for sound environmental stewardship."³⁹

The Metropolitan Environmental Improvement Program (MEIP/Asia)

MEIP is a UNDP-funded regional program executed by the World Bank. Started in 1990, MEIP focuses on the development and implementation of an Environmental Management Strategy (EMS) for large urban regions. MEIP has initiated work programs in five Asian cities. Activities strengthen local capacities of environmental agencies, and the program works with economic, planning, and sectoral agencies. MEIP also seeks to build in-country environmental networks and cooperates with local organizations to conduct studies, demonstration projects, and workshops.

MEIP's work is guided by a steering committee with representatives from government agencies dealing with the environment, inter-governmental affairs, the economy, land use, and urban planning. Working groups oversee the technical aspects of specific MEIP activities.⁴¹

Some of the lessons learned from working experiences in Beijing, Bombay, Jakarta, and Metro Manila include the following:

- The organizational framework is critical.
- Both rapid investment and long-term strategies are necessary.

Box 1. The Wapenhans Report

In February 1992, the President of the World Bank, Lewis Preston, established a high-level task force to review the performance of Bank-financed projects and make recommendations to improve the Bank's capacity to help members. Headed by Vice-President Willf Wapenhans, the task force found that the proportion of successful projects declined over the last decade.⁴⁰ Key conclusions of the task force report include:

On-the-ground Benefits. The Bank's success should be determined by benefits "on-the-ground" and not by loan approvals, good reports, or disbursements. The Bank recognizes the limits of "sectoral and project-by-project" approaches.

Commitment and Implementability. Successful implementation requires commitment built on stakeholder participation and local "ownership." A preeminent role by Bank staff undermines a borrower's sense of ownership.

Quality at Entry; Implementation Planning. Quality at entry into the portfolio will determine success of the project. Bank projects are too complex and do not always match the capacity of executing agencies.

The Wapenhans Report states that to improve the quality of projects, the Bank should:

Ensure Country Commitment. Agreement on the Bank's supporting role should be set early and tailored to the country, the relevant institution(s) and type of project. The Bank must define its role in promoting borrower commitment and accountability.

Foster Broad-based Participation in Project Preparation. The Bank should foster adequate participation—both by borrowers and intended beneficiaries—in the identification, preparation, and implementation of projects. Without borrower and beneficiary commitment, successful implementation is not likely.

Emphasize Implementability in Design and Appraisal. The Bank should design projects in the light of agency capabilities. Projects that are too complex for borrowers to implement are not likely to succeed. If implementation assistance is needed and provided, the Bank must be careful to play a supportive and advisory, rather than a dominant and decision-making role.

- Local-level initiatives and participation are vital.
- Consensus building fosters a sense of ownership.
- Communities require more orientation than they now get.
- There is too much central government control.⁴²

The Municipal Development Program of the Economic Development Institute (MDP-EDI)

MDP is a joint project of the World Bank, UNCHS, and other development agencies in partnership with African governments and institutions. SACDEL (Support and Training Systems for Local Governments) is the equivalent of the EDI-based MDP program for Latin America. Its purpose is to strengthen government capacities, provide training, and help decentralization of government services.⁴³

MDP tries to build analytic capacity and a coordinated policy framework, while introducing appropriate institutional structures to improve municipal governance. The program builds municipal governments' capability through training and improved coordination among African institutions, NGOs, and external development agencies.

The key lessons learned from MDP activities are as follows:

- Lack of political will is a major obstacle to good implementation.
- International development agencies lack control over many local variables at play, including market and political forces.
- Sectoral approaches are inadequate.
- Priority-setting exercises are more useful than the preparation of master plans.
- Although central governments are the principal client of the World Bank, local governments are key actors.⁴⁴

The United States Agency for International Development (USAID)

The Office of Housing and Urban Programs

The Office of Housing and Urban Programs, in the Bureau for Private Enterprise (APRE/H) provides financial support and technical assistance to developing countries for shelter; water supply and sanitation; municipal management and finance, including privatization of municipal services; land, infrastructure, and community facilities; and training.⁴⁵

Adopted in 1990, APRE/H's urban environmental strategy has three objectives:

- 1) to integrate urban environmental issues into program design;
- 2) to implement new private sector approaches to providing municipally financed environmental services; and
- 3) to contribute to the improved analytical capability of donors and host countries.

Examples of APRE/H's initiatives in 1991 and 1992 are as follows:

- The project for private provision of environmental services, which financed technical assistance to Costa Rica, Honduras, Ecuador, Haiti, Botswana, Swaziland, Morocco, and Tunisia;
- The development of environmental methodologies, which helped to improve the capabilities of USAID and host countries to analyze the impacts of environmental problems, including health-risk assessment, economic losses resulting from environmental degradation, and urban impacts on the natural resource base; and
- The project of municipal environmental management, which helped city governments build environmental management capabilities and strengthen service-delivery systems and institutions.

