

Role Of Informal Solid Waste Management Sector And Possibilities Of Integration; The Case Of Amritsar City, India



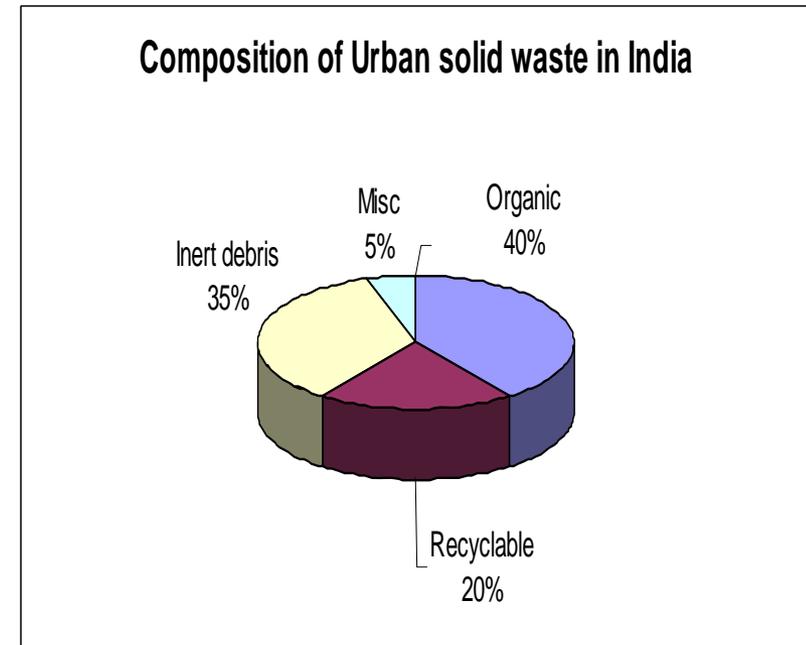
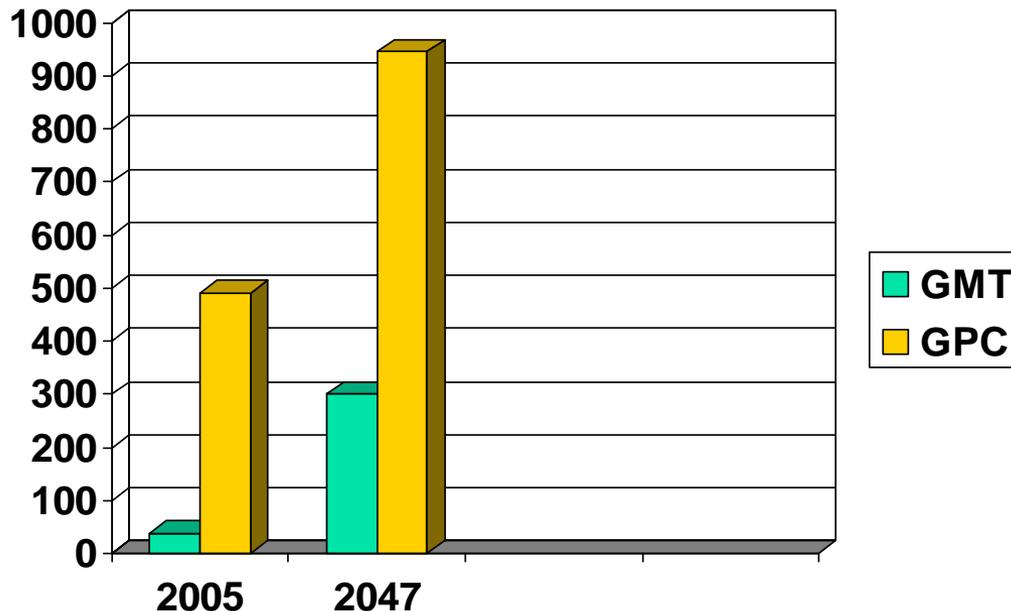
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India's waste management scenerio

Year	2005	2047
Generation	36.5mt	300mt
G/capita	490gms	945gms



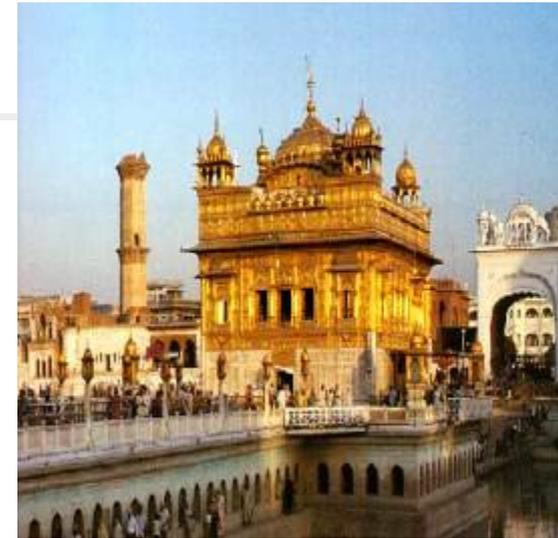
Informal waste collection

City	MT/Day	N.O Ragpickers
Delhi	7000	100000
Mumbai	8000	85000
Bangalore	2000	35000
Pune	1000	6000

- Only 30-60% waste collected by Urban Local Bodies
- Waste Collection by Informal Sector estimated at 15-20%
- 1 million urban poor in informal waste management sector.
- Ragpickers are the bottom rung.
- MSW Rules 2000 & SWM initiatives sideline informal sector.

