

## Developing Resource Efficiency Policies in Emerging Countries; Drivers and Facilitating Factors - a case of Indonesia-

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### Introduction

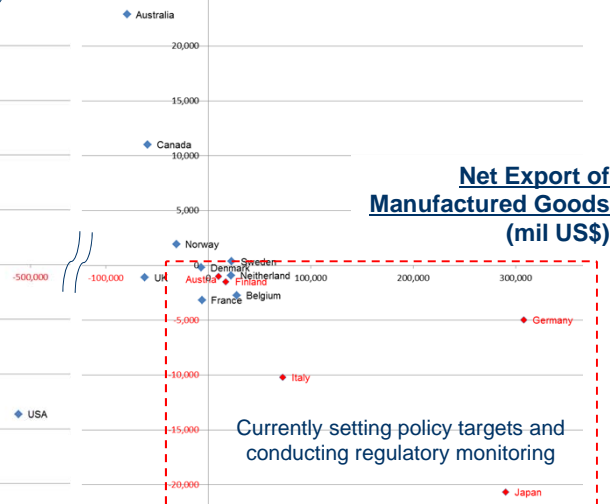
- Resource Efficiency (RE): central of global environmental policy agenda

- **Newly developed RE strategy**
  - EU, Germany, Austria
- **Continuing consideration of RE in 3R policies**
  - China, Japan
  - On circular economy / sound material cycle society policies
- **Applying RE indicators (Resource Productivity) as headline indicator:**
  - **UNEP** Green Economy Indicator
  - **OECD** Green Growth Indicator

## Common characteristics of developed countries Active in Resource Efficiency Policies

- **Manufactured goods** : Ex > Im  
and
- **Resources** (Ex. Metal, ore, minerals) : Ex < Im
- **Higher % of manufacturing to total GDP** : around 20 %  
average: 14.1%
- **Highly interested in efficient productive use of (metal) resources**

Net Export of Metals (mil US\$)



Net Export of Manufactured Goods (mil US\$)

Note: data of year 2007

Source: based on C. Aoki-Suzuki et al. (2012)

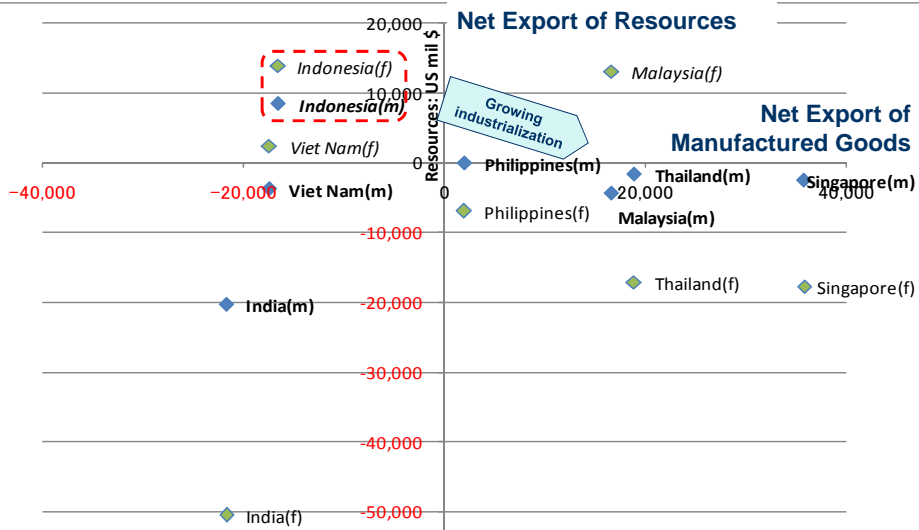
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## Asian Situation: Net Export (mil US \$) of Metal or Fuels (vertical axis) and Manufactured goods (horizontal axis)