An important lesson that emerged from the HUD 1991 "Privatizing Solid Waste Management Services in Developing Countries" seminar is that privatization cannot succeed without firm support from the city's political leadership: "The single most important component of a privatization strategy is the political commitment to implement it".⁴⁶

The Water and Sanitation for Health Project (WASH)

Begun in 1980, WASH is a centrally funded, multi-year project of the Office of Health, Bureau of Research and Development (R&D). It is operated by Camp Dresser & McKee International, an environmental consulting firm. Traditionally, WASH has focused on rural areas; however, for the past two years interest in urban issues has increased.

After ten years of experience, WASH has acquired significant knowledge on the successful provision of technical assistance and the development of water supply and sanitation projects: "The first principle is that technical assistance is most successful when it helps people learn to do things for themselves in the long run."⁴⁷ Other lessons learned from the project include:

- Local institution building is the key to transferring sustainable skills.
- Technical assistance in water supply and sanitation requires an interdisciplinary approach, not a narrow specialized one.
- Participatory approaches maximize the chance for sustainable programs and projects.
- Coordination and collaboration are important, but often they depend more on professional networking and personal relationships than on institutional and contractual relationships.
- An active information service can expand the outreach of technical assistance, as well as its visibility and credibility.

Environmental Assistance to Central and Eastern Europe

USAID, EPA, and the Department of Energy (DOE) have joined efforts to help alleviate environmental

problems in Central and Eastern Europe. A \$62-million environmental program has been launched featuring training, advice, technical assistance, and equipment earmarked for Poland, Estonia, Latvia, Lithuania, the Czech and Slovak Republics, Hungary, and Romania. Activities include programs for reducing air pollution, improving environmental conditions in chemical and industrial plants, supporting efforts to pass new environmental laws and introduce environmental impact statements, and conducting studies to develop cleanup plans for surface waters as well as other anti pollution-related activities.⁴⁸

At the local level, USAID is helping communities through the Local Environmental Management Project and the Environmental Training Project, which are aimed at expanding public awareness and support. EPA has developed training modules and set up environmental management training centers to provide instruction on policy development, economic analysis, risk assessment, and other topics. Because the program was launched only recently, it is too soon to draw lessons from it.

The Environmental Pollution Protection Project (EP3)

The EP3 Project will be carried out by the Office of Environment and Natural Resources, Bureau for Research and Development (R&D/ENR). Technical management and oversight will be shared with the Office of Energy and Infrastructure (R&D/EI).

The goal of EP3 is to reduce environmental pollution associated with urbanization and industrialization. Its purpose is to enable urban and industrial pollution management by public and private sector decision-makers. This will be accomplished through increased knowledge of pollution prevention and control, and by innovative industrial processes and equipment that minimize waste generation.⁴⁹ It is still too soon to draw lessons from EP3.

The Municipal Development Project (MDP)

MDP is funded by the Office of Housing and Urban Programs of the International City Management Association (ICMA). Through this program, ICMA shares U.S. urban management expertise with municipal managers in developing countries. It provides technical services to AID missions on municipal management, finance, and training.⁵⁰

In urban management, ICMA works with local government officials, helping cities assume fuller responsibility for public services and decentralize control. In municipal finance, ICMA designs training seminars for local government officials. In environmental planning, ICMA has sent advisors to Latin America, Africa, and Southeast Asia to help address a range of urban environmental issues.

Other USAID-sponsored Environmental Projects

USAID is currently designing or implementing numerous environmental projects to reinforce these urban environmental activities. Among them are the Environmental

Policy and Training Project (EPAT); the Project in Development and Environment (PRIDE); the Environmental Education and Communications Project (GREENCOM); the Local Accident Mitigation and Prevention Project (LAMP); and the Environmental Training Program (ETP).

The United Nations

The Sustainable Cities Program (SCP) of The United Nations Centre for Human Settlements (UNCHS)

SCP is UNCHS's operational arm. It was launched by the United Nations Center for Human Settlements (UNCHS/Habitat) in 1990 to provide public agencies, the private sector, and grassroots organizations with an improved environmental planning and management capacity. The program aims to strengthen local authorities' ability to define critical environmental issues, identify available instruments to address them, mobilize funds for investment, and involve all actors whose cooperation is required.⁵¹

As a global program, SCP promotes the sharing of know-how among cities throughout the world. As an inter-organizational effort, SCP mobilizes technical and financial resources from both bilateral and multilateral sources. Demonstration activities are underway in Dar es Salaam, Tanzania; Ismailia, Egypt; Concepción, Chile; and Madras, India.

