URBAN SOLID WASTE MANAGEMENT
IN LOW-INCOME COUNTRIES

Kostandin Kristo

PhD Student, Applied Statistics and Informatics Department

University of Tirana, Albania

kostakosta63@yahoo.com

Abstract

The management of household waste is a major environmental problem in all Albanian communities. This is linked to several factors including the significant quantity of waste produced and inadequate infrastructure. These factors create a significant pressure on the environment and led to negative impacts on natural resources and the health and hygiene of the population. The Albania region is characterized by diverse and fragile natural environment resources. Therefore, it is necessary to preserve and protect this heritage against pollution. Based in an integration and treatment of exclusion criteria on average recycling coefficient of waste stream , we determinate to assist decision-makers in choosing an appropriate landfill site, taking into account both geo-environmental parameter, a) the shortest distance during a transport and b) the structure of the material being transported, referring to the average recycling coefficient of waste stream .

Keywords: low income countries, technological changes, incinerators, dumping

INTRODUCTION

Waste represents a major waste of resources, both in the form of materials and energy. Indeed, the amount of waste we produce can be seen as an indicator of how efficient we are as a society, especially in relation to our use of natural resources. Over the last 30 years there has been a growing number of initiatives taken by the EU, governments, councils, NGOs, private companies, etc. on waste management, including programs to reduce the amount of waste

generated. In general, private citizens across Europe have shown interest in how they can support better waste management. Many programs have been created to promote waste separation by individuals, households or generating businesses. These wastes, divided into fractions such as glass, paper and plastic, metal, textiles etc., are generally collected separately. Existing data on municipal waste and household waste per capita vary considerably between different countries. This working paper has been prepared to strengthen the contribution that cities and towns in developing countries, so low incomes countries as Albania , make toward human development, including economic growth, social development, and the reduction of poverty. The ultimate beneficiaries of the work would be the citizens who live in and use cities and towns, particularly the urban poor, who will receive better-managed services and more accountable, participatory, and transparent management as a simply result of this paper contribution.

This paper seeks to strengthen urban management by harnessing the skills and strategies of networks of regional experts, communities and organizations in the public and private sectors. Its goal is to contribute to local and regional expertise. The SOLID WASTE MANAGEMENT brings together national and local authorities, the private sector, community representatives, and other actors within a country to discuss specific problems within the subject areas and to propose reasoned solutions. Consultations are held solely at the request of a developing country and often provide a forum for discussion of a cross-section of issues generally resulting in a concrete action plan for policy programme change. The solid waste management treatment programms use their regional networks of expertise to sustain follow-up to the consultations by providing technical advice and cooperation to facilitate the implementation of action plans and to mobilise the resources needed for their implementation.

Through its Core-standard topics the MSWM support the regionals and networks by synthesizing lessons learned, conducting state-of-the-art research, identifying best practices, and disseminating programme-related materials.

1. Municipal Solid Waste Management (MSWM) is major responsibility of local government. It is a complex task which requires appropriate organizational capacity and cooperation between numerous stakeholders in the private and public sectors. Although it is essential to public health and environ-mental protection, solid waste management in most cities of developing countries is highly unsatisfactory.

2. The Conceptual Framework provides brief definitions of the main concepts of MSWM and identifies the goals and principles that normally guide MSWM system development. It discusses key objectives and issues which should be addressed by

MSWM strategies with regard to political, institutional, social, financial, economic and technical aspects.

3. MSWM is an important entry point for integrated urban management support; the Framework paper concludes by outlining possible directions for development cooperation.

4. The Conceptual Framework is not a finished product: it will be further elaborated by the UMP and its partners. Describing Municipal Solid Waste Management

5. Municipal solid waste is defined to include refuse from households, non-hazardous solid waste from industrial, commercial and institutional establishments (including hospitals), market waste, yard waste and street sweepings. MSWM encompasses the functions of collection, transfer, treatment, recycling, resource recovery and disposal of municipal solid waste.

6. The first goal of MSWM is to protect the health of the population, particularly that of low-income groups. Other goals include promotion of environmental quality and sustainability, support of economic productivity and employment generation. Achievement of MSWM goals requires sustainable solid waste management systems, which are adapted to and carried by the municipality and its local communities.

