



**World Customs
Organization**

Ongoing Research on Waste Control at border: from Customs' perspective

Kenji OMI (Mr.)

Technical Attache, Research Unit

WCO Knowledge Academy

10 Sep. 2020

CONTENT



I. Overview

II. A look at current situation

III. An observation

This presentation shows the findings of the author's research work in progress. Views, opinions and choice of data presented are those of the author and do not reflect the views or policies of the WCO or WCO Members.

Overview



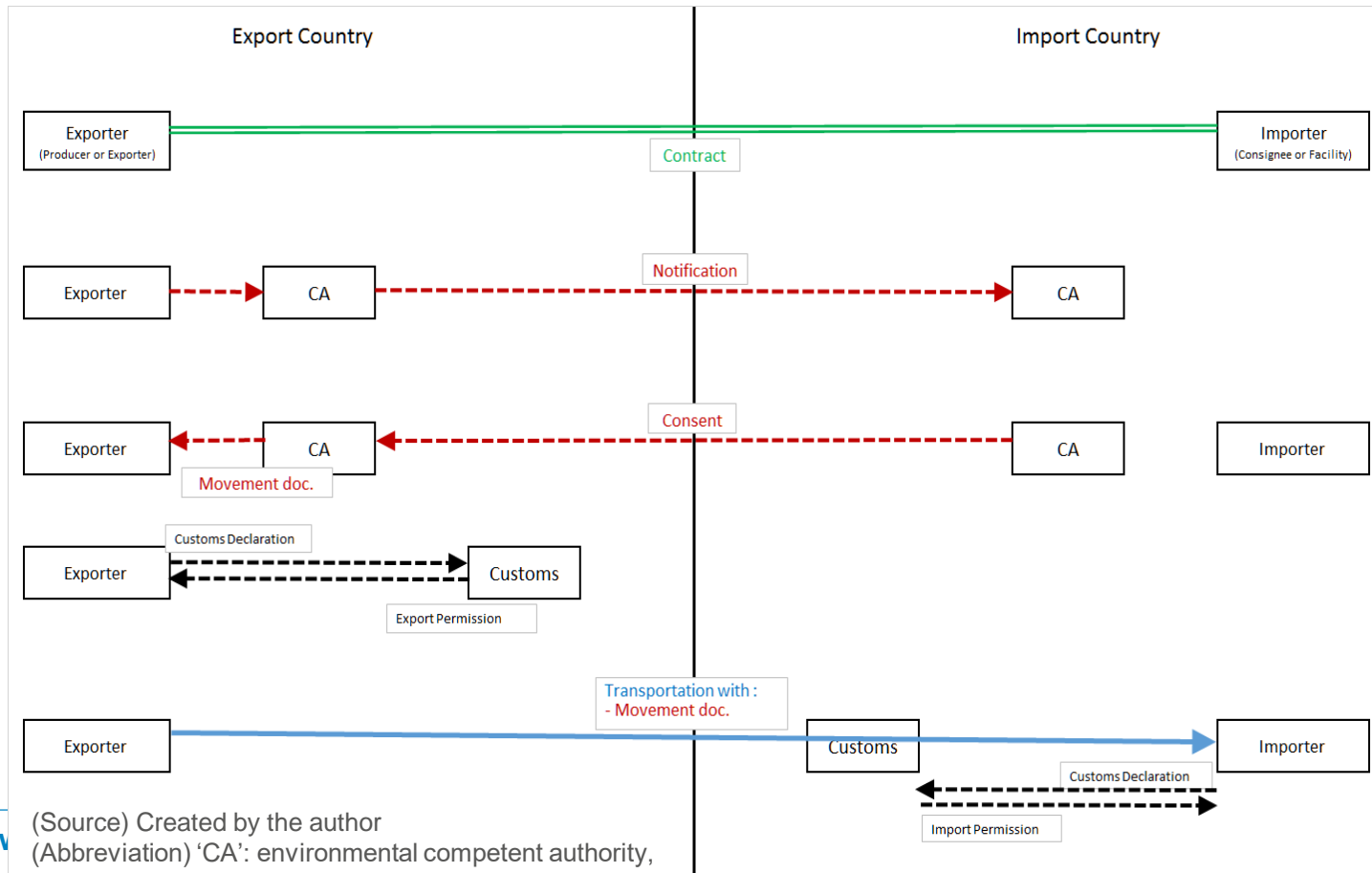
- Adverse effects posed by hazardous waste to human health and environment; Basel Convention (trade-related MEA governing waste control) recognized them at very first of its preamble
- Waste control at border contributes to UN SDGs: Goal 12 (responsible consumption and production); Goal 3 (good health and well-being); Goal 6 (clean water and sanitation); Goal 8 (decent work and economic growth); Goal 11 (sustainable cities and communities); Goal 14 (life below water)
- Multi characteristics of waste; endogenous in industrial production

(Abbreviation) 'MEA': multilateral environmental agreement

Overview: General flow of procedure



- PIC procedure governed by the Basel Convention and Customs procedure



Overview: Customs' contribution to waste control at border



- 'Green Customs Initiative' coordinated by the UNEP in cooperation with WCO since 2001
- WCO Council decision 'Actions Against Cross-Border Environmental Offences' in 2008
- WCO Environmental Programme launched since 2012
- 'Operation DEMETER' since 2009
 - International joint operations by Customs, coordinated by WCO
 - Participated also by national CAs, police, UNEP and regional bodies, Interpol, IMPEL etc

(Abbreviation)