In Dar es Salaam,⁵² a new SCP-supported urban management approach recognizes that participatory management, coupled with technical and political consensus building, is essential to ensure both sustainable development and environmental improvements:

"We feel that planning is not just a technical exercise, but a process that involves negotiating rules among the various actors...it's easy to get technical answers to technical problems; however, the challenge is to reconcile competing interests and to arrive at a consensus that is participatory. This is the only way to sustainability."⁵³

Attended by over 100 participants, the first city consultation on environment in Dar es Salaam marked both the climax of the preparatory activities and the beginning of the 18-month Dar es Salaam Environmental Strategy and Action Plan Planning Phase. Participants drafted, negotiated, and agreed upon a declaration that establishes a new partnership approach to city management; this broadens the range of actors involved to include the private sector and community-based organizations (CBOs).⁵⁴

The Industry and Environment Office (IEO) of UNEP

The IEO Office was established in Paris in 1975 to bring together industry, governments, and non-governmental organizations to work toward environmentally sound forms of industrial development. The office provides practical information and develops information

exchanges backed up by regular follow-up and assessment. IEO's work program has four principal parts:

- (a) publications (technical guides);
- (b) technical cooperation;
- (c) training; and
- (d) information transfer.

In 1988 the IEO, with the active support of industry, launched APELL (Awareness and Preparedness for Emergencies at Local Level), a program designed to reduce the risk and severity of technological accidents. It is aimed at alerting local communities to the dangers of technological accidents and providing them with a framework for designing local emergency plans so that they can prepare for and cope with any such accidents.

The Local Initiative Facility for Urban Environment or (LIFE) Fund of UNDP

UNDP is managing a \$15-million pilot project in eight countries to provide seed money to support NGOs and municipalities in capacity building and consultation activities.

The Inter-American Development Bank (IDB)

Among the objectives of the IDB's environmental work are the prevention and reduction of air and water pollution in urban areas. The Bank also has activities aimed at strengthening the region's institutional capacity for environmental management.⁵⁵ The IDB's Environmental Committee suggests that participation is integral to building effective environmental institution.

Environmental governance at the municipal level can play an essential role in allowing the local population to participate in building their own safe environment. Environmental education and awareness efforts can provide them with the information they need to better exercise collective judgment in environmental matters.⁵⁶ The IDB has two divisions that share environmental concerns: the Environmental Protection Division and the Sanitation and Urban Development Division.

The Environmental Protection Division

The Environmental Protection Division helps country and project teams to ensure that IDB operations are environmentally sound. It also identifies and prepares renewable resource and environmental projects. In 1992, a third area, environmental policy, was added to address policy, planning, and research issues; and interagency relations.

The Sanitation and Urban Development Division

The Sanitation and Urban Development Division implements IDB's strategy for meeting water-supply and sanitation needs. Simultaneously, it continues IDB's traditional role of supporting improved access to these services throughout Latin America. It concentrates on rehabilitating and improving efficiency of existing water supply and sanitation systems; actively supporting

institutional strengthening and the reform of water companies, particularly in light of current privatization trends; and expanding coverage of liquid and solid-waste collection systems and treatment facilities.

Other Agencies and Approaches

The International Union of Local Authorities (IULA)

IULA represents over fifty national associations of local government agencies seeking to integrate environmental concerns into local planning and management.

The International Council for Local Environmental Initiatives (ICLEI)

ICLEI helped introduce local government issues into the UNCED Declaration. Its Mega-Cities Project is a network of individuals based in institutions dedicated to research and urban planning in the world's most populous cities. Participants share information and promote the replication of urban environmental innovations.

The International Solid Waste Managers Association (ISWA)

ISWA promotes technology transfer and supports the strengthening of national chapters and the development of local associations in developing-country cities. It also publishes professional manuals on solid waste management.

The International City Managers Association (ICMA)

ICMA promotes "twinning" arrangements, training, and technical assistance to cities in developing countries to improve waste-management planning and practice.

The International Institute for Environment and Development (IIED)

Based in the United Kingdom and Argentina, IIED conducts research and publishes information on urban environmental management and health issues.

Other agencies that share an urban health focus are The Stockholm Environmental Institute, The London School of Hygiene and Tropical Medicine, and The World Health Organization's Healthy Cities Program.

SELECTED EXPERIENCES IN CITIES OF DEVELOPING COUNTRIES

Santo Domingo, Dominican Republic: Building NGO/CBO Coalitions for Environmental Action

Residents of La Zurza, a slum with 50,000 inhabitants in Santo Domingo, created the Society for the Integral Development of La Zurza (SODIZUR) with assistance from the Dominican Institute of Integral Development (IDDI). SODIZUR is a community-based organization (CBO) with democratically-elected officers that focuses on training and institution building to promote self-development within the slum. IDDI works with the community to

develop greater political control and social responsibility through the design of income-generating activities, the construction of infrastructure, and the design and delivery of health services.

