INTRODUCTION

Governance has been described as an approach or perspective that “focuses on state and societal institutions and the relationships between them, as well as on how rules are made in a society which are accepted as legitimate and enhances values that are sought by individuals and groups within the society” (Olowu and Akinola 1995, p. 23). Governance has also been identified with the “founding values and constitutional metapolicies, that constitute the nature of governing institutions, guide their actions and shape the complex relations between them and the society” (Swilling et al. 1995, p. 78).

Stren et al. (1992, p. 541) described public management based on principles of governance as one that “attempts to improve the system of government, to emphasize efficiency and responsibility for all institutions, to promote democratic principles and electoral processes and to establish a new organic relationship between government and civil society.”

According to Swilling et al. (1995), the growing literature on governance is an attempt to capture a shift taking place across the globe in thinking about the nature of the state and its relationship to society:

*The shift from a noun ("government") to a verb ("governance"), from structure to relations, from dependence to interdependence, from linearity to (feedback) loops, from rational structuration to chaos as process is influenced by the combined universal disillusionment with the nature of the state and the impact of the postmodern imagination that has abandoned the myth of human self-unification and the vision of a utopian end-state.*

The debate was triggered off by the World Bank’s (1992) report on sub-Saharan Africa, which emphasized that the root problem in Africa is bad governance — that is, personalization of power, denial of human rights, corruption, undemocratic government, low levels of participation, etc.

As Onibokun and Faniran (1995) pointed out, governance has two faces: first, the leadership, which has responsibilities derived from the principles of effective governmental organization; second, the governed, that is, the citizens, who are responsible for making relevant inputs to the socioeconomic and political affairs of their society. In other words, governance is a relationship between rulers and the ruled, the state and society, the governors and the governed. It is important that the two principal actors be as close as possible to ensure the legitimacy, accountability, credibility, and responsiveness of the rulers and the effective participation, cooperation, and responsiveness of the ruled.

Hyden (1992) posits that the effective functioning of these interactions hinges on four main principles:

- Trust within and between groups about the nature, purpose, and rules of sociopolitical interaction and practice;
- Reciprocity, which can only exist if associations and parties are allowed to organize themselves and to defend and promote the stakeholders’ interests via political competition, pressure, negotiations, and conflict resolution;
- Accountability, which means that governors can be held accountable by the governed through procedures and processes (such as elections, referenda, etc.); and
- The governors’ capacity to rule, that is, an ability to make policies and implement them in ways...
that resolve the problems of ordinary citizens and promote the legitimacy of the public realm.

There are many levels of leadership and many components of the governed. Governments are national, state, local, and municipal. These different levels of government interact among themselves, and the interactions are backed by laws or legal instruments of power and governance, including constitutions, Acts of Parliament, and military decrees. These levels also compete for power, which in many cases is won by the higher tiers, engendering strife, distrust, and envy and impairing not only the relationships among the various tiers but also their ability to perform their duties. The types of interaction vary from those of highly centralized governments to those of democratic, decentralized states. The extent of powers at the higher levels determines the amount of resources at the disposal of leaders at each tier, but the lowest tiers often are the poorest. For instance, the power of the federal government in Nigeria in revenue mobilization and allocation has made the lower tiers of government almost totally dependent on it, and this detracts significantly from their needed autonomy and active participation in governance. The lowest tiers, particularly the municipal and local governments, are the worst hit, as they have hardly any revenues of their own.

Also, the ruled have socioeconomic differences and different backgrounds in terms of income, wealth, education, enlightenment, and political awareness. These differences not only determine their interactions among themselves but also the ways they perceive problems, proffer solutions, and otherwise respond to issues.

An important aspect of the relationships within and between the two components of governance is the change that usually occurs. For instance, laws regulating certain behaviours and activities may change after some time. Where these changes become too frequent, without well thought out appraisal, instability results, and this may paralyze operations. Successive governments at various levels often castigate their predecessors and abandon their programs (irrespective of the relevance or appropriateness of such programs), and this disrupts operations.

Governance applied to waste management incorporates not only the formal structures of government but also the informal structures created by society, such as community-based organizations (CBOs), institutions, and associations, as well as the ways formal and informal structures interact in the collection, transportation, and disposal of waste. It involves intergovernmental relations, fiscal mobilizations and allocations, planning, and citizens’ participation. The efficiency and effectiveness of delivery depend most importantly on managerial and organizational efficiency, accountability, legitimacy, responsiveness to the public, transparency in decision-making, and pluralism of policy options and choices.

One needs to ask to what extent these elements are present in Nigerian urban-waste management. To answer this question and to understand the problem of urban-waste management in Nigeria, a study was carried out, focusing on Ibadan. This chapter is the report of that study. The emphasis is on the politics, economics, and sociology of waste management.

**URBANIZATION AND URBAN PROBLEMS IN NIGERIA**

Available data reveal that Nigeria’s urban population has been growing at an alarming rate. Nigerian towns and cities are exploding — growing in leaps and bounds. A little more than 50 years ago, fewer than 7% of Nigerians lived in urban centres (that is, settlements with populations of 20 000 or more). This proportion rose to 10% in 1952 and 19.2% in 1963. It is now estimated at about 40% and is expected to be as high as 45% by 2000. In fact, Nigerian cities are among the fastest growing in the world. Nigeria now has 7 cities with populations at 1 million; 18 cities, at more than 500 000; 36, at more than 200 000; and 78, at more than 100 000. As well, there were 5 050 towns with more than 20 000 people (Onibokun and Kumuyi 1996).
Mainly political and economic factors have been responsible for this rapid growth in urban population in Nigeria. The colonial era influenced the growth and pattern of urbanization in many ways, including the creation of new towns, principally along the transportation routes and at the ports and mining camps; modernization of the physical structures of existing towns; introduction of modern utilities; and changes in the economic base that led to the emergence of modern commercial–industrial centres outside the traditional town centres. The recently created state level of government has had perhaps the most significant impact by introducing new poles of political and economic growth. Consequent on all these pull factors in towns and cities, the city centres became attractive and rural–urban migration began to occur on a vast scale. The World Bank estimated the average annual growth rate in Nigerian towns for 1970–75 at 7%, of which the rural–urban migration accounted for 84% (World Bank 1993).

The problems and challenges posed by this rapid urban growth are immense. Very frightening and perhaps more easily observable are the human and environmental poverty, the declining quality of life, and the untapped wealth of human resources that they represent. Housing and associated facilities (water, electricity, etc.) are similarly inadequate, such that millions now live in substandard and subhuman environments, plagued by slums, squalor, and similarly inadequate social amenities, such as schools and health and recreational facilities. The gradual decline of social values and the breakdown of family cohesiveness and community spirit have resulted in increased levels of juvenile delinquency and crime. The level of provision of infrastructural facilities has declined, and intracity mobility is greatly hindered by poorly planned and inefficiently managed land use and a sharply reduced network of roads.

The municipal service that has seemed to fail most strikingly is waste collection and disposal. The service is frequently inadequate, with a preponderant proportion of the refuse generated remaining uncollected and with large parts of cities, particularly the low-income areas, receiving little or no attention. In most towns, the service is unreliable, irregular, and inefficient. The onus is often on the local government to provide a service for solid-waste management, but a fundamental deficiency of this system is the failure of governments to assume basic responsibility in raising sufficient funds to provide acceptable levels of service (Olowu 1981; Koehn 1992; Stren et al. 1994). Often, the local governments act alone, rather than in concert with the public, which has a negative impact on good governance.

GOVERNANCE OF WASTE MANAGEMENT IN IBADAN

GEOGRAPHICAL CHARACTERISTICS

Ibadan, at long. 7°2’ and 7°40’E and lat. 3°35’ and 4°10’N, was founded in 1829. It was initially occupied by immigrants, who moved into the city in search of security from intertribal wars. It is now the largest indigenous city in tropical Africa and is the capital of Oyo state, one of the 30 states in Nigeria. As the crow flies, it is 128 km northeast of Lagos and 345 km southwest of Abuja, the federal capital.

The city has grown particularly through the establishment of certain institutions and the construction of roads and the railway line. The convergence of the two major trade routes (through Ijebu and Abeokuta) on Ibadan, coupled with the arrival of the railway, accelerated the growth of the city. European traders were attracted and granted leasehold to land in 1903. Today, five primary roads and an expressway from Lagos radially converge on Ibadan from different directions. Most of southwestern Nigeria (excluding the Lagos area) is its hinterland for the procurement of specialized goods and services.
Since its founding the city has had rapid growth, both in area and in population. Developed land increased from only 100 ha in 1830 to 12.5 km\(^2\) in 1931, 30 km\(^2\) in 1963, 112 km\(^2\) in 1973, 136 km\(^2\) in 1981, and 214 km\(^2\) in 1988. Similarly, in 1856, the population was estimated at 60,000; by 1890, it had increased to about 200,000; in 1963, it was 625,000; and today, it is almost 2 million (NISER 1988). Measured from the General Post Office in the central business district, the city has sprawled out to a radius of 12–15 km along the primary roads. The city’s metropolitan region covers about 4,200 km\(^2\), with boundaries varying from 17 km in the southwest to 44 km in the northeast. It comprises 11 local-government areas, with 5 in the inner city and 6 in the outer areas.

The city can be classified into seven morphological regions, varying in their housing–population densities, types and levels of infrastructural facilities, and environmental and sanitary characteristics: the core area, the older suburb, the newer eastern suburb, the newer western suburb, the post-1952 suburb, the government-reserved areas (GRAs), and the government-planned residential estates (at Bodija and Oluyole).

The major sources of employment are, in descending order of importance, retail trade, public administration, service and repair industries, and education. The issues of great and pressing concern, which are also germane to our subsequent discussion are:

- The city’s unplanned growth since its foundation in 1829;
- Poorly managed solid-waste and drainage systems;
- Poor transportation facilities;
- Grossly inadequate public utilities and social infrastructure;
- Poor and inadequate housing, as well as environmental pollution; and
- Mismanagement.

