

22<sup>nd</sup> Reform Group Meeting in Salzburg (27/08/2018)

# Impacts of nuclear phase-out to host communities

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# 1. Research Questions

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- How do nuclear host municipalities depend on benefits from nuclear facilities?
- How can these host municipalities achieve nuclear phase-out without any serious damages?

# 1. Research Questions

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- Social Peripheralisation : Peripheral areas are highly likely to become ideal targets of nuclear facilities' location and become more dependent on it after accepting those facilities at once.
- Forms of dependency and ways of nuclear phase-out differ according to social structures.

## 2. Characteristics of Japan

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- Most of officials including governors and mayors of nuclear host municipalities have appealed that suspended reactors should restart ← Dependency on benefits of nuclear facilities
- For phasing out of nuclear power, we need to take care of them

## 2-1.Characteristics on Nuclear Energy

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- ◉ Victim of a nuclear bombing → Allergic to everything nuclear?
- ◉ Over 50 nuclear power reactors have been constructed successfully ← Result of **the unique incentive system** to host municipalities of nuclear facilities
- ◉ Fukushima disaster → But officials in other nuclear host municipalities wish to restart it.

# 2-1. Characteristics on Nuclear Energy

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- ⊙ Direct economic impact such as job creation → Researches show this is not so
- ⊙ **Financial impact to municipality's budget by grant and tax revenue**

## 2-2. Characteristics on Local Public Finance

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- ① The national government has revenue of about two-thirds of the whole tax revenue in Japan.
- ② Local governments expense two-thirds of the whole tax revenue.
- ③ One-third of the whole tax revenue is transferred from the national to local governments. → Power of bureaucrats



## 2-2. Characteristics on Local Public Finance

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- The most important feature of Japan's local finance system is **the possibility of bankruptcy**.
- If its go into bankrupt, municipalities suspend significant parts of its financial autonomy.
- The most famous municipality that went into the bankrupt is a case of former coalfield.

## 2-2. Characteristics on Local Public Finance

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- Although their tax revenue is not enough, they must take a financial responsibility.
- There are other many municipalities where have huge debt from the failure its project.
- Finances of nuclear host municipalities are far better than other similar municipalities.

## 2-2. Characteristics on Local Public Finance

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- ◉ Nuclear host municipality can get financial benefits in two ways of grants and property tax.
- ◉ There are some traps and those can result a cycle of addiction.

