

Country Profile Thailand

November 2018

MANAGING MUNICIPAL SOLID WASTE AND PACKAGING WASTE

1) Municipal solid waste (MSW) (2017)¹

Background information	
Population	67 million
- Urban	50.4%
MSW generation	27.37 million t
Per capita MSW generation	1.13 kg/day
- Urban	1.35 kg/day (3.90 kg/day in Pattaya City)
- Rural (islands)	0.91 kg/day
MSW generation growth	0.77% from 2015
E-Waste	0.419 million t ³

MSW composition	
Organic	64%
Plastic	18%
Paper and paper products	8%
Textile	3%
Glass	2%
Metal	1%
Rubber	1%
Others	1%

MSW collection & treatment	
MSW collection coverage	58% (on average)
- Urban areas	Up to 99% (Bangkok)
- Rural areas	No data
Diversion from disposal	31% (8.51 million t out of 27.37 million t)
Disposal	69.55%
- Landfilled	42.71% (11.69 million t)
- Open dumping	26.20% (7.17 million t) (2017)

Number of treatment & disposal sites	
Number of treatment facilities	103
- Incinerators	45
- Compost sites	35
- Mechanical biological treatment	23
No. of final disposal sites	2,811
- Sanitary/ engineered landfills	109
- Controlled dumpsites	465
- Open dumpsites	2,237

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Manual sorting of plastic waste in Phitsanulok Municipality, Thailand

Policy, planning & legal framework

- » Waste management is part of the **20-Year Pollution Management Strategy and Pollution Management Plan 2017-2012**, approved by Parliament on the 6th of July 2018
- » The **Environment and Conservation of National Environmental Quality Act B.E. 2535 (1992 AD)** is the fundamental environmental law governing air, water and waste management
- » The **Act on the Maintenance of the Cleanliness and Orderliness of the Country Public Sanitary and Order Act B.E. 2535 (1992) & B.E. 2560 (updated in 2017) Ch. III/1**
- » **Public Health Act, B.E. 2535, Chapter III**
- » The **National Economic and Social Development Plan (2017–2021)** aims to utilize more than 75% of MSW by the end of 2021
- » The **10-year (2012-2021) Alternative Energy Development Plan** promotes energy generation from waste
- » The **National Master Plan on Waste Management 2016-2021⁴**, approved by the National Council for Peace and Order on the 26th of August 2014, promotes 3R
- » **Thailand Zero Waste 2016-2017 Action Plan** includes a target to reduce the amount of MSW disposed by 5% compared to a 2016 baseline
- » **Law for Promotion of Source Segregation of household waste into general waste, recyclable waste and household hazardous waste** has been introduced; effective by 2020
- » **(Draft) Ministerial Regulation on Service Fees for Solid Waste Management** (prepared by the Ministry of Public Health, and approved by the Cabinet on April 20, 2015).

Institutional framework

- » The **Ministry of Natural Resources and Environment (MONRE)** with its **Office of Environmental Policy and Planning (ONEP)**, **Pollution Control Department (PCD)**, and the **Department of Environmental Quality Promotion (DEQP)** are responsible for policy, plans, regulation, guidance, technical recommendations, programs and standards
- » The **Department of Local Administration (DLA) of the Ministry of Interior** provides overall guidance of local authorities on waste handling as well as makes approval of the budget
- » Other line agencies include; Ministry of Interior, Ministry of Public Health, Ministry of Industry
- » **Municipalities, Sub-district Administration Organizations (SAO)**, Provincial Administrative Organization (PAO), and Special Administrative Areas (Bangkok and Pattaya City) are responsible for the collection and management of MSW within their governed areas

