

Community And Private (Formal And Informal) Sector Involvement In Municipal Solid Waste Management In Developing Countries

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FOREWORD

This background paper was drafted by Arnold van de Klundert as a consultant to UNCHS (Habitat) and by Inge Lardinois of WASTE Consultants, the Netherlands. Extensive assistance was received from Anne Scheinberg (private consultant) for the final stages of the paper.

The paper has been prepared for discussion at the "Ittingen Workshop" jointly organized by the Swiss Development Cooperation (SDC) and Urban Management Programme (UMP) in Ittingen, Switzerland, for 10-12 April 1995. The paper reviews the state of the art and needs assessment, and provides an overview of community and private formal and informal sector participation in municipal solid waste management in developing countries. It is based on experiences from a great variety of sources and includes cases and/or other partnership initiatives.

Useful comments on earlier drafts of the paper were received from Graham Alabaster and Paul Schuttenbelt (UN Habitat), and from Carl Bartone and Jens Lorentzen (UMP).

The paper has been adapted following comments that were made during the workshop. We would like to thank all participants who contributed to the lively discussions.

EXECUTIVE SUMMARY

Introduction

By almost any form of evaluation, solid waste management is a growing environmental and financial problem in developing countries. Despite significant efforts in the last decades, the majority of municipalities in the developing countries cannot manage the growing volume of waste produced in their cities.

The purpose of this paper is to review recent experiences in this field and highlight lessons learned and identify critical gaps to be addressed. The paper seeks to explore intersectoral partnerships as a means to achieving sustainable solid waste management (SSWM) systems. Point of departure is that the highest level of service and maximum benefit is gained when the municipality sees its solid waste management mandate and responsibilities clearly, but nevertheless can make use of the strengths of the various other actors. The four main types of actors considered in the paper are:

- 1 The municipal governments
- 2 The formal private (commercial) sector, in their role as potential solid waste function contractors
- 3 The informal private sector, including individuals, small entrepreneurs, and micro-enterprises, already working with waste materials or having the potential to do so.
- 4 Community based organizations (CBOs), either idealistically motivated or working for their own welfare, and non-governmental organizations (NGOs), usually in pursuit of their own idealistic goals.

Summary of the Case Studies

In Chapter 2, a number of cases of partnerships between public, private formal, and informal sectors are presented. The examples given reinforce the conclusion that modern, efficient, economically, environmentally and socially sustainable waste management systems are frequently beyond the reach of developing country municipal governments acting alone. The most successful initiatives occur where a mixture of public, private and community involvement has come into being, either through evolution or by deliberate design. The Key Issues identified in Chapter 3 begin to identify where the focus for action should lie.

Key Issues and Constraints

This chapter considers the key constraints to the *development of intersectoral partnerships between municipal governments, the formal private sector, the informal sector, and non-governmental and community-based organizations*. These include:

Financial constraints of all the sectors, in particular:

- For municipal governments, constraints on the use of taxpayers' money
- For the formal private sector, constraints on capacity, credibility, liability and resilience

- In terms of the informal private and community sector, generally marginal access to social institutions, and extremely limited access to financing
- General institutional and capacity problems typical of developing countries

Resistance and territoriality of the various sectors also forms an important barrier. This resistance may take the form of lack of belief in the legitimacy of other partners, or it may have more to do with an expressed or unexpressed fear that partnerships may disrupt the status quo, especially of marginal actors such as informal sector entrepreneurs.

Recognition and legitimisation of the informal sector may provide a significant threshold or barrier to inter-sectoral partnerships. **Resistance to institutionalisation** on the part of both formal and informal actors is a barrier in itself.

In addition, there are **technological issues** affecting the success of intersectoral partnerships. Technology choice in these areas generally has a severely limiting effect on the institutional arrangements. At the same time, the choice in favour of appropriately designed and scaled technical solid waste tools and systems is a necessary but hardly a sufficient condition for the creation of intersectoral partnerships.

Agenda for Action

The proposed action programme seeks to strengthen inter-sectoral partnerships in support of a long-term vision of the goals of waste management in developing countries. This goal is to achieve sustainable solid waste management systems which are stable over time, and which are beneficial to the society, the economy and the environment. At the core of the action programme is the understanding that the overarching responsibility and mandate of the municipal government for solid waste management remains central, irrespective of the extent to which it succeeds in referring its tasks onto other actors.

The Agenda for Action proposes a significant, long-term experiment in solid waste planning and implementation, with the following characteristics:

- Ten cities will be chosen for a fully integrated pilot project designed to achieve sustainable solid waste management (SSWM). The cities will offer both a learning and a developmental function, and can also serve as examples and precedents for other cities.
- The municipal governments retain ultimate responsibility.
- Intersectoral partnerships play a central role play, as a means to develop both the tools and precedence for sustainable solid waste systems.
- The ten municipalities must commit themselves to the principles and practices of sustainable solid waste management.
- Each of the ten municipalities must make a declaration that they are ready to enter into democratic relationship with the other actors (and must allow this to be monitored).
- Donors guarantee the financing of the entire process from planning through implementation.
- Donors make a commitment to the sustainable waste management plans and must limit and focus their activities to support these plans, and not their own policy or commercial agendas.

The activities in the proposal fall under the following general classifications:

- **Investigation, research, documentation, and analysis** of the existing solid waste system in operation in the city, with emphasis on: economy, institutional set-up, organizational capacity, roles and impact of all actors, regulatory framework, industrial and commercial infrastructure, municipal and national policy goals, et cetera.
- **Capacity building, enabling, and empowerment** of all current and potential actors in order to enhance their capacity to take on new partnership roles in sustainable solid waste management.
- **The creation of infrastructure, preconditions, instruments, and an institutional context** in which all actors can perform their partnership functions in relation to the development of new models for sustainable solid waste management in an optimal manner.

Parallel activities included under the large scale experiment are designed to catalyse and create a process of profound change in the pilot cities. The activities include the following

- Activities oriented towards research; methodology development; the development of a regulatory framework; and financial instruments.
- Activities which result in a process of change that is both profound and transparent to the public, and to as many as possible of the participating actors.

These activities relate to:

- Financial management, with the aim of introducing improvement of cost management of municipal solid waste management in the city and the enhancement of cost recovery in relation to an affordable sustainable solid waste system for all citizens.
- Legal and institutional constraints, with the goal of creating a legal framework for enabling sustainable solid waste management.
- Education in sustainable solid waste management, aiming at an increase in awareness of the complexity of solid waste management.
- Intersectoral partnership development, which seeks to enable the development of consultative and cooperative processes between all the actors in the solid waste management system, in order that their activities be coordinated to create an optimal sustainable solid waste management system.
- Stimulating developments in solid waste and recycling technology, with the aim of promoting and developing appropriate and affordable technical solutions, as well as to improve the health and safety of those working in waste management (predominantly in the informal sector).
- Capacity building in the informal and formal private sector, in support of the formal and informal private sector developing the capacity to serve as partners for municipal governments.
- Extending waste collection services to upper, middle and especially low-income areas.
- Adapting the structure and effectiveness of activities of bilateral and multilateral lending and aid institutions, in order to ensure that donor activities support and strengthen the development of stable cross-sectoral partnerships which in turn support sustainable waste management.

CHAPTER 1 SIGNIFICANCE OF COMMUNITY AND PRIVATE SECTOR PARTICIPATION

1.1 Introduction

By almost any form of evaluation, solid waste management¹ is a growing environmental and financial problem in developing countries. Despite significant efforts in the last decades, the majority of municipalities in the developing countries cannot manage the growing volume of waste produced in their cities. This inability to manage urban solid waste consists of failures in the following areas:

- Inadequate services
- Inadequate financing
- Inadequate environmental controls
- Poor institutional structure
- Inadequate understanding of complex systems
- Inadequate sanitation

These inadequacies are receiving increasing attention, and are gaining in priority both in the countries themselves and in the international donor community. The attention to sustainable development also means that sustainable waste management systems – actually, sustainable material use systems - will increasingly come to be the goal of solid waste policy.

This paper serves as a draft background paper (package no. 3) for the Ittingen Workshop, which has as its main objective to agree on a conceptual framework and preliminary mid-term action plan for activities in municipal solid waste management (MSWM). The paper seeks to introduce and explore the role of the formal and the informal private sector and community actors in relation to sustainable solid waste policy, to ensure that integrated approaches result in real and measurable gains in the management of solid waste. Its purpose is to explore the aspects of participation and integration of the different sectors in detail, in order to arrive at a framework for action. One of the difficulties of a paper like this is the need to generalize, across the huge differences that exist between South America, Africa and Asia, and also across the enormous variation within each of those continents.

Chapter 1 provides an introduction and overview, together with identifications and descriptions of the main actors in solid waste management. It goes on to provide a rationale and justification for the institutionalisation of the participation of the private sector, both formal and informal, and the community sector in municipal waste management systems in developing countries. Chapter 2 presents specific examples of the state of the art in cross-sectoral partnerships, waste management activities, and experience in South America, Asia and Africa.

1 For the purpose of this discussion, solid waste management refers to the following steps in waste management: the discarding of used materials, collection, transfer, recovery (including recycling), and disposal of municipal solid wastes. Municipal solid wastes are defined to include: refuse from households, non-hazardous solid (not sludge or semisolid) wastes from industrial and commercial establishments, refuse from institutions (including non-pathogenic waste from hospitals), market waste, yard waste, and street sweepings (Cointreau-Levine, 1994). In developing countries usually at least 50% of the waste consists of organic material

Chapter 3 provides an analysis of the key issues and major impediments to further development of cross-sectoral partnerships in municipal solid waste management. It ends with a summary of five categories of problems. These five categories are taken up again in Chapter 4, describing a framework for an Action Programme. Chapter 4 begins with an introduction, discussing sustainable waste management systems as the ultimate goal of solid waste policy and programmes. It then provides the framework for a preliminary action programme, designed to serve as a basis for discussion during the workshop.

It should be emphasized that the examples provided are neither new nor theoretical: each describes a real-world situation in a developing country. What is new is the attempt to subject these examples to critical analysis, and to apply the lessons to be learned to the task of developing sustainable integrated solid waste management systems in developing countries.

