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**SUSTAINABLE DEVELOPMENT AND THE PROVISION OF BASIC URBAN  
SERVICES: THE NEED FOR CHANGING THE ROLES OF GOVERNMENT AND  
PRIVATE ORGANIZATIONS**

**by**

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## INTRODUCTION:

Population and environmental issues are becoming increasingly intertwined as the world's population explodes and environmental problems are shaping much of our outlook on the future. It is widely accepted that urbanization in developing countries is irreversible and that urban areas are not expected to experience net out-migration. (USAID, 1989) There are many aspects of urban development which can be viewed as having a positive impact. In terms of population control, it had been shown that urbanization often leads to declining birth rates by increasing access to health services and improving women's position in society. Urbanization has also proven to be a factor which can contribute to an area's increased provision of services. The per capita cost of service provision tends to decrease as density increases. Additionally, waste treatment is more affordable in urban areas. Urban areas also tend to use more efficient and environmentally sound energy sources because of increased access to the latest technological advances. However, urban growth also has many negative side effects which must be addressed. Urban development usually leads to a depletion of natural resources that are necessary for sustainable development to occur. In addition, the majority of urban dwellers inhabit large squatter settlements with highly limited access to basic services. (USAID, 1989)



With the developing world's urban population growing rapidly, urban environmental problems are becoming increasingly important and complex. These problems urgently need to be studied and mechanisms for facing their challenges must be developed and implemented. This is an incredibly complex process with many factors and actors that must be taken into account.

This analysis will provide an overview of the interrelated issues of urban growth and the environment in developing countries in terms of the provision of basic urban services in low-income urban settlements. Harrison's (1992) analysis of population and the environment and sustainable development will be used demonstrate the complexities of the problems and the need for an integrated approach in the move towards sustainable development.

The analysis will then turn towards looking more closely at the changing roles of the various actors in the development of sustainable cities and the provision of basic urban services. The provision of such basic urban services as housing, water, sanitation, and transportation have become central issues for urban planners in the urban centers of the developing world. Addressing these issues will only become more critical as these areas expand in size and population, as the inadequacy of basic services serves to breed and intensify poverty. The rapid rate of urban growth has far surpassed the ability of central and

municipal governments to provide even the most basic services to the urban population. With urban populations in many developing countries' cities growing at two or three times the rate of national populations, the central and municipal governments simply do not have the resources to serve the urban poor if they continue the current approach to addressing these problems. Planners and policy makers working in the developing world will need to learn how to draw on resources other than those sources traditionally used by governments. It is not only resources that are needed, but also increased administrative capabilities and political will. Governments will need to draw on innovative policies, programs, and organizations. They will also need to rethink the placement of responsibilities among central governments, municipal governments, and non-governmental organizations. Each of these urban environmental issues will have to be evaluated in terms of how to best meet the urgent needs to the exploding urban poor population.

This analysis is complemented by a case study of a non-governmental organization (NGO) working in the field of low-income urban service provision to better the urban environment. The case study is of the Sulabh International of India which works in the field of low cost, sustainable sanitation. The analysis will look at its role in the provision of the service and how it served to better the environmental conditions of its target community. The case study provides an example of how a

non-governmental organization can be successful in urban service provision. It also demonstrated the need for governments to encourage and facilitate more initiatives of its kind.

Finally, this analysis will provide some ideas and guidelines on how governments can rethink their role in urban service provision and the relationships among the central government, the municipal government, and the private organizations in order to best provide for the urban poor and to move towards sustainable cities. With the current urban environmental crisis and the majority of urban dwellers in developing countries living without access to urban basic services, these are critical issues which must be addressed in order for sustainable development to be achieved.



## URBAN GROWTH AND THE ENVIRONMENT: THE NEED FOR SUSTAINABLE DEVELOPMENT

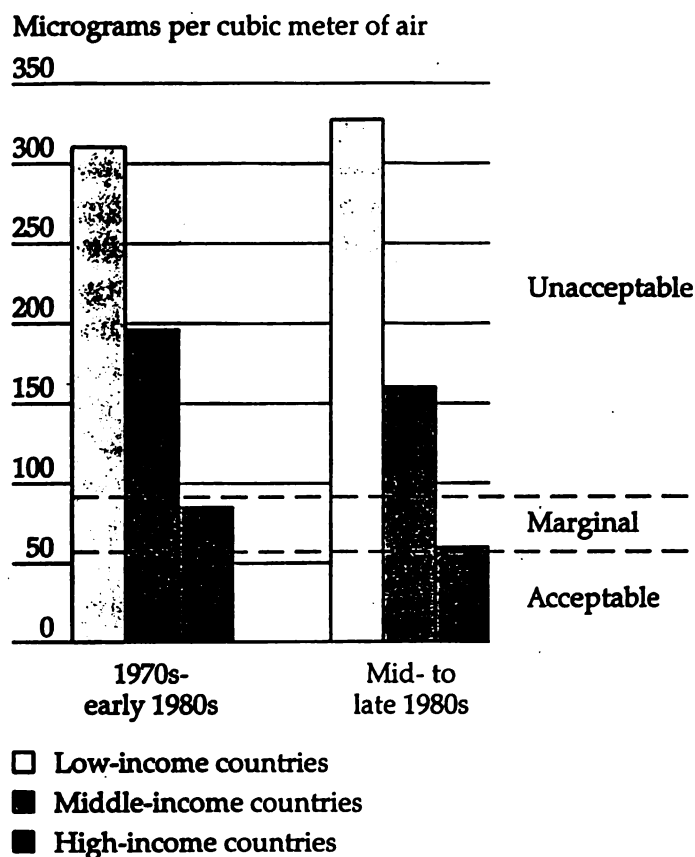
The critical urban environmental problems in the developing world's cities can be referred to as *the gray agenda*. This refers to problems such as unsafe water, insufficient waste management and pollution control measures, congestion and crowding related accidents, the occupation and deterioration of environmentally sensitive lands, inadequate infrastructure, poor governance, and the interrelationships between each of these problems. (Leitman, 1992) Table one notes the main problems associated with urban growth and their related impacts. The impact of the gray agenda on the poor's daily lives can be linked to health problems, decreased productivity, insufficient incomes, and an undesirable quality of life. Almost all of the households in the poorer areas live with the daily threats from two basic serious health hazards: pathogenic micro-organisms, including those from human excreta, and overcrowded and cramped living conditions. Urban air pollution is a related hazard to which the urban poor have excessive exposure. (Hardoy, 1989) Figure one demonstrates the breakdown of urban air pollution by country income groups.

There are no sewerage systems in most urban centers in Africa and Asia. (Hardoy, 1989) Even in those that do have sewerage systems, it often only serves a very limited portion of

the population. It is estimated that thirty to fifty percent of the urban centers' solid wastes are left uncollected.

(Cointreau, 1982) Therefore, it amasses around houses, on streets, and in wastelands. This issue is addressed in the case study later in this paper of a non-governmental organization (NGO) which provides one means of addressing this issue in terms of both technology and social equity.

