Chapter 11
User Charges and Solid Wastes Generation in Lagos, Nigeria

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ABSTRACT
Solid waste is a major disutility of urbanization in Nigeria as rapid urbanization combined with industrialization in Nigerian cities have created greater concentration of wastes than what these cities’ systems can possibly assimilate. One state where this problem is most severe is Lagos State. The size of the state, coupled with the other factors like population trend, topography, concentration of industries act as potential threat to the limited carrying capacity of the environment. Therefore, if the present annual growth rate in population of 6-8% is to be sustained, there should be an urgent need to de-link economic activities from environmental degradation via an efficient waste management strategy that focuses on waste minimization among others. This research analyzed the impact of user charges, recycling incentive (price of recyclables) and weather variables on both residential and commercial sectors. In addition, income and population density variables were included for the household model using the OLS and ARIMA model. The author found that user charges negatively impacts on waste quantities. Weather variable (temperature) positively influenced wastes quantities. The author recommends the use of variable user charges set appropriately and the encouragement of recycling in the state.

INTRODUCTION
The rising concern for the environment can be attributed to the realization of the limited carrying capacity of the environment. Man, in his bid to further satisfy his needs and aspirations for further development and better living conditions exerted further influence on the environment in which he depends for survival. This causes further deterioration of his environment. This outcome is avoidable. Based on the report of Agenda 21, the success of efforts to eradicate poverty and manage

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the natural resource base for economic and social development depends upon fundamental changes in global consumption and production patterns.

Even though certain innovative production processes have been celebrated over the years, the environmental gains from these innovations are being offset by huge consumption. Excessive consumption is caused mainly by population pressure in the metropolitan centres and higher income status of individuals. The population problem is compounded by the fact that efforts towards improving the environmental quality and economic performance of products have been some incentives for consumers to consume more. This process negates the benefits of the original improvement in the environmental quality and economic performance (the rebound effect).

World consumption patterns pose formidable threats to the environment under two opposing grounds (excessive consumption and inadequate consumption). Consumption pattern has gone up dramatically due to expansion of the global economy and a corresponding explosion in standard of living. For instance, the global consumption expenditure has grown by an average of 3 percent annually since 1970. From 1973 to 1998, the World consumption in real terms has more than doubled to reach US 24 trillion dollars i.e., twice the 1975 level and six times that of 1950 (UNDP, 1998). According to the “State of the World 2004” report, the amount spent on goods and services at the household level has increased fourfold since 1960 and topped more than $20 trillion in 2000. Therefore the expected wastes turnout is going to add to the pressure of already stretched life support system if urgent measures are not taken. The problem is more disturbing because of the role the environment plays in the poverty debate.

Low income residents of urban centres are the most vulnerable to exposures from environmental health hazards, the most susceptible when exposed to pollution, and above all, are the least able to cope with the consequences of environmental disasters when they occur. This is because the households with inadequate income are less able to afford accommodation that shield them from environmental risks and are forced to occupy the ecologically fragile areas (usually slums/blighted areas). These fragile areas are without pipe-borne water, adequate provisions for sanitation, drains and garbage collections. This is so because they are priced out of safe, well located, and planned residential settlement with adequate investments in infrastructure to mitigate the impact of disasters when they occur. Other reasons include their engagement in environmentally dangerous work so as to meet their physiological needs; they also lack the political resistance to environmentally detrimental governmental decisions among others.

Urban environmental improvement can therefore be an effective means of reducing poverty, more so that its improvements enhance healthier living and working conditions for urban poor. Better health resulting from environmental improvement leads to healthy children that grow into healthy adults without excessive expenditures on medicines and health care. They also avoid the loss of income that can result from taking time off work due to illness or to nursing sick family members. They are less likely to lose their jobs and enter a vicious circle of poverty and destitution. National policy frameworks devised by countries in less developed countries therefore calls for the necessity of preventing poverty-driven environmental degradation in the context of rapid population growth and improving the environmental conditions of the poor.

Urban environmental problems must be given a propriety more so that the world population is expected to grow by 3.7 billion over the next 40 years. Ninety percent of that rise will take place in developing countries, largely in cities, pushing population densities in many places to an extreme. World consumption of energy and manufactured goods will triple, even under more efficient patterns of use; for developing countries, the increase will be fivefold. If emission (and waste) per unit of output remains unchanged, tens of millions
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