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Belgian Nuclear Research Centre

KU LEUVEN

Citizen Science after Fukushima

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ICTP workshop - Citizen Science with Application to Nuclear, Seismic and Air Quality Monitoring: Applications

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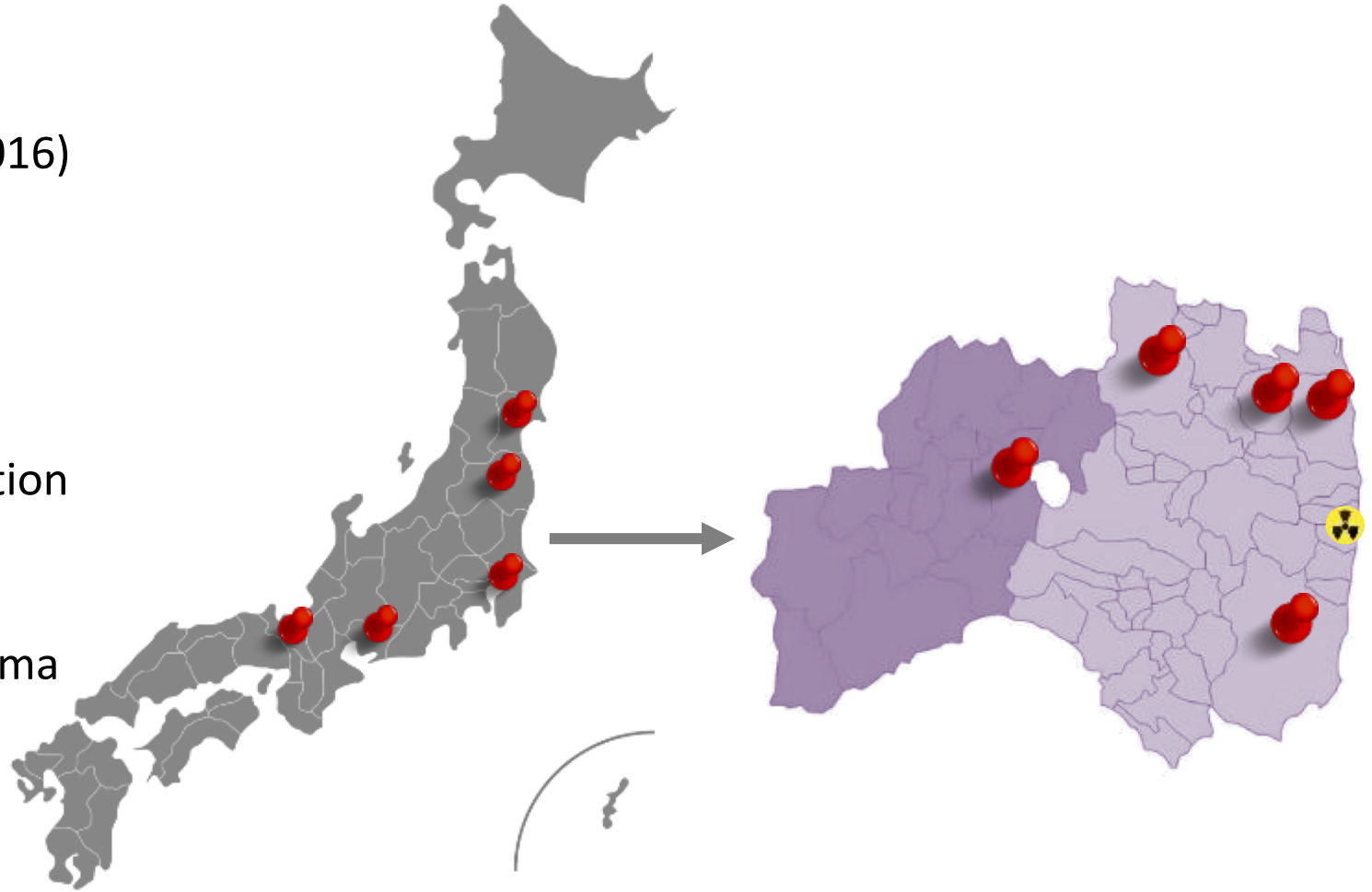
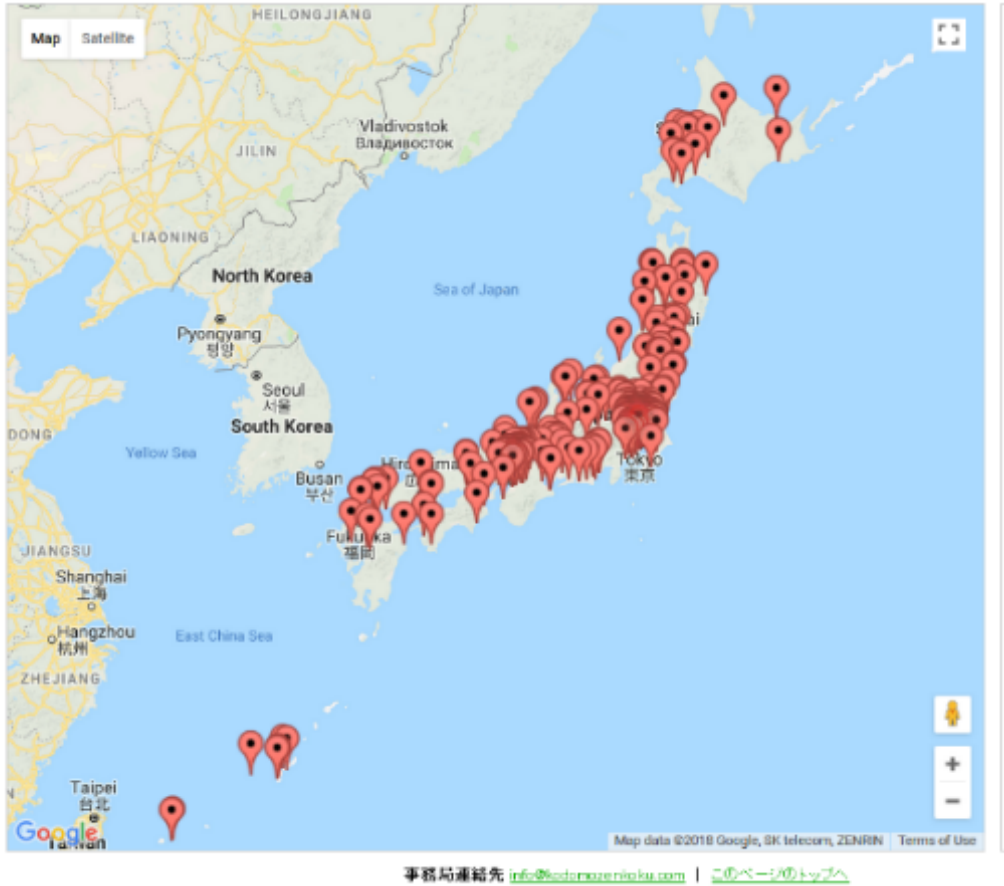
1. Introduction