Some of the key lessons learned from the collaborative development process between IDDI and SODIZUR include:

- Emphasize a balanced and integral approach to development.
- Recognize that intermediate support organizations, such as NGOs, often fill the role of effective advocates for the voiceless.
- Focus development programs on raising people's awareness in order to have long-term beneficial effects.⁵⁷

El Salvador: Strengthening Governance through People's Participation in Housing Projects

The Salvadoran Foundation for Development and Low-Income Housing (FUNDASAL) is a private, non-profit organization that focuses on integrated social development and seeks the active participation of stakeholders in housing projects. FUNDASAL successfully reached the low-income urban population of major Salvadoran cities, while achieving one of the highest cost-recovery rates of any World Bank-financed urban shelter program (Sites and Services).⁵⁸

Two main principles have guided the housing programs of FUNDASAL—progressive development and mutual help. From 1970 to 1978, it helped deliver a total of 7,300 housing units in seven different cities. For FUNDASAL, however, housing construction was not an end in itself; instead, it was the means for promoting popular participation—part of a larger process of human development that, in turn, promoted greater social equity.

Key lessons learned from this experience include:

- Even though community participation and organization contributed significantly to the success of the Sites and Services Program, few external agencies interested in financing housing had funding available for social components.
- A sectoral activity—as housing—proved to be an effective means of promoting community organization for social improvement.
- The mutual-help construction process created a sense of solidarity and responsibility, and many community organizations developed into effective community governments.
- Many of the constraints affecting shelter supply were institutional.⁵⁹

Recife, Brazil: Creating a Constituency for the Environment in the Olinda Slums

In 1983, the municipal government of Olinda (a city of 400,000 in the metropolitan area of Recife) began an environmental-upgrade project with a pilot effort in the Triangulo do Peixinhos slum. Initially, the project focused on improving drainage. In response to community pressure,

the project was later expanded to include solid-waste collection. Subsequently, the project became involved with sanitation through the construction of ventilated pit latrines and road upgrading.

The key lesson learned was that community participation is vital to success. Both labor and services were contracted through the community association. This approach contributed to the maintenance of environmental infrastructure and mobilization of household resources for local investment.⁶⁰

Bombay, India: PROUD Voices Raising Environmental Concerns

In 1979 in Dharavi, an informal settlement in Bombay, representatives of a Calcutta-based organization arrived with the aim of building a local people's organization. The representatives identified drinking water as a major issue in one of the neighborhoods and organized a meeting with residents. A delegation was sent to the municipal authorities; within a month, 76 new water taps were in place. As a result, a local organization called the People's Responsible Organization of the United Dharavi (PROUD) emerged.

Today, PROUD is a well-established, active, community-based organization made up of 150 neighborhood communities that meet monthly to discuss local problems and plan actions leading to solutions. Because of PROUD's strong base of support among the residents of Dharavi, municipal authorities now recognize the legitimacy of some of the community's claims. As a result, the organization has been able to obtain environmental improvements and to block plans for demolition and development that would have destroyed the homes of thousands of residents.⁶¹

Bihar, India: Taking Charge of Urban Sanitation: The Sulabh Project

The Sulabh project was started in Bihar, India, in 1974, in partnership with the state government. This project demonstrates how an NGO can achieve positive results with government support. The objective of the first phase of this project was to convert dry household latrines into new pour-flush waterseal latrines. The project gave special attention to women and scavengers.

In its second phase, "pay-and-use" public toilets and wash areas were constructed. Currently, Sulabh International is extending the project to other parts of India, including riverfront New Delhi, where many poor people live. Finally, by providing latrines to communities that have mobilized and requested them, the Sulabh Project is motivating and reinforcing community involvement.⁶²

Tianjin, China: Collecting Fees to Improve the Urban Environment

Tianjin, China's third-largest city, is an important industrial center. Its growth has been unavoidably linked to

environmental degradation. Efforts to improve Tianjin's environment began as early as the 1950s. More recently The Tianjin Municipal Environmental Protection Bureau (TEPB) mobilized different sectors of the community to support environmental improvements. More than 80 percent of the TEPB's budget comes from locally collected discharge fees; the rest comes from fines, local taxes, central government grants, and contracts.