1.2 Description of the Main Participants and their Respective Roles

This section introduces the various actors who participate in solid waste management in developing countries, and begins to clarify and define their roles. In principle, these actors are part of every solid waste management system, both those in developing and developed countries. Although the terminology in the literature is ambiguous and frequently confusing, this paper attempts to use the terms below in a consistent manner.

In most situations, few clear boundaries can be drawn between the formal and informal sector, both of which are involved in the collecting and recycling of waste materials. Many enterprises operate in a kind of 'grey zone', where characteristics of both 'formal' and the 'informal' sector apply. Furthermore, relatively strong commercial connections exist between the entrepreneurs in the chain (varying from waste-pickers, intermediate traders to manufacturers of recycled end-products) regardless of their status as formal or informal; the two sectors tend to operate in a symbiotic relationship, with the 'informal' enterprise acting as supplier or sub-contractor to a 'formal' waste business or manufacturer. Also, competition for both materials and service contracts may exist between the entrepreneurs in the formal and informal sectors.

Even the boundaries between the municipal government and the informal private waste sector may be blurred. For example, a common situation involves informal waste pickers working along with the municipal crew on collection vehicles. Also, informal waste collectors or recyclers may have organized themselves and receive exclusive rights to recover resources from municipal refuse.

1.2.1 Municipal Governments

Local municipal governments have a role in the set-up and operation of waste management systems. Most urban authorities in both industrialized and developing countries receive their powers and obligations from a central government authority, with allocation of powers and responsibilities to protect the rights of the citizens, to provide services, and to serve the common good (Gidman et al., 1995). On the one hand, they have to implement laws and regulations in order to fulfil their statutory obligations. On the other, a failure to provide a public service can result in those in power risking the wrath of their constituents, the ridicule of the international community, and (at least in the case of democratically elected officials) ultimately their ability to get elected and enjoy the privileges of public office.

Local municipal governments, almost by definition, are charged with controlling living conditions and public health. Within this framework, urban authorities around the world traditionally interpret their mandate to include the delivery of services, including sanitation, waste removal, and disposal, within their political and geographic jurisdiction. This gives them formal responsibility for solid waste management; this responsibility is generally assigned to the Health or Sanitation Department, but in certain cases also to the department of Public Works or Engineering.

The following characteristics are typical of the public sector in fulfilling its responsibility for waste management systems:

- *Motivated by legal and political concerns, and sometimes by international prestige*
- *Performing activities because of its mandate and obligation, or because of the power and patronage they confer on the government, or its representatives*
- *Using public tax-generated resources and/or fees for services rendered*
- *Regulating or contracting with the private sector*

1.2.2 *The Formal Private Sector*

The 'formal private sector' is here understood to refer to private sector corporations, institutions, firms and individuals, operating registered and/or incorporated businesses with official business licences, an organized labour force governed by labour laws, some degree of capital investment, and generally modern technology (Furedy, 1990). In general, the defining characteristic of the formal private sector is that its main objective is to generate a profit on investments.

Formal private companies are involved in wide-ranging activities in waste management systems, varying from waste collection, resource recovery, incineration and landfill operation. They may participate in the waste management system in a number of ways, including:

- Entering into contracts paid by the municipality to perform collection, processing, disposal or cleaning services for compensation
- Purchasing the right to perform services and keep (all or part of) the income generated
- Entering into contracts with individuals or businesses for collection services
- Functioning as a purchaser of recovered materials from the municipality or the collector

The following characteristics are typical of the formal private sector in its participation in waste management systems:

- *Motivated by profit*
- *Performing activities because of their potential to generate income*
- *Using private resources*
- *Regulated and/or contracted by the municipal government*

1.2.3 *The Informal Private Sector*

The term 'informal private sector' refers to unregistered, unregulated, or casual activities carried out by individuals and/or family or community enterprises, that engage in value-adding

activities on a small-scale with minimal capital input, using local materials and labour-intensive techniques (Furedy, 1990).

Informal activities, in contrast with the formal sector in waste collecting and recycling, are often driven by poverty, and are initiated personally and spontaneously (and sometimes haphazardly) in the struggle for survival (although some enterprises, especially the ones engaged in recycling activities, manage to make considerable profits). Consequently, the choice of materials to collect is in the first place determined by the value of the waste materials, and in the second place, by their ease of extraction, handling, and transport. Paper, metals and plastics, usually collected from more wealthy residential or industrial areas, tend to attract more attention than organic or biodegradable materials, even though these materials are present in much smaller percentages than organic waste or manures.

In general, the informal sector consists of two types of activities, individuals and families, performing activities which provide them with subsistence, and small businesses, operating in much the same way as their larger, registered counterparts, but without the benefit of official registration. The organization and structure of these recovery activities is generally opaque to outsiders. This is true not only for waste pickers and itinerant waste buyers, but also for other groups such as small enterprises recycling metals or plastics. In general waste work is done by religious or ethnic minorities, low castes or rural immigrants, who are looking for a way to generate subsistence income in an urban context. The importance of the role played by the informal private sector in waste management systems in general, and as partners for municipalities in particular, is slowly achieving international recognition.

While informal-sector activities vary according to sociocultural, religious and economic circumstances, some generalizations about gender roles are possible. The least sophisticated forms of labour, including collection of waste from the streets and dumps and primary sorting of the material fall to the women and children, most of whom work from home and do any handling or sorting in their homes or yards. Men are more likely to be involved in the processing or manufacturing of items, together with the selling of recovered items and materials.

The following characteristics are typical of the informal private sector in its participation in waste management systems:

- *Motivated by the need for subsistence activities and survival*
- *Performing activities because of their potential to generate income or produce needed goods*
- *Using resources too marginal to attract competition from the formal sector*
- *Beneath the notice of most decision makers in municipal government, except as an embarrassing nuisance*

1.2.4 Community Based Organizations (CBOs)

The community and its representatives have a direct interest in waste management, as residents, service users and tax payers. Communities in the low-income areas generally receive marginal or no services in terms of public transport, electricity, drinking water, sanitation, drainage, and also of waste removal.

These communities will sometimes take the initiative to organize themselves into Community Based Organizations (CBOs), with the direct goal of self-help and improving their living conditions. Such CBOs may receive external assistance in the form of technical and/or financial aid from different agencies. Sometimes these activities may also take the form of direct participation in (their own) waste management, such as feeding organic material directly to their stock. Usable materials, like bottles, are often reused by the members of the low-income community themselves.

Groups of citizens, including those from middle and high-income areas, may start CBOs aimed at improving the waste situation in their neighbourhood: they may hire (informal or formal) waste collectors; they may make arrangements with local politicians for waste transfer points; they may start waste separation experiments, et cetera. Middle and high-income communities produce the more valuable waste and hence are attractive to low-income waste pickers, where they are often assisted by watchmen and domestic servants. Solving service problems in poorer areas is more likely to require intervention, since the materials have less value. CBOs mainly participate in primary waste collection systems, separation at source experiments and implementation and so on.

CBOs may also take a role in the actual provision of services, including operations and maintenance, and even in the construction of facilities. Thus CBOs, speaking for the individuals or members involved, play an important role in waste management system development processes. Organized communities have a stronger voice than individuals and bring about improvements more easily. They can also be organized along lines of gender, age or religion.

1.2.5 *Non-Governmental Organizations (NGOs)*

The term NGO can refer to such diverse organizations as churches, universities, labour organizations, environmental organizations and lobbies. Sometimes even donor organizations can fall under this heading.

Generally, Non-Governmental Organizations (NGOs) are intermediate organizations which are not directly and continuously involved in community projects. NGOs not only advocate, they can also be involved in awareness-raising, advocacy, and decision-making. NGOs can act as intermediaries between grassroots initiatives (CBOs) and municipal governments, or serve the ideological, political, or altruistic interests of international organizations. They can advocate interests on a larger scale than the single community and provide support and advice to CBOs, but also to marginal groups in the society, such as waste pickers at dump sites and street children.

The role of NGOs as partner organizations in waste management systems ranges from serving as the umbrella organization under which CBOs operate, to providing a channel for donor financing. As partners, they can sometimes confer a degree of credibility and perspective on the informal sector in the eyes of the municipality.

The following are the typical motivations of CBOs and NGOs:

- *Motivated by an altruistic wish to improve circumstances or a combination of personal and altruistic motivation to improve the community.*
- *Advocating activities which in some manner serve the public interest.*

- *Bringing outside resources to bear on the situation.*
- *Outside of the formal decision making structures of municipal governments, but also not functioning as a private-sector business.*

1.3 Rationale and Justification for Private and Community Sector Participation in Waste Management Systems

Private and community sector participation in waste management is not, in itself, an *a priori* goal of solid waste policy. It is rather a means to achieve the general improvement of waste management systems operating or being planned in developing countries. Private sector participation in waste management systems should occur when it can contribute to making those systems more responsive, more efficient, more economical, more equitable, or more environmentally responsible. In the following section, some advantages to the involvement of the various actors in solid waste management systems is discussed.

1.3.1 Formal Private Sector

Examples of the gains to be made from including the formal private sector in waste management systems are listed below. It should be emphasized, however, that these are potential gains, whose realization depends not only on the quality of the private sector actors available, but on the degree of oversight and control retained by the municipal or regional government responsible for the jurisdiction.

Potential benefits to the waste management system include:

- Greater efficiency and enhanced performance, due to leaner private-sector organization and more flexible employee compensation procedures, and sometimes also to the introduction of competition into waste management operations.
- Better management and accountability, due in part to the fact that the private business functions as a contractor, and could lose the contract.
- Faster response, associated with the ability of private business people to raise capital, as opposed to the relatively long lead times involved in government decision making and/or the donor grant process, or with government procurement procedures.
- Higher service ethics, associated with the business's image and their ability to attract new clients.
- Greater flexibility in terms of purchase of land and siting of facilities.
- Greater access to experience and technology, due to the potential to create partnerships with experienced private businesses in other countries and regions.
- Risk reduction, by transferring unpredictable costs or unreliable revenues onto the private operator.

