Chapter 5 :Effects, Verification, and Risk Communication of Decontamination

5.1. Status of Implementation of Decontamination Projects

(1) Special Decontamination Areas

The whole area decontamination of Special Decontamination Areas based on decontamination implementation plans was completed at the end of FY2016 (i.e., March 31, 2017).

In a total of 11 municipalities with Special Decontamination Areas, the cumulative total number of workers was about 13 million persons and the budget was about 1.3 trillion yen (as of January 31, 2017). Also, the proportion of workers in Fukushima Prefecture to total workers was estimated at about 40% (according to the Japan Federation of Construction Contractors).

A total of 23,000 residential lots, 8,700 hectares of farmland, 7,800 hectares of forest, and 1,500 hectares of roadways had been decontaminated.

Monitoring of decontamination was carried out before and after decontamination, and conducted at about 470,000 measurement points in 11 municipalities.

As of November 2017, there were 252 temporary storage sites, and the generated amount of removed soil was about 9 million m^3, of which the amount delivered to Interim Storage Facility or temporary incineration facilities was about 1.6 million m^3.

Table 5-1 Decontamination work implemented (as of September 30, 2017)

Municipality	Residential areas	Farmland	Forests	Roads	Date evacuation order lifted
Tamura City	about 150 sites	about 140ha	about 280ha	about 29ha	April 1, 2014
Naraha Town	about 2,800 sites	about 830ha	about 740ha	about 170ha	September 5, 2015
Kawauchi Village	about 170 sites	about 130ha	about 210ha	about 38ha	(Former: Preparation Areas for Lifting of Evacuation Orders) October 1, 2014 (Former: Habitation Restricted Areas) June 14,2016
Okuma Town	about 220sites	about 170ha	about 200ha	about 31ha	—
Katsurao Village	about 480 sites	about 570ha	about 690ha	about 95ha	June 12, 2016
Kawamata Town	about 450 sites	about 610ha	about 730ha	about 71ha	March 31,2017
Futaba Town	about 97 sites	about 100ha	about 25ha	about 8.4ha	—
Iitate Village	about 2,100 sites	about 2,400ha	about 2,100ha	about 330ha	March 31,2017
Tomioka Town	about 6,200 sites	about 750ha	about 790ha	about 170ha	April 1, 2017

Municipality	Residential areas	Farmland	Forests	Roads	Date evacuation order lifted
Namie Town	about. 5,900 sites	about 1,400ha	about 510ha	about 230ha	March 31, 2017
Minamisoma City	about 4,700 sites	about 1,600ha	about 1,600ha	about 280ha	July, 12, 2016
Total	about 23,000 sites	about 8,700ha	about 7,800ha	about 1,500ha	—

Note)

1. The lifting of evacuation orders is limited to the Preparation Areas for Lifting of Evacuation Orders and Habitation Restricted Areas.
2. "Residential areas" include schools, parks, cemeteries, and large facilities. "Farmland" includes orchards. "Forests" include slopes, grasslands and lawns.

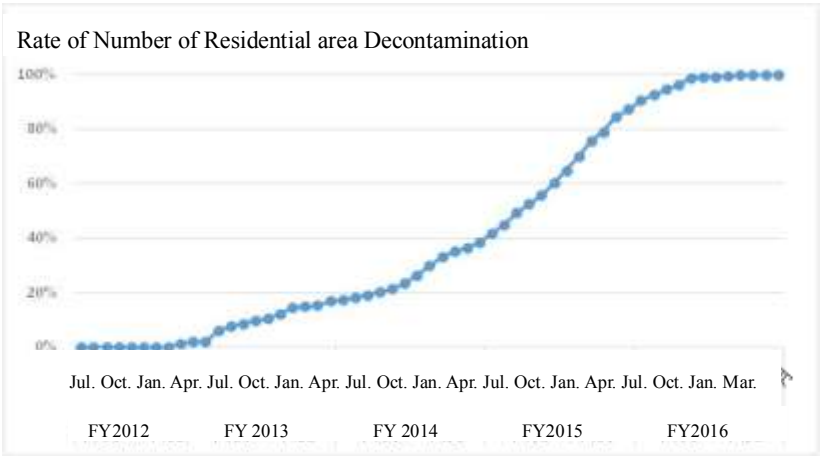


Figure 5-1 History of decontamination work implemented (residential areas)

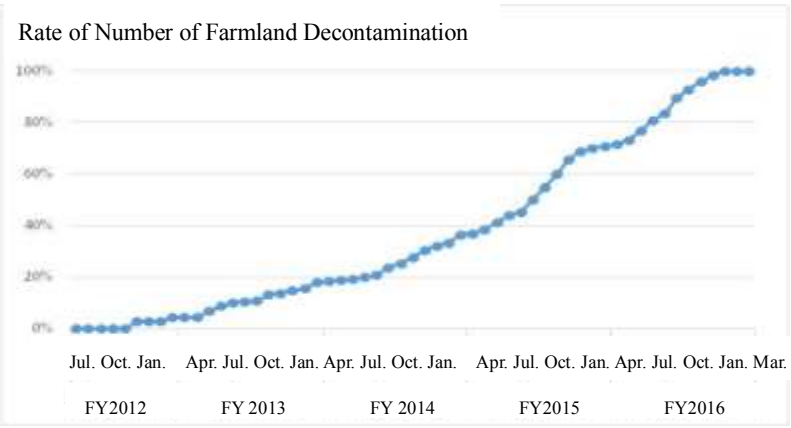


Figure 5-2 History of decontamination work implemented (farmland area)

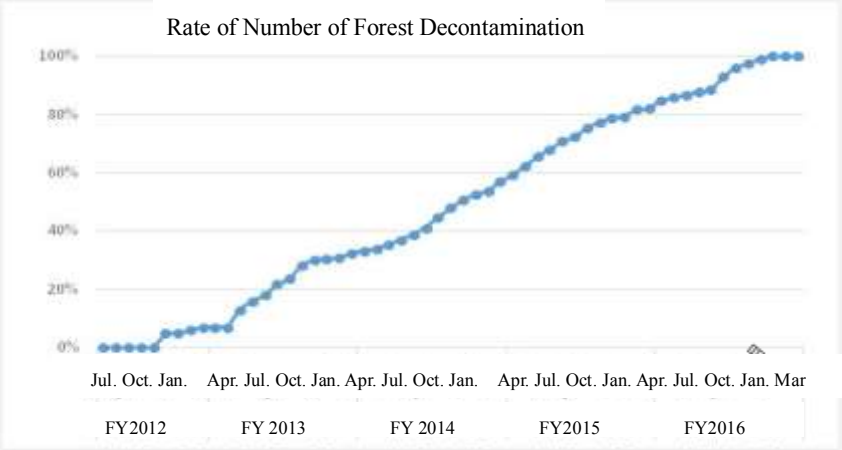


Figure 5-3 History of decontamination work implemented (forest area)

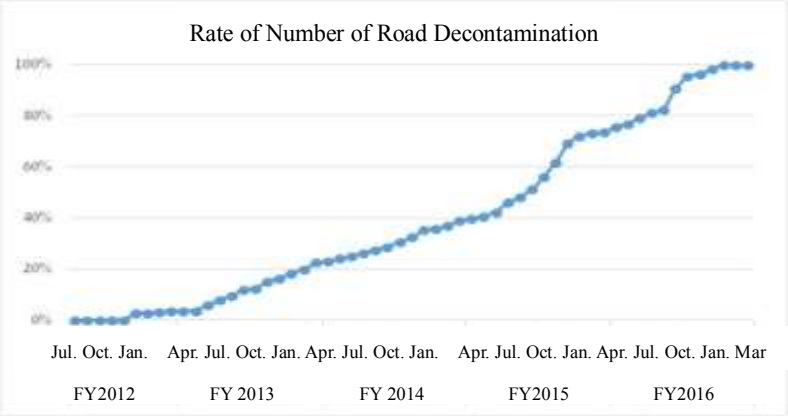


Figure 5-4 History of decontamination work implemented (roadways area)

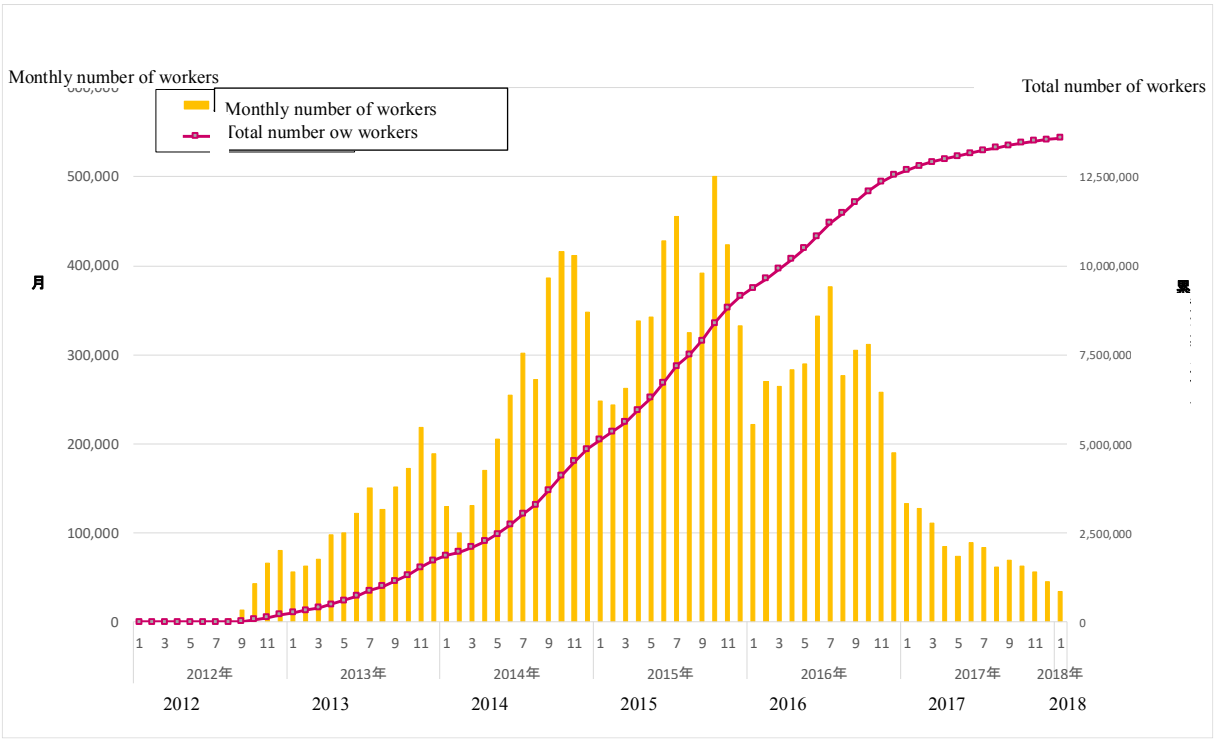


Figure 5-5 History of the number of decontamination workers (total for 11 municipalities)

Note) Since there were times when work could not be done due to snowfall in winter, the number of workers decreased.

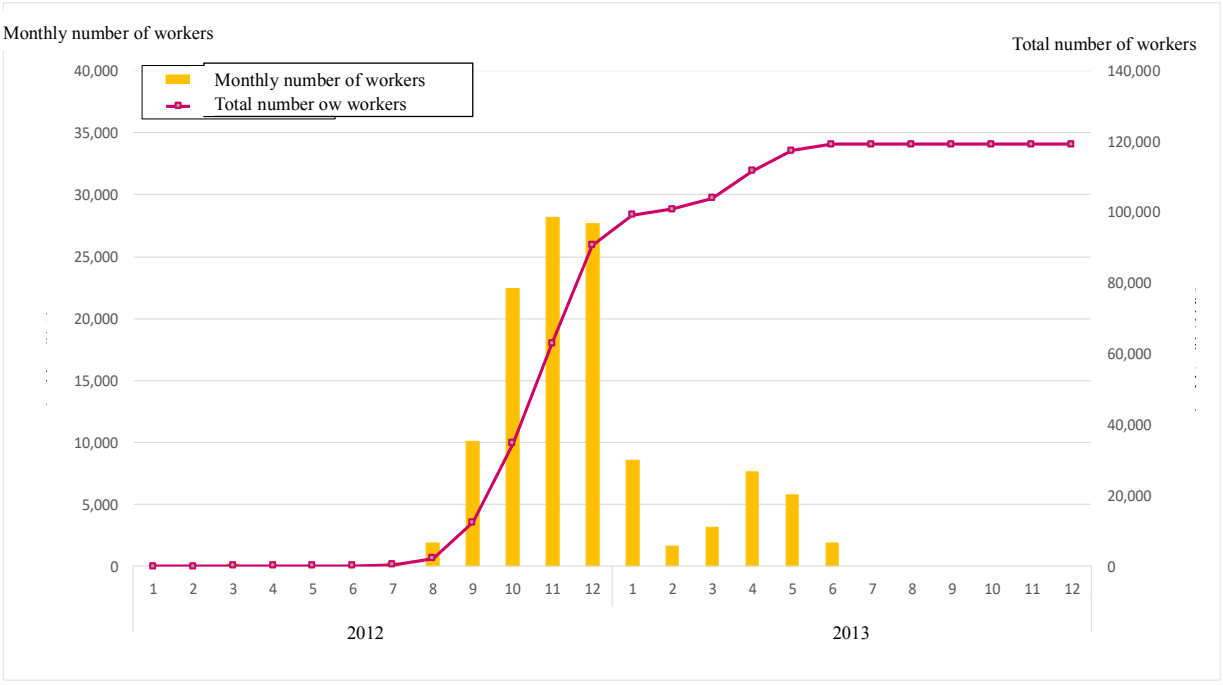


Figure 5-6 History of the number of decontamination workers (Tamura City)

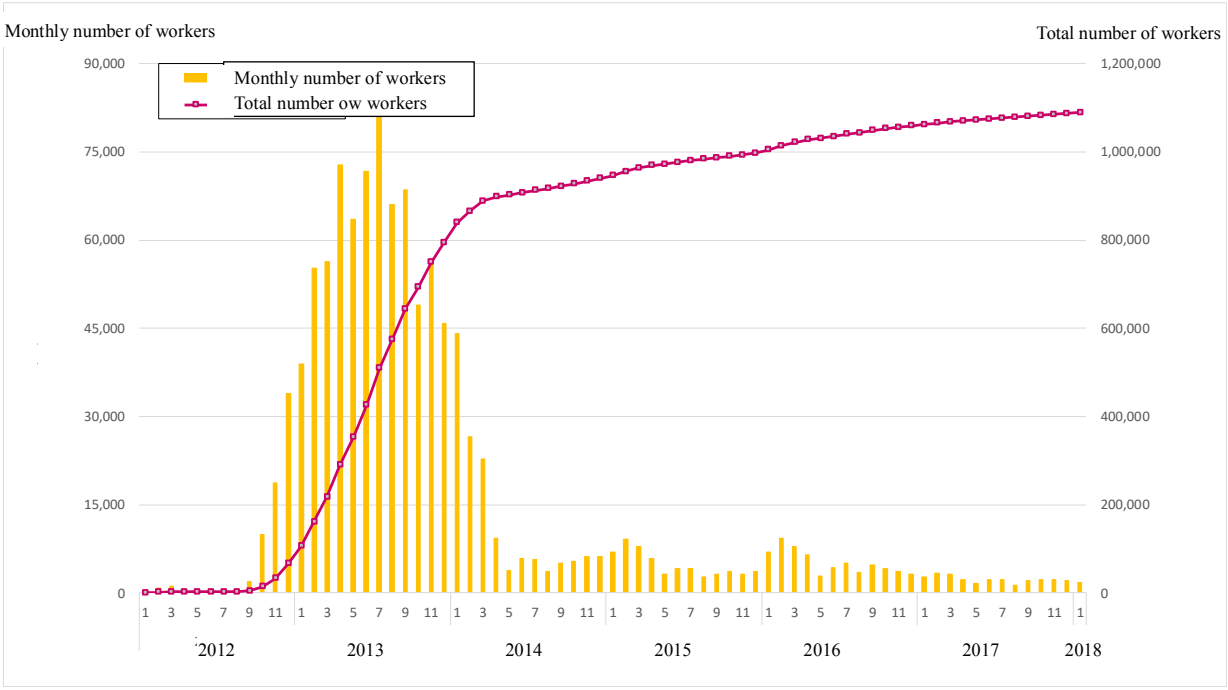


Figure 5-7 History of the number of decontamination workers (Naraha Town)

