



Country Profile Indonesia

October 2018

MANAGING MUNICIPAL SOLID WASTE AND PACKAGING WASTE

1) Municipal solid waste (MSW)¹

Background information	
Population	267 million (2018) ²
- Urban	55.3% (2018)
MSW generation	65.03 million t/year (2015)
MSW per capita	0.7 kg/day (2015)
-Urban	0.7-0.8 kg/day (1.31 kg/day in Jakarta)
-Rural (islands)	0.45 kg/day (2008)
MSW generation growth	2-4% annually
E-Waste	0.745 million t ³

MSW composition (2013)	
Organic	60%
Plastic	14%
Paper and paper products	9%
Textile	3.5%
Glass	1.7%
Metal	4.3%
Rubber	5.5%
Others	2.4%

MSW collection & treatment	
MSW collection coverage	45-50% (2015) (40% in 2001)
- Urban areas	56%
- Rural areas	5%
Diversion from disposal	14%
- Recycled (& reuse)	4.6%
- Composted	7.0%
-WtE/ biogas	2.4%
Disposal	86%
- Landfilled	66.4%
- Unmanaged	19.6%

Number of treatment & disposal sites	
No. of temporary solid waste storage & recycling points (waste banks)	5,244 (treating 2.4% of the total waste)
- Incinerators	No data
- Compost sites	242
- Mechanical biological treatment	No data
No. of final disposal sites	521
- No. of sanitary/engineered landfills	24
- No. of controlled dumpsites	52
- No. of open dumpsites	No data

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Policy, planning & legal framework

- » Indonesia has adopted a legal framework through the **Solid Waste Management Act (No. 18/2008)**, which sets an ambitious goal for improving overall waste collection and management.
- » **PP 81/2012 The Household Solid Waste & Household-like Solid Waste Management** provides the policy directives to implement the Waste Management Act.
- » Presidential Regulation No. 97/2017 **Solid Waste Management National Policy and Strategy (2017-2025)** targets a 30% waste reduction and 70% solid waste handling.
- » Solid waste management is included as the third most important sector in Indonesia's **Nationally Determined Contribution (NDC)**
- » Other decrees, programmes, policies and strategies on MSW:
 - Ministerial Decree No. 13/2012 3R and Waste Bank
 - Ministerial Decree No 53/2016 ADIPURA⁴
 - Clean Indonesia Programme Year 2020
 - The National Medium Term Development Plan's "100-0-100" target of eliminating all slums and providing universal access to water and sanitation, including solid waste, by 2019
 - Presidential Regulation No. 18/2016 about Waste-based Power Plant Acceleration in 7 cities (DKI Jakarta, Surabaya, Bandung, Tangerang, Makassar, Semarang, and Solo)⁵
- » Indonesia has introduced **Extended Producer Responsibility (EPR)** in the waste management sector, stipulated in Act 18/2008 and PP 81/2012.

Institutional framework

- » At **national level**, the following Ministries are relevant concerning waste management:
 - **Ministry of Environment and Forestry** has the leading responsibility for developing policies, formulating regulations and coordinating efforts in pollution control (waste collection and recycling)
 - **Ministry of Public Works and Housing** provides technical advice, promotes pilot projects, constructs and supervises large-scale off-site waste management facilities (such as landfills)
 - **Ministry of Home Affairs** works towards strengthening and building capacities of municipalities in implementing MSW management

- » At **local level**, as mandated by the Waste Management Act, city and district governments are ultimately responsible for solid waste management:
 - The **Municipal Planning Agency and Cleansing Services Unit** are the main local government agencies responsible for planning and implementing solid waste management
 - The **City Environmental Agency** is responsible for monitoring of MSW and coordinating the 3R program with local communities, NGOs & the private sector
 - MSW management is typically done by the **City Cleansing Department** (Seksi Kebersihan) of each district. In some cities, the agency has become a local company (Perusahaan Daerah).

