

# **18<sup>TH</sup> SESSION OF THE UNITED NATIONS COMMISSION ON SUSTAINABLE DEVELOPMENT**

## **NATIONAL REPORT FOR GHANA**

### **WASTE MANAGEMENT IN GHANA**

#### **1.0 BACKGROUND**

Most of the concern for waste management in Ghana is with the urban areas than the rural areas. Urban areas in Ghana produce a variety of waste. The predominant wastes being domestic solid waste, industrial waste and construction waste. These wastes are sent to a few dumpsites, but majority end up in drains, streams and open places. Waste is disposed of by open dumping, open burning, controlled burning and tipping at dumpsites. This has created a pressing sanitation problem as many towns and cities are overwhelmed with management of municipal solid and liquid wastes.

The current state of waste management leaves much to be desired. Less than 40% of urban residents are served with solid waste collection services and less than 30% by an acceptable household toilet facility. The traditionally applied methods of dealing with wastes have been unsuccessful, and the resulting contamination of water and land has led to growing concern over the absence of an integrated approach to waste management in the country.

#### **2.0 GOVERNMENT RESPONSE AND INTERVENTIONS**

Over the years, the government of Ghana in her efforts to address the waste management problems has developed various strategies and solutions which are still very relevant. These measures include the following:

##### **2.1 Policy, Legal and Institutional Frameworks**

In an effort to address the problem of waste management, Government has over the years put in place adequate national policies, regulatory and institutional frameworks. An Environmental Sanitation Policy was formulated in 1999. This policy has currently been amended and strategic action plans developed for implementation. Various relevant legislations for the control of waste have also been enacted. These include the follows:

- Local Government Act, 1990 (Act 462);
- Environmental Assessment Regulations, 1999 (LI 1652);
- Criminal Code, 1960 (Act 29);
- Water Resources Commission Act, 1996 (Act 522)
- Pesticides Control and Management Act, 1996 (Act 528);
- National Building Regulations, 1996 (LI 1630).

In addition to the above policies and legislations, the Ministry of Environment, Science and Technology, the EPA, Ministry of Local Government and Rural Development and the Ministry of Health have prepared the following guidelines and standards for waste management:

- National Environmental Quality Guidelines (1998)
- Ghana Landfill Guidelines (2002)
- Manual for the preparation of district waste management plans in Ghana (2002)
- Guidelines for the management of healthcare and veterinary waste in Ghana (2002)
- Handbook for the preparation of District level Environmental Sanitation Strategies and Action Plans (DESSAPs).

The District Assemblies are the key institutions responsible for the management of sanitation and waste at the local and community level. They are however, supported in this task by a number of other institutions and organisations. For example, the Environmental Protection Agency (EPA) gives technical support to the District Assemblies by setting environmental standards and guidelines on waste management; administration of Environmental Assessment Regulations; undertaking environmental education and awareness programmes; and monitoring environmental quality. Ghana Environmental Assessment Regulations, 1999 (LI 1652) make provisions for existing undertakings, which are required to submit Environmental Management Plans.

A National Environmental Sanitation Policy Co-ordination Council has been established within the Ministry of Local Government and Rural to oversee to the implementation of the policy objectives

## **2.2 Environmental Education and Awareness Creation**

Various capacity building programmes, seminars and workshops have been organized and/or are still on-going. For example, the 35<sup>th</sup> Annual General Meeting of the Ghana Institute of Engineers organized lectures held in March 2004 on “Sanitation and Waste management in Ghana: Way Forward”; the Inter-Faith Waste Management Initiative – November 14, 2005 etc. All of these workshops came out with very practicable solutions to the waste management menace, however, the evidence on the ground points to the fact that there is still a lot to be done.

A National Environmental Sanitation Day has been established and observed annually to sensitise the general public in keeping their environment sound and clean.

## **2.3 Waste Recovery, Recycling and Reuse**

Waste recycling has become a viable economic option in the country despite the considerable cost of collection. Waste recycling technologies are being used by some few industries to circumvent the need for treatment and the discharge and disposal of large volumes of waste and to reduce demand for raw materials, energy and water. In many instances, these industries have found waste recycling as effective ways of improving the economic competition of their products. For example Guinness (Ghana) Limited, Kumasi, derives part of its revenue from the

sale of yeast and spent grain used as animal feed. However, most major industrial establishments still practice very little recycling.