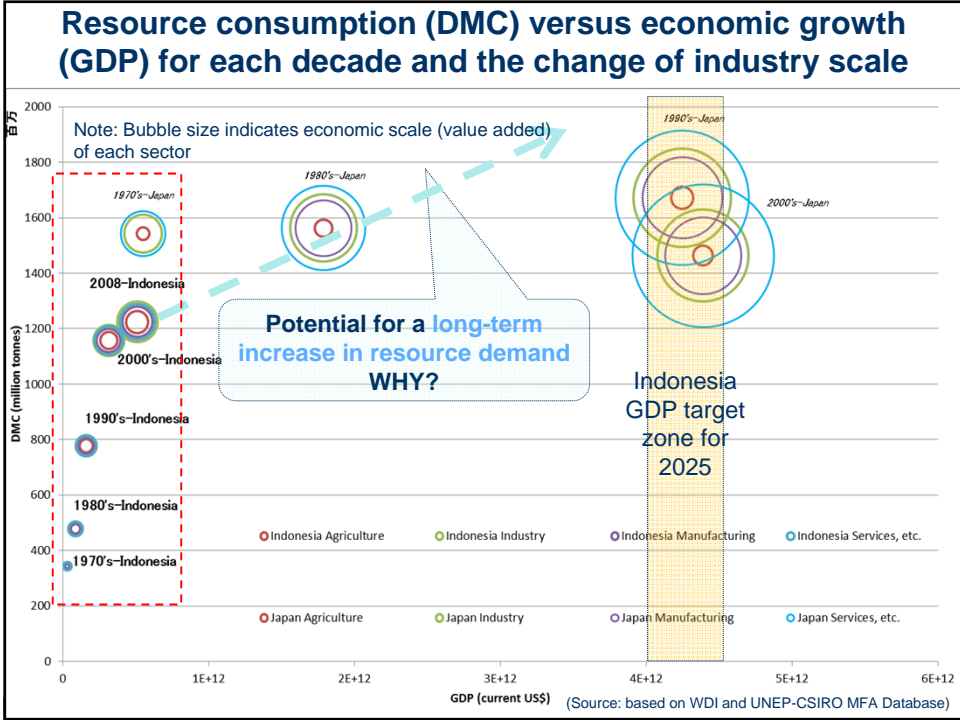
Source: UNCTAD

- m: SITC 27 + 28 + 68 + 667 + 971 : Ores, metals, precious stones and non-monetary gold (includes stones/gravel for construction purposes, but excludes ingot, pipes, semi-finished products, etc.)
- f: SITC3: Mineral fuels, lubricants and related materials (coal, oil, natural gas, etc.)

