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Plenary Session 3

Sound Material Flow and Accounting Towards Sufficiency Economy

# Transboundary Movement of Recyclable Resources: Current Management System and Practices in Asia-Pacific

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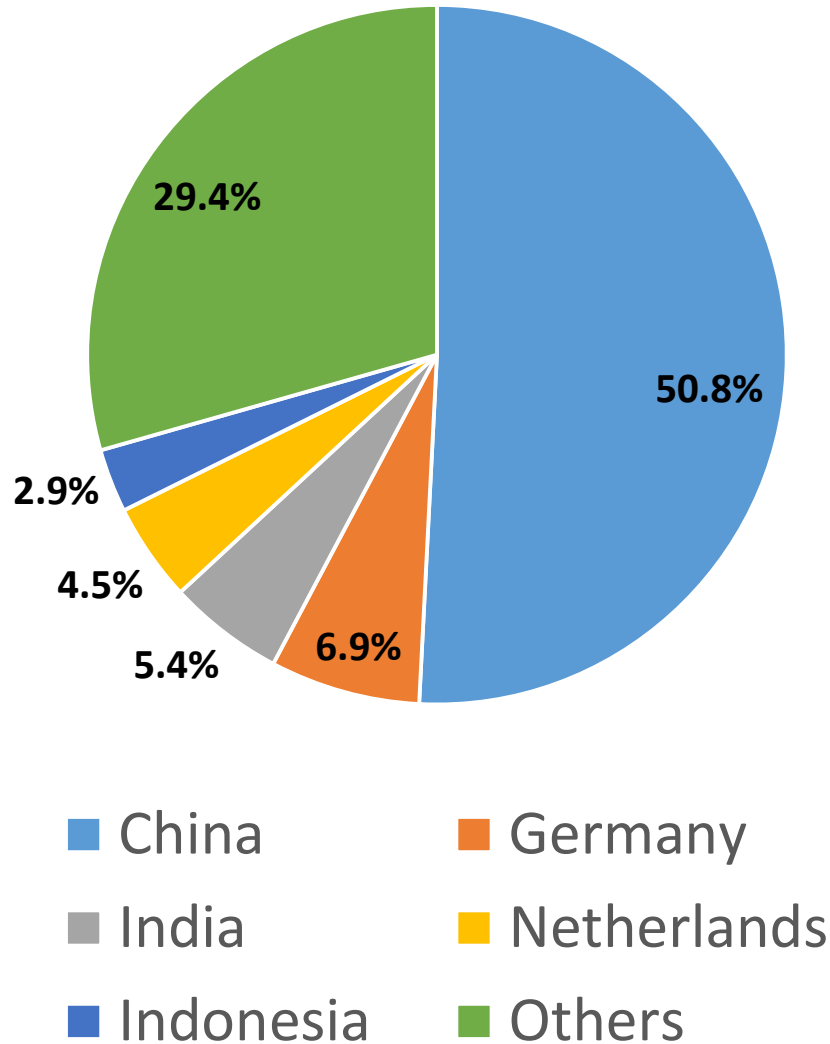
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# Philosophy of Sufficiency Economy and International Trade

