

Chapter 17: Plastic waste management in the “middle island regions” of the Philippines
Supplementary Material

Table 17.B. Waste composition across the regions of the Philippines
 Computed by Environweave based on WACS data from LGU Solid Waste Management Plans
 Waste Composition data sample size: 551

Region	Sample size	WACS results from consolidated Solid Waste Management Plans				Plastics Fractions (assumes 100% urban)		Urbanization rate (PSA, 2022)	Plastics fraction (considers regional urbanization rate)			
		Biodegradables	Special	Recyclables	Residuals	0.54 of Recyclables	0.50 of Residuals		Plastic Recyclables	Plastic Residuals	Other recyclables	Other residuals
NCR (National Capital Region)	17	44.544%	8.490%	31.345%	15.633%	16.93%	7.82%	100.00%	16.93%	7.82%	14.419%	7.816%
Region I (Ilocos Region)	25	50.368%	2.618%	23.922%	23.098%	12.92%	11.55%	25.50%	3.29%	2.95%	20.628%	20.153%
Region II (Cagayan Valley)	15	60.084%	3.631%	17.065%	19.220%	9.22%	9.61%	19.50%	1.80%	1.87%	15.268%	17.346%
Cordillera Administrative Region (CAR)	25	47.836%	1.300%	28.192%	22.689%	15.22%	11.34%	33.30%	5.07%	3.78%	23.122%	18.911%
Region III (Central Luzon)	56	47.325%	3.322%	22.810%	26.556%	12.32%	13.28%	66.30%	8.17%	8.80%	14.644%	17.753%
Region IV-A (CALABARZON)	54	46.552%	1.639%	29.176%	22.618%	15.75%	11.31%	70.50%	11.11%	7.97%	18.068%	14.645%
MIMAROPA Region	15	52.727%	2.573%	23.431%	22.678%	12.65%	11.34%	35.20%	4.45%	3.99%	18.977%	18.686%
Region V (Bicol Region)	32	53.331%	1.480%	22.343%	22.714%	12.07%	11.36%	23.80%	2.87%	2.70%	19.471%	20.011%
Region VI (Western Visayas)	61	56.349%	1.439%	21.389%	20.818%	11.55%	10.41%	22.52%	2.60%	2.34%	18.788%	18.474%
NIR (Negros Island Region)	6	59.342%	0.802%	18.814%	20.849%	10.16%	10.42%	59.10%	6.00%	6.16%	12.809%	14.688%
Region VII (Central Visayas)	61	43.666%	2.068%	24.282%	29.976%	13.11%	14.99%	56.05%	7.35%	8.40%	16.933%	21.575%
Region VIII (Eastern Visayas)	33	50.803%	2.890%	29.542%	16.652%	15.95%	8.33%	14.70%	2.35%	1.22%	27.197%	15.428%
Region IX (Zamboanga Peninsula)	11	61.529%	1.445%	20.492%	16.603%	11.07%	8.30%	37.80%	4.18%	3.14%	16.310%	13.465%
Region X (Northern Mindanao)	33	64.128%	1.542%	19.041%	15.214%	10.28%	7.61%	50.30%	5.17%	3.83%	13.869%	11.387%
Region XI (Davao Region)	28	55.077%	2.515%	16.229%	26.215%	8.76%	13.11%	66.80%	5.85%	8.76%	10.375%	17.459%
Region XII (SOCCSKSARGEN)	22	70.017%	1.073%	11.817%	17.087%	6.38%	8.54%	55.50%	3.54%	4.74%	8.275%	12.345%
Region XIII (Caraga)	53	50.965%	5.389%	24.830%	18.783%	13.41%	9.39%	36.60%	4.91%	3.44%	19.923%	15.345%
Bangsamoro Autonomous Region In Muslim Mindanao (BARMM)	4	61.401%	1.000%	21.087%	16.513%	11.39%	8.26%	27.60%	3.14%	2.28%	17.944%	14.234%

Provided as part of the 2025 publication “Plastic Pollution Countermeasures - For Effective Global Efforts with Case Studies of East Asia Region” under the Economic Research Institute for ASEAN and East Asia.

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Table 17.C. Waste generation rates in the Philippine regions (2025 estimates)
Computed by Environweave based on WACS data from LGU Solid Waste Management Plans
Waste generation rate data sample size: 490

		Population (2025) at 0.008 growth rate	LGU data set kg/ppd in 2025	Projected Waste Generation based on LGU dataset 2025 (tpd)	Waste Generation (tonnes per day), 2025						
					Biodegradables	Special Waste	Plastic Recyclables	Plastic Residuals	Other recyclables	Other residuals	
	Philippines	113,631,320			28,427	8,322	4,587	3,388	8,964	8,202	
Luzon	NCR	National Capital Region	14,113,765	0.77	10,813.27	4,817	918	1,831	846	1,559	845
	Region III	Central Luzon	13,092,987	0.52	6,785.81	3,211	994	554	597	994	1,205
	Region IV-A	CALABARZON	17,068,700	0.47	8,077.09	3,760	1,459	897	644	1,459	1,183
	Region I	Ilocos Region	5,385,193	0.42	2,244.96	1,131	463	74	66	463	452
	Region II	Cagayan Valley	3,807,829	0.46	1,759.00	1,057	269	32	33	269	305
	CAR	Cordillera	1,823,457	0.47	862.88	413	200	44	33	200	163
Region V	Bicol	6,112,941	0.33	1,997.35	1,065	389	57	54	389	400	
Mindanao	Region XI	Davao Region	5,432,537	0.54	2,937.98	1,618	305	172	257	305	513
	Region IX	Zamboanga Peninsula	3,975,388	0.45	1,791.61	1,102	292	75	56	292	241
	Region X	Northern Mindanao	5,219,753	0.57	2,999.34	1,923	416	155	115	416	342
	Region XII	SOCCSKSARGEN	4,498,478	0.38	1,723.26	1,207	143	61	82	143	213
	Region XIII	Caraga	2,888,118	0.44	1,269.07	647	253	62	44	253	195
	BARM	Bangsamoro	5,737,116	0.32	1,809.91	1,111	325	57	41	325	258
Visayas + MIMAROPA	Region VII	Central Visayas	6,597,968	0.46	3,047.89	1,331	516	224	256	516	658
	Region IV-B	MIMAROPA	3,271,410	0.57	1,879.79	991	357	84	75	357	351
	Region VI	Western Visayas	4,768,617	0.38	1,826.74	1,029	343	47	43	343	337
	NIR	Negros Island Region	4,944,184	0.42	2,088.96	1,240	268	125	129	268	307
	Region VIII	Eastern Visayas	4,662,936	0.33	1,523.57	774	414	36	19	414	235

