

Session: “ASEAN Circular Economy and Plastics”

New Ideas for Sustainable Business and Lessons from Pioneers in Circular Economy and Climate Change

Challenges towards ASEAN Circular Economy

Venue: BITEC, Bangkok, Thailand

Date: 10:00 ~ 11:40, , 7 June 2019

Coordinated by So Sasaki Ph.D.

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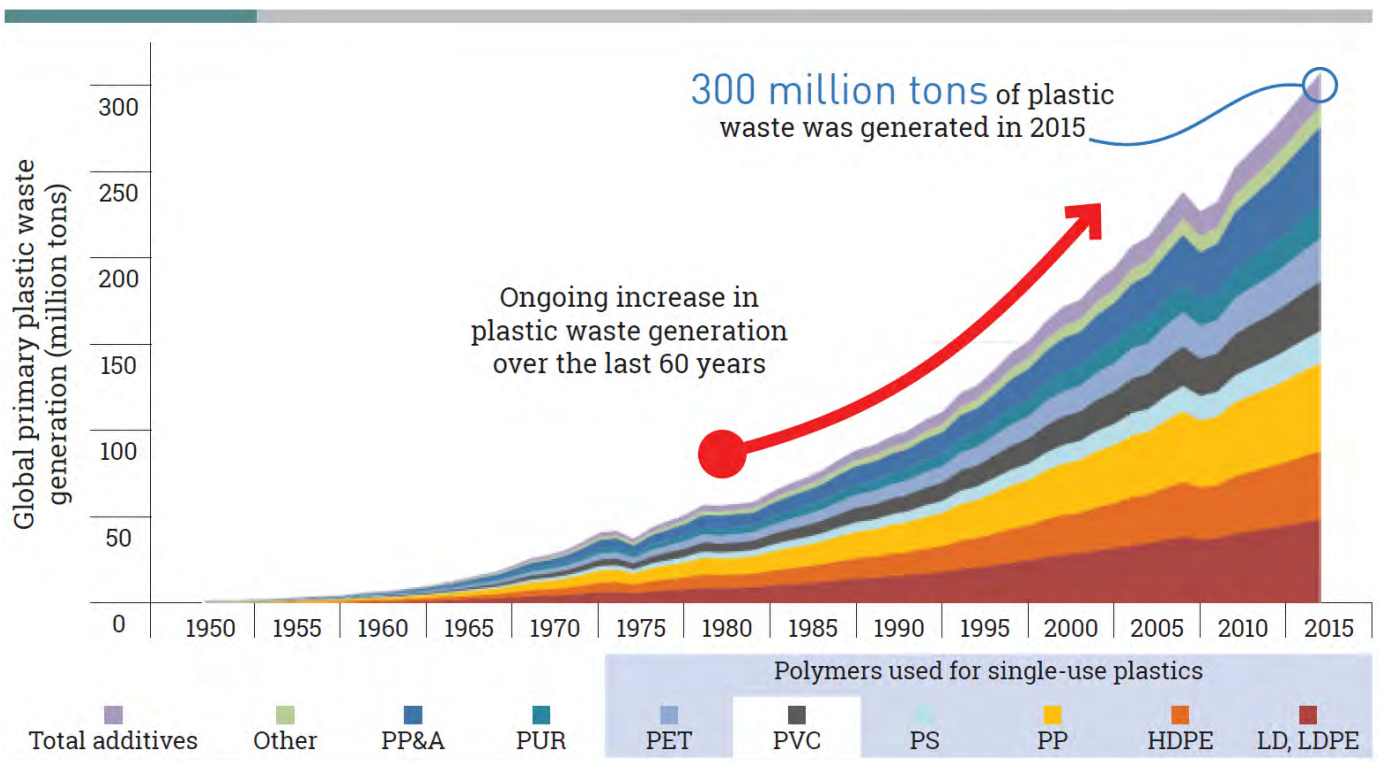
Contents

1. Challenges towards ASEAN Circular Economy (10min), by So Sasaki, Visiting Scholar, Chulalongkorn University
2. Plastic and Other Material Recycling in Thailand (10min) by Dr. Somthai Wongcharoen, President, Wongpanit
3. Circular Economy (10min), by Mr. Kongchai Wonghiritwat, Program Manager, Circular Economy Office, SCG Plastic
4. Latest Trend of Circular Economy (10min), by Michikazu Kojima, Senior Economist, Economic Research Institute for ASEAN and East Asia (ERIA)
5. Q&A and Discussion (60min)

Background and Objective

China Impacts and Marine Litter

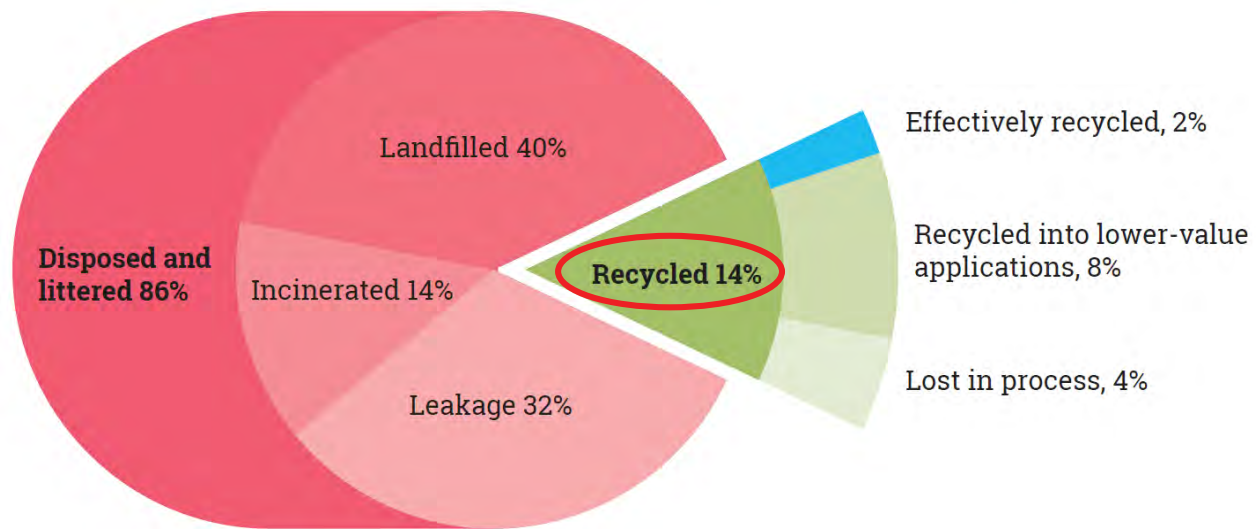
Global Primary Plastic Waste Generation, 1950–2015