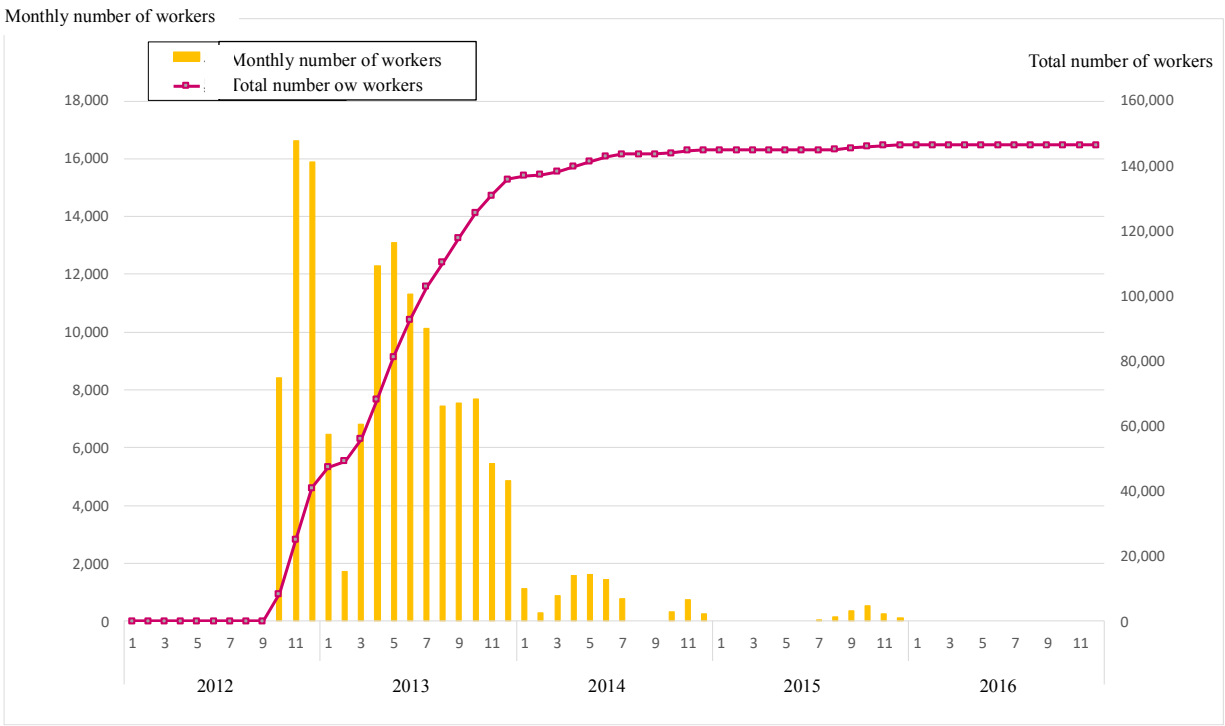


Figure 5-8 History of the number of decontamination workers (Kawauchi Village)

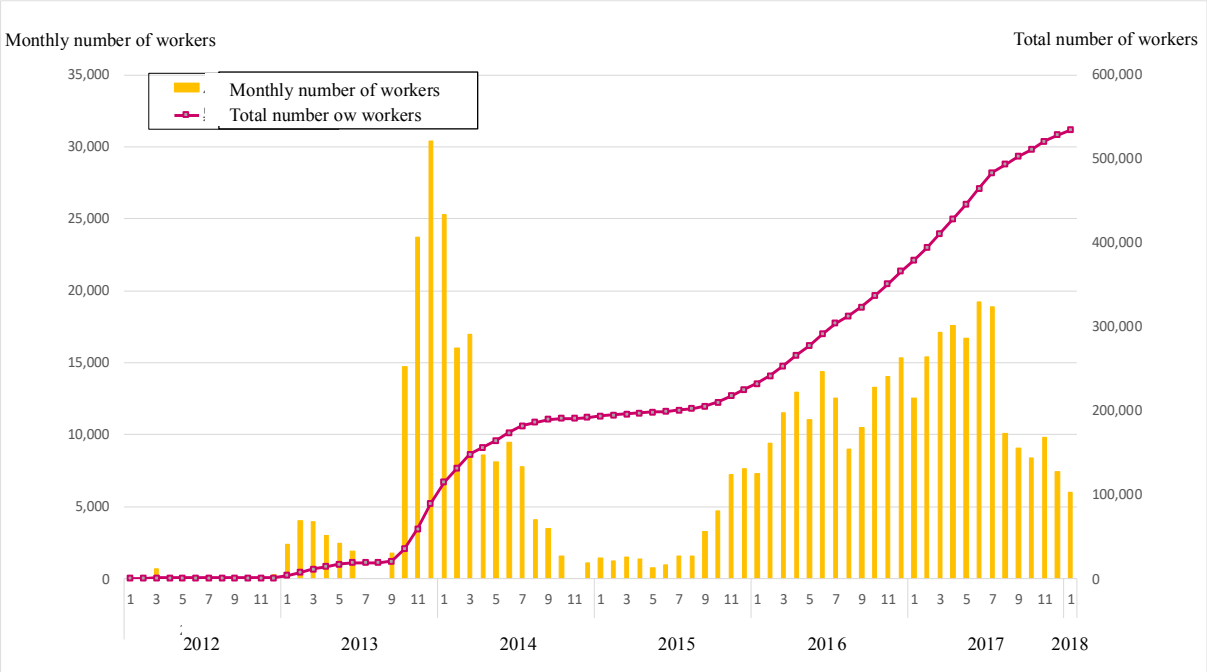


Figure 5-9 History of the number of decontamination workers (Okuma Town)

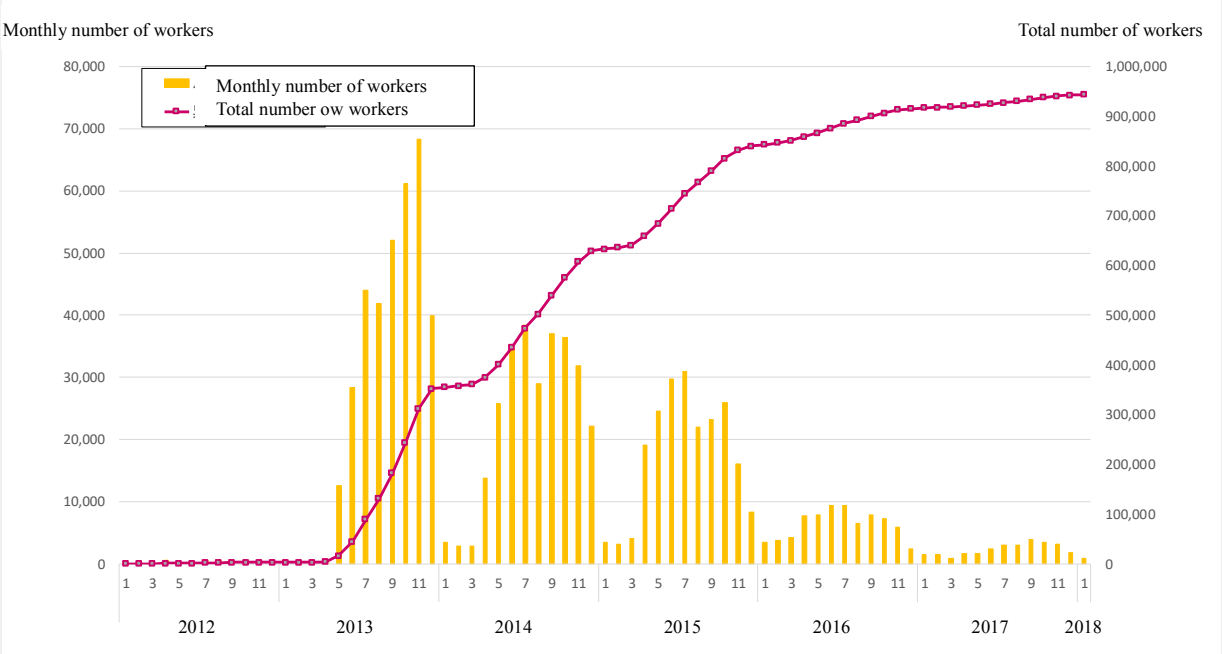


Figure 5-10 History of the number of decontamination workers (Katsurao Village)

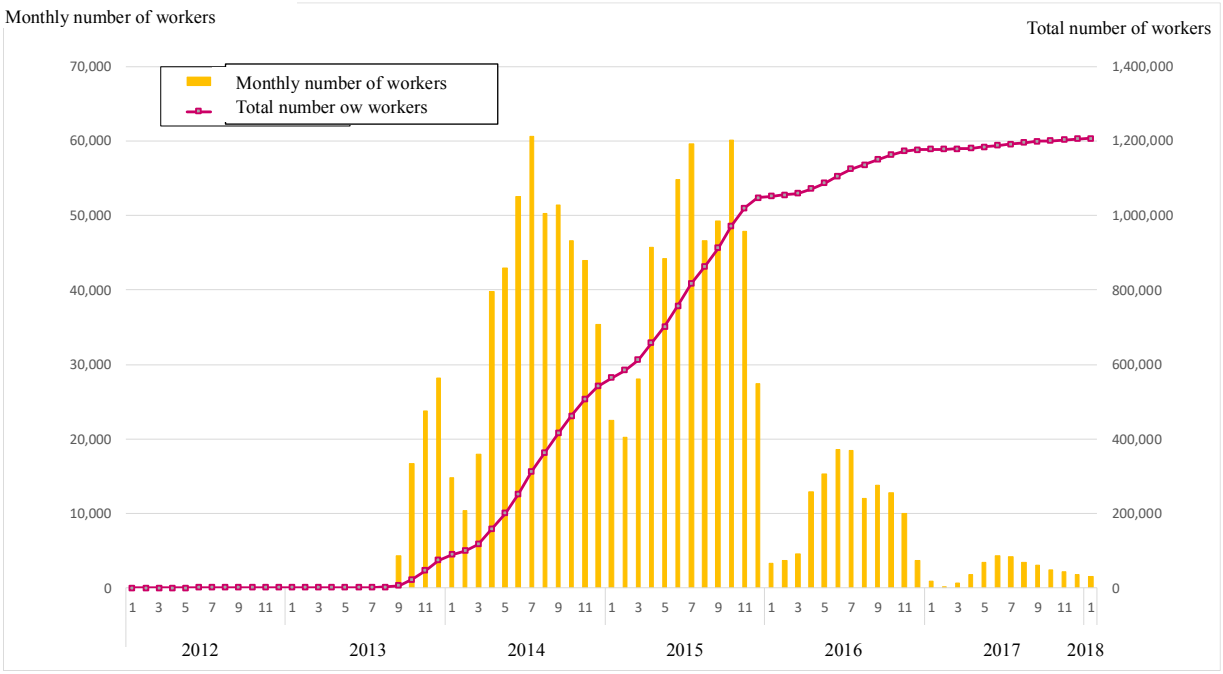


Figure 5-11 History of the number of decontamination workers (Kawamata Town)

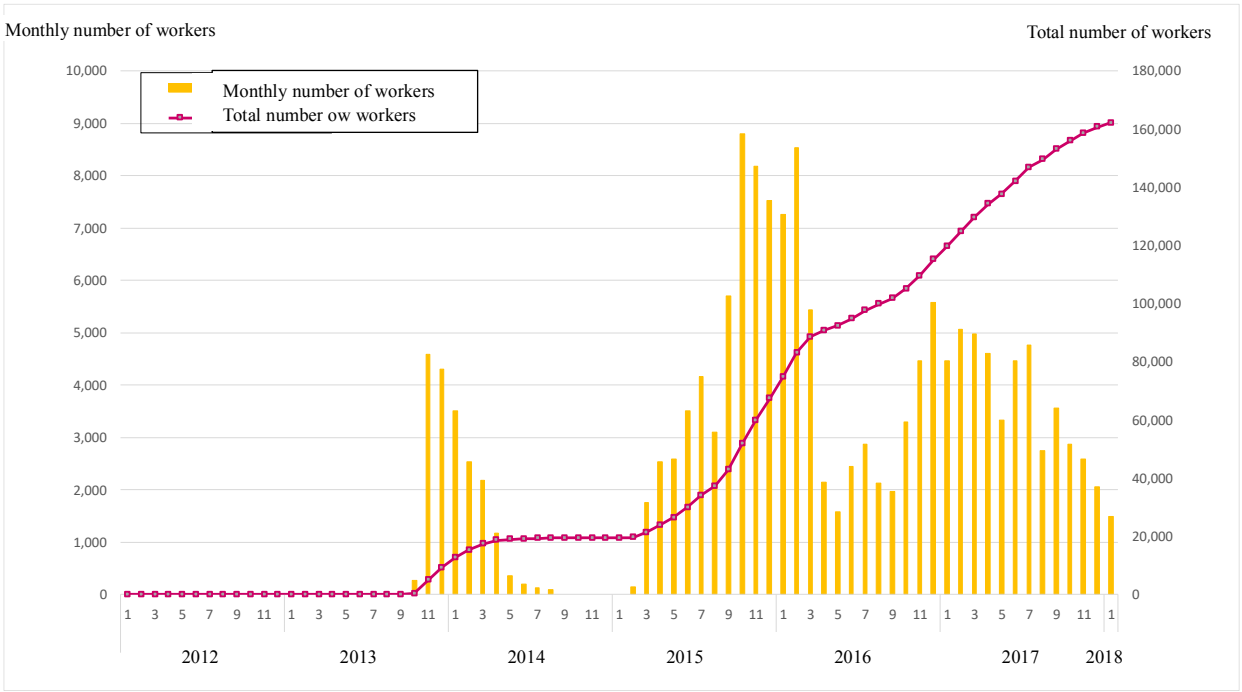


Figure 5-12 History of the number of decontamination workers (Futaba Town)

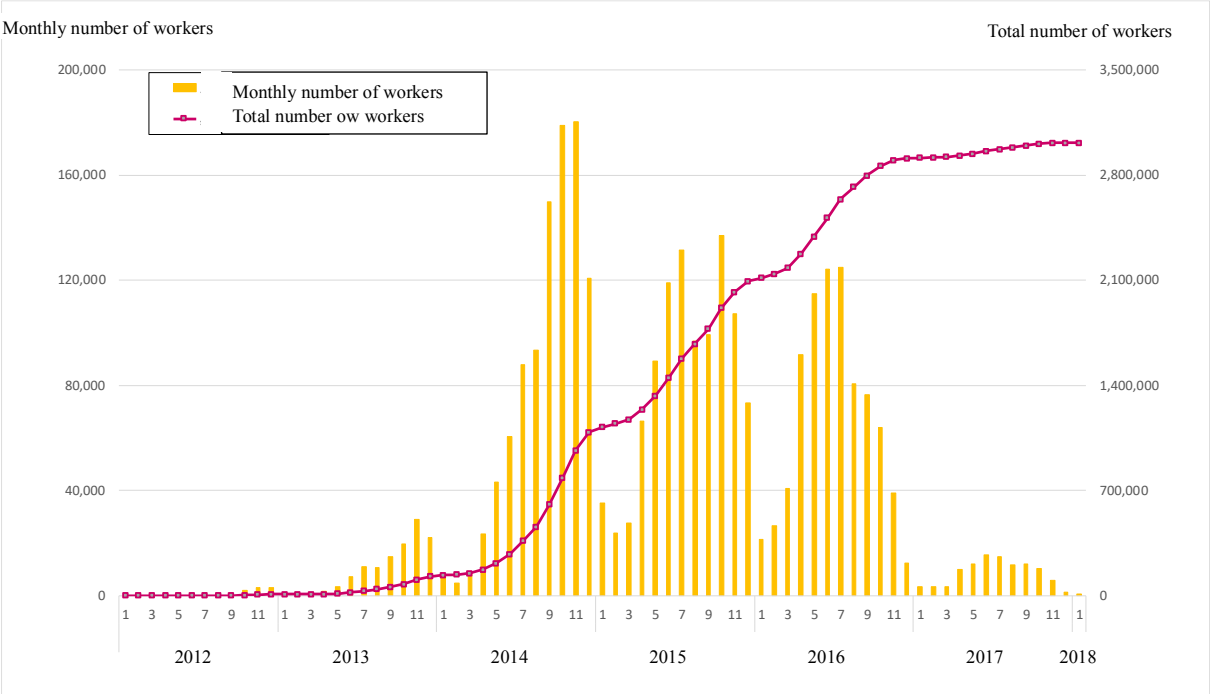


Figure 5-13 History of the number of decontamination workers (Iitate Village)