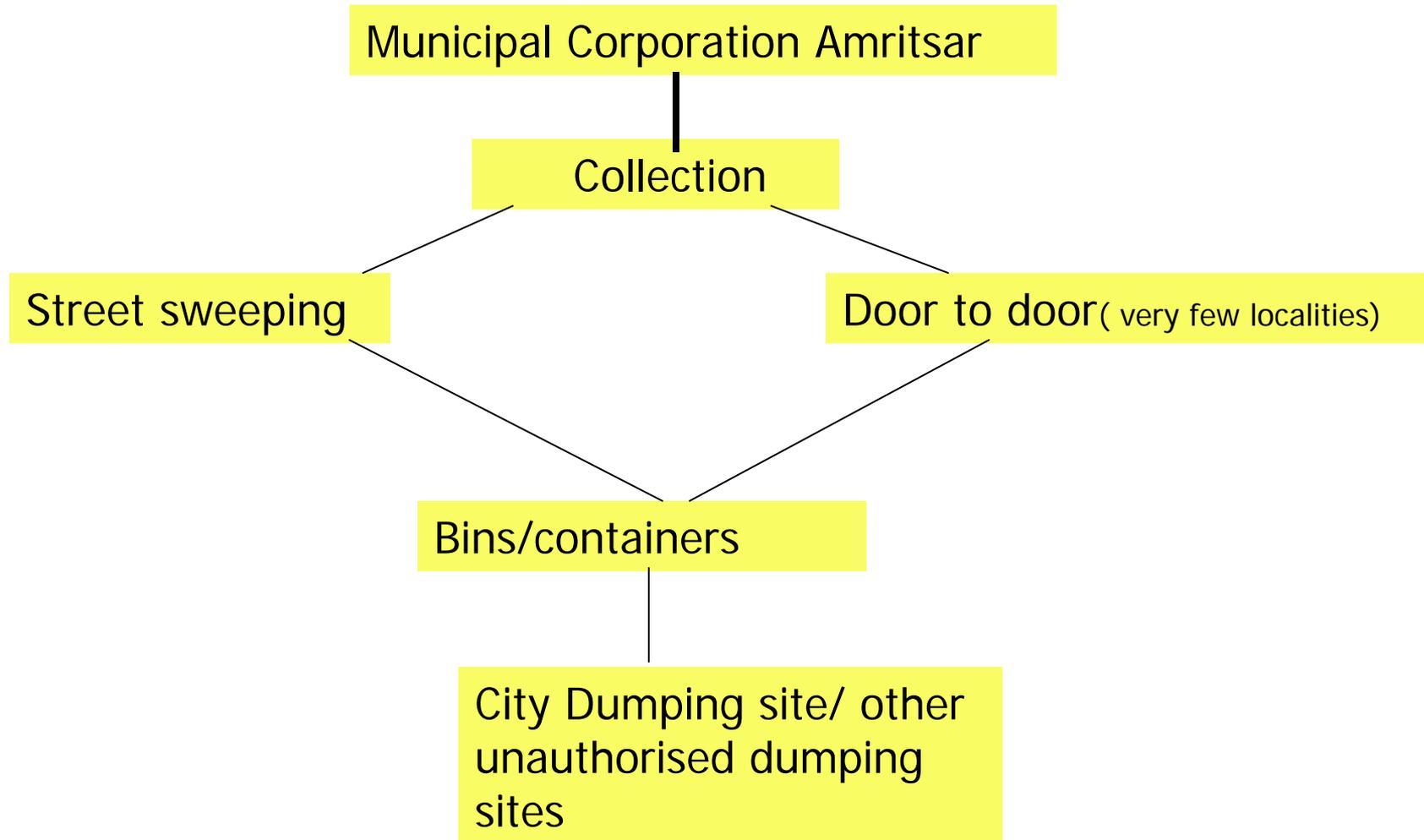
Amritsar City: Quick facts

- Metropolitan City , population 1 million plus.
- Area: 20553 acres.
- Political capital & centre Stage of sikh religion.
- Attracts tourist from all over the globe.



