



UNSD/UNEP Questionnaire on Environment Statistics and SDG indicator 12.4.2 (Hazardous waste generated per capita and proportion of hazardous waste treated, by type of treatment)

Prepared by the United Nations Statistics Division (UNSD) for: Series of SDG Webinars for the Arab Region: UNEP

SDG 12.4.1, 12.4.2, 15.9.1(b)

An Interagency and Experts Collaboration to Improve the Production and Dissemination of SDG Indicators from Official National Sources



12 May 2022





Outline

- 1. The United Nations Statistics Division (UNSD)/ United Nations Environment Programme (UNEP) Questionnaire on Environment Statistics**
- 2. ... and how it relates to SDG indicator 12.4.2: Hazardous waste generated per capita and proportion of hazardous waste treated, by type of treatment**
- 3. ESCWA member states' responses**
- 4. Collaboration in waste statistics at international level**



UNSD/UNEP Questionnaire on Environment Statistics



- Since 1999, **UNSD** has collected waste data 10 times biennially, from about 160-170 UN member states. Mandated by UN Statistical Commission (**UNSC**) 28th session (1995); reinforced at 34th session (2003).
- Questionnaires are sent to National Statistical Offices and Ministries of Environment.
- Questionnaires are not sent to Eurostat and Organisation for Economic Cooperation and Development (OECD) members and candidate members as OECD and Eurostat services those UN member states.
- Response rate typically hovers around 50% (2018: 52%; 2020: approaching 50%).
- No imputation, no estimation.



UNSD/UNEP Questionnaire on Environment Statistics - Waste



United Nations Statistics Division (UNSD) and United Nations Environment Programme QUESTIONNAIRE 2020 ON ENVIRONMENT STATISTICS

Section: WASTE

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Table R6	Electronic Waste Generation and Collection
Table R7	Supplementary Information Sheet

Relevant to SDG 12.4.2

Two blue arrows originate from the red circles around 'Management of Hazardous Waste' (Table R2) and 'Electronic Waste Generation and Collection' (Table R6), pointing towards the text 'Relevant to SDG 12.4.2' on the right side of the page.

Table R2: Management of Hazardous Waste

Those variables in yellow are a direct source for: SDG indicator 12.4.2 (Hazardous waste generated per capita and proportion of hazardous waste treated, by type of treatment)

Table R2: Management of Hazardous Waste		
Line	Category	Unit
1	Stock of hazardous waste at the beginning of the year	tonnes
2	Hazardous waste generated during the year	tonnes
3	Hazardous waste imported during the year	tonnes
4	Hazardous waste exported during the year	tonnes
5	Hazardous waste treated or disposed of during the year (=6+7+9+10)	tonnes
6	<i>Amounts going to:</i> Recycling	tonnes
7	Incineration	tonnes
8	<i>of which: with energy recovery</i>	tonnes
9	Landfilling	tonnes
10	Other, please specify in the footnote	tonnes
11	Stock of hazardous waste at the end of the year (=1+2+3-4-5)	tonnes



UNSD/UNEP Questionnaire on Environment Statistics: disseminated outputs

- **UNSD environmental indicators:** <https://unstats.un.org/unsd/envstats/qindicators> Time series, or most recently available data for selected variables provided by countries. Disseminated after completion of collection cycle.
- **Country files:** https://unstats.un.org/unsd/envstats/country_files Individual country data on water and waste. Disseminated periodically during collection cycle. E.g. all nine countries here who provided data to UNSD for the 2020 Questionnaire all have their data in the public domain here.
- **Country snapshots:** <https://unstats.un.org/unsd/envstats/snapshots/> Individual country data spanning many environmental themes.
- **Tailored queries:** Per solicitation from key users (e.g. World Health Organisation, UN-HABITAT, UNEP).



UNSD Environmental Indicators



United Nations Statistics Division

Hazardous waste generated

Date of release: 15-Mar-22
Coverage: 99 Countries
Series Type: Time series
Series Start: 1990
Series End: 2019
Unit: Tonnes

Definitions & Technical notes:

In the 1989 Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (<http://www.basel.int/>), 164 countries agreed to minimize the generation of hazardous waste, to assure sound management of hazardous wastes, to control transboundary movement of hazardous wastes; and to improve institutional and technical capabilities especially for developing countries and countries with economies in transition. At later meetings, Parties agreed to a ban on the export of hazardous wastes from OECD to non-OECD countries ('Basel ban').

