Improvement of Data Collection and Monitoring for SDGs

Nao Takeuchi
Urban Basic Services Branch, UN-Habitat

Contents

SDGs

What is SDGs?

SDGs
Solid Waste Related Goals

Goal 6: Ensure availability and sustainable management of water and sanitation for all

Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable

Goal 12: Ensure sustainable consumption and production patterns

Waste SDG
Targets and Indicators

UN-Habitat

Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable		
Targets		***Indicator***
11.6	By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management.	**% of urban solid waste regularly collected and with adequate final discharge with regards to the total waste generated by the city**

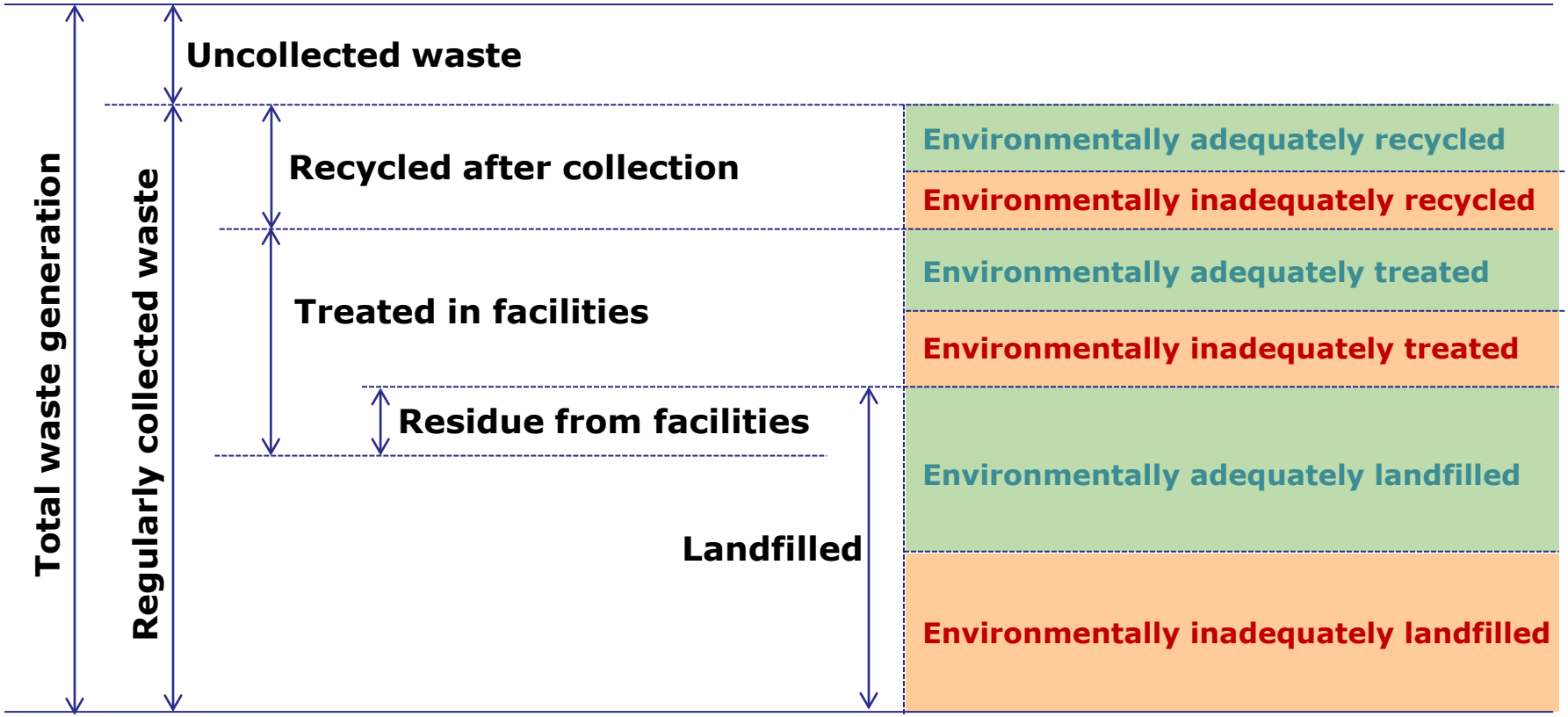
UN-Habitat & WHO

Goal 6: Ensure availability and sustainable management of water and sanitation for all		
Targets		***Indicator***
6.3	By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally environment.	**% of wastewater safely treated (Definition of 'wastewater' include septage and feacal sludge)**