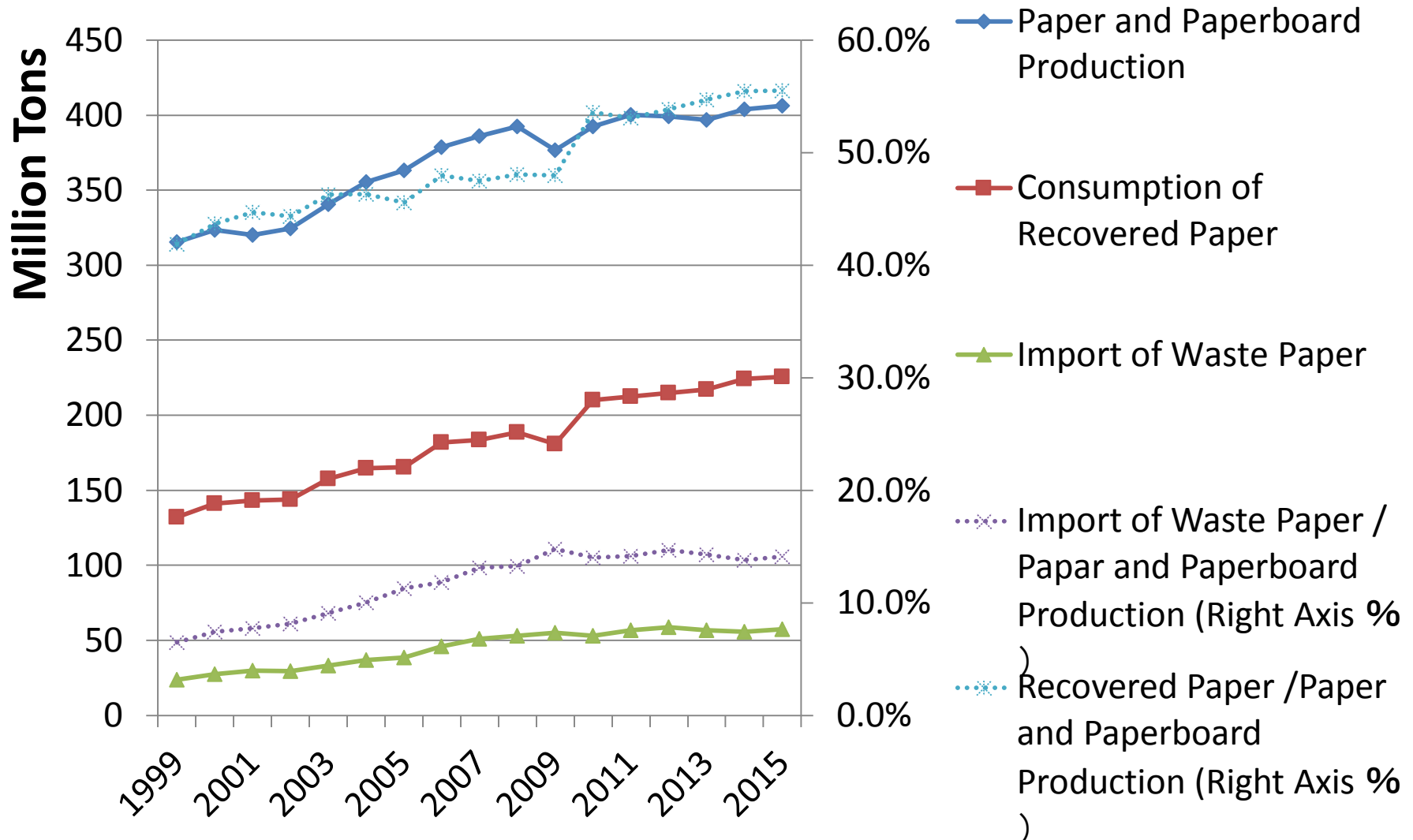
- Philosophy of Sufficiency Economy stressed “reasonableness” (or wisdom), “moderation” and “prudence” (or self-immunity).
  - “”Sufficiency” means moderation and reasonableness and need for self-immunity for sufficient protect from internal and external changes” (NESDB 2007)
  - “Sufficiency Economy at national level starts with a national administrative and development plan that encourages and enables people to live their lives and to cooperate with others in development based on the Philosophy of Sufficiency Economy.” (NESDB 2007)
  - Philosophy of sufficiency economy can contribute to ensure environmental sustainability. (Mongsawad 2010)

# Waste Paper Import in 2016

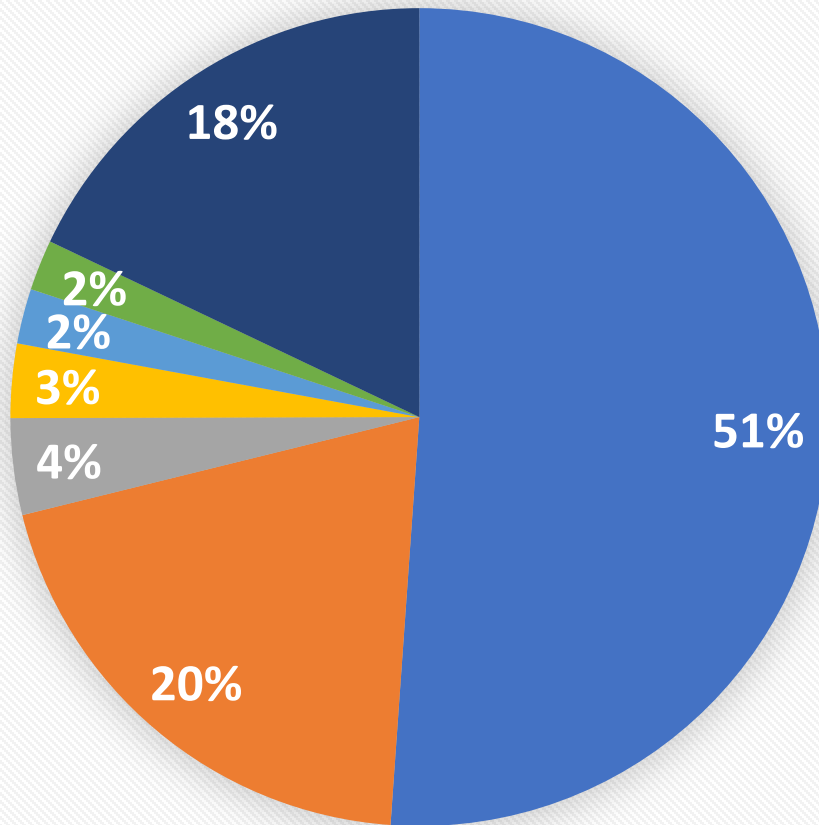


One of the Background of Chinese import is demand of carton boxes. China export many products, packaged with carton box. Demand of waste paper exists for producing carton box. Because of deforestation in China, china strictly regulate forest. China is not able to secure the waste paper domestically. China still import a lot of waste for recycling.