Financial & cost recovery arrangements

- » Less than 2% of the **provincial or district budget** is allocated for MSW management. Most of this budget is used for maintaining parks, gardens and cemeteries, with little budget spent on MSW management.
- » **Budget allocated** for waste management ranges between 2-5 US\$/capita/year (10-12 US\$/capita/year in Jakarta)
- » **Households pay** about 2.4 US\$/month as a waste collection service fee to a neighbourhood association.
- » Development agencies such as World Bank, ADB, AusAid, KfW, GIZ, JICA support the Indonesian government in the waste sector.

Private sector involvement

- » The Presidential Decree No. 38/2015 on **Cooperation Between Government and Business Entity in Procurement of Infrastructure** guides the Public Private Participation (PPP) in Indonesia
- » Government of Indonesia has established various organizations such as Indonesia Infrastructure Guarantee Fund (IIGF), Sarana Multi Infrastruktur (PT SMI), and Indonesia Infrastructure Finance (PT IIF) to provide guarantees and financing for PPP projects
- » Government of Indonesia has in recent years enacted key policies such as the waste management law and energy policy, which further drive the private sector participation in the waste sector



Informal recycling in Sidoarjo, Indonesia

2) Packaging waste⁶

Packaging production	
Packaging industry value	70 trillion rupiah (2014) (4.7 billion US\$)
Packaging industry growth rate (average)	10% (over the past decade) and expected 6-10% (2015-2018)
Composition of packaging industry (by type)	60% plastic packaging industry (flexible and rigid); 25% paper and board, 15% others
Flexible plastic packaging share	45% of all packaging types; 42,538.6 million units in 2016. Largest market in ASEAN.
Packaging consumption	
Market	90% domestic, 10% export ⁷
Sectoral consumption	70% food and beverage industry, pharmaceuticals are 2nd largest consumer
Usage of packaging (by material type)	45% flexible packaging, 28% paper and board, 14% rigid plastic, 5% metal cans, 5% woven bags, 3% glass ⁸
Plastic industry and plastic products	
No. of plastic companies	925 (2017)
Plastic (products) raw material produced	5.635 million t (2016)
Plastic raw material used in packaging sector	2.254 million t (40% of total plastic production) ⁹

Packaging waste generation

- » **Annual plastic use:** 17 kg per capita¹⁰
- » **Plastic bag usage:** 40 plastic bags per capita/year¹¹. Approx. 9.8 billion plastic bags (in 90,000 modern retail outlets) in 2016, of which 95% become waste¹²
- » **Volume of plastic waste generated:** 3.2 million t (2014.)¹³
- » **Plastic waste management:** 10-15% is recycled; 60-70% is put on final disposal sites, 15-30% leaks into rivers, lakes and the sea¹⁴
- » **Marine plastic leakage:** Worldwide 2nd largest contributor with 0.48-1.29 million t/ year¹⁵.
 - E.g. Sidoarjo Regency: marine plastic litter generation of about 7,616 t, equal to 3.17 kg/capita (2017)¹⁶
 - **Plastic waste in waterways:** In Jakarta, out of 165 t waste extracted from waterways, 41 t (25%) were plastics¹⁷
 - **Composition of waste disposed in waterways:** 16% plastic bags, 5% plastic packaging, 1% plastic bottles, 9% other plastics, 4% glass & metal, 21% diapers, 44% organic waste¹⁸

