

CHAPTER 1

INTRODUCTION

1.1 PREAMBLE

Over the years, there has been a continuous migration of people from rural and semi-urban areas to towns and cities. The proportion of population residing in urban areas has increased from 10.84% in 1901 to 25.70% in 1991. The number of class I cities has increased from 212 to 300 during 1981 to 1991, while class II cities have increased from 270 to 345 during the same period. The increase in the population in class I cities is very high as compared to that in class II cities. The uncontrolled growth in urban areas has left many Indian cities deficient in infrastructural services such as water supply, sewerage and municipal solid waste management.

Most urban areas in the country are plagued by acute problems related to solid waste. Due to lack of serious efforts by town/city authorities, garbage and its management has become a tenacious problem and this notwithstanding the fact that the largest part of municipal expenditure is allotted to it. It is not uncommon to find 30-50% of staff and resources being utilized by Urban Local Bodies for these operations. Despite this, there has been a progressive decline in the standard of services with respect to collection and disposal of municipal solid waste including hospital and industrial wastes, as well as measures for ensuring adequacy of environmental sanitation and public hygiene. In many cities nearly half of solid waste generated remains unattended, giving rise to insanitary conditions especially in densely populated slums which in turn results in an increase in morbidity especially due to microbial and parasitic infections and infestations in all segments of population, with the urban slum dwellers and the waste handlers being the worst affected.

Solid Waste Management is a part of public health and sanitation, and according to the Indian Constitution, falls within the purview of the State list. Since this activity is non-exclusive, non-rivalled and essential, the responsibility for providing the service lies within the public domain. The activity being of a local nature is entrusted to the Urban Local Bodies. The Urban Local Body undertakes the task of solid waste service delivery, with its own staff, equipment

and funds. In a few cases, part of the said work is contracted out to private enterprises.

There has been no major effort to create community awareness either about the likely perils due to poor waste management or the simple steps that every citizen can take which will help in reducing waste generation and promote effective management of solid waste generated. The degree of community sensitization and public awareness is low. There is no system of segregation of organic, inorganic and recyclable wastes at household level. Door to door collection is not practiced in most of the cities.

It is estimated that the total solid waste generated by 300 million people living in urban India is 38 million tonnes per year. The collection and disposal of municipal solid waste is one of the pressing problems of city life, which has assumed great importance in the recent past. With the growing urbanization as a result of planned economic growth and industrialization, problems are becoming acute and call for immediate and concerted action. The proper disposal of urban waste is not only absolutely necessary for the preservation and improvement of public health but it has an immense potential for resource recovery.

It is estimated that about 1,00,000 MT of Municipal Solid Waste is generated daily in the country. Per capita waste generation in major cities ranges from 0.20 Kg to 0.6 Kg. Generally the collection efficiency ranges between 70 to 90% in major metro cities whereas in several smaller cities the collection efficiency is below 50%. It is also estimated that the Urban Local Bodies spend about Rs.500 to Rs.1500 per tonne on solid waste for collection, transportation, treatment and disposal. About 60-70% of this amount is spent on street sweeping of waste collection, 20 to 30% on transportation and less than 5% on final disposal of waste, which shows that hardly any attention is given to scientific and safe disposal of waste. Landfill sites have not yet been identified by many municipalities and in several municipalities, the landfill sites have been exhausted and the respective local bodies do not have resources to acquire new land. Due to lack of disposal sites, even the collection efficiency gets affected.

Very few Urban Local Bodies in the country have prepared long term plans for effective Solid Waste Management in their respective cities. For obtaining a long term economic solution, planning of the system on long-term sustainable basis is very essential.

The Ministry of Environment & Forests, Government of India have notified Draft of "Municipal Waste (Management & Handling) Rules, 1999" on 27th September, 1999. The notification is given as per Annexure 1.1.

1.2 PROBLEMS BEING FACED BY URBAN LOCAL BODIES

Barring a few progressive municipal corporations in the country, all other local bodies suffer due to non-availability of adequate expertise and experience; thereby the solid waste is not properly handled resulting into creation of environmental pollution and health hazards. As mentioned earlier, these local bodies lack technical, managerial, administrative, financial resources, adequate institutional arrangements. Similarly Defence, Railways, CPWD and several Government of India Organizations/Undertakings having large establishments in the cities and towns lack the technical knowhow of managing urban solid waste. It is, therefore, very necessary to provide proper guidance in the Urban Local Bodies/Government Agencies/Establishments referred above, to make them efficient in managing the solid waste generated in their respective areas/cities/towns.

1.3 NEED FOR A MANUAL ON SOLID WASTE MANAGEMENT

Preparation of the Manual on Municipal Solid Waste Management is mainly to assist the personnel involved in managing the solid waste generated in the cities/towns of the country.

The purpose of the Manual is to create:

- An understanding that municipal solid waste management is part of a broader urbanisation problem;
- An awareness of need for competent management of municipal solid waste in urban areas;
- An understanding of various systems available for collection, transportation, recycling, resource recovery and disposals;
- An approach to preparing municipal solid waste management plans in the light of the potential problems and issues which may become apparent during project development; and
- To provide operational guidelines for the efficient municipal solid waste management systems.

1.4 CONSTITUTION OF THE EXPERT COMMITTEE AND METHODOLOGY ADOPTED

With a view to assist and guide the Urban Local Bodies for managing the solid waste in an efficient manner, the Ministry of Urban Development, Government of India constituted an Expert Committee in February, 1998 by drawing experts from various Academic, Research Institutions, Central Ministries/Departments and Urban Local Bodies, to prepare a *Manual on “Municipal Solid Waste Management”*.

The Committee after a series of deliberations decided to include all the aspects of municipal solid waste in the Manual such as Composition and Quantity of Solid Waste, Bio-Medical Waste, Storage of Waste at Source, Primary Collection of Waste, Transportation of Waste, Composting, Energy Recovery from Municipal Solid Waste, Emerging Processing Technologies, Landfills, Community Participation, Institutional Aspects and Capacity Building, Prospects of Private Sector Participation, Economic and Financial Considerations, Environmental and Health Impact Assessment, Legal Aspects etc. and to give exhaustive details of waste processing and disposal methods.

The various approaches suggested in different Chapters contained in the Manual will assist the policy & decision makers, planners, managers and technical personnel involved in solid waste management activities in safe and hygienic handling & disposal of municipal solid waste generated in the urban areas in the country.