

CHAPTER 2

WASTE GENERATION, COMPOSITION AND MANAGEMENT DATA

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2 WASTE GENERATION, COMPOSITION AND MANAGEMENT DATA

2.1 INTRODUCTION

This chapter updates to the recent year (2010) of waste generation rate and waste composition by region according to UN classification. Waste generation rate and waste composition are the keys parameter used in the FOD model. These two parameters are subjected to change by time depending on waste policies such as waste to energy, measure such as promotion of recyclable waste and new technologies implemented. The refinement Tables identifies reporting year and treatment technologies are in accordance with IPCC waste model. The update of waste composition by region in accordance with waste generation rate with the average from city and country level information is provided. Waste components are in line with IPCC Waste model. The refinement provides detailed information in Annex tables. In this refinement clarification of waste generation and waste collection are provided.

In addition to waste generation rate and waste composition, managing data of sludge in SWDS is refined with the new guidance on the information of % C and % N in sludge include the use in wastewater chapter (Vol 5 Chapter 6) and agriculture (Vol 4 Chapter 11).

2.2 WASTE GENERATION AND MANAGEMENT DATA

No refinement

2.2.1 Municipal Solid Waste (MSW)

Default data

Updating of default data of regional specific waste generation rate per capita per year are provided in Table 2.1. To generate data sets on waste practice at the country level for EU countries, the data were derived from Eurostat, for other countries-World bank data based on references. These data are based on weight of wet waste and can be assumed to be applicable for the year 2010. Waste generation per capita for subsequent or earlier years can be estimated using the same guidance indicated in 2006 IPCC Guidelines.

TABLE 2.1 UPDATED MSW GENERATION AND TREATMENT DATA – REGIONAL DEFAULTS						
Region	MSW Generation Rate ^{1,2,3} (tonnes/cap/yr)	Fraction of MSW open dumped	Fraction of MSW disposed to landfills	Fraction of MSW incinerated	Fraction of MSW composted	Fraction of other MSW management, unspecified ⁴
Asia						
Central Asia	0,34					
Eastern Asia	0,49	–	0,29	0,22	–	0,49
South-Eastern Asia	0,38	–	0,08	–	–	0,92
Southern Asia	0,50					
Western Asia	0,62	0,23	0,66	–	0,02	0,09
Africa						
Northern Africa	0,41	0,79	0,17	–	–	0,04
Eastern Africa	0,30	–	0,98	–	0,01	0,01
Middle Africa	0,19	0,95	–	–	–	0,05
Southern Africa	0,33					
Western Africa	0,18	–	0,64	–	–	0,36
Europe						
Eastern Europe	0,32	–	0,60	0,10	0,09	0,22
Northern Europe	0,50	–	0,26	0,32	0,11	0,31
Southern Europe	0,42	–	0,68	0,06	0,06	0,21
Western Europe	0,57	–	0,07	0,39	0,22	0,32
America						

Caribbean	0,95	0,03	0,72	–	0,01	0,24
Central America	0,56	0,13	0,62	–	–	0,25
South America	0,45	0,43	0,40	–	–	0,18
Northern America	0,90	–	0,27	0,07	0,10	0,56
Oceania						
Australia and New Zealand	1,08	–	0,77	–	–	0,23
Melanesia	1,18					
Micronesia						
Polynesia	1,35					

¹ Data are based on weight of wet waste.

² To obtain the total waste generation in the country, the per-capita values should be multiplied with the population whose waste is collected. In many countries, especially developing countries, this encompasses only urban population.

³ The data are default data for the year 2010, although for some countries the year for which the data are applicable was not given in the reference, or data for the year 2010 were not available. This year for which the data are collected, where available, is given in Annex 2.A.1

⁴ Other, unspecified, includes data on recycling for some countries.

64 UPDATING FROM 2006 IPCC GUIDELINES

66 Table 2.1 updated value of waste generation rate by region default. Information of value by country are provided
67 in Annex 2A.1. Fraction of treatments are categorized by treatment technology used in the 2006 IPCC Guidelines.

68 2.2.2 Sludge

69 No refinement

70 2.2.3 Industrial waste

71 No refinement

72 2.2.4 Other waste

73 No refinement

74 2.3 WASTE COMPOSITION

75 2.3.1 Municipal Solid Waste (MSW)

76
77 Waste composition is one of the main factors influencing emissions from solid waste treatment, and is influenced
78 by factors such as cultural norms, level of economic development, climate, and energy consumption etc. In the
79 municipal solid waste stream, waste can be classified into organic and inorganic component. Food waste, garden
80 (yard) and park waste, wood and process residues can be classified as organic waste. The different waste types
81 contain different amount of degradable organic carbon (DOC) and fossil carbon. Waste compositions, as well as
82 the classifications used to collect data on waste composition in MSW vary widely in different regions and countries.

83 In this Volume, default data on waste composition in MSW are provided for the following waste types:

- (1) food waste
- (2) garden (yard) and park waste
- (3) paper and cardboard
- (4) wood
- (5) textiles
- (6) nappies (disposable diapers)
- (7) rubber and leather
- (8) plastics

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(9) metal

(10) glass (and pottery and china)

(11) other (e.g., ash, dirt, dust, soil, electronic waste)

Waste types from (1) to (6) contain most of the DOC in MSW. Ash, dust, rubber and leather contain also certain amounts of non-fossil carbon, but this is hardly degradable. Some textiles, plastics (including plastics in disposable nappies), rubber and electronic waste contain the bulk part of fossil carbon in MSW. Paper (with coatings) and leather (synthetic) can also include small amounts of fossil carbon. To split such components into biodegradable and fossil shares by mass proportion of fossil and non-fossil carbon is a good practice for inventory compiler.

Based on the collecting MSW compositions results from international literatures, the regional average components were calculated and the regional default data on waste composition in MSW are given in Table 2.3 updated. This updated default data are classified by region allocated from UNEP in accordance to the update of waste generation rate.

These data are based on weight of wet waste without industrial waste. Table 2.3 updated does not provide default data for garden and park waste and nappies. In the Tier 1 default method these waste fractions can be assumed to be zero, i.e., they can be assumed to be encompassed by the other waste types.

This refinement updates waste composition by region in accordance with waste generation rate with the average from city and country level in wet weight basis. Waste components are in line with IPCC waste model. Details information of waste composition is provided in Annex 2A.2.