Potential benefits to the local economy include:

- Creation of a more robust commercial sector in the country.
- Generation of sustainable employment in the private sector.
- The recovery of valuable materials from recycling activities, which can be locally used without loss of hard currency or foreign exchange.

Social and environmental benefits include:

- The insulating of waste management activities from political patronage of civil service systems (although patronage in the form of contractor choice is a danger of private sector participation in contracts)
- Conservation of resources when materials are recovered
- Reduction in environmental damage from exploiting primary resources, including mining and deforestation.

Examples of efficient and cost effective formal private sector activities are given in Box 1.

Box 1: Benefits of Formal Private Services

In a number of cases the private sector can operate more efficiently and cost effectively than the public sector in the delivery of waste services. For example, in Sao Paulo, Brazil, where the private sector provides services, the cost of providing these services is approximately half of that in Rio de Janeiro. For comparable service areas, vehicle efficiency is 71 percent higher in Sao Paulo than in Rio, and labour efficiency 13 percent higher. In Buenos Aires, public collectors (which serve about 13 percent of the city) used 7.5 times more workers per 1,000 population served and 4.5 times as many workers per vehicle, than the private collectors.

In Malaysia, the cost of contractor services averages 23 percent less (after taxes) than the cost of services provided by the municipalities. Most local authorities contract out between 10 and 80 percent of solid waste collection services, giving contracts to between one and nine contractors through a well-defined competitive tender process (Sinha quoted in Bartone).

Source: Bartone et al., 1991.

1.3.2 *Informal Private Sector*

The participation of the informal private sector, including both that of small entrepreneurs and individuals and families, also has substantial benefits, which are presented here. Although small-scale in itself, the informal sector is operating on a large scale. First, the importance of the informal sector is illustrated with an example from Jakarta, Indonesia, in Box 2.

Box 2: The Benefits of the Informal Sector in Jakarta, Indonesia

In 1988, Jakarta had a daily waste production of more than 21,000 m³, 25% of which was recovered by an estimated 37,000 scavengers. These activities save the city \$270,000 - 300,000 per month. Today, at least 78 factories use material that has been recovered from waste in their plastic, paper, glass and metal production processes. The recycling rates for glass and paper are as high as 60 - 80%. The waste paper collected by scavengers comprises 90% of the secondary raw material in this sector. In delivering 378,000 tonnes of waste paper per year to paper factories for recycling purposes, the scavengers save 6 million trees from being cut down. Some \$48.5 million per year are made with solid waste recycling only, compared with the \$0.5 million paid in garbage collection fees.

Source: Oepen, 1993.

Potential benefits to the waste management system:

- The successful recovery and return to productive use of materials that would otherwise end up in the waste stream.
- The handling of large volumes of materials at no or marginal cost to the municipal government.
- Reduction of the amount of waste materials requiring collection and transport.
- Risk reduction, by transferring marginal activities, unpredictable costs or unreliable revenues to the private operator.
- Extension of the lifetime of capital investments such as environmentally appropriate sanitary landfills or composting facilities, through reduction of throughput.
- Provision of waste removal and sanitary services to otherwise unserved (generally poor) sectors of the city.
- Provision of service at no-cost to the municipality.

Potential benefits to the local economy include:

- The supplying of raw materials to the local manufacturing sector without recourse to foreign exchange or import.
- The maintenance of a large and available stock of secondary resources to stimulate industrial production.
- Providing of income-generating activity for a large number of people, many of whom would otherwise be indigent or require financial support from the government.
- The availability of a tier of products for poor people, such as containers, harnesses, and wheels made from recycled materials, which improve the living standard of poor people at a price that they can afford.

Box 3: The Income-Generating Importance of Informal Sector Waste Activities

In order to give some indication of the number of people and small-scale enterprises involved, the following figures serve to exemplify part of the resource recovery industry:

- In Metro Manila an estimated number of 17,000 people make their living as dump site scavengers (CAPS, 1992).
- The number of waste pickers in Bangalore is estimated to range from 20,000 to 30,000 (Baud et al., 1994).
- In Cairo more than 400 small plastics reprocessing enterprises exist, which recycle approximately 70% of the waste plastics generated (EQI, 1991).
- Over 20,000 women work as paper pickers in Ahmedabad (Bentley, 1988).

Social and environmental benefits include:

- Providing employment for a number of people who might otherwise not be able to survive.
- Supporting communities and providing family and neighbourhood cohesion.
- Improvement health and safety conditions when informal activities are recognized and supported.
- Conservation of resources when materials are recovered.
- Reduction in environmental damage from exploiting primary resources, including mining and deforestation.
- Reduction in use of water in primary production.

1.3.3 CBOs and NGOs

The benefits and advantages resulting from CBO and NGO participation are listed below.

Potential benefits to the waste management system include:

- The contribution to problem-solving at the local level, e.g. by setting up and supporting primary waste collection schemes.
- Experimentation with innovations at neighbourhood level and within the informal sector.
- Mobilization of citizens and enhancing their participation in solid waste management schemes.
- Promotion of environmental awareness.
- Provision of environmental health education.
- Provision of waste removal services to underserved, marginalized, or hardly accessible areas.

Social benefits include:

- Support for the poorer groups in the society, the low-income communities as well as the waste pickers, with technical assistance and advocacy.
- The provision of countervailing power.
- The stimulation of income-generating activities among the urban poor.
- The strengthening of organizational capacities of communities and informal individuals and entrepreneurs.

CHAPTER 2 STATE OF THE ART IN CROSS-SECTORAL PARTNERSHIPS

This chapter gives an overview of existing private and community activities and partnerships in municipal waste management in developing countries. Section 3.1 deals with partnerships with the formal as well as the informal sector, which are primarily the initiative of the municipality. Formal and informal private companies, community-based organizations or non-governmental organizations are increasingly taking over part of the activities of the municipalities. The success of the undertaken activities and the roles of the various actors will be elaborated upon in the sections 3.2 - 3.5. Section 3.6 summarizes the main conclusions.

2.1 Municipalities Privatising Services

Privatisation² assumes that the public sector municipal authorities retain ultimate *responsibility* for the service. More and more municipalities are becoming convinced of the need for privatisation and community involvement. Steps have been taken towards various forms of public-private partnerships, especially in South-East Asia and South America and to a much lesser extent in Africa.

In the recent publication *Private Sector Participation in Municipal Solid Waste Services in Developing Countries Vol. 1 The Formal Sector*, Sandra Cointreau-Levine gives a good overview of formal private sector involvement and the variety of institutional arrangements, such as contracting, concession, franchise, open competition, and the like, which can be deployed. She also discusses the many factors which need to be analysed, such as cost recovery, efficiency, public accountability, economies of scale, which play a role in the decision to privatise. A number of examples of privatisation, both from her text and from actual cases and other literature, are presented below.

Jakarta is one of several cities that began to experiment with the privatisation of waste collection in the second half of the 1980s. In 1988, Jakarta officials experimented with private contracting for waste collection in 261 sub-districts (10 percent of the city's waste generating areas), which were comprised of middle- to high-income residents (Cointreau-Levine, 1994).

South Korea, in the same period, began privatising waste treatment and disposal. A successful combination of public and private sector activity for hazardous waste disposal has shifted the balance towards private sector operation. A public corporation built and operated two state-of-the-art hazardous waste treatment and disposal facilities. In a later stage the Ministry has been able to license and monitor the development of at least six privately owned and operated facilities (Cointreau-Levine, 1994).

Recently, The Bangkok Metropolitan Administration (BMA) privatised various aspects of its waste management service packet.

2 In this paper 'privatisation' is defined as the process of reducing government activity or ownership within a given service or industry (Cointreau-Levine, 1994).

- When faced with budget limitations, the BMA opted for contracting the disposal of refuse to a private operator in the outlying areas of the province, instead of sitting and developing a new landfill.
- The BMA has given permits to private contractors to collect garbage from a few of the 36 districts of Bangkok.
- The production of compost has been liberalized: the Fertilizer office is still within the BMA organization, but operates as a company. It can allocate salaries to the workers beyond the usual civil-official rates (Ksemsan Suwarnarat, 1991).

Keys to successful privatisation include creating contestable markets, establishing an appropriate regulatory framework and operational standards for contractors, and strengthening local government capacity to negotiate contracts and monitor performance. The focus must be on competition, transparency, and accountability (Bartone et al., 1991).

The informal private sector and community groups are also gradually being seen as partners for municipalities in developing countries. In Indonesia, cities commonly work with the community leader of low-income neighbourhoods to organize community efforts for the self-delivery of waste to a communal depot or to hire and manage the neighbourhood workers who provide door-to-door pushcart collection. In Ciudad Juarez, Mexico, the city gave a concession to operate the city landfill to a cooperative of dump-site waste pickers (Cointreau-Levine, 1994). In Curitiba, Brazil, the inaccessibility of low-income areas by trucks is solved by involving the community who bring their waste to central collection points, by exchanging food and service coupons for the materials. This is funded out of the prevented costs of collection.

Box 4: Participation of private (formal and informal) sector in municipal solid waste management in La Paz, Bolivia

In 1989, the municipality of La Paz established the EMA enterprise (Empresa Municipal de Aseo) which took over most of the tasks of the DSU (Dirección de Saneamiento Urbano). This was motivated by a wish to trim municipal budgets and advance private-sector participation. In 1991, EMA commenced its function as an intermediary, charged with subcontracting its tasks to private enterprises. EMA organizes, coordinates and controls these private-sector efforts.

By November 1992, EMA had subcontracted all waste collecting activities to the Chilean company Starco for a period of five years. Starco, a typical representative of the formal waste management private sector, is contractually obliged to transport all collected waste materials to the Mallasa dump. EMA retains ownership of the waste. Scavenging by collection personnel is prohibited, although much of the recoverable material is in fact removed by informal sector scavengers who search the containers for recoverable materials.