Some of the innovative environmental management activities pioneered in Tianjin over the past 15 years include:

- (a) the integration of environmental concerns in urban planning;
- (b) the use of regulatory and economic instruments;
- (c) the use of a variety of tools to protect the urban environment, including standards and permits, zoning, monitoring, environmental impact assessments, fiscal measures, and economic incentives;
- (d) discharge fees and a pollution-control fund, and
- (e) direct investments in infrastructure.⁶³

Curitiba, Brazil: Finding the Ingredients to Solving Urban Problems

Curitiba has met many of the demands of an exploding population through sound urban planning and management. An efficient low-cost mass transit system is perhaps the most recognizable program. Floor-level "boarding tubes" for buses have cut loading times in half. Color-coded buses and an innovative road network design also contribute to the bus system's simplicity and accessibility. Two thirds of the population now uses the bus system regularly. This contributes to a 25 percent savings in fuel use city-wide.

Through environmental education, a range of successful initiatives has changed the city's future. Over 70 percent of the households participate in a garbage-sorting program. (Bags of garbage are traded for transport vouchers and food.) In addition, the city has increased its ratio of green space per inhabitant from five square feet to over 500 square feet—one of the highest urban ratios in the world.

What has happened in Curitiba exemplifies the importance of political will, as well as the positive effects that sound urban planning, good management, and effective implementation can have on environmental quality. The experience of Curitiba stands as a model for cities throughout the world, demonstrating that local government leadership and community action can provide timely answers to growing urban challenges.⁶⁴

CONCLUSIONS

The review of urban environmental problems and approaches in current use by both international agencies and independent organizations in developing countries leads

to some conclusions concerning the major environmental challenges facing Third World cities. It also allows recommendations for technical assistance that address urban environmental problems.

The view of the city held by planners has evolved. In the past, fears that cities would become too large dominated the literature. However, the present view is that the growth rate and economic and institutional constraints, not city size, are the driving forces of urban problems in developing countries. While this shift in emphasis may elucidate critical issues for managing urban growth, it may be too narrow, and neglect the importance of the impact of city size on the natural resource base and environmental quality.

The main urban environmental problem in developing countries is sanitation, and those most affected by environmental degradation are the urban poor. They cannot afford available options, invest in mitigating measures, or pay for services. The poor also lack the political clout to participate in the decision-making process affecting their livelihoods.

Urban environmental issues are about human well-being. Despite increasing recognition of the importance of social determinants of project success, a widespread belief exists that urban environmental issues are about pollution and essentially technical in nature. Such issues as local capacity-building and stakeholder participation are considered less important. Indeed, the technical departments of international development and local agencies have far more power, status, and resources than those dealing with social or institutional development aspects, if the latter exist at all.

It is important to recognize that the urban environment is not a sector as such. Sector by sector approaches offer limited solutions to the complex, cross-media, and cross-sectoral problems typical of urban areas. However, improved urban management of specific sectors (such as housing, water supply and sanitation, and transportation) will help to alleviate pressures, improve conditions, and minimize risks and negative impacts.

Urban environmental challenges in developing countries are related to institutional and policy constraints. These challenges include lack of political will, jurisdictional complexity, lack of public accountability, insufficient knowledge and information, and shortage of financial resources.

The way international development assistance has been conducted also impedes progress. Reliance on sectoral and project-by-project approaches, on top-down approaches to project design, both institutional and public, and decision-making dominated solely by immediate economic concerns and political considerations—generally biased against the poor—all limit project success. More generally, as long as international agencies continue to pump most of their resources into central governments,

the solutions to urban development and environment problems are unlikely to be found.

Experience demonstrates that NGOs can reach the urban poor. Strong coalitions of NGOs and Community-based Organizations (CBOs) help articulate urban environmental priorities. NGOs and CBOs are also well prepared to participate effectively in the development and environmental decision-making process at the city level.

Neighborhood and community involvement is essential to the success of development and environment programs and projects. The knowledge, ingenuity, and organizational capacity of citizens themselves are the most important resources the city has to offer.

RECOMMENDATIONS

New Directions for Technical Assistance to Cities in Developing Countries

Successful approaches to urban environmental problems in developing countries must include ensuring local political commitment, strengthening policy and institutional capacities to deal with interrelated problems and improved interagency coordination, and mobilizing public support and participation. This means establishing clearly defined institutional arrangements and improving the effectiveness of the policy decision-making process through increased information, awareness, and participation. Development assistance projects succeed only if they can build effective local policy-making, planning and management capabilities, and institutional frameworks.

Accomplishing these objectives will require changing the culture of development assistance. One of the key problems with development assistance is that project preparation and design is all too often a "unilateral" activity conducted by international agencies. Foreign consultants usually overwhelm and spoon-feed borrowers. Too often, expatriate consultants themselves respond to the scope and deadline set by the agency, instead of helping local professionals do so. Local institutions, grantees, or borrowers should feel that the project is truly needed. They should take the lead, work on project identification, preparation and appraisal, and seek technical assistance only as needed.