TABLE 2.3
UPDATED MSW COMPOSITION DATA BY PERCENTAGE-REGIONAL DEFAULTS¹

Region	Food Waste	Paper/ Card-board	Wood	Textiles	Rubber/Leather	Plastic	Metal	Glass	Other
Asia									
Eastern Asia	38.6	16.1	3.6	4	3.4	13.9	2.2	4	16.7
South Asia	55	8.6	7.9	3.2	0.8	6.1	2.7	2	20.9
South-Eastern Asia	47.5	15.1	7.1	2.4	1.6	9.7	3.5	3.9	15.8
Western Asia & Middle East	46.2	18.3	9.8	2.9	0.6	8.6	3	3.1	7.6
Africa									
Eastern Africa	59.5	7.6	7	1.7	1.1	8	1.7	2.4	12.6
Northern Africa	53.7	15.2	4.3	2.5		5.6	3	2.3	3.9
West African	42.5	3.5				3	2.5	1	40
Western Africa	41.5	6.7	4.4	1		3	1.8	1	40
Europe									
Eastern Europe	29.6	21.6	7.5	4.7	1.4	9	4	9.5	20.4
Northern Europe	36.2	23.7	5.2	2.2	0.5	12.7	5.3	6	11.7
Southern Europe	33.9	18.7	0.7	2.8		9.4	2.5	9.5	18
Western Europe	26.5	27.2	11.1	2.2	0.3	8.3	5.7	6.9	40.1
Oceania									
Australia and New Zealand	27	25.4	17.9	4	1.2	12.2	5.5	5.6	24.3
Rest of Oceania	67.5	6	2.5						
America									
North America	29.7	28.1	5.7	3.9	2.5	10.1	5.7	5.2	16
Central America	43.8	13.7	13.5	2.6	1.8	6.7	2.6	3.7	12.3
South America	57.5	12.7	4.7	2.6	0.7	10.1	2.3	2.7	10.9
Caribbean	46.9	17	2.4	5.1	1.9	9.9	5	5.7	3.5

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Note 1: Data are based on weight of wet waste of MSW without industrial waste at generation around year 2010.

Note 2: The region-specific values are calculated from national, partly incomplete composition data. The percentages given may therefore not add up to 100%. Some regions may not have data for some waste types - blanks in the table represent missing data.

Note 3: Data of rest of Oceania and Caribbean are not refined

Sources:

Daniel Hoornweg and Perinaz Bhada-Tata (2012)

Dawda Badgie et al. (2012)

EPA, (2010)

Pennsylvania Department of Environmental Protection, (2003)

Yi Xiao et al. (2008) ,

Bryan F. Staley and Morton A. Barlaz, (2005)

Tapan Narayana (2009)

Guadalupe Gomez et al. (2009)

Emilia den Boer et al. (2010)

Stephen J. Burnley (2007)

S.J. Burnley et al. (2007)

David C. Wilson et al. (2010)

2.3.2 Sludge

This refinement presents guidance to estimate emission from sludge treatment in addition to 2006 IPCC Guidelines. The DOC content in sludge will vary depending on the wastewater treatment method producing the sludge, and also be different for domestic and industrial sludge.

For domestic sludge, the default DOC value (as percentage of wet waste assuming a default dry matter content of 10 percent) is 5 percent (range 4 - 5 percent, which means that the DOC content would be 40-50 percent of dry matter). Sludge generated in waste water treatment plant operation is characterized by total suspended solids (TSS) and DOC corresponds with volatile suspended solids (VSS). When estimating emissions, it is a good practice to differentiate between raw sludge and aerobically or anaerobically stabilized sludge because they may have different composition.

A rough default value of 9 percent DOC (assuming the dry matter content to be 35 percent) can be used for industrial sludge, when country and/or industry-specific is not available. The default DOC value applies for total industrial sludge in a country. Sewage, food industry, textile industry and chemical industry will generate organic sludge. DOC is also found in sludge from water work and dredging. The DOC in sludge can vary much by industry type. Examples of carbon contents in some organic sludge (percentage of dry matter) in Japan are: 27 percent for pulp and paper industry, 30 percent for food industry and 52 percent for chemical industry (Yamada et al., 2003).

When information of TSS and VSS are provided, DOC fraction and percent carbon content can be estimated. Amount of DOC is estimated as multiplication of share of carbon in sludge (per cent of dry mass) and organic fraction of sludge (VSS). When estimating emissions, it is a good practice to differentiate between raw sludge and aerobically or anaerobically stabilized sludge, while in raw sludge VSS represent about 50%, in stabilized sludge VSS are reduced to about 30%.

Information of %C and % N in sludge were added for estimating emissions from sludge in composting, incineration, landfilling and land application. Default values of DOC, carbon and nitrogen content as per cents of dry mass in selected industries are shown in the Table 2.4A below.

TABLE 2.4A (NEW) DEFAULT VALUE AND UNCERTAINTY OF CARBON CONTENT, NITROGEN CONTENT AND DOC OF INDUSTRIAL SLUDGE (DRY MATTER)						
Industry	Carbon content		Nitrogen content		DOC	
	Carbon content (percent)	Uncertainty (percent)	Nitrogen content (percent)	Uncertainty (percent)	DOC fraction	Uncertainty (percent)
Food industry (fruits & vegetables)	44	+/- 33	1.1	+/- 45	0.36	+/- 69
Paper industry (process sludge)	28	+/-49	0.5	+/-130	0.12	+/-25
Paper industry (WWT sludge)	31	+/- 15	0.9	+/- 60	0.12	+/- 25
Sewage sludge	31	+/- 27	4.2	+/- 56	0.16	+/- 61

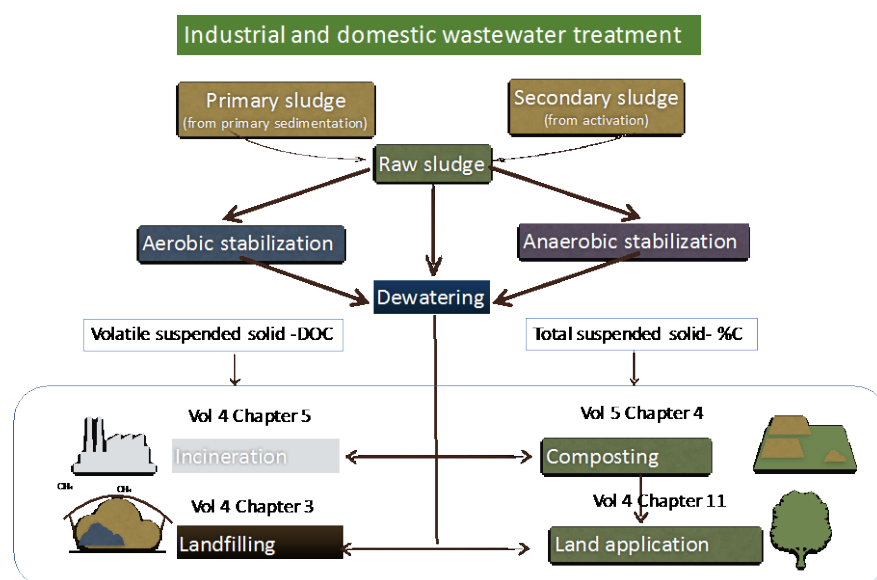
Source:Derived from Phyllis2, database for biomass and waste, <https://www.ecn.nl/phyllis2> Energy research Centre of the Netherlands

BOX 2.1A SLUDGE PATHWAY

The 2006 IPCC Guidelines elaborate sludge as "...Sludge from domestic and industrial wastewater treatment plants is addressed as a separate waste category in this Volume. In some countries, sludge from domestic wastewater treatment is included in MSW and sludge from industrial wastewater treatment in industrial waste. Countries may also include all sludge in industrial waste. When country-specific categorization is used, it should be documented transparently..."