UNEP

Goal 12: Ensure sustainable consumption and production patterns		
Targets		***Indicator***
12.4	By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment.	**Treatment of waste, generation of hazardous waste, hazardous waste management, by type of treatment**
12.5	By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse.	**National recycling rate, tons of material recycled**

11.6.1 on Urban Waste
Concept Model



% of urban solid waste regularly collected and with adequate final discharge

$$= \frac{Amount\ of\ waste\ environmentally\ adequately\ recycled, treated\ \&\ landfilled - Residue}{Total\ waste\ generation}$$

11.6.1 on Urban Waste
Definitions

Scope of Monitoring:

Municipal solid waste (wastes consisting of everyday items such as product packaging, grass clippings, furniture, clothing, bottles and cans, food scraps, newspapers, appliances, consumer electronics, and batteries.)

Environmental Adequacy:

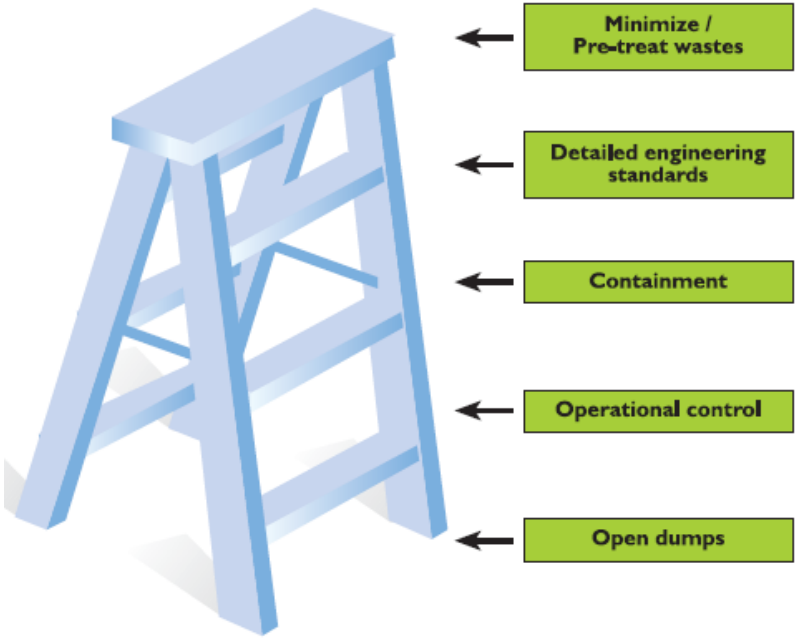
Intermediate level of control

- Control over waste reception and general site management
- Control over waste treatment and disposal
- Degree of monitoring and verification of environmental controls



11.6.1 on Urban Waste

Example of 'intermediate control'



Stepwise progression controlling disposal
UN-Habitat (2010) *Status of Solid Waste Management in the World Cities*

Example of improvement of open dumps to operational control
JICA (2016) *Projet de renforcement des capacities pour la gestion des dechets menagers et assimiles dans la commune de Tiznit et les communes avoisinantes dans le Royaume du Maroc : rapport final*

6.3.1 on Waste Water
Concept Model

diffuse agricultural sources

it is unfeasible to monitoring sources or diffuse agricultural pollution – therefore only their effect on receiving water quality is monitored.