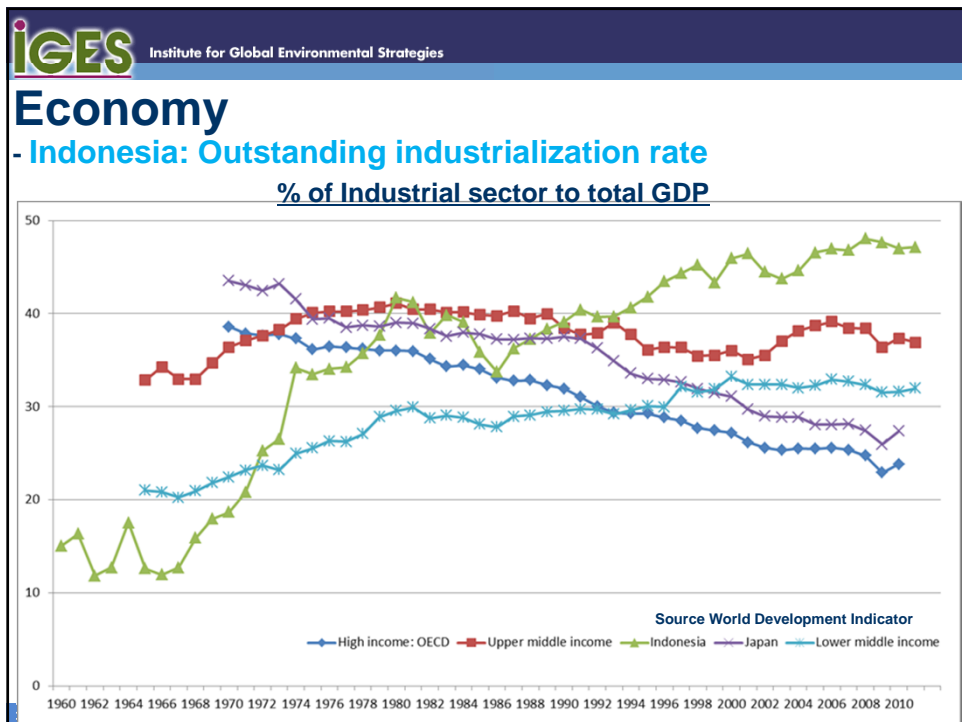
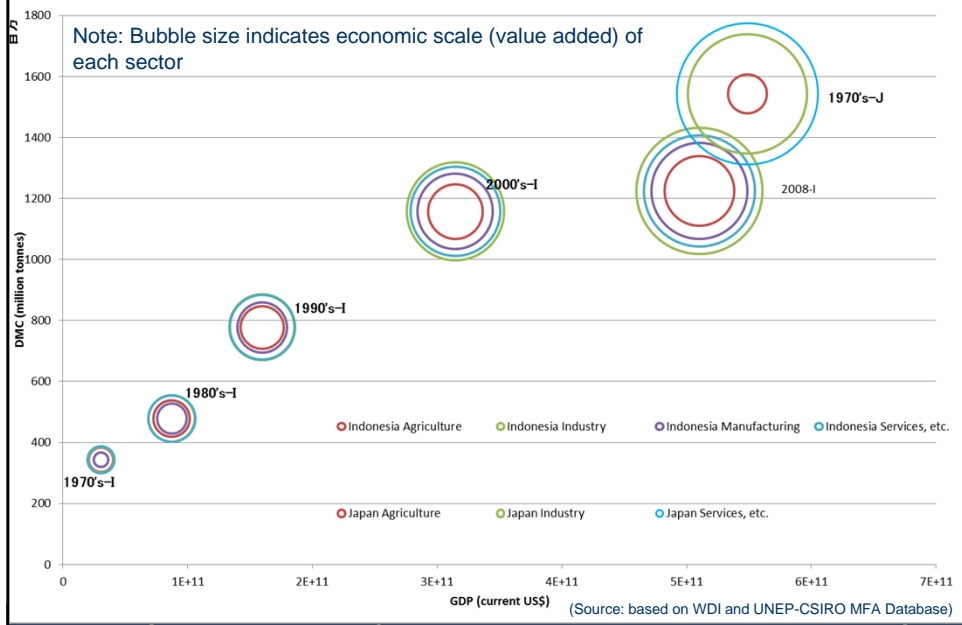
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## More details of Indonesia

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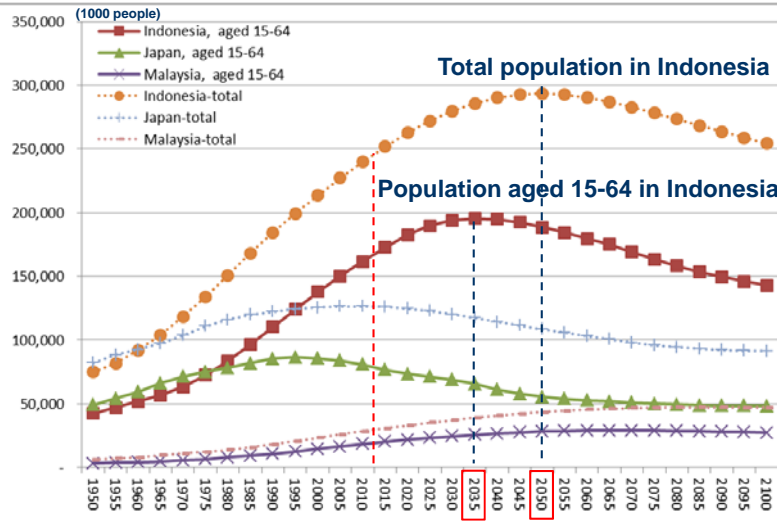
## Resource consumption (DMC) versus economic growth (GDP) for each decade and the change of industry scale



## Economy: Growing Economy with high targets and Increasing & Large population in Indonesia

(currently about 240 mil → max 300 mil)

GDP growth rate: average over 5% (2008-2010)



**Target (2025)**

**GDP: USD 4000-4500 billion**

(nearly current Japan)

**GDP/capita: USD 14,250-15,500**

(high income category)

Data Source : United Nations Population Division Department of Economic and Social Affairs World Population Prospects: The 2010 Revision

