

## Where are we today in Fukushima Prefecture compared to immediately after the accident ?

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Ten years have passed since the Fukushima Dai-ichi Nuclear Power Plant (FDNPP) accident occurred. In Fukushima Prefecture, progress is being made on the lifting of evacuation orders except for the difficult-to-return zones in accordance with the creation of an environment which people can return to, such as implementation of decontamination and development of infrastructure, etc. The proportion of the area of the prefecture under evacuation orders has reduced from approx. 12% on April 2011 to approx. 2.4% (as of August 2021). Since 2017, Specified Reconstruction and Revitalization Base (SRRB, zones among areas where returning is difficult for which evacuation orders are lifted and where people are allowed to reside) has been established in the difficult-to-return zones in six municipalities (Futaba, Okuma, Namie, Tomioka, Iitate and Katsurao), demolition of houses and decontamination work have started. In public facilities such as station square, nurseries, and gymnasium, demolition and decontamination work had been completed until Aug 2020. In conjunction with the full reopening of the JR East's Joban Line on March 14, 2020, the evacuation orders for Futaba, Ono, and Yonomori JR East stations and their surrounding areas in the difficult-to-return zone was lifted in advance. From the spring of 2022, it is being considered that the evacuation orders in the SRRB in all six municipalities will be lifted. On August 31 this year, the Japanese government decided to lift the evacuation order in the 2020s so that those who wish to return to their homes can do so, in the difficult-to-return zones other than the SRRB. Since 2018, the author has been serving on the Decontamination Verification Committee in Okuma Town, where the FDNPP is located. In Okuma Town, there are an interim storage facility, the area where the evacuation order has already been lifted, the SRRB, and the difficult-to-return zone. The committee consists of seven members: five experts with different areas of expertise such as radiation protection, radiation measurement, environment, biology, etc., a town councilor, and the mayor of the ward. The committee consults for local authorities to collect and examine the information on decontamination projects and to analyze and verify whether radiation levels have been effectively reduced from professional and local perspectives.

With the lifting of the evacuation orders, the number of residents returning and living in the areas is gradually increasing. In May 2022, the number of evacuees was 164,865 (62,038 evacuees outside Fukushima Prefecture and 102,827 evacuees within the prefecture), and in June 2021, the number had decreased to 35,092 (28,147 evacuees outside the prefecture and 6,940 evacuees within the prefecture). As of June 2021, 90.2% of the population of Hirono Town was living in the area where no evacuation order was issued. In the 12 cities, towns, and villages where the evacuation orders were issued, 85.0% and 60.7% were in Tamura City (Miyakoji area) and Naraha Town, respectively, where the evacuation orders were lifted earlier in 2014 and 2015. However, in Katsurao Village and Iitate Village, where the evacuation orders have been partially lifted in 2016 and 2017, the percentages of residents living were only 32.0% and 29.0%, respectively.

The author has been engaged in investigations of distributions of radiation and radioactivities in and around residential houses in the affected areas since 2011. The author has been conducting a survey on the houses of two Okuma Town committee members, who wish to return to their homes after the evacuation order is lifted. While some residents have already returned to their homes after the evacuation order was lifted and are rebuilding their lives, others are still waiting for the order to be lifted and some have given up on returning. The author will introduce some of these resident's narratives in the presentation.

As the decommissioning of the FDNPP progresses, the issue of how to deal with Advanced Liquid Processing System (ALPS) treated water from the FDNPP has been attracting social attention both domestically and internationally. Water gets contaminated when it touches the damaged reactors and debris. This is called contaminated water. ALPS treated water refers to water that has been purified in several purification facilities, including the ALPS. Most of nuclides (e.g., <sup>137</sup>Cs, <sup>90</sup>Sr) has been removed from the contaminated water during this process except for tritium. Approximately 170 m<sup>3</sup> of ALPS treated water is being generated and stored in tanks every day. 94% of the total tank capacity is being used as of September 23, 2021 and it is expected to be full around the summer of 2022. On April 13, 2021, the government revealed their policy and the decision to discharge ALPS treated water into the ocean. In response to this decision, local fishermen and residents have voiced their distrust of TEPCO and the government and their concerns about reputational damages, as the decision was made without agreements with them. In South Korea, the neighboring country across the sea, there have been protests against the oceanic release. Under these circumstances, Japan Health Physics Society (JHPS) has been working to solve issues related to ALPS treated water. On June 29, 2020, JHPS held a live symposium on the web entitled International symposium: How do we find the solution to radiological protection of tritium water? ~ International and Societal Perspectives on Radiation Protection. The symposium was comprised of two parts. In Part I, four speakers; three experts from Japan, Taiwan, and South Korea, and a community activist from Japan gave lectures. After a prerecorded interview with a fisherman in Soma was shared, a live discussion was held in Part II, in which two issues on "scientific safety of tritiated water" and "social consensus building" were discussed. In response to this symposium, Korean Association for Radiation Protection (KARP) held KARP-JHPS Joint Symposium, which was entitled Fukushima 10 years: Lessons Learned and Radiological Environmental Impact on March 11, 2021. The lessons learned and radiological environmental impact for last 10 years after the Fukushima accident were presented and discussed from the pure scientific view. Then, a meeting entitled Current status of Fukushima Daiichi decommissioning project, treated water, and future collaboration among RP experts - JHPS and KARP was held in June 2021 at the invitation of JHPS side. The consistent concern from KARP was the way the general public perceived the issue, and KARP colleagues are very concerned about the highly emotional statements of some mass media and people. It was suggested that KARP and JHPS experts in radiation protection work together to reduce the gap between experts and the general public and promote understanding on radiation and its risk. The author will introduce synthesis of these mutual symposiums and workshops between KARP and JHPS in the presentation.