These issues have all been compounded by political instability and an absence of informed and effective political leadership (CASSAD 1994).

**WASTE GENERATION IN IBADAN**

**Solid waste**

Although it is generally agreed that enormous quantities of solid waste are generated in Ibadan daily, the exact figures have not been determined, probably owing to the use of diverse methods of calculation. Maclaren International Ltd (1970) found that the average per capita quantity of solid waste generated was 0.37–0.5 kg/day for the traditional areas of the city and 0.53 kg/day for the newer areas. Oluwande (1983) estimated the average solid waste generated and its mean production rates per head for three distinguished areas of Ibadan: 0.420 kg/day in the GRA; 0.377 kg/day in outlying areas; and 0.35 kg/day in the old city.

According to Egunjobi (1986), 38 million kg of solid waste was collected in the suburbs of Ibadan in 1986. The suburbs constitute about 21% of the city. On this basis, it can be estimated that 181 million kg of solid waste was generated in the city as a whole in 1986. This gives a per capita waste-generation rate of 0.31 kg/day, using the 1986 estimated population of 1.6 million for the city.

In 1982, PAI Associates recorded the volume and weight of solid waste generated per household per day in Ibadan. The study revealed that waste generation varied according to land use, with residential land use taking the bulk of the share. The generation rates were 3.4 kg/household per day in the traditional areas, 3.2 kg/household per day in the newer areas, and 3.3 kg/household per day in the whole city (altogether giving a per
capita generation rate of 0.33 kg/day).

Several researchers have studied the volume of refuse generated in the city. For example, Maclaren International Ltd (1970) estimated this volume at 182 900 t. The latest study, conducted by Haskoning and Konsadem Associates (1994), estimated the per capita rate at 0.6 kg/day, with a density of 300 kg/m$^3$. The projections are based on an annual growth rate of population per year (Table 1).

The solid-waste composition in Ibadan comprises leaves, paper, food waste, tins, glass, and rags (Maclaren International Ltd 1970). This is because Ibadan is located in the heart of a rich agricultural land and has a large old and unplanned section. PAI Associates (1983) made a comparative analysis of the composition of solid waste from two acres of Ibadan in 1970, which showed that residential land use accounted for 70.1% of the waste generated, followed by commercial land use (18.8%) and industrial land use (9.7%). Institutional and other land use accounted for 0.7% each.

The mean percentage composition of solid waste in Ibadan in 1982 for different parts of the city is summarized in Table 2, which shows that in the newer areas (GRA, Bodija, and Mokola and Sango), food remnants and tins and metals constitute the largest proportion of solid waste, whereas in the traditional areas (Agugu, Table 1. Population and solid-waste generation estimates for Ibadan, 1992–2000.

<table>
<thead>
<tr>
<th>Year</th>
<th>Population ($\times 10^8$)</th>
<th>Waste generation per year ($\times 10^9$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1992</td>
<td>3.430</td>
<td>751</td>
</tr>
<tr>
<td>1994</td>
<td>3.620</td>
<td>784</td>
</tr>
<tr>
<td>1996</td>
<td>3.688</td>
<td>797</td>
</tr>
<tr>
<td>1998</td>
<td>3.748</td>
<td>821</td>
</tr>
<tr>
<td>2000</td>
<td>3.860</td>
<td>845</td>
</tr>
</tbody>
</table>


Table 2. Solid-waste composition in Ibadan, 1983.

<table>
<thead>
<tr>
<th>Mean % composition by weight</th>
<th>GRA</th>
<th>Bodija</th>
<th>Mokola and Sango</th>
<th>Oke Aro</th>
<th>Agugu</th>
<th>Traditional core (Ojuba)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leaves</td>
<td>7.5</td>
<td>4.3</td>
<td>23.2</td>
<td>23.5</td>
<td>32.6</td>
<td>29.8</td>
</tr>
<tr>
<td>Food remnants</td>
<td>35.5</td>
<td>19.2</td>
<td>9.1</td>
<td>3.6</td>
<td>5.4</td>
<td>6.9</td>
</tr>
<tr>
<td>Paper</td>
<td>15.1</td>
<td>26.2</td>
<td>10.7</td>
<td>19.4</td>
<td>15.2</td>
<td>16.6</td>
</tr>
<tr>
<td>Cartons and rags</td>
<td>1.3</td>
<td>1.5</td>
<td>4.8</td>
<td>6.8</td>
<td>4.5</td>
<td>10.9</td>
</tr>
<tr>
<td>Plastics and polystyrene</td>
<td>4.1</td>
<td>3.9</td>
<td>3.7</td>
<td>11.6</td>
<td>4.8</td>
<td>6.1</td>
</tr>
<tr>
<td>Tins and metals</td>
<td>20.8</td>
<td>11.4</td>
<td>16.4</td>
<td>16.4</td>
<td>7.7</td>
<td>12.8</td>
</tr>
<tr>
<td>Bones, soot, dust, and stones</td>
<td>5.9</td>
<td>18.7</td>
<td>18.1</td>
<td>28.8</td>
<td>21.0</td>
<td>21.1</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>0.8</td>
<td>11.8</td>
<td>3.0</td>
<td>0.5</td>
<td>1.0</td>
<td>2.2</td>
</tr>
</tbody>
</table>


Note: GRA, government-reserved area.

Table 3. Changes in solid-waste composition in Ibadan, 1969–82.
Ojaba) leaves and bones, ash dust, and stones constituted the bulk. The composition by weight of the various constituents of solid waste has also changed, with the leaves’ share declining over time and the shares of tins and metals, paper, and bones, ash dust, and stones increasing (Table 3).

### Liquid waste

The Ibadan metropolis has a lot of problems with the management of its liquid waste. PAI Associates (1983) estimated the magnitude of liquid waste within Ibadan at 22,650 million L (an average of 6.2 L per household), and Akintola and Agbola (1989) projected the amounts of liquid waste for 1990 and 1995 at 113.7 million and 126.5 million L, respectively.

Liquid waste in Ibadan also contains tins, sticks, excreta, oil, pieces of iron scrap, and refuse. Outside of large institutions, such as the University of Ibadan’s Teaching Hospital and the International Institute of Tropical Agriculture, Ibadan has no sewerage system. The city’s human waste is disposed of largely by means of septic tanks, pit latrines, and buckets.

The uncontrolled disposal of liquid waste into open gutters, open spaces, along roads, etc., poses serious health hazards. Bodies of stagnant water produce bad odours, breed mosquitoes, and sometimes obstruct the movement of people and goods. For instance, the 1983 study by PAI Associates revealed that 50% of the stagnant pools emitted bad odour, 70% bred mosquitoes, 24% obstructed the movement of people, and 12% bred worms and other germ-breeding pests.

Poor practices for liquid-waste disposal are responsible for waterborne diseases that are common in the city, particularly in its inner core. The unwholesome environment forces the populace to spend appreciable portions of their low income and time on improving their personal health, with adverse consequences for general economic well-being.

### Industrial waste

The industries in Ibadan generate a lot of waste, particularly chemical and toxic waste, explosives, and ash, but the exact quantities have not been measured. The industries make private arrangements for disposal of their waste, with little or no monitoring. Groundwater pollution is a possibility, as companies do not take precautions at disposal sites to supervise and ensure proper sanitary conditions.

### GOVERNANCE OF WASTE MANAGEMENT IN PERSPECTIVE

Although waste removal is one of the most pressing problems in Nigerian cities, it is not a new
problem. As Onibokun (1989) observed, the history of urban management (including waste management) in Nigerian cities is closely tied to that of local governments, which went through four evolutionary periods.

THE PRECOLONIAL PERIOD

In the precolonial period, the areas of the north and the west that had substantial urban populations had a hierarchy of emirs or obas, chiefs or community heads, area heads, and compound heads, with defined areas of jurisdiction for the administration of each community. The inhabitants of these communities lived by a system of well-defined rules and functional differentiations. In the east, where agglomerations of settlements were less pronounced, the different kinship groups were informally and loosely controlled through the lineal heads. As the urban communities were fairly simple, the indigenous system of administration was appropriate for the rudimentary management of these folk-urban communities. Public places were swept in rotation by groups of women; household and other refuse was deposited in surrounding bushes, where it decomposed. However, the native physical-planning methods were inadequate to handle the extent and rate of future developments and thus inadvertently sowed the seeds of later chaos.

THE COLONIAL PERIOD

In the colonial period, the colonial masters adopted a policy of indirect rule. They introduced ordinances to strengthen city administration, including

- The Public Health Act of 1909, which laid the foundations for improved health management; this period also saw the introduction of sanitary inspectors, who went house to house to ensure that the houses and their surroundings were clean and, for recalcitrant residents, applied appropriate sanctions;
- The Township Ordinance of 1917, which classified townships into three categories and set up different municipal arrangements for first-order cities; and
- The Town and Country Planning Act of 1947, which recognized the need for a separate establishment to complement the local-government councils in the south and native administrations in the north, to handle town and country planning functions; this led to the establishment of city and town planning authorities in all the larger urban areas, which had powers to regulate the use of land, prepare development plans and schemes, approve new building plans, and implement development-control measures.

Despite these measures and the creation of the GRAs, which have remained the best parts of Nigerian cities, the major shortcoming of the colonial era was that the British colonial masters treated Nigeria as primarily a rural country and regarded the urban centres as accidents of area development. They therefore made no effort to solve the emerging urban problems, particularly of sanitation. Wraith (1964, p. 68) observed that in the west, which had six cities of more than 100,000 inhabitants, “the chaotic urban communities presented a challenge which should have been met . . . . They now present almost insoluble problems of planning and sewage and lack any normal civilized amenities.”