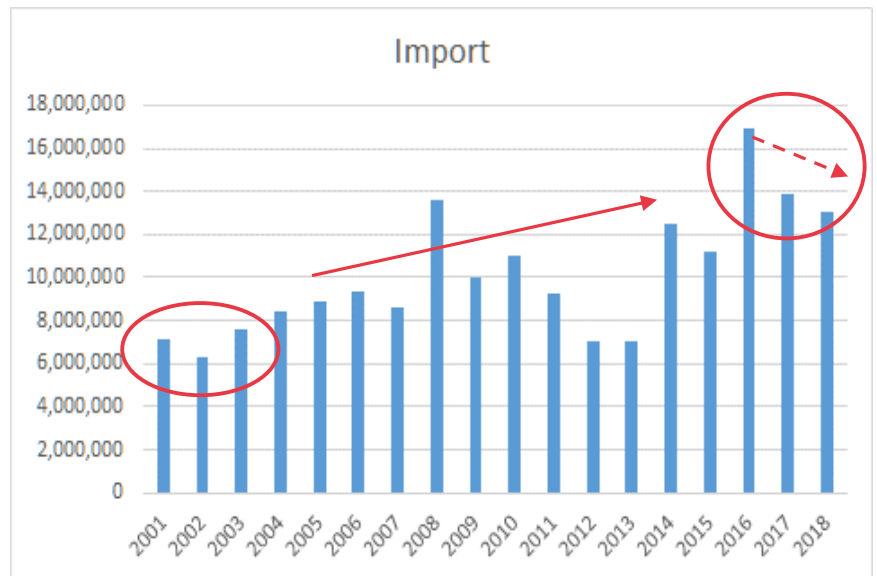
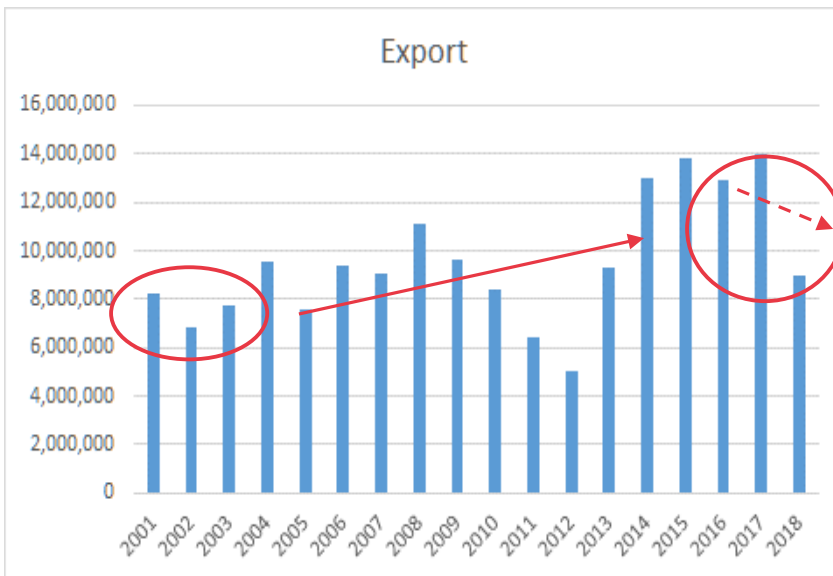
'CA': environmental competent authority

'IMPEL': European Union Network for Implementation and Enforcement of Environmental Law

Overview: Long-term increasing trend in waste trade



- Increasing trend; waste is endogenous to industrial production
- Possible decrease in recent years



(Source) The author's compilation of 'Total Export of Hazardous Wastes and Other Wastes' and 'Total Import of Hazardous Wastes and Other Wastes' (Basel Convention website)

Overview: Recent development of surrounding



- Stepped-up import restrictions on waste by China and Asian countries since 2018
- Basel Convention amendment: expansion of scope of hazardous wastes to plastic waste (to be in force from 2021) and Ban amendment

Current situation: Possible kinds of usable data



- Possible usable data for knowing waste trade
 - Information reported by CAs to Basel Convention, based on substantive determination of hazardous wastes
 - Trade statistics coming from Customs declarations declared. By nature, not capture post-importation characteristics of wastes
 - Statistical estimation based partially on real data to address lack/incompleteness of data
- To capture the highly technical nature of waste control, first type of data or similar data was used

Current situation: data used



- Three datasets used to look at the current situation
 - 1) Seizure of illicit trade of waste reported by 41 Customs administrations to WCO CEN database for period 2011-2019; intelligence-sharing purpose; 990 seizures
 - 2) Illegal transboundary movements of waste reported by 35 countries (CAs) for period 2016-2018, available at Basel Convention website; 1,600 reports
 - 3) 'Legal' transboundary movements of waste reported by 102 countries (CAs) for period 2016-2018, available at Basel Convention website; 11,700 reports
- Limitation of data (Note) for 1)-3), Intra-European Union trade was excluded
 - Reporting is voluntary for 1) & 2), mandatory for 3); non-Contracting Parties do not report; reporting is uneven across countries and years;
 - Even with such limitations, some characteristics can be observed

(Source)

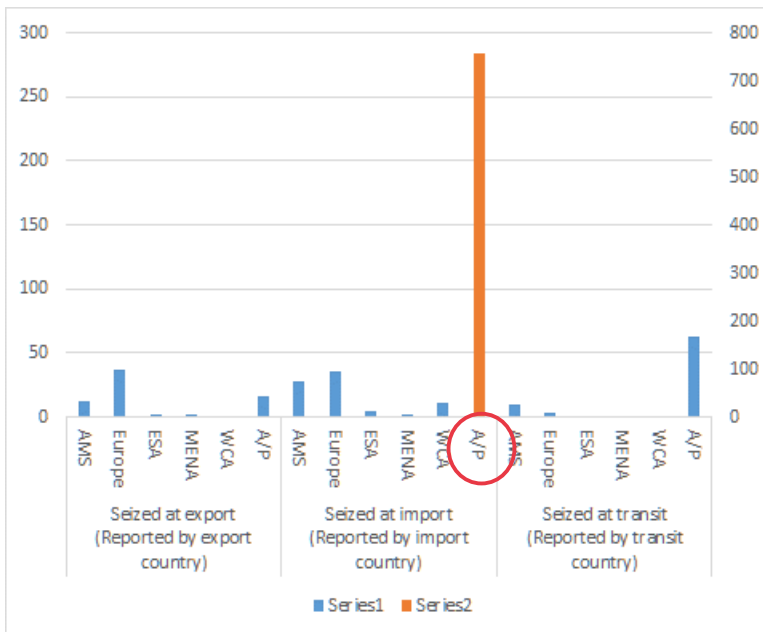
- 1) WCO Customs Enforcement Network data (2011- March 2020)
- 2) The author's compilation of 'Cases of illegal traffic which have been closed in the reporting year' of the 'Basel Convention National Reports' (Basel Convention website) for the period from 2016 to 2018
- 3) Compilation by the author of 'Exports (Imports) of hazardous wastes and other wastes' of the 'Basel Convention National Reports' (Basel Convention website) for the period from 2016 to 2018