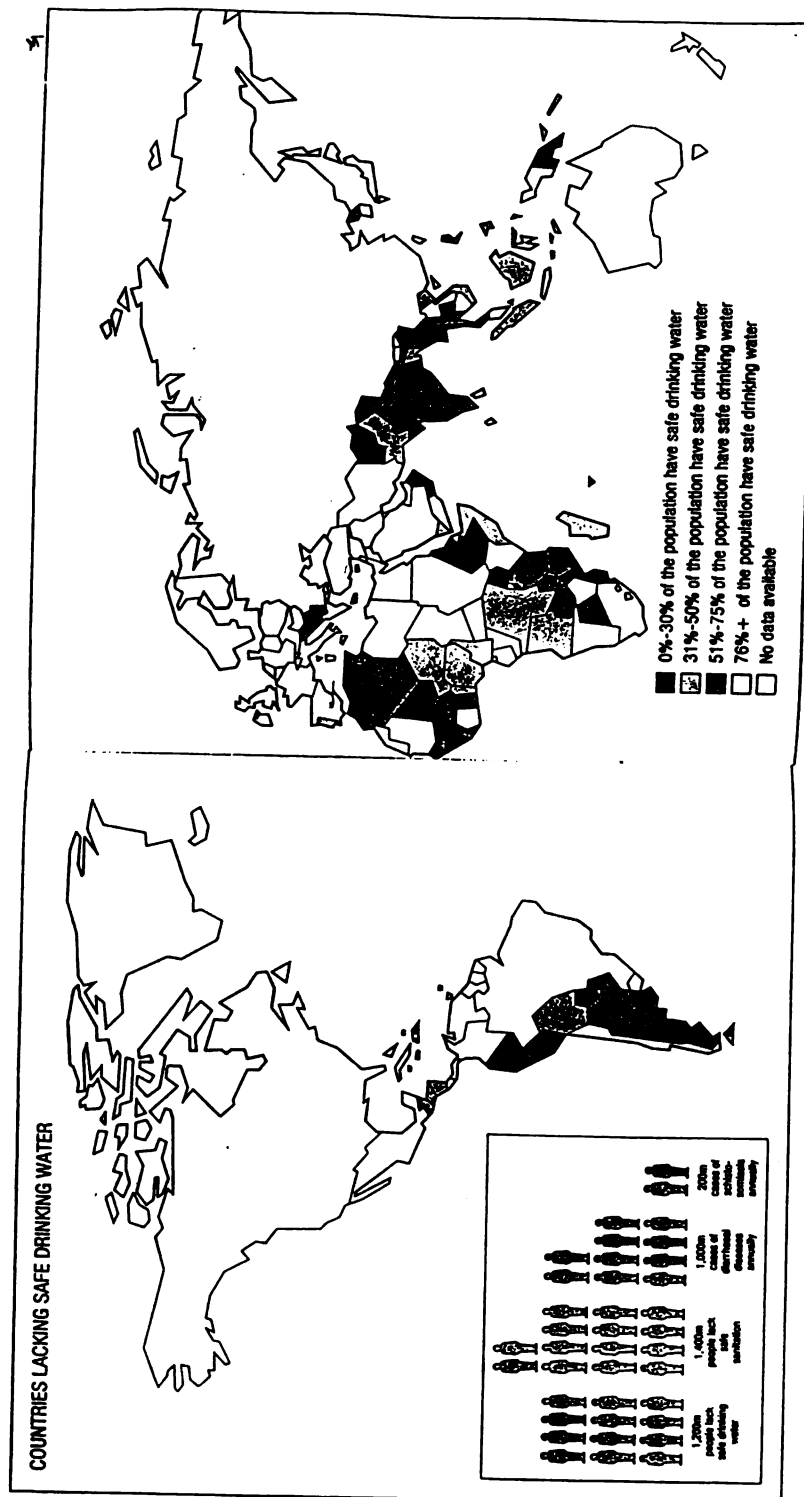
FIGURE 1: URBAN AIR POLLUTION BY COUNTRY INCOME GROUP



Note: Periods of time series differ by site. World Health Organization guidelines for air quality are used as the criteria for acceptability.

SOURCE: WORLD BANK, 1992

FIGURE 2: WORLD'S ACCESS TO SAFE DRINKING WATER



SOURCE: (SADIK, 1989)



Water supply is also very limited in the developing world. Figure 2 demonstrates the lack of access of safe water. UNDP's Agenda 21 estimated that one and a half billion urban dwellers in developing countries are without safe water and over two billion lack safe sanitation. Water resources are one of the main resources that have been put under severe pressure by rapid urban population growth and industrialization. There is an immediate need for the better management of urban water resources for the alleviation of poverty and the advancement of the urban poor's quality of life. According to Agenda 21's goals for urban water supply, *"The overall priority is to identify and implement strategies and action to ensure that continued supply of affordable water for present and future needs, and to reverse current trends of resource degradation and depletion" (p.44).* Therefore, today's urban policy planning and management must not only take into consideration those who presently inhabit urban areas, but the anticipated populations of the future. It is the responsibility of all involved parties to collaborate to properly address these issues and identify and implement viable solutions.

It is clear that as the developing world's urban areas rapidly expand, the issues of urban environmental quality will be of increasing importance. As urban environmental quality conditions decline, their effects take an increased toll on the daily lives of urban dwellers, especially low-income urban dwellers. Of course, urbanization does not take place in a

**URBAN GROWTH ISSUES AND THEIR CONSEQUENCES**

OVERLOADED LAND	<ul style="list-style-type: none"><li>*higher population densities</li><li>*higher land prices</li></ul>
OVERBURDENED URBAN INFRASTRUCTURE	<ul style="list-style-type: none"><li>*lower service quality</li><li>*lower service accessibility</li></ul>
OVERLOADED NATURAL RESOURCES	<ul style="list-style-type: none"><li>*increased pollution</li><li>*decreased environmental quality</li></ul>
OVERWHELMED URBAN INSTITUTIONS	<ul style="list-style-type: none"><li>*decreased institutional responsiveness</li><li>*decreased public participation</li><li>*fragmented bureaucratic action</li></ul>
OVERCONCENTRATED ECONOMIC ACTIVITY	<ul style="list-style-type: none"><li>*depleted resources</li><li>*increased prices</li><li>*increased economic disparities</li></ul>
ABANDONED RURAL AREAS AND SMALL TOWNS	<ul style="list-style-type: none"><li>*depleted human resources</li><li>*diminished maintenance of infrastructure</li></ul>

(Bower, 1989, p.13)

vacuum, and regional shifts in population and economic activity have significant impacts on, and are significantly impacted by, regional, national, and international issues. In order to comprehend these urban environmental problems and the successful strategies by which they can be addressed, one must take into account a collection of intertwining natural, social, and economic relationships. Many policy makers and planners recognize the need to utilize a combination of both preventive and curative instruments in order to respond to the intrinsically intertwined issues of the urban environment. (UNDP, 1992). In the move towards sustainable development and sustainable cities, it is crucial to first understand the complexity of the urban environmental problems and then to draw on all of the available resources, actors, and approaches to best address these problems.

In his book The Third Revolution Paul Harrison (1992) looks at the issues of population and the environment in terms of moving towards sustainable development. He sees population, consumption levels, and technology as the three direct factors in environmental impact. Harrison uses the following modification of Barry Commener's formula for his analysis of the impact that these factors have on the environment. In addition, he uses this formula to determine the effect that adjustments in the equation will have on environmental impact:

ENVIRONMENTAL IMPACT= POPULATION X CONSUMPTION X TECHNOLOGY



Population refers to the number of inhabitants of an area and takes into account migration and birth and death rates. Urbanization in the developing world is occurring at an alarming rate and all research leads to the conclusion that it will continue in this direction. Although urban growth is also an issue in the more developed countries, it is an issue of much greater urgency in the developing world. Figure three contrasts urban populations in the less developed and the more developed countries.