Another cause of the ineffectiveness of city administration during the colonial period was that the towns administered by town councils were subordinate to the native authorities, which were constituted and controlled by obas and chiefs, people who were mostly “old men by the time they attained office, with interest in another age” (Wraith 1964, p. 94). Their main interest was “ancient law and custom,” and it was left to the Health and Public Works Department of government to deal with the most urgent and compelling of municipal problems” (Wraith 1964, p. 95).
THE IMMEDIATE PRE- AND POSTINDEPENDENCE PERIOD

The third phase in the evolution of the local governments was the transition to independence, or the immediate pre- and postindependence period. One of the important landmarks of this period was the introduction of the Local Government Ordinances of 1950/54, which were subsequently amended in 1955, 1957, 1958, 1967, and 1973. The ordinances introduced a three-tier system of administration: county councils, urban and rural district councils, and local councils. Furthermore, in the three regions, the ordinances recognized the special needs of the metropolitan areas and urban centres and created specific local-government types, namely, municipal councils for the big cities and urban councils for the smaller towns, each with a single tier, different in function and composition from other local governments. These councils were assigned specific functions, including removal of night soil, maintenance of other forms of sanitation, and personal health services.

A town planning authority (in Lagos, a development board) was established in each of the urban-council areas. These were independent of municipal government (although the latter had representatives on them) and were accountable to the regional governments. In addition, each of the regional state governments established certain parastatals to handle special functions, and some of these duplicated the functions of both the urban councils and the local planning authorities. Among such parastatals were the states’ wastes-management boards. The regional state ministries also had among their defined functions those of maintaining parts of the municipal roads and handling certain municipal services, including solid-waste management.

These setups resulted in duplications, conflicts, inefficiency, and wastage. A number of factors crippled the performance of urban functions in this period:

- The local-government structure was unstable because the setup, financial allocations, administrative machinery, composition, headship, etc., changed with the whims and caprices of the higher authorities;
- Greed, corruption, and lack of accountability were promoted by the transience of the performers at the local-government level;
- Resources were inadequate, including money, skills, and materials; and
- Local governments had too much interference, particularly from the regional state governments, too much politics among councillors and other politicians, and too many councillors and committees, and all these constituted a drain on finances and a cog in the wheel of progress.

THE 1976 LOCAL-GOVERNMENT REFORMS

The fourth and final phase of local-government evolution started with the introduction of the local-government reforms in Nigeria in 1976. The Local Government Edict of 1976 established a unified and common local-government system; 301 single-tier local-government councils were created (their number has since been increased to 589), and each was expected to function as an effective third tier of government. The local-government councils were empowered to exercise substantial control over local affairs, as well as being given staff and financial powers. The 1976 Local Government Edict was latter entrenched in the 1979 Constitution of the Federal Republic of Nigeria.

The role of the federal government

Under the new system, the 1979 Constitution limits the responsibilities of the federal government in urban management to setting broad guidelines and national policies for local-government structure, number, functioning, and management. Such broad policies may also include, by convention, setting up national standards (building codes, subdivision regulations, environmental-quality protection, etc.) to
guide urban planning and management.

Worried about the increasing deterioration of the environment, in 1988 the federal government of Nigeria pursued its mandate to set up the Federal Environmental Protection Agency (FEPA) and in 1989 formally launched the National Policy on the Environment. Both FEPA and the National Policy on the Environment emphasized sanitation and waste management, “as part of an integrated, holistic, and systematic view of environmental issues” (FEPA 1990, p. 6). Among the important tasks specified by the National Policy on the Environment, for sanitation and waste management, are the following:

- Conducting a study of the most reliable systems appropriate for local domestic and industrial waste;
- Specifying waste-disposal and -treatment systems that consider the geological and environmental setting and encourage recycling;
- Specifying waste-disposal sites that guarantee the safety of surface- and groundwater systems;
- Setting up and enforcing standards for adequate sanitary facilities for the disposal of human and other solid waste in dwellings, estates, and public facilities in both urban and rural areas;
- Establishing monitoring programs, including periodic surveillance of approved waste-disposal sites and their surroundings and waste-water systems; and
- Establishing monitoring stations for control of the disposal of leachate from dump sites into surface- and groundwater systems.

The federal government has also taken other positive measures to improve environmental management:

- The National Urban Development Policy of 1989, with the role of developing a dynamic and sustainable system of urban settlements, fostering economic growth, promoting efficient regional development, and ensuring improved standards of living and well-being for all Nigerians;
- The Environmental Impact Assessment Decree No. 86 of 1992, giving legal muscle to the various policy provisions on the need for environmental-impact assessments (EIAs) of both public- and private-sector projects when such projects are planned; and
- The Urban and Regional Planning Decree No. 88 of 1992, providing general and specific guidelines for development and focusing on the quality of the environment by requiring EIAs for specified categories of development.

Similarly, since its establishment FEPA has led to the enactment of the following important laws on environmental management:

- The National Effluents Limitation Regulation S.I.8. of 1991, which makes it mandatory for industries to install antipollution equipment and to provide primary treatment of effluents and chemical discharges;
- The Hazardous Wastes Criminal Provision Decree 42 of 1988;
- The Pollution Abatement in Industries and Facilities Generating Waste Regulation S.I. of 1991; and
To complement the efforts of FEPA, a state Environmental Protection Commission (EPC) was established for each state in 1989. Edict No. 17 describes the tasks and responsibilities of the EPC. The most important of those concerning solid-waste management are

- To advise the state government on environmental policies and priorities;
- To formulate and enforce policies, statutory rules, and regulations on waste collection and disposal;
- To render advisory services and support to all local governments;
- To prepare master plans on solid-waste collection and disposal;
- To monitor discharges and the environmental impact of these discharges;
- To enforce applicable laws on activities related to the environment; and
- To establish environmental criteria, guidelines, specifications, or standards for environmental protection.

The federal government has therefore taken adequate legislative steps to tackle environmental problems, including solid-waste management. However, much success is yet to be achieved, largely because of the weakness of the enabling legislation and the inability of the relevant agencies to enforce some of the laws. The implementation strategies for such laws leave much to be desired. As Maxime Ferrari of the United Nations Environment Programme Regional Office in Kenya once remarked, “the painful reality is that [although] African governments still pay lip service to environmental issues, actual action still lags behind resolutions and declarations of governments in many parts of Africa” (Ferrari 1988, p. 12). The situation has not been helped by the public’s lack of voluntary compliance with the laws. As Ola (1984, p 74) remarked, “though a good law is necessary and useful, voluntary compliance with the law is still a long way off in this country and so all the innovations contained in the law need to stand the test to time.” The powerful people in the country, whom the general populace should normally emulate, are the first to flout the laws, and other citizens take their cue from them.

The roles of the state and local governments

The Ministry of Local Government (at present, the Department of Local Government Affairs in the state governor’s office) monitors the activities of local governments and passes directives and instructions to them as may be determined by state legislation. However, the local governments have full constitutional responsibility for management of sewerage and solid-waste disposal. This is underlined in Table 4, which lists the functions exclusive to the local governments and those they share with the state governments under the 1976 local-government reforms and the 1979 Constitution of the Federal Republic of Nigeria.

It needs to be pointed out that in 1989, for a number of reasons, most municipal and local governments could not perform many of the functions imposed on them by the Constitution. Furthermore, waste management did not feature among the few functions that these tiers of government performed. (The reasons for this situation were treated in detail by Onibokun [1989].) However, as a consequence, in many parts of the country, the state governments have had to intervene in solid-waste management from time to time. But such interventions have not been permanent, so


<table>
<thead>
<tr>
<th>Category A — exclusive functions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Markets and motor vehicles</td>
</tr>
<tr>
<td>Sanitary inspection</td>
</tr>
</tbody>
</table>
the responsibility for waste management has shifted several times from the municipal and local governments to the state governments and vice versa.

**CURRENT INSTITUTIONAL ARRANGEMENT FOR WASTE MANAGEMENT IN IBADAN**

In no city are the problems of waste management better illustrated than at Ibadan, Africa’s largest indigenous settlement. The spectacular failure of many programs and machineries for waste disposal in this city has led to a continuous shift in responsibilities between agencies and the various tiers of government, as well as prompting some degree of privatization. For instance, between 1988 and 1989, responsibility for solid-waste management was with the Environmental Sanitation Board. However, following an institutional directive in 1989, responsibility was again transferred to local governments. In this new dispensation, collection facilities and other equipment were shared among the five local governments that occupy the city’s core, namely, the Ibadan North, Northeast, Northwest, Southeast, and Southwest local governments.
Since 1991, however, these five local governments have entrusted responsibility for solid-waste collection and disposal to the Ibadan Urban Sanitation Committee (IUSC). The IUSC is governed by the Ibadan Urban Sanitation Board (IUSB), which comprises representatives from the five local governments and the state EPC. In Nigeria, we have the Sanitation Committee at the local level, the EPC at the state level, and the FEPA at the federal level. The members of the IUSB are the five health officers of the five local governments, representatives of the Ministry of Health and the EPC, and the project manager of the IUSC. There are two subcommittees, namely, Operations and Technical. Apart from solid-waste collection, transportation, and disposal, the committee also maintains the vehicles. The operations of the IUSC are subsidized by the five local governments, which contribute equal amounts, irrespective of their populations or the amounts of waste they generate. For instance, in 1993, the budget of 5 million NGN was contributed at the rate of 1 million NGN per local government (in 1998, 86.8 Nigerian naira [NGN] = 1 United States dollar [USD]). In 1994, the local governments budgeted 6.5 million NGN from their share of the federal-government statutory allocation and 3 million NGN from their own purse, making a total of 10 million NGN. This was far below the estimated 70 million NGN the IUSC needed to perform its functions more effectively. Internally generated revenue during the year was a meagre 200,000 NGN. Table 5 shows the allocation of funds to the IUSC for 1992 and 1993. The main advantage in using this system is that it removes the problems of sanitation at the boundary areas of local governments. Local governments retain responsibility for cleaning markets, sweeping streets, and cleaning drains.