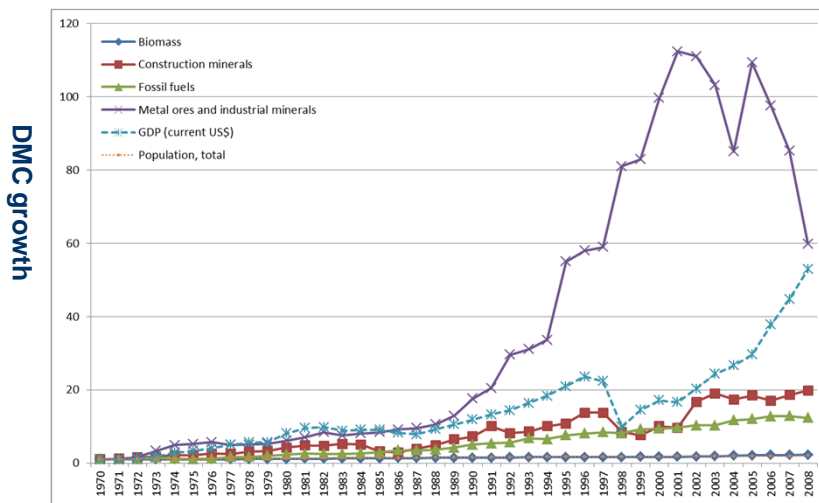
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## Growth of Resource Consumption in Indonesia → Significant metal use growth



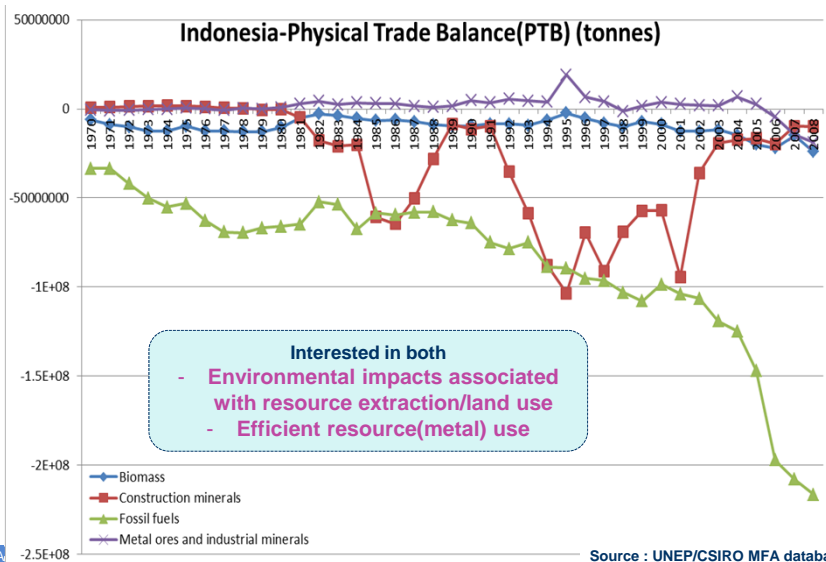
Data of 1970 = 1

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Source World Development Indicator, UNEP/CSIRO MFA database

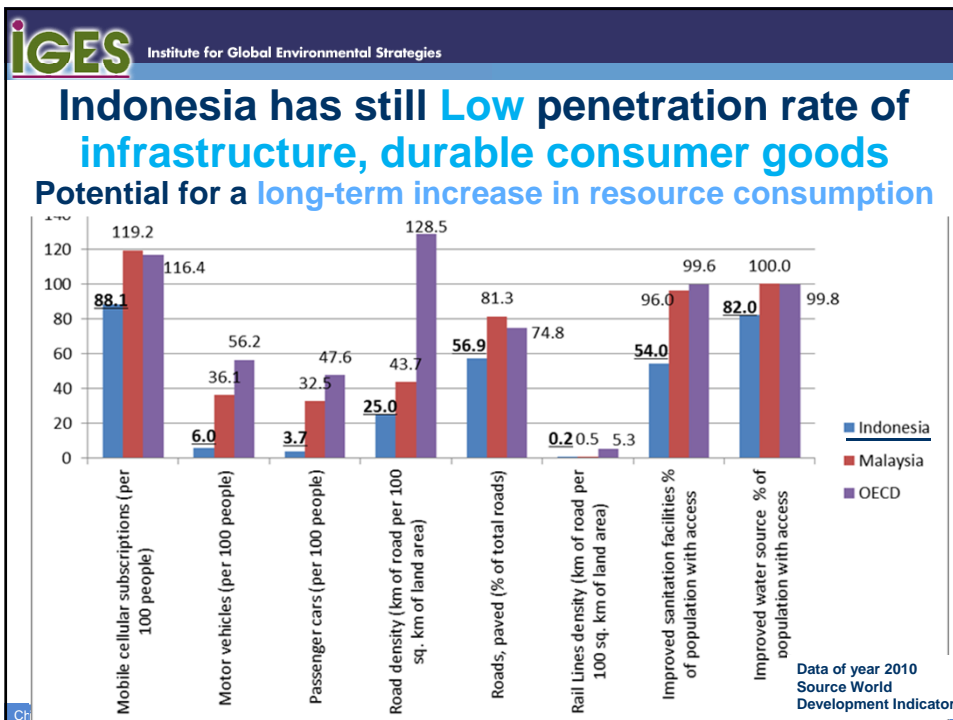
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## Indonesia: Producing and Exporting Resources, but Importing Metals (in general), Reducing Exports of construction mineral