It has been predicted that by the end of this decade almost 300 cities in developing countries will have populations of more than one million. Soon after the turn of the century it is expected that one half of the world's population will be living in urban centers. In the developing world urban populations are expanding by 60 million people each year. At this rate, there will be a net doubling of urban populations in the next twenty five years.(UNCED, 1992) Currently, the urban poor constitute over one half of the urban populations in developing countries. Urban human settlements provide shelter for two thirds of the developing world's population increases. By the year 2000, it is estimated that there will be almost two billion people in the cities' of developing countries. Of these two billion, approximately 600 million will have arrived during the present decade. Looking another 25 years into the future, by 2025 an

additional two billion people will be added to these cities' populations. Figure four provides on overview of the percentages of developing world's urban population and projections for the year 2025. (UNCED, 1992)

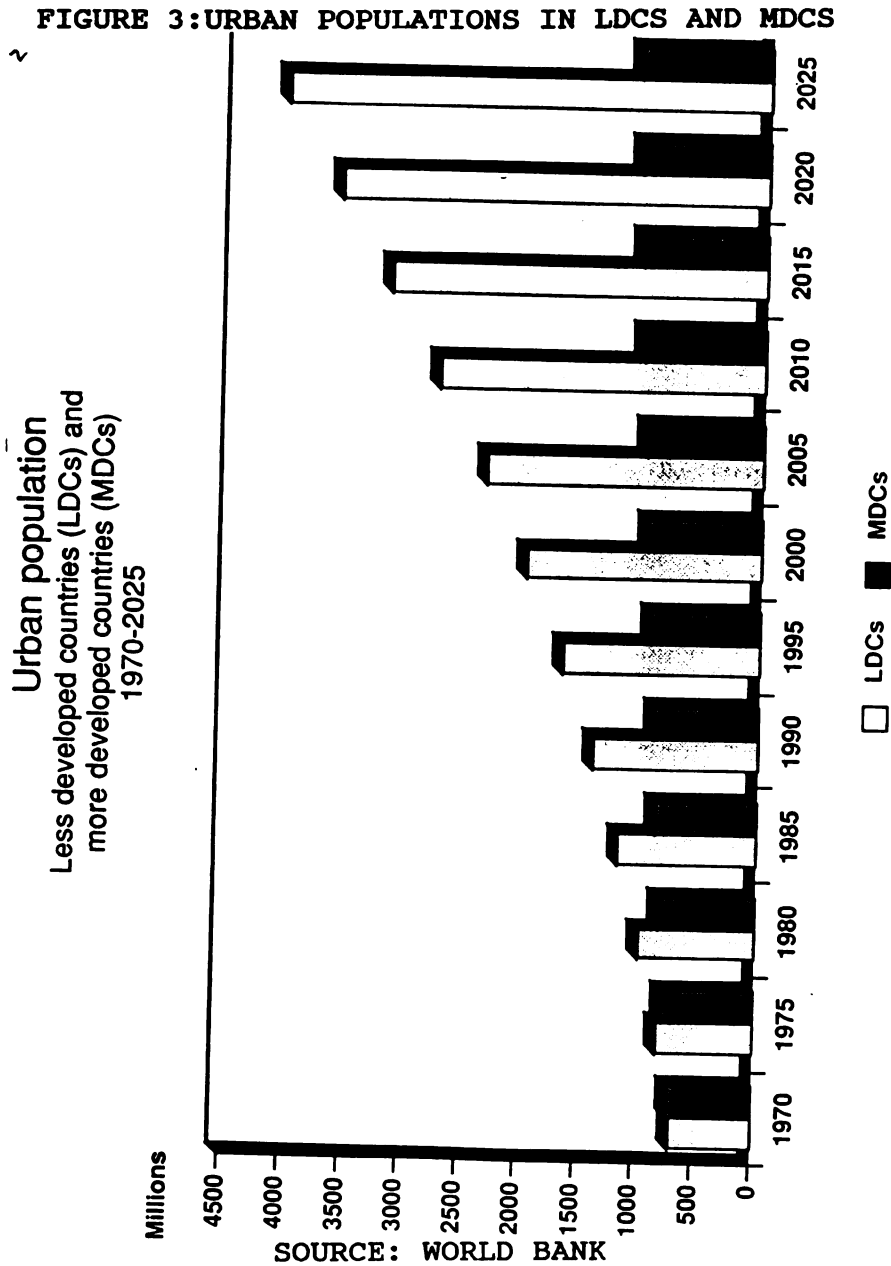
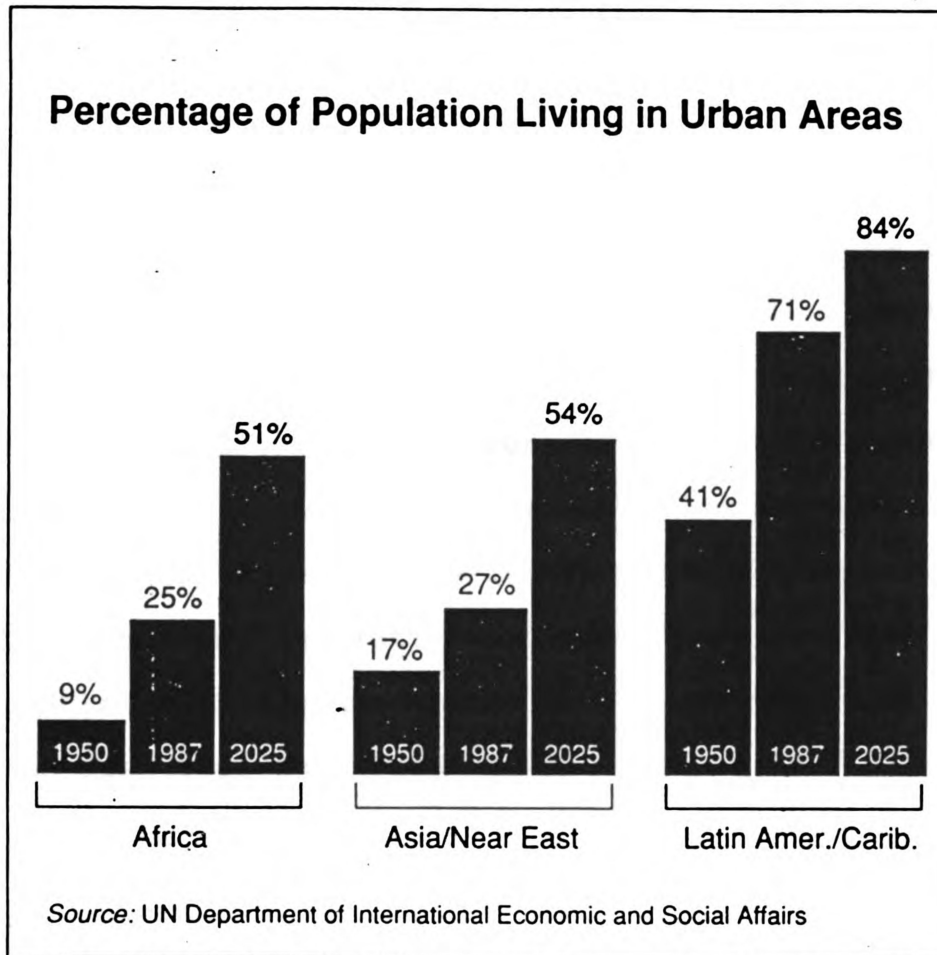


FIGURE 4: PERCENTAGE OF POPULATIONS LIVING IN URBAN AREAS



FROM (USAID, 1989)

The technology factor stands for the quantity of resources necessary to produce each unit of goods and the quantity of waste emitted into the environment after consumption. Low cost technologies can provide efficient production of many of the basic products consumed by urban dwellers. Harrison notes that in urban areas low-cost technologies and support for self-help will lead towards better urban environmental conditions for a greater portion of the population at a lower cost. For example, the recycling of solid waste reduces the use of the area's resources, yet does not require the reduction of consumption levels. In addition, Harrison notes that organic farming cuts the flow of sewerage, fertilizer, and pesticide wastes into water sources. One pivotal obstacle with the adoption of these low-cost, self-help technologies is their wide scale adoption. It is difficult to find initiatives which are socially and economically acceptable to the target community. Issues of local initiatives will be discussed in greater detail in section two's analysis of the expanding and changing role of NGOs and CBOs.