## 3. Three case studies

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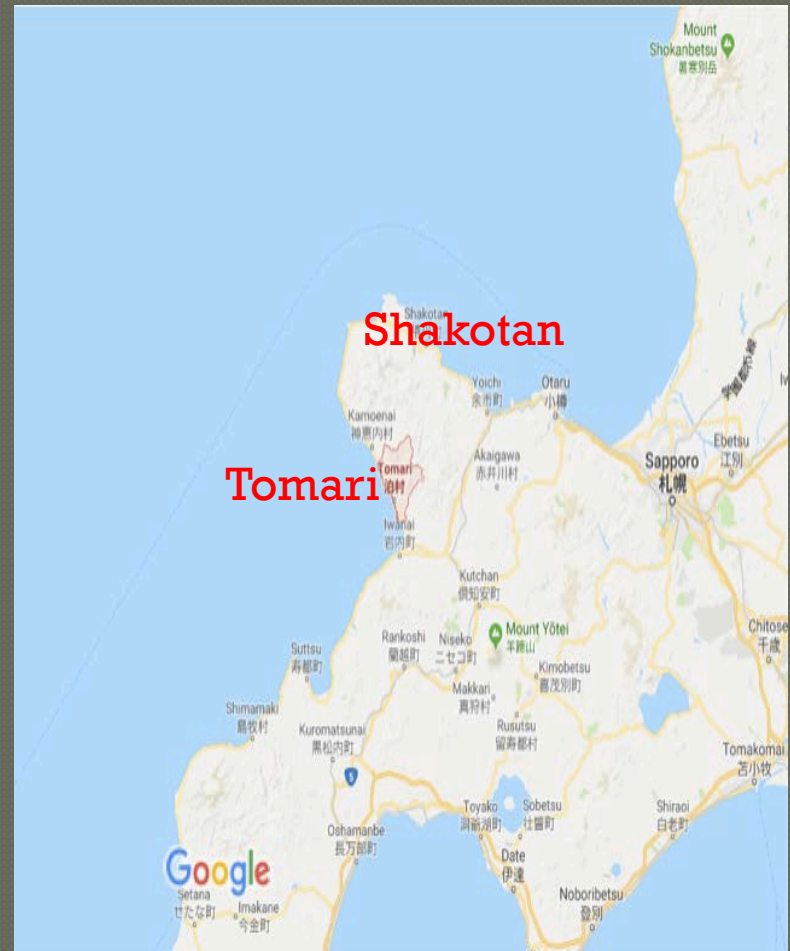
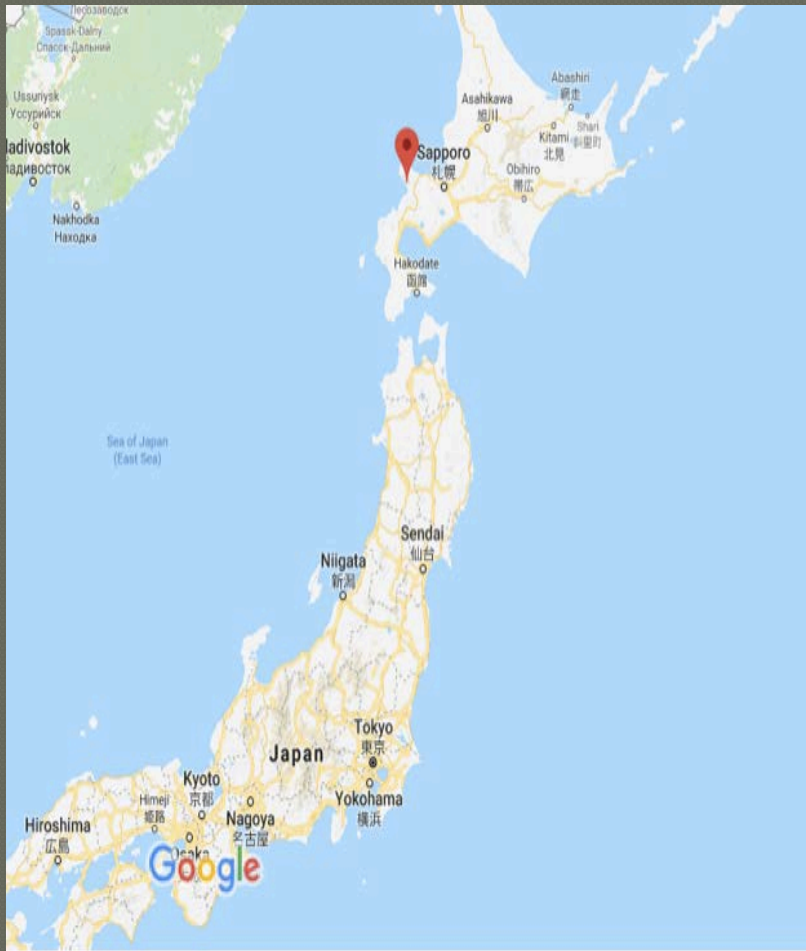
- The first case shows how nuclear host municipality become rich.
- The second case shows a cycle of addiction.
- The third case shows a municipality at the crossroad.