Generally, scavenging has often been considered a hindrance to municipal waste disposal operations, however they play a vital role in the waste recycling process. Ways of officially incorporating scavengers into municipal waste operations should be seriously considered. For example, they can be designated as official used-materials merchants and given training and status upgrading.

## **2.4 Financing Waste Management**

Poor national economic policies and poverty of the rural communities make financial considerations one of the most obvious constraints to developing appropriate waste management systems for the country. As the urban areas grow, they exhaust the capacity of existing traditional disposal sites so that wastes must be transported greater distances to sites outside the city. Householders often complain of unsatisfactory or unreliable waste management services. As a result they often resist paying the charges levied and instead preferring to dispose by informal dumping. The collection agencies have then less funding for their services. There is thus a clear need for more appropriate methodologies or financing mechanisms for waste management.

Currently, it costs about six Ghana cedis (¢6.00) for every ton of waste collected in Accra. The private contractors provide containers to store the waste and see to it that all wastes are cleared from the various points of collection. However, because the AMA is not able to pay regularly for the refuse they collect, they are also not able to maintain their trucks and as a result, most of them are broken down leaving a lot of waste uncollected within the metropolis. The Metropolitan Assembly spends an amount of about ¢250,000 alone on solid waste management every month.

## **2.5 Waste Management Projects and Programmes**

Several waste management projects and other related programmes have been implemented and some still being implemented in the country. For examples, the government of Ghana with the support of the World Bank implemented different phases of an Urban Development Projects (i.e. Urban I, II, III) in the 1990s, and the “Urban Environmental Sanitation Project (UESP) 1996-2000” in Accra, Kumasi, Tamale, Takoradi and Tema including construction of sanitary infrastructure such as night soil treatment plant and private toilets. DFID also supported the “Accra Waste Management Project” designed to address wastewater and night soil treatment options in the city. The installed capacity of the plant was 11,010 kg BOD5 per day equivalent to 222,020 kg COD (biological organic load) per day.

## **3.0 LESSONS LEARNT**

A review of the current waste management policies, plans, and programmes and implementation have shown that there has been a general reluctance by District Assemblies and the private sector to invest directly in waste infrastructure. The main reasons for the lack of required investment on waste infrastructure include: the uncertainty of the planning process, the lack of enforcement of

national policies and district bye-laws; and the general lack of co-ordination in the implementation of waste management programmes.

There is a need for greater co-ordination in the implementation of waste management plans and programmes, and also in the overall management of hazardous and non-hazardous waste. In order to achieve a network of integrated waste management facilities, much more effective national, regional and District co-operation is required.

There is a need for better enforcement of existing waste legislation and bye-laws to prevent for example, illegal disposal of waste. Waste is often dumped without proper authorisation and this is becoming a more significant problem

There is the need to adopt a framework which encourages more private investment in infrastructure, as well as encouraging more Public Private Partnerships (PPPs).

Unless the waste management sector is recognised, and supported by sufficient human resource and training, the sector will not attract qualified professionals. This will make implementation of any good waste management policy difficult.

One other important lesson learnt is the roles and responsibilities of citizens in waste management. Waste management is not the sole responsibility of local government or the District Assemblies. Major groups and individual citizens also have critical roles to play. When we continue to assume that government institutions and local government only have that responsibility, these institutions get overwhelmed with the waste problem, while citizens stand aloof and even act negatively to pollute the environment instead of facilitating the rendering of the service. In setting up efficient waste management system therefore, the potential roles of all the sectors of society must be carefully considered and adequate measures put in place to realise them.

## **4.0 RECENT TRENDS AND EMERGING ISSUES**

### **4.1 Waste Composting Technologies**

Degradable organic materials make up the bulk of Ghana's discarded Municipal Solid Waste (MSW). A study on the composition of MSW conducted by the Accra Metropolitan Assembly (Waste Management Department) showed that about 65% of the waste stream consists of organics. Inert material arising from the practice of hand sweeping sand constituted about 17.1% of the waste stream. Together, both organics and inert material accounted for about 82% of the waste. The trend is no different from most urban centres of the country. This high percentage of organic material has often led to the suggestion that composting can be an appropriate and viable disposal MSW technique for the country.