Every week, the Project Manager of the IUSC and the five chief environmental health officers of the local governments discuss the collection schedule. In each local-government area, one skip eater is available to collect the skips. The five trucks were donated by the EPC. It is unclear why they should be based at the local-government premises when there is a main yard at Agodi and this arrangement may lead to conflicts and confusion between the local governments and the IUSC. The IUSC currently has five divisions, sections, and units, each headed by a chief who supervises other junior officers. The administrative setup is shown in Figure 1.

The EPC is the state arm of FEPA. It is administered by a Board of Directors and is headed by a general manager referred to as an executive secretary. Under this person are three directors (research and planning; personnel, finance, and supplies; and environmental management and works services). The EPC has at present a workforce of 200. In addition to its functions listed earlier, the EPC is mandated to undertake the following assignments that are crucial to solid-waste management:

- Providing grants to appropriate authorities and bodies with similar functions to enhance their capacity for environmental management (for example, the EPC donated one skip eater to each of the five local governments);

**Table 5.** Ibadan Urban Sanitation Committee waste-disposal unit allocations, 1992 and 1993.

<table>
<thead>
<tr>
<th>Year</th>
<th>Waste-Disposal Unit Allocations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1992</td>
<td>Estimated 70 million NGN needed</td>
</tr>
<tr>
<td>1993</td>
<td>Internally generated 200,000 NGN</td>
</tr>
</tbody>
</table>

Source: Oyo State Environmental Protection Commission, Ibadan.

Note: Estimates for 1992 were for 6 months only. NGN, Nigerian naira (in 1998, 86.8 NGN = 1 United States dollar [USD]).
• Collecting and making available through publications and other appropriate means, in cooperation with other public or private organizations, basic scientific data and other information; and
• Contracting with public and private organizations and individuals to help fulfil the EPC’s functions and responsibilities.

The EPC covers the whole of the state and handles waste-related matters in all the urban areas. It took inventory of all areas needing attention in environmental matters in all the local governments and established an EPC in each of them. It started a program of environmental education.

In Ibadan, the EPC is involved in the physical execution of both the Ibadan Flood Control/Storm Drainage and the Ibadan Waste Management components of the World Bank-assisted Oyo State Urban Project, for which it is an implementation agency. It awarded contracts for the following projects:

• The Ibadan Flood Control and Storm Drainage;
• Rehabilitation of the old ring-road refuse depot;
• Rehabilitation of the eroded areas of upper Ogunpa; and
• Rehabilitation of the IUSC–EPC workshops at Agodi.

There are also proposals for improving the collection system, including promoting and rationalizing the involvement of private contractors. The EPC has also begun to identify new sanitary landfill sites at the periphery of Ibadan. Eight sites have been identified, and the studies and designs are expected to commence soon. The sites are along the major roads entering Ibadan from Oyo, Iwo, Akufo, Abeokuta, Old Lagos, Olojuoro, Akanran, and Ife. The EPC has also embarked on the local fabrication of skips. The first products have been received, and they cost half as much as the old skips.

**IUSC’S CURRENT WASTE COLLECTION AND DISPOSAL**

Solid waste is collected by skip eaters from the available 50 skips located at major roads and markets in different parts of the city and transported to the ring-road disposal site. The locations of the skips have a few flaws.

• They are too few and inadequately scattered. Too few skips are allotted per depot, and when these are full, people dump refuse in the surrounding areas.
• Many of the dumps are located far from the intended users. One consequence is that residents resort to dumping their refuse everywhere, such as on vacant lands.
• The skips located beside the major roads are aesthetically offensive.

IUSC has no organized system for collecting the waste from house to house and transporting it from the houses to the skips. This is the responsibility of the residents, and in places where the skips are far from homes, particularly in the inaccessible core areas of the city, people are tempted to dispose of the waste before they reach the skips. At each of the skip points, two overseers are employed to clean the surrounding area. The skips are located in the residential areas. Some of the tipped solid waste is usually blown into the surrounding residential areas, as well as along the street between the dumping and disposal sites. This is a major cause of environmental pollution in the city.

The skips are collected in two shifts, day and evening. But operations are seriously hampered because these shifts coincide with the peak traffic periods. Each truck collects between 6 and 12 skips per day, that is, 3–6 skips per shift, depending on the season, as activities are also considerably slower during the rains.

The waste is deposited at the ring-road disposal site. Ibadan used to have three sites, namely, the ring-


road disposal site in Ibadan Southwest, Oniyere in Ibadan Southeast, and Ijokodo in Ibadan North. However, the Oniyere and Ijokodo sites have been closed down, leaving the ring-road site, which is encircled by residential areas and has degenerated into open dumps breeding flies, harbouring rodents, and leading to potential major health hazards, which may hamper human productivity. This site has became grossly inadequate, and its operational costs have mounted because of the long distances separating it from many parts of the city.

Early in 1995, Nigeria was preparing for the Junior World Cup. The ring-road disposal site was abandoned because it is very close to Liberty Stadium, one of the four venues for the competition, and two new refuse-disposal sites were chosen outside the city, namely, Ajakagan and Aba-Eku. These sites were prepared with the assistance of the World Bank. Even though Nigeria’s right to host the World Cup was later withdrawn, operations did not return to the ring-road site, and the two new depots remain in use.

In addition, when the state government realized that the two new landfills would be inadequate, it identified four others along the major roads linking Ibadan with other towns:

- Bode-Igbo village, along Ibadan–Abeokuta road, with an area of 21.6 ha;
- Lapite village, along Ibadan–Oyo road, with an area of 23.6 ha;
- Elesingodogbo village, along the Ibadan–Iwo road, with an area of 21.4 ha; and
- Alomaja village, along the Ibadan–Ijebu–Ode road, with an area of 22.5 ha.

Additional sites have been identified along other roads outside the core of the city where the IUSC operates. It is left to be seen what management arrangement will be made with the six fringe local governments where the new sites are located.

At the ring-road disposal site, two bulldozers are available to move the waste from the entrance road to the actual site. Whenever one or both bulldozers malfunction, which quite frequently happens, or the entrance road is bad, the trucks have to dump the waste far from the site, often obstructing the highway.

Facilities are limited at the central workshop where vehicles and other equipment are parked and maintained. Operational and nonoperative vehicles clog the site. For a number of financial, technical, and other reasons, the vehicles are not always functional. This accounts for the IUSC’s meagre contribution (estimated at not more than 10%) to waste collection in the city.

The facilities for waste collection in Ibadan in 1994 are shown in Table 6. Few vehicles and equipment were always functional. Only one of the two bulldozers at the ring-road disposal site was functional. Only 2 of the 7 tippers and none of the 18 compactors were in operation. On the whole, only 57 of the 93 available pieces of equipment were working.

Table 7 shows the total number of workers available in the waste-management system at Ibadan in 1993. As noted earlier, the IUSC has 200 workers, contributed by the five participating local

**Table 6.** Current facilities for waste collection, Ibadan, 1993.

<table>
<thead>
<tr>
<th>Description</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bulldozers</td>
<td>2</td>
</tr>
<tr>
<td>Tippers</td>
<td>7</td>
</tr>
<tr>
<td>Compactors</td>
<td>18</td>
</tr>
</tbody>
</table>


**Table 7.** Human resources for waste collection, Ibadan, 1993.

<table>
<thead>
<tr>
<th>Description</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Workers</td>
<td>200</td>
</tr>
</tbody>
</table>


governments. The other 144 workers are the direct contribution by local governments to such waste and sanitation activities as street sweeping. Nonetheless, it is apparent that the waste-management system in Ibadan is generally understaffed. It is estimated that between 400 and 500 staff are needed for the effective performance of the IUSC functions. A major reason for the lack of staff is the dearth of funds. Also, employment in waste-collection and -disposal activities is looked down on, and the salary structure is not enhanced to compensate for this.

In 1993, the IUSC spent 2 million NGN on fuel and oil and 3 million NGN on maintenance, spare parts, and administration, making a total of 5 million NGN (the amount contributed by the local governments). During that year, the cost of efficient solid-waste management (involving 1–15 trucks, without new equipment) was estimated at 6 million NGN for administration and 5 million NGN for maintenance, making a total of 11 million NGN. In other words, the IUSC had less than 50% of the resources it needed for optimum performance in 1993. Since then costs have gone up astronomically, following the increase in fuel prices (from 0.70 NGN/L to 3.25 NGN/L, and then to 11.0 NGN/L) and the deregulation of the foreign-exchange market. But the contribution of each of the five local governments remained stagnant at 1 million NGN. Although this increased slightly more recently, it still falls short of the requirement.

**PRIVATE WASTE COLLECTION**

The private waste collectors in Ibadan are all members of the Association of Environmental Contractors. In 1994, they served an estimated 10,000 households in the Ibadan urban area. At present, 28 private firms are registered with IUSC, but only 10 of these are functioning. The criteria for registering are office accommodation, available equipment, staff strength, and financial capability. Although the registration is free of charge, if the applicant meets the conditions, it pays a dumping fee of 5,000 NGN/year to use IUSC depots. No particular part of the city is allocated to any contractor, and they are free to make their own arrangements. Many companies and institutions in the city make use of these private collectors.

Some small-scale operators use wheelbarrows to collect over short distances. They operate in the Sabo area and in some markets and motor parks and charge their clients agreed sums of money. However, they dispose of the refuse they collect in refuse depots within the neighbourhood. These are often not cleared regularly and therefore constitute both an environmental hazard and an impediment to traffic.