Starco contracts with 'micro empresas' that have been contracted by Starco to collect the garbage from the less accessible poorer suburbs (located on a hill). In these suburbs, some ten small enterprises operate collecting the garbage on foot or with carts and delivering it at Starco against payment. Each of these 'micro empresas' consists of 8 to 10 persons who are paid by Starco per day and per collected kilo. These small enterprises received brooms, carts, gloves etc. as a one-time donation from GTZ for a total amount of \$1,500 per company. DSU estimates that approximately 400 families in La Paz earn their daily income from garbage; 100 of them are organized in an 'asociación', especially those that collect plastics.

Then Starco itself wanted to organize waste collection in the less accessible suburbs because this would entail considerable savings. In March 1993, some neighbourhood committees protested against the Starco's expansion and intention to employ their own personnel to collect waste in the suburbs. Probably it would have strengthened the position of the 'micro empresas' if they had been contracted directly by EMA instead of by Starco. Furthermore, Starco is not interested in recycling, as the company is paid by weight by EMA. Both of these are clear examples that a truly successful partnership reserves important roles for the municipal government. It also shows that the financial arrangements (in this case a fee per ton collected) influence the results attained.

Source: Cornelissen et al., 1993.

2.2 Formal Private Sector Activities

In countries where local authorities are not able to adequately address the solid waste problem, private companies fill this gap. This is especially the case in Africa, where municipalities are often unable to fulfil their service mandates. In Guinea Bissau for example, waste collection is only carried out on a temporary basis when a local private company has a contract paid for by the World Bank.

In Nairobi the collection of garbage was the sole responsibility of the Nairobi City Council and fell under the jurisdiction of the Public Health Department. The failure of this collection system has been a political 'hot spot' in the last few years: only 40% of the 800 tonnes generated daily are collected, and only 25% of the collection trucks are operational. Private

garbage collection (from middle- and high-income areas, industries and offices) disposal, (industry, offices) and recycling have gone on for a long time, operating without official approval until March 1991. BINS Ltd, which mainly collects waste in high-income areas and is involved in salvaging paper, metal, glass and plastics is relatively typical. In 1992 they were charging customers a paper pickup fee of Kshs 225,- (US \$4.-) per month (Karuga, 1991).

Structural adjustment programmes may encourage the formation of private enterprises as a by-product of the dismantling of expensive municipal infrastructures. In Mali, political changes in the late 1980s and the fact that the government had to slash public sector jobs to meet the demands of the structural adjustment programme had the effect of encouraging private initiative.

Box 5: Private Waste Collection Enterprises in Bamako, Mali

In Bamako, the municipal department (DSUVA) which has the responsibility to collect and dispose of the urban waste of the whole city, consistently fails to perform its function. In 1991 Cofesfa, a NGO consisting of young unemployed university women, got a contract from the Governate of the district to handle the collection of garbage in the area called Medina-Coura, and also provides a health education service. The pilot project was a success (GERAD, 1992).

Meanwhile the Government of Mali (with assistance of the World Bank) established an intermediate agency, Agence d'Exécution de Travaux d'Intérêt Public pour l'Emploi (AGETIPE), which can bypass bureaucratic government procedures. It is able to pay competitive salaries to a relatively small number of well-motivated staff to control private sector operations. Through this agency, Cofesfa received a second contract for the area of Djikoroni-Para (Miles, 1994). The waste removal service was reported to have improved considerably. But the somewhat *ad hoc* character of AGETIPE is a cause for concern, since financial difficulties could halt its ability to contract with Cofesfa.

The institutional arrangement of the GIE (Group de Intérêt Economique) Beseya, a private enterprise that began collecting waste in the Hamdallaye area in Bamako in 1992, with the approval of the local authorities, avoids this risk by collecting fees directly from the residents of the service area. GIE started with sensitizing the community, making clear what their task was and the fee they expected from each household. A respected, senior person from each group of households collects the fees and hands the money over to the collection crew. Additional income is generated by selling the compost made from the biodegradable fraction, and by selling seedlings from the tree nursery.

Cofesfa and GIE Beseya are not the only private initiatives that have taken off in Bamako. In 1992 at least ten units were active in several neighbourhoods. Nevertheless, there are still problems at the municipal level; the municipality is not able to adequately monitor and control the activities of contractors, nor to provide secondary waste collection and adequate disposal services. This is a good example of how privatization cannot compensate for the lack of an overall municipal waste management strategy or for the failure to have a complete overview and to retain accountability.

2.3 Informal Private Sector Activities

In some cases, waste pickers and recyclers have been able to get official recognition from municipalities by organizing themselves and institutionalising their activities. These initiatives are gradually formalizing the informal activities that arose as survival strategies; the resulting

businesses, especially in the recycling sector, are crossing over and becoming more and more 'formal'. Most of them now act in the grey area between the formal and informal sector.

Probably the best known example of institutionalised informal private sector activities are the Zabbaleen in Cairo, who collect about 2,700 (metric) tonnes of household waste per day, nearly 50% of Cairo's daily total of 6,000 tonnes (EQI, 1991). With some outside assistance they have managed to organize themselves and to extend and upgrade their services, branching out from collecting waste to setting up and operating recycling and composting businesses. The Zabbaleen have also received formal recognition for their services from the municipal government.

Evidence from South-America and South-East Asia also suggests that the organization of the informal sector is indeed a key factor for success and integration in the municipal waste management system.

In Colombia, approximately 1% of the population, or more than 50,000 families, earn their living from urban rubbish (Pacheco, 1994). A marginalized section of the population, waste pickers have been organizing themselves into locally based cooperatives since 1986; at the national level, with the assistance of a NGO and the university of Bogota, they have formed the National Association of Recyclers (ANR). Currently, 84 joint groups of recyclers exist, subdivided into 7 regional groupings. Since ANR was set up in 1990, it has represented and protected the interests and rights of all recyclers in the country and promoted national policies in the interests of the union, backed up by a new legal framework, which obliges the inclusion of the operation in the organized waste pickers union.

The Self Employed Women's Association (SEWA), in India, has managed to improve the living conditions of women paper pickers, by organizing them into cooperatives and by searching for easily accessible raw materials in bulk quantity (Bentley, 1988). In recent years SEWA has expanded its efforts to include alternative income-generating schemes, and programmes for the education and training of the children of the paper pickers.

In Brazil (illustrated by the case in Box 6) the organization of scavengers and waste pickers into cooperatives contributes towards increasing the flow of recyclables and reducing costs, which is currently a major stumbling block to initiating curbside recycling programmes (CEMPRE, 1994).

Box 6: Coopamare, São Paulo, Brazil

In 1982 eight paper pickers, working together, managed to buy one cart. They received some support from religious welfare organizations, so that they could construct more carts. In 1985 they founded an association to defend the rights of the waste pickers. Some years later they received a piece of land under a viaduct (in a middle-income area) from the then PT mayor (Labour Party) under two conditions: first, the cooperative would have to return the land as soon as it would stop its activities; and secondly, the place should be kept clean. In the beginning, the neighbouring citizens did not like the idea of having a waste cooperative nearby, but an 'Open Day' and some meetings convinced them. Now, Coopamare has approximately 100 members (mostly men, since the hilly terrain makes waste collecting a heavy task) mainly working in two neighbourhoods of São Paulo.

Coopamare is unique among cooperatives in that a former waste picker has now become the leader of the cooperative and various responsibilities are shared among the members. Also, much attention is paid to working conditions and keeping the environment clean and attractive. Together the waste pickers manage to fetch higher prices for their waste materials. Higher quantities of waste materials can be sold directly to the formal recycling industries, thus bypassing middlemen. Establishing good contacts with these industries is of utmost importance. To upgrade and extend their activities, they have received assistance from several, often church-related, donor NGOs. Similar cooperatives exist in other cities in Brazil, including Santos, Belo Horizonte, Porto Alegre and Santa Catharina. Based on the experience of Coopamare, a training kit has been designed to help waste collectors in other cities to form cooperatives and to integrate these coops into officially run waste programmes.

2.4 Self-Help Projects by Community Based Organizations

Even where they exist, urban waste collection systems tend to bypass low-income areas; even in middle- and upper-income areas, collection services tend to be inadequate. Certain community based organizations have organized themselves to solve these and other problems. In this model of partnership, the initiative comes from the residents themselves³.

In South America, a number of CBOs in low-income areas are struggling to get the basic services that meet their needs. Vila Reis is a typical low-income area of Sao Paulo, with many immigrants from the North-East of Brazil. Its local neighbourhood committee, or 'Associação dos Moradores de Vila Reis' tried organizing the residents to put pressure on the politicians to improve living conditions and services in the neighbourhood. Their success in waste activities depended mainly on the political colour of the mayor of Sao Paulo and the resulting cooperation between the municipality and the university.

Municipal support also appeared to be a crucial factor in Bayovar, a town in San Juan de Lurigancho, one of the forty districts of Lima. MUPROBA (MUjeres Para el PROgreso de BAYovar - women for the progress of Bayovar) approached ESMILL (Empresa de Servicio de Municipalidad de Limpieza de Lima), a semi-public garbage collection firm, to collect the waste in their area. However, political changes resulting in a change in ESMILL personnel caused a cessation of ESMILL services (Claringbould, 1990).

3 In general, such initiatives are more likely to come from middle- and high-income areas.

Many, perhaps most of the community-based self-help projects are initiated by women. Traditional divisions of labour generally assign women the responsibility for running the household, for domestic food production, and for taking care of the children. Therefore, mostly only the women come in contact with the waste materials, have the greatest interest in a clean and relatively odour-free area, and are the most concerned when their children's injuries become infected due to unsanitary circumstances. The case of KAWWS in Karachi (Pakistan) illustrates how upper-income women took such an initiative.

Box 7: KAWWS, Karachi, Pakistan

In 1988, housewives who were dissatisfied with the inadequate service delivered to their (middle/upper) income area (the KAECHS-housing project south of Karachi) took the initiative to arrange for a private garbage collection service in their area. They approached their local politician for support, started a public awareness campaign on public health and garbage among the residents, and established the Karachi Administration Women Welfare Society (KAWWS) to deal with these and related issues. They consider all residents responsible for the creation of waste and thus for proper disposal, even though the dominant Muslim religion enjoins its followers to avoid all contact with waste.

