

Basic Survey (Radiation Dose Estimates) Reported on 25 December 2014

1. Response Rates and Radiation Dose Estimates

1.1 Response Rates of Residents

The overall effective response rate to the Basic Survey (radiation dose estimates), which targeted the entire population of Fukushima Prefecture, was 26.9% (553,418/2,055,383) as of 31 October 2014. Response rate of the simplified questionnaire was 3.1% (62,805/2,055,383). (See Table 1)

Target population		2,055,383	
Response	Original questionnaire	490,613	23.9%
	Simplified questionnaire*	62,805	3.1%
	Total	553,418	26.9%

*Preliminary figures
Fractions have been rounded.

The following tables show the results of the original and simplified questionnaires combined.

Since we started providing the simplified questionnaire around a year ago, the response rates have increased especially in the areas where the proportion had been low. In Minami-aizu, the increase was 6.6% (from 13.4 to 20.0%). (See Table 2)

	Kempoku	Kenchu	Kennan	Aizu	Minami-aizu	Soso	Iwaki	Total
30 Sept. 2013 (a)	26.5%	20.9%	17.6%	15.1%	13.4%	44.4%	21.9%	23.6%
31 Oct. 2014 (b)	29.8%	23.7%	21.9%	20.9%	20.0%	45.4%	25.0%	26.9%
Difference (b-a)	3.3%	2.8%	4.3%	5.8%	6.6%	1.0%	3.1%	3.3%

1.2 Radiation Dose Estimates

Doses have been estimated for 531,691 of 553,418 respondents (96.1%) as of 31 October 2014, and the results have been returned to 512,194 respondents (Table 3).

Area(preceding and full-scale surveys)	Target population a	Response b	Response rates c=b/a	Completed dose estimation d	Proportion e=d/b	Returned results f	Proportion g=f/b
Kempoku	504,062	150,123	29.8%	144,637	96.3%	140,301	93.5%
Kenchu	557,266	131,995	23.7%	127,871	96.9%	123,944	93.9%
Kennan	152,229	33,362	21.9%	31,969	95.8%	29,868	89.5%
Aizu	267,205	55,891	20.9%	52,542	94.0%	47,532	85.0%
Minami-aizu	30,787	6,169	20.0%	5,736	93.0%	4,999	81.0%
Soso	195,608	88,895	45.4%	86,156	96.9%	85,536	96.2%
Iwaki	348,226	86,983	25.0%	82,780	95.2%	80,014	92.0%
Total	2,055,383	553,418	26.9%	531,691	96.1%	512,194	92.6%

Including Yamakiya of Kawamata, Namie and Iitate.

We have been estimating doses for non-residents who were visiting or staying in Fukushima Prefecture at the time of the accident (Table 4).

Number of requests a	Responses b	Response rate c=b/a	Completed dose estimates d	Proportion e=d/b	Returned results f	Proportion g=f/b
3,858	2,125	55.1%	1,869	88.0%	1,864	87.7%

2. Results of Radiation Dose Estimates

Table 5 shows the numbers of completed dose estimates (see Table 3) —excluding the data in the estimation period less than four months—within a range of values.

Radiation doses for a total of 453,183 residents have been estimated to date. The results for 444,362 respondents (excluding radiation workers) suggest that the doses for about 87% of the respondents in Kempoku area and about 92% in Kenchu area were <2 mSv. The doses for approximately 88% of the respondents in Kennan area and more than 99% of those in Aizu and Minami-aizu areas were <1 mSv. Doses for about 78% of respondents in the Soso area and more than 99% of respondents in Iwaki were also <1 mSv.

Effective Dose (mSv)	Total	Excluding radiation workers				By area (excluding radiation workers)												
						Kempoku *		Kenchu		Kennan		Aizu		Minami-aizu		Soso **		Iwaki
<1	281,706	276,227	62.2%	93.9%	24,368	20.2%	55,611	51.7%	24,025	88.4%	42,758	99.3%	4,618	99.3%	55,068	77.6%	69,779	99.1%
1-2	143,261	141,003	31.7%	99.8%	80,736	67.0%	43,863	40.7%	3,127	11.5%	272	0.6%	32	0.7%	12,362	17.4%	611	0.9%
2-3	24,618	24,261	5.5%		5.8%	14,810	12.3%	7,751	7.2%	15	0.1%	21	0.0%	0	-	1,637	2.3%	27
3-4	1,516	1,441	0.3%	0.2%	452	0.4%	406	0.4%	0	-	1	0.0%	0	-	579	0.8%	3	0.0%
4-5	536	494	0.1%		0.2%	39	0.0%	5	0.0%	0	-	0	-	0	-	449	0.6%	1
5-6	429	376	0.1%	0.1%	18	0.0%	3	0.0%	0	-	0	-	0	-	354	0.5%	1	0.0%
6-7	264	226	0.1%		0.1%	10	0.0%	1	0.0%	0	-	0	-	0	-	215	0.3%	0
7-8	151	114	0.0%	0.0%	1	0.0%	0	-	0	-	0	-	0	-	113	0.2%	0	-
8-9	113	73	0.0%		0.0%	1	0.0%	0	-	0	-	0	-	0	-	72	0.1%	0
9-10	69	39	0.0%	0.0%	0	-	0	-	0	-	0	-	0	-	39	0.1%	0	-
10-11	66	34	0.0%		0.0%	0	-	0	-	0	-	0	-	0	-	34	0.0%	0
11-12	52	31	0.0%	0.0%	1	0.0%	0	-	0	-	0	-	0	-	30	0.0%	0	-
12-13	35	13	0.0%		0.0%	0	-	0	-	0	-	0	-	0	-	13	0.0%	0
13-14	34	12	0.0%	0.0%	0	-	0	-	0	-	0	-	0	-	12	0.0%	0	-
14-15	27	6	0.0%		0.0%	0	-	0	-	0	-	0	-	0	-	6	0.0%	0
≥15	306	12	0.0%	0.0%	0	-	0	-	0	-	0	-	0	-	12	0.0%	0	-
Total	453,183	444,362	100.0%	100.0%	120,436	100%	107,640	100%	27,167	100%	43,052	100%	4,650	100%	70,995	100%	70,422	100%
Max	66mSv	25mSv			11mSv		6.3mSv		2.6mSv		3.6mSv		1.9mSv		25mSv		5.9mSv	
Mean value	0.9mSv	0.8mSv			1.4mSv		1.0mSv		0.6mSv		0.2mSv		0.1mSv		0.8mSv		0.3mSv	

