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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 Wonghiriwat, 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


300 million tons of plastic waste was generated in 2015

Ongoing increase in plastic waste generation over the last 60 years

 polymers used for single-use plastics

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


Total packaging waste in 2015: 141 million tonnes

- Landfilled 40%
- Recycled 14%
- Incinerated 14%
- Leakage 32%
- Disposed and littered 86%
- Effectively recycled, 2%
- Recycled into lower-value applications, 8%
- Lost in process, 4%


Asia: 278,793t
North America: 177,992t

(source) UN Comtrade
Material Flows of Plastic Waste to China in 2005

Asia: 2,486,322t
Africa: 32,337t
Europe: 905,024t
North America: 470,706t
South America: 121,192t
Oceania: 482,782t

(source) UN Comtrade

Material Flows of Plastic Waste to China in 2012

Europe: 2,747,367t
North America: 1,595,345t
South America: 69,681t
Oceania: 240,254t
Africa: 76,016t
Asia: 4,149,103t

(source) UN Comtrade
Import Volume of Plastic Waste and the World Share in China

[source] UN Comtrade

Chinese import ban has big impacts

Big Impact
Domestic: Dr. Somthai & Mr. Kongchai
ASEAN: Mr. Kojima

(source) UN Comtrade
Marine Litter/ Debris / Plastic

Eight of the top 10 countries are in Asia

<table>
<thead>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>China</td>
<td>UMI</td>
<td>262.9</td>
<td>1.10</td>
<td>11</td>
<td>76</td>
<td>8.82</td>
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<td>1.32–3.53</td>
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<td>2</td>
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<td>LMI</td>
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<td>83</td>
<td>3.22</td>
<td>10.1</td>
<td>0.48–1.29</td>
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<td>LMI</td>
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<td>0.5</td>
<td>15</td>
<td>83</td>
<td>1.88</td>
<td>5.9</td>
<td>0.28–0.75</td>
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<td>4</td>
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<td>88</td>
<td>1.83</td>
<td>5.8</td>
<td>0.28–0.73</td>
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<td>14.6</td>
<td>5.1</td>
<td>7</td>
<td>84</td>
<td>1.59</td>
<td>5.0</td>
<td>0.24–0.64</td>
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<td>6</td>
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<td>UMI</td>
<td>26.0</td>
<td>1.2</td>
<td>12</td>
<td>75</td>
<td>1.03</td>
<td>3.2</td>
<td>0.15–0.41</td>
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<tr>
<td>7</td>
<td>Egypt</td>
<td>LMI</td>
<td>21.8</td>
<td>1.37</td>
<td>13</td>
<td>69</td>
<td>0.97</td>
<td>3.0</td>
<td>0.15–0.39</td>
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<td>8</td>
<td>Malaysia</td>
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<td>22.9</td>
<td>1.52</td>
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<td>57</td>
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<td>0.14–0.37</td>
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<tr>
<td>9</td>
<td>Nigeria</td>
<td>LMI</td>
<td>27.5</td>
<td>0.79</td>
<td>13</td>
<td>83</td>
<td>0.85</td>
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<td>0.13–0.34</td>
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<tr>
<td>10</td>
<td>Bangladesh</td>
<td>Li</td>
<td>70.9</td>
<td>0.43</td>
<td>8</td>
<td>89</td>
<td>0.79</td>
<td>2.5</td>
<td>0.12–0.31</td>
</tr>
</tbody>
</table>

Eight of the top 10 countries are in Asia


How to improve Marine Plastic in Thailand and Asia?

Current situation of Waste Management in Thailand

Thailand have many problems
26% of SW has still been improper disposal

The proportion of Solid Waste Management (million tons)


77% of facilities has still been improper disposal

Status of municipal solid waste disposal facilities in 2018

Impacts of poor waste management

(source) Ryuzo SUGIMOTO(2019), “Japan’s efforts on marine plastic debris issues”

Impacts of plastic Debris on Marine Life

(source) Sirinarat Pongyart(2018)

How to improve waste management & Marine Plastic in Thailand?
Plastic waste trade by the effect of China’s Ban

Thailand’s plastic waste trade volume (tons)

(source) Thai Customs Department Trade Statistics database

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
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

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.**


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”**

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

<table>
<thead>
<tr>
<th>Waste stream for Discussion Points</th>
<th>100%</th>
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</thead>
<tbody>
<tr>
<td>2.1 Plastic micro</td>
<td>100%</td>
</tr>
<tr>
<td>2.2 Cap-seal</td>
<td>100%</td>
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<td>50%</td>
</tr>
<tr>
<td>2.6 Single-use plastic cup</td>
<td>75%</td>
</tr>
<tr>
<td>2.7 Straw</td>
<td>100%</td>
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</tbody>
</table>


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

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

1. Recycling business
Recycling volume & rate of Waste Plastics

(source) PCD, “State of Thailand Pollution Report”
## 2. Activities by Manufactures

### Industrial voluntary standards

It is colored blue, but difficult to recycle

## 2. Activities by Manufactures

### Direct Regulation and Market Mechanism

<table>
<thead>
<tr>
<th>Methods</th>
<th>Merit</th>
<th>Demerit</th>
<th>Discussed</th>
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</thead>
<tbody>
<tr>
<td>Direct Regulation</td>
<td>• Expected effect</td>
<td>• Huge operation Cost</td>
<td>• Prohibition of 7 shingle use Plastics</td>
</tr>
<tr>
<td></td>
<td>• Little Unfairness</td>
<td>• Lack of flexibility</td>
<td>• Deregulation of recycled plastic for food (FDA)</td>
</tr>
<tr>
<td>Market Mechanism</td>
<td>• Low Operation Cost</td>
<td>• It is difficult to predict the effect</td>
<td>• Tax deduction of biodegradable plastic</td>
</tr>
<tr>
<td></td>
<td>• Flexibility</td>
<td>• Unfairness</td>
<td>• EPR / Recycling Low</td>
</tr>
</tbody>
</table>

- Tax
- Subsidy
- Deposit
- EPR
3. Waste collection by citizen and municipalities
V.S. or cooperate with Informal sectors

<table>
<thead>
<tr>
<th>Period</th>
<th>Fee Structure</th>
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<tbody>
<tr>
<td>~ 2003</td>
<td>4B</td>
</tr>
<tr>
<td>2003-2005</td>
<td>40B</td>
</tr>
<tr>
<td>2005-now</td>
<td>20B</td>
</tr>
<tr>
<td>OCT, 2019</td>
<td>40B + Disposal Fee 40B</td>
</tr>
</tbody>
</table>

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

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

Status of municipal solid waste disposal facilities in 2018

- Proper solid waste disposal facilities, 647, 23%
- Improper solid waste disposal facilities, 2,139, 77%

How to improve waste management in Thailand?
Eight of the top 10 countries are in Asia


Building CE to improve Marine Plastic in Thailand