



# The State of Waste Management, National Waste Management Strategy, and the Role of Education for Promoting 4R

National Environment Commission Secretariat



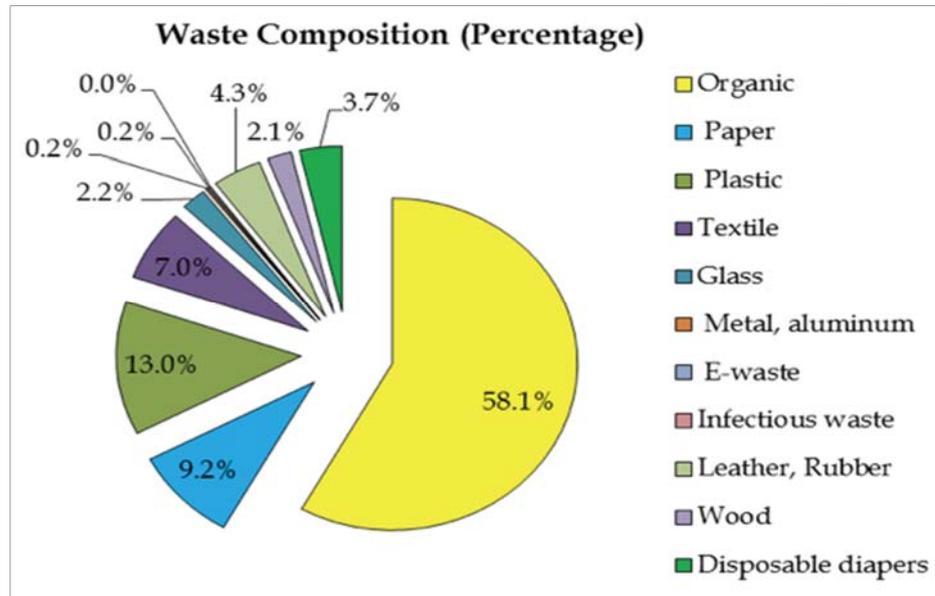
## Outline

- Current Waste Status
- State of Waste Management
- Policies and Legislations
- National Waste Management Strategy, 2019
- The Role of Education for Promoting 4R



# Current Waste Status

➤ average waste generated per day – 0.35 kg/capita/day



Average composition of MSW for Thimphu (2018)

NEC, 2018



# Current Waste Status(contd.)

- Municipal wastes generated in the Country – 861.4 Mt/week
- Medical Wastes in the Country – 428.06 Mt/year
- Industrial waste in the Country – 520 Mt/year
- E-waste generated in the Country – 912 items per year

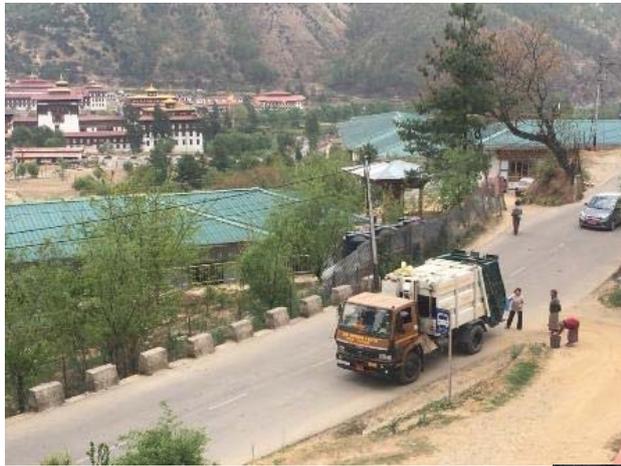
NEC, 2018



# Current Situation of Waste Management

## 1. *Municipal Solid Waste*

- Thromdes and urban areas are collected by local municipal authorities
- Overall guidance and technical support are provided by MoWHS.
- Waste in Rural areas are under the purview of Dzongkhag Administrations and Ministry of Health
- Waste are collected by refuse collectors and dumped in landfills or dumpsites
- Waste in rural areas are transferred to urban landfills or burnt
- Minimal waste segregation at source





## Current Situation of Waste Management (contd)

### *Waste Collection by Private Entities*

Firm Name	Waste Type	MT/day or Week	Remarks
Greener Way	Dry	24-25 MT/day	Covers Central and South Zone of Thimphu Thromde
	Wet	12-15 MT/day	
	Recyclable		Only PET bottle, card boxes, tins/Al, HDPE/LDPE are separated at the transfer station and glasses are not recovered.
Clean City	Total	24 TL/Week, 5trucks	Covers the Northern Zone of Thimphu



## Current Situation of Waste Management (contd)

### *Waste Drop Off Center*



There are five different disposal bins, one each for pet bottles, plastics, papers, metals, and food and other wastes. Residents have to segregate wastes before dumping.