7. The scope of MSWM encompasses planning and management systems, waste generation processes, and organizations, procedures and facilities for waste handling. Development strategies comprise specific objectives and measures in these areas. They need to consider the specific interests, roles and responsibilities of numerous actors, including: households, community-based organizations (CBO) and other service users, local and national government authorities, non-governmental organizations (NGO)formal and informal private sector enterprises, and external support agencies (ESAs).

8. The functioning of MSWM systems and the impact of related development activities depends on their adaptation to particular characteristics of the political, social, economic and environmental context of the respective city and country. Executive Summary Conceptual Framework for Municipal Solid

Waste Management Strategic Aspects of Solid Waste Management

1. To achieve sustainable and effective waste management, development strategies must go beyond purely technical considerations to formulate specific objectives and implement appropriate measures with regard to political, institutional, social, financial, economic and technical aspects of MSWM:

2. Political aspects concern the formulation of goals and priorities, determination of roles and jurisdiction, and the legal and regulatory framework Society's goals and priorities regarding environmental protection and equitable service access must be clearly articulated in order to mobilize popular support and resources required for their realization. A clear definition of jurisdiction and roles is essential to the political sustainability of MSWM systems. The strategic plan for MSWM provides a basis for putting the defined roles of government authorities and other actors into effect. Bylaws, ordinances and regulations for MSWM should be few in number, transparent, unambiguous and equitable.

3. Institutional aspects concern the distribution of functions and responsibilities and correspond to organizational structures, procedures, methods, institutional capacities and private sector involvement. Effective MSWM depends upon an appropriate distribution of responsibilities, authority and revenues between national, provincial and local governments. In metropolitan areas, where MSWM tasks extend across several local government units, inter-municipal cooperation is essential.

Decentralization of responsibility for MSWM requires a corresponding distribution of powers and capacities. It normally calls for revised organizational structures, staffing plans and job descriptions of the local agencies concerned. Capacity-building measures for MSWM should give primary attention to strategic planning and financial management. Discrepancies often exist between MSWM job requirements and the actual staff qualifications; training and human resource developments are thus important components.

For example, countries such as Denmark and the Netherlands have household waste generation data of around 500 kg / capita / year. This is twice as high as that reported for Iceland and Luxembourg and over 60% higher than that reported for Austria, Germany and Norway. Similar broad variants can be found for municipal waste.

Possible explanations for these changes include:

• Different definitions of waste and changes in the systems used for waste

• Differences in economic structure and lifestyle;

• Differences in waste policy;

• Real differences in the amounts of waste produced.

Definitions or references to municipal and household waste can be found at joint Eurostat / OECD questionnaires. Individual Member States also have their own definitions which are not necessarily in line with internationally applied definitions. As all Member States are aware of the OECD / Eurostat Joint Questionnaire and these surveys are the main source of information across Europe of municipal and household waste, it is worth examining in some

detail the definitions that have been used in these questionnaires over the last decade. Municipal waste is defined in the literature as: 'Municipal waste is waste collected by municipalities or by their order. Those include household waste, commercial activities, and office buildings, institutions such as schools and government buildings and small businesses that dump waste in the same facilities used for waste collected in the municipality. They also include similar waste from rural areas, if they are available from the generator. 'Municipal waste is waste collected by or on behalf of municipalities'.

They include:

• Waste coming from households (waste after consumption), similar waste from trade and commercial activities, office buildings, institutions (schools, hospitals, government buildings) and small businesses.

• Waste from these sources is collected door to door or delivered to the same objects used for waste collected in the municipality, as well as collected fractions separately for recovery operations (through door-to-door collection and /or through voluntary deposits). Also includes similar waste from rural areas, even if it is discarded by the generator.