* Including Yamakiya of Kawamata. Percentages have been rounded and may not total to 100%.
 ** Including Namie and Iitate. Excluding those with estimation period less than four months.

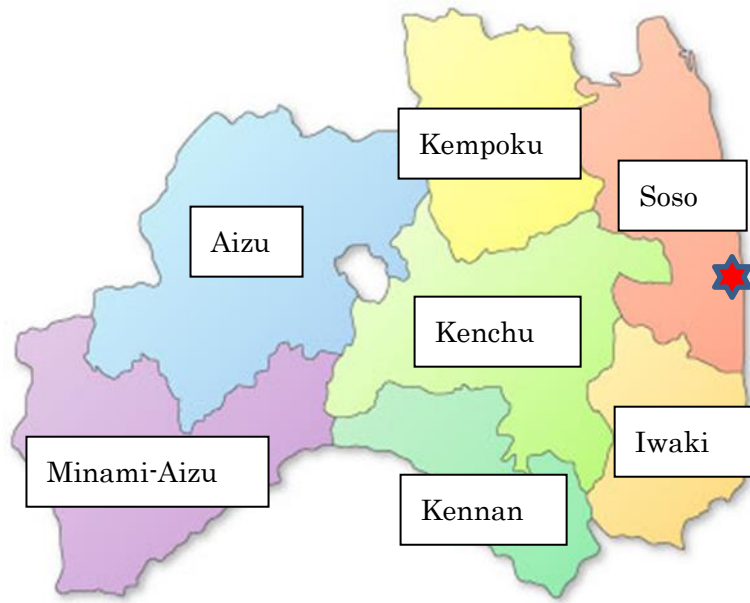
3. Evaluation of the results

The latest effective radiation dose estimates showed similar trends to those observed so far.

Since previous epidemiological studies¹ indicate no significant health effects at doses ≤100 mSv, we concluded that radiation doses estimated so far are unlikely to cause adverse effects on health, although this conclusion is based on external radiation doses estimated only for the first four months following the accident.

References

- 1) Sources and effects of ionizing radiation, United Nations Scientific Committee on the Effects of Atomic Radiation, UNSCEAR 2008 Report to the General Assembly, with scientific annexes.



Survey on the representativeness of dose distribution shown in the Basic Survey (Tentative plan)

1. Background and Purpose

At the 16th Prefectural Oversight Committee Meeting for the Fukushima Health Management Survey, questions were raised about whether people who have responded to the Basic Survey represent the whole population in regard to external dose estimates and dose distribution. To answer this, we will investigate how the dose distribution of as yet nonrespondents compares with respondents on a geographic area-by-area basis.

2. Survey Population

We plan to use a two-stage sampling method based on nationwide and prefecture-wide polls.¹ As a first step, we will randomly select geographic areas for polling, with special weight given to evacuation zones. In the next step, we will randomly select a total of around 4,000 to 5,000 samples throughout the prefecture.

3. Methods

After reviewing the responses, we will visit nonrespondents to conduct a series of questions starting in early fiscal (FY) 2015.² To meet the need for a large workforce, we will outsource and hire polltakers who will visit nonrespondents to support filling out the questionnaires. This enables us to ask them why they did not answer the questionnaire, and encourage their cooperation. If they are not home, a polltaker will visit them again to raise the response rates. This door-to-door survey should be completed by the end of FY 2015.

4. Results

We will estimate the doses for all respondents. By comparing the dose distribution of the respondents from the door-to-door survey and those who responded previously by mail, we will find out if what has already been reported is an accurate and unbiased assessment of dose distribution for the whole population of Fukushima Prefecture.

Reasons gathered from the respondents for not answering the questionnaire will be categorized and tallied to guide how the instructions for filling out the questionnaire and the Basic Survey might be improved.

1) The cabinet office typically selects 3,000 to 10,000 samples for a nationwide poll.

2) Japan's fiscal and academic year begins April 1.