## Making contamination knowable:

The tools and practices of radiation monitoring in Fukushima

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Radiation measuring and monitoring are one of the key mechanisms by which humans start to create knowledge and construct ideas about radiation contamination and exposure in and on their environments [1], food [2] and bodies[3].

As a social scientist, my research centres on questions around how measuring and monitoring practices influence the what, how and why of radiation knowledge creation.

I pay particular attention to the role of the devices involved in knowledge creation and understandings – such as the network of Real-Time Fixed Radiation Monitors [4]. These are unique markers found throughout Fukushima, following the 2011 disaster at Fukushima Dai-ichi Nuclear Power Plant.





Ethnographic research in Fukushima, over 6 months in 2018 and 2019. 35 formal semi-structured interviews, and informal conversations with a diverse range of participants about radiation measuring and monitoring: government officials, national agency representatives, researchers, scientists, artists, school teachers, children, citizen science groups, a priest, a food market tester, lawyers and farmers.

Participant observation included:

- Workshops for school children about radiation monitoring [5]
- Food monitoring preparation in markets and laboratories [6]
- Foraging for and monitoring wild vegetables in the mountains [7]
- Accompanying scientists carrying out research towards a standard for environmental radiation monitors and farming practices [8]
- Looking inside monitors and making my own monitor
- Collecting and uploading monitoring data onto a mapping system
- Almost getting a radiation monitor into North Korea
- Being monitored for internal contamination in a Whole Body Counter, as well as for external surface contamination [9].

There are many ways of measuring and monitoring radiation. The devices, standards and methods involved are complex, multiple, contested and problematic. A lot is negotiable.

Making radiation knowledge by measuring and monitoring is not only about knowing about radiation.



Monitoring can also show that someone cares (e.g. the government, a parent, a head teacher, the community) about the thing being monitored (e.g. vegetables in the garden, water in the ocean, a family member's body). It indicates that someone is paying attention to the potential for contamination and might take action. It is a link to a historical contamination event (in this case in 2011). It can show that something is being done to manage the situation (e.g. further decontamination, reopening a village). It can help communities to come together to rebuild their hometowns. It can help give authority to people whose concerns are sometimes ignored.



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## Fukushima Dai-ichi and the Ocean: 10 Years of Study and Insight 4 March 2021

L.Elstow@Lancaster.ac.uk This research has been kindly funded by an ESRC Stipend and JSPS 2018 Summer Fellowship