The women have arranged their own van to pick up their waste, despite the fact that taxes supposedly covering this service have already been paid by all the residents. Plans for home-composting or a small composting enterprise in the nearby park, run by some of the waste pickers in the area, are under discussion. Karachi has a significant number of similar initiatives due to the inadequate, highly centralized administrative system of public services.

Source: Ahmed, 1994.

In middle and high-income areas initiatives may come from residents who are in one way or the other professionally involved in waste management. In 1985, the Community Centre of São Francisco in cooperation with the University 'Federal Fluminense' took the initiative to start a project for separation of recyclables at source in São Francisco, a neighbourhood of Niterói, close to Rio de Janeiro (Eigenheer, 1993). This project is still in operation, although it remains financially dependent on outside funding, notably from Brahma, a large beer company in Brazil. Extending the project to other areas of Niterói is difficult, partly because the municipality is not willing to cooperate. Experience gained with the project has been transferred to other projects, especially to low-income areas of São Paulo and Rio de Janeiro.

2.5 Non-Governmental Organizations: Promoting Ideals and Self-Help

Many non-governmental organizations have also taken up the issue of waste management. These organizations are usually promoting either environmental health (e.g. the need for clean cities), social goals (such as the involvement of street children or working conditions of women and children in particular, generally considered as the most vulnerable group), or a combination of these two.

One of the great NGO success stories in waste management is the Balikatan Women's Movement in Manila, the Philippines. Currently, more than 18,000 households separate their

waste into wet (animal and food wastes) and dry fractions. A government agency collects the wet garbage daily, and the dry garbage is bought by more than 100 collectors who sort it and sell the valuable components. The success of the programme can be attributed to an integration of the informal sector that benefits financially, an education campaign focusing on environmental issues, and the support and participation of the junk shop dealers, the community and local government (CAPS, 1991).

Another successful NGO, which has branches in Bogota, Ho Chi Minh City, Bombay, Tunis, Rabat, Santo Domingo and headquarters Dakar, is ENDA-TM (Environment and Development Activities). In Senegal, ENDA has initiated a community-based waste collection system in Rufisque near Dakar. Collecting the waste materials is a part-time private activity, meaning that the horse-cart used in collection can also be used for other income-generating projects. The local health committee is responsible for the functioning of the system and the residents pay a fee for the collection of their waste.

In West Africa, ENDA has set up a network on urban environmental problems in order to exchange experiences and knowledge in the field of waste management. ENDA has initiated a similar network worldwide to facilitate a South-South transfer of knowledge.

NGOs in cities are increasingly recognizing the need for collaboration. In Bangalore (India), the role of many NGOs and CBOs in initiating projects has nevertheless failed to have a major impact on the overall solid waste situation in the city. Most projects have started as experiments, and have to date remained small scale, sporadic and localised. Organization to achieve a critical mass could change this.

In the beginning of the 1990s in Nairobi, a broad initiative called 'The Nairobi We Want' was initiated. A task Force on City Environment and Waste (TACEW) was established to tackle the waste problem as a joint effort of municipal departments, private formal and informal sector, NGOs, and technical institutes. These initiatives were aborted in 1994, however, due to a new political order (Karuga, 1993).

Although NGOs have an important role in aspects of waste management, their role in potential partnerships should not extend to taking on statutory responsibilities from the municipality. Roles need to be clearly defined, as in the case of ACEPESA in Costa Rica.

Box 8: The role of ACEPESA in San Jose, Costa Rica

ACEPESA is a local NGO involved in the development of innovative projects in the field of employment generation and the improvement of working conditions. ACEPESA has carried out a pilot project in San Jose in the district of Hatillo, area 1, 2 and 3. The municipal government entered into a contract with ACEPESA, giving ACEPESA the responsibility to establish a group of micro-enterprises involved in waste collection, and to provide the training. The enterprises were registered as 'foundations', that is, as not-for-profit organizations. The ILO Promicro Project supported the micro-enterprises, while an Austrian NGO supplied some basic financing. The citizens continue to pay taxes and fees to the municipal government which in turn contracts with and pays the micro-enterprises.

The micro-enterprises divide the tasks and contract their own work force. They may employ retired civil servants. The pilot project led to a 'reduction in operational cost of 25%, but also proved that the entrepreneurs could do the jobs with less labourers'.

2.6 Summary

Modern, efficient, economically, environmentally and socially sustainable waste management systems are frequently beyond the reach of developing country municipal governments acting alone. The examples given reinforce the conclusions that the various actors as defined in Chapter 1 already play an extensive role in solid waste management and that neither the municipalities, nor the formal and informal private sector, nor NGOs, nor the community can solve the waste problems on their own.

The most successful initiatives occur where a mixture of public, private and community involvement has come into being, either through evolution or by deliberate design. The intervention of an NGO or a CBO can often facilitate the development of a partnership which the partners themselves could not manage to arrange. These types of organizations can thus have a crucial role in catalysing partnerships and/or the institutionalisation of informal sector activities. An important aspect of forming partnerships is the recognition that some form of external stimulus, generally a combination of initiatives from NGOs, local consultancy firms, or universities, is necessary for informal sector activities to achieve formal recognition by the municipality. Left to themselves, low-income groups are unlikely to initiate seeking recognition or institutionalisation of their activities within formal waste management structures.

In general, successful community improvements and smoothly functioning inter-sectoral partnerships depend on the parallel provision of infrastructure and other municipal services, including reliable secondary waste collection services. This is one more example of how the whole system depends on the overarching role of the municipal government for coordination and responsibility.

Acknowledging the involvement of the private and community sector, the next chapter continues by analysing the constraints in establishing partnerships on a larger scale than is actually the case.

CHAPTER 3 KEY CONSTRAINTS

This chapter considers the key constraints in terms of the development of integrated, sustainable, partnership-based solid waste management systems in developing countries, and the issues that underlie these constraints. This discussion is primarily focused on the barriers to *development of intersectoral partnerships*. It is not designed as a discussion of the constraints on the development of solid waste management systems in general. Based on the discussion and examples in Chapter 2, a strategic analysis of the problems will emerge, which in turn will lead to the plan of action presented in Chapter 4.

3.1 Financial Constraints

3.1.1 *Finances of the Municipal Governments*

Few municipal governments have a dedicated income stream for solid waste services. The sources of financing which can be used for solid waste come either from the national government, from conservancy (environmental) fees, or from fees or charges for services (often combined with sewerage or water charges), or out of property taxes. All of these sources can be problematic for the financing of solid waste operations.

- Property taxes are often based on old, out of date, or preferential assessments which under tax the owners and provide insufficient revenues.
- While people are willing to pay for water and other services that are essential to their survival, solid waste removal does not always fall into this category. Thus, given a choice, people may seek illegal or informal disposal as an alternative to paying for waste removal.
- Even if residents and businesses are willing to pay for waste removal, the municipal government is unlikely to know what its true costs are, and so the actual fees often do not fully cover the costs (for example, capital depreciation is not included).
- When solid waste fees are calculated based on real estate assessments, there is no link between quantity generated and amount paid, and therefore no incentive to reduce the amount which is disposed of.
- The structure of donor financing (although a generally small percentage of municipal investment in urban infrastructure and services) makes it generally easier to secure financing for capital expenditures than for ongoing operations and maintenance.
- Financing involving commercial financial institutions has to demonstrate a high probability of success, with the promise of relatively high returns.
- Financing from multilateral institutions usually has to have a clear goal, such as the purchase of equipment. Bilateral aid often requires the purchase of goods or services from the donor nation.
- A general lack of understanding of the real costs of waste management means that hidden costs, externalised and internalised costs and opportunity costs are frequently left out of the analysis; the economic and logistical contribution of informal sector activities is often completely ignored.

A municipality which proposes to contract or franchise certain waste operations to the formal and informal sector has to justify its decision, generally on the basis of efficiency or lower cost.

If it can show that the private operator is financially sound and has a track record and good credit rating, it does not run into resistance from its sources of financing. This can be a barrier to contracting both with new entries into the formal private sector and with the informal sector, both of which may lack the track record and credit history.

Although many residents of both low and middle to upper-income areas are willing to pay fees directly to private formal or informal waste collection services to be sure their waste will be collected, they are often unwilling to pay the city for these services, because of fears that there is less accountability.

3.1.2 *Finances of the Formal Private Sector*

The finances of the formal private sector present fewer although significant barriers to the setting up of partnerships. These barriers fall into the following categories:

- Credibility barriers: the private sector may not be able to show that it has a good track record, or it may not have the requisite years of financial reporting to allow it to receive municipal contracts.
- Capital formation barriers: private businesses, unlike municipal governments, may have difficulty raising capital for equipment and/or land purchase.
- Insurance barriers: private contractors may have difficulty achieving the levels of insurance needed.
- Market guarantees: unlike a municipality, a private business operates in the 'free' market, and is subject to fluctuations in supply and demand. A business may thus be unable to guarantee that collected recyclable materials can be sold into the commodities market at a guaranteed price.
- Problems with the collection of fees: either unwillingness to pay for waste disposal or too few subscribers to enable a reasonable economy of scale for cost-effective collection.
- Cash flow: the tendency of municipal governments to pay their bills very slowly can cause financial hardship for contractors.

3.1.3 *Finances of the Informal Private and Community Sector*

Almost by definition, the informal private sector entrepreneurs and community groups (especially low-income) have extremely limited access to financing. Entrepreneurs have no access to funds for equipment or to capitalize their businesses, which makes them dependent on variable cost strategies and generally restricts the potential for improving products, broadening markets, improving working conditions, and the like. Community groups often rely on outside donors for basic equipment (carts, tri-cycles, brooms) to run a cleansing service in their area or to employ a community member to earn some income through this service.

Banks and other formal credit facilities are reluctant to provide loans to private informal enterprises, due to the absence of assets and securities. This in turn can make it difficult for a municipal government to justify contracting new tasks or institutionalising ongoing operations.

The private informal sector has developed great skills and creativity to produce semi-finished or final products from the collected and sorted waste materials. The equipment and machinery used in the informal sector is often built from second hand parts. Though they are constructed with ingenious skills, the machines often break down, reducing efficiency and increasing the costs in this way. Replicability, and thus the ability to reach a profitable economy of scale, is

also difficult to achieve. This may limit the ability of private informal sector enterprises to link up with formal private companies, either as partners or as suppliers.