Source: Adapted from Geyer, Jambeck, and Law, 2017

Global Flow of Plastic Packaging Waste, 2015

Total packaging waste in 2015: 141 million tonnes

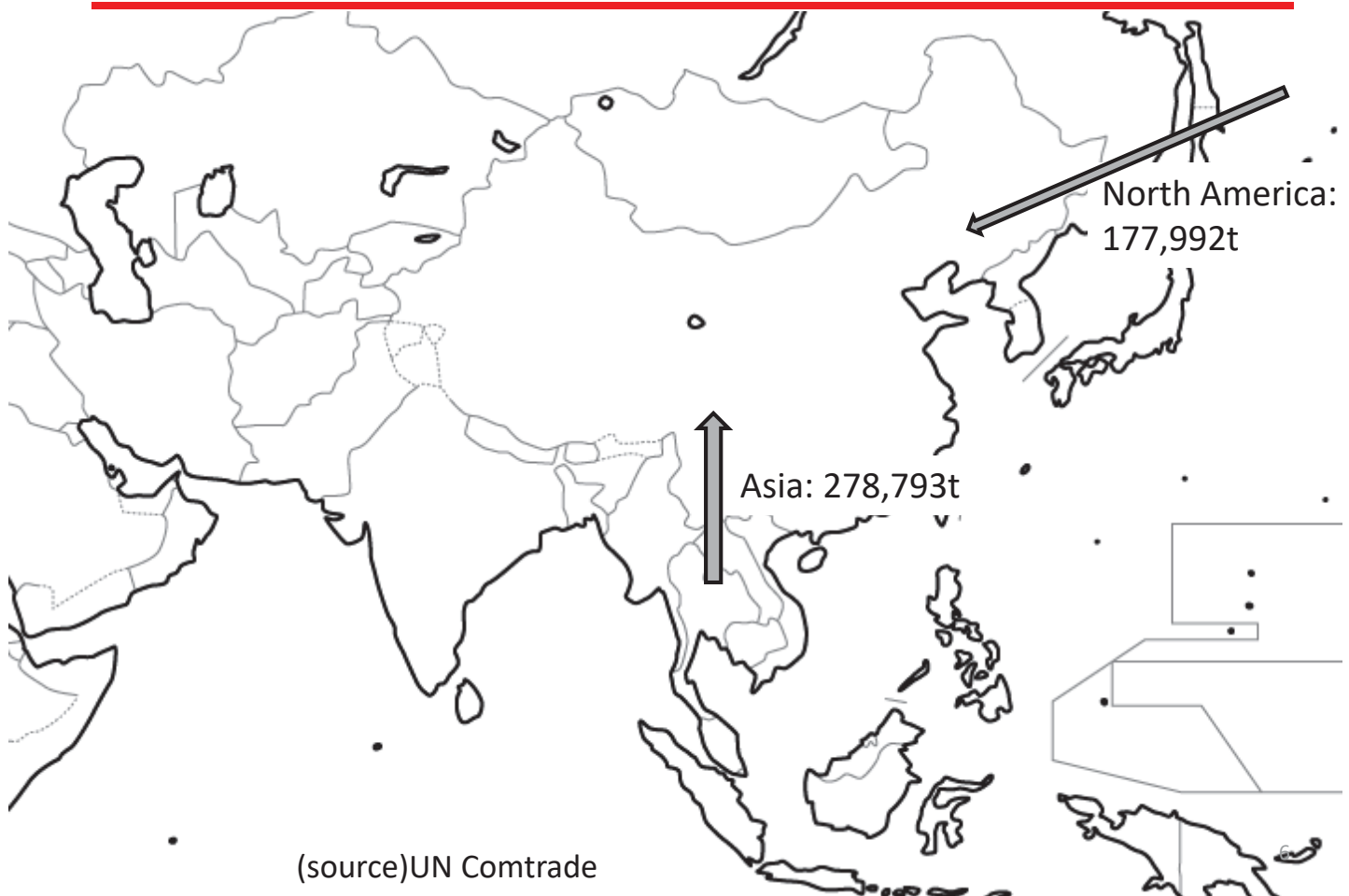


Source: World Economic Forum, 2016

(source) UNEP (2018). Single-use Plastics: A Roadmap for Sustainability