Current situation: Overall picture observed from 1) WCO CEN



- A/P region reported the largest number of seizures as import countries
- Wastes came from A/P, Europe, AMS

Number of seizures reported by Customs (unit: Number)



		Destination country							Total
		AMS	Europe	ESA	MENA	WCA	A/P	unknown	
Departure country	AMS	19	2					165	186 (18.8%)
	Europe	2	35	1	2	4	111	7	162 (16.4%)
	ESA			2				15	17 (1.7%)
	MENA			1	2			65	68 (6.9%)
	WCA					19	16		35 (3.5%)
	A/P		2	2		3	387	4	398 (40.2%)
	unknown	27	2		2	3	87	3	124 (12.5%)
Total	48 (4.8%)	41 (4.1%)	6 (0.6%)	6 (0.6%)	29 (2.9%)	846 (85.5%)	14 (1.4%)	990 (100%)	

(Source) 1) WCO CEN data (2011- March 2020)

(Abbreviation)

- 'AMS': South America, North America, Central America, and the Caribbean region
- 'Europe': Europe region
- 'ESA': East and South Africa region
- 'MENA': North of Africa, Near and Middle East region
- 'WCA': West and Central Africa region
- 'A/P': Far East, South, and South East Asia, Australasia, and the Pacific Islands region

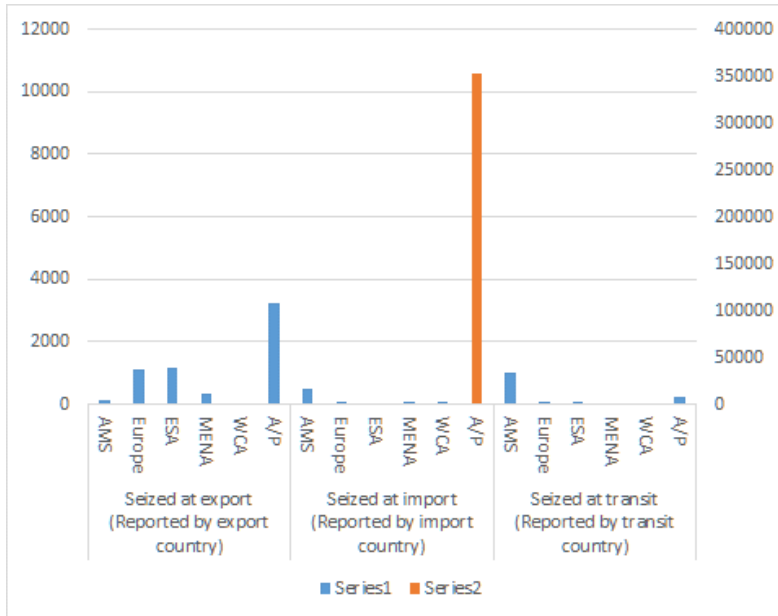
(Note) Blue bars are based on left axis. Red bar is based on right axis

Current situation: Overall picture observed from 1)



- Similar trend for quantity

Quantity of wastes seized by Customs (unit: MT)



		Destination country						unknow n	Total	
		AMS	Europe	ESA	MENA	WCA	A/P			
Departure country	AMS	1,096	103				37,216		38,414	(9.7%)
	Europe	90	161		16	65	37,419	116	37,867	(9.6%)
	ESA			1			3,427		3,429	(0.9%)
	MENA				25		3,878		3,903	(1.0%)
	WCA					6	381		387	(0.1%)
	A/P					4	59,676	5,800	65,480	(16.6%)
	unknown	71	49				244,277	309	244,706	(62.1%)
Total	1,257 (0.3%)	313 (0.1%)	1 (0.0%)	41 (0.0%)	75 (0.0%)	386,275 (98.0%)	6,225 (1.6%)	394,187 (100%)		

Source: 1) WCO CEN data (2011- March 2020)

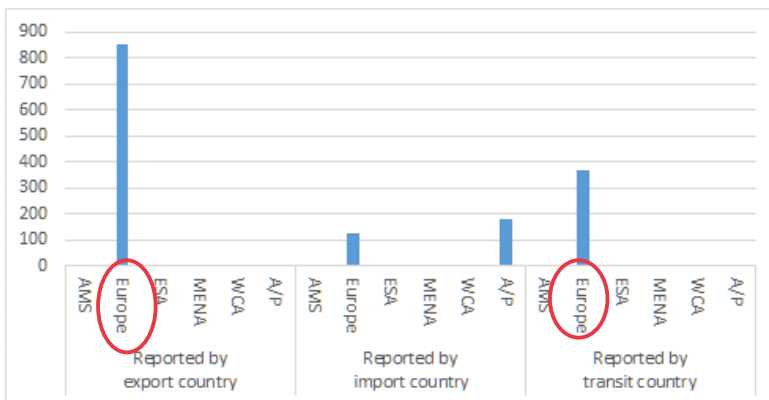
(Note) Blue bar based on left axis, Red bar based on right axis

Current situation: Overall picture observed from 2)



- Europe region is most frequent reporter
- Europe region observed as export countries, WCA & A/P region as import countries

Number of 'illegal' transboundary movements of hazardous and other wastes (unit: Number of reporting)



		Destination country						Total
		AMS	Europe	ESA	MENA	WCA	A/P	
Departure country	AMS	5	16		1	1	42	65 (4.1%)
	Europe	14	218	38	128	739	182	1,319 (84.0%)
	ESA						1	1 (0.1%)
	MENA		10	1			19	30 (1.9%)
	WCA		8				5	13 (0.8%)
	A/P		7				103	110 (7.0%)
unknown					17	4	1	11 (0.7%)
Total		19 (1.2%)	259 (16.5%)	39 (2.5%)	146 (9.3%)	744 (47.4%)	353 (22.5%)	1,571 (100%)

(Source) 2) The author's compilation of 'Cases of illegal traffic which have been closed in the reporting year' of the 'Basel Convention National Reports' (Basel Convention website) for the period from 2016 to 2018

(Note) For Contracting Parties to the Basel Convention which are not WCO Members, the author allocated WCO regions near which they are physically located. Same note throughout the slides.