Informal sector individuals and enterprises are generally considered to be even less credit-worthy when seen from the traditional financial viewpoint. Furthermore, these people may have low social status, and there may be taxpayer resistance to using tax revenues to support them.

3.2 General Institutional Constraints

3.2.1 *Institutional Infrastructure*

The **general lack of critical thinking** in relation to solid waste systems is often a barrier to innovative solutions. Even in developed countries, the intellectual framework for understanding the relationships between consumption, disposal, recycling, industrial activity and natural resource exploitation is seldom complete or adequate.

The lack of political will to make solid waste a priority means that it is usually lacking both talented personnel, adequate facilities, and the commitment of senior officials.

Furthermore, the **anachronistic organization of municipal government departments** and traditional divisions of labour in both developed and developing countries are often inherited from 19th century ideas about city government and sanitation, and do not lend themselves well to innovative problem-solving or to the needs of large cities.

Furthermore, many cities already have **master plans or comprehensive waste management plans**, which characterize the solid waste problem as one of 'technology'. These all too frequently fail to take unique features of the local system adequately into account, and imply that the solution to the problems can be achieved through the acquisition of large facilities. Once these plans are written and approved by the municipal government, they give rise to bureaucratic claims and privileges, and it can be difficult (or even impossible) to introduce innovative proposals in relation to current or potential activities of the community and the private formal or informal sector.

Confusing and fragmented divisions of labour and responsibility, may mean that activities which could be contracted out are administratively inseparable from each other, making it effectively impossible to split them off for a contractor.

Shared responsibility and jurisdictional disputes between municipal departments and a lack of clarity in the division of responsibilities, tasks and resources between central and local government may make clear articulation of policy or an unambiguous needs analysis impossible.

3.2.2 *Waste Management Personnel*

Staff incompetence and lack of interest often plays a role. Solid waste is frequently a 'dumping-ground' for political patronage, which can lead to the appointment of **supervisory**

or management personnel who lack the necessary skills to manage the department that is responsible for the environmental health of the city population. These departments often are overstaffed with workers with low qualifications, and lack middle management (or the recognition that it is necessary).

Even well-intentioned technicians in waste management will frequently opt for the status and attraction of `modern' technical solutions for the problems they encounter in their city's waste management. Their **education has not been oriented towards informal enterprises or community groups**. They have often received a `western' type of education which was not adapted to the needs of their society.

Finally, public officials may receive attractive fringe benefits, ranging from free service to their own homes to profitable contacts with equipment suppliers, from the status quo. They can be unwilling to risk their perquisites through consideration of alternative solutions, such as the involvement of the private informal entrepreneurs or a more appropriate but less glamorous waste technology.

3.2.3 *Legislation and Regulations*

Legislation and regulations are set up for particular purposes, and are often difficult to adapt to new circumstances. In particular, the legislative and regulatory context for solid waste management is dispersed, fragmented, and incomplete, and so does not tend to facilitate the formation of cross-sectoral partnerships. If such partnerships nevertheless come into being, existing legislation normally provides few tools for coordinating or managing them.

The following are specific examples of the kinds of legislative barriers that may frustrate the formation of cross-sectoral partnerships.

- **Mandates for public delivery of services** may make it difficult or impossible to contract the services to private sector actors.
- **Lack of enabling legislation to allow contracting** may mean that the appropriate procedures do not exist.
- **Lack of legislative and regulatory infrastructure for the management of contracting** risks insufficient monitoring and/or control by contractors, and no recourse for the city if contractors fail to perform in the ways they have agreed.
- **Existing public contract laws** may explicitly or implicitly require contractors to have achieved a level of institutional or financial stability which would exclude both smaller formal private sector firms and informal sector entrepreneurs.
- **The allowable structures available for contracting or franchising provisions** may assume a form of institutional arrangement which is inappropriate for or difficult to adapt to solid waste system needs.
- **Health and sanitation regulations** governing waste procedures may require procedures that conflict with informal recovery activities.
- **Environmental laws** may discriminate against apparently `dirty' businesses, even if the net effect of these businesses on the environment is positive.
- **Worker health standards** may effectively exclude waste picker and informal-sector entrepreneurs from consideration, since their workplace would not initially pass these standards.

3.3 Institutional Constraints on Agreements with the Formal and Informal Private Sector

3.3.1 *Public and Private Formal Sector Resistance to Informal Private Sector Involvement*

The following barriers are specific to the formation of cross-sectoral partnerships between municipal governments and informal sector entrepreneurs:

- **The reactive and ad hoc character of informal sector enterprises** may in theory or in practice make it difficult for them to provide a regular and reliable service to customers or the city.
- **Lack of applicable legislation and infrastructure**, while it may provide a 'window of opportunity' for informal sector activities to fill the gap, may make the procedures required to effect an arrangement with the formal sector or the municipality impossible to determine.
- **Legislative and regulatory gaps** may also open the field for political patronage, graft, and arbitrary policy making. Small informal enterprises have limited ability to operate under these conditions, and generally lack political influence.
- **Municipal government time schedules for decision making, contracting and payments** are beyond the tolerance of most informal sector actors, whose need for daily survival imposes an immediacy on all of their transactions.
- Complying with **commercial registration requirements, labour union rules, and labour laws** is not within the capability of most informal sector enterprises. While the potential for contracting may stimulate some enterprises to attempt compliance, and thus improve working conditions for the workers, it can also cause certain private informal enterprises to disappear when they are unable to attain certain standards.
- **Lack of default or bankruptcy protection or insurance for informal enterprises** may make it unattractively risky for municipal governments or formal enterprises to engage with them.

3.3.2 *Public Sector Resistance to Formal Private Sector Involvement*

Even without specific impediments, government personnel may resist private sector involvement in their areas of responsibility, either in principal or in practice. The main sources of resistance are:

- **Security of employment in the public sector, together with generous fringe benefits**, tends to lead to expansion in the civil service. Civil servants resist contracting, both on principal and when it threatens their jobs.
- **Actual or threatened competition from private-sector operators** may impose new work requirements on civil servants, putting new and stringent performance requirements on jobs which have essentially been sinecures.
- **Entry of new parties into waste operations may diminish or otherwise threaten perquisites of the job**, such as revenues from sale of materials recovered 'on the side'.
- **A shift to private-sector operators may shift the structure of privilege for highly-placed civil servants and elected officials**. Where these people have been receiving a higher level of service for no or little cost, there is a natural resistance to a change that risks a loss of privilege.

3.3.3 *Private Informal Sector Resistance to Contracting and Cross-Sector Partnerships*

Resistance to changes in the status quo are not exclusively the province of municipal officials. Other actors from the formal and informal private sector may also see change as a threat. In particular, there may be resistance in the areas described below:

- **The official aspect of contracting may appear threatening to informal sector workers**, who almost by definition are used to working under informal conditions, where decisions are made on a daily basis.
- **Municipal contracting to the formal private waste sector may decimate the profit potential of private informal waste collectors**. Not only do they risk losing access to certain areas and service fees, but private collectors are likely to 'skim' the recoverable materials, taking the most valuable items out of the waste stream for their own gain.
- **The introduction of compactor trucks and other high-tech equipment may reduce access to recoverable materials and/or contaminate them beyond recovery**. Such equipment and procedures often lead to the decrease of informal recycling activities, or a shift from the relatively safer process of street collection to the relatively more dangerous practice of dump picking.
- **A shift to private disposal facilities may put dump pickers out of business**. Even if the new facility is accessible, it may be farther away, and the pickers may also have to share profits with the owners.
- **Contracting to the formal private sector may disrupt informal service arrangements for marginal, low-income, inaccessible, or squatter communities**. New arrangements may deprive informal collectors of their rights without providing effective formal collection.

3.3.4 *Issues Surrounding Recognition of the Informal Sector*

This paper makes the assumption that cross-sectoral partnerships involving the informal sector will generally result in this sector achieving some degree of formal status and recognition, and some degree of institutionalisation of function. This section explores the specific barriers to attaining recognition of informal sector activities and their institutionalisation within the formal waste management system.

- **Waste work is regarded as dirty and low-status**. The recognition of people doing this work runs into taboos surrounding filth and dirt, and prejudice against foul functions.
- **Informal sector waste workers are frequently from disadvantaged and minority ethnic and social groups**. Recognition must cope with race, class, and ethnic prejudices.
- **Informal sector workers hope for upward mobility, and may regard their association with waste as transitional**. Recognizing their function may appear to them to freeze them into an unattractive and degrading profession that they had hoped to leave behind.
- **Recognition may be resented by those higher up in the formal and informal waste management hierarchy**. The more established processors and brokers may feel socially or economically threatened by formal recognition of their suppliers and those 'beneath them'.
- **Recognition may formally acknowledge people and circumstances that detract from a city's prestige and self-image**. Those supporting 'development' may feel that recognizing waste pickers and other informal waste workers gives the informal sector a kind of legitimacy incompatible with the image of modern 'developed' life.

- **Recognition may risk institutionalising technical approaches considered to be outdated and anachronistic** (even when they are the most appropriate approaches under the circumstances). The use of hand carts or animal-drawn vehicles, for example, may appear incompatible with goals of modernization.
- **Informal activities are often associated (justly or unjustly) with criminal activities.** Fears of semi-legality may discourage officials from associating with 'tainted' sectors and individuals.

3.4 Markets and Technologies

Informal sector waste entrepreneurs and individuals are connected to the international commodities marketplace through the materials they collect. Ultimately, the economic value and profit potential of the waste materials is connected to international commodity prices, global trade, and industrial policy.

Partnerships involving informal sector operators depend on their ability either to use the collected materials for their own manufacturing, or to prepare materials for commercial use. The key constraints discussed below relate to marketing, or 'closing the loop' for recovered materials.