### **4.2 Methane Gas Capture from Landfills**

In the wake of global and international challenges of climate change vulnerabilities and adaptations, methane capture from landfills has become a viable economic option for energy

production. Against this background, it will be viable to recover methane from all existing and new landfill sites or sewerage treatment plants for power generation.

Historically, there has been little or no attention paid to the draining of gases from landfill sites in Ghana. Existing and future landfill sites can be designed to maximize this resource in a sustainable and environmentally beneficial way. Currently, a number of landfill CDM projects are being pursued. For example, there has been donor interest and support in the design and construction of the proposed Kwabenya landfill for sanitation, health and safety purposes. However, additional support is required to secure methane recovery.

### **4.3 The Plastic Waste Menace**

Plastic waste generated in the country is currently the most post consumer waste. They are mainly plastic bottles, polythene bags, sachets and wrappers. It is estimated that, there are over 40 plastic producing industries in the country producing over 30,000 metric tones per annum of assorted plastic products. In addition, about 12,000 metric tones of finished plastic products are imported annually into the country. These add to compound the plastic waste problem in the country. At least about 20-30% of these end up as waste in the streets. With very few recycling facilities in the country, the issue of post-consumer plastic waste has become a major issue of concern.

### **4.4 Electronic Waste**

Ghana is a signatory to the Basel Convention on the Control of Transboundary Movement of Hazardous Wastes and their Disposal (Basel Convention). The trade in second hand electronically equipment has become a source of concern in the area of growing environmental and health disaster. Many of the obsolete computers, televisions, mobile phones, and other used electronic equipment exported from developed countries, are ending up gathering dust in warehouses or being dumped and burned creating serious health and environmental contamination. Empirical figures do not exist for the various categories of e-waste generated locally and those imported. However there is substantial evidence to suggest significant increase in recent times.

Recently, the government of Ghana and the Netherland's Ministry of Housing, Spatial Planning and the Environment (VROM) are collaborating to improve the control of transboundary movement of solid waste between the two countries. The programme involves exchange of best practices, operational enforcement information and intelligence in compliance, and capacity building. The EPA has initiated a nationwide inventory of e-waste targeting groups such as manufacturers, consumers, service providers, repairer's traders and associated groups.

## **5.0 MAJOR CONSTRAINTS AND CHALLENGES**

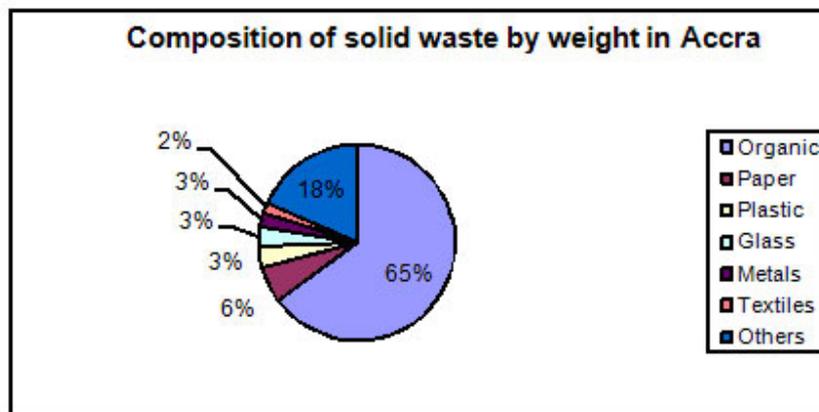
The problem of waste in Ghana is a direct result of a growing urban population, the changing patterns of production and consumption, the inherently more urbanized life-style and industrialization. The situation of waste management may be summarized as follows:

- Poor planning for waste management programmes;

- Inadequate equipment and operational funds to support waste management activities;
- Inadequate sites and facilities for waste management operations;
- Inadequate skills and capacity of waste management staff; and
- Negative attitudes of the general public towards the environment in general.

### 5.1 Solid (Non-Hazardous) Waste and Sewage

Poor sanitation and municipal solid waste management has contributed to pollution and unsightly conditions hindering economic development and causing public health problems. It is estimated that the average daily solid waste production is 0.45kg per capita per day. Accra for example, generates about 1500 tons of solid waste per day (*Ghana landfill guidelines, July, 2002*) of which only about 55% is collected and disposed. It is therefore common to find mountains of solid wastes uncollected for months especially in the urban areas.