Domestic wastewater

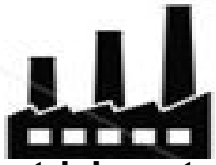
Monitored

Water quality

Monitored

Wastewater monitoring establishes causes of poor water quality

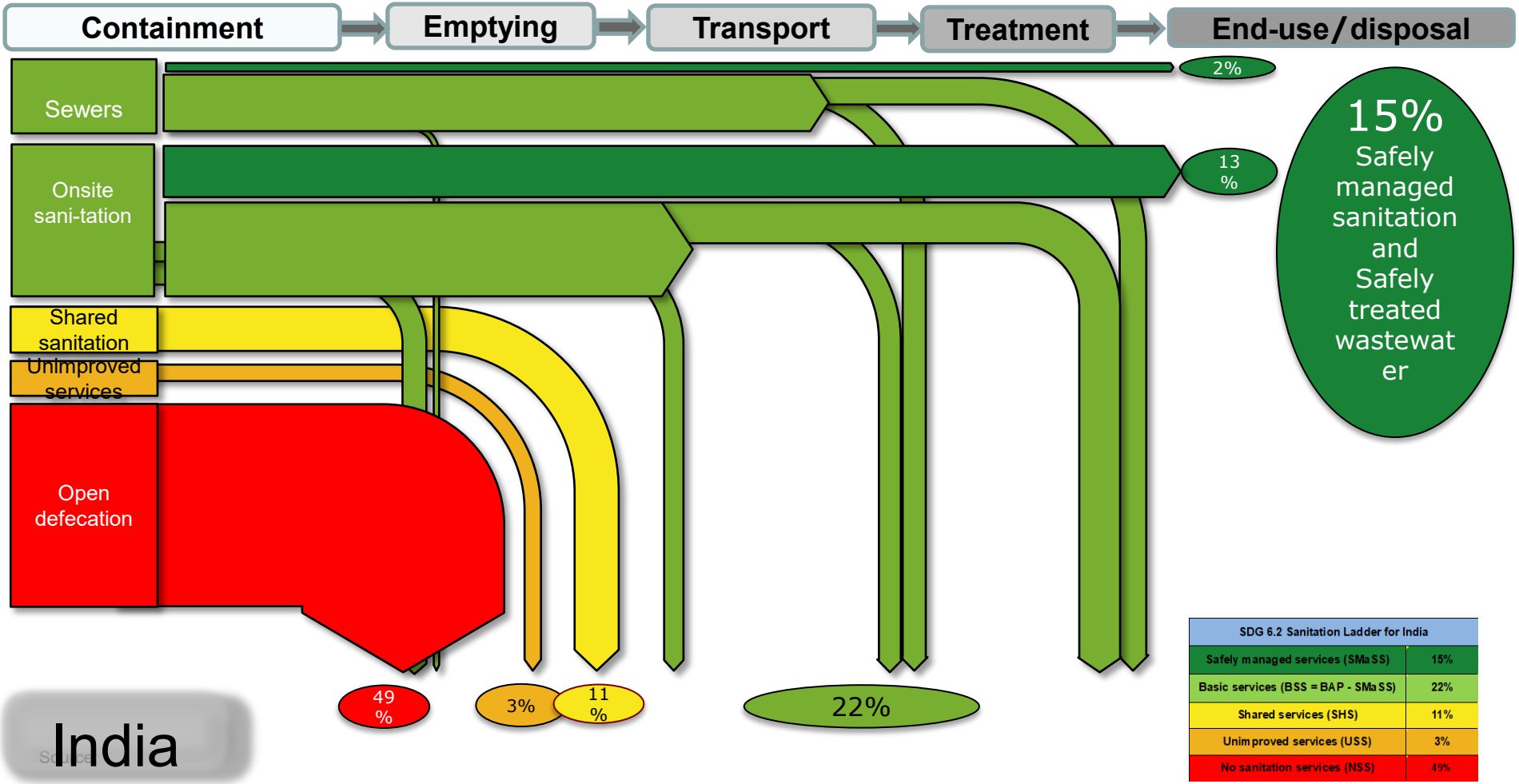
Monitored



Industrial wastewater (incl. point source agriculture)

Verify progress on wastewater management

6.3.1 Waste Water
Example from India Pilot Test



India

SDG 6.2 Sanitation Ladder for India	
Safely managed services (SMaSS)	15%
Basic services (BSS = BAP - SMaSS)	22%
Shared services (SHS)	11%
Unimproved services (USS)	3%
No sanitation services (NSS)	49%

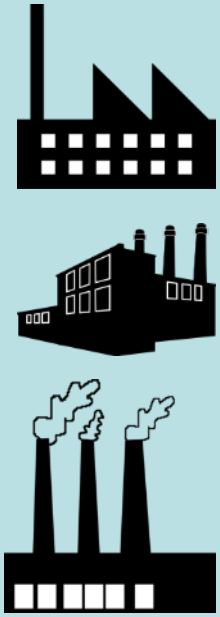
12.4.2 on Hazardous Waste
Concept Model

CATEGORIES OF WASTES TO BE CONTROLLED

WASTE STREAMS

Y1	Clinical wastes from medical care in hospitals, medical centers and clinics
Y2	Wastes from the production and preparation of pharmaceutical products
Y3	Waste pharmaceuticals, drugs and medicines
Y4	Wastes from the production, formulation and use of biocides and phytopharmaceuticals
Y5	Wastes from the manufacture, formulation and use of wood preserving chemicals
Y6	Wastes from the production, formulation and use of organic solvents
Y7	Wastes from heat treatment and tempering operations containing cyanides
Y8	Waste mineral oils unfit for their originally intended use
Y9	Waste oils/water, hydrocarbons/water mixtures, emulsions
Y10	Waste substances and articles containing or contaminated with polychlorinated biphenyls (PCBs) and/or polychlorinated terphenyls (PCTs) and/or polybrominated biphenyls (PBBs)
Y11	Waste tarry residues arising from refining, distillation and any pyrolytic treatment
Y12	Wastes from production, formulation and use of inks, dyes, pigments, paints, lacquers, varnish
Y13	Wastes from production, formulation and use of resins, latex, plasticizers, glues/adhesives