There are many complexities involved in the development and adoption of these technologies. Often technology needed to address the problem exists long before it is widely accepted and adopted by society. In addition, technologies developed to address one issue often lead to many other secondary problems. These are the difficulties that arise when dealing with factors

that are part of complex social, economic, political, and eco systems. As Harrison explains:

*Technologies devised to solve a known problem often give rise to other problems that were not foreseen...Modern 'solutions' to population pressure on land cause pollution problems which will require further adaptation...Nor is the problem solved simply by some clever invention. A technology will only be widely adopted if it is acceptable to most users. It must work socially as well as technically. It must fit in with users' economic and social circumstances. (Harrison, 1992, p.251)*

Consumption refers to the amount of goods used per person and the amount of waste created per person. Consumption levels vary greatly among income groups. Currently there exists a pattern of consumption and waste creation which is unable to continue to be managed without severe damage to the biosphere. If four-fifths of the world continues to strive to meet the consumption levels of the other one fifth, the environment will not be able to sustain this continued abuse. However, the developing world can not be denied advancement as they experience economic growth in the upcoming years. As explained in *Beyond the Limits*:

*A sustainable society would not freeze into permanence the current inequitable patterns of distribution. It would certainly not permit the persistence of poverty. To do so would not be sustainable for two reasons. First, the poor would not and should not stand for it. Second, keeping any part of the population in poverty would not, except under dire coercive measures, allow the population to stabilize. (in UNICEF, 1993, p.35)*

Environmental impact is directly influenced by the multiplication of three factors: population, consumption, and technology. Therefore, in working to reducing one side of the equation, environmental impact, there are three factors on the other side of the equation which must be addressed. Consumption per person can be lowered. Population growth can be slowed and long term population growth patterns can be altered. Technology can be adapted which will allow us to serve many of our increasing needs with the minimum environmental impact. Lowering consumption per person is more difficult than minimizing the environmental cost of consumption. In order to minimize this environmental damage, changes must occur in the realms of both population and technology. This is true for each of the factors in the equation. Reducing population growth rates is not as simple as distributing contraceptives. The reduction of population growth rates occurs at a much slower pace than the adaption of technology.

These three components do not act alone. Each influences each other and is influenced by many other factors. There are many other issues which come into play and which must be addressed in order to successfully curve this growth. The product of this equation is generated by *multiplying all three factors*. Therefore, progress or regress in any one of the three is compounded in the solving of the equation. The other factors

which influence the environmental impact indirectly include factors diverse as governance, poverty, inequality, democracy, market freedom, property rights, and women's rights. Positive changes in any of these and many other factors will have a positive effect on the reduction of population growth rates.

In looking for ways to address these problems in a sustainable manner, Harrison calls for human resource development. Human resource development is not an alternative to economic growth, yet it is the means of obtaining it. He writes:

*No other strategy offers such a combination of rich payoffs. Working separately on population, consumption, or technology will reduce the rate of environmental damage. But our basic equation for environmental impact is a multiplication sum. Progress or regress is compounded... And remember that these three factors are only our proximate determinants of environmental impact. To reduce their impact also means working on the whole range of factors...from abolishing poverty and reducing inequality to improving markets, economic policies, democratic rights, and institutions for controlling commons....The task of balancing population, consumption, and technology with the environment will be Herculean. Unless we pull out all the stops, the damage incurred before we stabilize our relationship with the environment will be catastrophic.*

*(Harrison, 1992, p. 291)*

The impact and interrelatedness of the problems associated with rapid urban growth and its environmental impact are widely recognized. In UNCED's guide to Agenda 21, "The Global Partnership for Environment and Development", it is explained, "The concentration of people in urban areas presents complex

*planning and management problems in environmental health, energy, transportation, water supplies and waste management. There is a need to develop policies that can connect public, private, and social sectors, and the institutions to provide training of technical experts and planners" (UNCED, 1992, p.38). As urban centers expand, there will be even greater pressure on their already overburdened and insufficient infrastructure. The burdening of urban services and infrastructure will also increase as cities are becoming increasingly important centers of productive and commercial activities. (Rondinelli,1992)*

In order to comprehensively address these complex problems, it is necessary for all of the involved parties to pull together their knowledge, resources, and commitment. If sustainable human resource development is to be achieved, it is necessary to have enabling governmental policies and structures; increased mobilization and collaboration; and support for local level initiatives. The following section discusses the need for changing the roles of governmental and non-governmental provision of urban basic services and demonstrates how these roles can be changed in order to facilitate sustainable development.



**SECTION TWO:**  
**THE CHANGING ROLES AND RESPONSIBILITIES OF GOVERNMENT AND PRIVATE**  
**ORGANIZATIONS**

## **CHANGING AND STRENGTHENING ROLES AND RESPONSIBILITIES**

At several point in this analysis, attention has been drawn to the need for an integrated approach with the participation of all involved parties in the move towards sustainable development. The growth of private sector involvement in urban basic service provision has occurred largely as a response to government's lack of ability to provide for their urban dwellers. Institutional alternatives to public sector agencies have emerged along with private sector providers of previously publicly monopolized services. It has been noted that the private sector is already providing many of the low-cost, alternative technology solutions to address the lack of urban basic services and infrastructure and their related urban environmental problems. It is becoming increasingly evident that governments can benefit from facilitating the expanding role of the private and informal sectors by encouraging private sector involvement in the provision of services and infrastructure. This section looks at the changing roles and responsibilities of governments and private/non-governmental organizations. It demonstrates the need for a transformation of their roles and examines how they can be strengthened and modified so as to best provide for the urban dwellers and the protection of the urban environment.

## THE NEED TO CHANGE THE ROLE OF GOVERNMENTS

Governments are often not fully aware of the magnitude of the basic service related environmental problems which they are facing. Many of the environmental problems facing the developing world's cities are rooted in underlying problems of mismanagement and weak institutional capabilities. The broad implications of these problems include such issues as incompatible economic policies, insufficient infrastructural and service investment, poor management, inadequate regulatory and institutional frameworks, and insufficient political interest in environmental problems. These problems must be understood and addressed in order to achieve sustainable development.(UNDP, 1992)

The inability of state owned enterprises to provide basic services to rapidly growing urban areas is a clear indication of their inefficiencies. Telephone service is a clear and prevalent example of these inefficiencies. Urban dwellers wait for telephone installation an average of eight years in Indonesia, seven years in The Philippines, and ten years in Pakistan. Even when installed, telephone service is often very poor. Although governments often do not invest in capital and financial resources for the servicing and development of their system, existing lines are seriously overstaffed. According to the World Bank, state owned telephone companies in developing countries employ

50-100 workers per 1000 lines, while in the United States and Europe, companies employ .2 or fewer workers for the same number of lines. (Ambrose, 1990)

Urban growth has far surpassed the capacity of central governments to manage development and respond effectively and efficiently to the need for infrastructure, services, and land. The authorities' lack of sufficient management and responses has led to the environmental degradation and depletion of natural resources which is currently threatening and undermining the productivity of cities and is hampering economic growth. Weak institutional capacities for planning as well as managing and operating many facets of urban service delivery leave much of the population unserved or underserved. This occurs even in the provision of one of the most basic human needs, shelter. The great majority of low-income housing in the developing world's cities is now build on illegal or semi-legal land. As Leitman, Bartone, and Bernstein (1992) explain, *"Although cities are the engines of economic development, failure to manage the impacts of rapid urbanization is threatening human health, environmental quality, and urban productivity"* (Leitman, 1992, p.132).

