

CHAPTER 1: INTRODUCTION

1.1 Overview of solid waste management in developing countries

Solid waste management is becoming a major public health and environmental concern in urban areas of many developing countries. The situation in Africa, particularly in the capital cities is severe. The public sector in many countries is unable to deliver services effectively, regulation of the private sector is limited and illegal dumping of domestic and industrial waste is a common practice. In general, solid waste management is given a very low priority in these countries. As a result, very limited funds are provided to the solid waste management sector by the governments, and the levels of services required for protection of public health and the environment are not attained. The problem is acute at the local government level where the local taxation system is inadequately developed and, therefore, the financial basis for public services, including solid waste management, is weak.

Improper solid waste management leads to substantial negative environmental impacts (for example, pollution of air, soil and water, and generation of greenhouse gases from landfills), and health and safety problems (such as diseases spread by insects and rodents attracted by garbage heaps, and diseases associated with different forms of pollution). Municipal (or local) authorities charged with responsibility of providing municipal solid waste management services (together with other municipal services) have found it increasingly difficult to play this role. The difficulty has been aggravated by lack of effective legislation, inadequate funds and services, and inability of municipal authorities to provide the services cost-efficiently. Changing lifestyles such as use of canned soft drinks, mobile phones, and disposable diapers (movement towards a “consumer society” in general), moreover, will pose special waste management challenges, as waste management systems in developing countries are incapable of frequent adjustment to match these lifestyle changes.

Cities in both developed and developing countries generally do not spend more than 0.5 per cent of their per capita gross national product (GNP) on urban waste services, which covers only about one-third of overall cost (World Bank, 1999). The responsibility

over solid waste collection and disposal is thus well beyond the capacity of municipal governments. More than 80 per cent of the total waste management costs in low-income countries are collection costs (World Bank, 1999). In Latin America the cost of waste collection is about 46 per cent of the total municipal solid waste management cost. Cost recovery in SWM service is difficult because, even though there is some willingness to pay for waste collection service, there is little such willingness for waste disposal. Traditionally, therefore, municipal authorities have financed the services through general revenues or attempted to charge for the service through inefficient property tax. Owing to the existence of willingness to pay, however, private provision of waste collection has potential. In addition, limited economies of scale and ease of entry and exit in waste collection imply that competition can keep the price of the private service competitive.

The upshot is that an increasing proportion of urban dwellers in developing countries, particularly the urban poor, will lack access to municipal solid waste management services and, consequently, suffer from pollution-related environmental and health problems. Fortunately, there are ways of dealing with or, at least, minimizing this problem. One of the ways, which is the subject of this paper, is the use of well-designed economic instruments to create the requisite incentives.

While laws and regulations, what is generally termed as 'command and control' instruments (CACs), are the most prevalent mode of solid waste management, interest in the use of economic instruments (EIs) is growing. Whereas CACs prescribe the standards to be complied to by economic agents and their decisions on what, how, when, where and how much to produce, consume, emit and clean up, EIs are much more flexible and non-prescriptive over actions required. This allows economic agents to dynamically innovate ways of cost-effectively complying with the minimum standards specified. In other words, economic agents chose the level of pollution on the basis of their marginal cost/marginal benefit equation, by trading with the level of pollution above or below the minimum.

The CAC approach is designed in such a way that the motivation for agents to comply comes from fear of fines and penalties. For this disincentive to work, however, vigilance and enforcement capacity must be adequate. Most developing countries lack such capacity and, generally, tend to have the following problems with their CAC approaches: inadequate detail in law, lack of inspection staff, lack of transport, inadequate empowerment of inspectors to ticket offenders, political intervention to quash tickets, disinterest by the courts for these minor offences and lack of courts for them, inadequate police coverage to enable arrests and follow them through the court system, and insignificant and therefore non-detering fines and penalties (IDB, 2003).

Where there are such performance monitoring and enforcement capacity weaknesses, economic instruments offer a viable alternative (IDB, 2003). The 1992 Rio Declaration on Environment and Development endorsed the use of EIs for the achievement of sustainable development. In solid waste management, EIs promise to improve the delivery of services and thus lessen the solid waste problem. The main strength of EIs as policy instruments is the potency of incentives or disincentives in making polluters go beyond what is required by laws and regulations.

Clearly, therefore, the success of EIs is dependent on successfully implementing regulatory controls. For EIs to work effectively, the regulatory standards need to be clear and the compliance enforcement capacity adequate. In a given country, the harmonious balance between CACs and EIs depends on local conditions and preferences. In many developing countries, for example, where inspection and enforcement resources are limited, political interferences may lead to inequitable compliance requirements. Even for modest standards of performance in such countries, therefore, EIs need to be designed.

1.2 Background to the report

This project on the *Selection, Design and Implementation of Economic Instruments in the Solid Waste Management Sector* was first conceived in March 2000 in response to UNEP's call for project proposals from governments on two thematic areas: Trade liberalization and the environment; and Selection, design and implementation of

economic instruments. This Country Report is the key product of the project. The aim of the report is to equip policymakers, planners and other stakeholders with the techniques and methodologies required to select, design and implement appropriate economic instruments in solid waste management. This is important because the appropriate EIs in a given country are determined by its socio-economic-political conditions.