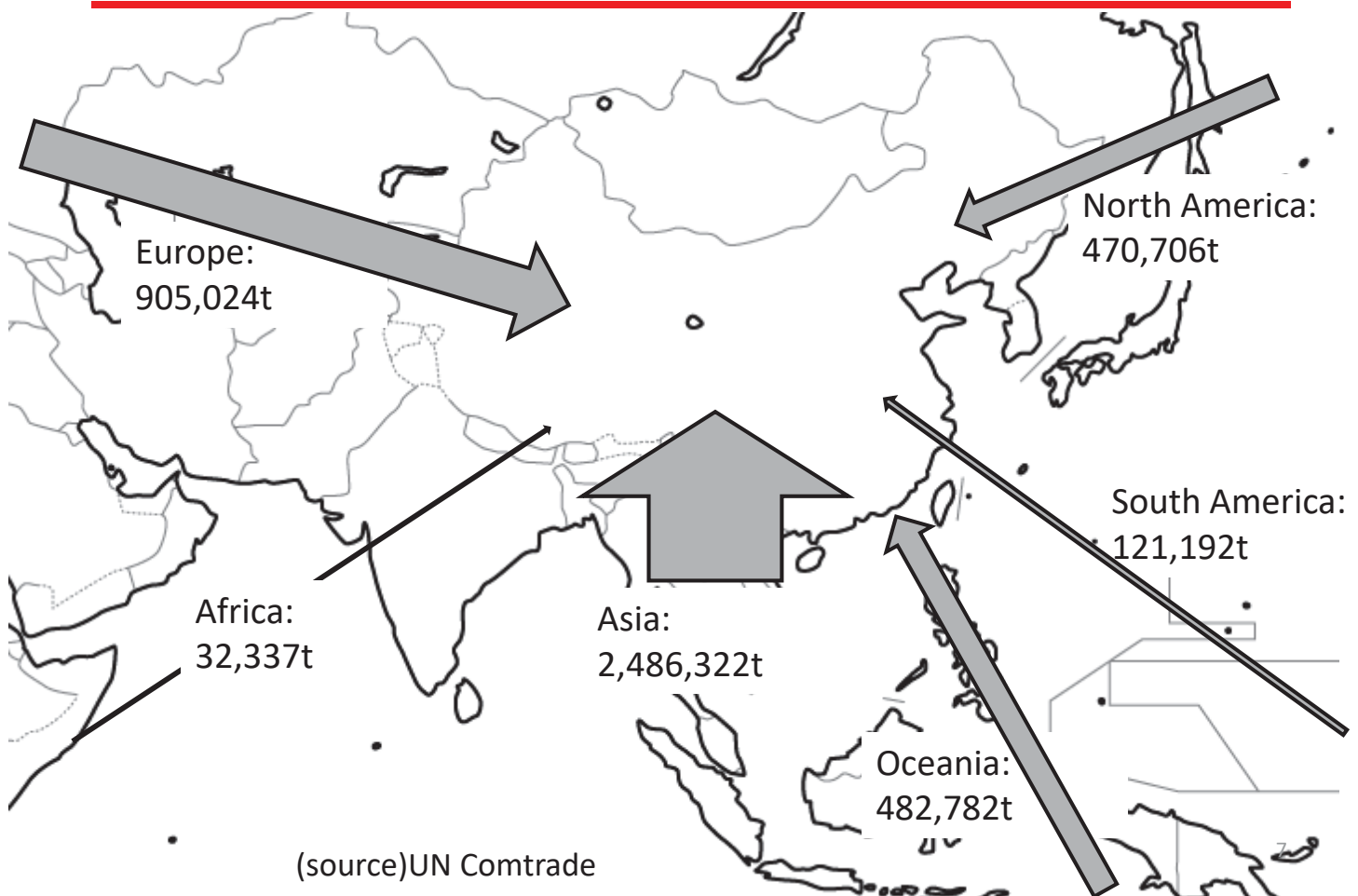
5

Material Flows of Plastic Waste to China in 1997

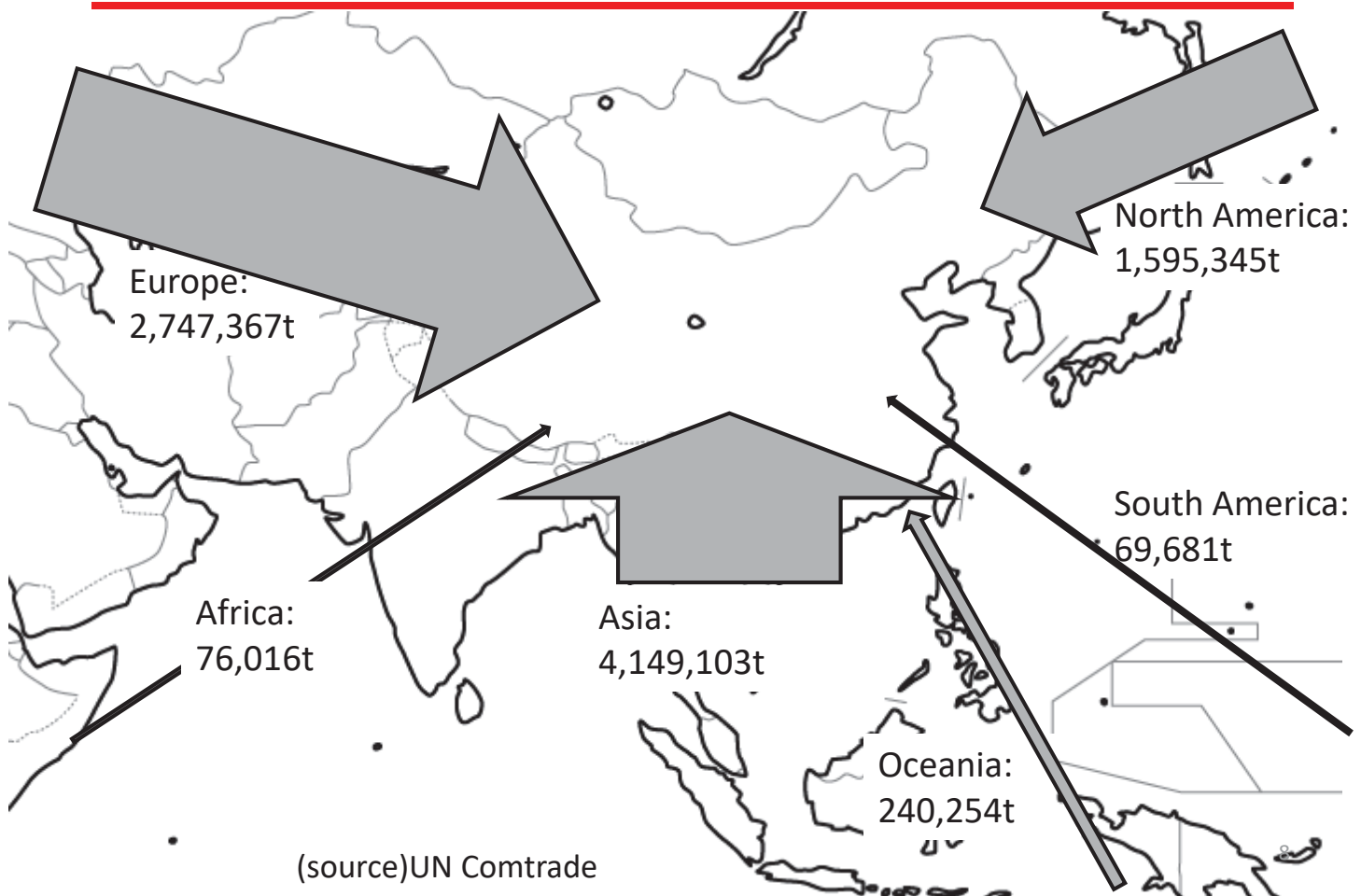


(source) UN Comtrade

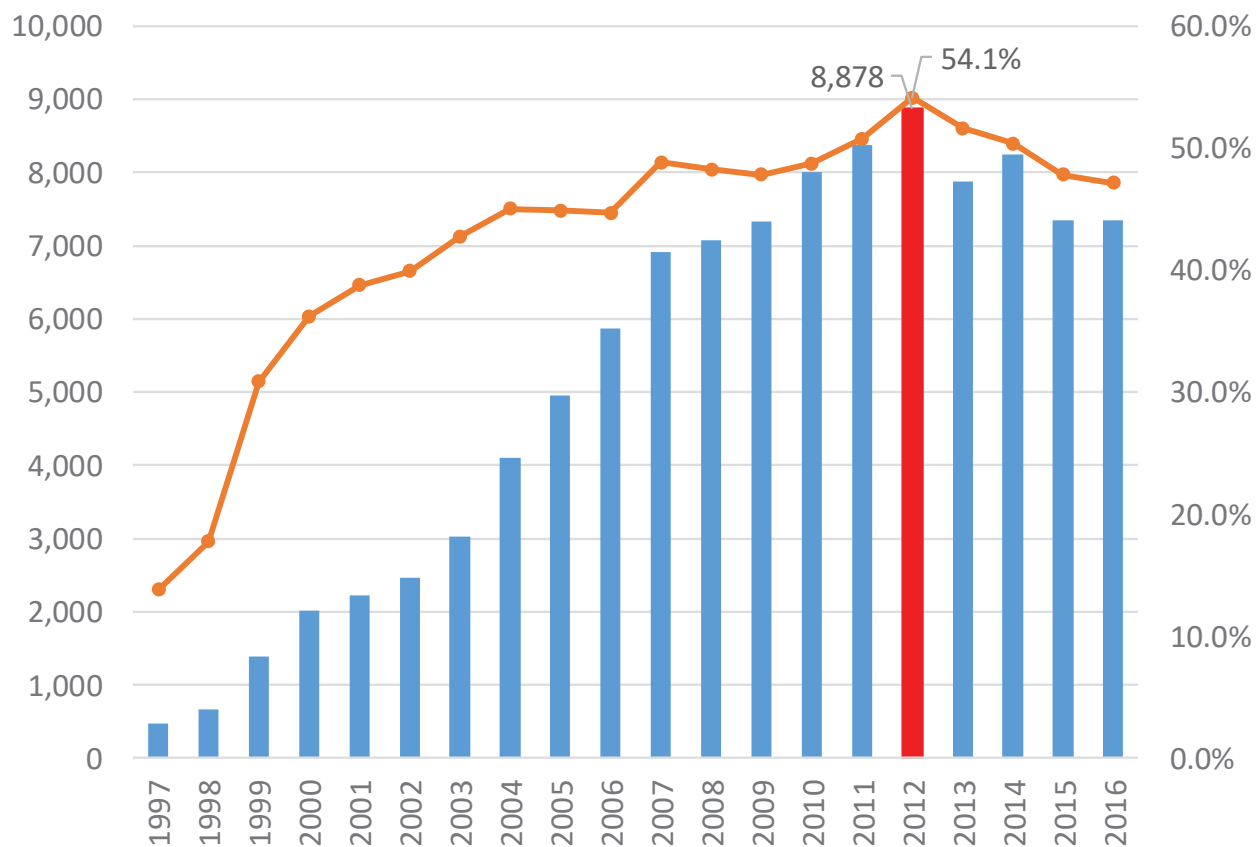
Material Flows of Plastic Waste to China in 2005