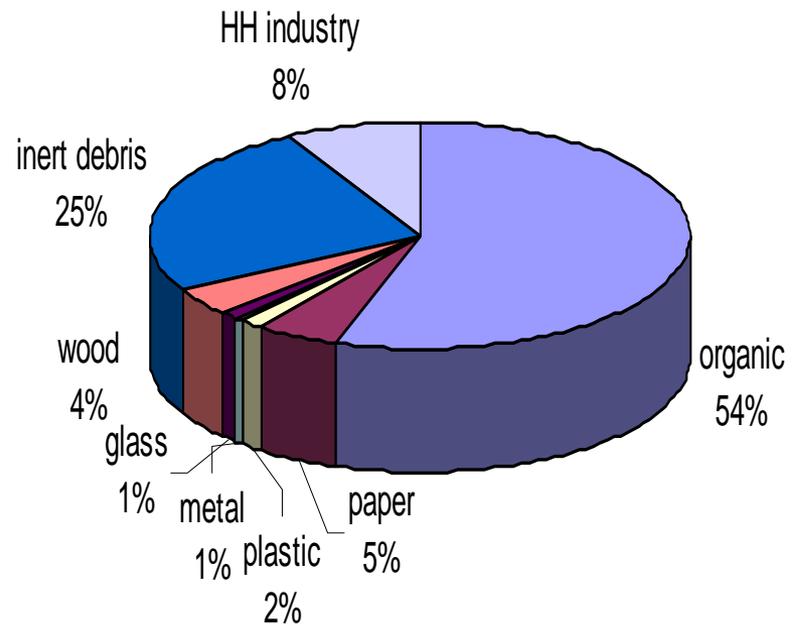
Municipal Solid Waste management : Current Formal Practices

- Amritsar City generates 500 tonnes/day. 50-60% collection
- Divided into 24 sanitary wards.



Waste Composition

- ❑ High generation of organic waste
- ❑ 55% moisture content
- ❑ 1500kcal/kg
- ❑ Recyclable waste: 75%



Formal waste management issues

- No arrangement for primary collection from residential/commercial areas.
- Source segregation not practiced.
- 2sanitary workers/1000 population as against requirement of 5.
- Inadequate and improper bins/containers.
- 20% population mostly in slum locations not covered.
- No formally designated transfer points.
- Inadequate transportation process.
- Current dumping site exhausted
- No adherence to MSW rules 2000
- No effort by MCA towards innovative waste management.
- Recent Move towards Incineration based WTE.

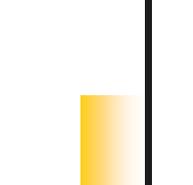
Sights at Municipal Containers and illegal dumps

- ❑ Usually overflowing with garbage
- ❑ Attract stray animals
- ❑ Create unhygienic conditions.



Current dumping ground, 8.1 hectares, adjacent to residential areas.





Informal sector operations

- 3000-3500 ragpickers estimated.
- All recycling takes places in informal sector.
- 98%ragpickers from W.Bengal.
- Items collected based upon recyclable demand.
- Territorial route demarcations.
- Waste collection sources.
- Waste must be sizeable.
- Waste pricing.
- Economic and social vulnerability.

Sorting, storing and disposal of absolute waste takes places within and around living area



Selling recovered waste to the scrap dealers

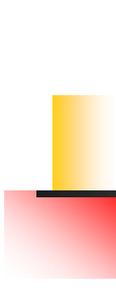


Social-Economic Vulnerability



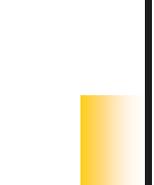
Major Solid Waste management Options for the city

Incineration based WTE	High moisture content in waste. Expensive & not suited.
Bio-Methanation	More capital intensive compared to composting/recycling.
Sanitary Landfill	Initial costs high. But could be suitable with sizeable waste reduction.
Pelletisation	High moisture content renders it less suitable.
Composting	Viable option. High generation of organics.
Recycling	Viable option. 75% waste is recyclable (in some form).



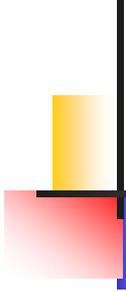
Possibility for Integrated Solid waste management

- Targeting waste reduction and poverty reduction through Integrated Solid waste management.
- Informal waste system be central to any SWM policy.
- MCA act as facilitator to organize waste pickers in micro enterprises into 66 city wards and 24 sanitary divisions.
- Registration of waste pickers (other than children).
- Source segregation to be overseen and made mandatory by MCA Sanitary Inspectors in their divisions.



Possibility for Integrated Solid waste management

- Waste pickers as primary collectors.
- Existing sanitary workers of MCA as secondary collectors
- Designation of waste transfer points and transportation.
- Organic and dry waste segregation.
- Procedure for Organic waste management.
- Procedure for recyclable waste management.
- Dealing with inert debris.
- Proposal for Final disposal of absolute wastes.



Perceived Benefits

- Low cost waste management system.
- Minimize investment on personnel & equipment
- Creation of jobs& poverty reduction.
- Reduce bulk disposal.
- Effective recovery of recyclables.
- Generating income from waste.
- Reduction of risk to Human Health & Environment.
- Economically viable, socially desirable & environmentally conducive.

THANK YOU



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