# Production of Paper and Recovered Paper



# Plastic Waste Import 2016



In 2016, 14 million ton of plastic waste was traded in the world. More than 60 % of plastic waste were sent to China, because most of imported plastic wastes by Hong Kong were re-exported to China.

- China
- China, Hong Kong SAR
- Germany
- USA
- Belgium
- Malaysia
- Others

## Europe

Compressed and baled

Prior Notice and Consent



## Philippines

Shredded and washed to flake



# Waste PET Bottle before Chinese Restriction

It twists and unite to make thick thread, or makes substitute to cotton.

## China

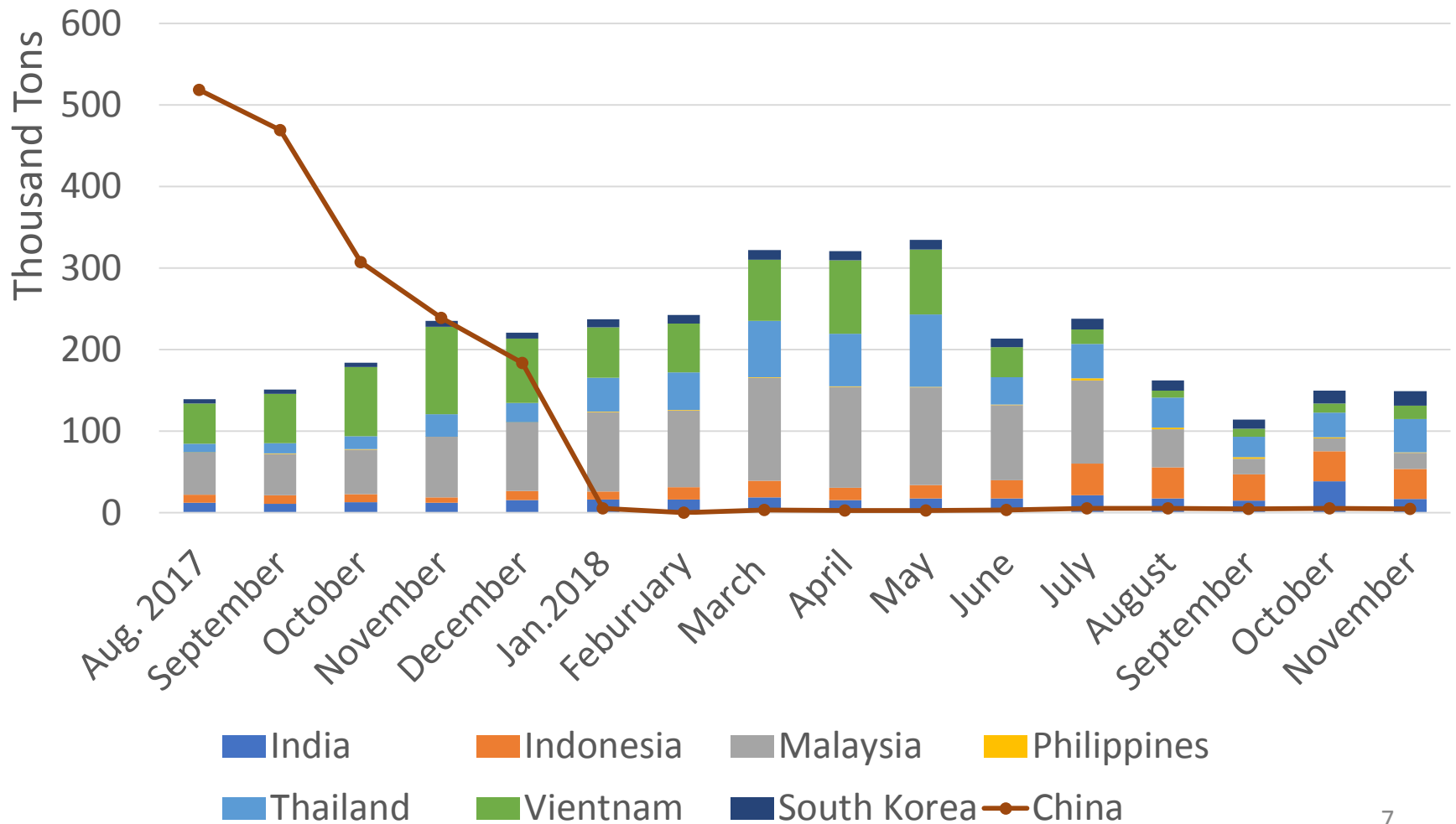


↑ Washed flake of PET.

