

# Partnership as the basis for moving towards CE and resource re-circulation society

Engaging scientific & research community towards CE

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December 14, 2020

# Hello from Toyama

2 hour train trip from Tokyo, 420 K people and incredible seafood!



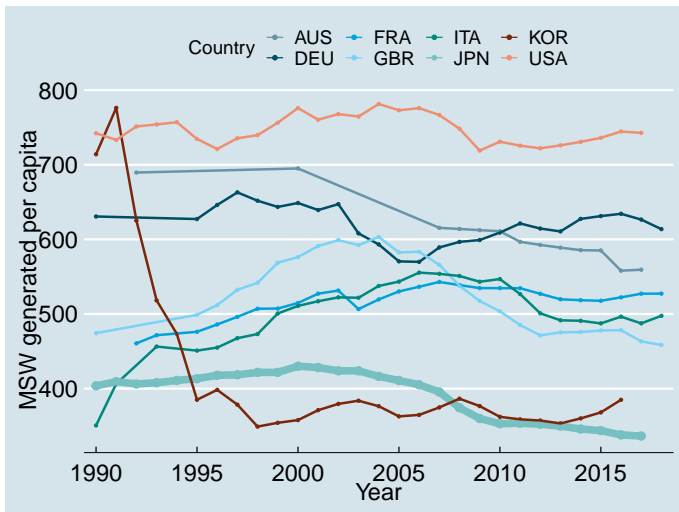
Source: <https://www.city.toyama.toyama.jp/kikakukanribu/kohoka/citypromotion/erabarerumachizukuri.html>

# Self-introduction: I'm an Environmental Economist

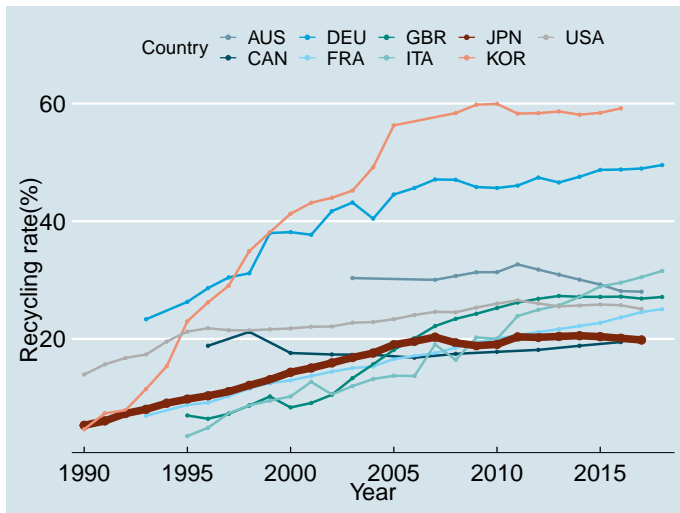
## Main field = waste management and recycling

- ♠ Tembata, K., Yamamoto, Y., Yamamoto, M. and K. Matsumoto, "Don't Rely Too Much on Trees: Evidence from Flood Mitigation in China," *Science of the Total Environment*, Elsevier, vol. 732, 138410, August 2020.
- ♠ Hosoda, E. and M. Yamamoto, (2020) "Transportation Costs of Vehicle Recycling under Hotelling's Duopoly Competition," *Journal of Industrial and Business Economics*, Springer.
- Ha, H.K., Kaneko, S., Yamamoto, M. Yoshida, Y. and A. Zhang (2017) "On the Discrepancy in the Social Efficiency Measures between Parametric and Non-Parametric Production Technology Identification," *Journal of Air Transport Management*, Elsevier, vol. 58, pp.9-14.
- Tajima, K., Yamamoto, M. and D. Ichinose (2016) "How Do Agricultural Markets Respond to the Radiation Risk?: Evidence from the 2011 Disaster in Japan," *Regional Science and Urban Economics*, Elsevier, vol. 60, pp. 20-30.
- ♠ Yamamoto, M. and E. Hosoda (2016) *Economics of Waste Management in East Asia*, Routledge, UK.
- ♠ Ichinose, D, Yamamoto, M. and Y. Yoshida (2015) "The Decoupling of Affluence and Waste Discharge under Spatial Correlation: Do Richer Communities Discharge More Waste?," *Environment and Development Economics*, Cambridge University Press, vol.20, pp. 161-184.
- ♠ Kinnaman, T., Shinkuma, T. and M. Yamamoto (2014) "Socially Optimal Recycling Rate evidence from Japan," *Journal of Environmental Economics and Management*, Elsevier, vol. 68 (1), pp. 54-70.