- Citizen Radiation-Measuring Organizations (CRMO, Kimura 2016)
- Citizen-initiated and –driven organizations
- 15 citizen science organizations
  - semi-structured interviews, (non-) participatory observation
  - Fukushima region, Tokyo, Nagoya, Osaka, Kyoto
  - After Chernobyl and Fukushima

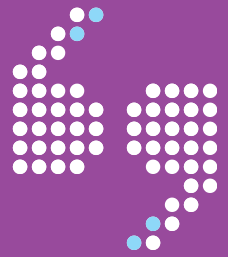


2. What are Citizen Radiation Measuring Organizations (CRMO)?

- Citizen science
- Not one size fits all:
  - farmers, parents, grandparents, …
  - With or without help from professional scientists
- Main activity: measuring radiation

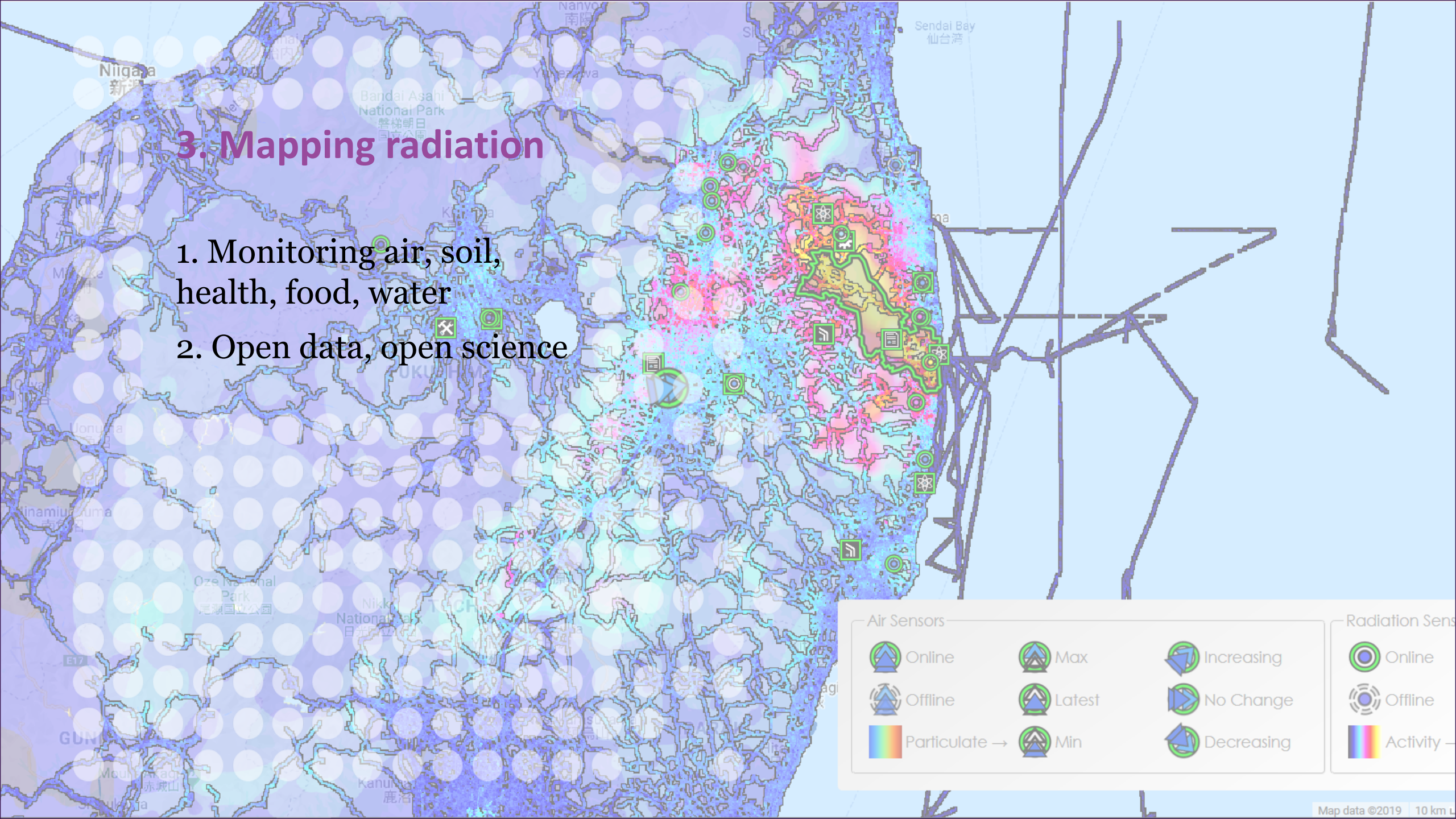


http://kodomozenkoku.sakura.ne.jp/network.html



“As the need arised we practiced science by citizens, precisely because it’s purpose is to be science for citizens […].”

(Interview CRMO member, Tokyo, 2018)


3. Mapping radiation
1. Monitoring air, soil, health, food, water
2. Open data, open science
Air Sensors
Online
Max
Increasing
Offline
Latest
No Change
Particulate →
Min
Decreasing
Radiation Sens
Online
Offline
Activity
Map data ©2019
10 km