Material Flows of Plastic Waste to China in 2012



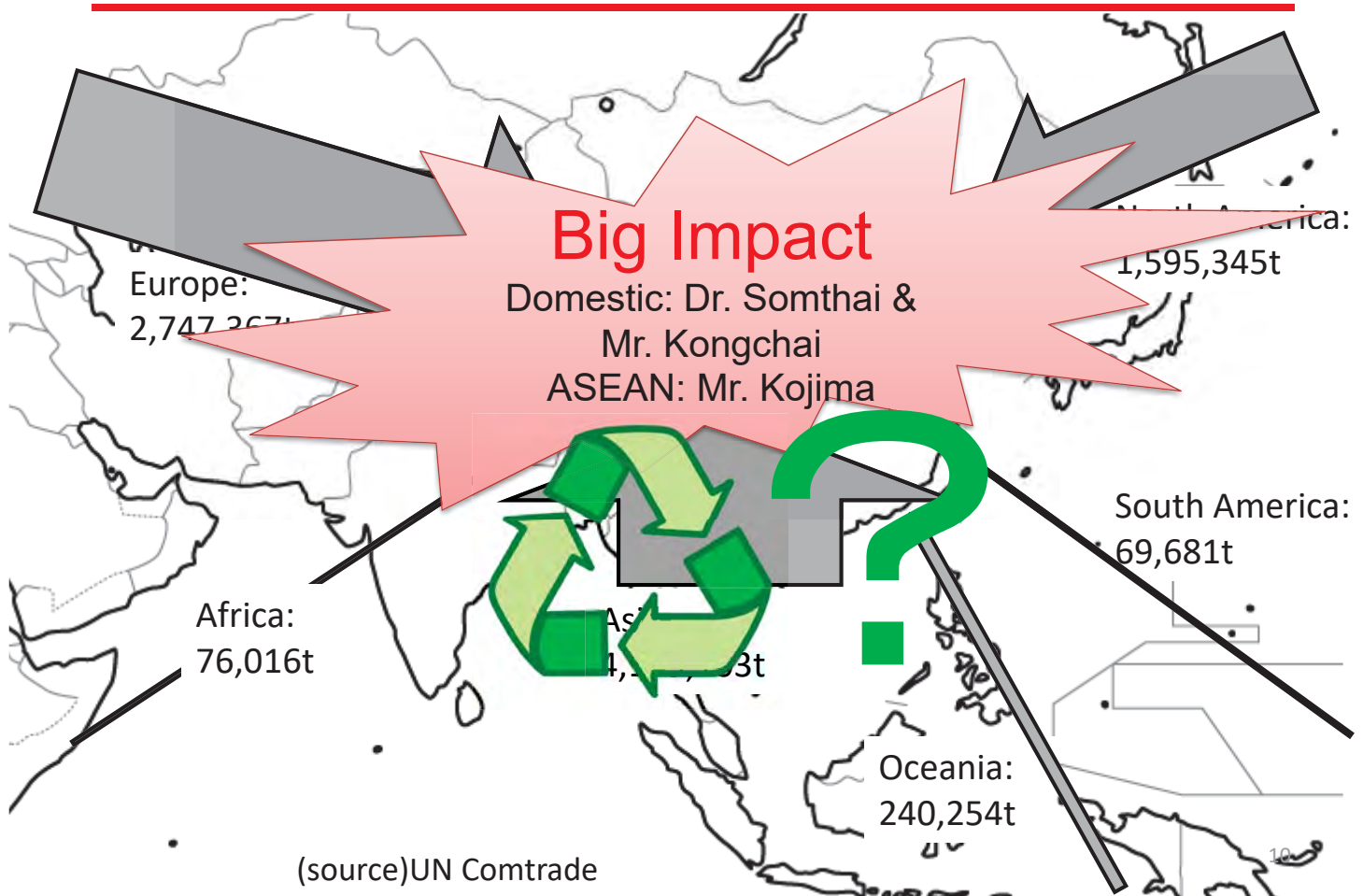
Import Volume of Plastic Waste and the World Share in China



(source)UN Comtrade

9

Chinese import ban has big impacts



(source)UN Comtrade

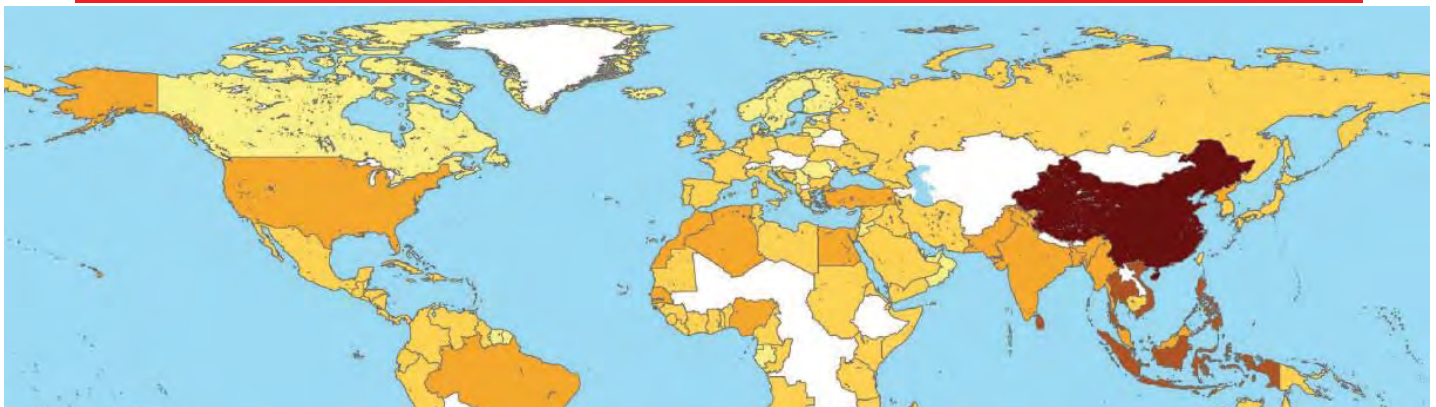
10

Marine Litter/ Debris / Plastic



Photo by NOAA Marine Debris Program

Eight of the top 10 countries are in Asia



Rank	Country	Econ. classif.	Coastal pop. [millions]	Waste gen. rate [kg/ppd]	% plastic waste	% mismanaged waste	Mismanaged plastic waste [MMT/year]	% of total mismanaged plastic waste	Plastic marine debris [MMT/year]
1	China	UMI	262.9	1.10	11	76	8.82	27.7	1.32–3.53
2	Indonesia	LMI	187.2	0.52	11	83	3.22	10.1	0.48–1.29
3	Philippines	LMI	83.4	0.5	15	83	1.88	5.9	0.28–0.75
4	Vietnam	LMI	55.9	0.79	13	88	1.83	5.8	0.28–0.73
5	Sri Lanka	LMI	14.6	5.1	7	84	1.59	5.0	0.24–0.64
6	Thailand	UMI	26.0	1.2	12	75	1.03	3.2	0.15–0.41
7	Egypt	LMI	21.8	1.37	13	69	0.97	3.0	0.15–0.39
8	Malaysia	UMI	22.9	1.52	13	57	0.94	2.9	0.14–0.37
9	Nigeria	LMI	27.5	0.79	13	83	0.85	2.7	0.13–0.34
10	Bangladesh	LI	70.9	0.43	8	89	0.79	2.5	0.12–0.31

(source) Jambeck, J. R., R. Geyer, C. Wilcox, T. R. Siegler, M. Perryman, A. Andrady, R. Narayan, and K. L. Law (2015) Plastic waste inputs from land into the ocean, *Science*, 347, 6223, 768–771

Eight of the top 10 countries are in Asia



How to improve Marine Plastic in Thailand and Asia?