In this refinement definition of sludge is elaborated. Sludge is a semi-solid mixture of liquid and solid components and can be produced as sewage sludge from wastewater treatment processes or as a settled suspension obtained from conventional drinking water treatment and from numerous other industrial processes. Sludge from industrial processes is usually process-specific and it is a good practice to obtain sludge composition data from producers.

Information of %C and %N in sludge were revealed for further use in other treatment include wastewater and agriculture. Emission from sludge treatment is shown in figure below. In addition to emission estimate and reporting in the 2006 IPCC Guidelines Chapter 2, Section 2.2.2, Estimation of methane generated from anaerobic sludge stabilization at a wastewater treatment plant shall be estimated according to Chapter 4 methodology and resulting emissions shall be included in Chapter 6.

Sludge treatment pathway**2.3.3 Industrial waste**

No refinement

2.3.4 Other waste

No refinement

153 **Annex 2A.1 Updated Waste Generation and Management Data – by country and regional averages**

TABLE 2A.1 UPDATED MSW GENERATION AND MANAGEMENT DATA BY COUNTRY AND REGIONAL AVERAGES											
Region/country	MSW ^{1,2} Generation Rate IPCC-1996 Values ⁴ (tonnes/cap/yr)	MSW ^{1,2,3} Generation Rate IPCC-2006 Year 2000 (tonnes/cap/yr)	MSW Generation Rate Year 2010 (tonnes/cap/yr)	Fraction of MSW disposed to SWDS IPCC-1996 Values ⁴ (tonnes/cap/yr)	Fraction of MSW disposed to SWDS IPCC-2006 Year 2000 (tonnes/cap/yr)	Fraction of MSW open dumped	Fraction of MSW disposed to landfills	Fraction of MSW incinerated	Fraction of MSW composted	Fraction of other MSW managemen t, unspecified ⁵	Source
Asia											
Central Asia	0.12	0.21	0.34	0.60	0.74	TBD	TBD	TBD	TBD	TBD	
Kazakhstan	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Kyrgyzstan	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Tajikistan	NA	NA	0.32	NA	NA	TBD	TBD	TBD	TBD	TBD	1
Turkmenistan	NA	NA	0.36	NA	NA	TBD	TBD	TBD	TBD	TBD	2
Uzbekistan	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Eastern Asia	0.41	0.37	0.49	0.38	0.55	0.00	0.29	0.22	0.00	0.49	
China		0.27	0.37	NA	0.97	NA	NA	0.02	0.01	NA	3
China, Hong Kong Special Administrative Region	NA	NA	0.73	NA	NA	0.00	0.55	0.00	0.00	0.45	4,5
China, Macao Special Administrative Region	NA	NA	0.54	NA	NA	0.00	0.21	0.00	0.00	0.79	4,6
Democratic People's Republic of Korea	NA	NA		NA	NA	NA	NA	NA	NA	NA	
Japan	0.41	0.47	0.62	0.38	0.25	0.00	0.03	0.74	0.00	0.23	4,7
Mongolia	NA	NA	0.24	NA	NA	TBD	TBD	TBD	TBD	TBD	8

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Republic of Korea		0.38	0.45		0.42	0.00	0.36	0.14	0.00	0.49	4,7
South-Eastern Asia		0.27	0.38		0.59	0.00	0.08	0.00	0.00	0.92	
Brunei Darussalam	NA	NA	0.32	NA	NA	TBD	TBD	TBD	TBD	TBD	9
Cambodia	NA	NA		NA	NA	NA	NA	NA	NA	NA	
Indonesia		0.28	0.19	NA	0.80	TBD	TBD	TBD	TBD	TBD	5, 10
Lao People's Democratic Republic		0.25	0.26	NA	0.40	TBD	TBD	TBD	TBD	TBD	5
Malaysia		0.30	0.55	NA	0.70	TBD	TBD	TBD	TBD	TBD	11
Myanmar		0.16	0.16	NA	0.60	TBD	TBD	TBD	TBD	TBD	12
Philippines		0.19	0.18	NA	0.62	TBD	TBD	TBD	TBD	TBD	5
Singapore		0.40	0.54	NA	0.20	0.00	0.15	0.00	0.00	0.85	4,13
Thailand		0.40	0.64	NA	0.80	0.00	0.00	0.00	0.00	0.99	5
Timor-Leste	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Viet Nam		0.20	0.53	NA	0.60	NA	NA	NA	NA	NA	14
Southern Asia	0.12	0.21	0.50	0.60	0.74	NA	NA	NA	NA	NA	
Afghanistan	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Bangladesh	NA	0.18	0.16	NA	0.95	TBD	TBD	TBD	TBD	TBD	15
Bhutan	NA	NA	0.53	NA	NA	TBD	TBD	TBD	TBD	TBD	16
India	0.12	0.17	0.12	0.60	0.70	TBD	TBD	TBD	TBD	TBD	17
Iran (Islamic Republic of)	NA	NA	0.06	NA	NA	TBD	TBD	TBD	TBD	TBD	18
Maldives	NA	NA	0.91	NA	NA	TBD	TBD	TBD	TBD	TBD	19
Nepal	NA	0.18	0.04	NA	0.40	TBD	TBD	TBD	TBD	TBD	5,20
Pakistan	NA	NA	0.31	NA	NA	TBD	TBD	TBD	TBD	TBD	21
Sri Lanka	NA	0.32	1.86	NA	0.90	TBD	TBD	TBD	TBD	TBD	22
Western Asia	NA	NA	0.62	NA	NA	0.23	0.66	0.00	0.02	0.09	
Armenia	NA	NA	0.25	NA	NA	0.00	1.00	0.00	0.00	0.00	4
Azerbaijan	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	

Bahrain	NA	NA	0.40	NA	NA	TBD	TBD	TBD	TBD	TBD	23
Cyprus		0.68	0.76	NA	1.00	0.00	0.87	0.00	0.00	0.13	24
Georgia	NA	NA	0.62	NA	NA	TBD	TBD	TBD	TBD	TBD	4
Iraq	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Israel	NA	NA	0.77	NA	NA	0.00	0.90	0.00	0.00	0.10	25
Jordan	NA	NA	0.38	NA	NA	0.00	0.85	0.00	0.00	0.15	26
Kuwait	NA	NA	2.09	NA	NA	TBD	TBD	TBD	TBD	TBD	27
Lebanon	NA	NA	0.43	NA	NA	0.37	0.46	0.00	0.08	0.09	26
Oman	NA	NA	0.26	NA	NA	TBD	TBD	TBD	TBD	TBD	28
Qatar	NA	NA	0.49	NA	NA	TBD	TBD	TBD	TBD	TBD	23
Saudi Arabia	NA	NA	0.47	NA	NA	TBD	TBD	TBD	TBD	TBD	28
State of Palestine	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Syrian Arab Republic	NA	NA	0.50	NA	NA	0.60	0.25	0.00	0.05	0.15	26
Turkey	NA	0.50	0.65	NA	0.99	0.66	0.30	0.00	0.01	0.03	7,29
United Arab Emirates	NA	NA	0.61	NA	NA	TBD	TBD	TBD	TBD	TBD	23
Yemen	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Africa											
Northern Africa	NA	0.29	0.41	NA	0.69	0.79	0.17	0.00	0.00	0.04	
Algeria	NA	NA	0.44	NA	NA	0.97	0.00	0.00	0.01	0.02	26
Egypt	NA	NA	0.50	NA	0.70	TBD	TBD	TBD	TBD	TBD	26
Libya	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Morocco	NA	NA	0.53	NA		0.95	0.01	0.00	0.00	0.04	26
Sudan	NA	0.29	0.29	NA	0.82	TBD	TBD	TBD	TBD	TBD	12
Tunisia	NA	NA	0.30	NA	NA	0.45	0.50	0.00	0.00	0.05	26
Western Sahara	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Eastern Africa	NA	0.29	0.30	NA	0.69	0.00	0.98	0.00	0.01	0.01	