Policies and initiatives

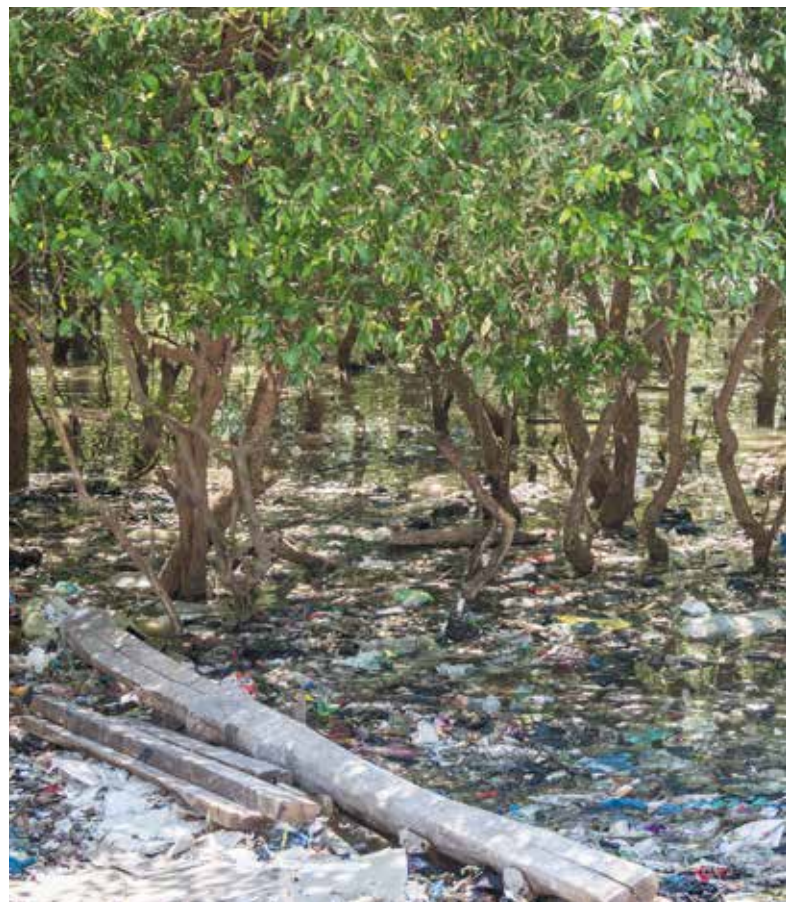
- » Indonesia launched the **National Action Plan on Marine Debris** (2017-2025), which calls for efforts to reduce 70% of its plastic debris (from 2017 baseline) by the end 2025
- » Indonesian government has pledged to spend up to \$1 billion a year on cleaning up its rivers and seas
- » Government of Indonesia incentivizes behavioural change, promotes R&D in sustainable packaging
- » Indonesia introduced in 2016 a plastic bag tax for a trial period of 3 months at selected retailers in 23 cities including Jakarta (200 rupiah / 0.01 US\$ per bag)
- » The city of Banjarmasin introduced a ban on plastic bags in 2016, resulting in a 80% reduction in plastic bag consumption. A similar ban on the use of Styro-foam was introduced in the city of Bandung. Bogor city issued in July 2018 a plastic bag ban.
- » The initiative “Ngaji Sampah” (“Sermons on Waste”) seeks to reduce plastic usage and switch to reusable bags; launched with Indonesia’s two largest Islamic organizations, Nahdlatul Ulama (NU) and Muhammadiyah, who have over 100 million followers
- » The Ministry of Industry considers to increase bio-based plastic consumption to 5% of total national plastic consumption. The current use of bioplastic in the country is less than 1% or around 3,000 t / year.

Stakeholders in the packaging value chain

- » **Design & production:** Indonesian Packaging Federation (IPF), Indonesian Association for Flexible Packaging, Indonesian Association of Downstream Plastics Industries, Association of the Indonesian Plastic Fabric Industry
- » **Retail & consumption:** Food and beverage companies, wholesalers, retailers, malls, markets, households, Indonesian Retail Entrepreneurs Association (APRINDO)
- » **Waste collection:** City and district governments, community-based organisations, waste banks, informal sector
- » **Sorting & recycling:** recycling factories, association, Packaging and Recycling Alliance for Indonesia (PRAISE), Indonesia Plastic Recycling Association (ADUPI)
- » **Government:** Ministry of Environment and Forestry, other Ministries