- **Any change in circumstances puts established supply routes into jeopardy.** A shift in type of materials, in their quality (for example, due to the introduction of compaction), or in their volume, may give brokers and other purchasers of material grounds for rejection or refusal.
- **Low or inconsistent quality of the materials processed in the private informal sector is often an impediment to the absorption in formal markets.** Partnerships which depend on a consistent level of quality of recovered materials may not have sufficient tolerance for the variation that occurs in practice.
- **Changes resulting in new locations or routes may disrupt existing transport arrangements.** The informal enterprises collecting waste for recycling purposes usually collect in middle and high-income areas or in industrial areas, using hand or animal-drawn vehicles. Adjustments in access may put them out of range of their buyers.
- **Contracting may result in deliberate or accidental alteration of facilities.** If contracts call for work on public premises, existing facilities for storage, sorting, bundling and, when appropriate, processing, may be out of reach.

3.5 Donor Influence

In contrast, **donor biases towards particular technical approaches or insistence on supplying equipment which supports their own export industries** can also result in a situation where new arrangements disrupt existing informal sector waste handling systems. Donor interventions may also be motivated by the goals and/or bureaucratic procedures of the home office, rather than on a full understanding and appreciation of local nuances.

It is easier to understand, finance and monitor large, technology-oriented interventions than to develop a small-scale, context-sensitive approach. Generally, appropriate interventions require patience, investment in understanding the specifics of the local context, respect for the actors,

and a willingness to modify grand principles to produce locally appropriate results; donors often do not have either the time nor the political will to take these steps.

Donor actions **frequently lack central coordination.** This is true both between donor nations, some of whose industries may be competing for contracts, and within a donor nation, where development organizations or agencies may be working at cross-purposes.

The scale on which donors intervene may be inappropriate: either larger than the situation merits, or too focused on micro-circumstances without sufficient reference to the larger financial and institutional context.

CHAPTER 4 ACTION PROGRAMME

This chapter describes a preliminary action programme. It is directed at the key actors identified in Chapter 1; it draws on the lessons from the state of the art in Chapter 2, and suggests strategies appropriate to the key issues and constraints identified in Chapter 3. The action programme aims at enabling cross-sectoral partnerships in solid waste management as a means to improving sanitation, municipal operations, local and regional economies, and the working and living conditions of the informal sector in the short and middle term. These recommendations are designed to form the basis for further discussion.

4.1 Towards Sustainable Solid Waste Management Systems

Strengthening inter-sectoral partnerships supports a long-term vision of the goals of waste management in developing countries. This goal is to achieve sustainable solid waste management systems which are stable over time, and which are beneficial to the society, the economy and the environment. In this context it is useful to review the normal progression of motivations for setting up solid waste management systems.

Solid waste systems are usually set up out of an initial set of concerns for public health and sanitation, and their first infrastructure, some type of collection system, is designed to meet these goals. After the most pressing health hazards are cleaned up, a second set of motivations arise related to quality of life, cleanliness of streets, community appearance, and the like. Generally, after this level has been achieved, the focus shifts to environmental quality and cost reduction, at which point there is an increased attention to recycling and composting. There is generally a reduction in the role of mixed waste collection, and an increase in separate collection and number of system components. Finally, the achievement of first-order environmental goals leads to a recognition of the need for sustainable solid waste systems.

The point here is that it is possible, given the state of the art in both developed and developing countries, to bypass intermediate motivations, and to seek to create and implement sustainable waste management systems from the outset. This action plan is set up to pursue this goal. This paragraph defines the different elements of sustainability.

4.1.1 *Environmental Sustainability*

- Sustainability will only be attainable if the current concept of refuse disposal, which imposes great burdens on the environment and resources, is transformed into a closed-cycle system, restoring various natural cycles, thus preventing the loss of raw materials, energy and nutrients.
- In general, this means minimizing resource extraction at the beginning of the production cycle and final disposal at the end of the cycle. As a consequence, avoidance of waste generation (including waste reduction and minimization) has a higher priority than recovery (including composting), and recovery (preferably including separation at source) has a higher priority than environmentally sound disposal of remaining residues. This concept is generally referred to as the solid waste hierarchy.

- Sustainable waste management calls for the support and promotion of clean technology, together with the prevention or avoidance of unnecessary waste production.
- The principles of sustainable waste management draw also on the idea of local self-sufficiency, leading to a preference for processing waste and recyclables as close to the source of generation as possible.

In developing countries, there is some inherent conflict between the wish to develop and raise the material standard of living and the priority of waste reduction, since waste generation generally increases with a rise in material living standards.

4.1.2 *Institutional Sustainability*

- In any waste management system, the primary responsibilities remain with the public sector, in most cases the municipal government. Irrespective of the extent to which it succeeds in transferring its tasks to other actors, the municipal government must retain ultimate control and be ultimately accountable for the functioning of the system, specifically related to the following roles and functions:
 - o the democratically managed spending of taxpayers' money in relation to the performance of actors in the solid waste management system
 - o the (democratic) control and protection of the environmental health of the city and its citizens.
- Decentralization of tasks within government bodies should be accompanied by a decentralization of powers and resources.
- An adequate legislative and regulatory framework, with appropriate compliance and enforcement mechanisms, is essential to ensure adequate performance of private enterprises.
- A supportive and consistent legislative and regulatory infrastructure, such as rules of liability, insurance coverage, bankruptcy protection, and public contract law, forms an essential and indispensable foundation to the development of mixed systems.
- The professionalisation of solid waste management will assist in forming stable arrangements. This includes developing a broadened understanding of the components of an integrated waste system, as well as consolidating solid waste functions under the jurisdiction of a single department. It also includes investment in qualified and trained municipal solid waste staff.
- Inter-sectoral partnerships which make use of the unique talents of all sectors have the potential to result in sensible and efficient waste management systems at an appropriate level of technology. Promoting these partnerships thus promotes good waste management.
- Waste management should be consistent within the concept of Sustainable Cities.

4.1.3 *Financial and Economic Sustainability*

- Full-cost analysis is essential to gain a clear picture of the true costs and benefits of all waste-related activities. Full-cost accounting, combined with the implementation of cost-based fee collection systems (modified to allow for ability to pay) is a more sustainable approach than reliance on donor financing or international lending.
- Fee systems, which aim to achieve full-cost recovery from those who receive high levels of service, usually the wealthier citizens and the commercial sector (e.g. industries and hotels), should be introduced.

- The institutional and technical approaches should be based on a clear understanding both of current circumstances and the implications for all sectors of proposed future developments.
- There should ultimately be a relationship between the costs of waste management and the revenue streams associated with waste management activities (user fees, income from sale of materials, nominal fees, etc).
- The structure of the labour force in most developing countries argues for choosing waste management strategies with a high labour to capital ratio. This will appear counter-intuitive to those familiar with developed country economic systems, and runs counter to the practices of most (bilateral) donors. Labour-intensive, rather than capital-intensive systems, should certainly be considered, and in many situations should receive an *a priori* preference.

4.1.4 *Social Sustainability*

- Waste management plans and services should be provided to all strata of society, regardless of income, ethnic group, or social status.
- Informal waste collection and handling is often driven by poverty. Broader issues such as poverty alleviation, improvement of the local economic situation, and the like should be considered as well.
- In general, improvement of living conditions for the poor needs to be addressed. Improved working conditions will be of limited use if people still have no access to adequate water-supply and sanitation facilities.

4.2 **An Agenda for Action**

The ideas and strategies suggested below are designed to stimulate a discussion in the workshop. They are thus preliminary and indicative of directions, rather than exhaustive and detailed.

The action agenda described below is designed to facilitate the formation of sustainable cross-sectoral partnerships in the context of integrated solid waste management in developing countries. This agenda for action is structured around the development and implementation of an integrated planning process. The activities are designed to bring all actors -- municipal, formal, and informal and communities -- to the point where they are capable of recognizing the synergies involved in partnership, willing to engage with partners, and enabled to choose the appropriate form of partnership and implement it. They are furthermore structured to ensure that important actors and aspects of existing solid waste management systems are not ignored in the planning process.

In the description of the conceptual elements of sustainable solid waste management described above, the participation of the private (formal and informal) and community sector is of primary importance.

4.2.1 *Creating Sustainable Solid Waste Systems*

The proposed action programme seeks to strengthen inter-sectoral partnerships in support of a long-term vision of the goals of waste management in developing countries. This goal is to

achieve sustainable solid waste management systems which are stable over time, and which deliver benefit to the society, the economy and the environment.

The Agenda of Action proposes a significant, long-term experiment in solid waste planning and implementation with the following characteristics:

- Ten cities will be chosen for a fully integrated pilot project designed to achieve sustainable solid waste management (SSWM). The cities will offer both a learning and a developmental function, and can also serve as examples and precedents for other cities.
- The municipal governments retain ultimate responsibility.
- Intersectoral partnerships play a central role, as a means to develop both the tools and precedence for sustainable solid waste systems.
- The ten municipalities must commit themselves to the principles and practices of sustainable solid waste management.
- Each of the ten municipalities must make a declaration that they are ready to enter into democratic relationship with the other actors (and must allow this to be monitored).
- Donors guarantee the financing of the entire process from planning through implementation.
- Donors make a commitment to the sustainable waste management plans and must limit and focus their activities to support these plans, and not their own policy or commercial agendas.

The activities in the proposal fall under the following general classifications:

- **Investigation, research, documentation, and analysis** of the existing solid waste system in operation in the city, with an emphasis on: economy, institutional set-up, organizational capacity, roles and impact of all actors, regulatory framework, industrial and commercial infrastructure, municipal and national policy goals, et cetera.
- **Capacity building, enabling, and empowerment** of all current and potential actors to enhance their capacity to take on new partnership roles in sustainable solid waste management.
- **Creation of infrastructure, preconditions, instruments, and an institutional context** in which all actors can perform their partnership functions in relation to the development of new models for sustainable solid waste management in an optimal manner.

4.3 Key Action Areas

4.3.1 *Financial Management*

Principal Goal: to improve the cost management of municipal solid waste management in the city and the enhancement of cost recovery in relation to an affordable sustainable solid waste system for all citizens.

A. Supplementary Goal: to gain insight into the costs and possible revenues of the current solid waste management system and to disseminate the results to relevant municipal personnel.

