Sector	Urban Development
Sub - sector	Urban Development
Profile No.	UD-04
Project	Municipal Solid Waste Management in Gujarat

Project Rationale

Gujarat has witnessed a robust urban growth, in the view of rapid industrialization in the state. This has resulted in generation of large quantities of municipal solid waste in cities as well as towns. Hence the scientific management of the same has been given top priority. Upon recommendations of the Honourable Supreme Court of India, the MOEF, GOI framed Municipal Solid Waste (management and handling) Rules 2000 under the provisions of the Environmental Protection Act 1986 and made treatment and disposal of municipal solid waste in a scientific manner mandatory for all Municipalities. However, owing to the lack of finance and technical assistance, all the municipalities in the state failed to implement MSW rules.

The Government of India has decided to give financial and technical assistance to municipal authorities for implementation of MSW Rules – 2000.

A centralised project support unit is being developed by Gujarat Urban Development Company Ltd. (A Government of Gujarat undertaking).

The project is proposed to be developed with Private Sector Participation.

Project Components

The project is proposed to be developed in all the Urban Local Bodies of the State. The various components of the project being envisaged are as follows:

1. **Procurement of tools and equipments / vehicles for municipalities for primary as well as secondary collection of waste**

   It is intended to cover about 161 municipalities of the State for the primary and secondary collection of waste.

   The tools and equipments / vehicles shall be procured based on the information provided by the municipalities depending upon their requirements considering the existing fleet.

2. **Construction of individual compost plant per municipality for composting bio degradable waste**

   In order to compost the bio-degradable waste, about 130 municipalities are proposed to be covered. The municipalities are divided depending upon the population, as follows:

   a) Total 96 municipalities having population of less than 60,000 would be covered for construction of Vermi compost plant with all necessary infrastructural facilities (site office, roads, drains, plant lighting, etc.)

   b) Total 34 municipalities having population more than 60,000 would be covered for construction of microbial compost plant with all necessary infrastructural facilities (site office, roads, drains, plant lighting, etc.)

3. Construction of regional landfill sites among group of municipalities for final disposal of non-biodegradable and non-recyclable waste in closed containers.

The wastes which are non – biodegradable and non-recyclable are proposed to be disposed off in closed containers. These containers would ultimately be land filled at specific / identified sites.

It is proposed to cover total 155 municipalities for this task. These municipalities are grouped in the form of clusters (total 51 regional clusters), within a radius of 25 kms.

4. Operation and maintenance

The various possible options are being considered for the operation and maintenance of the proposed solid waste management project (including land fill sites, compost plant, etc.).

- Asset Management Company could enter into an agreement with private sector for the operation and maintenance of the plants.
- An agreement could be made between the stake holders – GUDC / Asset Management Company and ULB and private sector.
- ULB could form a Society under the relevant act for the operation and maintenance of the facilities, which can in turn approach Central Government for Viability Gap Funding.

5. Asset management

Asset Management is a business discipline for managing the life cycle of infrastructure assets to achieve a desired service level while mitigating risk.

Asset management encompasses various business processes like management, financial, customer and engineering. Asset management is a business discipline enabled by people, process, data, and technology.

Integrated Asset Management Systems provides a strategic approach and analytical tools to reduce the cost of maintaining, upgrading and operating assets whilst achieving management performance and service objectives. Various aspects of integrated asset management system include performance goals, asset data inventory systems, condition assessment and resource allocation decision making.

There could be a single State level asset management company, whose prime responsibility would be the management of all the assets of the project.

The asset management could be done with the help of GIS software which would help in developing and maintaining service routes, manage requests for service, strategic planning / fleet planning.

Bar code technology could also be used for locating, monitoring and to track inventory of the assets. This would help the asset management company in the following ways:

- Complete control of inventory,
- Reduction of losses and
- Resolution of discrepancies

6. Community awareness and public participation

Community awareness and public participation (CAPP) is an essential component of any infrastructure project. CAPP aims at development of greater awareness and involvement of communities in all aspects of project decision making.

The objectives of CAPP would be:

- Promotion of participatory community involvement in the project to contribute to the delivery of sustainable urban service.
- Cover community awareness, participation, and education with respect to implementation and management of the project facilities, and to educate communities about environmental sanitation and health linkages.
- Inform the project beneficiaries about implications to the community in terms of benefits and responsibilities, including the need to pay for sustainable urban and civic amenities.
- Stimulate civic concern about environmental quality and responsibility
- Ensure that the communities develop a sense of "ownership" of the new infrastructure and services

i. Components of CAPP

The major components of CAPP, in general, would be as follows:

Community Awareness

- Community awareness through public meetings, group meetings.
- Distribution of Handbills, Pamphlets, Booklets, Posters, and Folders related to project works.
- Organizing Exhibitions
- Telecasting of scroll messages through local cable network.
- Publication of appeals and messages through newspapers.
- To reach the public through newspapers and TV networks by publishing the works of the project.

Formation of Groups

- Formation of local ward committees, women groups, self help groups to look after the properties of GUDC.
- Capacity building of formation groups.
- Coordination with Self help groups, local ward committees, Advertising Agencies, Media agencies etc.
- To identify and co-ordinate with helping groups.

IEC

- Handbills, Pamphlets, Booklets, Posters, Folders, Newsletter etc.
- Audio Visual Advertisements of the project.
- Documentary films on the works of the project.

Training Programme and Workshops

- Organizing training programme and workshop for development of efficiency and better co-ordination of project works.
- Co-ordination with development agencies.
- Co-ordination with local NGOs and district administration for public awareness.
- City-wise workshop for members of ULBs.

GUDC is planning to have a separate fund for IEC (Information, Education and Communication) for CAPP activities.

7. Privatization of facilities / private sector participation

The project envisages implementation of the project as well as handling of entire O & M system by the private sector. The revenue structure for the project, however, will be decided by the nodal agency (GUDC).

Project benefits:

The advantages of decentralized composting are as under:

- Decrease in solid waste management cost by reducing huge volume of solid waste.
- Small scale community based compost plants can save 15 acres of landfill area per year.
- Improvement in overall environment of the neighbourhood by checking illegal disposal of waste on roads, drains or vacant lots as solid waste is directly collected from house holds.
- Returns organic matter to the soil and minimizes the use of chemical fertilizers. The organic manure made from composting acts as a buffer protection against chemical fertilizer, improves soil texture, conserves top soil and natural resources by use of compost.

Estimated Project Cost

The estimated project cost of municipal solid waste management project is INR 3,711.60 million (US $ 82.48 million). The detailed break – up of cost is as follows:

Sr.	Component	Amount (INR million)
1	Landfill sites (total 51) for 5 years	2,060.00
2	Vermicompost plants (total 96)	355.50
3	Microbial compost plants (total 34)	581.90
4	Procurement of equipments (130 ULBs)	588.90
5	WBM Approach road	75.30
6	Information, Education & Communication (IEC) activities	50.00
	Total	**3,711.60**

Financial indicators

It is proposed that the entire project will be financed by the GOI, GOG and GUDC.

Agencies to be contacted

Gujarat Urban Development Company Limited

Industrial Extension Bureau

Mott MacDonald India