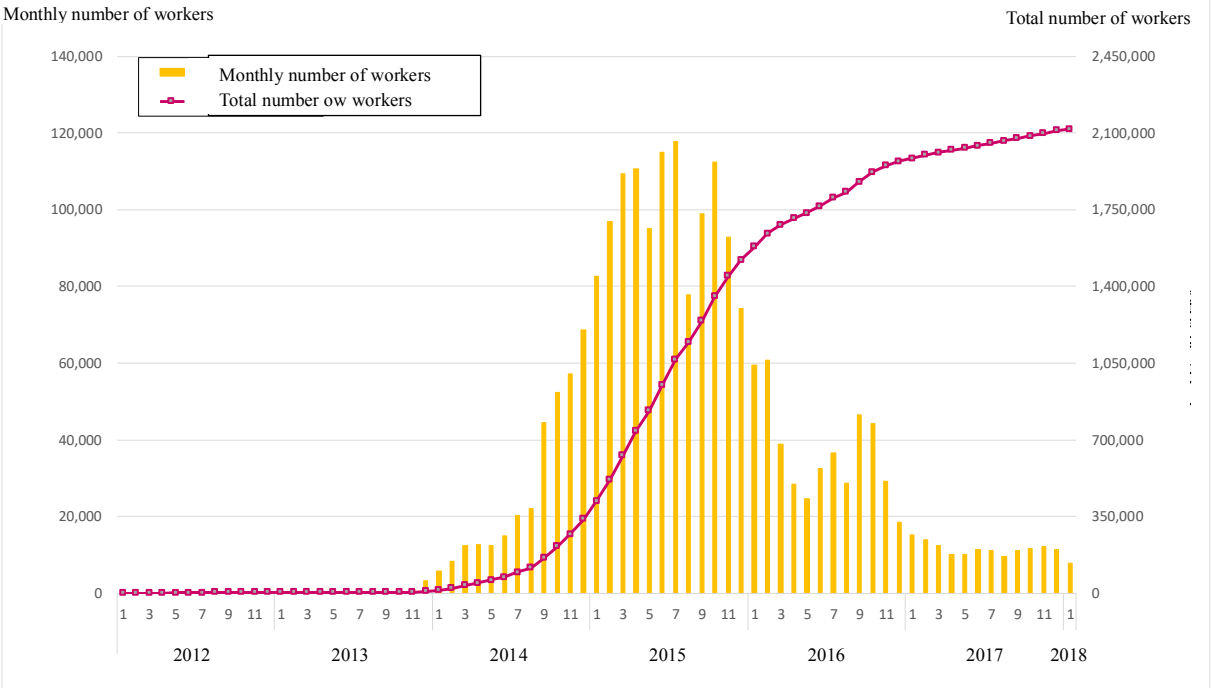


Figure 5-14 History of the number of decontamination workers (Tomioka Town)

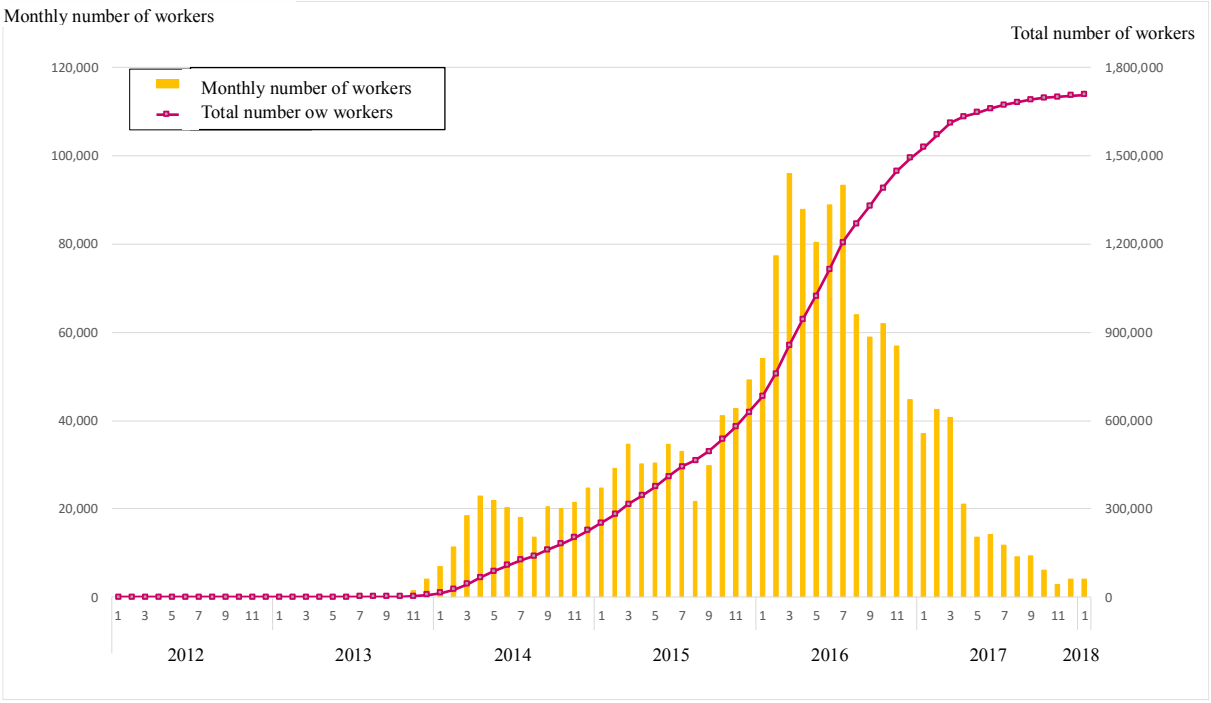


Figure 5-15 History of the number of decontamination workers (Namie Town)

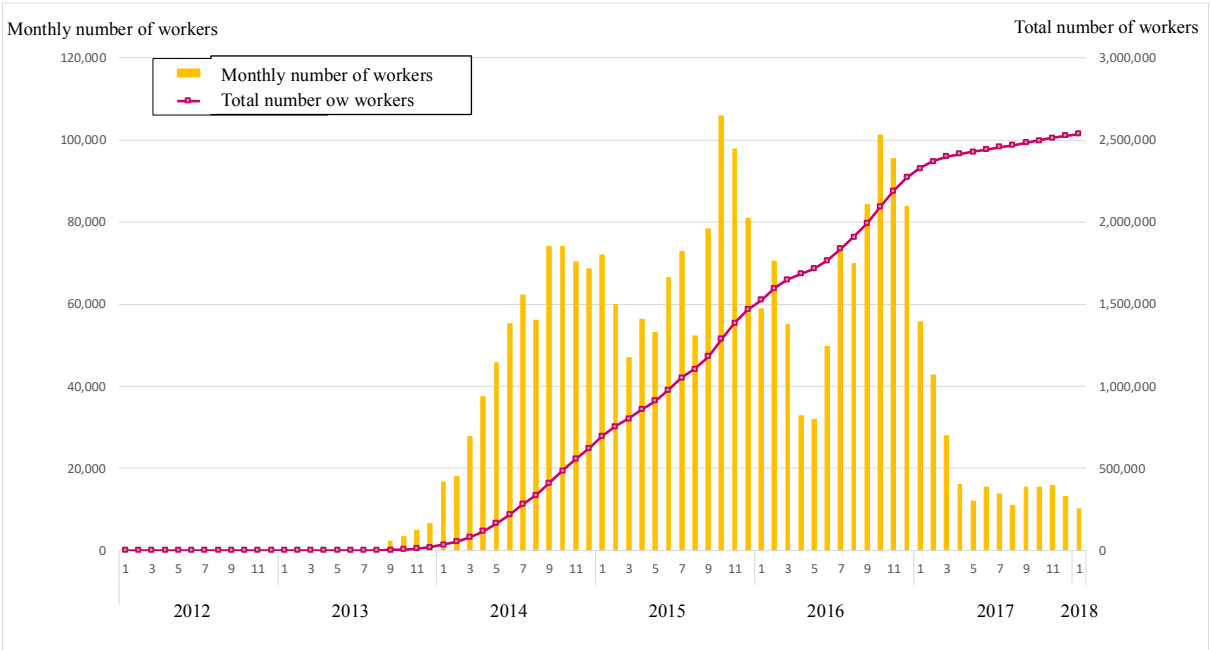


Figure 5-16 History of the number of decontamination workers (Minamisoma City)

(2) Intensive Contamination Survey Areas

Whole area decontamination of Intensive Contamination Survey Areas based on the decontamination implementation plan was completed in March 2018.

In a total of 92 municipalities with Intensive Contamination Survey Areas, the cumulative total number of workers was about 17 million persons and the budget was about 1.3 trillion yen (including about 1.2 trillion yen inside and about 50 billion yen outside Fukushima Prefecture) (as of January 31, 2017).

As of March 31, 2017, there were 847 temporary storage sites and 150,000 in-situ storage sites, the generated amount of the removed soil, etc., was about 7.2 million m^3 (including about 6.8 million m^3 inside and about 400,000 m^3 outside Fukushima Prefecture), and the amount of carried out was about 1.1 million m^3.

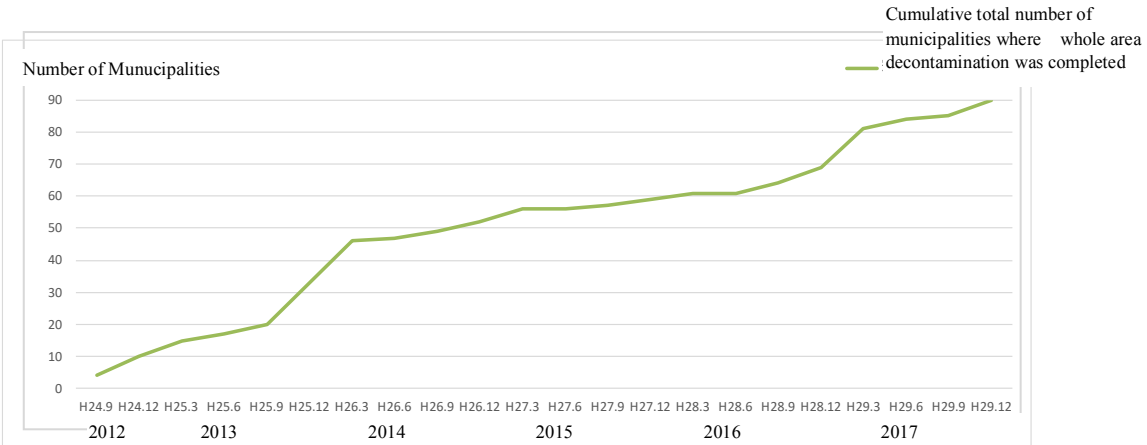


Figure 5-17 Cumulative total of municipalities where whole area decontamination was completed

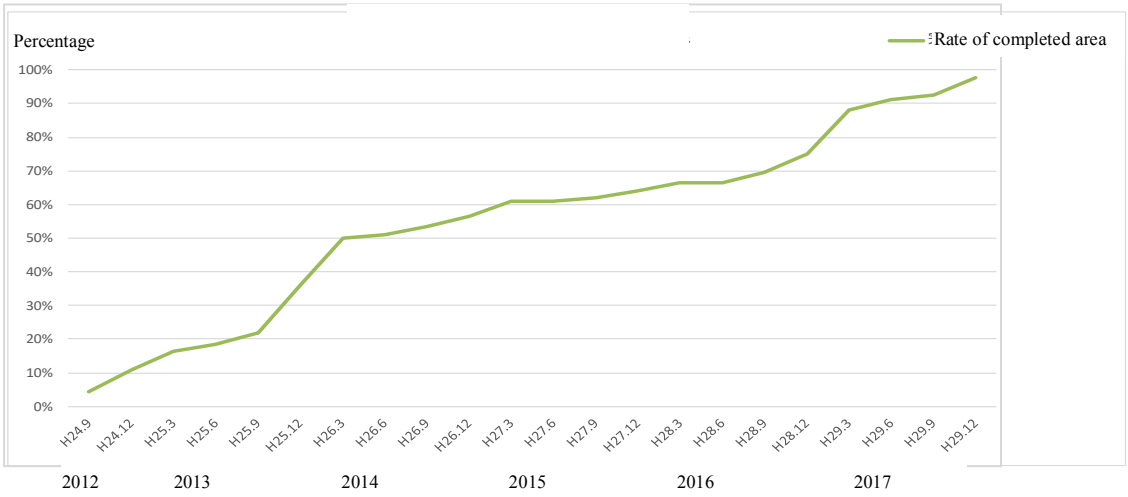
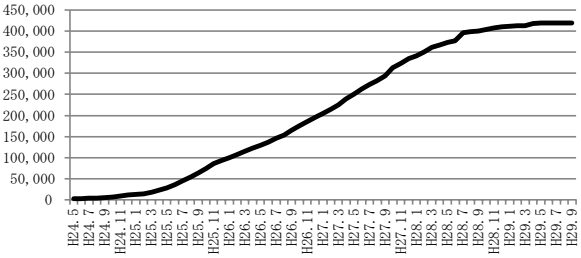


Figure 5-18 Cumulative percentage of whole area decontamination completed

Commentary	Implementation status of housing decontamination in Fukushima Prefecture

Decontamination by yard surface removal

Decontamination by washing roofs



History of numbers of houses decontaminated in Intensive Contamination Survey Areas in Fukushima Prefecture

Table 5-2 Progress status of decontamination in the pollution status priority research area

Fukushima Prefecture (as of Sept. 30, 2017)	Number of outsourced			Number of achievement		
	Rate of achievement (%)	Completed number	Planned number	Rate of achievement (%)	Completed number	Planned number
Housing (houses)	100	418,582	418,582	99.9	418,574	418,582
Public facility (facilities)	100	11,653	11,653	99.4	11,584	11,653
Roads (km)	100	18,804	18,804	92.5	17,385	18,804
Farmland・Grassland (ha)	100	31,252	31,252	99.6	31,139	31,252
Forests (residential area) (ha)	100	4,396	4,396	97.0	4,266	4,396

Outside Fukushima Prefecture (as of Mar. 31, 2017)	Number of outsourced			Number of achievement		
	Rate of achievement (%)	Number of achievement	Number of plan	Rate of achievement (%)	Number of achievement	Number of plan
Housing (houses)	100	147,656	147,656	100	147,656	147,656
School・Nursery etc. (facilities)	100	1,592	1,592	100	1,592	1,592
Parks・Sports Facility (facilities)	100	3,936	3,936	100	3,936	3,936
Other facility (facilities)	100	6,275	6,275	100	6,275	6,275
Roads (km)	100	5,399	5,399	100	5,399	5,399
Farmland・Grassland (ha)	100	1,588	1,588	100	1,588	1,588
Forests (in living areas) (ha)	100	300	300	100	300	300

Table 5-3 Status of decontamination in Intensive Contamination Survey Areas

(as of September 30,2017)

Prefecture	Number of municipalities	Municipalities designated as Intensive Contamination Survey Areas	
		Municipalities with decontamination progress rate of 100% (Underline: measures completed municipalities)	Measures continued municipalities
Fukushima	36	Shirakawa City, Sukagawa City, Soma City, Tamura City, Date City, Koori Town, Kunimi Town, Kawamata Town, Kagamiishi Town, Tenei Village, Aizubange Town, Yugawa Village, Aizumisato Town, Nishigo Village, Izumizaki Village, Nakajima Village, Yabuki Town, Tanagura Town, Samegawa Village, Ishikawa Town, Tamagawa Village, Hirata Village, Asakawa Town, Furudono Town, Miharu Town, Ono Town, Hirono Town, Shinchi Town（28）	Fukushima City、Koriyama City、Iwaki City、Nihonmatsu City、Minamisoma City、Motomiya City、Otama Village、Kawauchi Village（8）
Iwate	3	Ichinoseki City, Oshu City, Hiraizumi Town	
Miyagi	8	Shiroishi City, Kakuda City, Kurihara City, Shichikashuku Town, Ogawara Town, Marumori Town, Watari Town, Yamamoto Town	
Ibaraki	19	Hitachi City, Tsuchiura City, Ryugasaki City, Joso City, Hitachiota City, Takahagi City, Kitaibaraki City, Toride City, Ushiku City, Tsukuba City, Hitachinaka City, Kashima City, Moriya City, Inashiki City, Tsukubamirai City, Tokai Village, Miho Village, Ami Town, Tone Town	
Tochigi	7	Kanuma City, Nikko City, Otawara City, Yaita City, Nasushiobara City, Shioya Town, Nasu Town	
Gunma	8	Kiryu City, Numata City, Shibukawa City, Midori City, Shimonita Town, Takayama Village, Higashiagatsuma Town, Kawaba Village	
Saitama	2	Misato City, Yoshikawa City	
Chiba	9	Matsudo City, Noda City, Sakura City, Kashiwa City, Nagareyama City, Abiko City, Kamagaya City, Inzai City, Shiroi City	
Total	92	84 (measures completed municipalities 30)	8

Note) Cancellation of designation of Intensive Contamination Survey Areas (12 municipalities): Showa Village, Mishima Town, Yamatsuri Town, Hanawa Town, Yanaizu Town (Fukushima Prefecture: 5 municipalities), Katashina Village, Minakami-Town, Nakanojo Town, Annaka City(Gunma Prefecture: 4 municipalities), Ishinomaki City (Miyagi Prefecture: 1 municipality), Hokota City (Ibaraki Prefecture: 1 municipality), Sano City (Tochigi Prefecture: 1 municipality)

5.2. Effects of Decontamination

5.2.1. Effect of Dose Reduction due to Decontamination

(1) Status of Air Dose Rates in Special Decontamination Areas after decontamination

According to the monitoring results of decontamination in Special Decontamination Areas to June 30, 2017, the average value of the air dose rate after decontamination of residential land, farmland and roads was about 40 to 60% lower than that before decontamination, and from post decontamination monitoring it was about 60 to 70% lower than before decontamination. For decontamination in forests, it was 27% lower than before decontamination, and in post-decontamination it had decreased by 46% compared to before decontamination. In addition, after decontamination, overall air dose rates were about 53% lower after decontamination, and with supplemental monitoring they were about 67% lower compared with before decontamination, confirming the reduction effect of wide area decontamination.