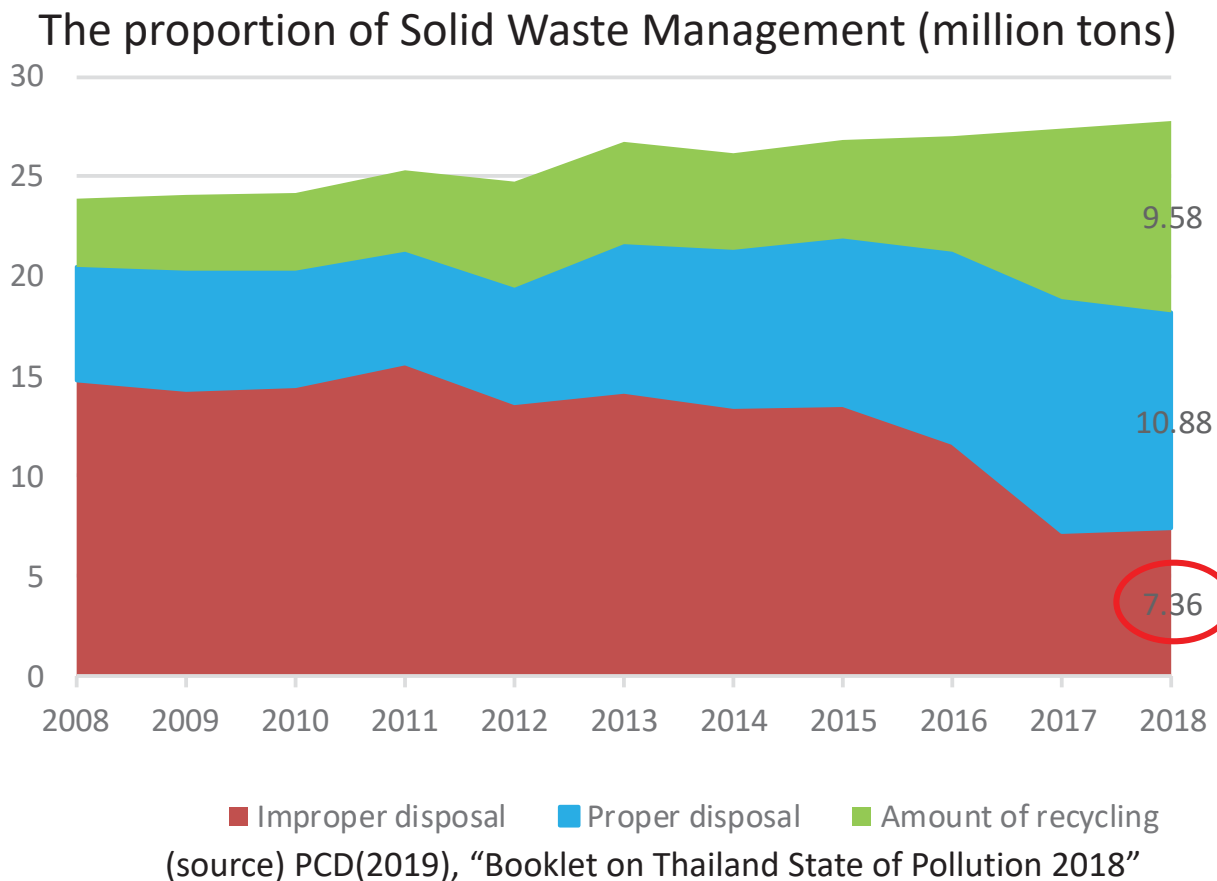
Rank	Country	Waste management system	Plastic waste inputs (MT/year)	Plastic waste inputs (MT/year)	Plastic waste inputs (MT/year)	Plastic waste inputs (MT/year)	Plastic waste inputs (MT/year)	Plastic waste inputs (MT/year)	Plastic waste inputs (MT/year)
1	China		27.7	1.32	3.53				
2	Philippines	LMI	10.1	0.48	1.29				
3	Vietnam	LMI	5.9	0.28	0.75				
4	Sri Lanka	LMI	5.8	0.28	0.73				
5	Thailand	UMI	5.0	0.24	0.64				
6	Egypt	LMI	3.2	0.15	0.41				
7	Malaysia	UMI	3.0	0.15	0.39				
8	Nigeria	LMI	2.9	0.14	0.37				
9	Bangladesh	LI	2.7	0.13	0.34				
10			2.5	0.12	0.31				

(source) Jambeck, J. R., R. Geyer, C. Wilcox, T. R. Siegler, M. Perryman, A. Andrady, R. Narayan, and K. L. Law (2015) Plastic waste inputs from land into the ocean, *Science*, 347, 6223, 768–771

Current situation of Waste Management in Thailand

Thailand have many problems

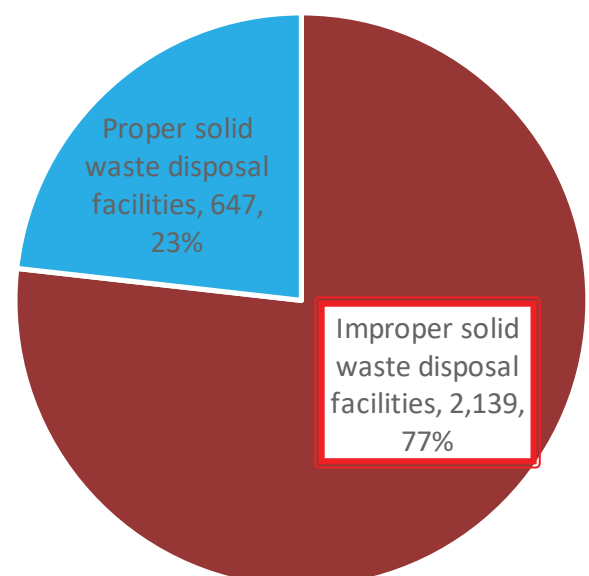
26% of SW has still been improper disposal



15

77% of facilities has still been improper disposal

Status of municipal solid waste disposal facilities in 2018



(source) PCD(2019), "Booklet on Thailand State of Pollution 2018", photo by Sasaki¹⁶

Impacts of poor waste management



(source) Ryuzo SUGIMOTO(2019), "Japan's efforts on marine plastic debris issues" ¹⁷