• Large waste (e.g. white goods, old furniture, mattresses) and yard waste, leaves, shepherd's cuttings, street cleaning, garbage container contents and garbage cleaning market if managed as waste. As household waste, household waste is defined as' waste generated by the household activity. A similar definition is used in the Eurostat 1996 Environmental Statistics (page 191). In 1996 and 1998, a relatively clear direction was given regarding household waste stating that 'household waste consists of traditional collection waste, ordinary waste collected separately and other fractions collected separately'. OECD / Eurostat questionnaire tables generally require information on:

• Paper, cardboard, paper products

• Textiles

• Plastics

• Glass

• Metals

• Food waste, garden waste and similar waste

• Other waste

The amount of waste generated on average in a year in Albania has experienced an extreme increase in the last decade and has reached about one million tons of solid waste, including 0.65 million tons of household waste. Recycling and transformation of waste have become common practice for solid waste management. The need to get rid of an economic waste approach after re-selection of urban generated waste has led to mass dumping

Mentioning the potential impacts on optimizing urban waste processing in the literature

"The main idea of sustainability is to cut only as many trees as can be regrown"

Sustainable development in the case of urban waste forces us to continuously reuse to the maximum the raw materials obtained from their pre-selection, processing and recycling. There are dozens of challenges facing decision makers regarding minimizing waste processing costs but the following indicators are mentioned as the most substantial:

1. Minimization of financial costs based on the application of various waste treatment technologies;

2. Proper analysis according to geographical, socio-economic specifics, how the respective plants should be designed / planned, also analyzing the potential of economies of scale.

3. Relying on the most advanced standards of waste data analysis in two main pillars a) their generation and b) treatment, up to recycling.

4. Continuous search for new roads, innovations or technical, technological, infrastructure and logistical improvements to support optimization in every direction in the difficult process with ongoing challenges of integrated urban solid waste management.

5. In addition to statistics on waste generation and treatment, additional information is needed on the number and capacity of recovery and disposal equipment and on covering the collection scheme with means of transport based on the shortest possible route to destinations predetermined with expected time agenda to the displacement of the waste mass.

6. Number and capacity of waste treatment facilities specified by the treatment categories e.g.: number and capacity of incineration facilities, number and capacity of open landfills, number of closed landfills, number of recovery equipment.

7. Population and projected amount of waste, landfill areas, exclusion of unsuitable landfill areas, socio-economic constraints, land occupation, geo-environmental constraints, geological criteria, water criteria.

Advantages and challenges of applying H.A.R.C.

Carry a high average value as a recyclable raw material.

-Voice weight has a low impact on transport costs (tons / km) because the average weight of the recyclable mass is low but the fuel noise is affected by the distance which for this waste stream is high, away from residential areas.

-Low pre-selection costs per unit of mass generated because it has a high percentage of recyclable mass.

-Transport density is low and this substantially positively influences the total monthly transport cost.

CONCLUSIONS

So, we have identified how understanding the oriented streams of urban waste increases the chances for solutions at lower costs, providing a practical application of it by decision makers.

The progressive increase in the amount of urban waste has become a socio-economic issue, threatening economies, entire environmental spaces and lifestyles. As such, corporate leaders need to begin to understand that they need to be involved in finding the most appropriate solutions.

The need to improve the efficiency of the use of transport and collection equipment, for processing requires the introduction of modern technologies such as GPS, to increase the presence of pre-selection tools in every environmental spot.

Addressing the absorption of raw materials not from natural resources but through maximum recycling and their reuse as a way of recommending to policymakers, which should emphasize the reuse and recycling of solid waste to meet the needs of industries for raw materials para.

Beyond reuse and recycling to help improve management costs, mentioning the time saved for the work of waste pre-sorters through conveyors due to the predetermination of waste streams with significantly different recycling coefficients. Electricity accounts for 15 to 20 percent of operating budgets for pre-selection services.

With stricter regulatory and environmental constraints helping to overcome some obstacles, our economic future may depend on how we, as entrepreneurs, manage the natural resources of raw materials that for the most part can be recovered from waste recycling and not from the use of natural resources.

The statistics of landfills occupying landfills around the world are a wake-up call: within 100 to 150 years we will not have enough space to support our waste disposal businesses and endless natural resources thus undermining right the quality of life of our offspring.

The urban waste economy is about new revenue streams and monumental savings through extreme recycling as in the case of Sweden which has become the state with the world's largest per capita demand for imports of urban waste for processing industries.

Infrastructure of today's pre-selection and collection systems in Albania is responsible for significant losses of economies dealing with urban waste.

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