

## URBAN WASTE MANAGEMENT: CENTRAL AND EASTERN AFRICA

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### INTRODUCTION

The dawn of the last decade of the twentieth century finds the Central and Eastern African subregion at the verge of a massive transformation of its political and socioeconomic structures. Almost every country in the region is now involved in the process of effective systematic political and economic changes. At the same time, the aftermaths of an economic crisis which persisted throughout the previous decade are becoming more evident as they threaten the sustenance of social fabric. The standards of public services such as education, health, water, infrastructure etc. are falling below the levels enjoyed by the citizens in the 1970s (Stren, 1989).

Urban centres seem to be at the confluence of these dynamics. On the one hand, they have not yet recovered from the negative impact of economic crisis and administrative neglect of the previous decade and, on the other hand, they have now to accommodate the structural changes which are attaining their full momentum during the 1990s. The consequences of these changes tend to weigh heavily on the cities and towns of the subregion. The pressure exerted by these forces is of such magnitude that if it is not contained immediately it may undermine the total capacity of the subregion to cope with the broader challenges of the 21st century. The above predicament elevates the subject of urbanisation together with related issues of providing infrastructure and services to become a top priority issue in the development of the subregion. One such important issue is waste management in the urban areas. It becomes necessary for scholars and practitioners in the field to reexamine the content and evaluate the existing knowledge of urban phenomenon in the subregion. This involves taking stock of how much is known, identifying prevailing gaps and lacunae, and charting out a new direction for future inquiry and solution proposals to avert the crisis.

### 1. REGIONAL RESEARCH RECORD: STRENGTHS AND WEAKNESSES

The cleanup of our environment is increasingly becoming an important issue on the national and international scenes. In addressing the problem of environmental degradation, governments will inevitably find other problem areas that would benefit from solutions for implementing prevention of environmental damage. One field of work, in particular solid waste collection and recycling, could achieve the combined improvement of the environment and unemployment rates. Solid waste collection and recycling of that waste not only serve to

reduce the amount of waste, the land area used for storage, and pollution, but also serve to generate employment in the areas of waste collection, sorting, transportation, processing, recycling, and the selling of waste components and its by-products.

The increasing quantity of waste is creating a serious environmental problem in the urban areas in the developing countries. The status of waste management in our major cities are unhygienic and unsatisfactory. In Tanzania, Kulaba (1988) observed that on average, all urban authorities could only collect 24 percent of the estimated refuse produced everyday in the urban areas. In Dar-es-Salaam the level of collection is only 16 percent of the garbage (Mabuba, 1991). In Kenya, Syagga (1992) pointed out that less than 50 percent of the refuse generated in Nairobi is collected while the rest remains scattered and rotten in open spaces, open drains and roadsides. Similarly, in Kinshasa, Zaire, Mbuyi (1989) pointed out that collection of household waste and cleaning are not carried out in a coherent way. In most parts of the city household waste is put on the road, in illegal dumps, in storm water drains or buried in plots. Similar cases of hopelessness in solid waste collection have been observed in Kampala (Bushra, 1992) and Kigali (Bertolini, 1992). A maximum of 15 percent of total household waste generated in Kampala is collected by the City Council, and residents have to bribe council workers so as to get garbage collected. The situation continues to grow worse as the population increases, and governments continue to lay emphasis on self-financing of municipal services.

Most of the available research in the region has concentrated on municipal waste collection and disposal of waste at dump sites. Very little attention has been paid to privatisation of waste management and the industrial or economic significance of waste recycling. Studies in Kenya (Mbugua, 1979 and Wachira, 1980) considered the need for appropriate housing estate design to facilitate solid waste collection by Nairobi City Council in terms of where to locate collection points or transfer stations within the buildings and the estates. The role of households, community, private sector and institutions was not considered an important issue in the management of the solid waste. Besides making recommendations such as the use of plastic bags to avoid rusting of the present metal dustbins, and the need to use compressing machines for any refuse from offices to compress the refuse into bales so as to reduce the volume of refuse collected, both studies assumed that tipping is the only disposal method for solid waste. In this regard both studies recognized that Nairobi would soon run out of sites for tipping since the City Council did not deliberately plan for such sites. Where the tipping is being done now in Nairobi was once a stone quarry site which may become filled soon, particularly if all waste generated daily was sufficiently collected. There is therefore an urgent need to consider alternative methods of not only reducing the amount of waste to be disposed but also the need to look into alternative disposal methods including composting, incineration and resource recovery. Yhdego (1992) in Dar-es-Salaam identified poor design and lack of a well-organized waste storage, collection and disposal systems in the city markets. Proposals for improved design

of storage and collection facilities were described. However, the basic assumption was that waste management remained the responsibility of Dar-es-Salaam City Council. Mabuba, (1991) equally supports the notion that the municipal government should still retain broad responsibility for waste management, providing operational and technical support.

Research on waste management in the region also makes no reference to possible benefits of waste to agriculture, possibly due to the prevailing practice in the region where urban agriculture is illegal. There is need to link waste management with urban agriculture. Furedy (1990a) pointed out that in India, Calcutta's main dumping site established in 1865, is now being leased by the Municipal Corporation for vegetable farming. Fresh refuse is also highly priced by farmers who make arrangements with drivers to obtain consignments before the trucks reach dump sites. In the Central and Eastern African region the link between waste management and agriculture would be particularly valuable. In Kigali, for instance, Bertolini (1992) draws attention to the preponderance of natural as opposed to synthetic or industrial matter in domestic garbage. The study shows that organic and inert matter makes up 92 to 96 percent in weight of total household garbage. This leads to the need to consider the possibility of making compost as a means of valorising the domestic garbage. Yhdego (1992) also points out that two-thirds of the waste from Kariokor market in Dar-es-Salaam consists of vegetable matter, while in Kampala 75 percent of waste generated is composed of organic matter or vegetables (ILO/UNDP, 1991). Given the nature of the eating habits of most of the inhabitants in the region it can be concluded that most of the household waste consists of organic matter. This gives rise to use of the waste either in composting or in feeds to animals such as pigs, etc.. Each of these activities would form a solid base for demand for urban agriculture. While many Asian countries have allowed for intensive urban and urban fringe agriculture, planning regulations in Central and Eastern African countries prohibit farming within urban areas. This is despite the fact that 60 percent or more of the urban population in these countries practice some form of agriculture illegally (Lee-Smith et al., 1987; Mosha, 1991). Those growing food in towns include middle and high-income groups who grow their food in their back gardens. The low-income groups tend to farm on road and railway reserves, river valleys and other vacant land such as open spaces in residential estates, open fields and forested land. The policies of "allotment" used in some countries should be studied by African countries to see how best urban agriculture can be promoted as a productive industry. It will also be necessary within the region to make detailed analysis of the composition of the waste for purposes of making compost. The waste may contain some inert matter such as sand or pebbles which are nonbiodegradable and thus reduce the extent of "compostability". Such materials will have to be separated from what is to be put in the compost heaps.

Other studies in the region (Khadaka, 1988; Ruto, 1988; Kulaba, 1989; Mbuyi, 1989; Mwaura, 1991; Svagga, 1992) have made references to the failure of the urban authorities to collect and dispose of waste adequately largely on account of insufficient equipment. Kulaba