## 3-1. Tomari: How rich host municipalities are

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- The first case is Tomari in Hokkaido, the northern island of Japan.
- The nuclear power station site has three nuclear reactors that started its operation in 1989, 1991 and 2009.
- Comparison with Shakotan
- One of the richest municipality in Japan

# Map of Tomari and Shakotan



# Tomari reactors

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Source:<http://media.index-japan.jp/archives/6549>

# 3-1. Tomari: How rich host municipalities are

	<b>Population 2018</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>
Tomari	1657	1.79*	3.09*	2.77*	3.69*	2.58*	2.31*
Shakotan	2047	1	1	1	1	1	1

\* Ratio of Revenue of Per Capita, Tomari to Shakotan



## 3-2.Futaba : A cycle of addiction

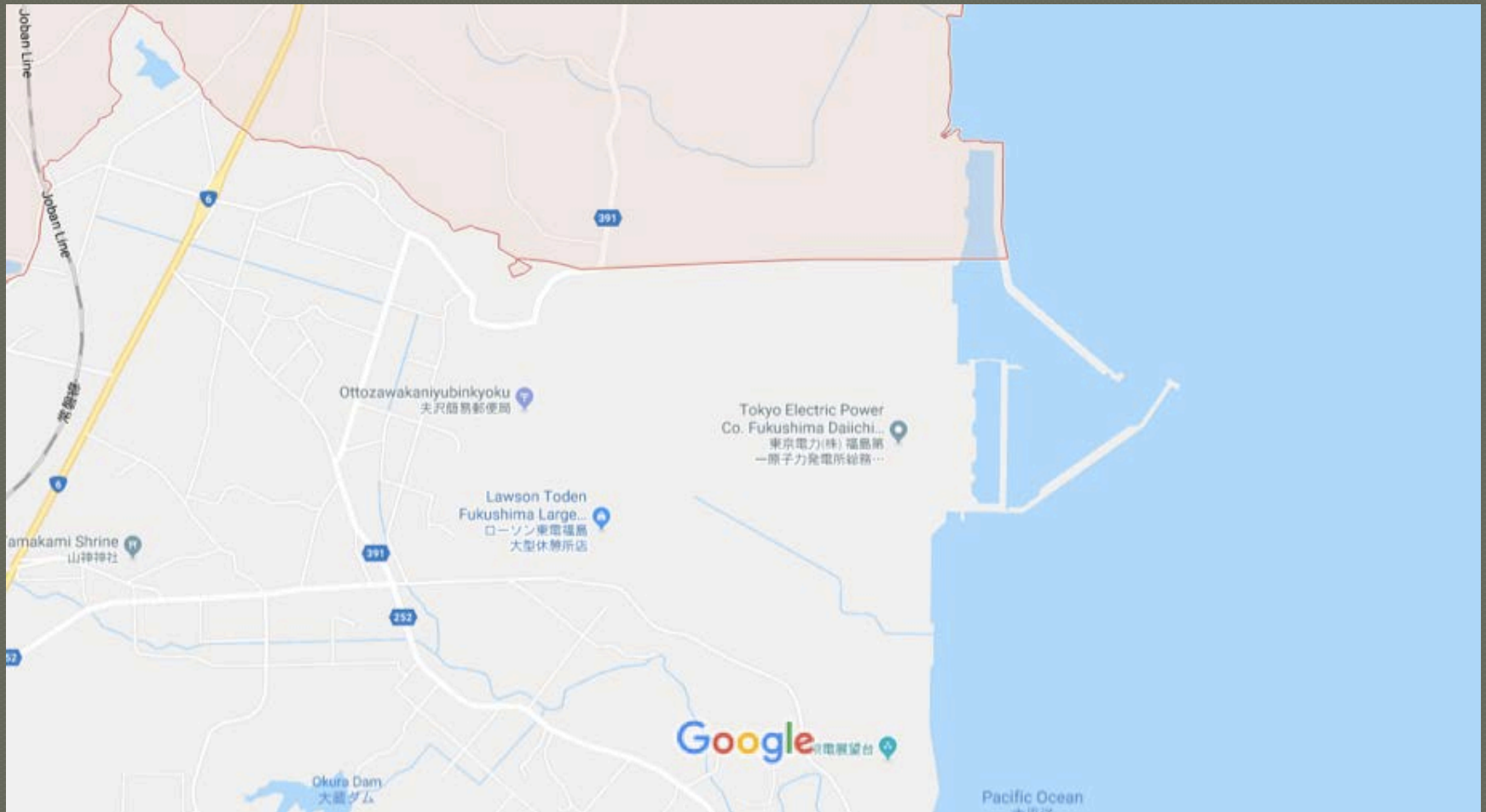
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- One of the host municipalities of Fukushima Daiichi nuclear power plant.
- No.5 reactor started its operation in 1978 and No.6 did 1979.
- Futaba partially went into bankrupt in 2008.
- This is because one of its financial indexes exceeded the criteria that the national government set.