International consultants should work with local counterparts, stakeholders, and other related institutions, provide "on-the-job-training," and transfer knowledge and skills. The various project reports should always be a joint venture. Through strategic planning sessions, brainstorming workshops and other types of meetings, organizations should jointly define the issues, prepare studies, identify approaches, set priorities, reach consensus, and plan for implementation. This way, the results will reflect the city's constraints and priorities. Essential to success is a match between the approach of the international donor or lender and local realities and priorities.

International agencies should allocate more resources and provide assistance to strengthen local institutions, allowing them to design, plan and manage the project. This also means more use of local expertise, with foreign consultants in an advisory and capacity-building role.

A great need exists to disseminate the information about demonstration projects that promote local ownership through participation and, to develop local institutional capabilities.

International development assistance aimed at the urban environment should be focused strictly on cross-sectoral issues. It should *remove* institutional constraints and include support to urban NGOs that can reach the poor. The focus on cross-sectoral issues requires new approaches for delivering technical assistance. Vital here is strengthening linkages and communication between private and public interests, and among sectors, disciplines, and institutions—including municipalities, utilities, communities, and other key actors and stakeholders at the local, metropolitan, regional, and national levels.

Along with institutional capacities for urban environmental planning and management, local governance needs to be strengthened. Both local political commitment to a strong local representative government and the development of effective participatory planning and management tools, institutions, and methods are essential.

Participation should be understood both as a means and as an end. It is a means of increasing the effectiveness of planning, management, and implementation with the end of promoting democratic governance and local empowerment.

Strengthening Institutions for Better Planning and Management

Strengthening urban environmental planning and management is likely to involve developing tools and methods that help clarify institutional arrangements, promote coordination, build consensus, aid priority setting, and improve the information base for decision-making.

- **Clarifying Institutional Arrangements.** Assistance is needed in identifying constraints and institutional needs and arrangements for urban environmental planning and management, as well as in formulating institutional strategies, action plans, and environmental policy agendas.
- **Promoting Coordination.** Assistance should be provided to develop coordination frameworks and mechanisms related to the institutional arrangements mentioned above. Effective coordination and communication remains an important issue because of conflicting interests and agendas of different actors and stakeholders in urban areas.
- **Building Consensus.** The sheer number of actors in urban areas makes conflicts between development forces and environmental concerns more apparent in cities than in isolated rural settings. The objectives of the government and the community may conflict, and hidden agendas often lurk behind objectives. A key part of participatory planning is thus developing and

applying conflict-resolution and negotiation techniques by exploring linkages and common objectives between institutional mandates, constituencies and decision-makers, stakeholders, and intended beneficiaries or affected parties.

- **Setting Priorities.** Governments insulated from popular voices and pressures are more likely to concentrate scarce resources on infrastructure projects that give them prestige but that do not benefit the majority. Even where political commitment exists, decision-makers still question whether resources are being wisely spent. Assistance should be provided in setting priorities through consultation. Where budgets are limited, the public needs to participate in the debate about tradeoffs, and to influence choices regarding investment in parks, waste treatment plants, or water supply systems.
- **Improving Information.** More and better information contributes to well-informed discussions and better decisions. Conversely, information gaps hamper effective decision-making. More resources should be allocated to increase scientific research and data generation in developing countries. Carefully structured information systems—essential to success—should incorporate data appropriate to the types of decisions needed.

Strengthening Urban NGO Capabilities and Promoting Community Participation in Decision-Making

Projects that successfully reached the poor typically help low-income groups get organized and participate. Local and international experiences in developing countries have demonstrated that NGOs can reach the poor and that participation, especially by women, is vital to the success of development programs and projects. Increased direct support to urban NGOs will ensure NGOs are better equipped to build a bridge between donors and governments, and the poor. NGOs are effective vehicles for assistance to less sophisticated, community-based organizations (CBOs). NGOs have been working with low-

income communities on various development issues for decades. Although the urban environment may be new terrain for most of them, they already have structures and networks for health and family planning, housing, infrastructure improvements, and other areas. These structures can facilitate a smooth transition to urban environmental issues.

Policy Research Opportunities

Urbanization and Natural Resources. Although urbanization is closely related to the degradation of natural resources, much remains to be learned about the linkages among urbanization, environment, and natural resources. A promising and necessary topic for future research is the extent to which cities contribute to such global environmental problems as acid rain, global warming, and the depletion of the ozone layer. Issues may also include deforestation resulting from the commercial consumption of woodfuels; loss of prime agricultural land due to rural to urban land conversion; land degradation due to increased runoff, erosion, and siltation; degradation of downstream watersheds and coastal resources and its impacts on fisheries and tourism; forests and crop damage due to acid rain; urban greenhouse gas emissions; and others.