Options for further action

- » Strengthen technical skills and financial resources of local governments to implement and enforce national waste management laws and policies
- » Enhance funding of municipal solid waste management through private sector investments and waste collection fees based on full cost accounting
- » Draft a regulation on packaging waste as it is not specifically covered by the waste management law
- » Elaborate strategies on Extended Producer Responsibility for the packaging sector to oblige companies who put packaging on the market to participate in financing and organising the management of packaging waste
- » Promote dialogue amongst stakeholders along packaging value chains concerning design and recycling for a shift towards circular economy
- » Take measures to integrate informal sector workers in collecting and sorting packaging waste
- » Develop strategies for reducing plastic waste through sustainable consumption and production, including public awareness raising and regulations



Waste accumulation in mangroves in Sidoarjo, Indonesia

References

- 1 MSW related information are compiled from various sources, including (i) Indonesian Directorate of Waste Management (2017) 'National Waste Management System'. Presentation.
http://ditjenppi.menlhk.go.id/reddplus/images/resources/ws_transperancy_framework/r4_02_sampah_klhk.pdf (ii) World Bank (2018) Indonesia Marine Debris Hotspot- Rapid Assessment Synthesis Report.
<http://documents.worldbank.org/curated/en/983771527663689822/pdf/126686-29-5-2018-14-18-6-SynthesisReportFullReportAPRILFINAL.pdf> (iii) Ratnawati, Rosa Vivien (2016) The 3Rs and Clean Land – the role of the Circular economy in Preventing Land Pollution (Indonesian Perspective). Indonesian Ministry of Environment and Forestry. Country 3R Profile submitted to the 8th regional 3R Forum, 9-12 April, 2018, Indore, India <http://www.uncrd.or.jp/content/documents/6473PS-3-Panel%20Slide-Indonesia-Ministry%20of%20Environment%20&%20Forestry.pdf>, Damanhuri, Enri (2017) Country Chapter – State of the 3Rs in Asian and the Pacific – The Republic of Indonesia. UNCRD.
[http://www.uncrd.or.jp/content/documents/5689\[Nov%202017\]%20Indonesia.pdf](http://www.uncrd.or.jp/content/documents/5689[Nov%202017]%20Indonesia.pdf), (iv) Ekonid (2016) Indonesiens Abfallwirtschaft 2016. In German, http://indonesien.ahk.de/fileadmin/ahk_indonesien/Business_Delegations/BMUB_Waste_Management/BMUB_Waste_Management_in_Indonesien_2016_FINAL.pdf (v) Aretha Aprilia, Tetsuo Tezuka and Gert Spaargaren (2012) 'Household Solid Waste Management in Jakarta, Indonesia: A Socio-Economic Evaluation'. Book Chapter 4 in Waste Management – an Integrated Vision.
http://cdn.intechopen.com/pdfs/40536/InTech-Household_solid_waste_management_in_jakarta_indonesia_a_socio_economic_evaluation.pdf (vi) Journal of the Indonesia Infrastructure Initiative PRAKARSA, Issue 15 / October 2013. Solid Waste Management (vii) Jakarta Post news articles.
- 2 Worldometers (undated) 'Indonesia Population'. Website, accessed on 4 October 2018.
<http://www.worldometers.info/world-population/indonesia-population/>
- 3 United Nations University (UNU) South East Asia E-Waste Monitor.
http://collections.unu.edu/eserv/UNU:6348/Regional_E-waste_Monitor_East_Southeast_Asia_low.pdf
- 4 The Ministry of Environment and Forestry had introduced a programme in which cities that have successfully managed their solid waste receive an award called "Adipura". The programme ended and was replaced by a new "Clean City" programme.