Safecast, Tokyo, 2018

Iitate, 2018

Nasu, 2018

Fukushima city, 2018

Fukushima city, 2018

https://nipponsyaheigiken.com/product-introduction/hotspot-finder/

sck cen | KU LEUVEN Nagoya, 2018, 2020

Iwaki, 2018

Tokyo, 2018

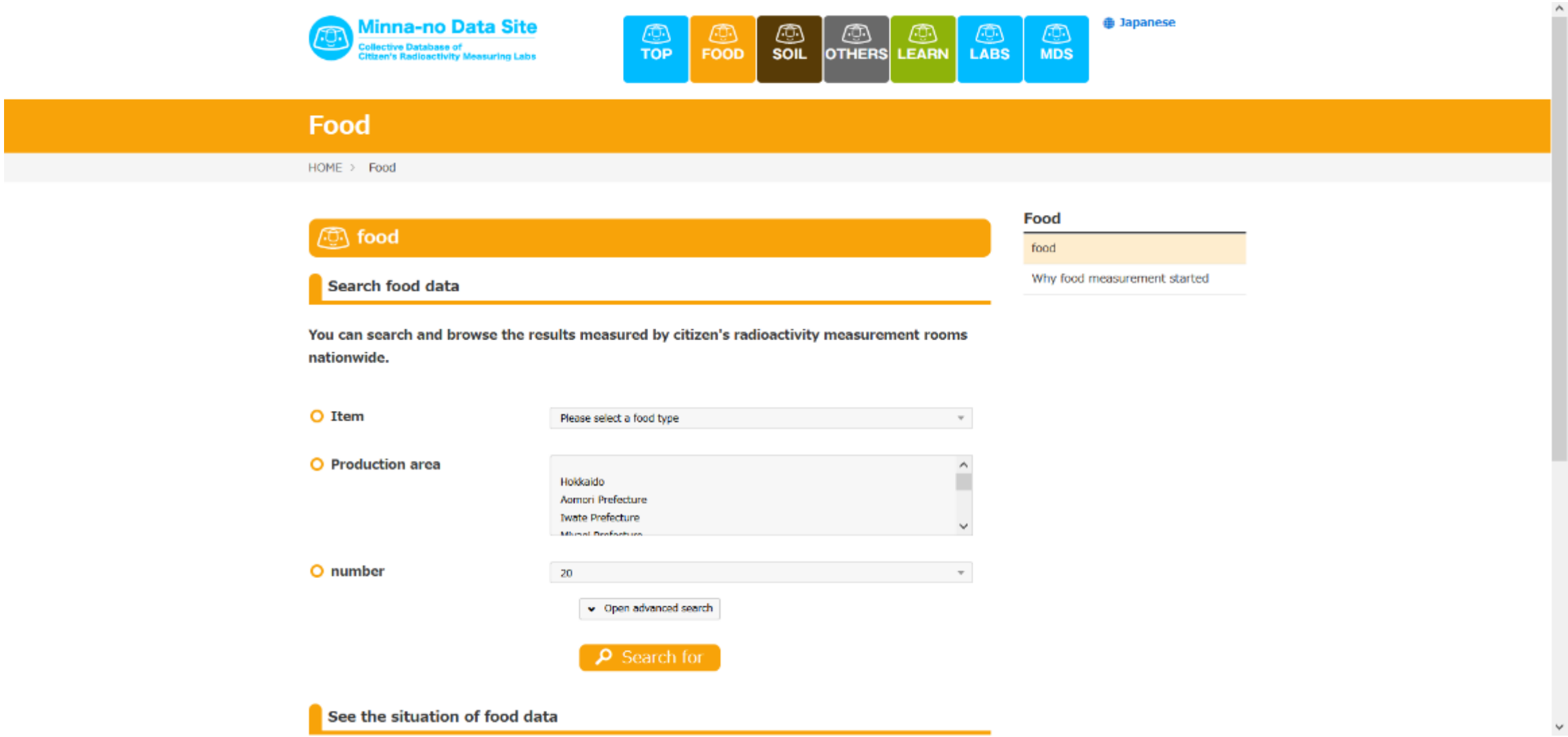

ATOMTEX

Aizu Wakamatsu, 2018

Open data, open science

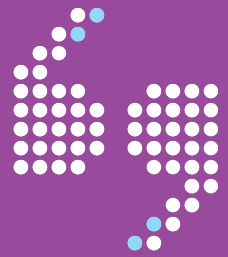
https://www.youtube.com/watch?v=cnBGLQ6GnR0