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Table 17.D. Recyclables and residual plastic waste generation rates in the Philippine regions with regional urbanization rates considered

Computed by Environweave based on WACS data from LGU Solid Waste Management Plans
 Waste Composition data sample size: 551
 Waste generation rate data sample size: 490

		<i>Values are weighted averages based on population</i>				Recyclable Plastics % (regional urbanization rate considered)		Recyclable Plastics Generated (average tpd, 2025)		Total (tpd)	kg/cap-day	Residual Plastics % (regional urbanization rate considered)				Residual Plastics Generated (average tpd, 2025)		Total (tpd)	kg/cap-day															
		Philippines		7.3%		485		4,587	0.0404	5.7%				330		3,388	0.030																	
Luzon	National Capital Region*	9.6%	7.4%	16.9%	17%	804	497	1,831	1,831	0.1297	6.6%	6.3%	2.7%	515	416	694	846	0.060																
	Central Luzon*			8%	8%														55	74	0.0137	3%	3%	515	416	51	66	0.012						
	CALABARZON*			11%	8%																								32	0.0083	2%	2%	33	0.009
	Ilocos Region			3%	3%																													
	Cagayan Valley			3.0%	2%														57	0.0094	3%	3%	54	0.009										
	Cordillera																								5%	3%	172	172	0.0316	8.8%	9%	257	257	0.047
	Bicol			3%	3%														75	0.0188	3%	3%	56	0.014										
	Davao Region*			4.5%	4.1%																				5.9%	6%	102	85	155	0.0297	4.5%	3.4%	5%	106
Zamboanga Peninsula	4%	4%	61			0.0136	3%	3%	82	0.018																								
Northern Mindanao	5%	4%									62	0.0216	3%	3%	44	0.015																		
SOCCSKSARGEN	4%	4%	57			0.0099	2%	2%	41	0.007																								
Caraga	5%	3%									224	224	0.0340	8.4%	8%	256	256	0.039																
Bangsamoro	3%	3%	84			0.0256	4%	4%	75	0.023																								
Central Visayas*	4.8%	3.8%		7.4%	7%						114	73	47	0.0100	4.8%	3.4%	2%	118	66	43	0.009													
MIMAROPA			4%			4%	125	0.0254	6%	6%												129	0.026											
Western Visayas			3%			3%																		36	0.0077	1%	1%	19	0.004					
Negros Island Region			6%			6%	36	0.0077	1%	1%												19	0.004											
Eastern Visayas			2%			2%																		36	0.0077	1%	1%	19	0.004					

*With several Highly Urbanized Cities (HUCs)

Cities with a minimum population of 200,000, as certified by the Philippine Statistics Authority, and with the latest annual income of at least ₱50,000,000 or USD 1,000,000 based on 1991 constant prices, as certified by the city treasurer.

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Table 17.E. Plastic waste generation estimates for the Philippines

Source (Year)	Philippine Plastic Waste Generation		Notes
	daily rate	annual amount	
Jambeck et al. (2015)	0.074 kg/cap	6.1 million tonnes by 2025	Plastic fraction assumed at 15%; assumed 83% or 5.1 million tonnes would be mismanaged plastic waste by 2025
NSWMC (2018)	0.04 kg/cap		WACS from 2008-2013
WWF Philippines (2020)	0.035 kg/cap	1.7 million tonnes in 2019	Based on Material Flow Analysis of WACS data collected in 2017-2019 from 9 study areas located in Luzon and Mindanao
World Bank (2022b)		4.7 million tonnes in 2020	From parallel studies - World Bank East Asia and Pacific Region: Marine Plastics Series
DENR (2025b)		2.75 to 5.5 million tonnes by 2025	Based on 12% and 24% of national daily waste generation rate for 2025 provided by EMB website, though source computation for national daily waste generation rate was not specified
NPAP (2025)		1.77 million tonnes per year	Sources: World Bank (2021). Proportion mirrors rural/urban figures from NSWMC (2008-2014), World Bank (last updated Feb 2025)
This study (2025)	0.04 kg/cap-day plastic waste	1.7 million tonnes plastic waste by 2025	National waste generation rate of 0.49 kg/cap/day, 7.3% recyclable plastic fraction and 5.7% residual plastics fraction, based on 2025 projections using WACS data from 490 LGUs (WGR) and 551 LGUs (waste composition) nationwide. Assumes 54% of recyclables as plastic fraction and 50% of residuals as plastic fraction in urban areas, based on World Bank 2022 study of Metro Manila detailed WACS, and then adjusted to consider regional urbanization rates
	0.03 kg/cap-day residual waste	1.2 million tonnes residual waste by 2025	