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British Indian Ocean Territory	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Burundi	NA	NA	0.20	NA	NA	TBD	TBD	TBD	TBD	TBD	30
Comoros	NA	NA	0.81	NA	NA	TBD	TBD	TBD	TBD	TBD	31
Djibouti	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Eritrea	NA	NA	0.18	NA	NA	TBD	TBD	TBD	TBD	TBD	30
Ethiopia	NA	NA	0.11	NA	NA	TBD	TBD	TBD	TBD	TBD	47
French Southern Territories	NA	NA		NA	NA						
Kenya	NA	NA	0.11	NA	NA	TBD	TBD	TBD	TBD	TBD	32
Madagascar	NA	NA	0.29	NA	NA	0.00	0.96	0.00	0.04	0.00	4,31
Malawi	NA	NA	0.18	NA	NA	TBD	TBD	TBD	TBD	TBD	30
Mauritius	NA	NA	0.84	NA	NA	0.00	0.98	0.00	0.00	0.02	4,31
Mayotte	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Mozambique	NA	NA	0.05	NA	NA	TBD	TBD	TBD	TBD	TBD	48
Réunion	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Rwanda	NA	NA	0.19	NA	NA	TBD	TBD	TBD	TBD	TBD	4
Seychelles	NA	NA	1.09	NA	NA	TBD	TBD	TBD	TBD	TBD	31
Somalia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
South Sudan	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Uganda	NA	NA	0.12	NA	NA	0.00	1.00	0.00	0.00	0.00	33
United Republic of Tanzania	NA	NA	0.09	NA	NA	TBD	TBD	TBD	TBD	TBD	34
Zambia	NA	NA	0.08	NA	NA	TBD	TBD	TBD	TBD	TBD	4,35
Zimbabwe	NA	NA	0.19	NA	NA	TBD	TBD	TBD	TBD	TBD	4
Middle Africa	NA	NA	0.19	NA	0.69	0.95	0.00	0.00	0.00	0.05	
Angola	NA	NA	0.18	NA	NA	TBD	TBD	TBD	TBD	TBD	4
Cameroon	NA	NA	0.28	NA	NA	0.95	0.00	0.00	0.00	0.05	36
Central African Republic	NA	NA	0.18	NA	NA	TBD	TBD	TBD	TBD	TBD	30

Chad	NA	NA	0.18	NA	NA	TBD	TBD	TBD	TBD	TBD	30
Congo	NA	NA	0.18	NA	NA	TBD	TBD	TBD	TBD	TBD	30
Democratic Republic of the Congo	NA	NA	0.18	NA	NA	TBD	TBD	TBD	TBD	TBD	30
Equatorial Guinea	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Gabon	NA	NA	0.16	NA	NA	NA	TBD	TBD	TBD	TBD	30
Sao Tome and Principe	NA	NA	0.18	NA	NA	NA	TBD	TBD	TBD	TBD	4
Southern Africa	NA	0.29	0.33	NA	0.69	NA	NA	NA	NA	NA	
Botswana	NA	NA	0.38	NA	NA	NA	TBD	TBD	TBD	TBD	37
Lesotho	NA	NA	0.18	NA	NA	NA	TBD	TBD	TBD	TBD	30
Namibia	NA	NA	0.18	NA	NA	NA	TBD	TBD	TBD	TBD	4
South Africa	NA	NA	0.73	1.00	0.90	NA	TBD	TBD	TBD	TBD	38
Swaziland	NA	NA	0.19	NA	NA	TBD	TBD	TBD	TBD	TBD	4
Western Africa	NA	0.29	0.18	NA	0.69	0.00	0.64	0.00	0.00	0.36	
Benin	NA	NA	0.20	NA	NA	TBD	TBD	TBD	TBD	TBD	4,30
Burkina Faso	NA	NA	0.19	NA	NA	TBD	TBD	TBD	TBD	TBD	30
Cabo Verde	NA	NA	0.18	NA	NA	TBD	TBD	TBD	TBD	TBD	30
Côte d'Ivoire	NA	NA	0.18	NA	NA	TBD	TBD	TBD	TBD	TBD	30
Gambia	NA	NA	0.19	NA	NA	TBD	TBD	TBD	TBD	TBD	30
Ghana	NA	NA	0.03	NA	NA	TBD	TBD	TBD	TBD	TBD	39
Guinea	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Guinea-Bissau	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Liberia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Mali	NA	NA	0.24	NA	NA	TBD	TBD	TBD	TBD	TBD	40
Mauritania	NA	NA	0.18	NA	NA	TBD	TBD	TBD	TBD	TBD	4
Niger	NA	NA	0.18	NA	NA	0.00	0.64	0.00	0.00	0.36	30
Nigeria	NA	NA	0.20	NA	0.40	TBD	TBD	TBD	TBD	TBD	41

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Saint Helena	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Senegal	NA	NA	0.19	NA	NA	TBD	TBD	TBD	TBD	TBD	4,30
Sierra Leone	NA	NA	0.16	NA	NA	TBD	TBD	TBD	TBD	TBD	42
Togo	NA	NA	0.19	NA	NA	TBD	TBD	TBD	TBD	TBD	4
Europe											
Eastern Europe	NA	0.38	0.32	NA	0.90	0.00	0.60	0.10	0.09	0.22	
Belarus	NA		0.28	NA							4,43
Bulgaria	NA	0.52	0.42	NA	1.00	0.00	0.66	0.03	0.10	0.21	44
Czechia	NA	0.33	0.32	NA	0.75	0.00	0.53	0.18	0.04	0.26	44
Hungary	NA	0.45	0.38	NA	0.92	0.00	0.54	0.14	0.06	0.26	44
Poland	NA	0.32	0.29	NA	0.98	0.00	0.44	0.13	0.16	0.26	44
Republic of Moldova	NA	NA	0.00	NA	NA	NA	NA	NA	NA	NA	
Romania	NA	0.36	0.25	NA	1.00	0.00	0.72	0.02	0.07	0.18	44
Russian Federation	0.32	0.34	0.34	0.94	0.71	TBD	TBD	TBD	TBD	TBD	12
Slovakia	NA	0.32	0.33	NA	1.00	0.00	0.69	0.11	0.07	0.13	44
Ukraine	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Northern Europe	NA	0.64	0.50	NA	0.47	0.00	0.26	0.32	0.11	0.31	
Åland Islands	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Denmark	0.46	0.67	0.79	0.20	0.10	0.00	0.01	0.53	0.19	0.27	44
Estonia	NA	0.44	0.36	NA	0.98	0.00	0.07	0.51	0.04	0.38	44
Faroe Islands	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Finland	0.62	0.50	0.50	0.77	0.61	0.00	0.12	0.48	0.12	0.28	44
Iceland	NA	1.00	0.53	NA	0.86	0.00	0.66	0.04	0.09	0.21	44
Ireland	0.31	0.60	0.59	1.00	0.89	0.00	0.38	0.16	0.06	0.40	44
Isle of Man	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Latvia	NA	0.27	0.43	NA	0.92	0.00	0.58	0.00	0.05	0.37	44