Hazardous waste is waste that owing to its toxic, infectious, radioactive or flammable properties poses an actual or potential hazard to the health of humans, other living organisms, or the environment. Hazardous waste here refers to categories of waste to be controlled according to the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal (Article 1 and Annex I). If data are not available according to the Basel Convention, amounts can be given according to national definitions.

For more information on the definitions, please see the [UNSD/UNEP Questionnaire 2020 on Environment Statistics](#).

... denotes no data available.



UNSD Environmental Indicators: Hazardous waste generated (tonnes)

CountryID	Country	Source	2011	2012	2013	2014	2015	2016	2017	2018	2019
12	Algeria	U	...	...	...	...	...	...	...	...	...
31	Azerbaijan	U	185,676	296,979	202,882	456,625	262,557	632,602	265,970	338,740	317,413
48	Bahrain	U	70,655	76,619	73,891	73,234	74,935	72,441	71,782	81,152	92,481
50	Bangladesh	U	...	28,946	...	...	...	...	...	...	...
250	France	E	...	11,303,137	...	10,782,969	...	11,010,303	...	12,098,017	...
368	Iraq	U	...	119,425	...	7,150	20,622	19,143	17,234	21,112	26,037
372	Ireland	E	...	478,706	...	482,907	...	533,987	...	630,526	...
380	Italy	E	...	8,987,032	...	8,877,164	...	9,706,964	...	10,137,834	...
400	Jordan	U	1,230,441	...	47,400	...	...	...	...	...	...
398	Kazakhstan	U	420,668,288	355,952,512	382,214,304	337,414,784	251,565,600	151,391,104	126,874,304	149,962,400	180,506,752
414	Kuwait	U	...	...	...	...	...	...	4,955	...	...
417	Kyrgyzstan	U	10,152,943	4,930,216	7,957,260	10,223,015	10,498,943	12,377,486	12,648,247	...	...
428	Latvia	E	...	95,114	...	104,142	...	66,223	...	77,334	...
422	Lebanon	U	...	...	...	...	...	...	...	...	...
440	Lithuania	E	...	136,786	...	165,477	...	175,951	...	192,865	...
496	Mongolia	U	...	...	...	...	...	...	...	...	316,416
504	Morocco	U	...	...	289,284	...	...	...	...	...	...
104	Myanmar	U	...	283	241	293	359	530	784	...	...
528	Netherlands	E	...	4,855,399	...	4,832,314	...	5,134,155	...	5,158,572	...
682	Saudi Arabia	U	...	...	...	...	...	559,334	900,000	808,267	889,100
702	Singapore	U	432,600	290,500	332,800	411,180	446,870	478,990	471,450	538,394	450,000
275	State of Palestine	U	...	4,512	...	4,572	...	...	...	...	...
740	Suriname	U	3.50	3.43	4.04	7.14	6.55	4.43	2.62	1.37	0.88
752	Sweden	E	...	2,696,749	...	2,568,154	...	2,379,232	...	2,882,135	...
760	Syrian Arab Republic	U	...	...	...	...	...	...	...	...	...
764	Thailand	U	3,400,000	4,710,000	3,303,000	2,693,000	3,445,000	3,462,000	...	2,271,000	1,750,000
780	Trinidad and Tobago	U	...	...	124,471	123,681	123,914	...	...	...	...
788	Tunisia	U	...	...	...	...	...	...	...	...	...
804	Ukraine	U	1,434,481	1,368,173	923,777	739,750	587,344	620,965	605,284	627,416	552,977
784	United Arab Emirates	U	370,319	369,002	373,759	436,258	416,104	368,564	510,592	610,966	697,362