The reduction rate of forest decontamination shows the effectiveness of removing deposited organic matter such as fallen leaves, etc., from the viewpoint of reducing the radiation dose in the living environment of residents near forests.

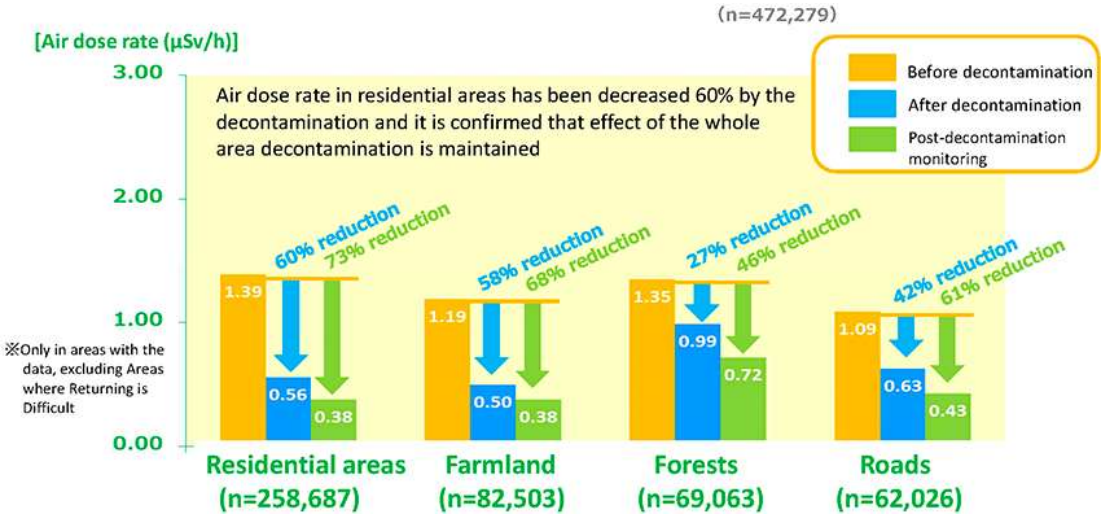


Figure 5-19 Reduction of air dose rate in each decontamination target (Special Decontamination Areas)

Source : MOE

Note) Average air dose rate for residential areas, farmland, forests, roads (aggregation of measurement point data)

The residential areas include schools, parks, cemeteries, and large facilities; farmland includes fruit orchards; forests include slopes, grasslands and lawns.

After half a year to one year after decontamination, post decontamination monitoring was carried out to verify the decontamination effect.

The post decontamination monitoring data for each municipality aggregates the latest results (first or second time)

[Period of implementation] Measurement before decontamination : Nov. 2011 to Oct. 2016;
after decontamination : Dec. 2011 to Dec. 2016,
post decontamination monitoring : Oct. 2014 to June 2017

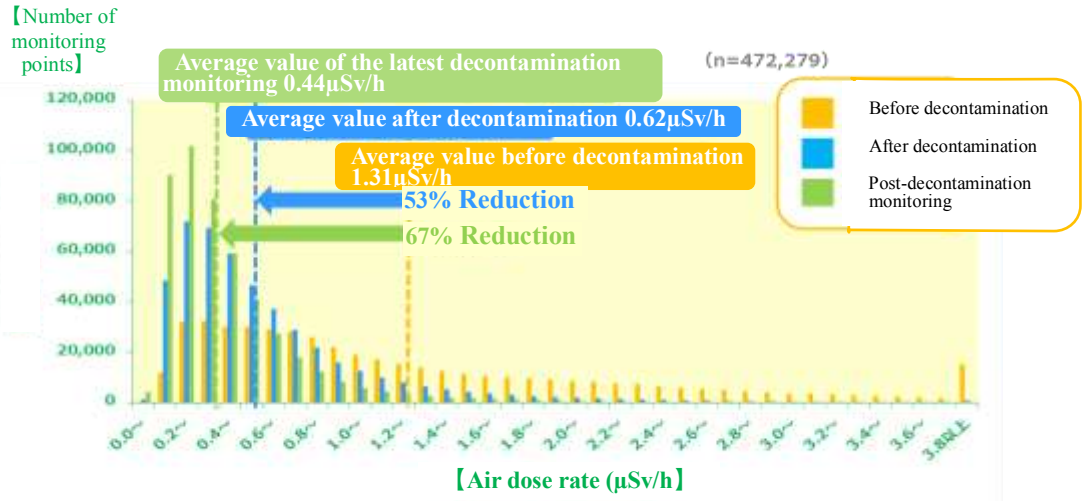


Figure 5-20 Air dose rate before and after decontamination

(Special Decontamination Areas)

Note) Average air dose rate for residential areas, farmland, forests, roads (aggregation of measurement point data)

The residential areas include schools, parks, cemeteries, and large facilities; farmland includes fruit orchards; forests include slopes, grasslands and lawns.

(The measurements are carried out at about 10 points of each area in residential areas in order to grasp the average dose.)

[Period of implementation]

Measurement Before decontamination: Nov. 2011 to Oct. 2016,

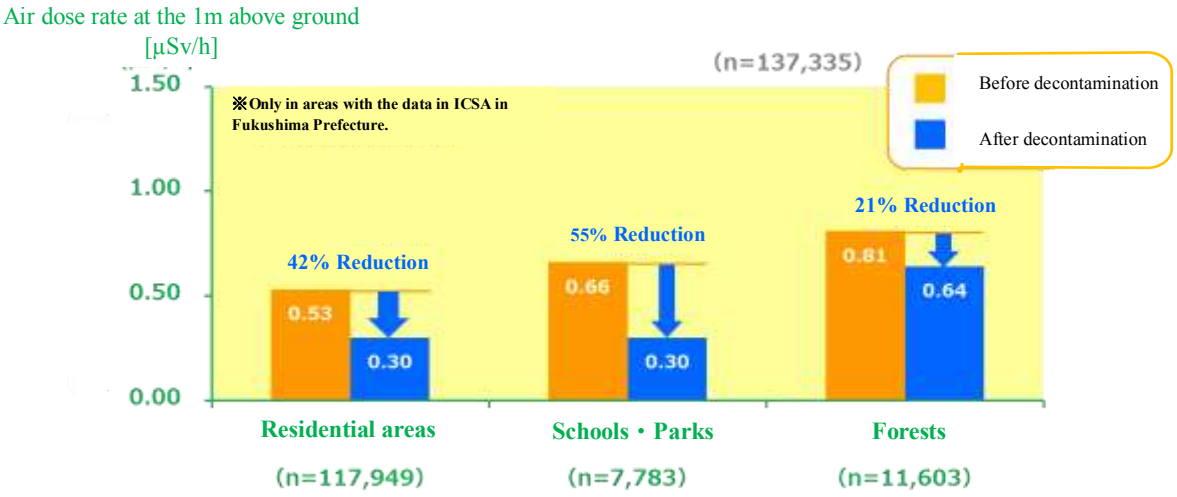
After decontamination measurements: Dec. 2011 to Dec. 2016,

Post decontamination monitoring: Oct. 2014 to June 2017

Source: MOE

(2) Status of Air Dose Rates in Intensive Contamination Survey Areas in Fukushima Prefecture After Decontamination.

According to the results of decontamination of municipalities in Fukushima Prefecture conducted until February 2016, when comparing the average value of the air dose rates before and after decontamination, in residential areas they were reduced by 42%, in schools and parks by 55%, and in forests by 21%, and this confirmed the reduction effect of whole area decontamination.



Note) Averages of air dose rates of residential area, schools・parks, and forests (aggregation of measurement point data)
[Period of implementation]
[Residential areas] Before decontamination: July 2011 to Feb. 2016
After decontamination : July 2011 to Feb. 2016
[Schools and Parks] Before decontamination: June 2011 to Mar. 2015
After decontamination: June 2011 to Aug. 2015
[Forests] Before decontamination: Dec. 2011 to Dec. 2015
After decontamination: Dec. 2011 to Feb. 2016

Figure 5-21 Reduction rate of air dose rate by decontamination work (Fukushima Prefecture Intensive Contamination Survey Areas)

Source: MOE

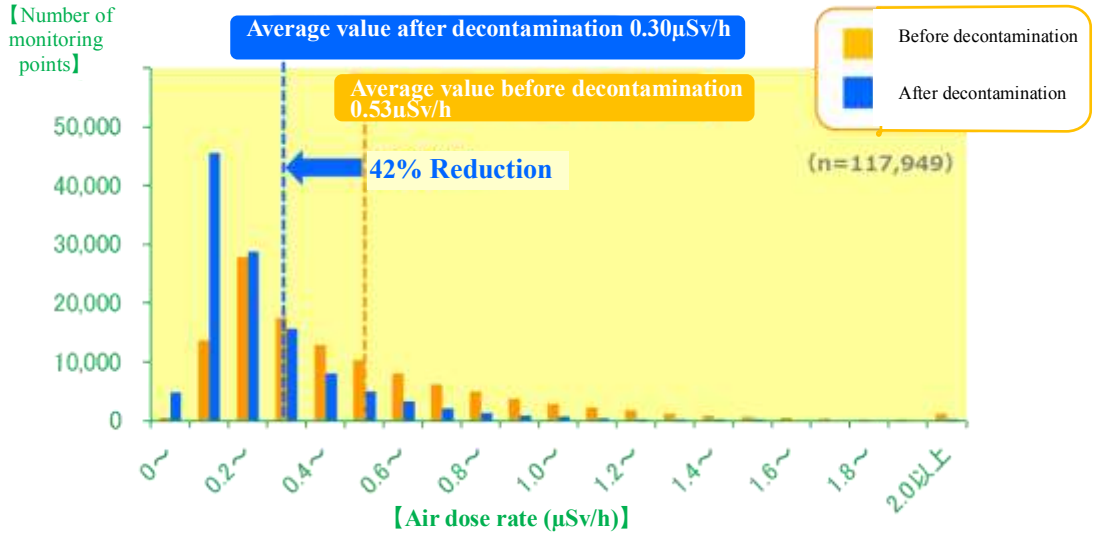


Figure 5-22 Air dose rate of residential area before and after decontamination (Fukushima Prefecture Intensive Contamination Survey Areas)

Source: MOE

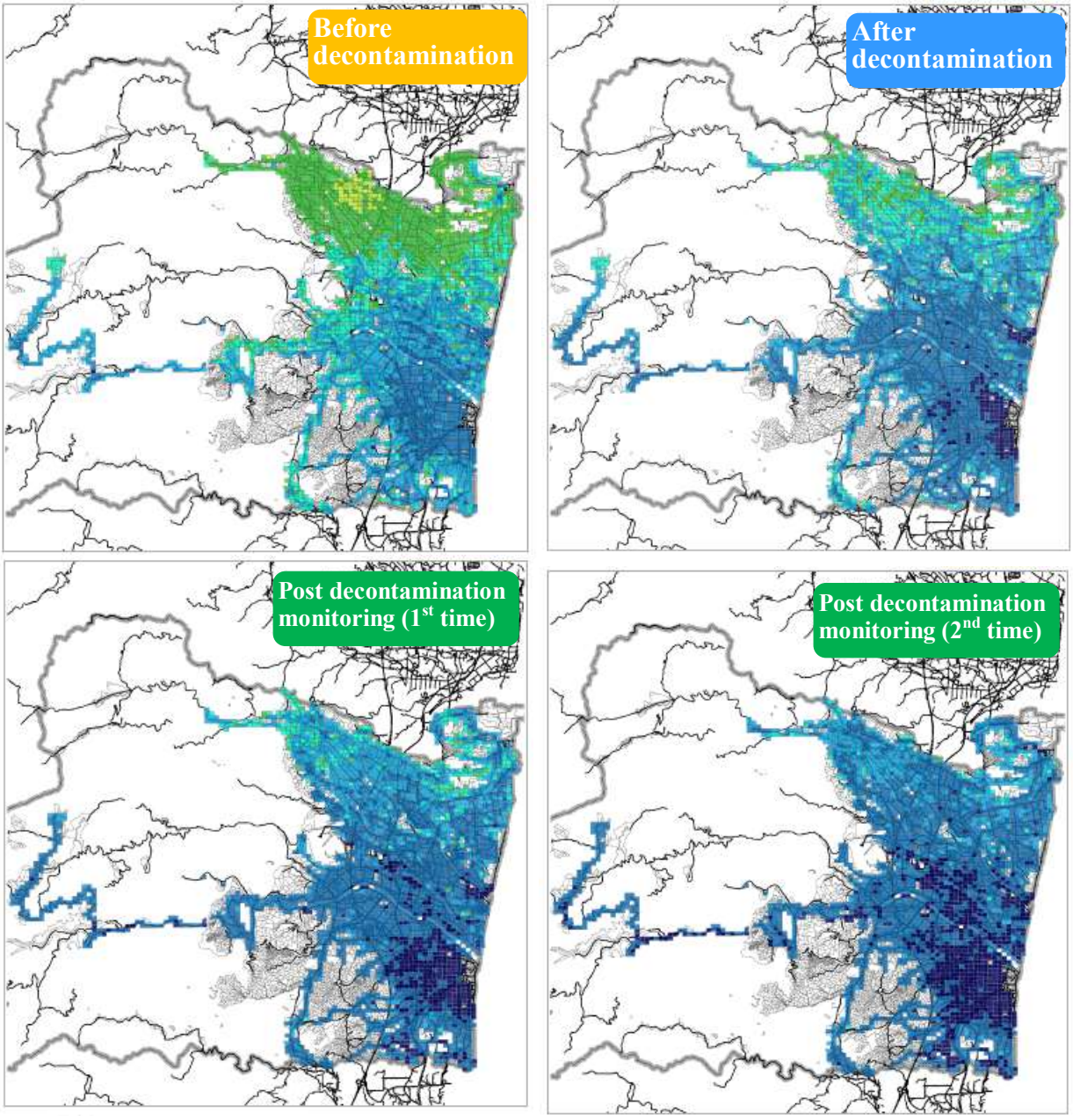


Figure 5-23 Results of measurement before and after decontamination and post decontamination monitoring (example data of Naraha Town)

Source: Decontamination Information Site Material

(3) Effect of Dose Reduction due to Decontamination (Special Decontamination Areas)

According to measurement results after decontamination in Special Decontamination Areas to June 30, 2017, after decontamination the air dose rate 1 m above the ground surface compared to before decontamination was reduced by 60% in residential areas, 58% in farmlands, 27% in forests, and 42% on roads compared with the dose rate. The latest monitoring reduction rate was 73% in residential areas, 68% in farmlands, 46% in forests, 61% on roads.

By dose band, the higher the air dose rate before decontamination, the higher the reduction effect by decontamination tended to be. In addition, as for the effect of reducing the air dose rate and the amount of removed soil per unit of area, the reduction rate tended to increase as the amount of removed soil increased.

Table 5-4 Decontamination effect by land use and dose zone

Land use classification	Dose band (μSv/h) ※Before decontamination	Number of points	① Before decontamination (μSv/h)	② After decontamination (μSv/h)	③ Latest post decontamination monitoring (μSv/h)	Reduction rate ①→②	Reduction rate ①→③
Residential area	less than 1	123,797	0.50	0.30	0.21	41%	57%
	1～3.8	124,813	1.99	0.75	0.52	62%	74%
	3.8or more	10,077	4.84	1.36	0.80	72%	83%
	Total	258,687	1.39	0.56	0.38	60%	73%
Farmland	less than 1	48,274	0.61	0.36	0.28	42%	54%
	1～3.8	32,531	1.86	0.68	0.51	63%	73%
	3.8or more	1,698	4.67	1.23	0.91	74%	81%
	Total	82,503	1.19	0.50	0.38	58%	68%
Forest	less than 1	31,163	0.65	0.50	0.37	23%	43%
	1～3.8	35,823	1.77	1.29	0.93	27%	47%
	3.8or more	2,077	4.68	3.22	2.41	31%	49%
	Total	69,063	1.35	0.99	0.72	27%	46%
Roads	less than 1	38,871	0.55	0.36	0.27	33%	50%
	1～3.8	21,907	1.85	1.01	0.65	46%	65%
	3.8 or more	1,248	4.70	2.19	1.27	53%	73%
	Total	62,026	1.09	0.63	0.43	42%	61%

Note 1. Before decontamination data : Nov. 2011 to Oct. 2016,
After decontamination data : Dec. 2011 to Dec. 2016
Post decontamination monitoring : Oct. 2014 to June
2. Residential area include schools, parks, cemeteries, and large facilities.
Farmland include orchards.
Forests include grasslands, lawn yard and slopes.