Impacts of plastic Debris on Marine Life



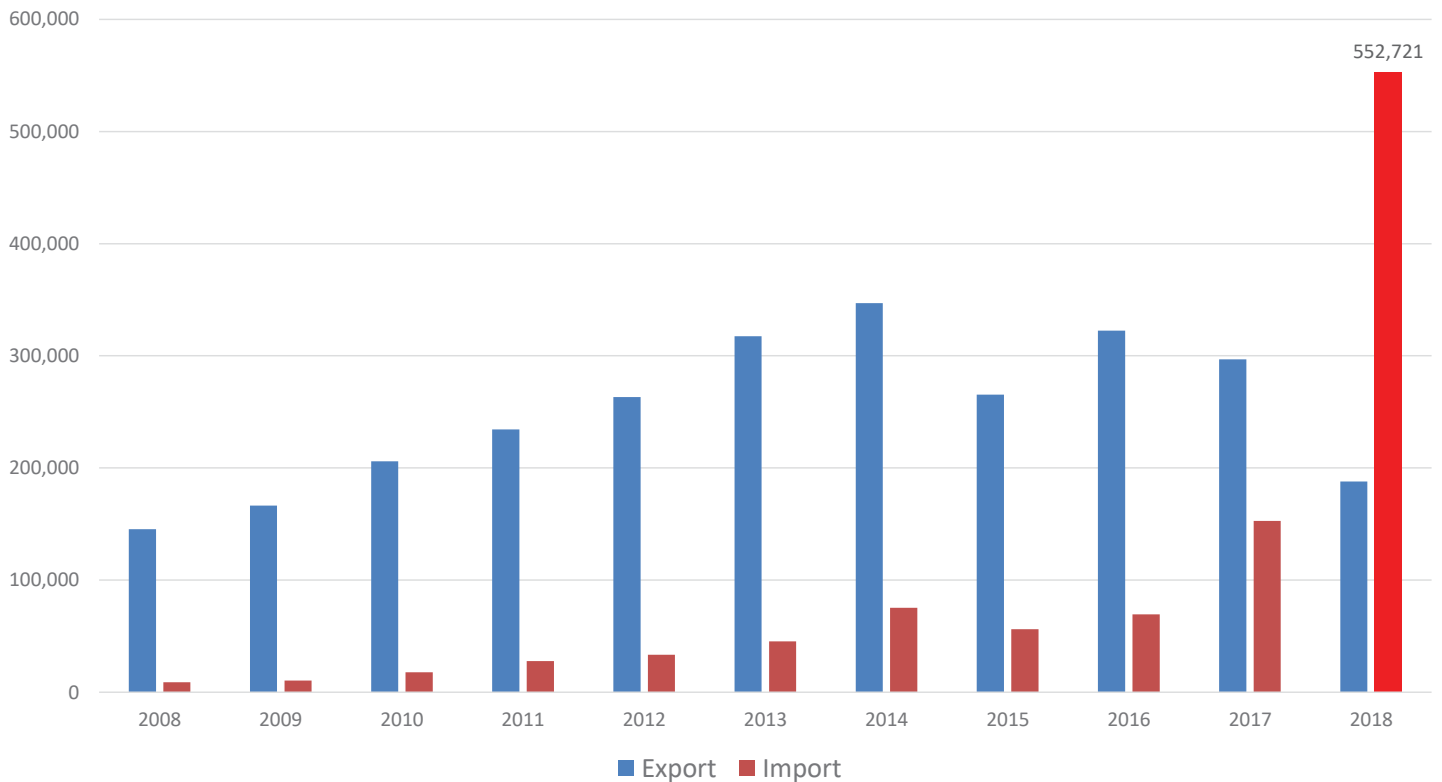
How to improve
waste management
& Marine Plastic in
Thailand?



(source) Sirinarat Pongyart(2018)¹⁸

Plastic waste trade by the effect of China's Ban

Thailand's plastic waste trade volume (tons)

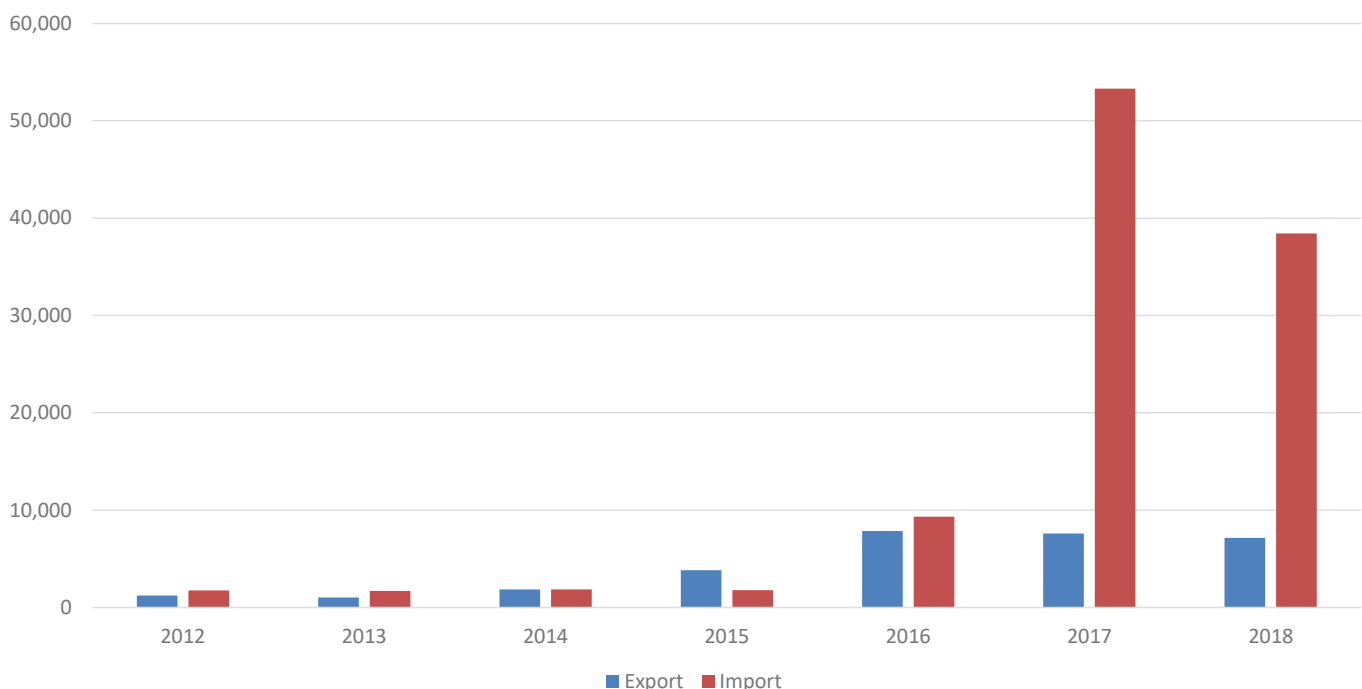


(source) Thai Customs Department Trade Statistics database

19

E-waste increased 5.7 times more than 2016

Export and import permission volume of E-waste / E-scrap (in tons)
under Import regulation of E-waste



(source) Department of Industrial Works

20

Smuggled Waste to Thailand



(source) "Fears grow over waste imports", 3 Jun 2018, Bangkok Post

(source) "E-waste crackdown reaches Chon Buri, as police sniff hazard in Laem Chabang Estate", 30 May 2018, The Nation



21

Current Governmental Measures

Governmental Measures for Recyclable Trade

The Thai governmental sub-committee has announced the following:

- A ban on the import of 432 used electronic items in the next six months in a bid to combat the rise in electronic waste
- Agreed to revise the import quota on used plastic bags for industrial use. This is in line with the government's aim to ban all used plastic imports after 2020.