What motivates governments is often the desire to retain political power and the associated desire to escape disaster. Governments have tended to address urban environmental consider-

ations when they can see that they have direct, immediate effects on the government, such as when they have a negative effect on the city's tourist industry. However, the implications and repercussions of these problems are broad in scope and spreading rapidly. In its discussion of the Poverty, Population Growth, and Environmental Degradation (PPE) Spiral, UNICEF notes these widespread repercussions:

*In addition to their worldwide environmental impact, PPE problems are also beginning to transmit international shock waves through their impact on the political stability of the developing nations, with all the costs and risks that such instabilities will pose...The hopes of millions of people have been raised in the scores of countries which have made or are attempting to make the transition from authoritarian rule. Frustration of those hopes by PPE problems will increase economic desperation, leading to further internal migrations, social division, political turmoil, and violent conflicts.*

*(UNICEF, 1994, p.33)*

Some governments are coming to realize these implications and the importance of addressing these problems. It has become clear that the interrelated issues of urban growth, poverty, and the environment can not be ignored if a country wants to move towards sustainable development and political stability. This understanding was made clear by Dr. Kofi Awoonor, Ghana's Ambassador to the United Nations when he said that, "Poverty is the father of dictatorship"(UNICEF, 1994, p.33).

In their publication, The Urban Environment in Developing Countries, UNDP (1992) notes that governments should be

encouraged to make the connection between economic stability and rising incomes and governance problems related to the urban environment. UNDP points out that a city's economic growth and incomes often suffer when:

1. The available public infrastructure is poor in volume, quality, or price.
  2. The transport system leads to high absenteeism and exhaustion in the workforce as well as costly delays in the movement of commodities.
  3. Bad housing and services debilitate the labor force.
  4. Ordinary telephone calls impose extraordinary costs in terms of wasted time
  5. City life has high risks ranging from faecal contamination to street violence.
- (UNDP, p.36)

Rapid urban growth often occurs at a pace much faster than that which the government is able to keep up with. Weak institutional capacities of governments prohibit the productive development of all aspects of the workings of a city. Governmental structures need assistance in organizing and guiding their country's cities' development along a sustainable path. In the wake of these developments, many governments are looking to the private sector for assistance and guidance on urban basic service and infrastructure provision. Countries are exploring

the possibilities of expanding private sector involvement as they realize that many state-owned enterprises are not contributing to governmental revenues, but actually are large contributors to governmental borrowing and debt.

## **EXPANDING THE ROLE OF THE PRIVATE SECTOR**

The role of non-governmental and community organizations in the addressing of urban environmental problems has evolved over the years out of a basic necessity for low-income urban dwellers to develop means to protect themselves from the hazards of their environment. It became evident to many members of these communities that their governments were not going to address these problems for them. The governments' lack of response can be seen as both an unwillingness and a lack of ability to solve these problems for which they were often the cause. Therefore, people were essentially forced to develop collective ways of addressing these problems which they found themselves in combat with in their daily lives.

### *Clarification of Terms*

There can be some confusion over the uses of the terms community based organization (CBO), non-governmental organization (NGO), and civil society organization (CSO). The most broad

term, CSO can be used to refer to such diverse organizations as trade unions, cooperatives, service organizations, community groups, youth and women's organizations, academic institutions, media, and church-related organizations. (UNDP, 1993)

In his article, *"Community Groups and NGOs in the Urban Field in Pakistan"*, Arif Hasan groups organizations at the community level into two categories. The first is the more informal groups. These usually are formed to address a specific issue or service a specific need. The organizations in the second group are the more formal organizations which are addressing longer term goals. In addition, these organizations often run a service. Hasan notes that the precise distinction between the larger and better organized community action groups and NGOs is often unclear.

Tade Akin Aina, in discussing the role of community organizations in environmental and urban contexts, notes the similarities of all the organizations and their basic function, *"the essence of what is referred to by all these terms in the arrangements and associations formed and located within the local space, or immediate residential surrounding of the actors...(they are) a place and point where lessons in autonomy, empowerment, popular participation, and democratic struggles are learnt, internalized, and disseminated into the community of the poor.* (Aina, 1990, p.6)



## Increased Recognition:

The world's growing number of civil society organizations are gaining recognition and respect. It is widely recognized that these organizations play a critical role in an area's development and that their importance is expanding. It is also recognized that to fully exercise their strength they can often benefit from collaboration amongst themselves and with local governments.

Many developing countries' NGOs and CBOs have moved beyond their initial function as service provision organizations and are active in issues involving their communities economic and social equity, empowerment, and policy change. (UNDP, Global Meeting 1994) The United Nations Development Programme recognizes this issue in its discussion of participatory planning in the 1993 Human Development Report. The authors write:

*A lesson many NGOs have learned is that efforts to promote participation and empowerment cannot be divorced from concrete economic achievements. If they are not simultaneously offering such improvements, efforts to promote empowerment come under strain...The approach is to encourage communities to reflect on their place in society and their power to bring about change. But unless this awareness raising is matched by efforts to meet the immediate tangible needs of the groups involved, the results can be frustration and the group's disintegration (UNDP, 1993, p.90).*

At the same time, NGOs and CBOs are gaining greater attention among the international development organizations. Many agencies and governments are now channeling their development assistance through NGOs and CBOs as they have found it to be the best way to have it reach the target groups. Often government and private contributions are made to Northern NGOs which then send the funds to their Southern counterparts. Although some Northern NGOs still operate in the South, most organizations have moved towards putting this power in the hands of the NGOs or CBOs in the area of implementation. At this point, much of the decision making and planning still takes place with little Southern input. However, as the organizations become more established, this balance will continue to shift and greater power equalization may be observed.

In addition, it is becoming increasingly recognized that these organizations should collaborate and network amongst themselves. In looking to the future for the development of sustainable human settlements, local planning and management authorities will need to adopt a more participatory approach to sustainable urban development. This necessitates dialogue between the public sector, the private sector, and local communities. A UNDP program, Asia-Pacific 2000 (now UMPAP) seeks to accelerate the transfer, adaption, and expansion of NGO initiatives which demonstrate how urban communities can organize themselves to gain access to basic environmental services. The

programme calls NGO's the vital link in their ability to reach poor populations unserved by other organizations; mobilize local resources and build local organizations; provide relatively low-cost services to unserved populations; solve complex problems in creative ways; and organize networks of diverse organizations around shared visions.

There are countless examples all over the world of people who have achieved so much for their communities with so little. These achievements are often without the assistance or support of their governments. There are currently many changes occurring in developing countries' government policies. They are turning away from vain policies which produce unrealistic plans for the public provision of expensive infrastructure. Today, many governments are looking for ways to support local, self-initiated and self managed initiatives. The need for bilateral and multilateral organizations to support these moves is crucial. (Turner, 1988)

As Dr. Arcot Ramachandran, then Executive Director of The United Nations Centre for Human Settlement (UNCHS, HABITAT) declared in his 1986 address to the United Nations Commission on Human Settlements, *"Our agenda for the next ten years must be to find the necessary capacities to apply (these) enabling strategies: (which we cannot be sure of success) we can only give a guarantee of failure for any other kind of strategy."* (in Turner, 1988, p.6)

The following case study is an example of an NGO which emerged as a response to a basic need of the urban poor: the need for safe sanitation. Much of Delhi's population has no sewerage facility or sufficient drainage system. With no provision for the expansion of these services in the government's budget, the people have turned to the option of low cost sanitation to meet their immediate need for these services. The case study provides a detailed look at how non-governmental organizations develop and expand and how their role can change with this growth. Because of the limited public sector involvement in the organization, it also shows what these organizations have been able to accomplish with limited assistance, and demonstrates how much more could be accomplished with increased collaboration and support from the government.