# Current Situation of Waste Management (contd)

## Transfer Station



# Current Situation of Waste Management (contd)

## 2. Medical Waste

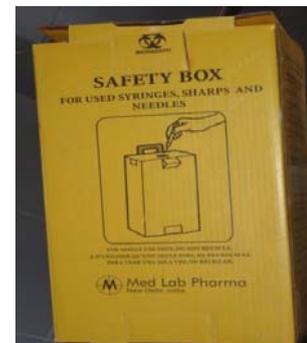
➤ Segregation of waste using color coded bins

**Red for Infectious and pathological wastes**

**Green for general waste like papers and plastics**

**Blue for food waste like leftover food, fruits and vegetable pills etc**

**Yellow/white for sharps: needle, blades etc**





- **Chemotherapy waste-** *Red bucket labeled 'Biohazard' (only JDWNRH)*
- **Pharmaceutical waste-** *cartoon boxes*
- **Chemicals-** *bottles/containers*



## Current Situation of Waste Management (contd)

### *The Waste Autoclave*



The old Vertical waste autoclave machine

The new Horizontal waste autoclave machine



## Current Situation of Waste Management (contd)

### *Deep Burial Pit*



- Deep burial pit in a nationally standardize design was constructed
- Has two chambers (one is being used and other one is kept lock)
- Only sharps and pathological wastes are disposed



## Current Situation of Waste Management (contd)

### *Waste Storage & Treatment House*



- Pilot Project on Model Health Care Waste Management
- Concurrently, will serve as a training center for support staff on waste management
- Completed and formally handed over to the hospital administration on 21st of June 2016
- Its of first kind in the country and the same design will be replicated to other four hospitals like Gelephu, Samtse, Wangdue and Damphu



## Current Situation of Waste Management (contd)

### 3. Industrial Waste

- Hazardous waste from the industries are disposed into the Pasakha Industrial Estate's landfill under the Department of Industry , Ministry of Economic Affairs and Non-Hazardous waste are disposed at Association of Bhutan Industries landfill.
- A tipping fee for waste collection and disposal of Nu.1240 per ton is collected from the Industries.
- A sum of Nu. 2.5 million till date has been collected as waste tipping fee from DoI, which is directly deposited to the government revenue account at Ministry of Finance (MoF)



## Current Situation of Waste Management (contd)

### 4. E-Waste

- Department of Information Technology and Telecom under MoIC is the implementing agency for “e-waste management
- DITT collects e-waste from govt. offices and hands over to the Department of National Properties (DNP)
- DNP organizes auctions and maintains records of the e-waste surrendered by government agencies





# Waste Management Policies and Legislations

- Environment Assessment Act of Bhutan, 2000 (Regulation 2002 & 2016)
- National Environment Protection Act of Bhutan, 2007
- Waste Prevention and Management Act of Bhutan, 2009 (Regulation 2012 & 2016)
- National Integrated Solid Waste Management Strategy, 2014
- National Waste Management Strategy, 2019



# National Waste Management Strategy 2019

## Goal

- To continuously move/promote towards “Zero Waste Bhutan” in partnership with the public, industry, civil society organizations, and government authorities at local and sectoral levels, municipalities, and with potential donor agencies





# National Waste Management Strategy 2019(contd.)



## Objectives

- Effective management of all forms/streams of waste following the integrated concept of Circular Economy and 4R Principles (Reduce, Reuse, Recycle & Responsibility)
- Inculcate deeper sense of environmental responsibility – consuming less, choosing more natural & adopting less wasteful options
- Improve waste management services & facilities
- Ensure proper treatment & disposal of waste
- Effective public-private participation



# National Waste Management Strategy 2019(contd.)



## Strategic Interventions towards effective waste management





## Role of Education in Promoting 4R

### 5. *Waste Banks*

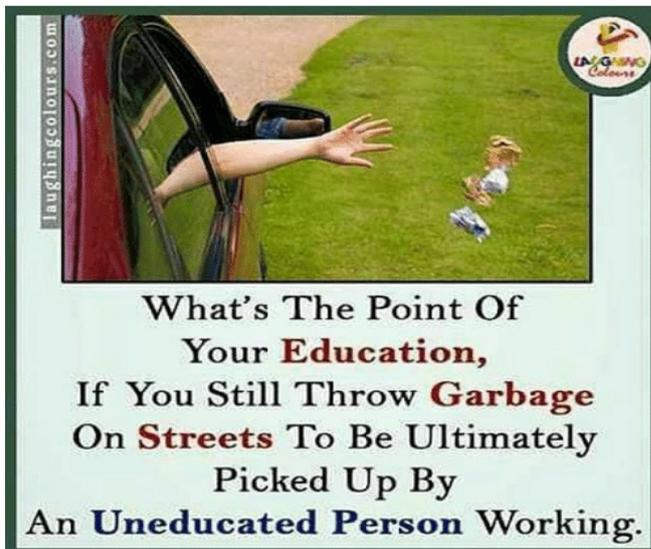
- Set up waste separation and waste banks (schools & communities)
- Recycling programs for the waste banks

### 6. *Behavioral Change*

- Education programs for children
- Continue waste management education through integration in the curriculum from pre-primary to high school



## Role of Education in Promoting 4R (contd.)



*Question:*

But does our  
education teach  
us about waste  
management?



**Thank You!**

National Environment Commission Secretariat