UNSD Country Files example: United Arab Emirates

							United Arab Emirates		البلد:
							جدول النفايات 2: إدارة النفايات الخطرة		
Category	2019	2018	2017	2016	2015	الوحدة	الفئة	الخط	
Stock of hazardous waste at the beginning of the year						الطن	مخزون النفايات الخطرة في بداية السنة	1	
Hazardous waste generated during the year	697362	A 610966	510592	368564	416104	الطن	النفايات الخطرة المنتجة خلال السنة	2	
Hazardous waste imported during the year	A 0	A 0	A 0	A 0	A 0	الطن	النفايات الخطرة المستوردة خلال السنة	3	
Hazardous waste exported during the year	A 120819	A 181025	A 141820	A 133100	A 107075	الطن	النفايات الخطرة المصدره خلال السنة	4	
Hazardous waste treated or disposed of during the year (=6+7+9+10)	A 576543	A 429941	A 368772	235464	309029	الطن	النفايات الخطرة المعالجة أو المدارة في البلد خلال السنة (6+7+9+10=)	5	
Amounts going to: Recycling	A 354271	A 32220.1	A 38554	A 33419.3	37124	الطن	الكمية الموجهة إلى: إعادة التدوير	6	
Incineration	A 25082.6	A 24294.7	A 11159.8	A 6772.45	6177.68	الطن	الحرق	7	
of which: with energy recovery	A 4527.26	A 4833.96	A			الطن	من ضمنها: إنتاج الطاقة	8	
Landfilling	A 67144.7	A 149895	A 72221	A 57433.9	75040.3	الطن	مدافن النفايات	9	
Other, please specify in the footnote	D 130044	D 223532	D 246838	D 137838	D 190686	الطن	مأل آخر للنفايات. يرجى تحديده في الحاشية	10	
Stock of hazardous waste at the end of the year (=1+2+3-4-5)						الطن	مخزون النفايات الخطرة في بديه السنة	11	

الرمز	نص الحاشية
A	المصدر: وزارة التغير المناخي والبيئة Ministry of Climate change and Enviroment
B	طرق استرجاع مختلفة (إعادة التصنيع داخل مرفق المعالجة أو بيع لشركات المعالجة أو بغرض إعادة التدوير طرق أخرى في الاسترجاع)
C	المصدر: مسح النفايات المجمع في المركز الوطني للإحصاء 2010-2016 بالتعاون مع المصادر التالية: 1. مركز الإحصاء-أبوظبي 2. مركزي للإحصاء والبلديات والجهات ذات العلاقة في بقية الإمارات
D	المعالجة الفيزيوكيميائية



ESCWA member states' responses to the 2020 UNSD/UNEP Questionnaire on Environment Statistics:

- 9 out of 20 member states (45%) offered a response: **Algeria, Bahrain, Egypt, Iraq, Jordan**, Kuwait, Lebanon, Libya, **Morocco**, Mauritania, **Oman**, State of Palestine, **Qatar, Saudi Arabia**, Somalia, Sudan, Syrian Arab Republic, Tunisia, **United Arab Emirates**, Yemen.
- Response rates for individual variables are generally much less than 45% (for ESCWA and the globe).
- UNSD held bilateral phone calls with two ESCWA member states to help with provision of data.



How can data collected via this Questionnaire inform key policy questions?

- **Indicator 6.3.1 (Tier II): Proportion of domestic and industrial wastewater safely treated**
 - **Custodian agencies: WHO, UN-HABITAT, UNSD**
 - **Metadata [\[link\]](#)**
- **Indicator 6.4.1 (Tier I): Change in water-use efficiency over time**
 - **Custodian agencies: FAO. Partners: UNEP, IUCN, UNSD, OECD, Eurostat**
 - **Metadata [\[link\]](#)**
- **Indicator 6.4.2 (Tier I): Level of water stress: freshwater withdrawal as a proportion of available freshwater resources**
 - **Custodian agencies: FAO. Partners: UNEP, IUCN, UNSD, OECD, Eurostat**
 - **Metadata [\[link\]](#)**





How can data collected via this Questionnaire inform key policy questions?

Hottest current interest is mostly via Sustainable Development Goal-related mandates...

Indicator 11.6.1 (Tier II): Proportion of municipal solid waste collected and managed in controlled facilities out of total municipal solid waste generated by cities

- Custodian agencies: UN-HABITAT, UNSD
- Metadata [\[link\]](#)

Indicator 12.3.1(b): Food waste index

- Custodian agency: UNEP
- Metadata [\[link\]](#)

Indicator 12.4.2 (Tier II): Hazardous waste generated per capita and proportion of hazardous waste treated, by type of treatment.

- **Custodian agencies: UNEP, UNSD**
- **Metadata [\[link\]](#)**

Indicator 12.5.1 (Tier II): National recycling rate, tons of material recycled.

