

## Solid waste management in Kathmandu and Compost Practices

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## Kathmandu at a glance

Country : Nepal  
 Capital : Kathmandu  
 City Area : Appro. 51 sq.km  
 Estimated Population: 725000 (census 2001)  
 Population growth: 6% per annum

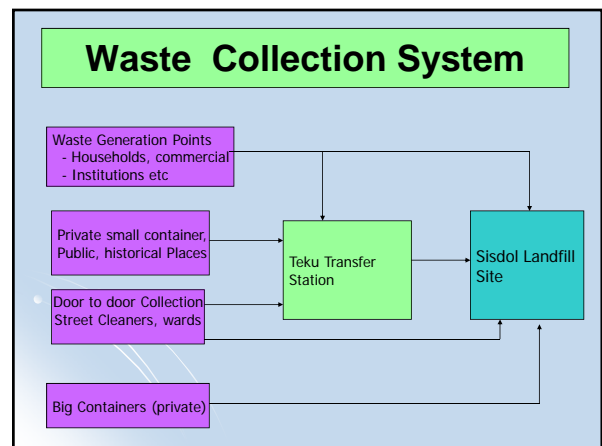
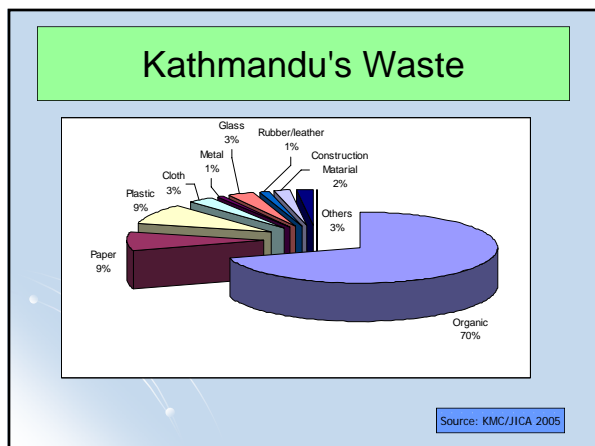
**Kathmandu Metropolitan City**  
[www.kathmandu.gov.np](http://www.kathmandu.gov.np)

## Key Environmental priorities - Kathmandu

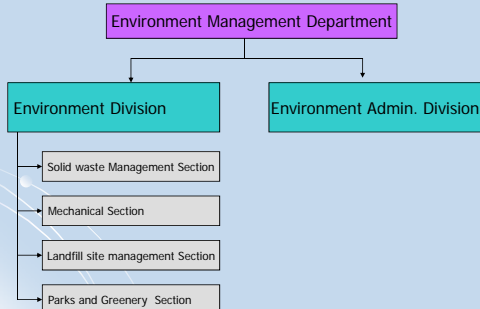
- Waste management
- Air quality and traffic Management
- Settlement Pattern
- Drinking water resources
- Natural Disaster Preparedness

## Waste Collection - Kathmandu

<b>KMC</b>	
• Road Side collection	175 ton/day
• Container collection	21 ton/day
Total = 196 ton/day	
<b>PSP</b>	
• Door to door	110 ton/day
Total (KMC&PSP) = 306 ton/day	
% Collection	91%
Uncollected waste (29 ton/day)	9%



## Organization structure of Environment Management Dept.



## Activities of KMC

- Waste is a raw material usable for economic development.
- 70 % of the waste generated in city are organic
- Composting, Reuse and recycling of waste is environmentally the most sound way of managing waste
- It saves precious landfill space and reduces pollution.
- The collection and use of local scrap materials spurs economic development and job creation.