Financial & cost recovery arrangements

- » The per capita expenditure for managing MSW in the year 2014-2015 was 1-2 US\$⁵.
- » In 2011, managing 15 million t of garbage created a cost of 12,000 million baht⁶ (370 million US\$)
- » Act on the Maintenance of the Cleanliness and orderliness of the Country (2017) proposed 150 baht/month/household (4.5 US\$) as waste collection service fee
- » Financing waste management is still inadequate. Revenue from waste collection fee does not cover full expenses needed for sustainable waste management
- » Small size municipalities often lack funds and capacities to manage MSW generated in its jurisdiction

Private sector involvement

- » The overall engagement of the private sector in the waste sector is encouraging, yet less than adequate
- » The formal private sector is involved in recycling and final disposal of waste, while the informal sector is involved in collection, sorting and transportation of waste
- » The PPP Act (introduced in 1992, and revised in 2013, under second review) guides PPP in the waste sector
- » The National Waste Management Master plan 2016-2021 encourages private investors in waste to energy sector



Compaction of sorted plastic waste in Fang Municipality, Thailand

2) Packaging waste⁷

Packaging production

Packaging industry value	424.2 billion baht (2014) ⁸ (about 13.05 billion US\$)
Packaging industry growth rate (average)	Compound annual growth rate (CAGR) of 8.21% (2007-2011) ⁹
Composition of packaging industry (by value in 2014)	Paper & board packaging (largest), Plastic packaging (2 nd largest), Metal packaging (3 rd largest) ¹⁰
Packaging material production (2016)	Plastic: 1.714 million t Paper: 2.130 million t Glass: 0.826 million t Metal: 0.418 million t ¹¹
Flexible plastic packaging share	Thailand occupies the 2 nd place in ASEAN for the flexible packaging market ¹²

Packaging consumption

Sectoral consumption	41% food industry, 30% beverage industry, 18% cigarette, 4% cosmetic & health, 7% others
Usage of packaging (by material type, 2015)	31.2% paper and board, 21.8% flexible packaging, 21.8% rigid plastic, 21.4% metal packaging, 7.2% glass, 4.6% others ¹³

Plastic industry and plastic products

No. of plastic industries	5,778 plastic factories were in operation in 2000 ¹⁴
Plastic industry type	1,170 companies with 138,299 jobs (42% film processing, 25% injection molding, 19% blow molding, 6% thermosetting 8% filament)
Plastic raw material used in packaging sector (2013)	48% packaging, 15% electrical and electronic appliances, 14% construction sector, 8% auto parts, 4% houseware, 2% recreation, 2% agriculture, 1% medical devices, 1% footwear, 5% others ¹⁵

Packaging waste generation

- » **Total packaging waste generation:** 21% of total MSW in 2001, 31% of total MSW in 2004¹⁶
- » **Annual plastic use:** 40 kg per capita (highest in Southeast Asia)¹⁷
- » **Plastic bag usage:** 8 plastic bags per day/capita¹⁸
- » **Plastic waste generated:** 4.7 million t
- » **Plastic waste management:** Out of total MSW collected, i.e. approximately 15 million t, plastic waste accounts for 2 million, out of which only 0.5 million t are recovered with all possible methods, while 1.5 million t (e.g. single-use plastic bags) accumulate in dumping sites¹⁹
- » **Marine plastic leakage:** world's sixth biggest contributor of marine plastic litter with 0.15–0.41 million t/year of plastic leaked into the ocean²⁰; annually about 51,000 t of uncollected plastic waste finds its way to the sea from 23 coastal provinces²¹
- » **Composition of coastal litter (2017):** 18% plastic bags, 17% drinking water bottles (plastic), 11% glass bottles, 9% Styrofoam (food wares), 5% straws, 4% ropes, 4% metal cans, 3% fishing net, 3% plastic bottle caps, 3% plastic carry/grocery bags, 3% cigarette butts, 2% disposable plastic plates/ bowls, 18% others²²