Different treatment facilities

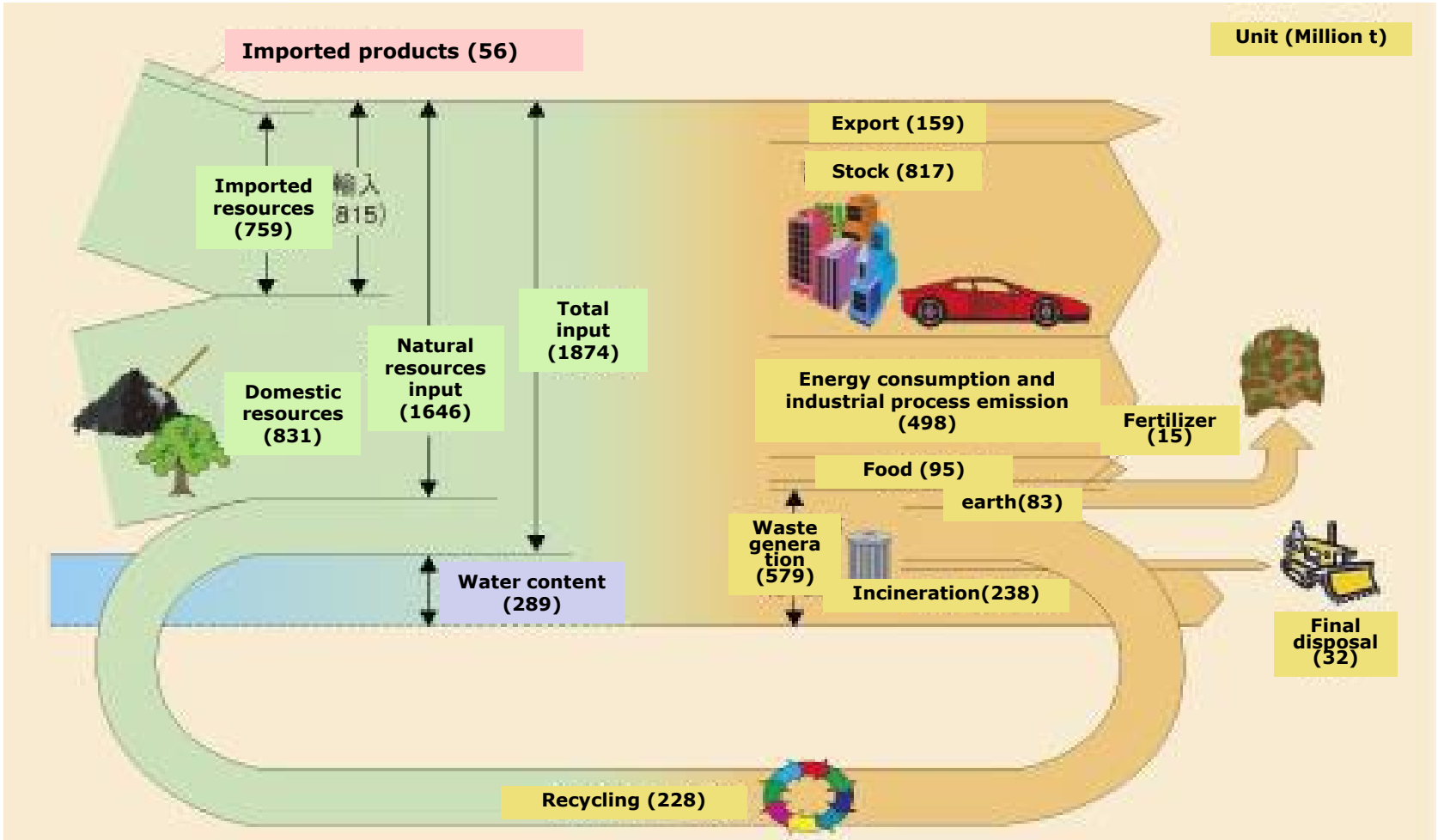


Monitored

Environmentally Sound Disposal

Manifest system and monitoring is necessary

12.5 on Recycling Rate
Concept Model (Example)



Environmental White Paper, Ministry of the Environment of Japan (2005)

Waste SDGs Monitoring
Challenges and Opportunity

Challenges

- Member states should monitor the indicators therefore establishment of monitoring system is essential
- Some data should be collected at the local or municipal level
- Capacity development for the personnel in the related entities on monitoring method is essential

Opportunities

- Measuring the waste related SDG indicators will allow you to have more informed policy making decisions (e.g. for swm master planning, priority areas for intervention, etc.)
- Numbers and data on the fact can tell you what the most effective and efficient interventions are to improve your solid waste management.

