

Solid Waste Management in Laos



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Presentation outlines

1. Overview of solid waste management in Lao PDR
2. Challenges of the solid waste sector
3. 3 R and Waste Management Policies
4. Next step for urban solid waste management

1. **Solid waste management in Lao PDR**

❖ **Institutional and legal framework for SWM sector :**

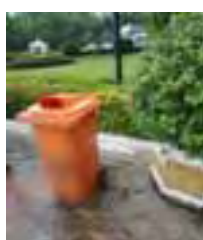
- Ministry of Public Works and Transport (MPWT)
- Water Resources and Environment Administration (WREA) of the Prime Ministers Office (PMO)
- Urban Development and Administrative Authority
- Village organization
- Private sector

❖ **Law and regulations**

- Industrial waste discharge (1994)
 - Environmental Protection Law (1999)
 - Law on Hygiene Disease Prevention and Health Promotion (2001)
 - Regulation on hygiene of public places (2004)
- **Under consideration**
- MPWT Ministerial decision on Management of solid waste in towns/municipalities, drafted by DHUP
 - Guideline on solid waste management , drafted by VUDAA

❖ Waste Collection and disposal

- Vientiane Capital: 48%
- 4 Secondary towns: 47.5%
- 17 Small provincial towns: 47%
- Of 141 District towns only 14 controlled landfill sites



❖ Characteristics of Vientiane wastes :

a. Generation rate & density

Waste Types	Generation rate	Density
Residential	0.653 kg/c/d	168 kg/m ³
Shop	8.958kg/shop	170 kg/m ³
Market	1.301kg/stall	227 kg/m ³
Office	0.031kg/empl.	77 kg/m ³
Hospital	0.957kg/bed	139 kg/m ³
Sweeping	58kg/km	56 kg/m ³
Hotel(30 beds)	24kg/hotel	175 kg/m ³
School(250s)	1.5kg/school	80 kg/m ³

b. Physical composition

Composit.	Resident	Shop	Market	Office	Hospital	Sweep
Garbage	16.9 %	43.3	61.7	5.9	47.1	0.0
Paper	2.8	20.0	7.3	32.2	13.3	3.7
Textile	1.6	0.3	0.5	0.0	6.2	0.0
Plastic	6.1	7.9	4.3	9.4	11.7	8.3
Wood	38.2	8.8	13.2	36.0	8.3	55.9
Leather	1.1	0.3	0.3	1.2	2.1	0.0
Metal	3.7	5.9	1.9	2.6	1.7	0.8
Glass	9.3	6.7	1.9	5.0	4.3	0.0
Other	20.3	7.2	9.1	7.9	5.3	31.5

c. Chemical composition

Types	Comb.	Moist.	Ash	LCV	C/N
Resident	42.4%	33.8%	23.8%	1707.3	22.7
Shop	37.2	42.2	20.5	1422.8	26.7
Market	36.0	50.5	13.5	1318.0	20.9
Office	53.9	30.3	15.8	2237.5	34.7
Hospital	42.0	44.0	14.0	1623.0	25.7
Sweep	52.5	32.0	15.6	2168.0	23.1

❖ secondary towns wastes :

(b) Composition

(a) Generation & density

Town's name	Generation rate (kg/c/d)	Density (kg/m ³)
Luangphabang	0.639	175
Thakhek	0.378	226
Kaysone	0.372	234
Pakse	0.276	200

Compos.	Luangp.	Thakhek	Kaysone	Pakse
Vegetable	32.9	21.2	41.9	24.3
Paper	9.6	5.2	4.2	6.0
Textiles	4.3	1.3	1.3	1.1
Plastics	14.9	13.6	13.1	10.9
Wood	8.4	26.0	10.4	31.3
Leather	1.5	1.7	0.7	4.0
Metal	1.2	3.5	2.7	2.6
Glass	1.9	11.3	6.8	2.7
Bone	1.6	2.8	2.4	0.7
Other	23.7	13.4	16.5	20.0

(c) Chemical composition

Town's name	Combust.	Moisture	Ash	LCV	C/N
Luangpabang	41.1	41.8	17.1	1 598.7	24.8
Thakhek	42.1	33.9	24.0	1 691.1	24.2
Kaysone	36.5	42.7	20.8	1 368.3	23.7
Pakse	44.7	38.2	17.1	1 782.3	23.9

3. Challenges of the solid waste sector

- Inadequate legal framework and unclear institutional responsibilities.
- Institutions envisaged to be established in accordance with law, are sometimes not established, nor given the proper mandate in accordance with the law (if established), neither given a budget to enable them to function in accordance to the law. New legislation is often drafted without proper reference to other legislation.

- A considerable amount of waste is illegally dumped into the drainage channels and rivers;
- Collection vehicle fleet is old and subject to frequent break down;
- The institutional and administration structure is not well established
- Public education system and participation programs are not established.



3 R and Waste Management Policies

- Promoting awareness in waste reduction among school children, urban community, especially in replacing market plastic bags with traditional baskets from bamboo, rattan or locally produced fabrics
- Public campaign on reusing of plastic bags, plastic and cupboard containers
- Recycling steel, glass and plastic bottles, paper and cupboard

❖ Policy on Solid Waste Management



- Waste reduction at source and recycling;
- Public campaign and awareness raising;
- Strengthening the legal framework;
- Intervention by local (district) national government;
- Private sector participation

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4. Next step for urban solid waste management

- Short-term targets (2008-2010)
 - Institutional and legal reforms
 - Sector database
 - Decision making models
 - Technical and Management Guidelines for construction and O&M
- Medium-term targets (2011-2015)
 - Capacity building at central, provincial and local levels
 - Review potential and limitations of PSP (e.g. service contracts, management contracts, concessions)
 - Financing mechanisms
- Long-term targets (2016-2020)
 - Increased access among the urban poor
 - Improved standards in selected urban areas, explore opportunities for communal and centralised treatment