Current situation: Overall picture observed from 2) reporting by CAs on illegal cases



- As to quantity, besides Europe, AMS also as export countries; A/P is larger importer than WCA
- Large quantity might imply industrial wastes

Reported quantity of 'illegal' transboundary movements of hazardous and other wastes (unit: MT)

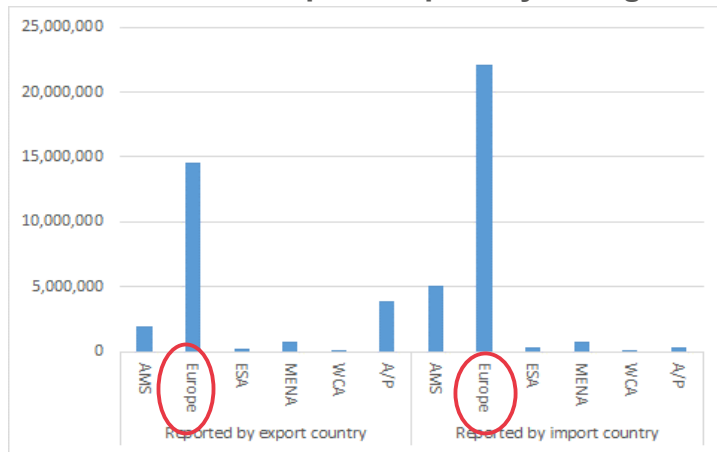
		Destination country							Total		
		AMS	Europe	ESA	MENA	WCA	A/P	unknown			
Departure country	AMS	275	294		1	25	78,578		79,174	(35.3%)	
	Europe	627	34,679	747	2,329	52,596	45,648		136,625	(60.9%)	
	ESA						10		10	(0.0%)	
	MENA		143	4,500			286		4,930	(2.2%)	
	WCA		1,139				91		1,229	(0.5%)	
	A/P		206	206			1,613		2,025	(0.9%)	
	unknown						18	6	70	1,093	(0.5%)
	Total		902	36,461	5,453	2,330	52,639	126,231	429	224,446	(100%)
		(0.4%)	(16.4%)	(2.4%)	(1.0%)	(23.5%)	(56.1%)	(0.0%)	(100%)		

Current situation: Overall picture observed from 3) reporting by CAs on 'legal' cases



- For both export & import, Europe is largest, followed by AMS & A/P
- Much imports into Europe; little import into WCA

Reported quantity of 'legal' transboundary movements of hazardous and other wastes (unit: MT)



		Destination country							Total	
		AMS	Europe	ESA	MENA	WCA	A/P	unknown		
Departure country	AMS	5,857,471	204,236			300	157,642		6,219,649	(18.3%)
	Europe	20,014	20,865,592	15,469	911,385	1,579	67,833		27,881,872	(82.0%)
	ESA		25,680	411,929				118,065	555,674	(1.6%)
	MENA	2,121	139,404	22,500	26,242			817,927	1,008,194	(3.0%)
	WCA	2,023	163,526	17,130		2,469		33,092	218,240	(0.6%)
	A/P	2,664	246,559					2,874,633	4,081,419	(12.0%)
	unknown								9,354	43,640
Total		5,884,293	27,644,997	467,028	1,929,457	4,348	4,069,212	9,354	34,008,688	(100%)
		(17.3%)	(63.6%)	(1.4%)	(5.7%)	(0.0%)	(12.0%)	(0.0%)		

Source: 3) Compilation by the author of 'Exports (Imports) of hazardous wastes and other wastes' of the 'Basel Convention National Reports' (Basel Convention website) for the period from 2016 to 2018

Current situation: Overall picture observed from 2) & 3)



- ‘Illegal’ is much smaller than ‘legal’ ones; although data limitation affects
- Challenging nature of detection of ‘illegal’

Quantity of reported ‘illegal’ transboundary movements of waste (unit: MT)

		Destination country							Total
		AMS	Europe	ESA	MENA	WCA	A/P	unknown	
Departure country	AMS	275	294		1	25	78,578		79,174 (35.3%)
	Europe	627	34,679	747	2,329	52,596	45,648		136,625 (60.9%)
	ESA						10		10 (0.0%)
	MENA		143	4,500			286		4,930 (2.2%)
	WCA		1,139				91		1,229 (0.5%)
	A/P		206	206			1,613		2,025 (0.9%)
	unknown					18	6	70	1,093 (0.5%)
	Total	902 (0.4%)	36,461 (16.4%)	5,453 (2.4%)	2,330 (1.0%)	52,639 (23.5%)	126,231 (56.1%)	426 (0.0%)	224,446 (100%)