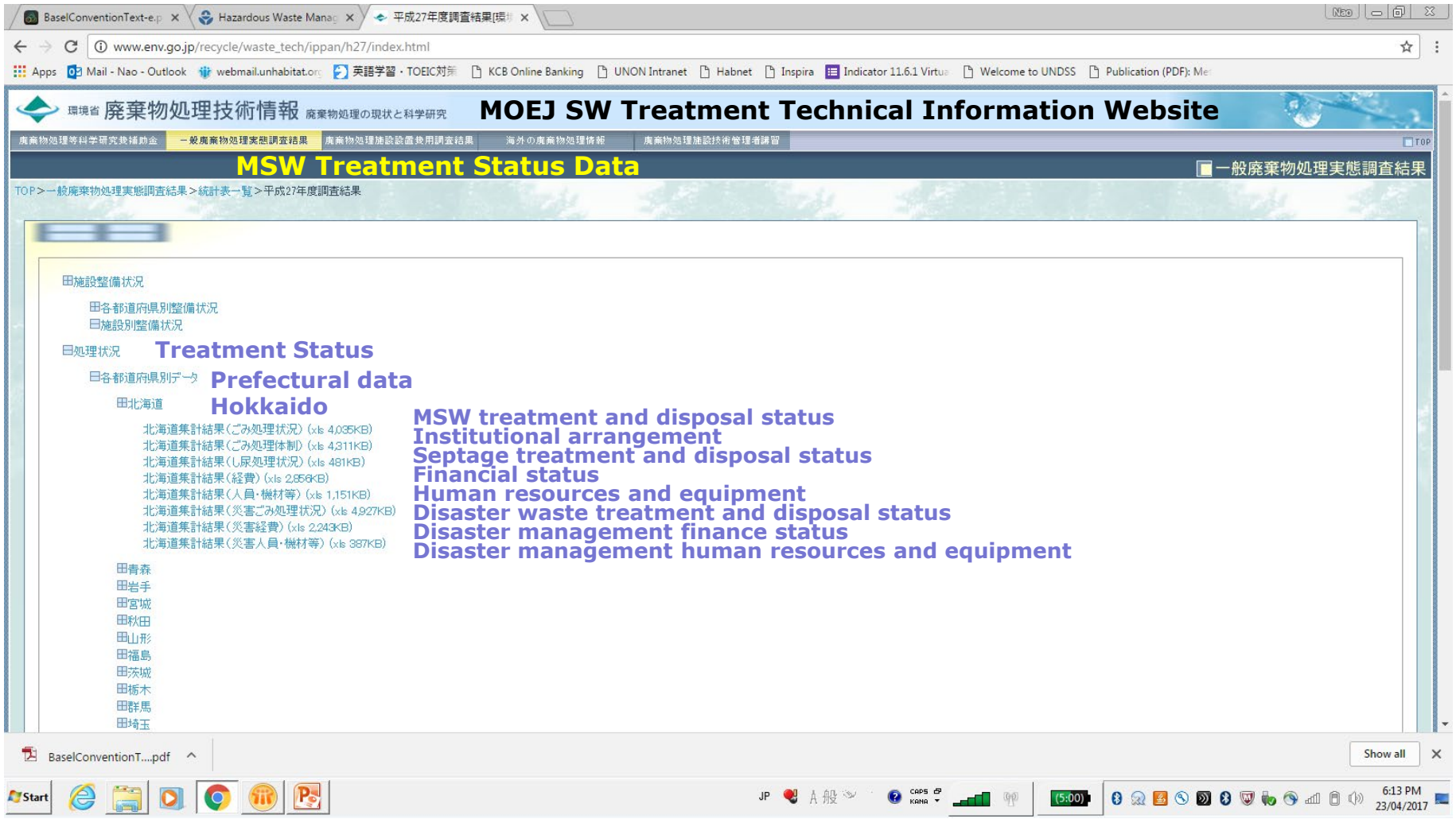
This platform can be utilised for the capacity development on monitoring mechanism establishment in your country!