Regulatory and Economic Policies. Dealing with urban pollution requires developing improved regulatory, fiscal, and economic policies, as well as institutions capable of implementing them. Research is needed on regulatory and economic instruments for environmental control and prevention. These include standards and permits, zoning, monitoring and enforcement; discharge and user fees; environmental impact/risk assessments; and fiscal and economic incentives—together with the removal of disincentives—for environmental investment.

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NOTES

1. Urban Management Programme, The World Bank, "Cities and UNCED, Broadening the Environmental Debate", *The Urban Age*, Volume 1, Number 1, September 1992, p. 1.
2. This paper revisits a conceptual framework first identified during WRI's research for the development of Urban Environmental Indicators. The four components of this framework are as follows: a) environmental pressures, which include both social pressures and natural fluctuations that disturb the environment from baseline conditions; b) environmental conditions, which reflect the state of the air, water and land resulting from concentration of wastes; c) environmental impacts, risks or effects, which include health, economic, aesthetic and ecological impacts from exposure to pollutants, and d) institutional responses—and performance of responses—to environmental impacts. See: Carlos Linares, D. Seligman and D. Tunstall, "Developing Urban Environmental Indicators in Third World Cities", WRI and USAID Office of Housing and Urban Programs, Project Report, Washington D.C., February 1993.
3. World Bank, "Urban Policy and Economic Development: An Agenda for the 1990's," World Bank Policy Paper, Washington, D.C., 1991, p. 16.
4. Carl Bartone, Janis Bernstein, and Josef Leitmann, "Toward Environmental Strategies for Cities: Policy Considerations for Urban Environmental Management in Developing Countries," Review Draft, UNDP/World Bank/UNCHS (Habitat), Urban Management and the Environment, Urban Management Program, Washington, D.C., May 1993, p. 3.
5. UNDP, "Cities, People and Poverty: Urban Development Cooperation for the 1990's", UNDP Strategy Paper, New York, 1991, p. 16.
6. *Ibid.*, p.18
7. The World Bank, *Development and the Environment: World Development Indicators*, World Development Report 1992, The World Bank, Washington, D.C., 1992.
8. World Resources Institute, *World Resources 1990-91*, Washington, D.C., 1990, p. 75.
9. Carl Bartone, et al, "Towards Environmental Strategies for Cities", Working Draft, UNDP/World Bank/UNCHS (Habitat), Urban Management and the Environment, Urban Management Program, Washington, D.C., 1993, p. 7.
10. Water and Sanitation for Health Project WASH, "Environmental Health: Water, Sanitation, Wastewater Management and Drainage." WASH/Office of Health of USAID, Washington, D.C. 1991. pp. 3-8. "The goals of the U.N. International Drinking Water Supply and Sanitation decade (1981-90) were not met. The Decade began with 180 million urban dwellers unserved with a safe water supply. 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".
11. Josef Leitmann, Urban Manager, Urban Management and Environment Program, The World Bank, personal communication.
12. World Bank, "Urban Transport," World Bank Policy Study, Washington, D.C., 1986. p. 20.
13. Josef Leitmann, "Energy Environment Linkages in the Urban Sector." UNDP/World Bank/UNCHS (Habitat), Urban Management and the Environment, Urban Management Program, Washington, D.C., 1991, pp. 2-3.
14. The World Bank, *The Urban Edge*, Vol 8, No. 9, November 1984 and Op. Cit. 2, Box 1. p. 34.
15. *Op. cit.* 9, pp. 19-20.
16. World Resources Institute, *World Resources 1992-93*, Washington, D.C., 1992, p. 196.
17. *Ibid.*, p. 17.
18. *Ibid.*, p. 17.
19. *Ibid.*, p. 17
20. Office of Housing and Urban Programs, USAID, "Urbanization and the Environment in Developing Countries," 1989, p. 10.
21. *Op. cit.* 9, pp. 2-3.
22. *Op. cit.* 9, pp. 5-6.
23. *Op. cit.* 9, pp. vii - viii and Jorge Hardoy, et al. *The Poor Die Young*, Earthscan Publications Ltd., London, 1990.
24. *Ibid.*, p. 15.
25. *Ibid.*, p. 15.
26. International City Management Association (ICMA), "Municipal Development Project," Program Statement, ICMA/Office of Housing and Urban Programs, Washington, D.C., 1993, p. 3.
27. *Op. cit.* 9, p. 6.
28. *Op. cit.* 9, p. 17
29. Josef Leitmann, "Rapid Urban Environmental Assessment: Lessons from Cities in the Developing World," Working Draft, UNDP/World Bank/UNCHS (Habitat), Urban Management and the Environment, Urban Management Program, Washington, D.C., 1993, pp. 31-33.
30. *Ibid.* pp. 39-41.
31. *Op. cit.* 9, pp. 35-39.
32. *Op. cit.* 19. p. 18.
33. Hardoy, et. al. *Op. cit.* 22, p. 232.
34. *Op. cit.* 3, pp. 7-12.
35. Urban Management Programme: "A Partnership of the United Nations Centre for Human Settlements, the United Nations Development Programme and the World Bank", Program Brochure, Washington, D.C., 1992.
36. *Op. cit.* 28.
37. *Op. cit.* 9. Latest version entitled: "Toward Environmental Strategies for Cities: Policy Considerations for Urban Environmental Management in Developing Countries." Urban Development Division, The World Bank. May 1993.
38. Siva Ramakrishnan, Senior Advisor and Unit Coordinator, personal communication.