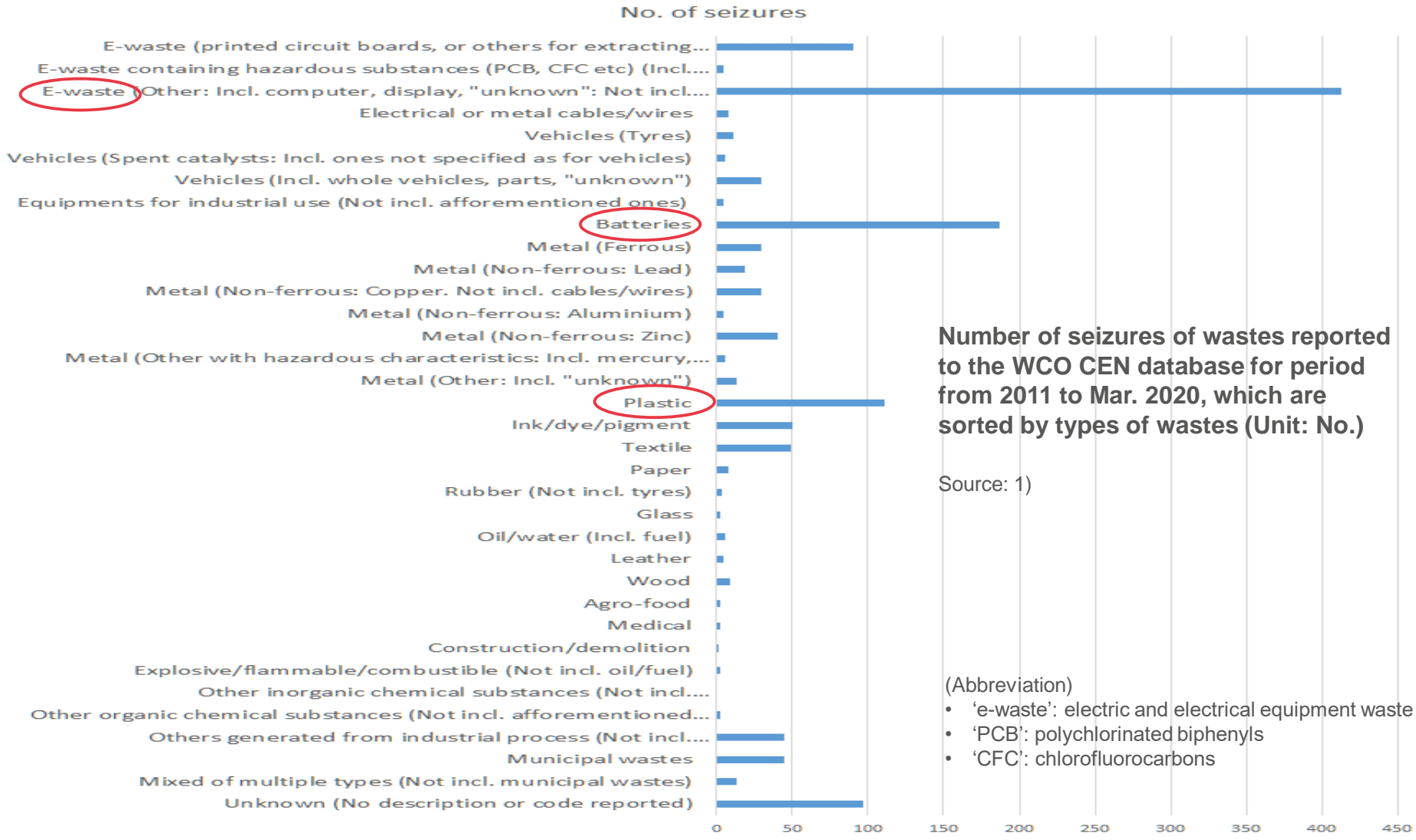
Source: 2)

Quantity of reported ‘legal’ transboundary movements of wastes (unit: MT)

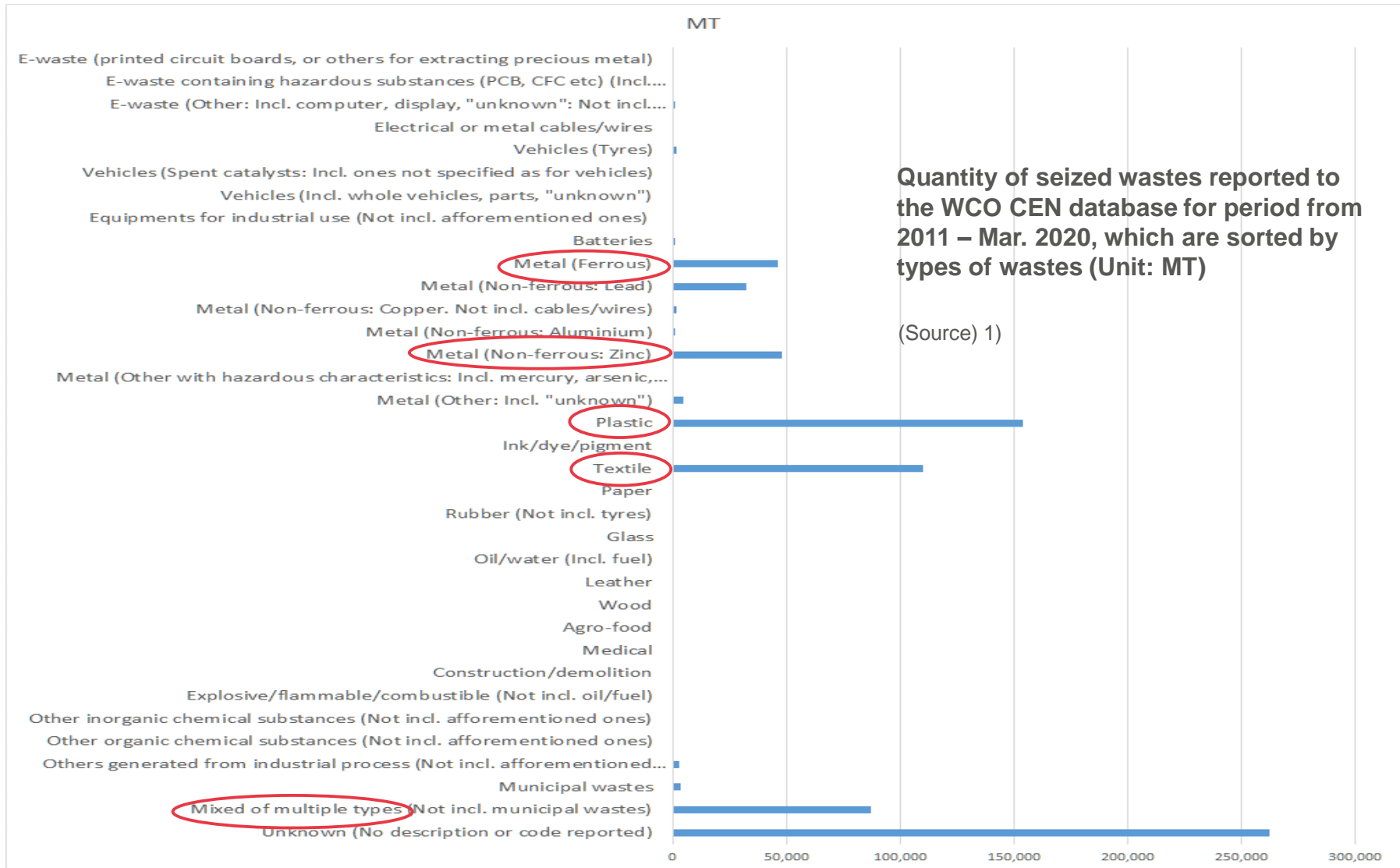
		Destination country							Total
		AMS	Europe	ESA	MENA	WCA	A/P	unknown	
Departure country	AMS	5,857,471	204,236				300	157,642	6,219,649 (18.3%)
	Europe	20,014	20,865,592	15,469	911,385	1,579	67,833		27,881,872 (82.0%)
	ESA		25,680	411,929				118,065	555,674 (1.6%)
	MENA	2,121	139,404	22,500	26,242			817,927	1,008,194 (3.0%)
	WCA	2,023	163,526	17,130		2,469		33,092	218,240 (0.6%)
	A/P	2,664	246,559		948,190		2,874,653	9,354	4,081,419 (12.0%)
	unknown				43,640				43,640 (0.1%)
	Total	5,884,293 (17.3%)	27,644,997 (63.6%)	467,028 (1.4%)	1,929,457 (5.7%)	4,348 (0.0%)	4,069,212 (12.0%)	9,354 (0.0%)	34,008,688 (100%)