The specific objectives of the report are to:

1. Build and strengthen human and institutional capacity in the assessment, design and implementation of economic instruments for solid waste management
2. Form linkages with other international efforts on the development and application of economic instruments (including links with UNEP, OECD, and countries with the relevant experience)
3. Design an economic instruments-based policy package to manage a selected solid waste problem
4. Implement a proposed pilot project
5. Institute a multi-stakeholder process involving public sector institutions, the private sector, universities, and the civil society, among others, to identify and implement economic instruments for waste management.

The magnitude and nuisance of the solid waste management problem in Nairobi motivated this project's choice. Like many developing country cities, Nairobi's solid waste sector, which could be taken to generally represent the country's situation, is largely characterized by low coverage of solid waste management services, pollution from uncontrolled dumping of waste, inefficient public services, chaotic or unregulated private sector participation, and lack of key solid waste management infrastructure. In Nairobi, the capital city of Kenya of about 3 million people, only about 25 per cent of the estimated 1,500 tonnes of solid waste generated daily gets collected. Yet, until the mid 1970s the Nairobi City Council (NCC) singly collected over 90 per cent of the waste.

After significant deterioration in the services provided by the NCC, private companies and community-based organizations started providing waste collection services in the mid 1980s. There are now many actors involved in the service, operating in open

competition and without any guidance, control, or partnership from or with the NCC. Even the small private companies and informal actors, who are the only providers of service to the urban poor, are harassed instead of being encouraged and facilitated. The consequence of all this has been a chaotic solid waste management sector.

The Government has now prioritised solid waste management highly over other environmental issues. The importance of this sub-sector has been identified in various policy and legislative documents in the last few years, including the National Environment Action Plan (NEAP) 1994, Policy Paper on Industrialization to the Year 2020 (1996), Sessional Paper No.6 of 1999 on Environment and Development, and Environmental Management and Coordination Act (1999). The importance of having a strategy on solid waste management was also given due attention in the Government's Financial Bills of 1994/95 and 1998/99. The Minister for Environment echoed this during his opening remarks at the National Stakeholders Workshop held on 15 February 2001, as part of this project. In cities like Mombasa, hotels are reportedly cancelling planned city tours for tourists because of heaps of uncollected and unsightly solid wastes in the city streets.¹

At the local level too, solid waste management has attracted a lot of attention. Many municipalities have instituted specific departments just to manage waste that is generated within their jurisdictions. The Nairobi City Council has established the Department of Environment whose main function is to manage solid waste generated within the city boundaries. This department draws a lot of the City budget when compared with the other nine departments of the council. For example, during the 1998/99 financial year, the Department of Environment consumed about 19.2 per cent of the council's total expenditures.

1.3 Project approach

The approach used in the project is broadly that of integrating international and local experiences through observations, views, suggestions and advice. The project was launched in July 2000 after a consultative process involving the then Kenya's National

¹ Reported in the Daily Nation, 13 December 2004.

Environment Secretariat, which was the predecessor of the current National Environment Management Authority (NEMA). A National Steering Committee (NSC) for the project was established, whose membership included:

- Ministry of Industry, Trade and Tourism.
- Ministry of Finance and Planning.
- Ministry of Environment and Natural Resources.
- Nairobi City Council.
- National Chamber of Commerce and Industry.
- University of Nairobi.
- The World Conservation Union (IUCN)
- Other co-opted stakeholders.

In addition, a country team was constituted in a transparent matter and it formulated a project inception report in readiness for the First National Stakeholders' meeting held on 28 November 2000 at the Kenya School of Monetary Studies and attended by 28 participants. The main objective of the meeting was to introduce the entire project to the main stakeholders in Kenya outlining its objectives, justification, implementation strategy, inputs and expected outputs. This was followed by a National Stakeholders' Workshop held on 15 February 2001 at the Kenyatta International Conference Centre, Nairobi. The workshop, which was attended by top policy makers in government, private sector representatives, national agencies and civil society organizations, had four main objectives:

1. To institute a multi-stakeholder process to identify and implement economic instruments in the solid wastes management sector
2. To stimulate decision makers to take a proactive role in formulating country and sector specific economic instruments to help achieve sustainable development
3. To strengthen human and institutional capacity in the assessment, selection, design and implementation of economic instruments in the solid waste management sector in Kenya, and
4. To specify modalities for implementation.

As a way of enhancing capacity in the use of economic instruments, the project team leader participated in the Expert Working Group Meetings on Economic Instruments in Berlin and Geneva, organized by UNEP's Economics and Trade Branch (ETB, Geneva). Presentations and focused discussions took place in both meetings, along with exchanges of national experiences on the use of economic instruments in achieving environmental policy objectives.

Data collection

The methods used in the project to collect data included:

- Desk review of national and international publications and records
- Discussions on economic instruments at international meetings, symposia, seminars and workshops
- Group discussions in national workshops, roundtable panels and peer review meetings
- Use of structured questionnaires and informal interviews to collect data from the industry
- Input from consultants at different stages of the project.