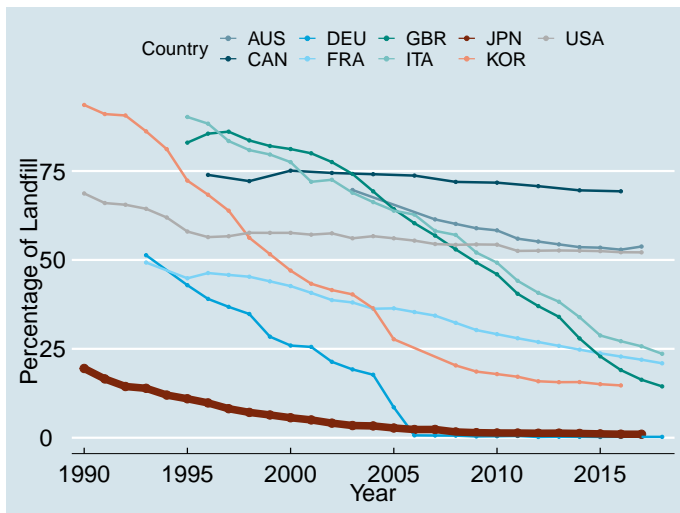
# Generation of municipal solid waste per capita



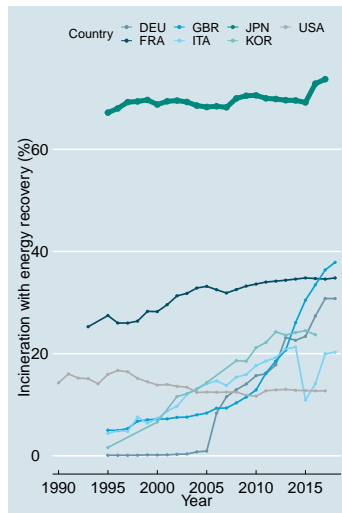
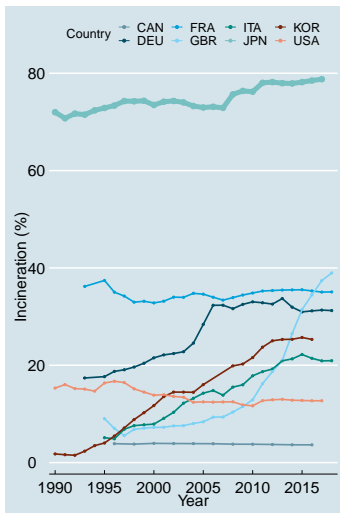
# Recycling rates of municipal solid waste