A report of the Nigerian Institute of Social and Economic Research (NISER), the *Socio-Economic Survey of Ibadan City* (1988), covering the 15 conveniently delineated zones of the city revealed that 35.9% of the sampled households used private collectors. The degree of use was highest in the newer well laid out and accessible parts of the city, such as the Oluyole Estate, where 79.1% of households used their services; Felele–Challenge, 89.5%; Agodi GRA, 67%; and Mokola, 79.8%. But they were least used in the old, indigenous parts of the city, such as Agugu (3.8% of households), Oranyan (3.6%), Kobomoje (9.15), and Gege (1.1%). Most private collectors rent tipper trucks for their operations; one owns a compactor truck; and some own their own tipper trucks. Households pay 20–50 NGN per month for their services.

**Frequency of refuse collection by agencies**

The 1988 NISER survey revealed that for households using government agencies the most common interval for solid-waste collection was more than once per week (31.9% of respondents). The next most
common was weekly (5.2%), followed by biweekly (2%). Daily and triweekly collections were uncommon. The intervals for waste collection by private firms employed by the government were similar. Such firms most commonly collected refuse at an interval of more than 1 week (32.7%). Collection once a week was the second most common (5.8%), followed by collection biweekly (2.8%). Daily collection occurred in only one case (Sawmill–Onipepeye), and triweekly collection occurred in 0.4% of cases (Table 8).

These figures are very different for refuse collection by firms employed by residents. Weekly collection was the norm (29.2%). Biweekly and triweekly collections also occurred more commonly than in the cases of government agencies or private firms employed by government (Table 9).

THE POPULACE

People bear responsibility for manually carrying wastes generated in their households to the skips (that is, in cases where households do not have refuse bins or drums). This responsibility is particularly great in many parts of Ibadan, particularly the inner core, which is not accessible to trucks, thus making it necessary to place the skips far away at the main roads. This demands a lot of cooperation from people — because when they decide to throw away the refuse before they get it to the skips, the pollution problems persist. But for reasons elucidated later, this cooperation has not been forthcoming.

Payment by residents for refuse collection

Table 10 shows that in 1988, apart from the 9.5% of respondents who could not indicate how much they paid for refuse collection, an appreciable proportion of residents did not pay for refuse collection (41.3%). This indicates that refuse collection in many areas was a voluntary community undertaking. This is underlined by the fact that the highest proportions of those who did not pay for refuse collection were in the areas inhabited by the indigenous population, such as Agugu (89.8%), Oranyan (91.2%), Ayeye (64.7%), and Gege (89.3%).

Of those who paid for refuse-collection services, the majority (37.9%) paid between 5.01 and 10.00 NGN/month. The parts of the city with high proportions of residents who paid the most popular charges were Mokola (72.8%), Felele–Challenge (70.5%), Oke Ado–Oke Bola (89.6%), and Oluyole Estate (72.1%). In the city as a whole, 5.3% of the residents paid 5.00 NGN/month or less, 5.6% paid
between 10.01 and 15.00 NGN/month, and 0.3% paid more than 15.00 NGN/month. On the whole, the proportion of people who made payments in the highest brackets (more than 10 NGN/month) was highest in Alamu–Apata (22.7%), Agodi GRA (19.3%), Agbowo–Orogun (14.3%), and Oluyole Estate (14%), with an average of 5.9% for the whole city.

Despite the trend of price inflation in the country, payment for refuse-collection services has only increased slightly. For example, the charges now range from 20 to 50 NGN/month. However, many residents of the city expressed their willingness to pay more if service was improved.

**Degree of satisfaction with refuse-collection services**

At the time of the survey (NISER 1988), the majority of residents of Ibadan were satisfied with the refuse-collection services; 26.6% were quite satisfied; and 41.7% were just satisfied. However, 8.1% were not so satisfied; 15.0% were dissatisfaction; and 0.8% were utterly dissatisfied. High figures of residents who were satisfied occurred in areas where more reliance was placed on private firms paid by residents such as Felele–Challenge (89.1%), Oke Ado–Oke Bola (87.6%), Agbowo–Orogun (88%), Alamu–Apata (81%), and Agodi GRA (84.1%). At the other extreme, more people were either not so satisfied, dissatisfied, or utterly dissatisfied in Oranyan (50.2%), Agugu (44.7%), and Gege (44.9%).

Residents who were dissatisfied gave a number of reasons: 6.9% complained of the great distances that separated their houses from the refuse depots; 4.1% of the respondents were dissatisfied because the agents employed did not come regularly; 1.6% complained about high charges; and 3.1% complained about the inadequacy of refuse collection and disposal facilities, a complaint that was loudest in the indigenous sections of the city. A small proportion of residents, 1.2%, were dissatisfied because of the indiscriminate way the collectors dumped the refuse. In particular, where the method of burning was adopted to dispose of refuse, some people complained about the unhygienic and unsightly nature of such depots. Many residents were reluctant to cooperate with their neighbours in matters of environmental sanitation.

**Other waste-disposal methods employed by the populace**

Because of a lack of institutionalized waste-disposal facilities or the inability or unwillingness of people to use them, people employ a variety of other methods to dispose of their waste, with severe repercussions on the environment. For instance, the illegal dumping of refuse in open spaces, along the roads, in open gutters, etc., blocks drains and sewer holes, disrupts business in commercial areas, reduces road space, and holds up traffic. In addition, as solid-waste services are unable to cope with the volume of refuse, it is usually burned in households, zones, depots, and disposal sites, which causes air and general environmental pollution. In fact, the 1988 NISER study revealed that burning refuse and disposing of the ashes in drainage channels was the method for disposal of refuse used by 26.8% of surveyed inhabitants of Ibadan. Burning and disposing of ashes in open dumps, often unauthorized and with little chance of being cleared, represents the preferred method of 35.8% of the surveyed inhabitants.

There are about 40 markets in Ibadan and a lot of street trading. The unguided increase in the activities of the informal sector in the city has led to the invasion of all available spaces in all land-use types. Petty traders block access roads and disobey planning set-back regulations. These factors not only increase the generation of waste but also complicate collection mechanisms. The nonchalant attitude of people toward the local governments and their members has much to do with this situation.

Nonetheless, the same study revealed that people are very willing to pay for solid-waste removal and disposal if the service is improved. The people need to be mobilized to contribute both in cash and in
kind toward improving the environment.

After the military regime was established, on 31 December 1983, it organized environmental days on the Saturday of every second week. This initiative has increased people’s participation in waste management. Residents collect solid waste from their homes, and trucks are available to transport it to the disposal site. In some cases, the trucks are donated by individuals and organizations such as the National Association of Road Transport Workers and the National Association of Road Transport Owners. But a lot still needs to be done to get people fully mobilized to make environmental sanitation a way of life, rather than a burden to be endured on specific days of the month.

**NONGOVERNMENTAL ORGANIZATIONS, CBOS, AND ACADEMIC AND RESEARCH INSTITUTES**

The major areas of intervention for nongovernmental organizations (NGOs), CBOs, and academic and research institutes have been public enlightenment and research. The Nigerian Society of Engineers recently organized a community-based discussion on waste management within the local governments in Ibadan. The Centre for African Settlement Studies and Development (CASSAD) has consistently promoted waste management through policy-oriented research, discussions, lectures, and seminars. A lot of research has also been done in the universities and research institutes, but the findings have not always been available to the waste-management service in Ibadan.

**EVALUATION OF GOVERNANCE OF WASTE MANAGEMENT**

The previous summary has revealed that the inadequacies in the governance of waste management in Ibadan are largely reflected in the waste-management system. The following characteristics of governance hamper effective waste management:

(Continues below...)

**PROBLEMS WITH THE INSTITUTIONAL FRAMEWORK**

At all levels of government, Nigeria has institutions and agencies for waste management. That there is so much waste in Nigerian cities is therefore not due to a lack of relevant institutions but to inadequacies in the ways the institutions function. In particular, the various agencies and institutions act in an independent, fragmented manner, and whenever they interact, they are likely to be on a collision course. The general tendency among Nigerians is to want to carve out miniempires for themselves whenever they head any institution, and they would rather drift along than take advice from, or cooperate with, institutions performing similar functions. For this reason, it is always difficult to know which government agency is doing what in waste management, and at which level of government. The interaction of institutions in waste management with other development agencies is even worse, particularly with those concerned with land development, housing, transportation, and other infrastructures. The tendency is for each of the institutions to act independently, regardless of the needs of others.

As we observed earlier, most municipal and local governments in Nigeria cannot perform many of the functions imposed on them by the Constitution. But more important, from the point of view of our present focus, is the fact that most of these governments do not accord high priority to waste management. This is well illustrated by a study conducted by Koehn (1992) of local governments in northern Nigeria. Koehn’s results are shown in Tables 11 and 12. As Table 11 reveals, education, tax
collection, agricultural services, and rural and semirural water supply received most attention. Furthermore, the functions reported to be among the five accorded the most importance by local governments were, in descending order of importance, education, agricultural services, collection of local taxes, medical services, and rural and semirural water supply. Others were community development, road construction and maintenance, maintenance of law and order, and markets and motor-vehicle parks (Table 12). Needless to say, sanitation and waste management are not in either of these tables. Other studies confirm that Koehn’s findings about local governments in northern Nigeria apply to most local governments across the country (Onibokun 1989). Although the statutory roles of the various tiers of government are stated in the Constitution, officials at the local government level, because they do not hold themselves responsible or accountable to the people, clearly do not consult with the general populace in fixing their priorities. In fact, most of the problems of administration at this level stem from this, particularly the inability of government to mobilize the people and elicit their trust and confidence.

Table 11. Functions accorded most importance by local governments, northern Nigeria, 1979.