Activities:

- The development of a methodology for real cost analysis for municipalities to gain insight into the actual costs of the current solid waste management system.
- The calculation of the amount of income that citizens can generate in a reasonable manner to pay for a well-functioning solid waste management system, and primarily oriented to covering the costs that the current cost recovery system fails to finance.
- Research oriented towards creating pricing and fee systems which are reasonable in relation to: the criticality of the need, the type of service to be provided, and the willingness to pay for any service in general, and for specific services in particular.
- Research to determine to what extent financial management (e.g. fee collection) can be contracted out in the context of and through the medium of a municipally determined structure of maximum charges, level of services, et cetera.
- The organization of workshops for involved municipal personnel with the goal of having them take ownership of the methodology, learn to identify financial bottlenecks, recognize areas for improvement, maximize the potential for use of secondary (recycled) materials in industrial processes, et cetera.

B. Supplementary Goal: to develop financial mechanisms for involving the private and community sector.

Activities:

- The development of manuals with financial models and procedures adequate to enable contracting of private and community sector.
- The training of relevant municipal staff, enhancing managerial capacities for financial management, institutional development, demand assessment, contract arrangement skills, partnership arrangements, etcetera.

C. Supplementary Goal: to encourage recycling as a means of achieving enhanced cost recovery

Activities:

- Analysis and quantification of the benefit to the local economy of recovered materials within formal and informal sector.
- Awareness raising of municipal policymakers as to the financial and economic benefits of recycling.
- The creation of institutional structures to allow individual units within the municipal solid waste management systems to function as independent entrepreneurial units.
- The scrutiny of international regulations and treaty conventions in relation to trade of waste materials and prices of raw materials.

4.3.2 *Legal and Institutional Constraints*

Principal Goal: to create a legal framework for enabling sustainable solid waste management.

A. Supplementary Goal: to facilitate the creation of sustainable, legally protected partnerships between municipal governments, the informal private sector, and the formal sector on a legal basis.

Activities:

- The development of solid waste management laws and ordinances
- The development of performance standards for waste contractors in all phases of waste management
- The institutionalisation of the role of the informal sector by transforming their informal activities into law and rights for particular groups of actors.

B. Supplementary Goal: to create the possibility of democratic control and participation in decision making by the residents of communities, together with a decentralised budgeting process for community residents to participate in financing the solid waste management system in their area.

Activities:

- The creation of simplified bureaucratic procedures for contracting and reporting
- The provision of educational materials, information and training for community residents (or their representatives) in maintaining control of the budget for their area.

4.3.3 *Education for Sustainable Solid Waste Management*

Principal Goal: to raise the level of awareness as to the complexity of solid waste management.

Activities:

- The active combatting of biases for 'modern' high-technology waste management systems, both on the part of municipal officials and personnel and in the community of multilateral and bilateral donors, through rigorous analysis of the costs and benefits and dissemination of these results.
- Support for the integration of low-technology activities done by the informal sector into a waste management system through peer exchanges and dissemination of information.
- Support for forward-looking thinking by analysing the effect on the waste quantity and composition, and on the effectiveness of current formal and informal recovery operations, of projected development goals.

4.3.4 *Partnership Development*

A. Principal Goal: to enable the development of consultative and cooperative processes between all the actors in the solid waste management system, in order that their activities be coordinated to create an optimal sustainable solid waste management system.

Activities:

- The development of a critical assessment of the interplay of various actors (private formal, informal, NGO, CBO, community individuals) in currently functioning systems, in order to gain insight into the capacities of the actors and to identify unfulfilled niches.
- The development of a framework and guidelines for setting up mixed systems that give proper weight to specific local actors.
- The documentation of success stories of private (formal and informal) and community sector forms of organization (CBOs and NGOs), including a detailed assessment of the

role of the different actors, thereby focusing on lessons learnt, followed approach and future areas for improvement and further integration (for example, informal initiatives which have resulted in 'formal' partnerships with the municipality). Examples of partnerships can be presented in a policy and advocacy document, which defines the roles of the various actors, and which can be disseminated to municipal officials (e.g. mayors) to convince them of the need for and the benefits of partnership development.

- Facilitation of the formation of cooperatives, unions, guilds, and other organizational forms to enhance the political and economic clout of low-income communities and individuals.
- Creation of a forum for information exchange at city level, to provide opportunities for cross-sectoral communication between the municipal government, the formal and informal private sector, local CBOs and local and internationally oriented NGOs.

4.3.5 *Solid Waste and Recycling Technology*

A. Principal Goal: to promote and develop appropriate technology.

Activities:

- Development of a technology screening kit to assist municipal officials, (formal) private sector operators, and donor organizations in eliminating inappropriate technical options.
- The set-up of technology adaptation and innovation centres.
- Support for the development and dissemination of appropriate technical information, and discouraging the dissemination of inappropriate commercial propaganda, using trade associations and query networks.
- Stimulation of the adoption of clean technologies, whenever appropriate.

B. Principal Goal: to improve existing informal waste collection and recycling activities in terms of occupational health, but also concerning environmental pollution.

Activities:

- Assessment of occupational health and working conditions in collection (e.g. at dump sites) and recycling (e.g. plastics, household batteries) in relation to living conditions and in relation to formal industries.
- Development of methodologies to improve existing production and processing practices, raise awareness on health aspects and raise general standards of living.
- Development of methods and techniques to improve working conditions, such as separation at source, good housekeeping, improvement of equipment.

C. Principal Goal: to promote the use of recovered materials in the production of useful and needed products and services.

Activities:

- The introduction or dissemination of improvements in existing recycling technologies.
- Analysis of current and potential markets for recycled materials both in the formal and the informal economy of the region. Where necessary, global or export markets may also be included.
- Research to develop a more complete method of calculating the nature and value of waste-born materials.

- Researching the potentials for stimulating local niche-market production and import substitution.
- The development of economic instruments and incentives for the support of materials and products made from secondary (recycled) materials; these should be designed both to affect consumer buying patterns and to influence public procurement practices. For example, the local production of compost should be subsidized instead of the current practice of subsidizing imported fertilizers.

4.3.6 Capacity Building in the (Formal and Informal) Private and Community Sector

Principal Goal: to support the formal and informal private sector in becoming capable of serving as partners for municipal governments and to extend collection services to all areas irrespective of the prevailing ability to pay.

A. Supplementary Goal: to improve formal private sector performance.

Activities:

- Provision of assistance to private businesses with performance-linked financial assistance and capital formation.
- Development of performance standards for private sector contractors in a variety of areas and connecting these standards to the bidding process.

B. Supplementary Goal: to enhance and develop strategies for enabling private contracting.

Activities:

- The enabling or facilitating of private contracting by:
 - o having the municipality provide the capital equipment, while the private contractor takes responsibility for operations
 - o using the municipality's insurance and capital formation abilities
 - o franchising in order to allow the contractor to collect revenues directly from the clients
- The introduction of innovative financial arrangements such as a municipal service fee, which allows the contractor a guaranteed minimum income, supplemented by direct payments by contractors, which might improve cash flow.

C. Supplementary Goal: to improve informal sector performance.

Activities:

- Support of the enhancement of private sector capacity and experience through training, technical publications, and exchange and peer matching programmes.
- Development of innovative financial tools for transferring the avoided costs of municipal collection, particularly in relation to marginal areas, to the informal sector for serving those areas. These could include capitalizing equipment, supplying a baseline subsistence wage, providing price supports per household served, or similar initiatives.

D. Supplementary Goal: to encourage recognition of informal sector activities.

Activities:

- The combatting of social prejudices against both 'dirty' waste work and the ethnic, racial and class background of informal sector members by highlighting the value these activities provide to the public good, by highlighting its value in technical journals and conference papers.
- The invitation of informal waste pickers and recyclers to the UN Habitat Conference in Istanbul in 1996, including giving them a place on the programme (for speaking and discussion) and make this a major discussion-topic with far-reaching implications.
- Support for creative and unconventional solutions through municipal prizes or special forms of recognition, e.g. award a prize during the UN Habitat conference for the city with the most innovative ideas and programmes for integrating informal sector activities into the formal waste management system.

E. Supplementary Goal: to support primary waste collection systems and to deliver adequate waste collection services to low, middle and high-income areas.

Activities:

- Development of the potential and support the development of primary waste collection systems including separation at source, neighbourhood sorting centres and small-scale composting.
- Assessment of the ability to pay for waste collection services in high, middle and low-income areas.
- Creation of educational tools with the potential to mobilize communities, with NGOs as the likely appropriate organs to develop educational material. Successful examples of educational campaigns can then be (adapted and) disseminated to other cities.

F. Supplementary Goal: to raise awareness within the municipality and the general public on waste needs and services to marginal areas.

Activities:

- The prioritisation and highlighting of the marginalized areas through training, press attention, and through articles and papers in professional and trade publications and conferences.
- The provision of technical information and case studies on successful examples of public sector partnerships with the informal sector that allow low-income areas to be adequately served.
- The setting up of peer exchange programs for solid waste management staff, which have those facing the problem visiting programmes where innovative solutions have been implemented.
- Integration of information about difficult to serve areas within a competent full-service sanitation department, thereby improving this department's image.

4.3.7 *Bilateral and Multilateral Lending and Aid*

Principal Goal: to ensure that donor activities support and strengthen the development of stable cross-sectoral partnerships which in turn support sustainable waste management.

Recommendations:

- Donors must coordinate their policies and activities and agree to cooperate within a region or municipality.
- The choice must occur in a manner consistent with problem formulation and needs analysis in the recipient country and not on the basis of available technology in the donor country. The principle of untied aid is especially important here.
- Donors make a commitment to the sustainable waste management plans, and must limit and focus their activities to support these plans, and not their own policy or commercial agendas.

Activities:

- Development of information packets for donors on a number of related subjects, such as the role of the informal sector, an orientation to micro-enterprise, the import substitution significance of local micro-production using recycled materials, et cetera.
- Convening of conferences to set up a total package of financial and technical support.
- The setting up of an international advisory committee, probably with only advisory powers, which can nevertheless be a watchdog organization for donor activities, criticising these publicly when circumstances merit it, and that can sit at the table with donors when policy and technology decisions are being made.

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