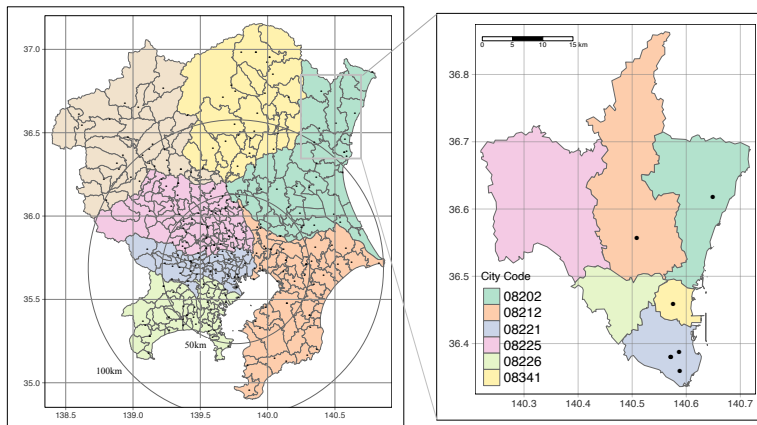
# Landfill rate



# Incineration rate



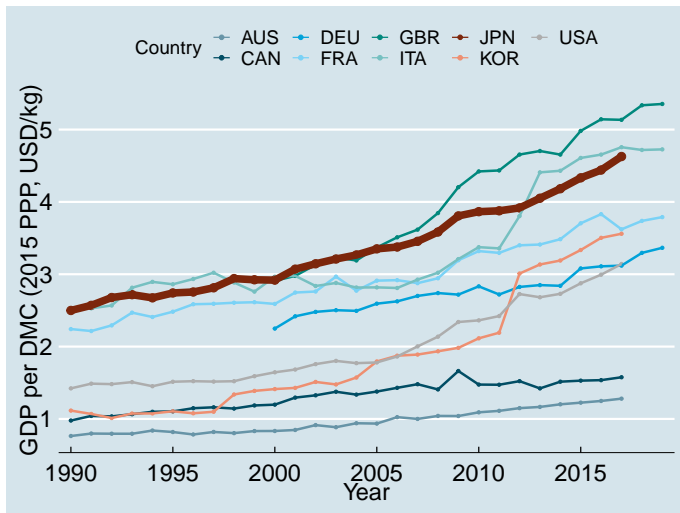
# Incinerators are everywhere



Source: Yamamoto and Kinnaman (2020)

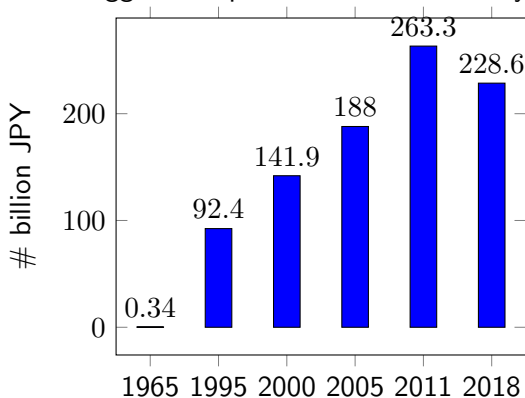


# Resource Efficiency



# Grant-in-Aid for Scientific Research (JSPS KAKENHI)

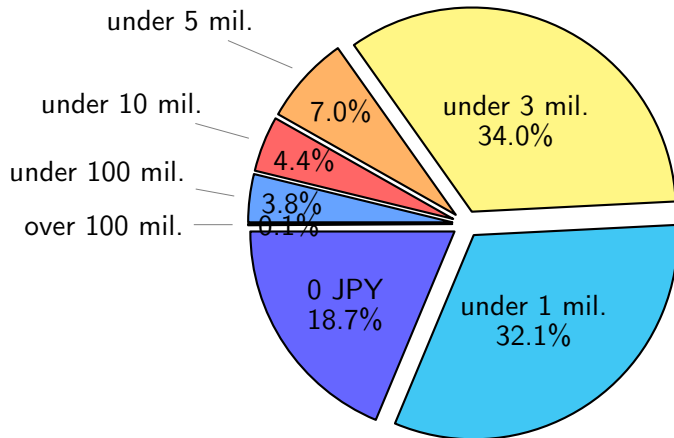
The biggest competitive research fund by Japanese government!



Source:Nikkei Shimbun  
(2018/11/17)

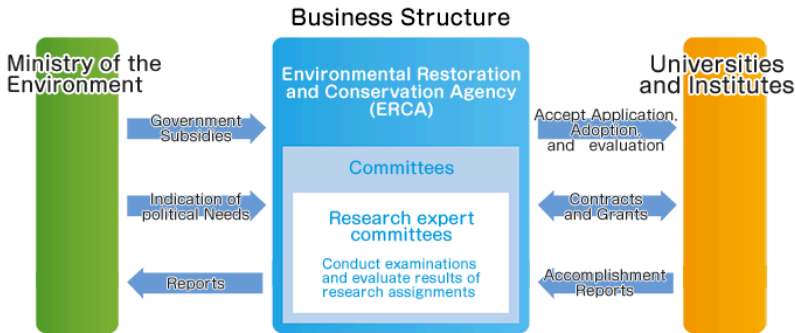
## Joint Research by private firms and universities (2017)

Very limited amount of collaboration.