<table>
<thead>
<tr>
<th>Function</th>
<th>% of respondents from local governments who ranked this function as “most important”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education</td>
<td>48</td>
</tr>
<tr>
<td>Tax collection</td>
<td>33</td>
</tr>
<tr>
<td>Agricultural services</td>
<td>9</td>
</tr>
<tr>
<td>Rural and semirural water supply</td>
<td>7</td>
</tr>
<tr>
<td>All others</td>
<td>8</td>
</tr>
</tbody>
</table>


\( n = 138. \)

Table 12. Functions reported to be among the five accorded the most importance by local governments, northern Nigeria, 1979.

<table>
<thead>
<tr>
<th>Function</th>
<th>% of respondents from local governments who ranked this function in top five</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education</td>
<td>88</td>
</tr>
<tr>
<td>Agricultural services</td>
<td>74</td>
</tr>
<tr>
<td>Collection of local taxes</td>
<td>61</td>
</tr>
<tr>
<td>Medical services</td>
<td>48</td>
</tr>
<tr>
<td>Rural and semirural water supply</td>
<td>46</td>
</tr>
<tr>
<td>Community development</td>
<td>33</td>
</tr>
<tr>
<td>Road construction and maintenance</td>
<td>31</td>
</tr>
<tr>
<td>Maintenance of law and order</td>
<td>28</td>
</tr>
<tr>
<td>Markets and motor-vehicle parks</td>
<td>21</td>
</tr>
</tbody>
</table>


\( n = 138. \)

Institutions at the local level are very unstable. Agencies are created and abolished at random. Those in place are not given sufficient technical or financial support to perform their duties, and because of this they are replaced, but without any correction of the factors that hindered their performance. The situation is well illustrated in Table 13. In Ibadan, before 1972, household-refuse removal was the
responsibility of the Ibadan municipal government. Between 1973 and 1978, it became the responsibility of an Ibadan Waste Disposal Board, a creation of the Oyo state government. This period was followed by a reversion of the function to the Ibadan municipal government, in collaboration with the Ministry of Housing and Environment. The takeover of the national government by the military, on 31 December 1983, led first to the transfer of waste-management matters to the Sewerage and Refuse Matters Department in the State Ministry of Works and later to the creation of the Oyo State Environmental Sanitation Task Force, which worked in collaboration with the Ibadan municipal government. Later shifts in responsibilities were highlighted in the earlier parts of the paper.

The tenure of political and public officials is tenuous and very unstable. Holders of political office at the local-government level, to whom most responsibility for waste management devolves, are appointed and removed at will by people in higher tiers of government. Because they are unsure of their tenure, a lot of their time is spent currying favour from, and trying to please, the people who hold the reins of government at the higher levels. Therefore, they pay scant attention to long-term sustainable programs or the interests of the people whom they serve. Many of them try to make hay while the sun shines by enriching themselves. There is therefore a high level of corruption and a total lack of transparency. Between 1976 and 1994, the administration at the local-government level (including municipal government) changed more than six times. For instance, Lagos Island Local Government had, between January 1990 and May 1991, worked under four state–federal administrations. New governments are notorious for discrediting previous administrations and abandoning policies and programs on which previous administrations spent vast amounts of money. Successive governments pursue their own fancies in a rather flippant and ad hoc manner, rather than being motivated by a desire to leave lasting legacies. Institutions are created, then merged with other institutions, then made independent again, and later merged. Officials are appointed casually and removed even more casually.

This situation ensures that established rules, regulations, and relationships between and within state and societal institutions are flouted and that society can accept no values as legitimate and defensible.

**Table 13.** Temporal changes in the organization of solid-waste management, Ibadan, Kaduna, and Enugu, 1940–85.

<table>
<thead>
<tr>
<th>City</th>
<th>Period</th>
<th>Management agency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ibadan</td>
<td>Before 1972</td>
<td>Ibadan municipal government</td>
</tr>
<tr>
<td></td>
<td>1972–73</td>
<td>Ibadan Waste Disposal Board</td>
</tr>
<tr>
<td></td>
<td>1978–83</td>
<td>Ibadan municipal government, Ministry of Housing and Environment</td>
</tr>
<tr>
<td></td>
<td>1984–Dec 1985</td>
<td>Sewerage and Refuse Matters Department, Oyo State Environmental Sanitation Task Force, Ibadan municipal government</td>
</tr>
<tr>
<td>Kaduna</td>
<td>1940–67</td>
<td>Kaduna Native Authority</td>
</tr>
<tr>
<td></td>
<td>1967–71</td>
<td>Kaduna local government</td>
</tr>
<tr>
<td></td>
<td>1971–85</td>
<td>Kaduna Capital Development Authority</td>
</tr>
<tr>
<td>Enugu</td>
<td>Before 1977</td>
<td>Enugu urban council</td>
</tr>
<tr>
<td></td>
<td>1977–84</td>
<td>Enugu local government</td>
</tr>
<tr>
<td></td>
<td>1984–85</td>
<td>Anambra state task force</td>
</tr>
<tr>
<td></td>
<td>1985–Dec 1985</td>
<td>Anambra State Environmental Sanitation Authority</td>
</tr>
</tbody>
</table>
civilian regimes, when administration of state and local (municipal) government belonged to different political parties, meant that the roles ascribed to different tiers of government were taken over by others with scant consideration of their ability to perform them.

Governance is also fragmented. Rather than taking a holistic view of governance, the governors force or allow development agencies such as those involved in land-use, transportation, housing, and waste management to pursue their different programs and execute their own projects without consideration of or reference to those of others. However, good governance can only be achieved if relationships, interactions, and feedback are well established and coordinated among the different performers and stakeholders. Without these connections, people tend to lack trust in the governors, which reduces their capacity to rule.

The result of fragmented governance is the confusion one observes, particularly in waste management. For instance, areas of dense population are provided with inadequate roads, which hampers refuse collection. In the past, some sanity came from the Ibadan Metropolitan Planning Authority, which had the mandate to sanitize, regulate, control, and monitor all ramifications of development in Ibadan. This institution was later dissolved, and no similar institution has taken its place. The tendency for fragmented development has thus been given a free rein. Intergovernmental conflicts have led several observers to call for a coordinating body to be established to initiate and coordinate urban programs at the federal, state, and local levels. According to these observers, this body should also provide a forum for public participation in the management of urban problems in the country, which has hitherto not been achieved because of the fragmentation of governance (Uyanga 1982; Gboyega 1983; Olowu 1994).

A major deficiency of current waste-management governance in Ibadan is that it incorporates only 5 of the 11 local governments that make up the Ibadan region. Although the five local governments account for about 67% of the total population of the Ibadan region (Table 14), large sections of the city are administered by the other local governments. Again this is a clear case of exclusion, which does not promote good governance. The six fringe local governments are left to devise their own systems, without consultation or collaboration with IUSC. None of these six local governments has the requisite technical, financial, or managerial resources to effectively cope with waste management in their areas of jurisdiction, and therefore waste collection and disposal are inadequate in their own sections of the city. Furthermore, the recently identified new refuse-disposal sites, which are in the process of study and design by IUSC and EPC, are located in these fringe local-government areas. Without adequate consultation and a mutually beneficial arrangement, the seeds of future collisions are being sown.


<table>
<thead>
<tr>
<th>Local-government area</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ibadan Northwest</td>
<td>72,439</td>
<td>74,270</td>
</tr>
<tr>
<td>Ibadan North</td>
<td>151,535</td>
<td>149,101</td>
</tr>
<tr>
<td>Ibadan Northeast</td>
<td>133,370</td>
<td>132,370</td>
</tr>
<tr>
<td>Ibadan Southeast</td>
<td>112,114</td>
<td>113,721</td>
</tr>
<tr>
<td>Ibadan Southwest</td>
<td>127,084</td>
<td>126,944</td>
</tr>
<tr>
<td>Alakya</td>
<td>69,576</td>
<td>70,011</td>
</tr>
<tr>
<td>Lagelu</td>
<td>32,835</td>
<td>32,837</td>
</tr>
<tr>
<td>Egbeda</td>
<td>64,110</td>
<td>64,888</td>
</tr>
<tr>
<td>Ona-Ara</td>
<td>59,738</td>
<td>62,538</td>
</tr>
<tr>
<td>Oluyole</td>
<td>45,418</td>
<td>45,602</td>
</tr>
<tr>
<td>Ibad</td>
<td>27,918</td>
<td>27,975</td>
</tr>
<tr>
<td>Percentage of total population</td>
<td>43.57</td>
<td>56.43</td>
</tr>
</tbody>
</table>

PROBLEMS WITH ADMINISTRATION AND MANAGEMENT

Closely linked to problems with the institutional framework are those with administration and management. As we noted earlier, waste-management institutions are grossly understaffed, in terms of both quantity and quality. For instance, about 200 personnel are on the ground, but between 400 and 500 are needed for effective performance. One of the major reasons for this has been the dearth of funds. But even at the best of times, the service has been unable to attract the right calibre of people (particularly at the technical level). This is partly due to the fact that people generally hold the administration at the local-government level in low esteem. Because it is the level of government closest to the people, they tend to hold it responsible for the failure of government in general. Indeed, the local governments’ style of administration often lacks consultation and responsiveness to the needs of people. Their style of administration has done little to remove the stigma of inefficiency, corruption, and irresponsibility. Therefore, to a large extent, local-government appointments have hitherto been regarded as last resorts in many parts of the country.

This situation is exacerbated by poor conditions of service. Historically, local-government staff have been less well paid than their state (regional) and national (federal) counterparts, and even among the local-government staff, the waste-management section attracts the least pay. Therefore, although local-government staff (despite the harmonization of salaries) feel inferior to their state and federal counterparts, they exhibit an attitude of superiority toward their colleagues in the waste-management section. This situation considerably lowers morale and promotes slothfulness.