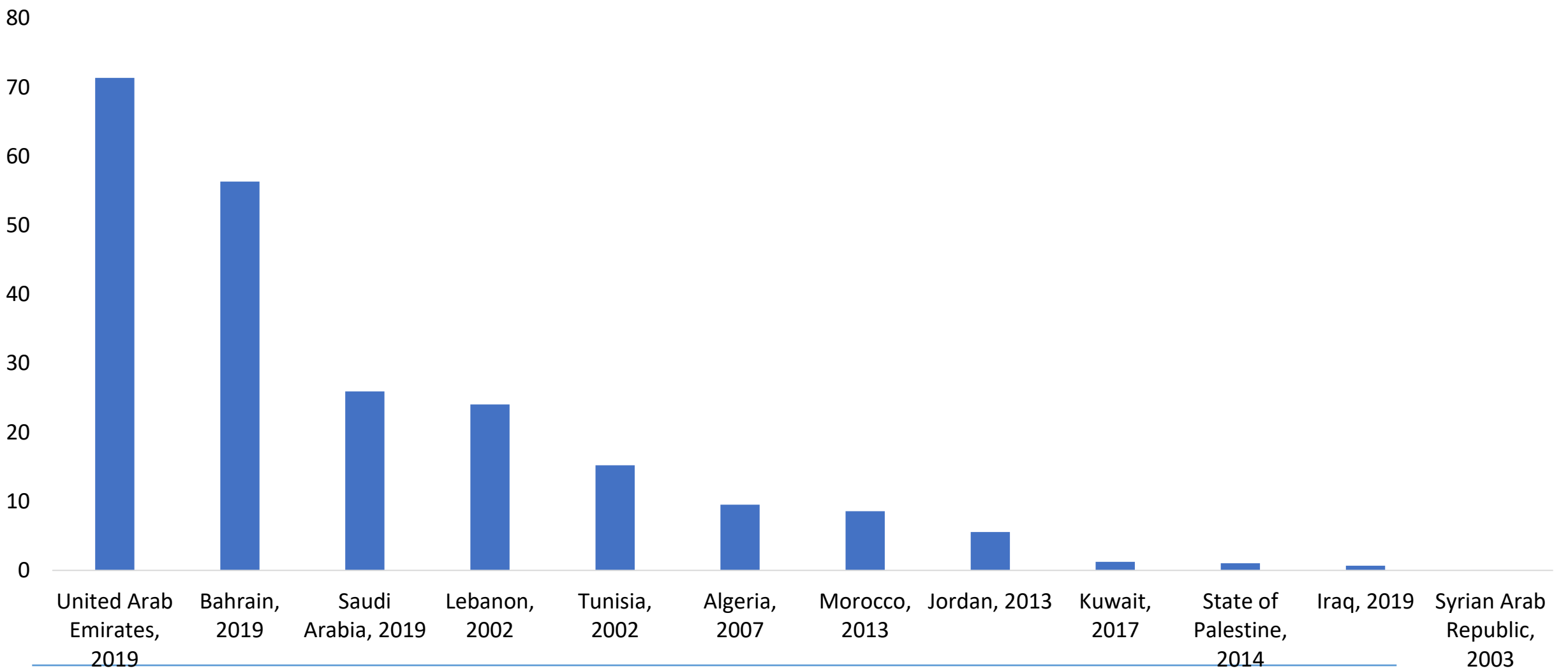
- Custodian agencies: UNEP, UNSD
- Metadata [\[link\]](#)

...and also continued interest from academia, researchers, journalists, etc.



ESCWA member states' responses to the 2020 UNSD/UNEP

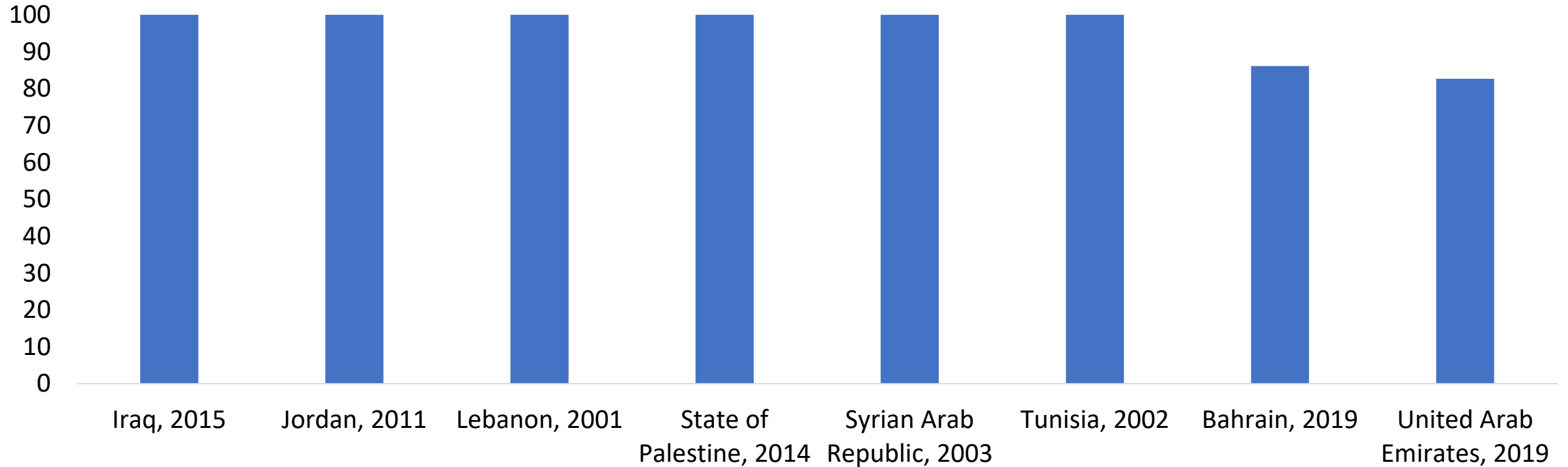
Questionnaire on Environment Statistics: Hazardous waste generated (kilograms per capita)