CASE STUDY: "A REVOLUTION IN LOW COST SANITATION: SULABH INTERNATIONAL, NEW DELHI"

This data comes from a case study prepared by the National Institute for Urban Affairs, New Delhi, India. It was undertaken in collaboration with the UNDP/World Bank/ Habitat Urban Management Program. It was prepared for the Mega-Cities Project, New York, NY.

BACKGROUND:

Delhi is the most rapidly growing mega-city in India. The United Nations predicts that by the year 2000, Delhi will be the eleven largest city in the world. The 1962 Master Plan of Delhi attempted to curb this growth by decentralizing urban spatial patterns. The plan called for the development of a polycentric growth pattern with the distribution of commercial and industrial and residential zones. However, the existence of such a plan was not enough to control the flood of people into the central city area. In light of the lack of success of the decentralization scheme, Delhi's planners have developed a new plan which recog-

nizes the development of centralized employment and settlement patterns.

Delhi has many of the problems typical of rapidly expanding mega-cities: traffic congestion and accidents; unhealthy environmental conditions, inadequate infrastructure, lack of clean water, decrepid sewer system, and frequent power failures. These problems will only become more acute as the population grows. It has been estimated by Delhi's planners that by the year 2000 there will be a need to triple or even quadruple the city's basic infrastructure as well as create approximately 3,000,000 jobs.

#### PROBLEM TO BE ADDRESSED:

As in much of the developing world, India's high rates of urban population growth have led to the development of large sprawling high density slums. In 1990, it was estimated that 40-45 percent of Delhi's population lived in slums. Most of these settlement areas lack basic urban services and amenities. One of the most crucial services that these areas lack is the provision of safe water supplies and sanitary facilities. These two problems combine to cause many fatal and crippling epidemics. In Delhi's 543 regularized colonies, 380 have some access to piped water facilities, however, only 135 have a sewerage system. 326 colonies were waiting for the government to fulfill its commitment to provide them with drinking water. Many of these communi-

ties are in the eastern section of Delhi which was the site of a massive cholera epidemic in 1988.

The conditions in the squatter settlements are even far worse than in these regularized communities. In these areas there is almost no drainage. In fact, in December of 1988, the government reported that of the 251 squatter settlements in East Delhi, 250 had no drainage. 433 of the 451 shanties surveyed were without drainage. With no drainage system, filthy water flows around and inside of the homes. People are forced to defecate in the streets and in the areas surrounding their homes. Residents, lacking clean safe drinking water, must dig hand pumps and drink water that is contaminated by the communities indiscriminate methods of defecation.

Indiscriminate defecation is responsible for many severe environmental hazards in these communities. These include water and soil pollution, disease, and infant mortality. Poorly designed and irregularly cleaned latrines are also sources of the same problems. They become breeding grounds for flies and other disease carrying insects. These unsafe and unhealthy conditions lead to many illnesses and affect the water and soil of the entire city through their severe environmental contamination. In fact, in 1980 it was estimated that diarrheal diseases, including hookworm, roundworm, and dysentery, kill approximately 1.4 million children in India annually. And with the massive urban

growth that India has experienced since 1980, this number can be assumed to be low in relation to what it would be today.

The few dry latrines that were in existence before this innovation were cleaned by scavengers. It was the responsibility of the scavengers to clean the pits and carry the night soil away on their heads. These workers are usually overworked and forced to clean overused and filthy facilities. It was estimated that there was only one public latrine seat per 27 households (150 people). It was also estimated that 51 percent of the families in low-income communities used public latrines and 41 percent used open spaces. However, even those that did use the public latrines did not do so regularly because of overcrowding, dirtiness, lack of water, and long walking distances from their homes.

#### SULABH SHAUCHALAYA

Sulabh Shauchalaya was developed in 1970 by Dr. Bindeshwar Pathak. Dr. Bindeshwar is a graduate in sociology for Patna University. He developed a new, easily built latrine design for use in the provision of basic sanitation facilities to the urban poor. The term Sulabh Shauchalaya means *easy access to sanitation*. After developing the idea, Dr. Pathak wanted a means to spread the word about this innovation. Therefore, in 1970 he founded his organization Sulabh Shauchalaya and registered it as



a non-governmental organization (NGO) with the government. The objective of Sulabh Shauchalaya was the conversion of dry, household latrines into the hand flush waterseal latrines. In addition to the development of the latrines for private use, Dr. Pathak also proposed the idea of pay and use public toilets. These projects started to draw international media attention and interest from the World Health Organization (WHO). The implementation of the ideas quickly spread throughout India. The NGO now has 68 complexes in use in Delhi as well as 61 were in the final stages of construction at the time the case study was written in 1990. During its first twenty years of existence, Sulabh Shauchalaya built 660,000 private latrines and approximately 2,500 public latrine complexes in 584 towns in 18 states in India. It was estimated that the 68 public complexes in Delhi with bath cabins along with the toilets serve 290,000 men and women each day. It was predicted that upon completion of the 61 complexes in construction the daily totals will be approximately 362,000 men and women. However, the use of this idea was not limited to India. The organization was later renamed Sulabh International. In conjunction with the United Nations, Dr. Pathak's latrine design, with slight modifications, was implemented in nineteen countries throughout Asia, Africa, and Latin America.

## INNOVATION

In his research, Dr. Pathak came to the conclusion that the

pit privy is the most useful and applicable latrine design produced in the world. He then worked with Mr. R.L. Das towards the development of the design that was used for Sulabh Shauchalaya. However, the innovation for Dr. Pathak is just as much a social innovation as it is a technical one. As he explains:

*I thought that mere availability of the appropriate technology will not solve the problem. For its wider application, one would have to go to the people to educate them about the technology, persuade them for its adoption and then keep a watch whether they are being properly used or not. Further, I thought that voluntary organization should not be kept confined to the work of propagation and demonstration only; Rather, they should get themselves involved in practical work. Secondly, voluntary organization should not remain dependant on the government grant or public donations, rather they should run in on a no-profit-no-loss basis so as to be fully self reliant.*

Although the project was slow to catch on in its first three years, by 1978 the NGO had converted approximately ten thousand privies. With the help of UNDP, WHO, and the Government of India, Sulabh International was responsible for the installation of inexpensive latrines in 100 towns all over India. However, the entire responsibility for these projects remained in the hands of this small local organization. With the expansion of the organization's responsibilities, the number of employees has grown. In India, with its high urban unemployment rates, Sulabh Shauchalaya has also proven to be a positive force in providing employment in the low-income communities. In 1980, Sulabh Shauchalaya employed one thousand people. By 1990, the organization had grown to 20,000 workers.

## GOALS

Sulabh International's long term goal is the stimulation of a major shift in the personal habits of the urban poor. The organization's general short term goal is the provision of accessible, affordable latrines and the means to maintain them. The following are the organization's ten operational goals which are used to guide their activities:

1. To eliminate the inhuman practice of carrying human excreta as head load by the promotion and construction of Sulabh Shauchalaya's toilets and by replacing bucket/dry latrines.
2. To operate and maintain community toilet complexes with baths and urinals on "pay and use" basis after constructing them or providing the technical assistance for their construction.
3. To construction or provide advice for construction of Sulabh Shauchalayas and urinals in schools and colleges to make the students and instructors aware of low-cost sanitary latrines and inculcate them in the habit of using them.
4. To produce bio-gas from human excreta and generate electricity as an alternative source of energy.
5. To train youths to promote low-cost sanitation in rural areas.
6. To involve women in the scavenging eradication program.