As Obadina (1995) observed, the period of 1973–78, when the Ibadan Wastes Disposal Board was in charge of waste management in Ibadan, saw the highest level of achievement to date. This is because of the high proportion of technical personnel available at that time. Technical personnel comprised the general manager (an engineer), the chief design and construction engineer, and six other engineers in charge of operations, planning, design, and construction. The best technical personnel that the management agency has had either before or after that period consisted of two, one, or no engineers, thus making the operation ineffective and grossly inefficient.

Furthermore, the management of the IUSB is dominated by the local governments, whereas actual operational responsibility lies with the IUSC. However, abundant evidence shows that little or no consultation takes place between the two bodies or between these bodies and the populace in determining responsibilities for waste management or making financial allocations to the IUSC. This has greatly impaired the governance of waste management. In most cases, therefore, the responsibilities are unclear. For instance, both local governments and the IUSC have collection vehicles, and the skip eaters donated by the EPC to each of the local governments are stationed at the local governments. It is unclear why the local governments should retain collection vehicles, as the responsibility for waste collection has been entrusted to the IUSC. Local governments have differences of opinion, particularly about budgetary allocations to IUSC and the performance of the institution. In fact, some local governments would prefer to organize waste collection themselves, instead of making use of the IUSC. It should also be noted that the present arrangement lacks proper legislative backing. The required levels of trust, interdependence, and reciprocity are clearly lacking between the two institutions and between these institutions and the populace. The present arrangements for waste management can, therefore, be regarded as being as unstable as the local governments themselves.

PROBLEMS WITH FINANCE

The inadequacies of governance at the urban level (particularly the lack of an organic relationship and mutual trust between the rulers and the ruled), the inadequacies of intergovernmental relations, and the lack of capacity among the rulers have adversely affected the ability of most urban governments to
mobilize the resources — money, skill, and materials — needed for good administration.

As Onibokun (1997) demonstrated, “lack of funds and professional staff turned many of the urban councils and municipal planning authorities into purposeless bodies, and a drain on the regional/state governments.” Since the 1976 reforms the tendency of local governments has been to look to the federal government for funds, instead of accepting the challenge and advantages that go with financial autonomy, that is, noninterference by the higher tiers of government in their affairs. Quoting various sources, Onibokun revealed the following characteristics of most local governments in Nigeria:

• They are in debt;
• They are basically underfinanced;
• The fiscal burden is unfairly distributed (that is, large potential areas of taxation, such as property as a basis for tax, are neglected);
• Patterns of expenditure do not reflect a defensible set of priorities;\(^2\)
• The local governments have little concern for cost-effectiveness and avoidance of waste;
• Their financial controls are ineffective; and
• Their financial information often comes too late or is too obscure to be useful.

Thus, the five participating local governments are unable to effectively back up the activities of the IUSC. The IUSC is unable to generate revenue internally. As noted, the federal government remains the principal source of revenue for the local governments, as only a small proportion of total revenue is generated internally. The budget of the IUSC is supplied by the five participating local governments. At present, these contributions (1 million NGN per local government in 1993) are deducted at source and given directly to the IUSC. For this reason, the IUSC is subject to political instability. Furthermore, the contributions are not calculated on any economic basis, as the IUSC is not involved in drawing up its own budget. They are based neither on population figures of the different local governments nor on the particular amounts of waste generated in their areas.

The IUSC’s capacity to generate internal revenue is hampered in a number of ways. At present, the only source of revenue from its operations is that received from institutional customers, such as schools, hospitals, and some private institutions. Even here, the IUSC has no organized system for collecting fees. In most

\(^2\) For example, spending on civil and administrative overhead is overwhelmingly at the expense of service to people. It is estimated that more than 80% of available revenue is spent on recurrent expenditure, which puts spending on the increase and leaves only 5%–15% of total revenue for capital expenditure.

cases, people who wish to pay go to one of the revenue offices to settle their bills. Usually, bills are only paid if the client needs continued service or if payment is made a condition for receiving some other service. In other words, what is needed to generate revenue is a system of mutual reinforcement, based on citizen participation and cooperation.

At present, no penalties or sanctions are levied for refusal to pay for services. The markets, which should have been substantial sources of revenue for IUSC, have not been tapped, for lack of a suitable machinery to determine and collect levies. Revenue from waste collection is, therefore, very low, estimated at only 80 000 NGN in all five local governments in 1993, compared with a total expenditure on solid-waste management of 11 million NGN. This revenue increased to 0.2 million NGN in 1994. But this is a pittance compared with current expenditures, which are estimated at 70 million NGN/year.
Capital costs have continued to rise and have become prohibitive. The capital investments for civil works and equipment in 1988, according to Haskoning and Kosandem Associates (1994), were at an estimated 20.8 million USD (or 94 million NGN at the 1988 exchange rate of 4.50 NGN/USD). At the 1995 exchange rate of 82.00 NGN/USD, disregarding the additional waste-collection needs resulting from the continued growth of the city, the cost would be about 1.7 billion NGN. As a matter of fact, Obadina (1995) put the total capital-investment needs at about 5.0 billion NGN, which is clearly beyond the capacity of the management authorities.

PROBLEMS WITH TECHNOLOGY AND INFRASTRUCTURE

Lack of good governance is also reflected in various technical and infrastructural problems, particularly if the equipment is unavailable in the desired quantities and the existing ones are difficult to maintain. As earlier noted, in 1994 only 57 out of the 93 pieces of available equipment were working. At the time of the study, only about one-third of the 43 pieces of equipment were working. Although the IUSC has a central workshop for vehicle maintenance, the facilities are very limited. Operational and nonoperational vehicles are parked at the workshop, which gives it an untidy appearance and severely hampers operations. The main maintenance problems are

- Insufficient funds for maintenance in general but particularly for the procurement of essential spare parts, as some are not locally available;
- Insufficient facilities at the workshop;
- Poor condition of the access roads at the workshop (also at the disposal site);
- Short-comings in the management of maintenance procedures; and
- Problems with maintenance and procurement of spare parts because equipment is sourced from various manufacturers.

However, the officials at the IUSC and the EPC were convinced that the maintenance problems could be solved with adequate funds. Nonetheless, it needs to be stressed that these problems remain crippling, mainly because of the wrong approach taken to the governance of waste management. As the United Nations Centre for Human Settlements (Habitat) (UNCHS 1989, p. 14) pointed out, many municipalities see solid-waste management as a problem of equipment, that is, how to obtain and maintain sophisticated equipment when waste management systems which include community participation and do not require high technology and inappropriate machinery might prove to be sustainable at the community level, since income-generating waste-management systems can be maintained by low-income communities.

LACK OF PARTICIPATION AND COOPERATION FROM THE PEOPLE

The cooperation of the people, which is a necessary ingredient of good governance, cannot always be taken for granted. On the one hand, most segments of the population believe that they should not bear any responsibility whatsoever for waste collection and disposal, as they consider it a social service and the responsibility of the local governments. On the other hand, people generally have an attitude of nonchalance toward local governments and their members. This is largely because, with the military’s frequent and long interventions in governance, the councillors and chairs of local governments are appointed by the state government, rather than elected by the people, and are therefore not the true representatives of the people. In fact, residents in most parts of the city do not know who their representatives are in the local government.

A recent study by CASSAD (1994), carried out in one of the local governments, revealed that 80% of
the people interviewed (mostly people from urban elites) did not know which local-government area they belonged to; 76% did not know the names of either the chair of the local government or the councillors representing their wards in council. The reasons they gave for this apathy, included the following:

- The local government had not been relevant to their survival;
- The members of the local government did not represent them (rather, they represented the military government that appointed them); and
- The impact of the local government had not been felt in any way (people had to source their own water through wells and boreholes, provide their own roads, and organize their own security).

For these reasons, people saw the officials as inept, inefficient, corrupt, and insufficiently committed to their welfare. They were therefore ill-disposed to cooperate with them. The fact that, despite the efforts of institutions to tackle the waste problem, the streets were still littered with refuse is taken as a measure of the ineptitude of officials and proof that they did not deserve cooperation or assistance. Apart from taxes deducted at source, under the Pay-As-You-Earn system, very rarely do people pay other forms of rates, not even property rates. This situation severely aggravates the financial problems of local governments and increases their dependence on the higher tiers of government, particularly the federal government, for their financial support.

On the other hand, local governments have made little or no effort to mobilize or educate people. In fact, because they depend heavily on allocations from the federal government, the councillors do not feel or behave as if they are accountable to the people or need their support or cooperation. Realizing the insecurity of their tenure, they aspire to please nobody but themselves and those who put them in office. As a result, even the community-based associations, such as landlord–tenants associations, are left out completely, although they play crucial roles in other areas of development, such as the provision of infrastructure and support for security agents. These associations could be made to play even greater roles in waste management. Many such CBOs have donated vehicles for police crime-prevention and patrol operations and, with adequate information, education, consultation, and mobilization, could do the same for waste management.

Thus, the lack of participation from people’s organizations in the governance of waste management in Ibadan has had the following effects:

- Lack of confidence in the activities of government;
- Apathy and a nonchalant attitude toward government programs;
- Muddled activities of government and lack of accountability of government functionaries;
- Insensitivity and unresponsiveness of government to the needs and aspirations of the people;
- Citizens’ lack of a sense of belonging in the operations of government; and
- Absence of useful feedback that would enhance governance.

TOWARDS THE IMPROVEMENT OF THE GOVERNANCE OF WASTE MANAGEMENT

Our discussion so far has revealed that a lack of good governance is at the root of most urban-management problems, particularly those of waste management. The existing system of waste-management governance in Ibadan exhibits the following deficiencies:

- It is unrepresentative and undemocratic. The current rulers are appointed or selected by the
military dictatorship, rather than elected by the people. It cannot therefore be held accountable for its actions through institutionalized procedures and processes, such as elections.