Lithuania	NA	0.31	0.45	NA	1.00	0.00	0.54	0.12	0.10	0.24	44
Norway	0.51	0.62	0.42	0.75	0.55	0.00	0.03	0.52	0.17	0.28	44
Svalbard and Jan Mayen Islands	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Sweden	0.37	0.43	0.45	0.44	0.23	0.00	0.01	0.51	0.16	0.32	44
United Kingdom of Great Britain and Northern Ireland	0.69	0.57	0.49	0.90	0.82	0.00	0.23	0.31	0.16	0.30	44
Southern Europe	NA	0.52	0.42	NA	0.85	0.00	0.68	0.06	0.06	0.21	
Albania	NA	NA	0.28	NA	NA	TBD	TBD	TBD	TBD	TBD	44
Andorra	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Bosnia and Herzegovina	NA	NA	0.31	NA	NA	0.00	0.75	0.00	0.00	0.25	44
Croatia	NA	NA	0.39	NA	1.00	0.00	0.80	0.00	0.02	0.19	44
Gibraltar	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Greece	0.31	0.41	0.51	0.93	0.91	0.00	0.81	0.00	0.04	0.16	44
Holy See	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Italy	0.34	0.50	0.49	0.88	0.70	0.00	0.26	0.19	0.18	0.37	44
Malta	NA	0.48	0.62	NA	1.00	0.00	0.90	0.00	0.00	0.10	44
Montenegro	NA	NA	0.53	NA	NA	0.00	0.92	0.00	0.00	0.08	44
Portugal	0.33	0.47	0.45	0.86	0.69	0.00	0.49	0.21	0.14	0.16	44
San Marino	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Serbia	NA	NA	0.26	NA	NA	0.00	0.74	0.00	0.00	0.26	44
Slovenia	NA	0.51	0.45	NA	0.90	0.00	0.23	0.17	0.08	0.53	44
Spain	0.36	0.60	0.43	0.85	0.68	0.00	0.55	0.12	0.16	0.17	44
The former Yugoslav Republic of Macedonia	NA	NA	0.37	NA	NA	0.00	1.00	0.00	0.00	0.00	44
Western Europe	0.45	0.56	0.57	0.57	0.47	0.00	0.07	0.39	0.22	0.32	
Austria	0.34	0.58	0.56	0.40	0.30	0.00	0.03	0.38	0.31	0.28	44
Belgium	0.40	0.47	0.42	0.43	0.17	0.00	0.01	0.43	0.19	0.37	44

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France	0.47	0.53	0.50	0.46	0.43	0.00	0.26	0.35	0.17	0.22	44
Germany	0.36	0.61	0.63	0.66	0.30	0.00	0.00	0.31	0.18	0.50	44
Liechtenstein	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Luxembourg	0.49	0.66	0.63	0.35	0.27	0.00	0.18	0.34	0.20	0.29	44
Monaco	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Netherlands	0.58	0.62	0.52	0.67	0.11	0.00	0.01	0.47	0.27	0.25	44
Switzerland	0.40	0.40	0.73	0.23	1.00	0.00	0.00	0.47	0.21	0.32	44
America											
Caribbean		0.49	0.95	NA	0.83	0.03	0.72	0.00	0.01	0.24	
Anguilla	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Antigua and Barbuda	NA	NA	2.01	NA	NA	0.00	0.99	0.00	0.00	0.01	4,45
Aruba	NA	NA	NA	NA	NA						
Bahamas	NA	0.95	1.19	NA	0.70	TBD	TBD	TBD	TBD	TBD	45
Barbados	NA	NA	1.73	NA	NA	TBD	TBD	TBD	TBD	TBD	45
Bonaire, Sint Eustatius and Saba	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
British Virgin Islands	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Cayman Islands	NA	NA	NA	NA	NA	TBD	TBD	TBD	TBD	TBD	4,45
Cuba	NA	0.21	0.30	NA	0.90	0.00	0.84	0.00	0.11	0.04	4,45
Curaçao	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Dominica	NA	NA	0.45	NA	NA	0.00	1.00	0.00	0.00	0.00	4,45
Dominican Republic	NA	0.25	0.43	NA	0.90	TBD	TBD	TBD	TBD	TBD	45
Grenada	NA	NA	0.99	NA	NA	0.00	0.90	0.00	0.00	0.10	45
Guadeloupe	NA	NA		NA	NA	NA	NA	NA	NA	NA	
Haiti	NA	NA	0.37	NA	NA	0.24	0.00	0.00	0.00	0.76	45
Jamaica	NA	NA	0.07	NA	NA	0.00	1.00	0.00	0.00	0.00	45
Martinique	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	

Montserrat	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Puerto Rico	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Saint Barthélemy	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Saint Kitts and Nevis	NA	NA	1.99	NA	NA	0.00	1.00	0.00	0.00	0.00	45
Saint Lucia	NA	0.55	1.59	NA	0.83	0.00	0.70	0.00	0.00	0.30	45
Saint Martin (French Part)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Saint Vincent and the Grenadines	NA	NA	0.62	NA	NA	0.00	0.78	0.00	0.00	0.22	45
Sint Maarten (Dutch part)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Trinidad and Tobago	NA	NA	0.58	NA	NA	0.06	0.00	0.00	0.00	0.94	45
Turks and Caicos Islands	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
United States Virgin Islands	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Central America	NA	0.21	0.56	NA	0.50	0.13	0.62	0.00	0.00	0.25	
Belize	NA	NA	1.05	NA	NA	0.00	1.00	0.00	0.00	0.00	4,45
Costa Rica	NA	0.17	0.50	NA	NA	0.22	0.72	0.00	0.00	0.06	45
El Salvador	NA	NA	0.41	NA	NA	TBD	TBD	TBD	TBD	TBD	45
Guatemala	NA	0.22	0.73	NA	0.40	0.00	0.22	0.00	0.00	0.78	45
Honduras	NA	0.15	0.53	NA	0.40	TBD	TBD	TBD	TBD	TBD	45
Mexico	NA	0.31	0.45	NA	NA	0.00	0.97	0.00	0.00	0.03	7
Nicaragua	NA	0.28	0.40	NA	0.70	0.34	0.28	0.00	0.00	0.38	45
Panama	NA		0.44	NA		0.20	0.56	0.00	0.00	0.24	45
South America	NA	0.26	0.45	NA	0.54	0.43	0.40	0.00	0.00	0.18	
Argentina	NA	0.28	0.45	NA	0.59	TBD	TBD	TBD	TBD	TBD	45
Bolivia (Plurinational State of)	NA	0.16	0.12	NA	0.70	TBD	TBD	TBD	TBD	TBD	46
Bouvet Island	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Brazil	NA	0.18	0.38	NA	0.80	TBD	TBD	TBD	TBD	TBD	4,45
Chile	NA	NA	0.39	NA	NA	0.00	1.00	0.00	0.00	0.00	45