- 5 It has recently been revoked by the Supreme Court. Government is still revising the regulation; there will be a city addition, Denpasar City
- 6 In the absence of published reports and databases in the public domain, information on the packaging industry (& waste) are compiled from various sources, mainly; market research (sample) reports, blogs, and newspaper articles. Most of the information on Indonesian packaging industry is compiled from Ekonid, BMWi (2015) Zielmarktanalyse Indonesien 2015 – Verarbeitungs- und Verpackungstechnik für die indonesische Nahrungs- und Genussmittelindustrie. In German. https://www.ixpos.de/IXPOS/Content/DE/Ihr-geschaeft-im-ausland/_SharedDocs/Downloads/bmwi-markterschliessungsprogramm-2015/bmwi-mep-marktstudie-indonesien-verarbeitungs-verpackungstechnik.pdf?v=2
- 7 Ekonid, BMWi (2015) Zielmarktanalyse Indonesien 2015 – Verarbeitungs- und Verpackungstechnik für die indonesische Nahrungs- und Genussmittelindustrie. In German.
http://indonesien.ahk.de/fileadmin/ahk_indonesien/Publications/EIBN/EIBNSecRep2016_PackagingMachineryFBIndustry_Full-08740.pdf
- 8 Ekonid, BMWi (2015) Zielmarktanalyse Indonesien 2015 – Verarbeitungs- und Verpackungstechnik für die indonesische Nahrungs- und Genussmittelindustrie. In German
http://indonesien.ahk.de/fileadmin/ahk_indonesien/Publications/EIBN/EIBNSecRep2016_PackagingMachineryFBIndustry_Full-08740.pdf
- 9 Indonesia Plastic Recycling Association (ADUPI) (2016) Indonesia Plastic Lifecycle 2016.
<https://www.coursehero.com/file/p7u62g4/ADUPI-and-APDUPI-is-Indonesia-Plastics-Recycling-Association-Indonesia-Plastics/>
- 10 Rahajeng Kusumo (2017) 'Plastic Imports to Surge by 15% in 2017: Inaplas'. Jakarta Globe, 16 May 2017.
<https://jakartaglobe.id/business/plastic-imports-to-surge-by-15-in-2017-inaplas/>
- 11 Ringkang Gumiwang (February 23, 2018). Excise duty on Plastic bag. Pemerintah akan mengenakan cukai terhadap produk kantong plastik mulai Juli 2018. <https://tirto.id/cukai-kantong-plastik-trik-menambal-apbn-dan-melawan-sampah-cFc3> Tirta Investama is a bottled water producer which is affiliated to French firm Danone
- 12 Indonesian Ministry of Environment and Forestry (2018) 'Deklarasi Pengurangan Sampah Kantong Plastik'. Website.
<http://www.menlhk.go.id/siaran-227-deklarasi-pengurangan-sampah-kantong-plastik.html>
- 13 Liam Taylor, February 28, 2018. Clean-up events shed light on Indonesia's waste crisis. Jakarta Post.
<http://www.thejakartapost.com/life/2018/02/28/clean-up-events-shed-light-on-indonesias-waste-crisis.html>
- 14 Indonesian Ministry of Environment and Forestry (2018) 'Deklarasi Pengurangan Sampah Kantong Plastik'. Website.
<http://www.menlhk.go.id/siaran-227-deklarasi-pengurangan-sampah-kantong-plastik.html>
- 15 Jambeck, J.R., Geyer, R., Wilcox, C., Siegler, T.R., Perryman, M., Andrady, A., Narayan, R., Law, K.L. et al. (2015) 'Plastic waste inputs from land into the ocean'. Science, vol. 347, issue 6223, p. 768-771.
- 16 GIZ (2018) Marine Litter Prevention. P. 54. https://www.giz.de/de/downloads/giz2018_marine-litter-prevention_web.pdf
- 17 World Bank (2018) Indonesia Marine Debris Hotspot- Rapid Assessment Synthesis Report.
<http://documents.worldbank.org/curated/en/983771527663689822/pdf/126686-29-5-2018-14-18-6-SynthesisReportFullReportAPRILFINAL.pdf>
- 18 World Bank (2018) Indonesia Marine Debris Hotspot- Rapid Assessment Synthesis Report.
<http://documents.worldbank.org/curated/en/983771527663689822/pdf/126686-29-5-2018-14-18-6-SynthesisReportFullReportAPRILFINAL.pdf>

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