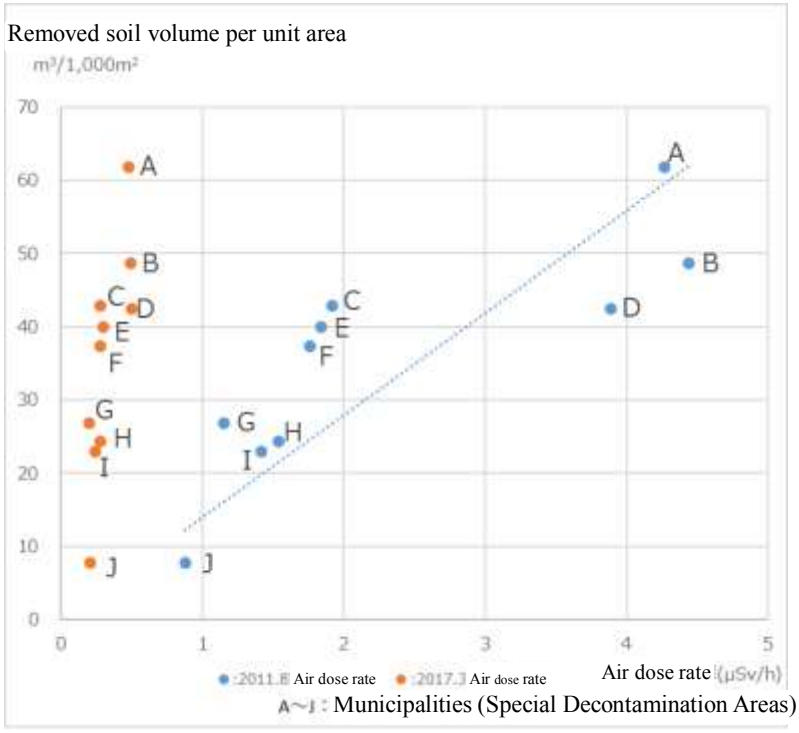


Figure 5-24 Change of air dose rate - Removed soil volume per unit area

(By municipalities・Special Decontamination Areas)

Note) Removed soil volume [m^3] per 1,000m^2 : Removed soil volume / area of decontamination

(Total value of residential area, farmland, forests and roads)

Source: Material created by TEPCO, edited by MOE

1) Residential areas

- Data for residential areas includes dirt yards, grassland, gravel, and concrete paved surfaces, etc., and also includes schools, parks, cemeteries, and large facilities, etc. In the yards of residential areas the topsoil or other surface was removed, except in low dose areas.
- The observed dose range before decontamination was less than 1 μSv/h, and 1 to 3.8 μSv/h were almost the same number, accounting for over 95% of all residential area data.
- The reduction rate of all residential areas (average value of reduction rate when comparing before with after decontamination) was about 60%.
- Where the dose rate was less than 1 μSv/h before decontamination, the reduction rate was about 41%. The reduction rate increased for higher air dose rates and reached about 72% where the dose rate was 3.8 μSv/h or more before decontamination.

2) Farmland

- Data for farmland includes orchards and meadows, but most of them were data of the fields (deep plowing, top soil stripping). Under the circumstances where air dose rate exceeds 2 μSv/h, most of the data derived from the top soil stripping.
- Regarding the dose range before decontamination, the low dose range of less than 1 μSv/h was the most

frequent, accounting for over 50% of whole farmland data

・The reduction rate of the farmland as a whole (average decline rate when comparing before with after decontamination) is about 58%, which is almost the same level as the housing.

・Where the dose rate was less than 1 μSv/h before decontamination, the reduction rate was about 42%. The reduction rate increased as the air dose rate increased and reached about 74% at the dose rate was 3.8 μSv/h or more before decontamination.

3) Forest

・Data for forests includes data of slope, grassland and lawns. For forests, most of the data refers to the removal of forest litter such as fallen leaves, but in some areas with high dose rates, residue below the litter was also removed in order to further reduce the dose rate.

・Compared to other land categories, the dose range before decontamination was distributed somewhat higher, with the dose range of 1 to 3.8 μSv/h being the most frequent, accounting for over 50% of all forest data.

・The reduction rate for all forests (average reduction from before to after decontamination) was about 27% lower than for residential areas, farmland and roads.

・Where the dose rate was less than 1 μSv/h before decontamination, the reduction rate was about 23%. The reduction rate increased where the air dose rate was higher, and reached about 31% where the dose rate was 3.8 μSv/h or more before decontamination.

・Forests near residential areas were decontaminated from the viewpoint of reducing the radiation dose in the living environment of residents who lived near forests. Therefore, the reduction of air dose rate within the forest does not necessarily directly indicate a reduction of the air dose rate in residential areas near forests.

4) Roads

・Data for roads includes data of paved roads, gravel or crushed stone roads, and dirt roads, etc. Most of the paved roads were decontaminated by cleaning and high pressure water washing, etc. Crushed stone and dirt roads, etc., were decontaminated by removing and scraping the surface depending on the dose rate zone.

・The dose range before decontamination of less than 1 μSv/h was the most frequent, accounting for over 60% of all road data.

・The reduction rate of roads overall (average reduction from before to after decontamination) was about 42%.

・Where the dose rate was less than 1 μSv/h before decontamination, the reduction rate was about 33%. The reduction rate increased as the air dose rate increased and reached about 53% where the dose rate was 3.8 μSv/h or more before decontamination.

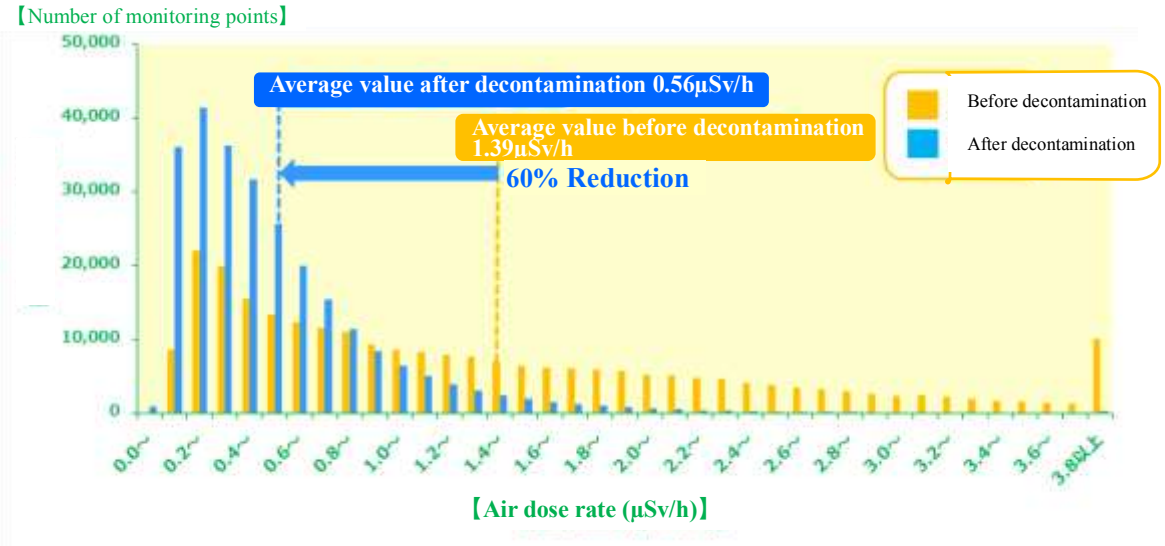


Figure 5-25 Air Dose Rate (1 m above ground) of Special Decontamination Areas (Residential areas)

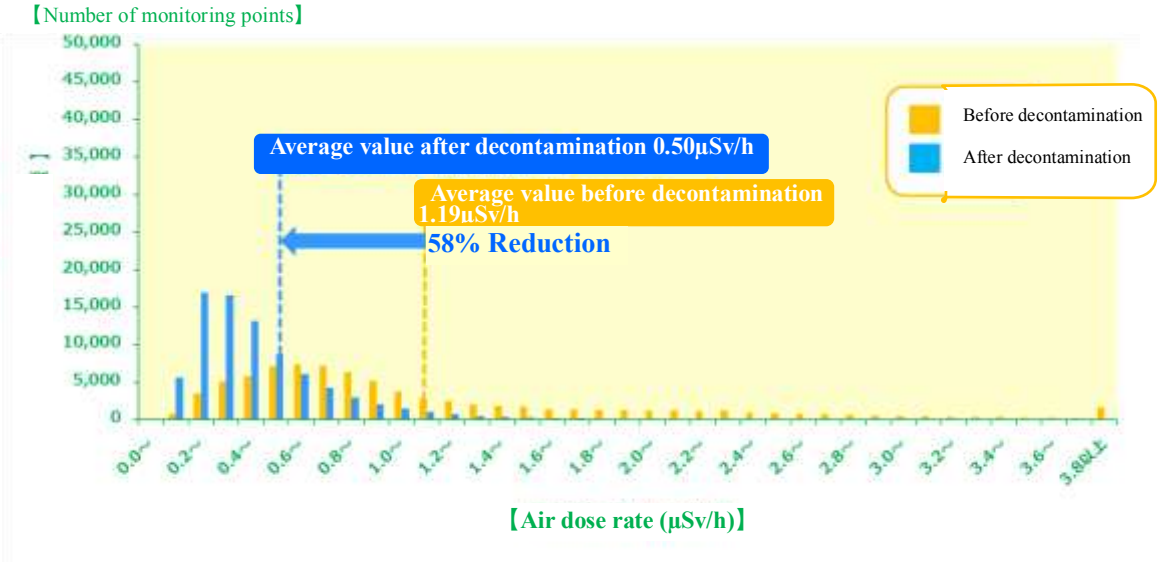


Figure 5-26 Air Dose Rate (1 m above ground) of Special Decontamination Areas (Farmland)

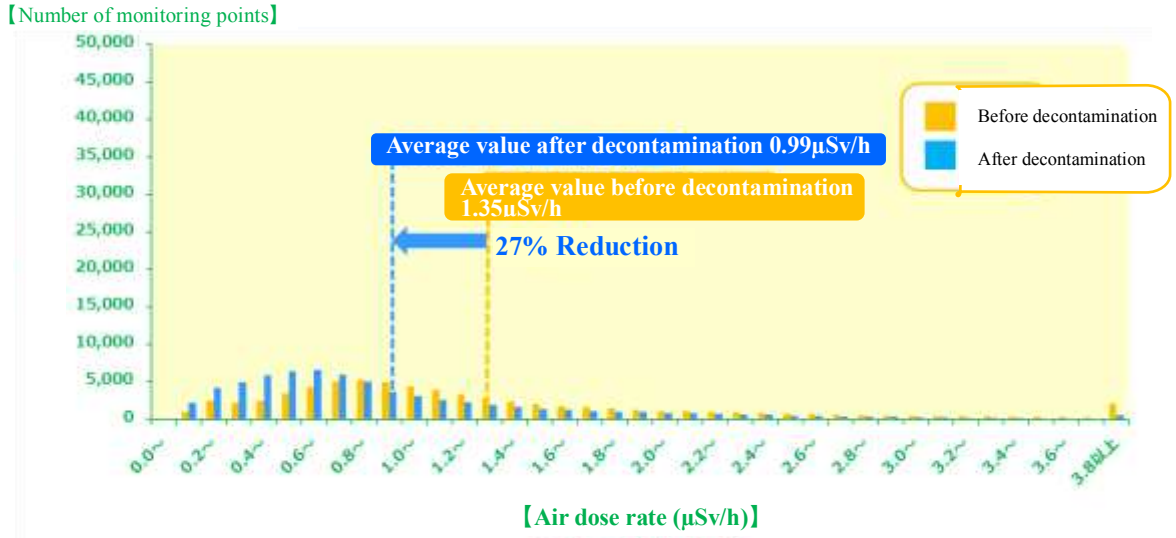


Figure 5-27 Air Dose Rate (1 m above ground) of Special Decontamination Areas (Forest)

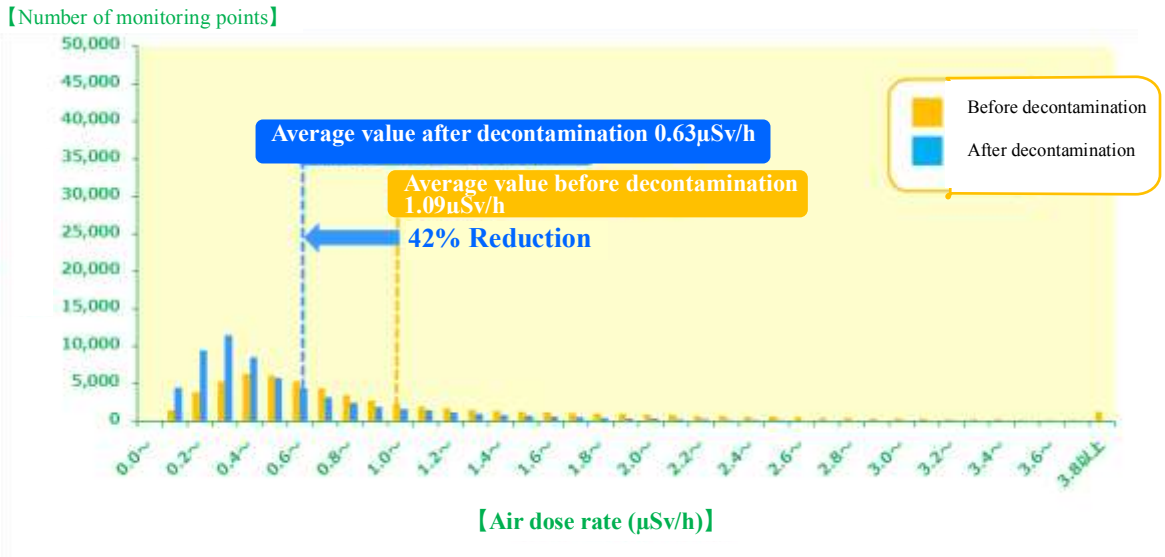


Figure 5-28 Air Dose Rate (1 m above ground) of Special Decontamination Areas (Roads)

Note) Before decontamination data : Nov. 2011 to Oct. 2016,

After decontamination data : Dec.2011 to Dec. 2016.

(4) Estimation of Average Air Dose Rates

Figures 5-29 and 5-30 show estimated average air dose rates after decontamination in residential areas and farmland in Special Decontamination Areas, and in residential, school and park areas in Intensive Contamination Survey Areas.

Estimated dose values (taking into consideration natural decay and weathering) as of March 2018 in Special Decontamination Areas were reduced by approximately 59% compared with where decontamination was not implemented.

Where decontamination was not implemented, it was estimated that the dose rate would fall to 0.32 μSv/h in 2036. Therefore, it could be estimated that the reduction had been achieved 18 years ahead of schedule by decontamination.

Also, the reduction rate was estimated at about 38% compared with where decontamination was not carried out as of March 2016 in Intensive Contamination Survey Areas.

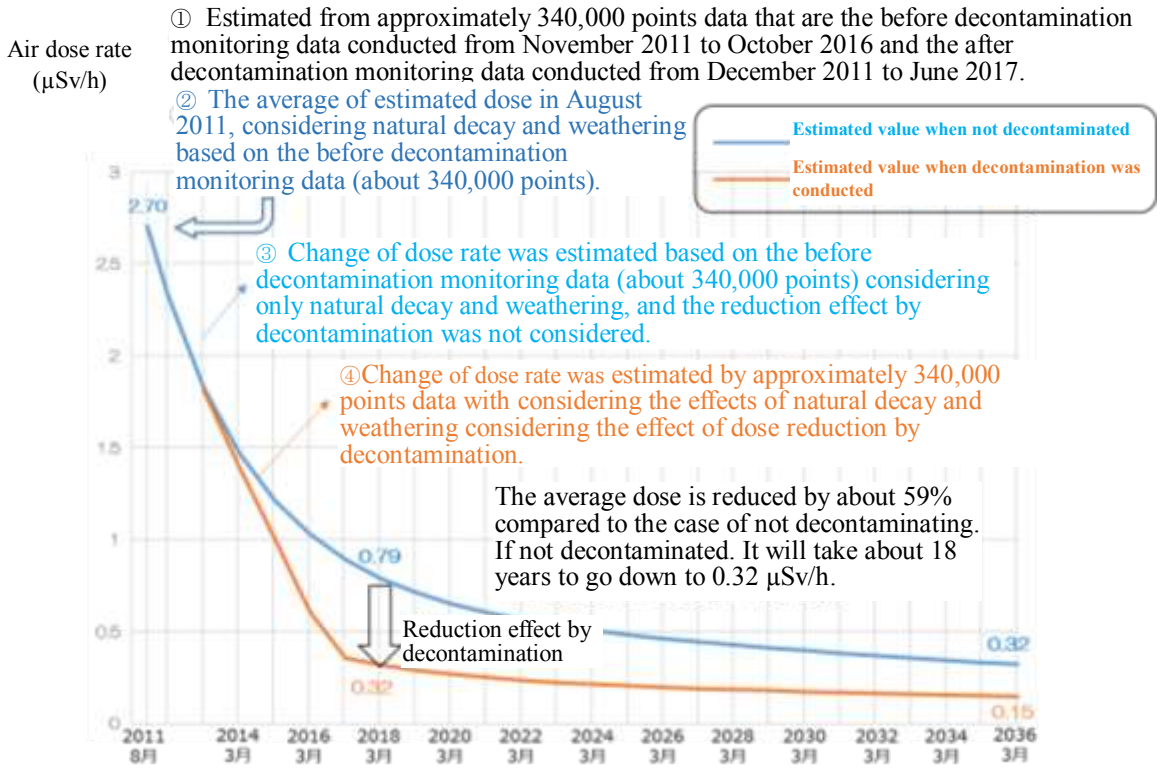


Figure 5-29 Estimation of average air dose rate in Special Decontamination Areas (Residential areas and Farmland)

Source: Material created by TEPCO, edited by MOE.