# Map of Futaba 1



# Map of Futaba 2



## 3-2.Futaba : A cycle of addiction

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- Futaba fallen into the cycle of addiction.
- The town council resolved to locate more two reactors.
- A scandal of covering up serious incidents by TEPCO was found out →to freeze the new reactors project.
- The town council canceled the freeze for getting a grant and getting out of the bankruptcy.

## 3-2. Timeline of Futaba

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- 1978 : No.5 reactor started its operation
- 1979 : No.6 reactor started its operation
- 1980's : The finance of Futaba had kept to be good
- 1990's : The finance became wrong
- 1991 : The council resolved to locate more two reactors.
- 2002 : A scandal of covering up serious incidents by TEPCO was found out. → The town council froze the new reactors project.
- 2007 : The town council canceled the freeze
- 2008 : Start of getting a grant
- 2009 : The municipality bankrupted(2008FY)
- 2010 : Get out of the bankruptcy

## 3-3.Tokai : At the Crossroad

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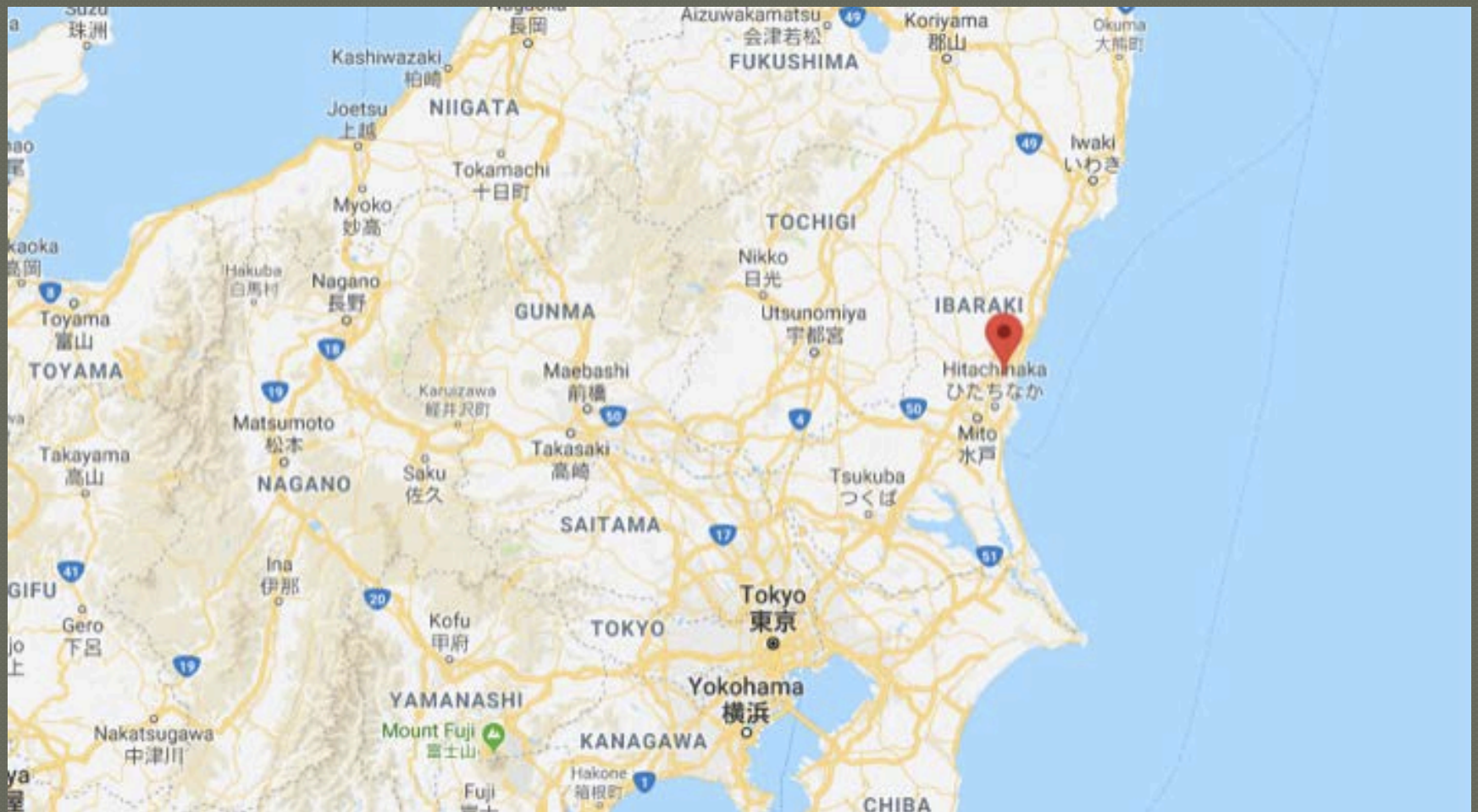
- Tokai is the nearest nuclear host municipality to the capital, Tokyo and has the first civilian nuclear power plant in Japan.
- This municipality has also a cluster of nuclear industries such as large laboratory and private factories.