Thread is spun with heat. ←



# Import of Waste Plastics by Asian Countries



# Problems generated from Transboundary Movement of Recyclable Waste

- Many Southeast Asia, such as Thailand, Vietnam, Malaysia, Philippines, Indonesia faced problems due to imported plastic waste in 2018, after China restrict import of plastic waste generated from households.
- Environmental Pollution
  - Recycling facility accepting imported recyclable waste may cause pollution problem from production process.
  - Exporter of wastes for recycling do not have good quality control, while importer also do not care about the quality of imported waste. As a result, waste which is not good for recycling are disposed, or burned without pollution control.
- Some containers with plastic waste were left in ports.





Plastics  
and  
others

Mixed paper with plastics, imported to Shenzhen, China from US. December 2011.

# Reasons behind such transboundary movements

- In some exporting country, incentive structure in EPR system are distorted so that recyclers export recyclables without any or minimum treatment.
- In importing countries, enforcement at port and of pollution control is weak in importing country.
- Southeast Asia is good location for making pellet from waste plastics and exporting pellet to China.
- Due to reduction of supply of products made from plastic waste to the world, some recyclers in Southeast Asia got order from foreign customers to export the recycled products. Such exporters of recycled products needs more recyclable waste for expanding production.

# Basel Convention

- Parties of the Basel Convention will discuss the amendment of annexes regarding plastic waste in May 2019. There is possibility that unsorted and/or uncleaned plastics will be regulated under the Basel Convention.
  - Such amendment may create a burden to small counties, where it is not able to invest in sorting and washing facilities. Some special arrangement should be considered, in the context of “3R+Return”, which has been promoted in Pacific islands countries.
- Import restriction should be taken into account the differences of quality of waste plastics.





Mixed Waste Plastics.



Some of label and cap is not removed.

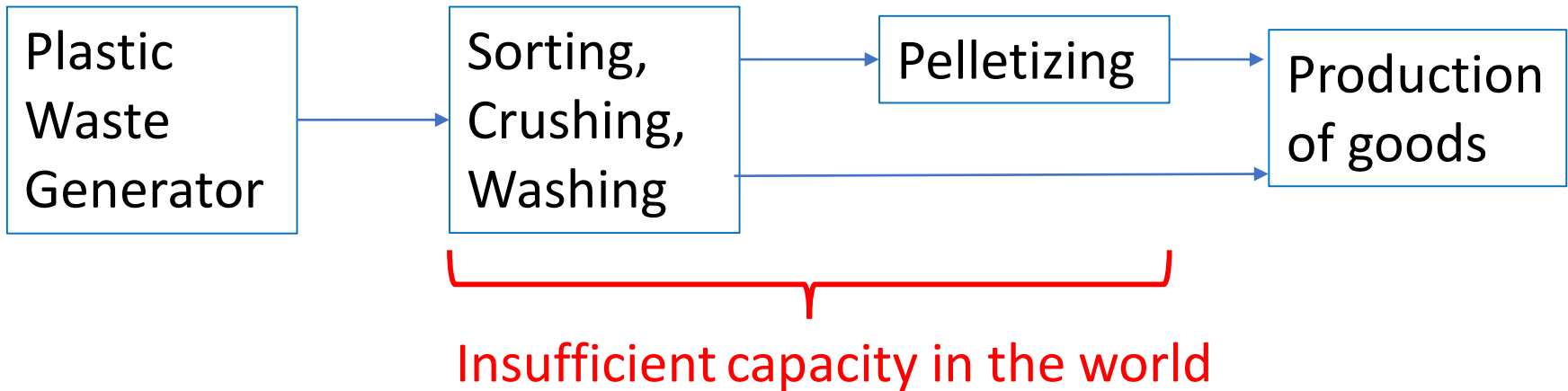


Label and cap are removed.



PET flake after washing and Crushing

# Challenges for plastic recycling



- Recycler may not want to invest in sorting, crushing and washing facility, because
  - China may allow import some types of plastic waste in the near future. (I do not believe, but some recycler believe.)
  - Country where they will invest in the facility may prohibit the import in the future.
- Some recyclers try to get short-term profit, because unsorted plastic waste is cheap and because strong demand of re-pellet is still existing in China.

# Reference

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- NESDB(2007) *Sufficiency Economy: Implications and Applications*.
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