Source: 3)

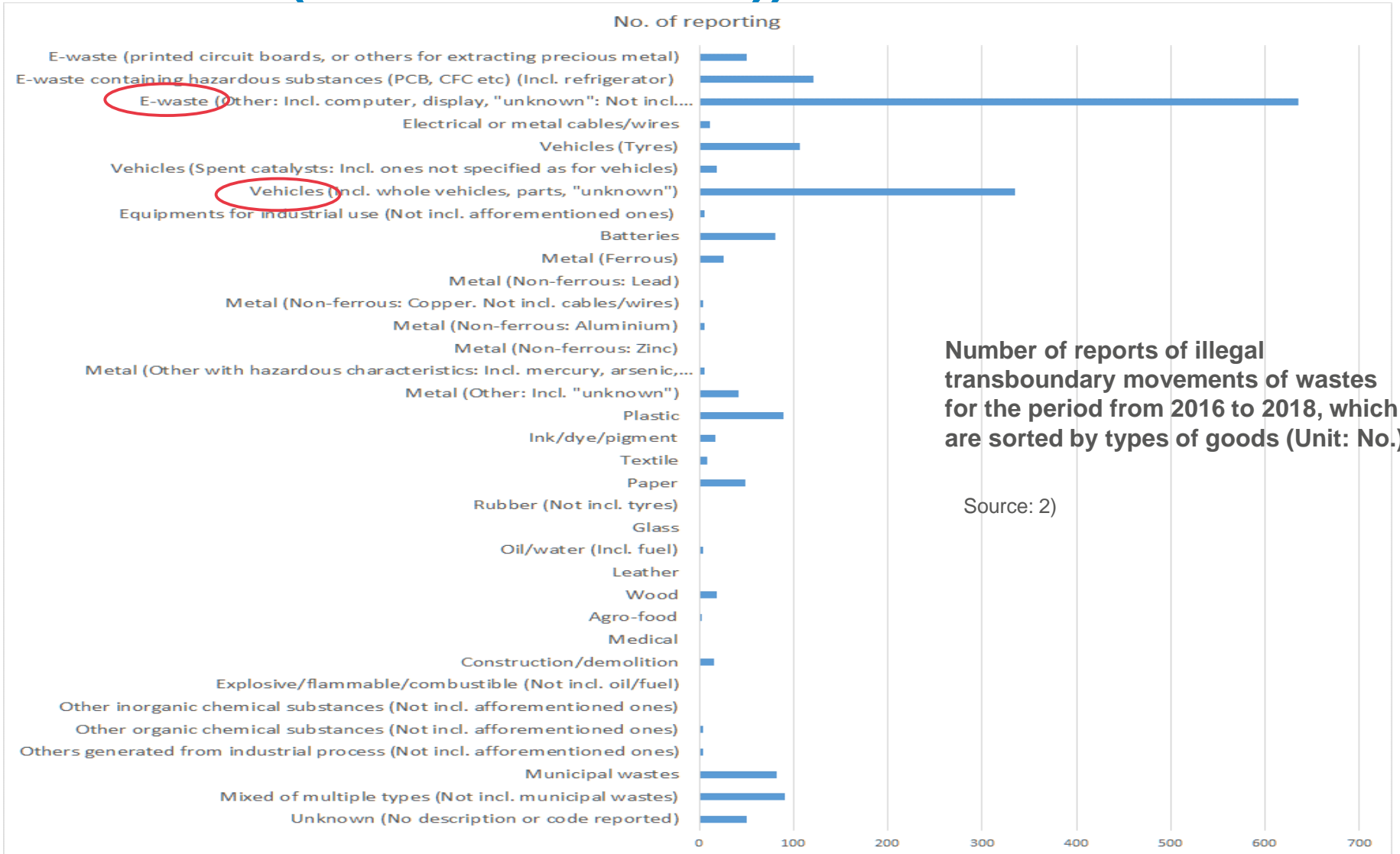
Current situation: Various types of wastes (observed from 1))