Nasu, 2018



https://en.minnanods.net/food/

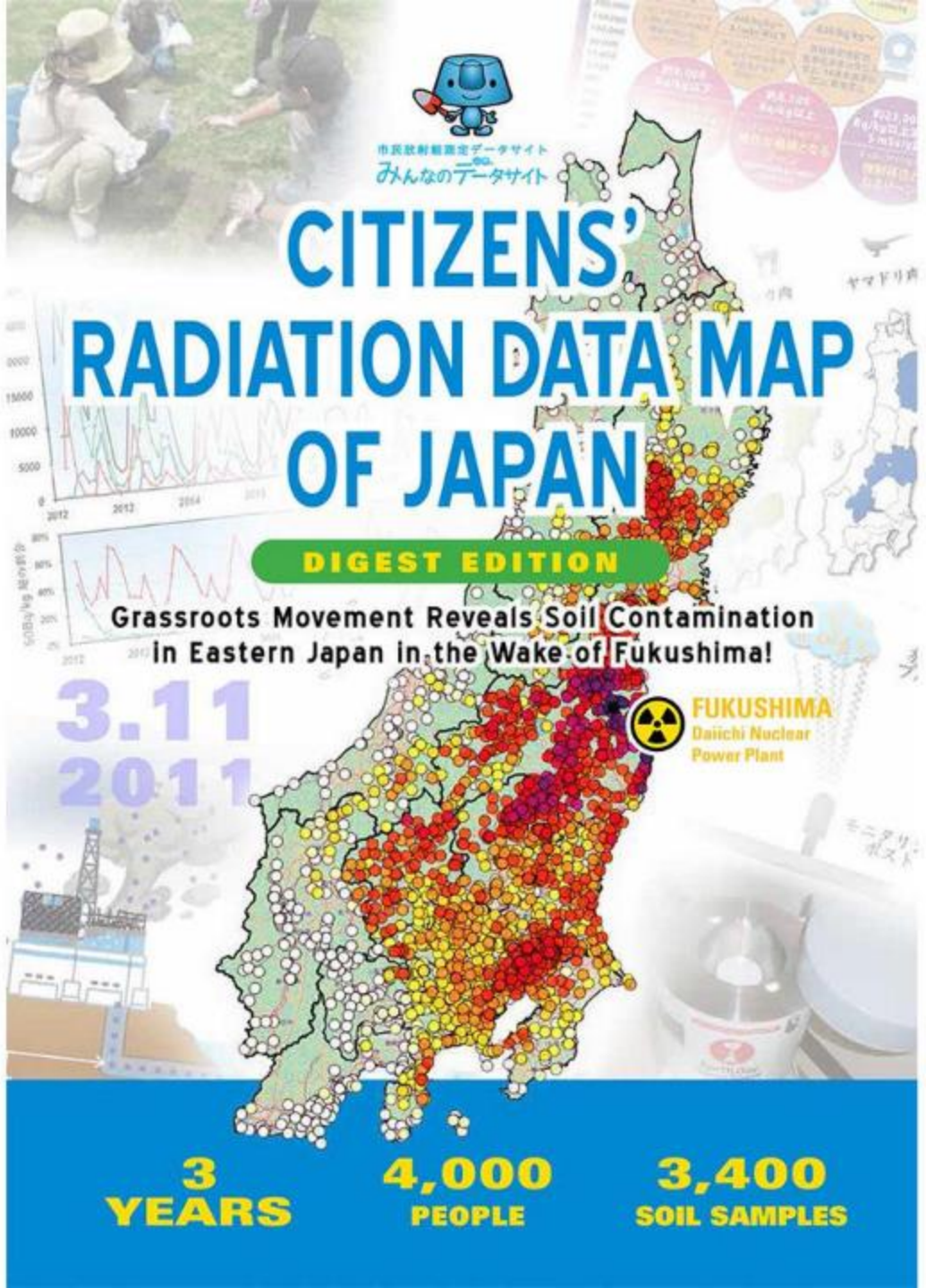
4. Citizen science = more than science



"The part [of citizen science] that concerns science for the citizen is definitely strong, after all the information coming from the government is very limited and whenever they provide lots of information, it is hard to understand. It's like we are going against the poor access to information, low transparency, and we are trying to provide information that is as comprehensible as possible, we try to match to needs of each individual, and we try to provide information that is actually useful in our lives. We have come a long way to improve the way we provide information, visualizing the info, and […], providing a kind of counseling, that is essentially 'for the citizen'."

(Interview with CRMO member, Tokyo, 2018)

Fukushima city, 2018



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Aizu citizen science group

Iwaki, 2020

5. Discussion

- CRMOs are community driven
  - Evolution: emergency to post-disaster recovery
- Purpose of knowledge/data/science:
  - Problem-driven science (Clark & Dickson, 2003), actionable data
  - “Just good enough data” (Gabrys, 2016)
  - Boundary bridging or constructing function of standards and standardized practices (Ottinger, 2010)
  - Knowledge**s**

Thank you for listening!
Questions or comments?

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