Waste Monitoring
Example from Japan

Waste Monitoring
Example from Japan

Level	Entity	Municipal solid waste	Hazardous waste
National	Ministry of the Environment Dpt. Waste and Recycling	• Questionnaire distribution • Data consolidation and publication	• Questionnaire distribution • Data consolidation and publication
Prefectural	Dpt. Environment Solid waste management unit	• Questionnaire distribution to municipal government • Data consolidation and submission to MOE	• Data collection based on the facilities inventory according to treatment types
Municipal	Dpt. Environment Solid waste management unit	• Data collection from all the facilities managed by municipal government	

Waste Monitoring
Example from Japan

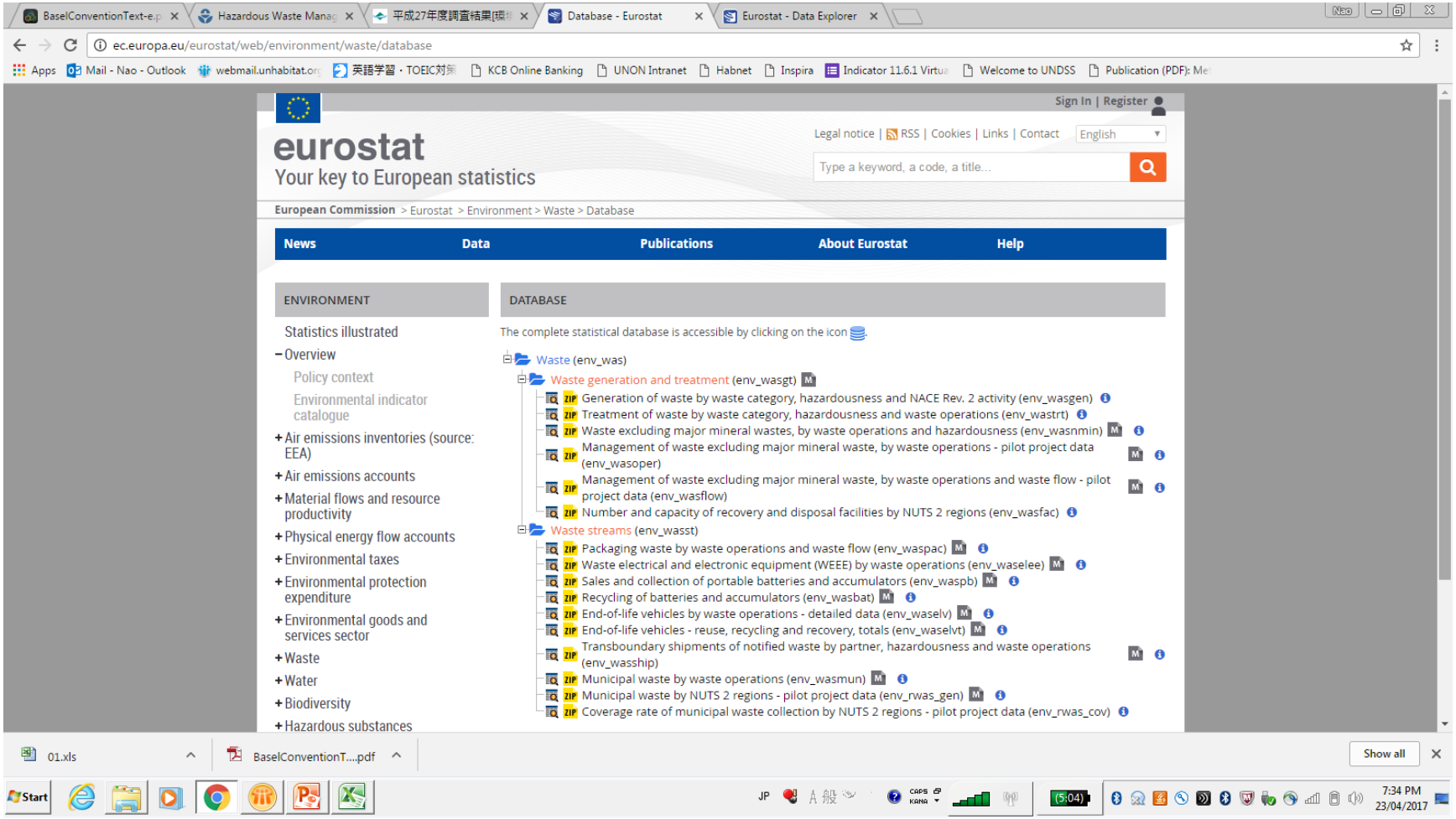


Waste Monitoring
Example of Japan

Prefecture name	Prefectural code	Municipal government names	Population	Population with collection services	Population with own treatment methods	foreigner population	Waste generation: Collected by collection service	Waste generation: Brought to facilities by generator	Waste generation: Other collection services	Waste generation: Total	Per capita generation: Total	Per capita generation: Municipal solid waste from household	Per capita generation: Municipal solid waste from restaurants, offices, other institutions	Treated and disposed by their own	Treatment and Disposal: Incinerated	Treatment and Disposal: Landfilled	Treatment and Disposal: Oter treat... Total
			(人)	(人)	(人)	(人)	(t)	(t)	(t)	(t)	(g/人日)	(g/人日)	(g/人日)	(t)	(t)	(t)	(t)
北海道	01000	合計	5,401,481	5,394,799	6,682	24,906	1,560,709	243,907	139,800	1,944,416	984	678	306	4,586	1,132,353	163,993	472,...
北海道	01100	札幌市	1,941,078	1,941,078	0	10,014	533,531	65,128	56,727	655,386	923	630	293	0	401,070	32,711	164,...