7. To propagate the need of Sulabh Shauchalayas and educate the people through demonstration units and audio-visual media for mass communication (including house to house contact, meetings, and the publication and distribution of literature) and holding seminars and workshops.
8. To conduct ongoing experimental research in the fields of sanitation, environmental impacts, bio-gas, and applied social research related to hygiene and personal sanitation.
9. To provide consultancy services on low-cost sanitation.
10. To rehabilitate the scavengers freed from the demeaning task of handling human excreta by imparting training to them and their wards in alternative vocations and trades.

## **TARGET GROUP**

The target population for the activities of this NGO are the impoverished members of Delhi's low-income communities. Particular attention is given to those who have no or very limited access to sanitary latrines. In addition, particular attention is given to women and to the scavengers. The target sites are located throughout India's urban areas. Within Delhi, most of them have no sewerage facility or sufficient drainage system. Because these areas are poor, they are not able to afford their own formal sewerage system. Unfortunately, the Delhi Administration does not include this provision in their budget. Therefore,

the best solution at least for the time being is low-cost sanitation.

The target communities are communities whose local administrators have approached the Sulabh International NGO for assistance. It is up to the individual households or the administrators to be interested in the projects and to make these first steps. It is more likely that such communities will be responsible for providing a location which is convenient for the residents, participant in the implementation, and in the latrines' maintenance.

#### **PARTICIPATION**

The NGO considered community participation to be central to its success. Although the NGO was not founded by a member of these communities, it seems to consider it important to keep contact and participation with the communities. As is explained in the *Mega-Cities Casestudy*, "On the level of the slums, community participation has been central to Sulabh's success. Education programs have been used to create a general awareness of sanitation which will affect all areas of the slum dweller's lives...(Sulabh) aims to permanently alter the values and hygiene habits of the urban poor, and to help them find a place for cleanliness and sanitation in their daily routines" (p.10). This is what the organization's case study refers to in the section on

participation. As can be seen, participation, per se, seems to be largely one way for Sulabh International. There is an emphasis put on the education and technical training of the target community. However, there does not seem to be an effort made to learn from the community or to receive feedback or input from the community.

## **IMPACTS**

1. **POLLUTION:** With so many of Delhi's poor population living in low-lying areas, well below the water level of the Yamuna River, these communities are potential health hazards for the entire region. With periodic inundations and changes of the water table, These areas are given to pollution of soil and water by surface contaminations. In fact, in Delhi there are 24 main sewer lines which empty their pollutants directly into the river. The Sulabh Shauchalaya latrines can help greatly in the curbing of the spreading of water-borne diseases and polluted aquifers.

2. **EMPLOYMENT:** The Government of India has declared that it will rid the city of the inhumane practice of scavenging by the year 2000. In 1990 it was estimated that there were about 6,000,000 dry latrines in India, with 500,000 in Delhi. Therefore, it was estimated that in Delhi alone there were about 200,000 scavengers working as removers of night soil from the dry latrines in Delhi. Sulabh Shauchalaya has helped by retraining scavengers to main-

tain the new latrines. Therefore, they are able to not only retain their employment, but hold a more respectable position. In addition, the NGO retrains scavengers for other vocations. Even if all of the scavengers are not able to find reemployment in the same field, it is likely that with retraining in this or another field they will be able to find another form of work which will be more conducive to a healthy lifestyle.

3. DIGNITY: The NGO has assisted in the provision a basic human service, clean sanitation, for those who had been forced to survive without it. As the Mega-Cities case study explains:

*Another of the Sulabh's widespread impacts on social equity in the city is the simple provision of clean toilets to people who formally had to subsist without them. Men and women faced the humiliation of defecating in open fields, and children when they were fortunate enough to be entered into school systems, were too embarrassed to bring classmates home. Slowly, these conditions, and the unhealthy personal habits that spur them, are being reversed.*

4. MOBILIZATION: As mentioned earlier Sulabh Shauchalaya has a policy of working with those individuals and communities that contact them and ask for assistance. Therefore, they are helping to encourage communities to organize and mobilize for their services. The organization's free educational and public health and training workshops also assist the communities on this level.

## **GOVERNMENTAL COLLABORATION AND COOPERATION:**

The public latrines built by Sulabh are located on municipally donated land. This is an example of the "financial and moral support" (p. 13) which the NGO has received from the government. However, the NGO has experienced opposition from politicians who saw this unconventional innovation as a threat. Dr. Pathak's technology and his financial matters were brought under investigation by legislators in the State of Bihar. These accusations were also widely publicized in the newspapers. In spite of pressures, Dr. Pathak did not back down and he successfully defended himself against the accusations in court.

Although the case study materials do not include further information on dealings with the government, it seems that they have received mixed signals on the innovation. In spite of the fact that the projects have been very successful, it is clear that they would have benefited from better relations and dialogue with the governmental units. In the future, by collaborating on combatting the problems of urban sanitation and working towards the shared governmental and Sulabh organizational goals, the project's impact will be even more widespread and substantial. This impact will be felt not only at the project implementation level, but also at the governmental policy level.

The following section looks at the need for governments to



collaborate with the civil society organizations and to provide an enabling environment for their interventions in urban service and infrastructure provision. It also demonstrates how central and municipal governments can rethink their roles and responsibilities in the provision of urban basic services to best serve their urban poor populations.

## GOVERNMENTAL SUPPORT FOR PRIVATE SECTOR INVOLVEMENT

Local government officials and local non-governmental and community based organizations are often best suited to plan investments and development of services and infrastructure as they have more knowledge of the area's situation and requirements. In addition they are better able to supervise service delivery and development. There is a growing recognition of the need for central governments in developing countries to create an environment conducive to the strengthening and expanding role of the private sector. (UNDP, 1989) Some international development organizations' programs are based in the concept that collaboration is needed as a means of empowerment and of finding and implementing solutions. UNDP's Local Initiative for Urban Environment (LIFE) is a program which recognizes the critical role which local governments, NGOs, and CBOs play in establishing programs and policies to tackle problems of the urban environment facing the poor, as well as the importance of coalition building among the organizations. Its goals is to promote local-local dialogue among NGOs, CBOs, and municipal governments to better the urban environment. The program works to draw on the full complement of human energy in the city to address these problems together. This is just one example of many such efforts which recognize the importance for collaboration in order for sustainable development to occur.

When compared to governmental state-owned enterprises, private enterprises have many advantages. These include lower production costs; more efficient service delivery; and increased ability to maintain and improve capital facilities. In addition, they can often offer more efficient and faster service and expansion of choice. Private enterprises and civil society organizations (CSOs) have proven themselves to be particularly efficient in the provision of housing, transportation, refuse collect and disposal and health and educational campaigns. This can involve the provision of services by private sector companies or the informal sector. As explained in UNDP's publication Cities, People, and Poverty, *"To meet the shelter and service needs of urban populations, government agencies, and NGOs must forge a new set of relationships. National and local governments will have to use a combination of arrangements for delivering services, including contracting, and coproducing of infrastructure and services. Contracting allows governments to take advantage of specialized skills"* (UNDP, 1991, p.65)

The need for governments to collaborate with the private sector is now widely recognized. In his discussion of the changing roles in the provision of urban services, Rondinelli (1992) writes, *"In the future, governments in countries with high levels of urban population growth and expanding urban economies will have to depend more heavily on private sector participation to meet growing needs for housing, urban services, and facili-*

ties" (Rondinelli, 1992, p.I).