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Colombia	NA	0.26	0.35	NA	0.31	0.54	0.46	0.00	0.00	0.00	45
Ecuador	NA	0.22	0.41	NA	0.40	TBD	TBD	TBD	TBD	TBD	45
Falkland Islands (Malvinas)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
French Guiana	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Guyana	NA	NA	1.95	NA	NA	0.37	0.59	0.00	0.00	0.04	45
Paraguay	NA	0.44	0.08	NA	0.40	0.42	0.44	0.00	0.00	0.14	45
Peru	NA	0.20	0.37	NA	0.53	0.19	0.66	0.00	0.00	0.15	45
South Georgia and the South Sandwich Islands	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Suriname	NA	NA	0.50	NA	NA	1.00	0.00	0.00	0.00	0.00	45
Uruguay	NA	0.26	0.04	NA	0.72	0.32	0.03	0.00	0.00	0.66	45
Venezuela (Bolivarian Republic of)	NA	0.33	0.42		0.50	0.59	0.00	0.00	0.00	0.41	45
Northern America	0.70	0.65	0.90	0.69	0.58	0.00	0.27	0.07	0.10	0.56	
Bermuda	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Canada	0.66	0.49	0.85	0.75	0.71	0.00	0.00	0.00	0.12	0.88	4,7
Greenland	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Saint Pierre and Miquelon	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
United States of America	0.73	1.14	0.94	0.62	0.55	0.00	0.54	0.14	0.08	0.24	4,7
Antarctica	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Oceania											
Australia and New Zealand	0.47	0.69	1.08	1.00	0.85	0.00	0.77	0.00	0.00	0.23	
Australia	0.46	0.69	0.81	1.00	1.00	0.00	0.70	0.00	0.00	0.30	5
Christmas Island	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Cocos (Keeling) Islands	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Heard Island and McDonald Islands	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
New Zealand	0.49	NA	1.34	1.00	0.70	0.00	0.85	0.00	0.00	0.15	5
Norfolk Island	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	

Melanesia	NA	NA	1.18	NA	NA	NA	NA	NA	NA	NA	
Fiji	NA	NA	0.77	NA	NA	TBD	TBD	TBD	TBD	TBD	49
New Caledonia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Papua New Guinea	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Solomon Islands	NA	NA	1.57	NA	NA	TBD	TBD	TBD	TBD	TBD	49
Vanuatu	NA	NA	1.20	NA	NA	TBD	TBD	TBD	TBD	TBD	49
Micronesia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Guam	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Kiribati	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Marshall Islands	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Micronesia (Federated States of)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Nauru	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Northern Mariana Islands	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Palau	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
United States Minor Outlying Islands	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Polynesia	NA	NA	1.35	NA	NA	NA	NA	NA	NA	NA	
American Samoa	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Cook Islands	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
French Polynesia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Niue	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Pitcairn	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Samoa	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Tokelau	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Tonga	NA	NA	1.35	NA	NA	TBD	TBD	TBD	TBD	TBD	49
Tuvalu	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Wallis and Futuna Islands	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	

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TABLE 2A.2 WASTE COMPOSITION – BY COUNTRIES AND REGIONAL AVERAGES									
Region/Country	Food/kitchen waste	Paper/ cardboard	Wood	Textile	Rubber/ leather	Plastic	Metal	Glass/ pottery/ china	Others
Central Asia									
Kazakhstan	NA	NA	NA	NA	NA	NA	NA	NA	NA
Kyrgyzstan	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tajikistan	NA	NA	NA	NA	NA	NA	NA	NA	NA
Turkmenistan	NA	NA	NA	NA	NA	NA	NA	NA	NA
Uzbekistan	NA	NA	NA	NA	NA	NA	NA	NA	NA
Eastern Asia									
China	53.4	14.9	3.2	4.5	1.0	13.1	1.9	4.0	3.1
China, Hong Kong Special Administrative Region	31.8	25.4	4.5	3.6	NA	18.1	3.3	3.1	10.35
China, Macao Special Administrative Region	NA	NA	NA	NA	NA	NA	NA	NA	NA
Democratic People's Republic of Korea	NA	NA	NA	NA	NA	NA	NA	NA	NA
Japan	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mongolia	NA	NA	NA	NA	NA	NA	NA	NA	NA
Republic of Korea	23.3	34.5	6.8	4.9	8.0	17.1	NA	NA	5.6
South-Eastern Asia									

Brunei Darussalam									
Cambodia	65.0	4.0	NA	NA	NA	13.0	1.0	5.0	12.0
Indonesia	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lao People's Democratic Republic	NA	NA	NA	NA	NA	NA	NA	NA	NA
Malaysia	50.3	21.9	3.3	1.9		10.4	4.1	2.8	6.9
Myanmar	NA	NA	NA	NA	NA	NA	NA	NA	NA
Philippines	50.0	13.0	NA	NA	NA	16.0	4.0	4.0	12.0
Singapore	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thailand	48.8	12.0	6.0	2.8	2.3	15.0	3.5	5.6	4.6
Timor-Leste	NA	NA	NA	NA	NA	NA	NA	NA	NA
Viet Nam	NA	NA	NA	NA	NA	NA	NA	NA	NA
Southern Asia									
Afghanistan	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bangladesh	74.0	9.0	NA	NA	NA	4.0	0.0	0.0	13.0
Bhutan	NA	NA	NA	NA	NA	NA	NA	NA	NA
India	74.0	9.0				4.0	0.0	0.0	13.0
Iran (Islamic Republic of)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Maldives	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nepal	73.5	7.0	NA	NA	NA	5.0	5.5	2.0	9.0
Pakistan	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sri Lanka	83.0	7.0	NA	NA	NA	6.0	2.2	0.3	1.5
Western Asia									

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Armenia	NA	NA	NA	NA	NA	NA	NA	NA	NA
Azerbaijan	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bahrain	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyprus	NA	NA	NA	NA	NA	NA	NA	NA	NA
Georgia	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iraq	NA	NA	NA	NA	NA	NA	NA	NA	NA
Israel	NA	NA	NA	NA	NA	NA	NA	NA	NA
Jordan	55.0	14.0	NA	NA	NA	13.0	2.0	3.0	13.0
Kuwait	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lebanon	NA	NA	NA	NA	NA	NA	NA	NA	NA
Oman	NA	NA	NA	NA	NA	NA	NA	NA	NA
Qatar	NA	NA	NA	NA	NA	NA	NA	NA	NA
Saudi Arabia	34.0	31.0				2.0	16.0	3.0	14.0
State of Palestine	NA	NA	NA	NA	NA	NA	NA	NA	NA
Syrian Arab Republic	59.0	13.0				12.0	1.0	8.0	8.0
Turkey	NA	NA	NA	NA	NA	NA	NA	NA	NA
United Arab Emirates	35.3	24.3	1.0	3.2	1.7	24.3	2.4	3.4	4.3
Yemen	57.0	11.0	NA	NA	NA	11.0	5.0	3.0	14.0
Northern Africa									
Algeria	NA	NA	NA	NA	NA	NA	NA	NA	NA
Egypt	66.6	11.6				8.3	2.0	3.0	8.9
Libya	NA	NA	NA	NA	NA	NA	NA	NA	NA
Morocco	NA	NA	NA	NA	NA	NA	NA	NA	NA