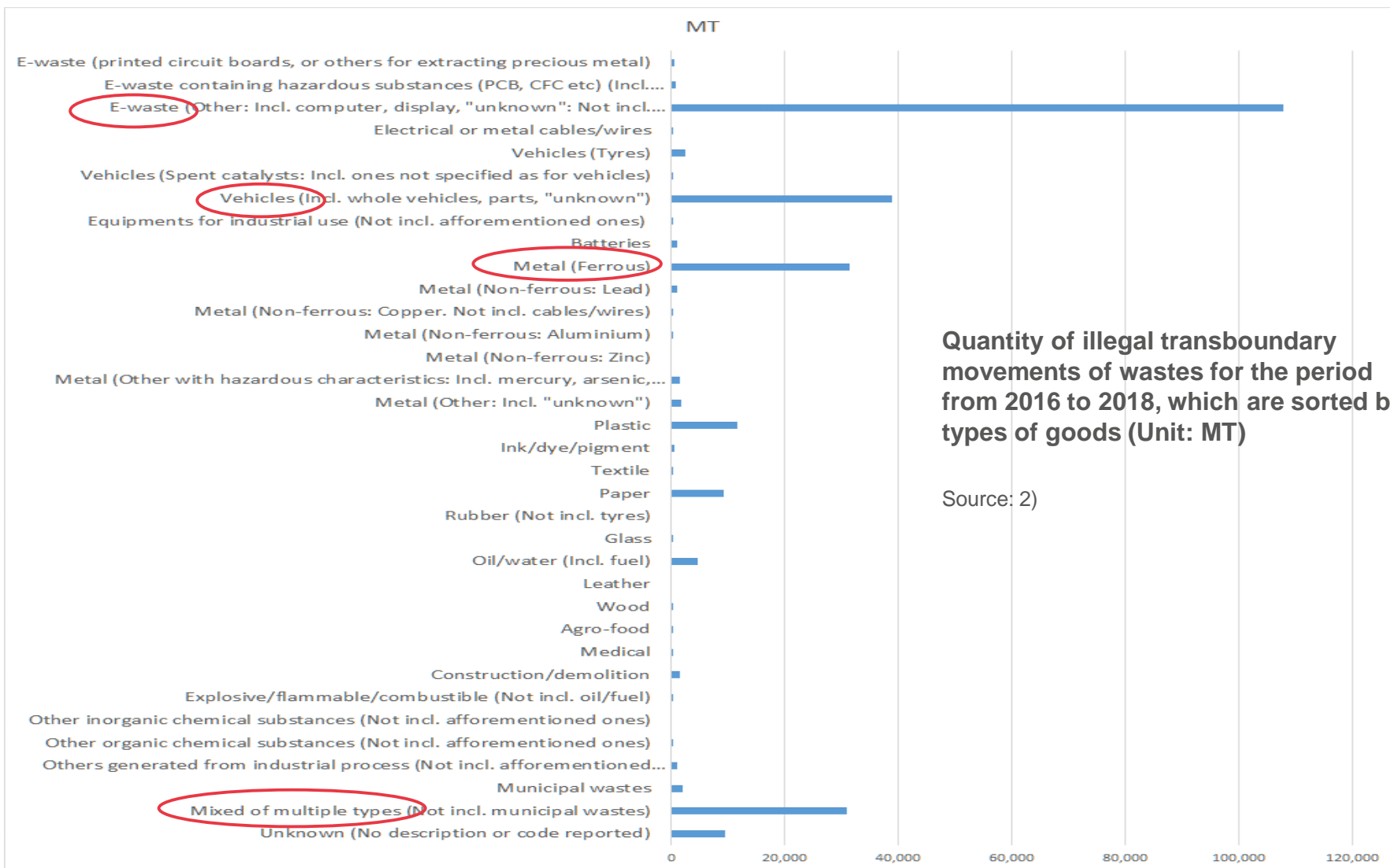
Current situation: Various types of wastes (observed from 1))



Current situation: Various types of wastes (observed from 2))



Current situation: Various types of wastes (observed from 2))



Current situation: Various types of wastes (observed from 1), 2), 3)

Components of each type of waste: examples of waste codes observed in actual trade

(Source) author's compilation based on 1), 2), 3)

(Note) Red: observed in illegal cases

Types of goods	Basel waste codes (Annex I, II III, & VIII of Basel Convention)	Codes in OECD rules for "amber controls"	Codes unique to EU rules for "export prohibition" to non-OECD countries	Basel waste codes (Annex IX of Basel Convention)	Codes in OECD rule for "green controls"	Codes unique to EU rules explicitly excluded from "export prohibition" to non-OECD countries
Electrical (printed circuit boards, or others for extracting precious metal)	A1010, A1020, A1180			B1110	GC020	
Electrical containing hazardous substances (PCB, CFC etc) (Incl. refrigerator)	A1180, A1190	AC150, AC160	14 06 01*, 20 01 23*, 20 01 35*, 16 02	B1110		
Electrical (Equipments for industrial use: Not incl. aforementioned ones)	A1180		16 02	B1110	GC010	16 02 16
Electrical (Other: Incl. computer, display, "unknown": Not incl. aforementioned ones)	A1180		16 02 13*, 16 02 15*	B1110	GC010	16 02 14
Electrical or metal cables/wires	A1190	AA010	17 04 09*, 17 04 10*	B1115		16 02 16, 17 04 11
Vehicles (Tyres)				B3140		16 01 03
Vehicles (Spent catalysts: Incl. ones not specified as for vehicles)	A1030, A2030		16 08 02*, 16 08 05*, 16 08 06*, 16 08 07*	B1120, B1130		16 08 01, 16 08 03
Vehicles (Incl. whole vehicles, parts, "unknown")	A3020, A4060		16 01 04*, 16 01 07*, 16 01 21*	B1250		16 01 06, 16 01 22
Batteries	Y26, Y29, Y31, Y34, A1160, A1170, A1180		16 06, 19 12 11*, 20 01 33*	B1090, B1110		20 01 34
Metal (Ferrous)	Y17, Y23		10 09 11*, 19 12 11*	B1010, B1200, B1210		12 01 02, 16 01 17, 17 04 05, 19 01 02, 19 10 01, 19 12 02
Metal (Non-ferrous: Lead)	Y31, A1020, A1030, A1040, A3030, A4060	AB070	10 04 01*, 10 04 02*, 15 02 02*, 16 03 03*, 17 04 09*, 19 12 11*			17 04 03
Metal (Non-ferrous: Copper. Not incl. cables/wires)	Y17, Y22, A1020, A1080, A1100, A1110, A1130, A1150, A2030	AB070	11 01 07*	B1010, B2040		11 02 06, 17 04 01
Metal (Non-ferrous: Aluminium)	Y17, Y18, A2030, A4050, A4060		10 03 08*, 10 03 09*, 10 03 15*, 16 11 01*	B1010, B1100		10 03 04, 12 01 03, 12 01 04, 17 04 02, 19 12 03, 19 12 11
Metal (Non-ferrous: Zinc)	Y23, A1080, A4100, A4140		10 05 10*, 11 01 15*, 11 02 02*, 19 02 05*	B1010		
Metal (Other with hazardous characteristics: Incl. mercury, arsenic, flammable)	Y24, Y26, Y27, Y29, Y45, A1010, A1020, A1030, A1040, A4050, A4090, A4140	AA190	06 04 04*, 06 04 05*, 10 03 15*, 17 04 09*, 19 12 11*, 20 01 21*			
Metal (Other: Incl. "unknown")		AB030	12 01 20*	B1010		16 01 18, 19 12 03
Plastic	Y13, Y17, A3050	AA190, AB030	17 02 04*, 17 09 03*, 19 12 11*	B3010, B3026	GH013	02 01 04, 07 02 13, 15 01 02, 19 12 04, 20 01 39