# Environment Research and Technology Development Fund

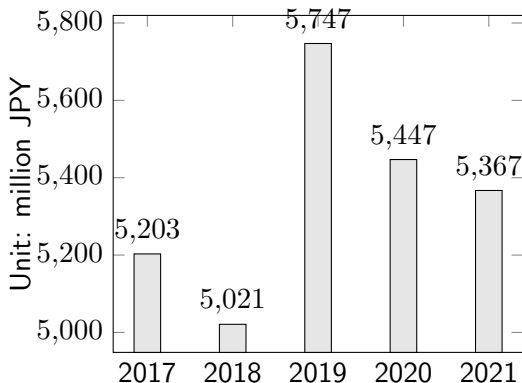
The aim of ERDF is to promote environmental policies through the research and development.



Source: [https://www.erca.go.jp/erca/english/activities/ac\\_10.html](https://www.erca.go.jp/erca/english/activities/ac_10.html)

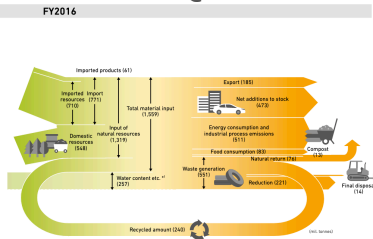
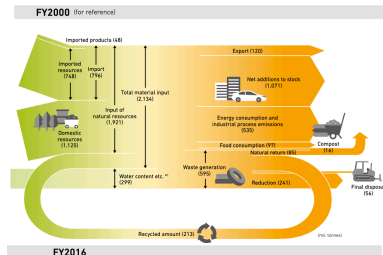
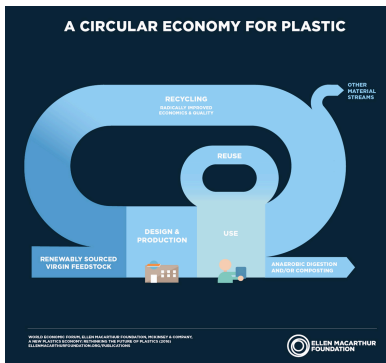
## ERDF budget

7 to 14 are 3R-related out of 134 to 151 total projects.



# My Own Experience from ERDF Project (3-1801)

The difference between EMF and Japan in CE.



## Other Examples of Private Public Partnership

### 1 Association for Electric Home Appliances (AEHA)

- Based upon Electric Home Appliances manufacturers' voluntary fund, AEHA provides resource to municipalities who need it to prevent illegal dumping.
- More than 100 municipalities received the fund each year.

### 2 JARC Japan Automobile Recycling Center / J-FAR Japan Foundation for Advanced Auto Recycling

- Both are organization related to Automobile recycling law in Japan.
- JARC provides funds to municipalities while J-FAR subsidizes the research by university professors and recycling firms.

# Arguably the best practice in Japan ....

It is very common in Japan public policy making process includes all the stakes-holders and academics from the very beginning.

Economic Analysis and Policy 64 (2019) 41–53



Full length article

## Political economy of voluntary approaches: A lesson from environmental policies in Japan<sup>☆</sup>

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### ARTICLE INFO

#### Article history:

Received 4 April 2019

Received in revised form 8 July 2019

Accepted 10 July 2019

Available online 19 July 2019

### ABSTRACT

In this paper, we attempt to identify the reasons behind the differences in environmental policy between Japan and other developed countries, particularly the US. Japan's environmental policy is unique in that voluntary approaches have been taken to reduce total emissions. This strategy is quite different from the traditional approach of heavy-handed regulation. In Japan, voluntary approaches are conducted through



## Wrap-up

- EU's CE  $\simeq$  Japan's 3R society
  - The goals are the same but less emphasis on employment.
  - 5th Basic Environmental Plan (2018) declares “simultaneous solutions” and “new avenues for growth”.
  - Economic structure behind the scene matters and important  
→ various ways to achieve CE.
- Compared to the US and other Western countries, partnership between universities and firms are very weak.
- Public policy making process in Japan often creates a magic cooperation among the three.