Sudan	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tunisia	66.5	9.5	NA	NA	NA	10.0	2.0	3.0	9.5
Western Sahara	NA	NA	NA	NA	NA	NA	NA	NA	NA
Eastern Africa									
British Indian Ocean Territory	NA	NA	NA	NA	NA	NA	NA	NA	NA
Burundi	NA	NA	NA	NA	NA	NA	NA	NA	NA
Comoros	NA	NA	NA	NA	NA	NA	NA	NA	NA
Djibouti	NA	NA	NA	NA	NA	NA	NA	NA	NA
Eritrea	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethiopia	NA	NA	NA	NA	NA	NA	NA	NA	NA
French Southern Territories	NA	NA	NA	NA	NA	NA	NA	NA	NA
Kenya	65.0	6.0	NA	NA	NA	12.0	1.0	2.0	15.0
Madagascar	NA	NA	NA	NA	NA	NA	NA	NA	NA
Malawi	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mauritius	48.0	23.0	NA	NA	NA	16.0	4.0	2.0	7.0
Mayotte	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mozambique	NA	NA	NA	NA	NA	NA	NA	NA	NA
Réunion	NA	NA	NA	NA	NA	NA	NA	NA	NA
Rwanda	NA	NA	NA	NA	NA	NA	NA	NA	NA
Seychelles	NA	NA	NA	NA	NA	NA	NA	NA	NA
Somalia	NA	NA	NA	NA	NA	NA	NA	NA	NA
South Sudan	NA	NA	NA	NA	NA	NA	NA	NA	NA

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Uganda	NA	NA	NA	NA	NA	NA	NA	NA	NA
United Republic of Tanzania	65.0	9.0	NA	NA	NA	9.0	2.0	3.0	12.0
Zambia	39.0	3.0	NA	NA	NA	7.0	1.0	2.0	48.0
Zimbabwe	NA	NA	NA	NA	NA	NA	NA	NA	NA
Middle Africa									
Angola	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cameroon	NA	NA	NA	NA	NA	NA	NA	NA	NA
Central African Republic	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chad	NA	NA	NA	NA	NA	NA	NA	NA	NA
Congo	NA	NA	NA	NA	NA	NA	NA	NA	NA
Democratic Republic of the Congo	NA	NA	NA	NA	NA	NA	NA	NA	NA
Equatorial Guinea	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gabon	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sao Tome and Principe	NA	NA	NA	NA	NA	NA	NA	NA	NA
Southern Africa	NA	NA	NA	NA	NA	NA	NA	NA	NA
Botswana	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lesotho	NA	NA	NA	NA	NA	NA	NA	NA	NA
Namibia	NA	NA	NA	NA	NA	NA	NA	NA	NA
South Africa	NA	NA	NA	NA	NA	NA	NA	NA	NA
Swaziland	NA	NA	NA	NA	NA	NA	NA	NA	NA
Western Africa	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benin	NA	NA	NA	NA	NA	NA	NA	NA	NA

Burkina Faso	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cabo Verde	NA	NA	NA	NA	NA	NA	NA	NA	NA
Côte d'Ivoire	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gambia	NA	NA	NA	NA	NA	NA	NA	NA	
Ghana	64.0	3.0	NA	NA	NA	4.0	1.0	NA	28.0
Guinea	NA	NA	NA	NA	NA	NA	NA	NA	NA
Guinea-Bissau	NA	NA	NA	NA	NA	NA	NA	NA	NA
Liberia	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mali	21.0	4.0	NA	NA	NA	2.0	4.0	1.0	52.0
Mauritania	NA	NA	NA	NA	NA	NA	NA	NA	NA
Niger	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nigeria	NA	NA	NA	NA	NA	NA	NA	NA	NA
Saint Helena	NA	NA	NA	NA	NA	NA	NA	NA	NA
Senegal	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sierra Leone	NA	NA	NA	NA	NA	NA	NA	NA	NA
Togo	NA	NA	NA	NA	NA	NA	NA	NA	NA
Eastern Europe	NA	NA	NA	NA	NA	NA	NA	NA	NA
Belarus	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bulgaria	24.0	13.0	NA	NA	NA	15.0	10.0	15.0	24.0
Czechia	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hungary	NA	NA	NA	NA	NA	NA	NA	NA	NA
Poland	33.9	18.7	0.7	2.8	NA	9.4	2.5	9.5	18.0
Republic of Moldova	NA	NA	NA	NA	NA	NA	NA	NA	NA

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Romania	NA	NA	NA	NA	NA	NA	NA	NA	NA
Russian Federation	NA	NA	NA	NA	NA	NA	NA	NA	NA
Slovakia	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ukraine	NA	NA	NA	NA	NA	NA	NA	NA	NA
Northern Europe	NA	NA	NA	NA	NA	NA	NA	NA	NA
Åland Islands	NA	NA	NA	NA	NA	NA	NA	NA	NA
Denmark	48.5	16.7	0.4	2.4	0.5	12.4	3.5	3.9	11.7
Estonia	NA	NA	NA	NA	NA	NA	NA	NA	NA
Faroe Islands	NA	NA	NA	NA	NA	NA	NA	NA	NA
Finland	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iceland	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ireland	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isle of Man	NA	NA	NA	NA	NA	NA	NA	NA	NA
Latvia	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lithuania	NA	NA	NA	NA	NA	NA	NA	NA	NA
Norway	NA	NA	NA	NA	NA	NA	NA	NA	NA
Svalbard and Jan Mayen Islands	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sweden	NA	NA	NA	NA	NA	NA	NA	NA	NA
United Kingdom of Great Britain and Northern Ireland	41.2	17.7	0.5	2.6	0.5	10.9	3.0	6.7	18.9
Southern Europe									
Albania	NA	NA	NA	NA	NA	NA	NA	NA	NA
Andorra	NA	NA	NA	NA	NA	NA	NA	NA	NA

