Policy Paper on Solid Waste Management in Quetta

Untreated waste in Quetta city bears an economic cost for residents of the area and is also an environmental hazard. Increasing pollution leading to environmental changes and economic cost related to waste in terms of health hazards and negative impact on infrastructure have changed the way authorities view it.

Though waste management is a relatively new phenomenon, it has caught the attention of governments all over the globe. Today the term waste management covers collecting, sorting, processing, recycling and reusing materials that would otherwise be considered as useless. It has moved from just being an environmental protection strategy to be an industry contributing to the economy.

This paper will examine the status of waste management and explore the ways to generate revenue and energy from waste and further improve understanding on solid waste management in Quetta city.

Introduction

Quetta like other developing cities faces serious environmental problems. Rapid population growth (annual growth rate of 2.61 percent a year) and impressive economic growth have put enormous pressure on the natural resources and have significantly increased pollution.

Balochistan did not address the issues of sustainable development and environmental protection in the decision making process. Unregulated use of forest land, water, urbanization and expansion of agriculture but not attempting to increase the crop yield, misuse of pesticides, ecological and health wise hazards, industrial processes are due to in-sensitivities to poverty,-environment nexus and flaws in policies.

Solid waste collection by government owned and operated services in Quetta currently averages 50 percent of waste quantities generated; however for city to be relatively clean at least 75 percent of these quantities should be collected. To achieve this level a large capital investment is required. Demand for services will grow as urban population grows and as per capita waste generation rate grows.

At the moment according to Metropolitan Corporation Quetta daily production of waste is 1000 MT out of which 350 MT is collected by QMC and rest 600MT to 850 MT is left behind. The increased quantity of waste will also place greater demands on disposal services thereby exacerbating and already poor situation since present disposal methods for solid waste are totally inadequate.

Much of the uncollected waste poses serious risk to public health through clogging of drains, formation of stagnant ponds and providing breeding grounds for mosquitoes and flies with consequent risk of cholera and malaria. In addition because of the lack of adequate disposal sites, much of collected waste finds its way to dumping grounds, open pits, ponds, and agricultural lands.

This concern has led to a growing recognition that economic development and the health and well being of Quetta population are closely linked with improved environmental management and protection.

According to 1998 census total population 759,941, out of which 412,064 Male, 347,877 Female live in Quetta city. The projected population in 2010 was 1,235,066 and population growth rate is 4.13 percent. Household size in Quetta is 8.5 and Housing units are 87091 (according to 1998 census). However If we add the population of Afghan refugees and people living in Quetta city on temporary basis according to safe estimates the total population of Quetta city should be above 2.2 million people.

Solid Waste in Quetta

Presently domestic solid waste in Quetta has not been carried out in a sufficient and proper manner in collection, transportation and disposal or dumping regardless of the size of population. Therefore the sanitary conditions have become more serious year by year and people are suffering from living in such condition.

The scope of problem regarding solid waste management is very wide and involves the consideration of all the aspects relating to solid waste and its management either directly or indirectly.

The municipal institution in Quetta city does not have sufficient resources and technical capacity to accommodate the needs of increasing urban population. The poor communities residing in urban areas are often engaged in a number of initiatives on self-help basis e.g., solid waste management and recycling. Almost all the paper, plastics, metals and glass are collected and re-used/recycled.

Thus the poor communities in urban areas play a key role in waste recycling. The only waste which remains on streets and collection points is the organic waste. This could be used for making compost but neither the municipalities nor private sector has moved toward full utilization of this business.

Physical Composition of Waste

Solid waste in Quetta is generally composed of plastic and rubber, metal, paper and cardboard, textile waste, glass, food waste, animal waste, leaves, grass straws and fodder, bones, wood and stones. There is a considerable content of plastic in the solid waste generated in Quetta which is a cause of great concern. Plastic waste is released during all stages of production and post consumption every plastic product is a waste. Both the quality and quantity of plastic waste cause environmental problems.

This is so as they are found in large volumes and less weights. Some of the environmental issues of plastics waste are litter, emissions of hydrogen chlorides and dioxins from incinerators; and contamination from chemical additives. Plastic waste also presents a direct hazard to wildlife.

The composition of waste has revealed that there is a considerable potential in solid waste management to make it a profitable enterprise. It may be realized that through the sale of recyclable. Composting, energy production and use of waste as earth filler; almost all of waste can be put into one of the above said uses. Only hazardous waste from hospitals and industries needs spate arrangement for its management.

Physical Composition of Waste in Quetta (% weight)

S.No	Items	Quetta
1	Plastic and Rubber	8.20
2	Metals	0.20
3	Paper	2.20
4	Card Board	1.30
5	Rags	5.10
6	Glass	1.50
7	Bones	2.00
8	Food Waste	14.30
9	Animal Waste	1.70
10	Leaves grass etc.	10.20
11	Wood	1.50
12	Fines	44.00
13	Stones	7.80

Source: EPMC Estimates, 1996

Waste Generation Estimates

The Ministry of Environment and urban affairs division, Government of Pakistan undertook study during 1996 on "Data collection of preparation of National study on privatization of solid waste management in eight selected cities of Pakistan. The study revealed that the rate of waste generation on average from all type of municipal controlled areas varies from 0.283kg/capita/day to 0.613kg/capita/day or from 1.896 kg/house/day to 4.29 in kg/house/day in all selected cities. It shows a particular trend of waste generation wherein increase has been recorded in accordance with city's population besides it social and economic development.