Source: UNSD/UNEP Questionnaire, Indicator tables. <https://unstats.un.org/unsd/envstats/qindicators> which is country replies to the UNSD/UNEP Questionnaire on Environment Statistics.

ESCWA member states' responses to the 2020 UNSD/UNEP

Questionnaire on Environment Statistics: Percentage of hazardous waste generated which is treated



For Bahrain and UAE, all or almost all of remaining hazardous waste is exported.

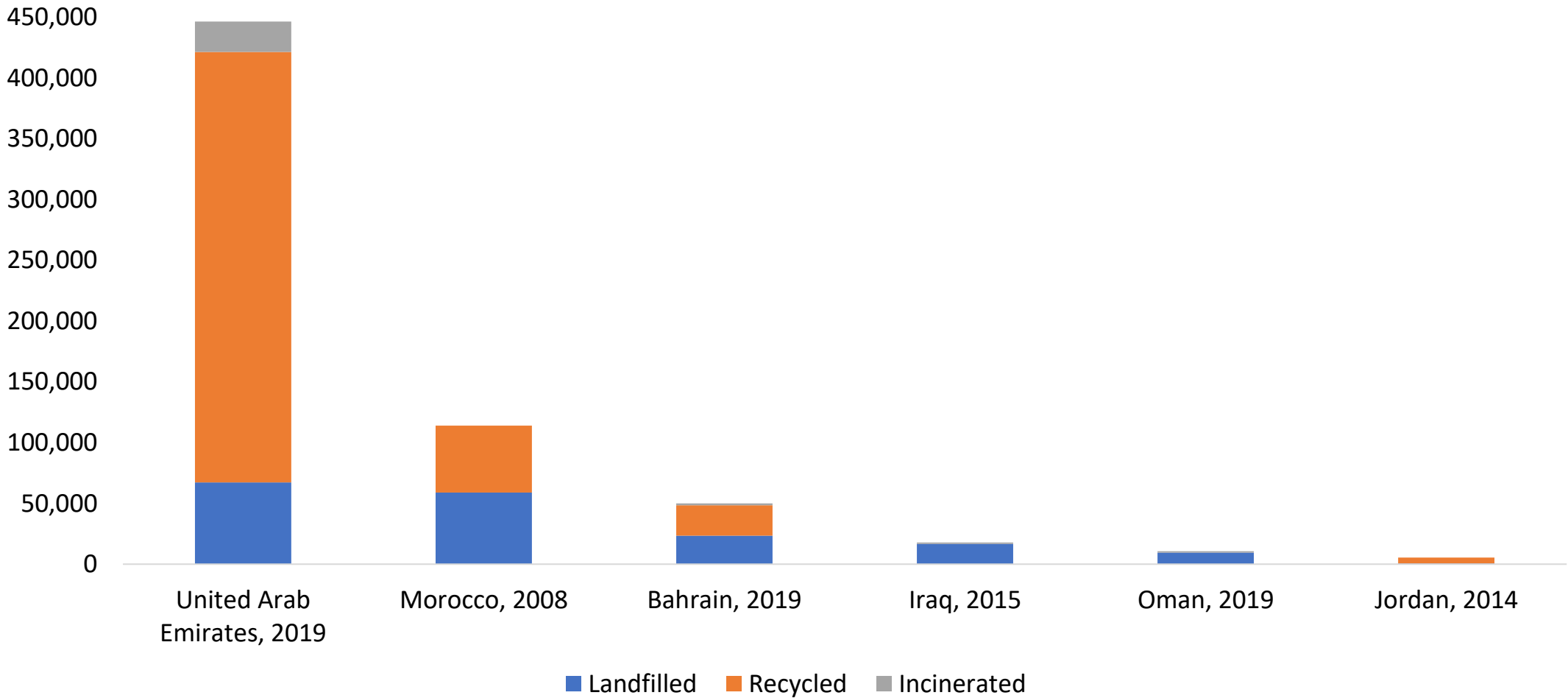
Sources: UNSD/UNEP Questionnaire, Indicator tables. <https://unstats.un.org/unsd/envstats/qindicators>