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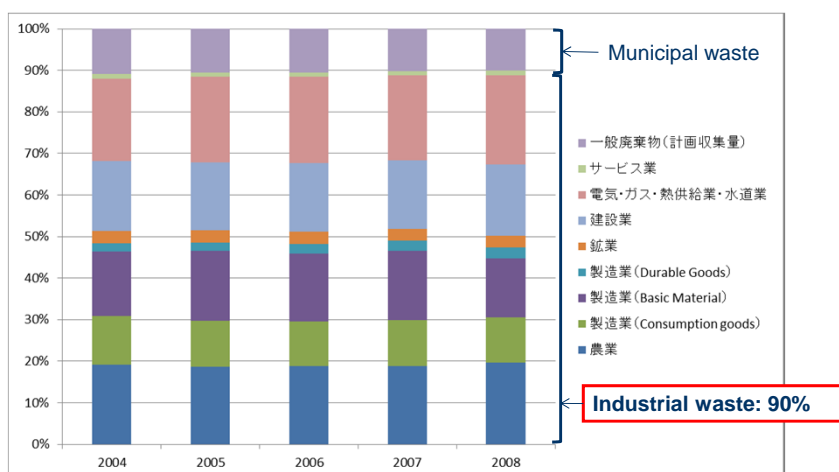
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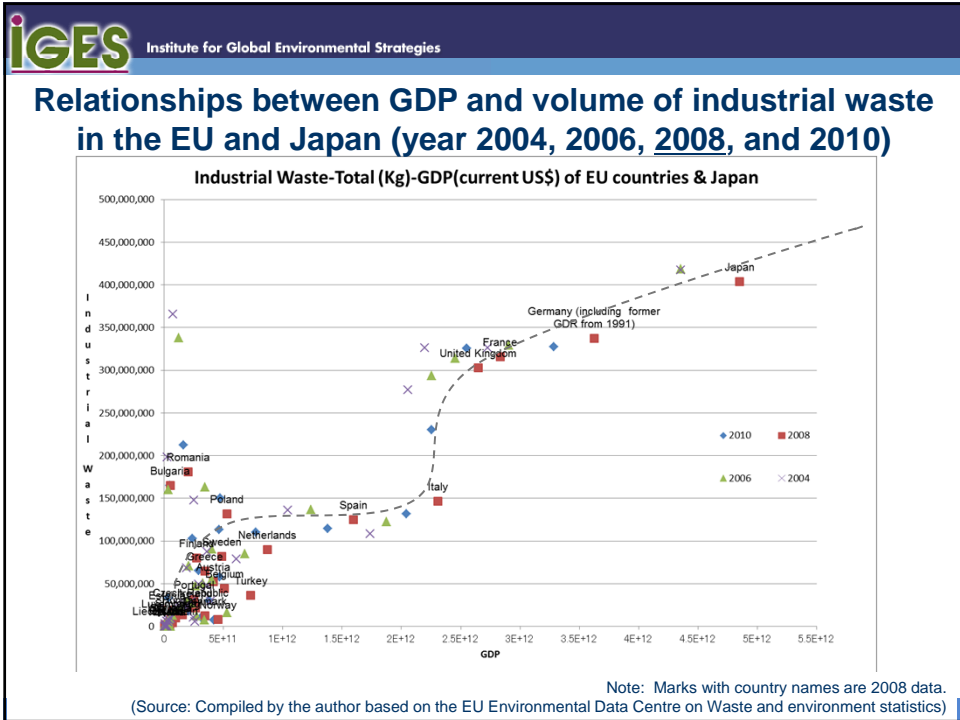
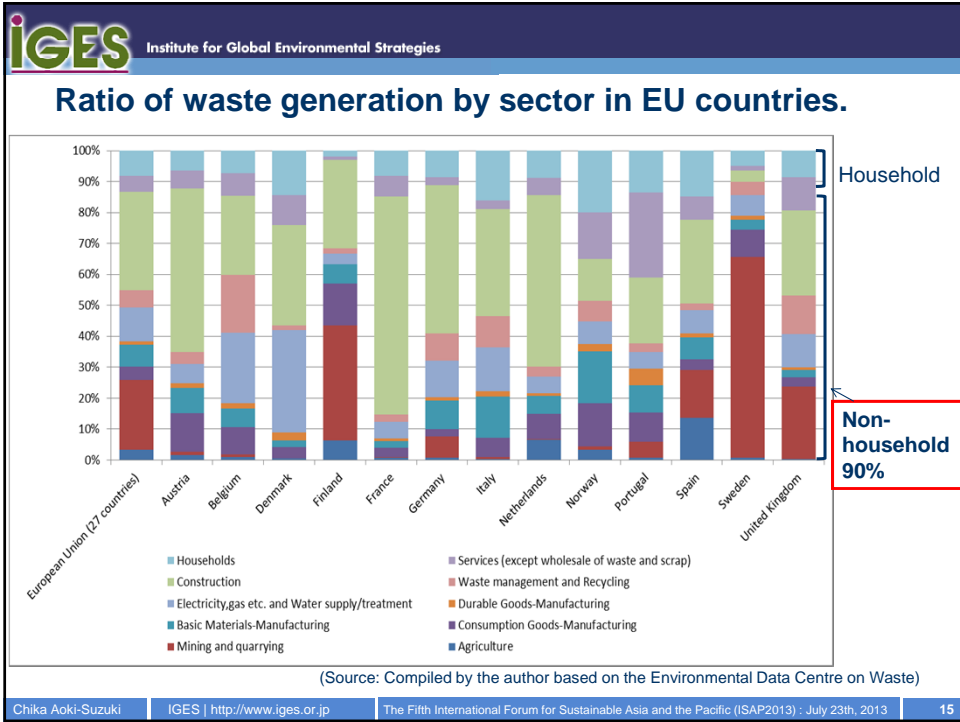
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## How does Indonesia Manage their Resource in a Sustainable Manner?