Waste Collection and Street Sweeping

QMC has deployed the sanitary workers and sweepers. The workers collect the solid waste from small heaps and dustbins with the help of wheel barrows, brooms etc, and store it at informal and formal depots and carry out sweeping of streets and roads. It has been noted that the service street/road sweeping is not regular and mainly limited to administrative, commercial and small industrial areas.

Further the number of formal collection bins such as masonry enclosures, containers, and trolleys are too less to accommodate the waste generated in the city. Furthermore these points are not located according to population and area requirements. It is the reason that a large number of open heaps are visible in the City.

Waste Management in Quetta

Before promulgation of the local government in 2001, the provincial Public Health Engineering Department (PHED) was responsible for the development and maintenance of water and sanitation

services including solid waste management. Under the recently prevailing system of local government, it is the responsibility of Town/Tehsil Municipal Administration (TMAs); however the sighting of disposal facilities is primarily the function of Zila Council. Paid sanitary workers are employed by TMAs to sweep the streets and collect the trash at a specified place from where it is taken to the dumping site by the municipal carrier.

In addition no private entrepreneur has entered the field. Some INGO's/ NGO's have conducted awareness and sensitization session on SWM. However operations of these organizations are limited in size and scope.

Waste Treatment and Disposal

The waste is disposed off outside municipal limits into low lying areas like, pits and ponds etc, without any treatment except recyclable separation by scavengers. The land is also hire/ leased on long term basis for disposal.

Waste Disposal Practice in Quetta

City	Collection Points	Dump Size	Recyclables Separation	Treatment Plant	Incinerator	Mitigation Measure	Proposed Landfill Site	Staff	Equipment
Quetta	867		Scavengers	Nil	1(Dysfunctional)	Nil	Nil	130	93

Budget for SWM	Budget Allocation	Expenditure	Unutilized Budget
205.21 Million PKR	205.21 Million PKR	106.10 Million PKR	99.11 Million PKR

Source: QMC brief on solid waste management

Treatment and disposal technologies such as sanitary land filling, composting and incineration are comparatively new in Quetta. Crude open dumping is the most common practice throughout Quetta and dumpsites are commonly set alight to reduce the volume of accumulating waste, hence adding to the air pollution caused by uncovered dumped waste itself.

There is also a need that the Govt of Balochistan should put forward a clearly opted policy for waste recovery, as well as composting. Compost is considered an attractive product because of its possible use as soil conditioner for agriculture use.

There is a need for establishment of at least one window composting plant in Quetta to promote composting.

Potential for Waste Recycling in Quetta

Under the present system, QMC is not carrying out any type of recycling activity. What happens normally is that the main recyclable items like paper, plastic, glass and metals are retained by the people themselves which are later sold to street hawkers /waste dealers for recycling.

Whereas the recyclable mixed with discarded waste are picked up by the scavengers who make 2 to 3 trips to different dumps and earn 150 to 300 rupees/day.

Potential for Waste Recycling

City	Recyclable Ratio	Ann. Amount Tons	Gross Income PKR (Million)	Net Income PKR (Million)	Source
Quetta	20.50	23,247	127.2	63.6	EPMC Estimate 1996

The Informal/formal Sector

Private sector is involved in waste management activities may be divided into formal and informal categories. The formal sector consists of organizations and non-government organizations (NGOs).

The informal sector is significant in size as it consists of thousands of itinerant traders (called kabarias or kabari-wallas) spread throughout the city who are engaged in collection of waste material of different kinds. Private sector firms can initiate projects based on organic and in-organic waste management. Organic waste is used to produce organic fertilizer. Inorganic waste is first sorted into paper, plastic, tin, etc., and it is then sold to respective industries where it is recycled to make products such as; Plastic Wood and Tetra Sheets. Unplanned urbanization, poor sanitation and drainage system, inadequate human and capital resources for collecting waste, unavailability of official dumping sites, absence of weight bridges for exact measurement of waste coming at sites, and almost negligible presence of recycling processes have negatively impacted waste management in Quetta.

In Quetta there is immense potential to convert waste into resource for the economy. In this regard, some NGOs and private firms can step into the industry. These organizations can collect waste and reprocess it to produce fertilizer, plastic bottles, and tetra packs. A private firm can establish a recycling facility in Quetta where it can engage to produce a refuse-derived fuel (RDF) based on the concept of waste-to-energy. Similarly NGOs can encourage people to sell their waste to them and prepares soil conditioning fertilizer. The extracted liquid from organic waste could be sold in market as liquid plant nutrient.

Although there has been commitment on part the government to create opportunities of converting waste in to energy and other useful purposes. Lack of adequate infrastructure is inhibiting the industry to grow. The government of Balochistan is aware of the role of waste management industry. However there is a need for a more pro-active approach, likely to be based on public private partnership to help this industry provide a cleaner environment while adding value to the economy.

It is highly recommended that Govt of Balochistan develops a public and private partnership policy along with a study on privatization of solid waste management to institutionalize the process and address environmental issues with added advantage of revenue generation capacity for local governments.

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