Policies and initiatives

- » Environmental quality management planning (2017-2021) aims at controlling plastic consumption through appropriate tax mechanism, promoting the use of bioplastic and other alternatives to plastics
- » Thailand has drafted Plastic Debris Management Plan (2017-2021) which targets to increase plastic waste recycling to at least 60%
- » National Roadmap for the development of Bio-plastic industry 2008
- » Cooperation of PCD with Plastic Institute, FTI, Thai Plastic Industry Association and Chulalongkorn University, efforts are made to improve the data base on the flow of plastic material in Thailand
- » Campaigns to axe plastic cap seals of drinking water bottles (effective from 1 April 2018)
- » Prohibition of plastic bags and Styrofoam containers in national parks (announced by the Department of National Parks, Wildlife and Plant Conservation, Thailand on 8 June 2018)
- » The Department of Medical Services of the Ministry of Public Health announced to completely phasing out the usage of plastic bags in its 30 hospitals from 1 October 2018, aiming to reduce the usage of 9 million bags per year
- » Ministry of Natural Resources and Environment made a Memorandum of Understanding with 16 business organizations to not distribute plastic bags to their customers on the 15th and 30th of each month
- » The Sustainable University Network (SUN) with 27 universities nationwide has organized a campaign to reduce single-use plastic on all campuses by 80-90 % over the year 2018
- » A “Public-Private Partnership for Sustainable Plastic and Waste Management” initiative, launched in June 2018 and led by the Plastic Industry Club, aims to halve the amount of ocean waste Thailand produces by 2027²³

Stakeholders in the packaging value chain

- » **Design & production:** Thai Packaging Association, Plastic Industry Club, Plastic Institute of Thailand, Packaging Intelligence Unit, Thai Bioplastics Industry Association
- » **Retail & consumption:** Food and beverage companies, wholesalers, retailers, malls, markets, households
- » **Waste collection:** Municipalities, sub-district & provincial administrations, waste management operators, informal sector
- » **Sorting & recycling:** private sector recycling factories, associations, Thailand Institute of Packaging and Recycling Management (TIPMSE)
- » **Government:** Ministry of Natural Resources and Environment (MONRE), Pollution Control Department (PCD), Department of Marine and Coastal Resources

Options for further action

- » Practice reuse and waste segregation and extend recycling facilities throughout the country
- » Encourage innovation and technology development on packaging design
- » Promote sustainable consumption patterns and the reduction of single-use packaging through education, public awareness, economic incentives and green procurement
- » Adopt Extended Producer Responsibility mechanisms to encourage the consumer goods industry to take responsibility for financing and organising post-consumer packaging waste management
- » Establish separate packaging collection and take-back systems to meet recycling and recovery targets

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- (ii) Country assessment report, presentation, country 3R Profile submitted to the 8th regional 3R Forum, 9-12 April, 2018, Indore, India, [http://www.uncrd.or.jp/content/documents/5695\[Nov%202017\]%20Thailand.pdf](http://www.uncrd.or.jp/content/documents/5695[Nov%202017]%20Thailand.pdf)
- 2 United Nations University (UNU) South East Asia E-Waste Monitor. http://collections.unu.edu/eserv/UNU:6348/Regional_E-waste_Monitor_Easr_Southeast_Asia_low.pdf
- 3 Recyclable waste such as glass, paper, plastic, iron and aluminium are often sold at junk shops and sent back to a manufacturing process or reused as material.
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Registered offices
Bonn and Eschborn

Friedrich-Ebert-Allee 36 + 40
53113 Bonn, Germany
T 49 228 4460-0
F +49 228 4460 – 1766

E solid-waste-management@giz.de
I www.giz.de

Programme:
Concepts for Sustainable Solid Waste Management and Circular Economy

Responsible/contact:
Ellen Günsilius
E Ellen.Gunsilius@giz.de

Authors:
Regional Resource Center for Asia and the Pacific at the Asian
Institute of Technology (AIT RRC.AP): Guilberto Borongan,
Prakriti Kashyap

Editorial team:
GIZ: Pascal Renaud, Ellen Günsilius, Johannes Paul, Daniel
Hinchliffe, Werner Kossmann

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