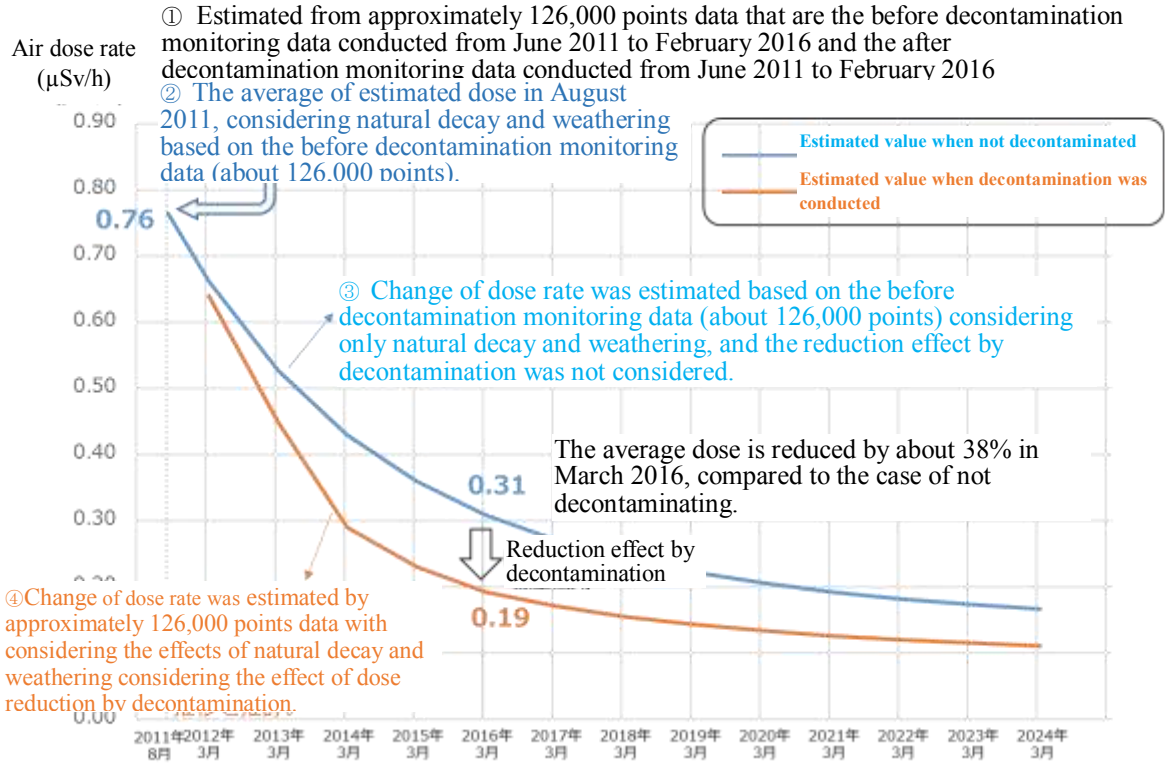


Figure 5-30 Estimation of average air dose rate in pollution status in ICSA (Fukushima Prefecture) (Residential areas, School and Parks)

Source: Material created by TEPCO, edited by MOE.

5.2.2. Outcomes and Social Effects from Decontamination

(1) Lifting Evacuation Orders

Regarding Areas under Evacuation Orders, the evacuation orders were sequentially lifted from regions in which it had been confirmed that the requirements for lifting evacuation orders in "For Accelerating the Reconstruction of Fukushima From the Nuclear Disaster" (December 20, 2013, amended June 12, 2015, Nuclear Emergency Response Headquarters) had been satisfied. By April 1, 2017 in the nine municipalities other than Okuma town and Futaba town, the evacuation orders of the Habitation Restricted Areas and the Preparation Areas for Lifting of Evacuation Orders were lifted except for Areas where Returning is Difficult.

(2) Other Effects

Public investment has stayed at a high level in Fukushima Prefecture where earthquake disaster recovery efforts such as decontamination work are proceeding. The impacts of decontamination work on the economy and employment seems to be significant, according to the high level of the Fukushima Prefecture construction industry diffusion index (D.I.) trend since FY2011.

Under these circumstances, the effective offers-to-applicants ratio has exceeded the national ratio since the earthquake disaster, and employee incomes also improved by the inflow of contractors and workers from other prefectures. In addition to the high level of housing investment and corporate profits, capital investment has been steadily increasing, and this has led to the recovery of the prefecture's economy.

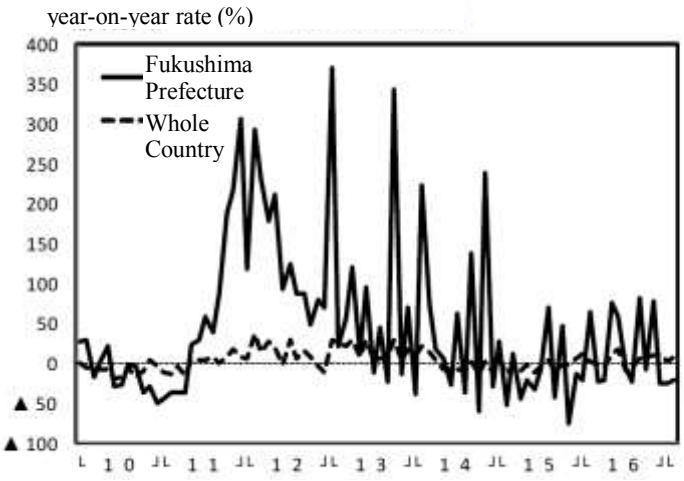


Figure 5-31 Trend of public construction contracts over the previous year (2010 to May 2017)

Source: "East Japan Construction & Public Security Co., Ltd. Other materials"

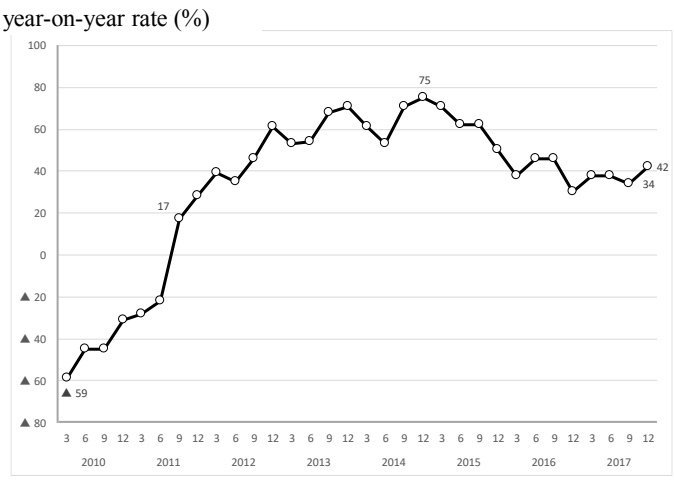


Figure 5-32 Trend of diffusion index (D.I.9) for Fukushima Prefecture construction industry

Source: "Bank of Japan Fukushima Branch Material"

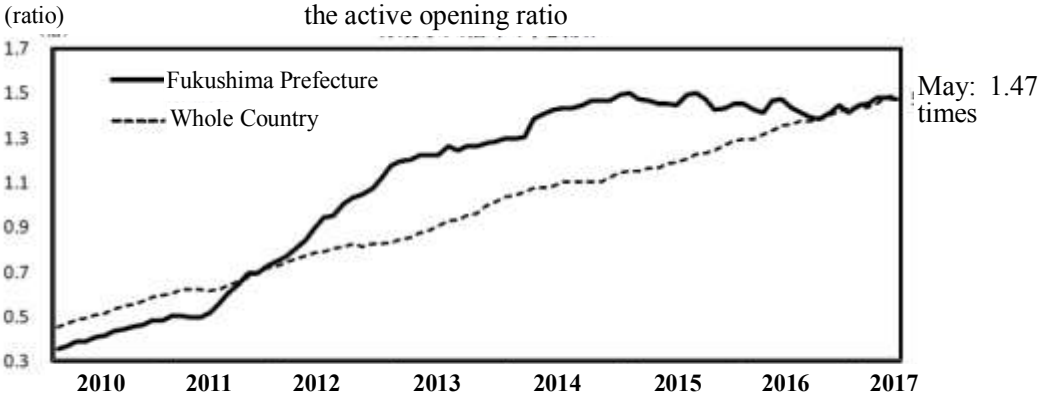


Figure 5-33 Trend of the active opening ratio (2010 to May 2017)

Source: "Fukushima Labor Bureau, MLWH"

5.3. Verification of Decontamination

5.3.1. Verification by MOE

(1) Investigative Committee on the Status of Enforcement of the Act on Special Measures concerning the Handling of Environment Pollution by Radioactive Materials

Article 5 of the Supplementary Provisions of the Act on Special Measures concerning the Handling of Environment Pollution by Radioactive Materials states that "When three years have passed since the enforcement of the Act, the status of enforcement of this Act shall be reviewed and necessary measures taken based on the results."

Based on this, MOE set up a "Investigative Committee on the Status of Enforcement of the Act on Special Measures concerning the Handling of Environment Pollution by Radioactive Materials" for the purpose of examining the implementation status of various measures based on this Act. Five meetings by experts were conducted after March 31, 2015, and the "Summary of the Status of Enforcement of the Act on Special Measures concerning the Handling of Environment Pollution by Radioactive Materials" was published on September 30, 2015.

The evaluation of this summary regarding initiatives to date based on the Act on Special Measures was that due to factors such as a lack of technical expertise and practical experience, a lack of education about radiation, and the time taken to build relationships of trust locally, partial delays in the initial response and current progress were observed. It was also evaluated, however, that a certain degree of progress had been made, thanks to an accumulation of expertise and knowhow in the national and local governments that were the implementation bodies for the initiatives.

On the other hand, a number of issues were pointed out, as follows.

- Decontamination work is an important precondition for reconstruction, and it should be completed as planned by the end of FY2016, by accelerating work through various means including greater transparency.
- Flexibility should be shown in the projections for construction of Interim Storage Facility.
- Regarding the treatment of designated waste outside of Fukushima Prefecture, more effort should be made to provide careful explanations and dialogue.
- Education about radiation should be tackled comprehensively not just by MOE but by the whole government.
- The national and local governments should cooperate with each other more than ever with a strong sense of awareness of their roles.

After that, the "Investigative Committee on the Progress of the Act on Special Measures" held meetings three times (6th - 8th meetings).

Table 5-5 Meetings of the "Investigative Committee on the Status of Enforcement of the Act on Special Measures"

No.	Date	Venue	Main Agenda
1st	March 31, 2015	TKP Conference center (Tokyo St.) Hall A	1. How to proceed 2. Outline of the Act, etc. 3. Outline of enforcement situation of the Act 4. Other
2nd	May 26, 2015	TKP Conference center (Akasaka St.) Hall C	1. About the implementation status of decontamination work 2. Dissemination of knowledge, survey research, technology development, etc. 3. Status of response to technical problems related to decontamination 4. Results of municipal questionnaire survey, etc. (part concerning decontamination) 5. Other
3rd	June 26, 2015	Nippon Express Worker's Union Conference Room A	1. Current situation of Interim Storage Facility 2. About the implementation status of designated waste, etc. 3. Results of municipal questionnaire survey, etc. (part concerning Interim Storage Facility and contaminated waste) 4. Other
4th	August 31, 2015	Nippon Express Worker's Union Conference Room A	1. On the outline of summary 2. Other
5th	September 24, 2015	Nippon Express Worker's Union Conference Room A	1. On the summary 2. Other
6th	July 28, 2017	TKP Garden City Nagata-cho 1st Floor Banquet Hall 1C	1. How to proceed 2. Regarding the enforcement status of the Act since FY2015 summary (related to decontamination) 3. Summary of FY2015 concerning the correspondence to each issue (related to decontamination)
7th	October 12, 2017	Nippon Express Worker's Union Conference Room A	1. Regarding the enforcement situation of the Act after FY2015 summary (related to interim storage) 2. Summary of FY2015 concerning the correspondence to each issue (related to interim storage) 3. Regarding the enforcement situation of the Act after FY2015 summary (related to contaminated waste) 4. Summary of FY2015 concerning the correspondence to each issue (related to contaminated waste)
8th	January 22, 2018	Nippon Express Worker's Union Conference Room A	1. Regarding the enforcement status of the Act after FY2015 summary (cross-sectional matters (technology development, risk communication etc.)) 2. Summary of FY2015 concerning the

			correspondence to each issue (cross-sectional matters (technology development, risk communication etc.)) 3. About matters pointed out that we have received 4. Outline of summary (draft)

<Investigative Committee on the Status of Enforcement of the Act on Special Measures>

(Honorific titles omitted)

Name	Affiliation
Naoto Asano (Chair)	Project Professor, Law School, Fukuoka University
Masahiro Osako	Director, Center for Material Cycles and Waste Management Research, National Institute for Environmental Studies, Japan
Tadashi Otsuka	Professor, Waseda University
Mitsumasa Okada	Professor, The Open University of Japan, Professor Emeritus, Hiroshima University
Shinichi Sakai	Professor, Director, Environment Preservation Center, Kyoto University
Kazuhiko Sakamoto	President, Center for Environmental Science in Saitama
Yuko Sakita	Journalist, Environmental Counselor
Masaru Tanaka	Director, Sustainability Research Institute, Tottori University of Environmental Studies
Osami Nakasugi	Former Professor, Graduate School of Global Environment Studies, Sophia University
Ikufumi Nimi	Professor, Meiji University
Hisaoki Mori	Technical Advisor, Interim Storage Department, Japan Environmental Storage & Safety Corporation

Table 5-6 Summary of the Status of Enforcement of the Act on Special Measures concerning the Handling of Environment Pollution

1. Issues and future directions

- Measures based on the Act on Special Measures concerning the Handling of Environment Pollution were intended to be done within about three years after the accident, but in reality it took more time than anticipated. However, at the present time, the situation is on track or making progress.
- The basic framework of the Act on Special Measures concerning the Handling of Environment Pollution is working effectively, but it requires some adjustments going forward including institutional arrangements for the smooth cancellation of the designation of Intensive Contamination Survey Areas and Special Decontamination Areas, and for steady implementation of volume reduction and recycling of removed soil.
- In parallel with promoting measures, under the existing framework, the national government should clarify its policies regarding the technical and practical issues, develop the necessary ministerial

ordinance and guidelines, and conduct inspections at the time of completion of decontamination implementation plans. In addition, necessary institutional arrangements should be implemented, for smooth completion of a series of measures under the Act on Special Measures concerning the Handling of Environment Pollution.

・It should be noted that one characteristic of radioactive materials is that the concentration of contamination in the materials themselves decreases with time.

・Rational responses should be made based on scientific safety assessments, considering the characteristics of radioactive cesium in the environment and the latest findings, such as the fact that there is little risk that cesium will migrate to groundwater, etc., since it is strongly adsorbed by the soil and the majority of cesium is transferred to surface soil in forests, etc.

・As lessons learned from efforts based on the Act on Special Measures concerning the Handling of Environment Pollution, in explaining and responding to residents in dealing with unprecedented environmental pollution, in order to accelerate and facilitate the measures, it is essential for national and local governments to cooperate with each other more than ever and with a strong awareness of their roles.