Current situation: Various types of wastes (observed from 1), 2), 3)

Components of each type of waste: examples of waste codes observed in actual trade

(Source) author's compilation based on 1), 2), 3)

(Note) Red: observed in illegal cases

Types of goods	Basel waste codes (Annex I, II III, & VIII of Basel Convention)	Codes in OECD rules for "amber controls"	Codes unique to EU rules for "export prohibition" to non-OECD countries	Basel waste codes (Annex IX of Basel Convention)	Codes in OECD rule for "green controls"	Codes unique to EU rules explicitly excluded from "export prohibition" to non-OECD countries
Ink/dye/pigment	Y12, A4070		08 01 11*, 08 03 12*, 14 06 03*, 16 02 15*	B4010		08 03 18
Textile				B3030		19 12 08, 20 01 10, 20 01 11
Paper				B3020		03 03 05, 03 03 07, 15 01 01, 19 12 01, 20 01 01
Rubber (Not incl. tyres)				B3040, B3080		07 02 09, 19 12 04
Glass	A1180, A2010		17 02 04*, 17 09 03*			10 11 03
Oil/water (Incl. fuel)	Y8, Y9, A3180	AC060	10 03 27*, 12 01 07*, 12 01 10*, 13 03 01*, 19 02 07*, 19 12 11*, 13	B3065		19 12 10
Leather	Y33, A3100					
Wood		AC170	17 02 04*, 19 12 06*	B3050		17 02 01, 19 12 07, 20 01 37
Agro-food				B3060		
Medical	A4010, A4020		02 01 08*, 07 01 08*, 07 04 03*, 16 03 05*, 18 01 08*, 07 05			18 01 07, 18 01 09
Construction/demolition	Y36, A2050, A3180	AC170	17 01 06*, 17 02 04*, 17 04 09*, 17 04 10*, 17 09 01*, 17 09 02*, 17 09 03*	B2130		17 04 01, 17 05 04, 17 09 04
Explosive/flammable/combustible (Not incl. oil/fuel)	Y15, H1, H4.1, H5.1, A4080	AA190	10 03 15*, 10 05 10*, 16 05 04*, 19 02 08*, 19 02 09*, 16 04, 16 05			16 05
Other inorganic chemical substances (Not incl. aforementioned ones)	A2030		06			
Other organic chemical substances (Not incl. aforementioned ones)	Y6, Y42, A3030, A3040, A3140, A3150, A3160, A3180	AC150, AC160	07 06 08*, 07 06 99*, 14 06 01*			
Others generated from industrial process (Not incl. aforementioned ones)	Y40, A4050, A4090, A4100, A4160		11 03 01*, 16 11 03*			19 12 12
Mixed of multiple types						
Municipal waste	Y46		15, 20			15, 20
Unknown (No description or code reported)						

Current situation: Highly technical nature of waste



- Wide-ranging types of waste; multi characteristics of waste
- Involves highly technical judgement, not only for determination of hazardous waste by CAs, but also detecting goods suspected of being hazardous wastes by Customs

Observation: Progressive improvements of waste trade/control environment



- Improved clarity
- As to e-waste, Basel Convention TGL on e-waste since 2015; its website says TGL on plastic waste will also be revised
- WCO HS 2022 drastically improved in terms of identification of e-waste; Also further clarified other wastes too

Excerpt from HS2022

(Abbreviation)
• 'TGL': technical guideline

85.49	Electrical and electronic waste and scrap.
	- Waste and scrap of primary cells, primary batteries and electric accumulators; spent primary cells, spent primary batteries and spent electric accumulators :
8549.11	-- Waste and scrap of lead-acid accumulators; spent lead-acid accumulators
8549.12	-- Other, containing lead, cadmium or mercury
8549.13	-- Sorted by chemical type and not containing lead, cadmium or mercury
8549.14	-- Unsorted and not containing lead, cadmium or mercury
	⋮
	- Other :
8549.91	-- Containing primary cells, primary batteries, electric accumulators, mercury-switches, glass from cathode ray tubes or other activated glass, or electrical or electronic components containing cadmium, mercury, lead or polychlorinated biphenyls (PCBs)
8549.99	-- Other".

Observation: Highly technical nature of waste trade/control



- Further strengthen waste control by Customs through WCO Environmental Programme
- Highly technical nature of waste control is observed for determination by CAs and detection by Customs
- Further risk management-based approach will be appropriate.
 - e.g., enhanced intelligence-exchange nationally/internationally through WCO Operation DEMETER or CEN database, enhanced capacities of Customs officers through Green Customs Initiative, knowing legal portions of waste trade better
- Proper implementation of HS2022



**World Customs
Organization**

Kenji OMI (Mr.)

Technical Attache, Research Unit