## Current Status – Major Activities for improving Kathmandu's waste management:

- School Programme
- Community Participation – household composting, community composting, vermi-composting, 3R activities
- Public Awareness Campaign and Training programme
- Public Exhibitions
- Formation of Ward Environment Committees (WECs)
- Formation of Nature Clubs in Schools
- City Volunteers
- Compost-Bin promotion
- Community recycling Centre



## Solid Waste Collecting and Sending

Collecting at Transfer Station



Sending to Landfill Site



## Financial Aspects

Total KMC budget : (Note: 1 US\$ = NRs. 79)  
 NRs. 1,879,310,000 – **US\$ 23,788,734**  
 (2008/2009)

Allocation of budget for Environment Management Department:  
 NRs. 346,341,000 – **US\$ 4,384,063.3**  
 (18% of total KMC 2008/2009 budget)

Community Participation program: composting activities etc  
 NRs. 5,094,000 – **US\$ 64,481.013**  
 (14.7% of 2008/2009 EMD budget)

Expenditure (2007/2008): NRs. 204,782,426.63  
**US\$ 2,592,182.5**

Expenditure (2006/2007): NRs. 196,951,447.80  
**US\$ 2,493,056.2**

## Improvement of transfer Station at Teku ( by direct transportation)



## Mass Education



## Roll Of Truck



Total 21 nos.  
17 for KMC & 4 for LSMC  
15 cubic meter roll off containers (6 ton)

Modern waste transfer vehicles (provided by Government of Japan)

## 1. Sisdol Semi-aerobic Sanitary Landfill Pilot Project

Valley 1

Valley 2



## Heavy Equipments in Sisdol LF



## Clean up program – school children, local people and municipality staffs



## Environmental Exhibition – Earth day 2005





## Some Features of Community Recycling Centre



- Location: core area of Kathmandu city
- Make recycling convenient for the public
- Information centre on SWM and recycling at the community level
- Selling of Recycled products
- Buying of inorganic recyclable waste & HH compost from local
- Local support

## Community Recycling Centres

- Promote Recycling by making it easy & accessible to the public
- Buy recyclable materials
- Sell Recycled products
- Provide information on SWM & Recycling



## Composting Activities - KMC



Compost bin

### Household Compost Bin

- Source: Kitchen waste
- Installation site: Rooftop or garden
- Selling Price: US \$ 14/bin
- Capacity: 100 liters
- Selling Price of compost : Rs. 10 /kg
- Production: 5 kg/ month
- Used in : Flowers, gardens
- Duration: two - three months
- 4000 bins were already distributed since 2002

## Community Composting



### Community Composting

- Source: door to door collection (mixed waste – site separation)
- Starting date: 2003
- Capacity: 3000 liters vessel
- Implementing households: 300
- Waste input: 300 kg/ day
- Production of compost: 1000 kg/ month
- Duration: two to three months
- Selling price of compost: Rs.10/kg
- Management by private sector/KMC

## Vermi - Composting Activities – KMC



- Source: Veg. Market
- Starting date: 5<sup>th</sup> June 2005
- Location : Teku transfer station
- Selling Price of compost: Rs. 12/kg
- Full phase capacity: 500 kg/ day
- Cost of worm: Re 1/ piece
- Production: 15 kg/day (demo. site)
- Production cost: Rs. 8/kg
- Affordable price Rs. 7 for household and Rs. 3 for farmers.
- Worm to waste ratio 2:1 and waste to compost ratio 5:1
- Used in : Flowers, gardens
- Duration: two - three months



### Private sector– composting

- Source: door to door/ household
- Starting date: 2004 Area: Hadigain
- Selling price of compost: NRs. 10/kg
- Input capacity: 300kg/ day
- Production capacity: 50 kg/ day
- Duration: two to three months
- Used in : flowers, gardens, parks
- Managed by private sector- NEPCAMAC



## Current Problems- waste management

- Attitude way we see waste - *throw & forget*
- Inefficient collection system
- Everyday sweeping and collection system
- Less practices on sorting and managing of recyclable and reusable wastes
- Need of large scale compost plant
- Migration of qualified personnels
- Lack of financial resources
- Old collection vehicles
- Public and political interferences – high demand
- Minimum participation of public and community
- Only one Teku Transfer Station/landfill site in operation – inefficient
- Lack of rules and regulation



Thank you