(1) Decontamination

a) Special Decontamination Areas (areas decontaminated by the national government)

・This should continue and be accelerated under the current laws and institutions and basic framework.

b) Intensive Contamination Survey Areas (areas decontaminated by municipalities)

・The national government should encourage the acceleration of decontamination while making more transparent the progress of decontamination and future prospects for each municipality.

c) Proper management of temporary storage sites

・Temporary storage sites, etc., have been adequately managed by storage standards established through discussion by the Committee on Environmental Remediation as well as by thorough inspections and repair. Further communication with the residents concerning safety is required.

・It is necessary to continue to implement proper management of temporary storage sites, etc.

・Thorough risk management measures should be taken for any container bags placed temporarily not at temporary storage sites but on-site at any decontamination site in a flood hazard area. This could include prioritizing their transfer to temporary storage sites, etc., or to higher ground if heavy rain and flooding are expected, or using rope to secure them to heavy machinery, etc. It is necessary to develop systems that can grasp the number of container bags, etc., on a daily basis.

d) Response to technical issues related to decontamination

・The long-term goal of an “additional exposure dose of 1 mSv/y or less” is separate from the annual cumulative dose of 20 mSv/y or less, which is one of requirements for lifting of evacuation orders, and in itself is not the target of decontamination. It is a long-term goal to be achieved in the context of residents’ lives, not through decontamination alone but through comprehensive and proper management of radiation risks, including monitoring, food safety management, and risk communication, etc.

・In communications, understandable explanations should be provided for each approach to dose level (e.g., 1 mSv/y and 20 mSv/y), and it should be clearly stated that any level of individual exposure dose

in the range of 1 to 20 mSv/y is consistent with international standards.

- In designating Intensive Contamination Survey Areas and setting decontamination implementation areas, the air dose rate of 0.23 μSv/h is used as a standard. It was used, however, in order to implement decontamination promptly, for convenience and based on conservative conditions by replacing the annual additional exposure dose 1 mSv/y with the air dose rate.
- It should be clearly explained that the average additional exposure dose of residents in the area does not actually exceed 1 mSv/y even in areas where the average value of the air dose rate exceeds 0.23 μSv/h.
- Some directions on technical and practical tasks such as disposal standards for removed soil and policies for measures to deal with radioactive materials in forests away from areas where people live are still undetermined.

  The government policy should be clarified and it is necessary to respond by establishing the necessary ministerial ordinances and guidelines, etc.
- Considering the latest scientific knowledge, such as the characteristics of cesium (cesium is so strongly adsorbed to soil, that there is little possibility of transition to groundwater, etc., radiation is shielded to a considerable extent by appropriate covering, etc.), it is necessary to consider that decontamination practitioners can respond to local circumstances when formulating the disposal criteria for removed soil.
- It is necessary to develop ministerial ordinances and guidelines, etc., by obtaining advice from experts on technical and practical issues such as disposal standards for removed soil and policies for measures against radioactive substances in forests in areas away from where people live.
- In order to consider impacts on trees and entire ecosystems, and to prevent sediment runoff due to heavy rain, etc., it is important to strengthen the forest functions of preventing sediment disasters (landslides, etc.).

  It is also necessary to clarify policies that integrate with forest and forestry revitalization in cooperation with the relevant ministries and agencies, and to disseminate information.

  In addition, it is necessary to provide easy-to-understand information concerning the possibility of the run-off of radioactive materials and dispersion from forests.
- Regarding the effects of supplemental decontamination, it is important to note that the effects are maintained as a whole and that it has been shown that additional effects cannot be expected even if repeated whole area decontamination is performed.
- In carrying out supplemental decontamination, the direction of reasonable and effective supplemental decontamination of residential areas within Habitation Restricted Areas should be shown and it is necessary to proceed conscientiously with risk communication to respond to voices of concern from residents.

(2) Cross-sectional matters

a) R&D and training and securing human resources

- Measures against radioactive substances are issues requiring long-term research, and it is necessary to reflect the latest scientific knowledge on environmental dynamics, etc., in measures.
- It is necessary to carry out monitoring and research on the influence of radioactive substances on wild

animals and plants, and to provide conscientious explanations including the interpretation of information.

b) Passing on experience and sharing internationally

・Efforts should be made to accurately record the sequence of events, experiences and reflections on decontamination work performed based on the Act on Special Measures concerning the Handling of Environment Pollution, as well as the development of Interim Storage Facility and treatment of decontamination waste, and this should be passed on in preparation for future emergency accidents and be a part of Japan's international contributions.

c) Information dissemination, sharing and risk communication

・It is necessary to transmit accurate information and deal conscientiously with the concerns of residents. Also, it is necessary to deepen mutual communication, among local residents, government and experts including local universities and research institutions, etc., while also using the Counselor System, etc.

・For real reconstruction including eliminating damage from negative rumors, it is indispensable that the government as a whole, including not only MOE but also other related ministries and agencies, engage in efforts for comprehensive education about radiation, including the promotion of understanding of natural radiation and information dissemination about work progress and the outlook for reconstruction work.

d) Comprehensive discussions, including legal system

・It is important to implement the institutional arrangements required for the smooth completion of a whole set of measures based on the Act on Special Measures concerning the Handling of Environment Pollution.

・It is important to accurately record the sequence of events, experiences, and reflections on measures performed based on the Act on Special Measures concerning the Handling of Environment Pollution, to pass them on and communicate them to others.

2. Conclusion

・Despite some delays in initial responses and current progress due to a lack of technical knowledge and practical experience, a lack of education about radiation, and the time required to build trust in the community, etc., some progress has been made thanks to the accumulation of knowledge and know-how in the national and local governments, which are the implementation bodies.

5.3.2. Verification by Local Governments in Areas under Evacuation Orders

(1) Committee for the Verification of Decontamination

1) Purpose

Although the positioning is somewhat different depending on each local government, the "Committee for the Verification of Decontamination" were held to verify the results of decontamination, which is one of the requirements for the lift of evacuation orders, and to indicate the situation and future prospects for infrastructure such as water and sanitation, electricity, roads, railways.

The Committee were held to comprehensively convey the situation to residents, as well as to ask opinions and suggestions of experts based on reports from the national government, etc., on arrangements such as medical care, nursing care, and welfare facilities, schools, shops, public housing, etc., necessary for living after returning home, as well as the lifting of evacuation orders, and reconstruction.

2) Contents and features of main discussions

The Committee's main discussions on decontamination included presentations of the following objective and quantitative data (listed below), a summarization of the results of decontamination based on comments and recommendations of experts and others, and review of the necessary guidelines going forward.

- Colored mesh maps indicating changes in whole area doses in areas where decontamination has been performed
- Changes in average dose for each administrative district or land use category (residence, farmland, forest, road)
- Dose histogram for each measurement point
- Results of post-accident monitoring and supplemental decontamination
- Storage condition at temporary storage sites, etc., and peripheral radiation doses

The main guidelines presented by experts at the verification committee, etc., are as follows:

- Management of individual exposure doses
- Radiation protection measures (external and internal)
- Supplemental decontamination of areas with comparatively high doses and areas where decontamination effect is not maintained
- Consultation and risk communication on radiation dose anxiety and livelihood insecurity

In some cases, with interventions by experts the anxiety of the residents was resolved and understanding was improved.

As a characteristic of the discussion, different circumstances, demands, and countermeasures were pointed out according to dose and region. For example:

- There were differences such as what kind of decontamination measures were taken to reduce the additional exposure dose, etc., in low-dose areas (mainly Preparation Areas for Lifting of Evacuation Orders), areas with a slightly higher dose (mainly Habitation Restricted Areas), and areas with relatively higher doses (mainly adjacent to Areas where Returning is Difficult).
- There were many requests for decontamination to be performed in forest near residential areas in densely-populated areas.
- There were concerns about the resumption of farming in areas with a lot of farmland.

Also, Kawauchi Village, Kawamata Town, and Minamisoma City had Special Decontamination Areas where the national government implemented decontamination, as well as "decontamination implementation areas" where the municipality implemented decontamination, so there were discussions about the differences between the decontamination measures in both types of area.

3) Situations of each municipality

① Naraha Town

In Naraha Town, various committees held meetings, including the Committee for the Verification of Decontamination, a radiation health committee, and a nuclear emergency disaster countermeasure examination committee, etc. The Committee for the Verification of Decontamination held a total of nine meetings starting in 2013 and published a report in March 2015.

Table 5-7 Implementation status of The Committee for the Verification of Decontamination (Naraha Town)

No.	date	Venue	Main Agenda
1st	November 26, 2013	Naraha Town Office, 3rd floor conference room	1. About Naraha Town decontamination committee 2. On-site inspection 3. Recovery situation in Naraha Town 4. Current status of Naraha Town (decontamination and monitoring)
2nd	January 28, 2014	Naraha Town Office, 3rd floor conference room	1. About the contents of the agenda of 1st Committee 2. Opinions and requests from residents 3. Condition of decontamination temporary place in Naraha Town 4. Accelerating Fukushima Reconstruction from nuclear disasters 5. Site visit 6. Current situation in Naraha Town (situation of decontamination / monitoring etc.) 7. Report explanation from each committee
3rd	January 28, 2014	Isotope Science Center, The University of Tokyo, 1st floor conference room	1. About the contents of the agenda of the second committee 2. Current report 3. Future consideration · Direction of summary
4th	March 25, 2014	Naraha Town Office, 3rd floor conference room	1. Mayor's greetings and greetings on behalf of the chairperson 2. On decontamination results 3. About the first report of the Naraha Town Decontamination Verification Committee
5th	November 25, 2014	Naraha Town Office, 3rd floor conference room	1. About decontamination 2. Site inspection and review 3. About safety and security of water 4. About monitoring
6th	February 25, 2015	Information Technology Center, The University of Tokyo, 3rd floor	1. About decontamination 2. About monitoring 3. About Secondary Report on Naraha Town Decontamination Verification Committee

		conference room	
7th	August 21, 2015	Naraha Town Office, 3rd floor conference room	1. About the situation of supplemental decontamination in Naraha Town 2. About efforts towards relief of tap water supplied by Koyama Purification Plant 3. Background of the counselor system 4. On the progress of radiation health care committee
8th	March 17, 2016	Naraha Town Office, 3rd floor conference room	1. Results of ex post monitoring in Naraha Town 2. About radiation dose survey such as monitoring
9th	March 16, 2017	Naraha Town Office, 3rd floor conference room	1. Results of ex post monitoring in Naraha Town 2. About radiation dose survey such as monitoring 3. Working Group Report

<The Committee for the Verification of Decontamination> (Honorific titles omitted)

Name	Affiliation
Tatsuhiko Kodama	Professor, Isotope Science Center, The University of Tokyo
Sho Shiozawa	Professor, Graduate school, The University of Tokyo
Toshio Nitami	Associate professor, Graduate school, The University of Tokyo
Nobuyoshi Akimitsu	Associate professor, Isotope Science Center, The University of Tokyo
Toshihiro Oka	Professor, Graduate school, Fukui Prefectural University
Kenji Sato	Professor, Iwaki Meisei University
Norio Nogawa	Project Professor, Fukushima Future Center for Regional Revitalization, Fukushima University
Yuzo Manpuku	Principal Investigator, The National Agriculture and Food Research Organization

Source: Naraha Town "Naraha Town Committee for the Verification of Decontamination" meeting material (1st ~ 9th)

Table 5-8 Report on the "Priority measures for return and restoring the lives of townspeople"

Contents of report
1. Recovery of safe living environment (1) Restoration of peace of mind by continuing decontamination and radiation health management aimed at achieving the long-term goal of the national government ① Decontamination efforts ・Regarding the decontamination of the residential area, there are areas where the air dose rate is relatively high in whole area of town. In order to reduce the dose by supplemental decontamination, it is necessary to respond with detailed consideration of equity, efficiency and effectiveness, taking into consideration the townspeople's intention to return to the town. ・In addition to requesting to enrich the consultation desk system of the national government that can respond conscientiously to the doubts and concerns from households that are not subject to the supplemental decontamination of the national government, it is essential for the town to strive to solve the townspeople's doubts and concerns about radiation through utilization of the counselor system. In some cases, according to the circumstances, it is also necessary for the town office to play a role of coordinating between the national government and the townspeople. ・Regarding trees and bushes such as yard trees, although the effect of reducing the air dose rate in the living

area by logging is limited, studies of mechanisms and measures that are possible to respond to requests and concerns vigorously should be promoted in order to relieve the concerns of townspeople.

・Regarding the forests decontamination, it is necessary to develop long-term and systematic countermeasures such as processing and utilization, and it is desirable to plan based on socio-economic considerations, taking into account the relationship with the measures for forestry conservation and restoration.

② About various monitoring

・Regarding the air dose rate maps created by MOE showing the decontamination effects, it is desirable to continue to prepare and publish the air dose rate maps while reflecting the effects of supplemental decontamination. To utilizing them for efficient implementation (priority) of supplemental decontamination, etc., it is also required to positively utilize them as a tool for risk communication to townspeople.

・It is necessary to continue carrying out the air dust sampling and the monitoring of community roads that the town was doing independently and to effectively use the findings as detailed data closely related to the lives of the townspeople. Efforts should be made to communicate information to the townspeople in an easy-to-understand manner by effectively utilizing data both from the town and from the national government.

・In some cases, radioactive cesium may be detected exceeding the standards for radioactive substances in food such as wild vegetables other than rice and vegetables, plus river fish and game meat, but for such foods collected from outdoors, it is important to conduct awareness-raising to ensure that measurements are done properly using testing equipment. Regarding monitoring of foods, it is also necessary to consider responses depending on the situation, such as selective use of simplified measurements taken independently by the town, versus accurate measurements entrusted to specialized agencies.

・For individual exposure dose control, it is considered that the current external dose in the town is not at a level at which health effects are concerned, but it is important to continue to measure in the future for further peace of mind. The value of this long-term target is not an absolute standard for evacuees to return, and the judgment of each townsperson should be respected regarding returning.

・With respect to internal exposure dose control, the number of persons being examined using a Whole Body Counter (WBC) has been decreasing year by year. But in order to obtain peace of mind by accumulating data, for example, it is required to consider systems for improving the examination rate, such as asking a WBC examinations at the time of regular health checkups for returning town residents.

・The decontamination waste temporary storage sites are being rigorously managed, with not only monitoring and measurements being taken by the national government but also by townspeople themselves conducting surveillance activities. However, these sites are ultimately intended to be only temporary, so as a fundamental solution it is important to arrange safe transfer to other locations as soon as possible, in order to reduce the anxiety of townspeople who have refrained from returning home.

・Regarding the volume reduction of decontamination waste, accumulation of knowledge of the national government and technological progress can be seen by demonstration tests and full-scale operations, etc., being advanced in various places.

Proper treatment of decontamination waste by efficiently and effectively introducing facilities is desired, appropriately reflecting these results in the establishment and operation, etc., of volume reducing facilities planned to be built in the town.

・It is important that the concerned ministries and agencies and local governments make an effort to share

sufficient and detailed information about future relocation plans for Interim Storage Facility.

・Regarding the transport of waste, it is hoped that careful consideration will be given to transport routes and timing in order to avoid any negative impacts on general transportation and the living environment of communities along the routes.

・Since it is expected that it will take several years to relocate temporary storage sites to Interim Storage Facility, consideration of roadmaps should begin now, for a combination of various measures to reduce the burden on residents during the interim, such as installation of incinerators and volume reduction.

Also, in response to problems that may occur at current temporary storage sites due to the passage of time, it is important to devise proactive measures, such as transferring the contents of any deteriorated flexible containers into new bags.

③ Safety and security of drinking water

・Data from vertical turbidity measurements in the Kido Dam reservoir, turbidity measurements of the intake weir, and time-series data on radioactive cesium concentrations in intake weir water do not indicate any noticeable disturbance of radioactive materials from bottom sediment during heavy rains and typhoons. However, it is necessary to continue measuring to obtain these basic data.

・Safety is ensured for water supplied from the Kido Dam and Koyama Water Purification Plant by various measures taken by the national government and a water supply consortium, etc.

However, since the anxiety of the townspeople has not yet been dispelled, for the foreseeable future it will be important to continue providing conscientious and easy-to-understand explanations for them to gain an understanding of safety.

Specifically, it is necessary to seek understanding of the townspeople's water safety, by reviewing and implementing initiatives such as a safety management system including a monitoring system and active dissemination of actual tap water measurement results.

・Radioactive substances continue to be present at the reservoir bottom of Kido Dam. Therefore, in the future, to ensure greater security of drinking water, consideration should be given to the feasibility of more impactful measures by using future technological innovation.

・As for the simple water service using stream water, the townspeople using this may feel uneasy as it is being measured only three times a week at present. However, since it is difficult to raise the current measurement frequency, it is necessary to engage in more risk communication to gain the townspeople's understanding of the current policy.

2. Enhancement of support for livelihood reconstruction

(1) Strengthening consultation systems (radiation, livelihood reconstruction, etc.)

From the viewpoint of promoting environmental improvements for evacuees to return to their town, it is important to develop a consultation system that will respond in detail to the concerns of individual townspersons, including concerns about radiation.