(source) กระทรวงทรัพยากรธรรมชาติและสิ่งแวดล้อม. 2018. ทส.จัดประชุมคณะอนุกรรมการเพื่อบูรณาการการจัดการขยะอิเล็กทรอนิกส์และเศษพลาสติก ที่นำเข้าจากต่างประเทศอย่างเป็นระบบ (Ministry of Natural Resources and Environment. 2018. Sub-committee meeting to integrate electronic waste management and plastic scrap imported from abroad systematically) [Online]. Available at: <http://www.mnre.go.th/th/news/detail/23708> [Accessed on September 10, 2018]

Governmental Measures for Domestic Plastics

The Thai cabinet acknowledged the draft Roadmap for plastic waste management (2018-2030) on 17 APR, 2019

- To achieve the goal “reducing plastic marine debris at least 50 % by 2027”

Goals	Baseline	2018	2019	2020	2021	2022	2027
1. Waste plastics return into the manufacturing system – Circular Economy	21%	22%	25%	30%	40%	50%	100%
2. Reduce the usage of 7 plastic packaging targets:							
2.1 Plastic micro bead			100%				
2.2 Cap-seal							
2.3 OXO bag (LDPE bag)							
2.4 <36 micron shopping bag			25%	50%	75%	100%	
2.5 Foam food packaging							
2.6 Single-use plastic cup							
2.7 Straw							

(source) <http://www.pcd.go.th/Public/News/GetNewsThai.cfm?task=lt2019&id=18769> [Accessed on APR 22, 2019]

Summary / Discussion Points

Summary / Discussion Points

1. The Chinese import ban has also big impact to Thailand.
 - ✓ Thai government found smuggling and improper imports of plastic waste and E-waste and has also banned them.
 - ❑ What is the current situation?
 - ✓ Domestic: Dr. Somthai & Mr. Teerapon, ASEAN: Mr. Kojima
2. Marine plastic have been hot issue.
 - ✓ the goal “reducing plastic marine debris at least 50 % by 2027
 - ❑ How to recycle more in Thailand?
 - ❑ How to build Circular Economy?
 - ❑ Is the current situation a chance for recycling industries?

Thank you for your attention!

ขอบคุณครับ

ご清聴ありがとうございました

To become circular economy in Thailand

Acknowledgement

This presentation is part of the results from the Grant-in-Aid for Young Researchers (A)17H04722 funded by the Japan Society for the Promotion of Science (JSPS).

for Discussion

Governmental Measures for Domestic Plastics

The Thai cabinet acknowledged the draft **Roadmap for plastic waste management (2018-2030)** on 17 APR, 2019

- To achieve the goal “reducing plastic marine debris at least 50 % by 2027”

**Specific measures
to achieve more and
more recycling rate?**

Goal				
1. Waste management				
2. Reduce plastic packaging				
2.1 Plastic mic				100%
2.2 Cap-seal				
2.3 OXO bag (LDPE bag)				
2.4 <36 micron shopping bag		25%	50%	75%
2.5 Foam food packaging				100%
2.6 Single-use plastic cup				
2.7 Straw				

(source) <http://www.pcd.go.th/Public/News/GetNewsThai.cfm?task=lt2019&id=18769> [Accessed on 29 APR 22, 2019]

Waste stream for Discussion Points

To promote recycling for Circular Economy

1. Recycling business
2. Activities by Manufactures
3. Waste collection by citizen and municipalities
4. Waste disposal by municipalities

1. Recycling business

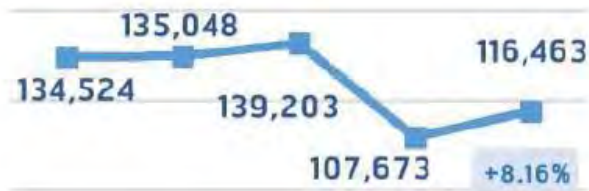
Will recycling industries grow in Thailand & ASEAN?

Business performances

Total revenue 2016

116,463

MB



Total net profit 2016

515

MB



2012 2013 2014 2015 2016

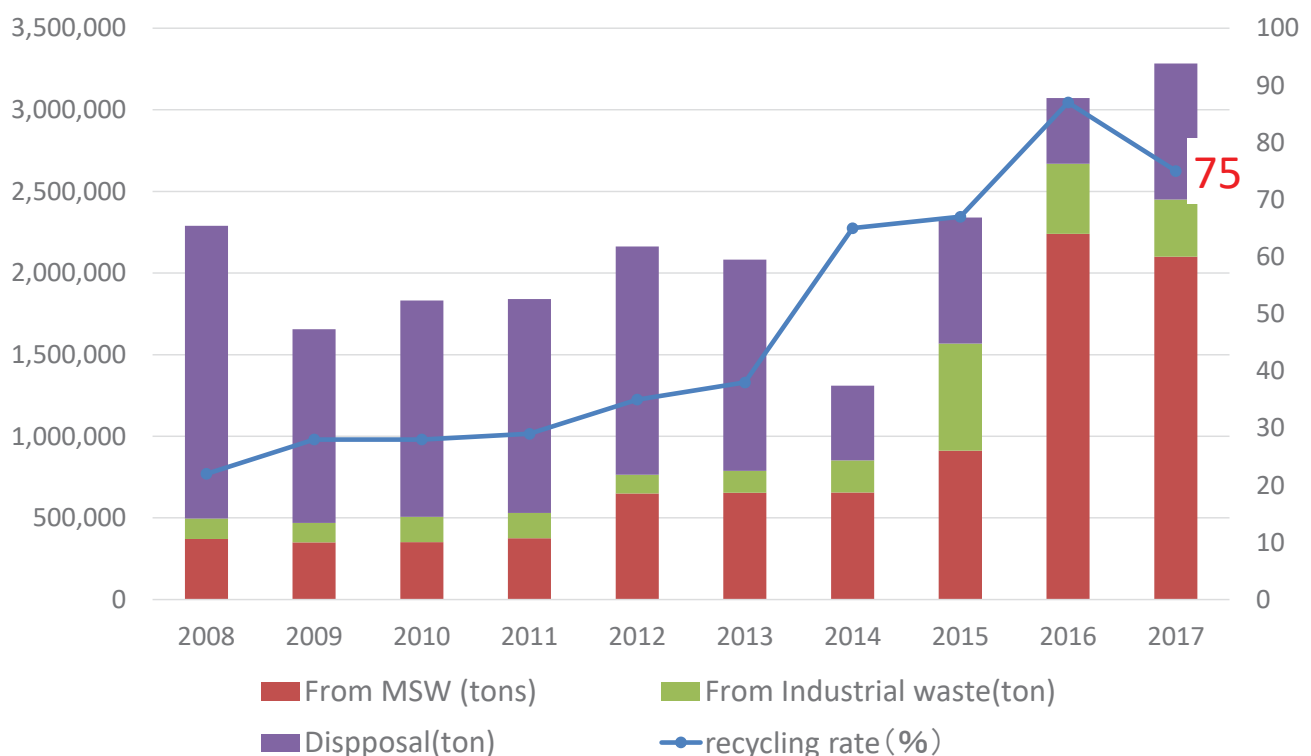
2012 2013 2014 2015 2016

(source) กรมพัฒนาธุรกิจการค้า (DBD) (2018), ธุรกิจรีไซเคิล กระทรวงพาณิชย์ (Department of Business Development. 2018. Recycling Business, Ministry of Commerce