## 3-3.Tokai : At the Crossroad

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- The first reactor (166,000kw) started operation in 1967 and the second one (1 million kw) started in November 1978.
- Tokai has clearly become rich by benefits from nuclear reactors.
- The amount of revenue was around 48 million USD in 1978. This included around 10 million USD of property tax.
- Its property tax jumped up to around 35 million USD in the next year. It reached to 40 million USD in 1981. The amount of revenue was 80 million USD in 1981.

# Map of Tokai





## 3-3.Tokai : At the Crossroad

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- ① How have the municipality office and residents been used the rich revenue for 40 years?
- ② Tokai has been spending it for civil engineering and education.
- ③ They also have been enjoying pretty better administrative services ←location of two firepower reactors.
- ④ The first reactor is already under decommissioning.

# 3-2. Tokai Hospital

(a photo from the website of the hospital)

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## 3-3.Tokai : At the Crossroad

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- Discussions are ongoing whether operation time should be extended or not, and the reactor should be restarted or not.
- Regardless of proponent or opponent for nuclear power, residents in nuclear host municipalities share concerns of influences of lost of nuclear facilities.

## 4-1. Financial measures but passive attitudes

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- Rise of the property tax are offsetted by fall of local allocation tax grant from the national government.
- We should not ignore the negative influence on municipalities' finance but it is not vital and treatable.

## 4-1. Financial measures but passive attitudes

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- Futaba and Tokai case shows that financial dependency strengthens passive attitudes.
- More essential point is their passive attitudes.
- Financial dependency strengthens these passive attitudes.
- For phasing out of nuclear host municipality, we should consider some ways for changing these passive dependent attitudes.

## 4-2. The problems of decommissioning

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- How does nuclear reactor's decommissioning influence to local economy?
- The decommissioning of nuclear reactors can cause wastes problem

# 5. Summary

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- Researches on the impact nuclear phase-out to nuclear host municipalities have not been done well.

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◎ Thank you.

◎ This work was supported by JSPS Kakenhi  
Grant Number 18K02015