- It is exclusive and discriminatory. Because the rulers are not elected, they are not in a position to promote other stakeholders’ interests through competition, pressure, negotiation, and conflict resolution. Like the military, which put them in power, they strive to monopolize their restricted power to the exclusion of others. Other stakeholders reciprocate by refusing to give them cooperation or trust. The organic and symbiotic relationship needed between the rulers and the ruled is therefore lacking.
- Most of the rulers lack the capacity to rule; that is, they are unable to seek or find ways to resolve people’s problems. Consequently, the rulers lack legitimacy and relevance.
- The rules and regulations that should determine the relationships between institutions are often lacking, and where they exist, they are ill-defined and flouted with impunity. This leads to conflicts or an apathy that often promotes inefficiency, ineffectiveness, and corruption.

There is therefore a need to redress this situation and to put good governance in place. The most important way to do this would be to accelerate the ongoing democratization process. It is therefore hoped that the current pressure being mounted by the international community and prodemocracy groups, among others, will hasten the return of full democracy in Nigeria. However, in view of the long period of military intervention in governance, there is also an urgent need to reawaken the people’s commitment to democracy. This can be achieved through

- Cultivation of a new political culture that emphasizes commitment, honesty, dedication to duty, and service to humanity;
- Education of the people on the need to participate fully in the electoral processes and show more interest in the ways their elected representatives govern; and
- Putting in place appropriate mechanisms to ensure that high-quality leaders are elected and installed for purposeful government.

To further enhance the quality of governance, there is also a need to consider the following areas of revenue mobilization:

- Self-governance and financial autonomy of urban centres might be increased. In many countries, revenue derived from property taxes constitutes a major component of the internally generated revenue of urban governments, but Nigeria has only scratched the surface of this source of revenue. There is need to review current practices and achievements and set up an appropriate machinery to mobilize revenues from property tax.
- In some developed countries, a waste-management tax is making it possible to achieve a cost-recovery level of 90% in waste-management operations. At present, in Nigeria, cost recovery is almost nil and therefore this practice should be emulated for better revenue generation. The legislation for this would include appropriate sanctions for default. Happily, surveys revealed that people in Ibadan would be willing to pay if the services were improved.
- Present methods used by the waste-management services for collecting stipulated rates, even from institutional clients, are by and large ineffective and inefficient. A system for collection of rates that depends on the goodwill of customers cannot work in Nigeria, where people tend to cut corners. The rate-collection machinery should therefore be overhauled. In addition, a workable mechanism should be put in place to impose and collect levies from the markets, as they generate a substantial portion of the solid waste.
- Doubtless, the local-government contributions (particularly financial) to waste management would grow if an acceptable level of efficiency was achieved. To do this, local governments need to strengthen their revenue base, largely by emphasizing their internal revenue-generating
capabilities, particularly the collection mechanisms. In addition, it is necessary to emphasize again the fact that urban government is largely intergovernmental, involving many lateral and vertical relations between different governments. The design of a system to collect rates should be based on consultation and negotiations among these governments and between the government and the governed.

Another major step in improving governance of waste management would be changing the present lukewarm attitude of the majority of the population toward waste-disposal activities. Increased cooperation and participation from the populace, particularly at the community level, would have positive impacts, such as

- Reduced capital and operating costs;
- Adoption of appropriate (small-scale) technology;
- Reduction in the levels of unemployment in the communities;
- Reduction in the quantity of wastes to be transported and disposed of through a system of thorough sorting and recycling;
- Increased revenues as a result of property monitoring;
- Protection of the environment through prevention of flooding and air pollution;
- Enhanced property values; and
- Greater cleanliness and a generally improved level of sanitation and health in the city.

Increased participation from people and communities can be achieved in the following ways:

- Education campaigns on sanitation and solid-waste management can be developed. Such campaigns could be undertaken by the state and local governments. Also, generous allocations have to be made for this in the improved budgets of the institution responsible for waste collection and disposal. The people have to be informed on how waste is to be collected, the ways it is to be stored and delivered to the collection points, and other responsibilities and benefits. In addition, they should be properly educated in the inherent dangers of inadequate attention to waste removal and disposal — unclean environment, flies, air pollution, diseases, etc.

- The level of consultation can be increased to obtain people’s input on various plans and projects concerned with environmental management. Notable citizens and community leaders should be given places on the Board of Waste Management Authorities.

- NGOs should be more involved in the planning and execution of solid-waste disposal.

Our study revealed that one of the problems of governance in Ibadan’s waste-management system is the governed’s disdain for, and lack of confidence, in the governors, particularly those at the local-government level. Therefore, a more responsive and responsible administrative structure is needed at the local-government level, in terms of resources, personnel, and monitoring of performance. Such an administrative structure should strive to

- Establish and improve budgetary control and proper accountability;
- Discourage the present almost total dependence on external sources of revenue;
- Emphasize institutional capacity-building among personnel; and
- Recruit highly competent technical staff of proven integrity, who can be made accountable and responsible for responding to the needs of the governed.

We have also observed that a major impediment to good governance in Nigeria is the fragmentation of governance, that is, the disposition of various tiers and agencies of government to pursue their various programs and projects with little or no collaboration with others. This has resulted in the confusion,
collision, and inconsistencies observed in waste management. To rectify this situation requires a holistic view of planning, including the planning of waste management. All types of land-use activities — housing, transportation, marketing, water supply, waste generation and disposal, etc. — should be regarded as subsystems of a larger planning system, each impacting on the others. It is desirable, therefore, to establish a central planning institution to coordinate and monitor developments in these various areas of land use.

The level of private-sector involvement in waste management has been too low and inconsistent and has, in fact, been on the wane in recent times. Activities of this sector are confined to the newer, well laid out zones of the city, and efforts have been hampered by many factors, such as lack of equipment, poor financing, lack of cooperation within the sector, inconsistencies of government policies, and an absence of a legal and operational framework for private-sector operations. Yet, given the high premium placed on privatization by the structural-adjustment program, one expects a higher level of private-sector involvement. In addition, studies have revealed that private-sector agencies are more efficient than government agencies in the areas in which they both operate. Consequently, efforts should be made to ensure greater private-sector participation. An operational and legal framework, including zoning, should be developed. Incentives should be introduced to encourage the private sector to move into the older parts of the city. Regular training and other capacity-building mechanisms should be put in place. The private firms should come together to share expertise, experience, and facilities to enhance their individual operational capabilities.

Waste recycling is a neglected aspect of waste management. Yet, wastes are known to contain a high proportion of recyclable materials, such as paper, glass, rags, plastics, and metals. The proportion of these materials varies from 35.6% in Mokola to 41.3% in the GRAs, 46.4% in the traditional core areas, and 48.0% at Bodija. Ideally, a significant proportion of these materials should be salvaged at the household level. But because wastes are not sorted out at source, a large proportion is lost because they are so contaminated by the time they reach the dumps that scavengers have difficulty retrieving them. To promote recycling, therefore, it is necessary to

- Promote the segregation of waste materials at source (that is, the household level);
- Streamline the operations of the scavengers, through proper training, upgrading of techniques, and the requisite health-protection mechanisms;
- Promote formalized recycling of waste materials by such modern devices as composting and generation of methane gas through anaerobic decomposition. This would require

the cooperation of researchers, the private sector, and the various tiers of government.

The federal government has several policies and programs to monitor and protect the environment, and some of its laws relate to the disposal of industrial wastes. But it is well known that the government, like many other African governments, is high on policies and programs and short on implementation. This trend should be halted. The federal government should strengthen its agencies, particularly FEPA, to meet their obligations more effectively, especially their enforcement of laws on industrial-waste management.

Finally, a new and more workable institutional framework is needed for solid-waste management. At present, the relationship between the local governments and the IUSC is too fluid and affected by the instability of the whole political situation in the country; therefore, the IUSC is ill-equipped, both statutorily and in terms of the requisite inputs, to meet the challenges of the future. The Board of Directors administering the IUSC is also too narrow and insufficiently committed to achieving the goals. Although we are aware that an omnibus management authority for waste management is in the pipeline, care must be taken to ensure that it meets the following acid tests of good governance:

- Greater participation of the populace should be achieved, particularly at the community level,
through mobilization and education. The existing CBOs could be used or new ones formed specifically for waste management. They should be involved in all deliberations and activities connected with all aspects of waste management in the communities.

- Economic sustainability of operations is important, particularly relating to managerial, technical, and financial aspects. This can be achieved by emphasizing cost recovery of operations and putting in place inexpensive, affordable, and appropriate technology. For instance, in transportation within the vicinity, greater use should be made of carts and wheelbarrows, instead of fuelled vehicles, whereas city-wide transportation of refuse should emphasize the use of rolled-up trucks or ordinary tipper vehicles for compactor trucks.

- Greater efficiency of operations is therefore needed to substantially increase the present level of waste collection, which is estimated at less than 10%.

- A high level of recovery and reuse is needed. This should start at the household level.

- A greater portion of the activities connected with waste management should be privatized.

- Well-trained and motivated staff of all cadres are important.

- All people involved in solid-waste management should have a high level of accountability.

- Although emphasis should be on a higher level of revenue from operations, efforts should be made to ensure that the rates are affordable to users.

- The authority should not act in isolation but in concert with other agents of development.

At the root of these structural changes lies good governance. The institutionalization of good governance hinges on democratization and participation. These processes will bridge the existing gulf between the rulers and the ruled and the attendant lack of trust, interdependence, reciprocity, responsiveness, and accountability in governance. Therefore, as efforts are made nationally and internationally to ensure that the country is speedily returned to democracy and that the right people are put in positions of power, the people themselves must be reminded that they will have to demand and obtain power over their own affairs through active participation.