United Nations, World Population Prospects 2019.

<https://population.un.org/wpp/Download/Standard/Population/>



How can data collected via this Questionnaire inform key policy questions? How are countries treating hazardous waste? (tonnes)



Source: UNSD/UNEP Questionnaire, Indicator tables. <https://unstats.un.org/unsd/envstats/qindicators>



How can data collected via this Questionnaire inform key policy questions?

- For some countries, we now have **credible, country-owned** time series for “hazardous waste generated”, “hazardous waste treated”, and furthermore, credible, country-owned time series for hazardous waste treatment by various treatment types (recycled, incinerated, controlled landfilling).
- If countries are able to provide detailed breakdowns of data (e.g. hazardous waste by treatment types [landfilled, incinerated, recycled]), we can answer more detailed questions on policy. e.g. How much of a country’s hazardous waste is being recycled/ incinerated/ landfilled?
- For some countries, data remain spotty, or are far too out of date. There remains a temptation for others to speculate or to apply estimation techniques in the absence of country-owned data. => capacity development can help address this and increase availability of country-owned data.
- For electronic waste (data collected since 2018), data have been provided by Jordan and United Arab Emirates so far to the Questionnaire.



Observations on waste data available via the UNSD/UNEP Questionnaire on Environment Statistics

- All data shown in the presentation was sourced from country responses to the UNSD/UNEP Questionnaire on Environment Statistics. No imputation or estimation has been made.
- The situation has gradually improved since the 1995 UN Statistical Commission mandate, and it's been a collaborative effort spanning institutions at international level, and many country NSOs, Ministries of Environment and other stakeholders at federal, state/provincial and local government levels.
- UNSD maintaining open relationships with key stakeholders (countries, regional commissions, international organisations, etc.) is vital to continued improvement.
- Data remains spotty for many variables collected whether they be demanded by key mandates (SDG indicators, Global Set of Climate Change Statistics and Indicators, Framework for the Development of Environment Statistics(FDES)) or otherwise.
- Maintaining **relevance** is key, hence the importance for the Questionnaire to be in alignment with the Basel Convention.
- UNSD remains cognizant of respondent burden upon countries. Supply v Demand is considered when modifying content. Caveats and footnotes are used to improve data availability and comparisons among countries.
- Imputations or estimates are not made. Only country-reported data are shown.



Collaboration in waste statistics

- Country consultation on UNSD/UNEP Questionnaire on Environment Statistics: Video call where UNSD made itself available for any questions or concerns countries who had not yet responded to the Questionnaire may have. About 15 countries attended together with key user stakeholders (World Health Organization, UN-HABITAT).
- Bilateral calls between a country NSO and UNSD on technical issues pertaining to the UNSD/UNEP Questionnaire on Environment Statistics (bound by language constraints)
- At international level, regular teleconferences continue among UNSD, UNEP and UN-HABITAT.
- As data improves, more citations from key users are expected, both in terms of data collected and the methodology advocated within the Questionnaire.
- United Nations Environment Programme, **Global Chemicals and Waste Indicator Review Document**,
<https://wedocs.unep.org/bitstream/handle/20.500.11822/36753/GCWIR.pdf>
- United Nations, **Manual on the Basic Set of Environment Statistics – Waste Statistics**
https://unstats.un.org/unsd/environment/FDES/MS_3.3.1_3.3.2_Waste.pdf



Grateful to countries for their contributions.

Thank You!

From your position in a National Statistical Office, Ministry of Environment, or otherwise, how are you able to provide data on hazardous waste? What are the major obstacles to providing data? Do you collaborate with your country's focal point for the Basel Convention?

UNSD Environment Statistics Section
Website: unstats.un.org/unsd/envstats
Email: envstats@un.org