39. Mohamed T. El-Ashry, "Balancing Economic Development with Environmental Protection in Developing and Lesser Developed Countries," *Air and Waste*. Vol. 43, January 1993. p. 21.
40. The World Bank, "Effective Implementation: Key to Development Impact," Task Force on Portfolio Management, 1992.
41. Metropolitan Environmental Improvement Programme (MEIP). "An Introduction to the UNDP-World Bank Asia Regional Programme for Urban Environmental Management," Programme Brochure, Washington, D.C., 1991.
42. David Williams, Manager, MEIP, personal communication.
43. EDI, "The Municipal Development Program for Sub-Saharan Africa: A Partnership for Building Local Government Capacity," Program Document for the Eastern and Southern Africa Module, Africa Technical Department and the Economic Development Institute of the World Bank. Harare, May 1991. pp. 1-4.
44. George Gattoni, Senior Advisor, EDI/World Bank, personal communication.
45. Office of Housing and Urban Programs, Bureau of Private Enterprise, *Annual Reports 1991 and 1992*.
46. Office of Housing and Urban Programs, "Privatizing Solid Waste Management Services in Developing Countries: Lessons Learned from Private Sector Involvement in the Delivery of Solid Waste Collection and Disposal Services," Seminar Proceedings Paper, USAID, 1991. p. ix.
47. WASH, *Lessons Learned from the WASH Project*. Office of Health, Bureau for Science & Technology, USAID/WASH, Washington, D.C., 1990, p. 4.
48. USAID, "Freedom, Fresh Air, and Enterprise, U.S. Environmental Assistance to Central and Eastern Europe", USAID Bureau for Eastern Europe. Office of Development Resources, Environment and Natural Resources. Washington, D.C., 1992.
49. USAID, EP3, "Environmental Pollution Prevention Project", Research and Development Bureau, Washington, D.C., 1992. p. 1.
50. ICMA, "Municipal Development Project of the International City Management Association (ICMA)." Funded by AID, Office of Housing and Urban Programs. Washington, D.C., p. 3.
51. Jochen Eigen, Manager SCP, personal communication.
52. Op. cit. 16, pp. 3-8.
53. Ibid, p. 8.
54. Jochen Eigen, Manager SCP, personal communication.
55. Inter-American Development Bank (IDB), *1992 Annual Report on the Environment and Natural Resources*, Washington, D.C. 1993, pp. 1-13.
56. Ibid. p. 4.
57. IDDI, "IDDI: Integral Urban Development in the Dominican Republic", in *Voices from the City*. Newsletter of the Peri-Urban Network on Water Supply and Environmental Sanitation. Washington, D.C.: WASH. Vol. 2. March. pp. 4-6.
58. Alberto Harth and Mauricio Silva, "Mutual Help and Progressive Development Housing. For What Purpose?, Notes on the Salvadorean Experience," in *Self-Help Housing: A Critique* ed. Peter Ward, Ch.9, Alexandrine Press, London, 1982; and Michael Bamberger and Alberto Harth, "Can Shelter Programmes Meet Low-income Needs? The Experience of El Salvador," in *Low-income Housing in the Developing World*. John Wiley and Sons Ltd., 1984, Ch.2.
59. Alberto Harth and Mauricio Silva, personal communication.
60. Op. cit. 8, p. 45.
61. Ibid, taken from UNCHS (1988), 1992. p. 46.
62. Ibid, taken from National Institute of Urban Affairs (1990) and Ribeiro (1987). p. 56.
63. Josef Leitmann, "Tianjin: Towards an Improved Urban Environment," *The Urban Age*. Environment Issue. Vol. 1, No. 1, Sept. 1992. p. 3.
64. "City of Hope: Curitiba's Innovative Solutions to Urban Problems." In Earth Line. Environmental and Natural Resources Policy and Training (EPAT) Project. January 1993. p. 5.

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