Source: AMA (WMD) Accra, 2000

Domestic wastewater in Ghana is mostly discharged directly into drainage systems that empty into water bodies such as rivers, lagoon and streams. By 2000 about 80% of sewage treatment facilities in Accra were not functioning thus placing a lot of pressure on the receiving streams and rivers in the city (EPA, 2000). The extent of pollution especially in the Odaw River in Accra is so intense leading to drastic decline in desirable aquatic organisms. It is also estimated that the Chemu lagoon in Tema also receives over 2million m<sup>3</sup> of discharges per day from industries in the catchment area.

### 5.2 Environmentally Sound Management of Hazardous Waste

Hazardous and industrial waste is generated from a wide range of activities especially from the manufacturing sector. Notable among them are the textiles industries (Spinning, weaving, finishing, bleaching and dyeing, printing); food and beverages (fish processing, slaughter houses, breweries, soft drinks, fruit processing, oil processing, cocoa processing and flour mills); Petroleum and petrochemical industry; Wood processing industry (Sawmills, veneer processing, ply mills, furniture); Plastics and foam industry; Paper, printing and publishing industry; Pharmaceutical industry; and the Paints and chemical industry. Majority of these industries do not have wastewater treatment facilities though wastewater generation is a major issue of

environmental concern. Those with treatment facilities are unable to meet all the sector specific environmental quality guidelines. It is also observed that generally industry does not segregate their solid wastes. Its management is limited to disposal at approved sites by local government authorities.

## **6.0 MEANS OF IMPLEMENTATION**

An integrated system involving all stakeholders and commitment of more resources will make significant impacts on the waste management situation in Ghana. Some of the strategies to be adopted to ensure integrated waste management system include the following:

- Planning and evaluating waste management activities by system designers and users;
- Using waste characterisation studies to adjust systems to the types of waste generated;
- Physically handling waste and recoverable materials, including separation, collection, composting, incineration, and landfilling;
- Marketing recovered materials;
- Establishing training programmes for waste management workers;
- Carrying out public information and education programs;
- Identifying financial mechanisms and cost-recovery systems;
- Establishing prices for services, and creating incentives;
- Incorporating private sector businesses, including sector collectors, processors, and entrepreneurs.

A community-based waste management system should be considered by the Ministry of Local Government and Rural Development for adoption by the District Assemblies. This proposal is aimed at creating employment using unemployed men and women to make them gainfully employed to collect, process and dispose the waste with households paying tokens but sustainable fees to support the proposed systems.

### **6.1 Mobilisation of Financial Resources**

Waste should be regarded as a great economic resource. The segregation, re-use and recycling of waste at the household levels or point of generation should be encouraged. Paper, plastics, organic matter, metals and glass could all be recycled or converted to usable materials.

In order to make user charges effective, there is the need to tailor such charges to the level of environmental consciousness of residents, and their ability to pay. Very serious consideration must be given to how more money could be generated to improve the delivery of the service. The District Assemblies in the long-term should consider adopting and modifying the use of other economic instruments such as:

- institution of solid waste pricing systems that will provide continuous incentives for households to reduce waste generation ( e.g. pay-per-volume of waste);
- disposal charges levied on dumping of industrial and municipal waste at landfill sites. Rate of charges should depend on type of waste and method of treatment before dumping;

- preferential tax treatment to the private sector for the construction of solid waste treatment plants.
- Incentive schemes such as subsidies, concessional loans and tax incentives to encourage District Assemblies and private investors in research, training, and demonstration projects for energy resource recovery as well as for planning for solid waste disposal;
- Linking charges to other utility services within the district
- Charging for dumping at landfill sites
- Adding charges to property rates so as to unify payment;
- Indirect charges through the sale of polythene bags for waste disposal

## **6.2 Technological Development, Transfer and Dissemination**

A planning unit should be set up (I.e. if not already in existence) within the Waste Management Departments of the Assemblies to continuously review and plan all activities within the department. It should constantly analyse the volume of waste collected and disposed of, the level of mechanisation, labour situation, and changing cost of collection and disposal of a unit volume or weight of waste and recommend appropriate action or technology.

## **6.3 Application of Research, Indigenous Knowledge and Know-how**

Promoting research into affordable, pragmatic, simple and workable methodologies and resource recovery technologies such as recycling, biogas technology, composting, incineration and waste –to-energy technologies should be encouraged.

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