北海道	01202	函館市	269,079	269,079	0	867	93,397	11,826	8,489	113,712	1,155	712	443	0	87,459	7,826	9,...
北海道	01203	小樽市	122,088	122,088	0	485	48,236	0	3,006	51,242	1,147	706	441	0	34,081	2,106	12,...
北海道	01204	旭川市	345,566	345,566	0	791	105,301	2,523	10,884	118,708	939	654	284	0	77,690	12,218	14,...
北海道	01205	室蘭市	88,889	88,889	0	307	30,362	5,176	3,361	38,899	1,196	667	528	0	27,175	1,779	6,...
北海道	01206	釧路市	176,719	176,719	0	505	60,584	10,829	2,810	74,223	1,148	769	379	0	50,721	3,384	17,...
北海道	01207	帯広市	168,532	168,532	0	553	45,172	4,010	7,911	57,093	926	679	246	0	35,299	0	13,...
北海道	01208	北見市	121,264	121,264	0	316	35,378	9,043	200	44,621	1,005	736	269	0	31,986	1,057	11,...
北海道	01209	夕張市	9,205	9,205	0	89	2,873	697	0	3,570	1,060	663	397	0	0	3,291	
北海道	01210	岩見沢市	85,059	85,059	0	119	22,959	1,948	2,965	27,872	895	648	247	0	19,902	0	4,...
北海道	01211	網走市	37,436	37,436	0	185	10,853	3,074	559	14,486	1,057	719	338	0	0	1,115	12,...
北海道	01212	留萌市	22,600	22,600	0	100	6,480	414	0	6,894	833	549	285	0	0	3,171	1,...
北海道	01213	苫小牧市	173,800	173,800	0	478	56,653	9,933	6,564	73,150	1,150	658	492	0	46,804	1,104	10,...
北海道	01214	稚内市	36,325	36,325	0	349	14,078	3,335	314	17,727	1,333	802	531	0	0	12,338	5,...
北海道	01215	美唄市	23,501	23,501	0	47	6,319	923	0	7,242	842	519	323	0	3,392	524	3,...
北海道	01216	芦別市	14,769	14,769	0	31	3,104	1,849	0	4,953	916	574	342	0	0	3,366	1,...
北海道	01217	江別市	119,587	119,587	0	418	31,521	1,561	7,274	40,356	922	686	236	0	28,779	28	4,...
北海道	01218	赤平市	11,123	11,123	0	57	2,177	1,069	0	3,246	797	535	263	0	2,102	202	
北海道	01219	紋別市	23,384	23,384	0	337	8,263	11	0	8,274	967	756	211	0	5,655	0	2,...
北海道	01220	士別市	20,004	20,004	0	59	6,808	1,657	17	8,482	1,159	693	466	129	0	4,488	3,...
北海道	01221	名寄市	28,760	28,760	0	130	7,213	2,741	373	10,327	981	619	362	0	3,094	5,568	1,...
北海道	01222	三笠市	9,300	9,300	0	17	3,334	608	0	3,942	1,158	979	179	0	0	0	3,...