31

1. Recycling business

Recycling volume & rate of Waste Plastics

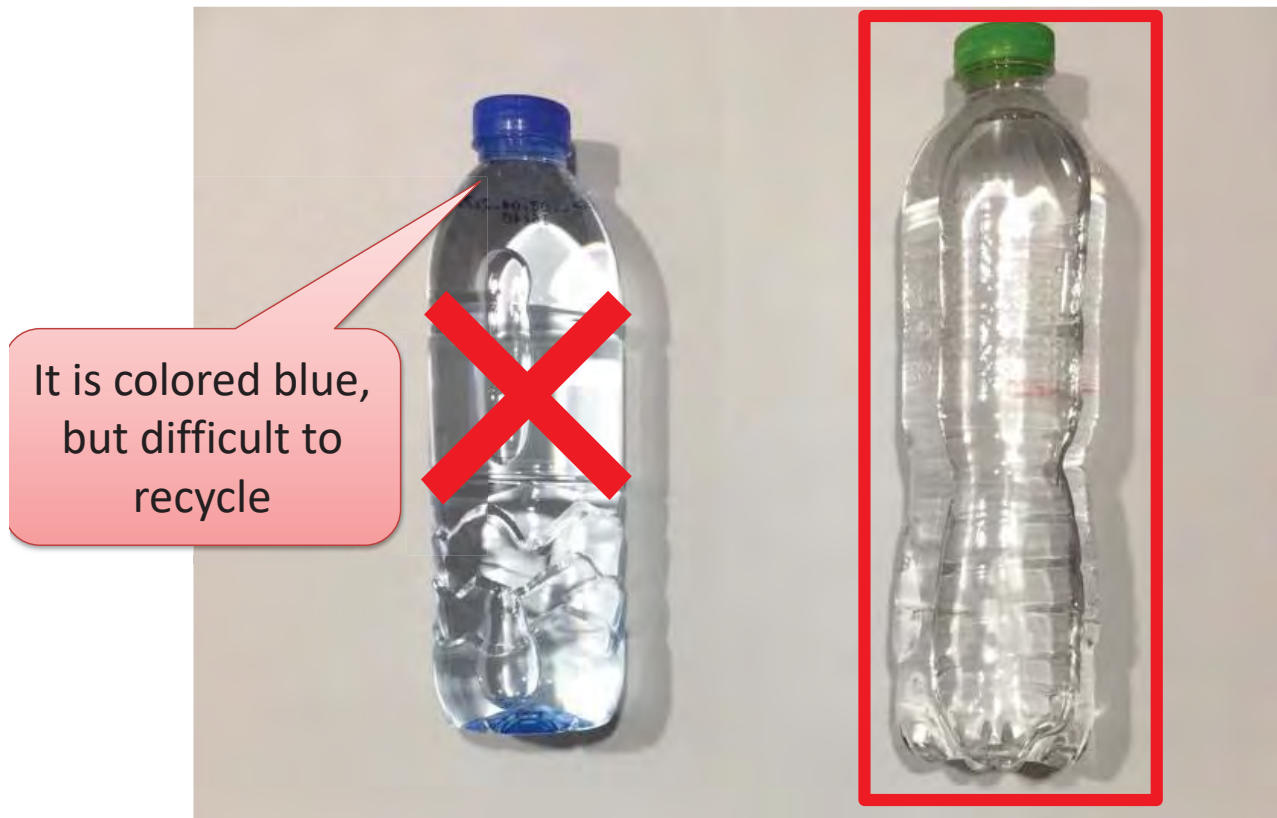


(source) PCD, "State of Thailand Pollution Report"

32

2. Activities by Manufactures

Industrial voluntary standards



33

2. Activities by Manufactures

Direct Regulation and Market Mechanism

Methods	Merit	Demerit	Discussed
Direct Regulation <ul style="list-style-type: none">•Prohibition•Deregulation	<ul style="list-style-type: none">•Expected effect•Little Unfairness	<ul style="list-style-type: none">•Huge operation Cost•Lack of flexibility	<ul style="list-style-type: none">•Prohibition of 7 shingle use Plastics•Deregulation of recycled plastic for food (FDA)
Market Mechanism <ul style="list-style-type: none">•Tax•Subsidy•Deposit•EPR	<ul style="list-style-type: none">•Low Operation Cost•Flexibility	<ul style="list-style-type: none">•It is difficult to predict the effect•Unfairness	<ul style="list-style-type: none">•Tax deduction of biodegradable plastic•EPR / Recycling Low

34

3. Waste collection by citizen and municipalities V.S. or cooperate with Informal sectors



BMA Collection Fee (20 L / Month*household)

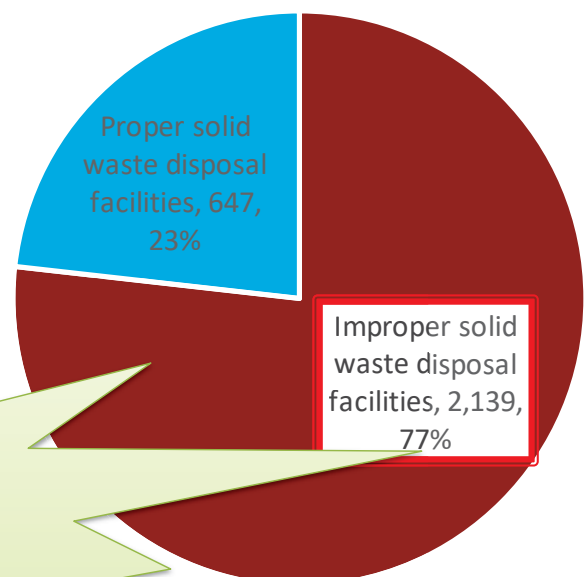


- BMA citizens do not know how much we throw away waste
- Change the collection method for promoting reducing, and separating and recycling waste plastic

35

4. Waste disposal by citizen and municipalities 77% of facilities has still been improper disposal

Status of municipal solid waste disposal facilities in 2018



How to improve
waste management
in Thailand?

Eight of the top 10 countries are in Asia



Building CE to improve Marine Plastic in Thailand

Rank	Country	Waste management system	Population (millions)	GDP (billion USD)	Plastic waste generated (MT/year)	Plastic waste managed (MT/year)	Plastic waste in the environment (MT/year)	Plastic marine debris (MT/year)
1	China	UMI	141.1	14.7	27.7	10.1	17.6	1.32–3.53
2	Philippines	LMI	105.9	3.22	10.1	3.22	6.88	0.48–1.29
3	Vietnam	LMI	93.9	1.88	5.9	1.88	4.02	0.28–0.75
4	Sri Lanka	LMI	21.6	1.83	5.8	1.83	4.0	0.28–0.73
5	Thailand	UMI	66.0	1.59	5.0	1.59	3.41	0.24–0.64
6	Egypt	LMI	83.0	1.03	3.2	1.03	2.17	0.15–0.41
7	Malaysia	UMI	31.8	0.97	3.0	0.97	2.03	0.15–0.39
8	Nigeria	LMI	193.9	0.94	2.9	0.94	2.0	0.14–0.37
9	Bangladesh	LI	160.9	0.85	2.7	0.85	1.85	0.13–0.34
10	Indonesia	UMI	253.9	0.79	2.5	0.79	1.71	0.12–0.31

(source) Jambeck, J. R., R. Geyer, C. Wilcox, T. R. Siegler, M. Perryman, A. Andrady, R. Narayan, and K. L. Law (2015) Plastic waste inputs from land into the ocean, *Science*, 347, 6223, 768–771