There has been increased recognition of the central role that local governments, community based organizations (CBOs) and non-governmental organization (NGOs) play in the development and sustainability of successful initiatives. Such organizations are uniquely qualified to identify needs and provide services. However, there is a gap between what governments and donor agencies expect these organizations to achieve and the amount of funding and support they are willing to provide. This issue is evident in the case study discussed earlier in this paper. It is widely acknowledged and accepted that, in the developing world, a great number of low-income communities provide their own housing and develop their own infrastructure and service provision systems. These activities require the investment of large amounts of money by the low-income residents of the area. In addition, it is widely acknowledged that the role of central governments and multilateral and bilateral development agencies should be one of supporting and strengthening the capacities of these local initiatives. These communities and local governments generally lack funds and credit opportunities. However, with the support of governments and the opportunities and resources which they offer, these initiatives can be even more successful. (Environment and Urbanization, 1993)

## CONCLUSIONS AND RECOMMENDATIONS

It is not possible to make accurate recommendations on what specific services or tasks the municipal governments and the private organizations should be responsible for. Each country and city is an individual case with its own idiosyncracies. However, it is possible to recommend a theoretical strategy for a country to determine the best organizational redistribution and restructuring. In his discussion of the informal sector as an administrative resource, John D. Montgomery (1988) provides a conceptual framework for ascertaining the best distribution of responsibility between the central government, the city government, and the informal sector. Although NGOs are actually part of the formal sector, they usually run programs that utilize the informal sector to provide their services. Therefore, defining and facilitating their role is central to developing the role of NGOs and to allowing them to play their appropriate role in sustainable development. Montgomery suggests three steps which a government should undergo in order to determine what restructuring and redistribution is necessary.

Governments should first undertake an data gathering and analysis stage in which a study is conducted of the current situation to observe the informal and private sector provision of

services that is already taking place. This study also helps to determine how these private services can be improved. This information is then used to allow governments to direct their actions towards the citizens' actual needs. Additionally, analyzing the results of this study may lead a government to rethink its policies and practices in this field.

The second step in this process involves a review of the current combination and levels of responsibilities to determine if this restructuring effort would assist in the strengthening of the sectors that are found to be the least efficient and effective. Governments are becoming more interested in the expansion of the private sector's role as they encounter increasingly tight financial resources to meet the growing needs for urban services. Along with strengthening the private sector, it is equally important to strengthen the abilities of municipal governments. Often, central governments' roles should be minimized to providing services and functions which can not be handled as well by municipal governments or the private sector, such as large infrastructural developments or national planning. The central government should be seen as a support structure for the municipal government and the civil society organizations in that it can provide the sort of training, supervision, and resources to which it have better access.

Montgomery suggested that the following structural improve-

ments are likely to be appropriate:

**Municipal Government:**

- + Restructuring the regulation of informal sector services so as to free entrepreneurial energies that are now inhibited by direct or indirect policies;
- + Providing support to voluntary activities and informal sector enterprises already under way. Such efforts could include training, infrastructure investments like paving or electricity, and supervision and guidance from municipal agencies.

**Central Government**

- + Introducing bond issues or direct capital improvements for services to the urban poor such as roads, schools, and health centres, exercising due care to ensure that locational and construction decisions give appropriate weight to the need and resources of low income areas;
- + Reviewing and revising arrangements for providing technical support to municipal officials engaged in service delivery. This task could be accomplished by establishing a panel to respond to specific requests for advice or setting up review committees to assist local administrators in developing standards of services for the urban poor.

(Montgomery in Rondinelli, 1988, p,107)

Decentralization to municipal governments and private sector involvement in urban service provision can help in the empowering of these local communities. Service delivery programs which are formulated to facilitate public sector participation can often increase urban residents' access to services at the same time as reducing the costs of expanding service provision. The private sector has proven that it can, in many cases, be a more effective and efficient means of urban service delivery, especially when it has governmental support or, at least, approval. However,

although these processes are necessary for the strengthening of these local organizations and local authorities, they still require support from the central government. If the central government simply transfers responsibility without support, this will only add to the smaller groups and governmental units' already overwhelming burdens. As John F. C. Turner (1988) explains:

*Autonomy means inter-dependent self-management, not independent self-sufficiency, as those who confuse it with autarchy believe. People's own underused capacities and those of CBOs cannot be used as excuses to offload governmental responsibilities. When government fails to use resources and services so that people cannot provide for themselves or through their own local organizations, their essential contributions will be inhibited or even perverted. And the same happens when government abuses its powers through centrally administered provisions, instead of supporting and enabling locally self-managed production. (p.6)*

The third and final step in this analysis and restructuring process is the consideration of the problems of coordination amongst the three types of players in this new structure. Ultimately, the arrangements would be likely to have the municipal and central governments autonomous, but working together and drawing on the private/non-governmental sector's resources, knowledge, and innovations. Of course, this requires working on current levels of distrust and disinterest in collaboration.

One problem with the informal provision of urban services without regional organization or governmental regulation is that



it can result in confusion and fragmentation. As explained by Bower et al (1990):

*The inability of governments of urban areas to provide adequate services, e.g. water supply, sanitation, transport, and solid waste disposal, has contributed significantly to the development of the 'informal' sector of economies in many, if not most, developing countries. The informal sector has become an increasingly important part of the overall economy, in terms of outputs, employment, and utilization of available natural resources. Although the informal sector has been able to provide some services to areas of cities not otherwise served, the existence of such efforts has added to the fragmentation- and hence the inefficiency- of the provision of urban services" (Bower, 1989,p.5)*

Therefore, it is necessary to determine which services are best provided by each of the players in this collaboration as well as how each can monitor and regulate the others activities.

There are dangers related to private sector provision of urban basic services. One main dangers is that richer neighborhoods are better served because it is more profitable to service these areas. Another danger is that because several governmental services (such as garbage collection) generally are profit making if well run, governments will be left with those services (such as welfare) that not only are not profit making, but are not even cost recovering, while that private sector will take over all the profit making industries. This, of course puts the governmental costs and revenues very off balance, leaving

governments without previously utilized means of internal cross-subsidization from revenue generating government services. The prevention of such scenarios is another reason to foster strong relationship between governments and non-governmental organizations.

Policy change and simple dialogue alone are not the solutions to the problem. There needs to be restructuring of the institutional arrangements through which environmental problems are viewed and addressed so that the governments can be more effective. Public efforts to address these issues can not be effective without strong local institutions and appropriate enabling policies. It is often unclear which government agencies are responsible for addressing these issues. Decentralization can help in providing effective and efficient strategies and management on urban environmental issues. However, the local agencies which are given increased responsibility must also be given increased resources as well as guidance on how to deal with their new responsibilities. In addition, they need to be accountable to those that they are to serve so that they will use their new responsibilities to benefit those they were meant for. This accountability can be fostered by encouraging local governments to work closely with the civil society organizations and the private sector. Therefore by strengthening the governments' ability to guide and monitor urban environmental interventions and increasing their accountability, the move towards sustainable

development can be facilitated with greater success. With such arrangements in place, governments are allowed to concentrate their efforts in those areas where they can best utilize their advantages as a public agency. At the same time, the private sector can be increasingly monitored and open to competition so that they will be more likely to provide the most safe and equitable services to those in need. With each of the actors playing the roles for which they are best suited, the move towards sustainable development and sustainable cities is possible.

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