### Ratio of waste generation by economic activity in Japan.



(Source: Compiled by the author based on MOEJ)





## Towards: Resource Efficient Indonesia Opportunities and Consideration

(0). Poverty reduction, Growth, Inequalities

(1). Increasing & Large population that will last until 2050

(2). Outstanding industrialization rate

(3). Low penetration rate of infrastructure and durable consumer goods.

→ **Resource efficient social system and life style**

(4). Potential for a long-term increase in resource consumption

(5). Producing/exporting both abiotic and biotic resources, consideration to Environmental impacts at extraction

(6). Expecting increased Waste generation

**Innovation for Industrial Process (cyclical use/ zero emission)  
and Prior Investment on 3Rs**

### Next step

#### In short-middle term

- How to develop **resource efficient society**
  - **Industries**
    - Energy Service to Resource Efficiency Service Company?
    - Use more secondary materials in Manufacturing sector
      - Push by Multinational companies(i.e. Nissan, Richo)?,
      - Encouragement by policy?
  - **Infrastructures (Transportation, buildings)**
  - **Mind change? : More reduce, reuse**

#### In longer term...(to avoid planetary boundary)

- To what level should **Resource Consumption** in Indonesia (AP) should **converge**?
  - Reduce the growth of Resource consumption

**Thank you!**  
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## How to achieve leapfrog and Sustainability?