Bosnia and Herzegovina	NA	NA	NA	NA	NA	NA	NA	NA	NA
Croatia	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gibraltar	NA	NA	NA	NA	NA	NA	NA	NA	NA
Greece	NA	NA	NA	NA	NA	NA	NA	NA	NA
Holy See	NA	NA	NA	NA	NA	NA	NA	NA	NA
Italy	NA	NA	NA	NA	NA	NA	NA	NA	NA
Malta	NA	NA	NA	NA	NA	NA	NA	NA	NA
Montenegro	NA	NA	NA	NA	NA	NA	NA	NA	NA
Portugal	NA	NA	NA	NA	NA	NA	NA	NA	NA
San Marino	NA	NA	NA	NA	NA	NA	NA	NA	NA
Serbia	NA	NA	NA	NA	NA	NA	NA	NA	NA
Slovenia	NA	NA	NA	NA	NA	NA	NA	NA	NA
Spain	NA	NA	NA	NA	NA	NA	NA	NA	NA
The former Yugoslav Republic of Macedonia	NA	NA	NA	NA	NA	NA	NA	NA	NA
Western Europe									
Austria	NA	NA	NA	NA	NA	NA	NA	NA	NA
Belgium	NA	NA	NA	NA	NA	NA	NA	NA	NA
France	NA	NA	NA	NA	NA	NA	NA	NA	NA
Germany	NA	NA	NA	NA	NA	NA	NA	NA	NA
Liechtenstein	NA	NA	NA	NA	NA	NA	NA	NA	NA
Luxembourg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Monaco	NA	NA	NA	NA	NA	NA	NA	NA	NA

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Netherlands	26.0	27.0				17.0	3.0	8.0	19.0
Switzerland	NA	NA	NA	NA	NA	NA	NA	NA	NA
Caribbean									
Anguilla	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antigua and Barbuda	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aruba	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bahamas	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barbados	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bonaire, Sint Eustatius and Saba	NA	NA	NA	NA	NA	NA	NA	NA	NA
British Virgin Islands	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cayman Islands	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cuba	NA	NA	NA	NA	NA	NA	NA	NA	NA
Curaçao	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dominica	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dominican Republic	NA	NA	NA	NA	NA	NA	NA	NA	NA
Grenada	NA	NA	NA	NA	NA	NA	NA	NA	NA
Guadeloupe	NA	NA	NA	NA	NA	NA	NA	NA	NA
Haiti	NA	NA	NA	NA	NA	NA	NA	NA	NA
Jamaica	NA	NA	NA	NA	NA	NA	NA	NA	NA
Martinique	NA	NA	NA	NA	NA	NA	NA	NA	NA
Montserrat	NA	NA	NA	NA	NA	NA	NA	NA	NA
Puerto Rico	NA	NA	NA	NA	NA	NA	NA	NA	NA
Saint Barthélemy	NA	NA	NA	NA	NA	NA	NA	NA	NA

Saint Kitts and Nevis	NA	NA	NA	NA	NA	NA	NA	NA	NA
Saint Lucia	NA	NA	NA	NA	NA	NA	NA	NA	NA
Saint Martin (French Part)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Saint Vincent and the Grenadines	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sint Maarten (Dutch part)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trinidad and Tobago	NA	NA	NA	NA	NA	NA	NA	NA	NA
Turks and Caicos Islands	NA	NA	NA	NA	NA	NA	NA	NA	NA
United States Virgin Islands	NA	NA	NA	NA	NA	NA	NA	NA	NA
Australia and New Zealand									
Australia	18.0	20.7	11.7	4.0	1.2	12.2	5.5	5.6	24.3
Christmas Island	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cocos (Keeling) Islands	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heard Island and McDonald Islands	NA	NA	NA	NA	NA	NA	NA	NA	NA
New Zealand	NA	NA	NA	NA	NA	NA	NA	NA	NA
Norfolk Island	NA	NA	NA	NA	NA	NA	NA	NA	NA
Melanesia	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fiji	NA	NA	NA	NA	NA	NA	NA	NA	NA
New Caledonia	NA	NA	NA	NA	NA	NA	NA	NA	NA
Papua New Guinea	NA	NA	NA	NA	NA	NA	NA	NA	NA
Solomon Islands	NA	NA	NA	NA	NA	NA	NA	NA	NA

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Vanuatu	NA	NA	NA	NA	NA	NA	NA	NA	NA
Micronesia	NA	NA	NA	NA	NA	NA	NA	NA	NA
Guam	NA	NA	NA	NA	NA	NA	NA	NA	NA
Kiribati	NA	NA	NA	NA	NA	NA	NA	NA	NA
Marshall Islands	NA	NA	NA	NA	NA	NA	NA	NA	NA
Micronesia (Federated States of)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nauru	NA	NA	NA	NA	NA	NA	NA	NA	NA
Northern Mariana Islands	NA	NA	NA	NA	NA	NA	NA	NA	NA
Palau	NA	NA	NA	NA	NA	NA	NA	NA	NA
United States Minor Outlying Islands	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polynesia	NA	NA	NA	NA	NA	NA	NA	NA	NA
American Samoa	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cook Islands	NA	NA	NA	NA	NA	NA	NA	NA	NA
French Polynesia	NA	NA	NA	NA	NA	NA	NA	NA	NA
Niue	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pitcairn	NA	NA	NA	NA	NA	NA	NA	NA	NA
Samoa	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tokelau	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tonga	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tuvalu	NA	NA	NA	NA	NA	NA	NA	NA	NA
Wallis and Futuna Islands	NA	NA	NA	NA	NA	NA	NA	NA	NA
Central America									

Belize	NA	NA	NA	NA	NA	NA	NA	NA	NA
Costa Rica	NA	NA	NA	NA	NA	NA	NA	NA	NA
El Salvador	NA	NA	NA	NA	NA	NA	NA	NA	NA
Guatemala	NA	NA	NA	NA	NA	NA	NA	NA	NA
Honduras	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mexico	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nicaragua	74.0	9.0	NA	NA	NA	8.0	1.0	1.0	6
Panama	NA	NA	NA	NA	NA	NA	NA	NA	NA
South America									
Argentina	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bolivia (Plurinational State of)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bouvet Island	NA	NA	NA	NA	NA	NA	NA	NA	NA
Brazil	66.0	10.0	NA	NA	NA	11.0	2.0	3.0	9.0
Chile	NA	NA	NA	NA	NA	NA	NA	NA	NA
Colombia	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ecuador	NA	NA	NA	NA	NA	NA	NA	NA	NA
Falkland Islands (Malvinas)	NA	NA	NA	NA	NA	NA	NA	NA	NA
French Guiana	NA	NA	NA	NA	NA	NA	NA	NA	NA
Guyana	NA	NA	NA	NA	NA	NA	NA	NA	NA
Paraguay	NA	NA	NA	NA	NA	NA	NA	NA	NA
Peru	70.0	6.0	NA	NA	NA	9.0	2.0	2.0	11.0

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South Georgia and the South Sandwich Islands	NA	NA	NA	NA	NA	NA	NA	NA	NA
Suriname	NA	NA	NA	NA	NA	NA	NA	NA	NA
Uruguay	NA	NA	NA	NA	NA	NA	NA	NA	NA
Venezuela (Bolivarian Republic of)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Northern America									
Bermuda	NA	NA	NA	NA	NA	NA	NA	NA	NA
Canada	NA	NA	NA	NA	NA	NA	NA	NA	NA
Greenland	NA	NA	NA	NA	NA	NA	NA	NA	NA
Saint Pierre and Miquelon	NA	NA	NA	NA	NA	NA	NA	NA	NA
United States of America	25.4	33.0	5.2	4.9	3.6	11.6	6.7	3.8	22.0
Antarctica	NA	NA	NA	NA	NA	NA	NA	NA	NA

NA (not available); TBD (to be determined): The default value(s) are being developed and will be provided in the second order draft (SOD).

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