ごみ処理概要 / ごみ搬入量内訳 / 施設区分別搬入量内訳 / ごみ処理量内訳 / 資源化量内訳 / 施設資源化量内訳 / 災害廃棄物搬入量 / ごみ集計結果 / ごみフローシート

Waste Monitoring
Example of EU



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Waste Monitoring
Example of EU

NAVIGATION

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IN OTHER LANGUAGES

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File:Municipal waste generated by country in selected years (kg per capita),1995-2015-T1.png

File File history File usage

	1995	2000	2005	2010	2015	change (%) 1995-2015
EU-28	:	521	515	504	477	:
EU-27	473	523	517	505	477	0.8
Belgium	455	471	482	456	419	-7.9
Bulgaria	694	612	588	554	419	-39.6
Czech Republic	302	335	289	318	316	4.6
Denmark	521	664	736	:	789	51.4
Germany	623	642	565	602	625	0.3
Estonia	371	453	433	305	359	-3.2
Ireland	512	599	731	624	:	:
Greece	:	412	442	532	:	:
Spain	505	653	588	510	434	-14.1
France	475	514	530	533	502	5.7
Croatia	:	262	336	379	393	:
Italy	454	509	546	547	486	7.0
Cyprus	595	628	688	689	638	7.2
Latvia	264	271	320	324	433	64.0
Lithuania	426	365	387	404	448	5.2
Luxembourg	587	654	672	679	625	6.5
Hungary	460	446	461	403	377	-18.0
Malta	387	533	623	601	624	61.2
Netherlands	539	598	599	571	523	-3.0
Austria	437	580	575	562	560	28.1
Poland	285	320	319	316	286	0.4
Portugal	352	457	452	516	:	:
Romania	342	355	383	313	:	:
Slovenia	596	513	494	490	449	-24.7
Slovakia	295	254	273	319	329	11.5
Finland	413	502	478	470	500	21.1
Sweden	386	428	477	439	447	15.8
United Kingdom	498	577	581	509	485	-2.6
Iceland	426	462	516	481	:	:
Norway	624	613	426	469	421	-32.5
Switzerland	600	656	661	708	725	20.8
Montenegro	:	:	:	:	533	:
FYR of Macedonia	:	:	:	351	:	:
Serbia	:	:	:	363	259	:
Turkey	441	465	458	407	400	-9.3
Bosnia and Herzegovina	:	:	:	332	:	:

Waste Monitoring
How to Do It in Data Scarce Context?

- Waste generation survey
  - Household survey
  - Visit to restaurants, offices, markets, etc
  - Estimate on waste generation per capita

  → Waste generation/capita x population = total waste (t)

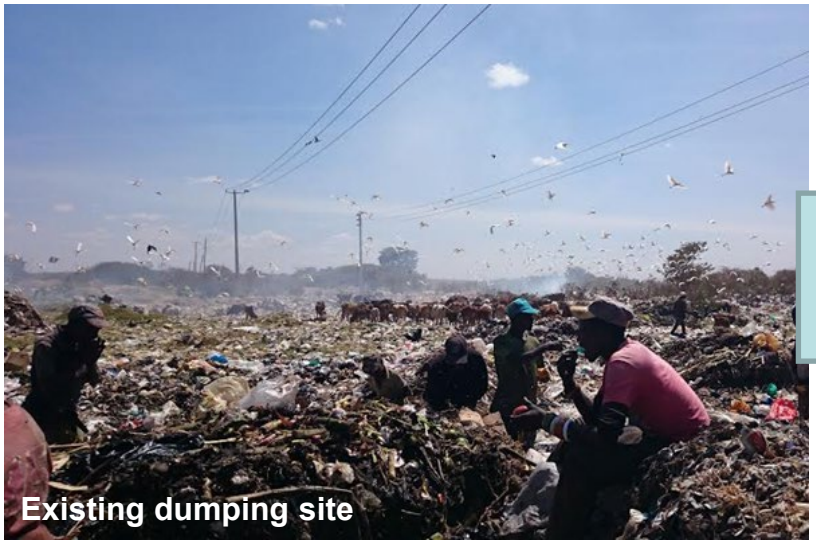
- Informal recycling activities
  - Interview to informal recyclers
  - Interview to waste pickers
  - Visit to recycling workshops

  → Create a list of recycling workshops and check their environmental adequacy and daily capacity (t)

- Disposal site
  - Install weighing bridge / count # of trucks coming in

Waste Monitoring
Use indicator to improve the SWM

For improvement of disposal site!


Existing dumping site


New pilot landfill site

0% → **Could be improve to 60%**

Waste Monitoring
Use indicator to improve the SWM

For formalization of informal sector!

0%

Could be improve to 70%

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Thank you!