・Consideration should also be given to the establishment of a third party (advisory) body to advise the town about health management relating to radiation and risk communication methods, etc. To establish such a body, it will be important to proactively address the requests to the parties concerned.

Source: Naraha Town "Naraha Town Committee for the Verification of Decontamination: Second Report" (March 2015)

② Kawauchi Village

In Kawauchi Village, for the return of evacuees, the Committee for the Verification of Decontamination held a meeting in 2014, and the report was published in December 2016.

Table 5-9 Implementation status of the "Committee for the Verification of Decontamination" (Kawauchi Village)

No.	Date	Venue	Main Agenda
1st	July 10, 2014	Community center annex "Nakayoshi-kan"	1. Progress of decontamination 2. Evaluation of radiation measurement results

<The Committee for the Verification of Decontamination> (Honorific titles omitted)

Name	Affiliation
Noboru Takamura	Professor, Atomic Bomb Disease Institute, Nagasaki University
Tadashi Inoue	Advisor, Central Research Institute of Electric Power Industry
Fuminori Tamba	Associate professor, The Faculty of Economics and Business Administration, Fukushima University
Masaharu Tsubokura	Division of Social Communication System for Advanced Clinical Research, Institute of Medical Science, University of Tokyo
Shinichi Endo	Decontamination sector, Industry Promotion Section, Kawauchi Village

Source: Kawauchi Village "Kawauchi Village Committee for the Verification of Decontamination (1st meeting materials)"

Table 5-10 Recommendation for return of evacuees

Contents of recommendation
1. Decontamination ・For decontamination, if the aim is to further reduce dose rates, it is necessary to decontaminate nearby forests, etc., and to consider the wishes of residents while also considering cost effectiveness. In addition, it is important to respond appropriately with regard to "hotspots" where doses are higher, giving consideration to the lifestyles of residents. Regarding decontamination and dose rates, it is also necessary to disclose information to enable residents to exercise appropriate judgment. **2. Health effects of radiation (external exposure, internal exposure, thyroid tests)** ・To date, external exposure doses evaluated by individual exposure dosimeters are generally at a low level. All evacuation orders in the village have been lifted, and it will be important to continue offering assessments of external radiation doses for residents who wish to return in the future. It is necessary to properly respond to occupational exposure of residents who are in charge of reconstruction and restoration of industries of Kawauchi Village such as forestry workers and decontamination workers.

・Currently, the internal exposure in Kawauchi Village has maintained a sufficiently low level, and it is believed to still be possible to maintain the low level through food inspection and controlling food distribution going forward. Meanwhile, contamination is present in some foods, and internal exposure may increase through continuous ingestion, so continued testing and information provision will be necessary going forward.

・For thyroid testing, it is important to continue securing access to proper consultation for those who want to undergo examination.

In the future, some examinees are expected to leave the village and/or the prefecture by going on to higher education or employment. In cooperation with Fukushima Prefecture, it will be necessary to provide information on access to thyroid testing and guidance for consultation to age groups expected to have increased migration out of prefecture.

3. Recovery status of infrastructure and daily services indispensable for daily life

・Restoration and maintenance of infrastructure and daily services indispensable for daily life are important for future reconstruction and development of Kawauchi Village. Based on population vision trends, it will be important to highlight the attractiveness of life in Kawauchi Village while promoting wide-area cooperation with other local governments. In addition to confirming the results of efforts for restoration and reconstruction from the earthquake disaster, it is necessary to construct a "Kawauchi-style" of sustainable community in context of the ongoing decline of population numbers in Japanese society.

4. Medical infrastructure

・Since the earthquake disaster, the provision of medical services at clinics and emergency transportation have steadily improved through cooperation with other medical institutions in the region, and the range of access is expanding. However, as the needs will continue to exist and demand for services is expected to grow with the aging of society, it will be necessary to enhance the functions of clinics and further strengthen collaboration with other medical institutions in the region.

・Improvement of childcare environment is also extremely important to prepare for the return of the younger generation of evacuees to the village. In addition, to encourage more new residents to move to the village, it will be important to support the revitalization of Kawauchi Village by emphasizing the benefits that families with children can enjoy from medical and welfare services.

Source: Kawauchi Village Committee for the Verification of Decontamination "Kawauchi Village Committee for the Verification of Decontamination Report" (December 2016)

③ Iitate Village

In Iitate Village, meetings were held by the Committee for the Verification of Decontamination, a committee on livelihoods, and an expert committee on reconstruction hub projects, and so on. The Committee for the Verification of Decontamination held five meetings in 2017 and its recommendations were published in June 2017.

Table 5-11 Implementation status of the "Committee for the Verification of Decontamination" (Iitate Village)

No.	Date	Venue	Main Agenda
1st	February 8, 2017	Iitate Village Office	1. On the election of the chairperson and vice chairperson 2. About the purpose of the committee 3. About the committee's schedule 4. About the current situation of decontamination 5. Materials concerning analysis and verification
2nd	February 28, 2017	Iitate Village Office	1. About the 1st meeting minutes 2. Current status of decontamination 3. Monitoring of residential land and farmland 4. Measurement and prediction of individual doses 5. Relationship between Space Dose Rate and Personal Dose 6. About rice plants, vegetable demonstration cultivation results 7. About farmland and agricultural water 8. Proposal proof of the report
3rd	March 30, 2017	Iitate Village Office	1. About the 2nd Minutes 2. About verification of decontamination 3. Monitoring of residential land and farmland 4. About farmland and agricultural water 5. On the movement of cesium from the forest
4th	April 26, 2017	Iitate Village Office	1. About the 3rd Minutes 2. Monitoring of residential land and farmland 3. Results of soil radioactivity measurement 4. About the implementation status of intermediate storage facilities 5. Concept of Rice Cropping 6. Measures against radioactive materials at irrigation pond 7. Recommendations and report (draft)
5th	June 23, 2017	Iitate Village Office	1. About the 4th meeting minutes 2. Monitoring of residential land and farmland 3. Results of soil radioactivity measurement 4. About recommendations and report 5. Schedule of submission of report
Submit	June 23, 2017	Iitate Village Office	Recommendation and Report submission

<The Committee for the Verification of Decontamination> (Honorific titles omitted)

Name	Affiliation
Junichiro Tada	Director, Specific Nonprofit Corporation Radiation Safety Forum (RSF)
Kazuto Endo	Principal Investigator, Center for Material Cycles and Waste Management Research, National Institute for Environmental Studies, Japan
Makoto Miyazaki	Assistant, Radiation Disaster Medical Center, Fukushima Medical University
Yuzo Manpuku	Principal Investigator, The National Agriculture and Food Research Organization

Kenichi Okoshi	Chairman, Iitate Village Administrative District Presidency Congress

Source: "Iitate Village Committee for the Verification of Decontamination" meeting material (1st ~ 5th)

Table 5-12 Recommendation of Committee for the Verification of Decontamination

Contents of recommendation
1. Continue consultation with the national government in response to requests of villagers for environmental restoration. 2. Strongly demand the national government to accelerate the removal of decontamination waste that can interfere with regular life. 3. Further promote efforts to let the individual villagers to know the dose they are receiving. 4. Strongly demand the national government to promptly restore sites that were borrowed or damaged in decontamination work. 5. Issue guidance to properly maintain potassium content in soil when resuming farming. 6. Continue consultations with national government concerning environmental restoration in Areas where Returning is Difficult.

Source: Iitate Village Committee for the Verification of Decontamination "Iitate Village Committee for the Verification of Decontamination Report" (June 2017)

④ Minamisoma City

In Minamisoma City, meetings were held by the Decontamination Promotion Committee, the Environment Recovery Promotion Committee, and the Community Planning Committee, etc. The Decontamination Promotion Committee held a total of 11 times starting in 2014 and published a report in December 2016.

Table 5-13 Implementation status of the Decontamination Promotion Committee (Minamisoma City)

Year	No.	date	Venue	Main Agenda
FY2014	1st	June 26, 2014	City Hall main building, 4th floor the Diet members' room	1. Progress of living area decontamination of Minamisoma City 2. Progress of the decontamination of farmland in Minamisoma City Investigation on occurrence factors of brown rice standard excess in Minamisoma City
	2nd	November 28, 2014	City Hall east building, 2nd floor, 1st conference room	1. Results of decontamination and progress of agricultural land decontamination in Minamisoma city 2. On the results of the whole rice bag inspection conducted in 2014 3. Results of decontamination of living area (Report)
	3rd	February 19, 2015	City Hall main building, 4th floor floor the Diet members' room	1. Results of living zone decontamination and local decontamination using PSF. 2. About change of decontamination plan (report) 3. Others · Response from Nuclear Regulatory Agency (Report)
FY2015	1st	April 17, 2015	Odaka area, Ukifune Cultural Center, Training Room	1. About the decontamination situation of Special Decontamination Areas (MOE) 2. About the demands and opinions of the residents of the evacuation area (Report City Office) · Outline of citizen's explanatory meeting and

				opinion exchange meeting in FY2014 · Consolidated result of free-list intention survey in Odaka area
	2nd	September 17, 2015	Hara Town Public health center	1. Status of decontamination in Intensive Contamination Survey Areas 2. Decontamination situation of Special Decontamination Areas 3. Requirements for decontamination, etc., for lift of evacuation order 4. About "decontamination and resumption of farming"
	3rd	December 24, 2015	Hara Town Public health center	1. Response of the State and the City to the Minamisoma City Decontamination Promotion Committee Statement on September 10 and 11, September 20, 2015, suffering heavy rain damage 2. Verification of decontamination effect in Special Decontamination Areas 3. Current Status and Issues of Decontamination Initiatives to lift evacuation order.
	4th	February 15, 2016	the Diet members' room	1. About the decontamination situation in Minamisoma City (Special Decontamination Areas) (MOE) 2. Verification of decontamination effect in Special Decontamination Areas 3. Report on Radiation Protection Measures for lifting evacuation order area 4. Results of forest decontamination test construction around farmland in decontamination area
FY2016	1st	July 11, 2016	Hara Town Public health center	1. Post-monitoring results and supplemental decontamination 2. About volume reduction of removed soil 3. "How do mountain of flexible container get lost (possibility of reuse and reduction in Minamisoma City)"
	2nd	October 27, 2016	Hara Town Public health center	1. On the results of decontamination of farmland in Minamisoma City 2. Estimated radioactivity concentration of removed soil by decontamination 3. About volume reduction and recycling of removed soil stored in temporary storage sites * Proposal on recycling treatment of radioactive waste (draft)
	3rd	December 21, 2016	City Hall main building, 4th floor the Diet members' room	1. About the Chairperson's Comment 2. Estimated radioactivity concentration of removed soil * Add Special Decontamination Areas 3. On issues of volume reduction and recycling
	4th	February 20, 2017	Hara Town Public health center	1. Result of decontamination of farmland · On the result of farmland decontamination · Minamisoma City agriculture, forestry and fisheries revitalization plan 2. Providing information by Manpuku committee member · Return municipalities Initiatives for revitalizing agriculture 3. Efforts towards the use of recycled materials

<The Decontamination Promotion Committee> (Honorific titles omitted)

Name	Affiliation
Tatsuhiko Kodama	Professor, Isotope Science Center, The University of Tokyo
Sho Shiozawa	Professor, Graduate school, The University of Tokyo
Kaname Miyahara	Director, Fukushima Environmental Safety Center, Fukushima Research Institute, Sector of Fukushima Research and Development, Japan Atomic Energy Agency
Tadashi Inoue	Director charged in Fukushima, Atomic Energy Society of Japan
Yuzo Manpuku	Principal Investigator, The National Agriculture and Food Research Organization
Jinichi Nagatsuka	Director, Department of Reconstruction Planning , Minamisoma City
Minoru Tanaka	Director, Department of General Affairs Department, Minamisoma City
Yukio Sato	Director, Department of Civic Life, Minamisoma City
Masanori Watanabe	Director, Department of Economic Department, Minamisoma City

Source: Minamisoma City "Minamisoma City Decontamination Promotion Committee" meeting material (FY2014~FY2016)

Table 5-14 Recommendation of Decontamination Promotion Committee

Contents of recommendation
Promoting separation and recycling of removed soil, etc., generated from decontamination It is predicted that there will be as many as two million large container bags packed with removed soil, etc., generated by decontamination, and temporary storage sites have been set up at 51 locations in the city to store them in Minamisoma City. Large container bags are subject to deterioration and breakage due to long-term storage. Also land lease contracts for temporary storage sites may end up having to be considerably longer than originally contracted due to delays in the construction of Interim Storage Facility. As a result, it is an important task to eliminate a large amount of removed soil and temporary storage sites as early as possible. The committee proceeded with consideration of how to deal with these challenges to restore Minamisoma's beautiful environment to what existed before the accident. In Minamisoma City and elsewhere in Fukushima Prefecture, long-term measures and immediate measures are both needed to restore the environment to what it was before the accident, taking into consideration the situation of extensive contamination caused by radioactive substances. The city needs to prepare a road map based on citizens' requests, and implement both long-term and immediate measures. Based on surface dose rates, soil removed from the Intensive Contamination Survey Areas (outside a 20 km radius) and stored in temporary storage sites in Minamisoma City is estimated to have 30% of the total volume below 3,000 Bq/kg, 50% between 3,000 Bq/kg and 8,000 Bq/kg, and about 20% above that. Soil removed from Special Decontamination Areas (within a 20 km radius) and stored in temporary storage sites is estimated from surface dose rates to have 10% of the total volume below 3,000 Bq/kg, 20% from 3,000 Bq/kg to 8,000 Bq/kg, and about 70% above that.

As an immediate countermeasure, it is necessary to thoroughly control radiation in temporary storage sites with constant air and groundwater monitoring. In such cases, to the extent possible it is important to reduce the volume of combustibles by incineration. Meanwhile, as a short-term measure, based on observations of the behavior of radioactive cesium in soil in Fukushima Prefecture to date, it is believed that removed soil with relatively low concentrations can be recycled as a material for embankments in public works such as the Joban Expressway and coastal disaster prevention forestry projects in areas where long-term management is possible. This is because of the low possibility of leaking into groundwater and releases to the atmosphere by adsorption to fine grains.

When promoting recycling, it is essential to have proper separated treatment of the contents in the large container bags.

On the other hand, for removed soil with relatively high-concentrations, it is becoming possible to recycle material by separating and concentrating cesium.

Separation can be cited as one such technology. Based on the characteristic of cesium that it adheres easily to fine grains (silt and clay) in the soil, the soil can be separated into fine grains (resulting in higher concentration than before classification) and sand and gravel (resulting in lower concentration than before classification).

After the separation process, sand and gravel can be prepared and mixed as required by the purpose of recycling.

The second measure is heat treatment. After reaction accelerator is added to soil with relatively high concentrations (soil removed for decontamination), radioactive cesium is sublimated by heat treatment, and then recovered by cooling to 200°C or lower. Radioactive cesium is briefly volatilized and separated, then cooled and collected.

The heat treated soil becomes civil engineering material with extremely low radioactive concentration and the condensed radioactive cesium requires appropriate management

"Technology Development Strategy for Volume Reduction & Recycling of the Removed Soil" April 2016, MOE

For long-term environmental restoration, it is necessary for anything generated by reclaiming materials to have lower than 100 Bq/kg of clearance standards based on the Nuclear Reactor Regulation Act. The recycled materials below the clearance standard can be reused as general materials without requiring special management.

In a demonstration experiment at Warabidaira in Iitate Village, it was reported that the removed soil can be brought to a radioactive concentration below the clearance standard by using volume reduction technology based on separation and concentration technology.

(Summary of report of demonstration experiment at Warabidaira in Iitate Village, FY2016)

If volume reduction and recycling of these removed soils are realized, the prospects for treatment of

removed soil, etc., in Fukushima Prefecture as a whole will also be greatly improved, which will lead to a reduction of the area needed for Interim Storage Facility. Thus, it is necessary to have initiatives to utilize recycled materials produced by separation and heat treatment, and facilities to process them.

Separated and concentrated radioactive cesium needs to be stored in containers that have a shielding function, in preparation for being transported from Interim Storage Facility for disposal outside the Fukushima prefecture within 30 years.

Next, it is important to have this volume reduction and recycling materialization facility become a base for environmental recovery as a facility that is environmentally friendly and culturally appealing.

For example, an incineration facility in Meguro-ku, Tokyo has a park and cultural facilities in the vicinity of residential buildings, and also offers a service for returning benefits to residents as water heated by heat generated by waste treatment. Moreover, the facility accepts visits of residents.

It is also necessary to consider setting up treatment facilities in mountainous area where many removed soils with high doses are being stored.

In addition to considering the increase in traffic volume by truck transportation, it is essential to have a wide range of consultation with the residents, as well as securing the availability of roads for inbound and outbound transport, separate from the community roads.

Based on the above discussion, this committee proposes that the city take measures for sorting treatment of waste soil, etc., and treatment for recycling material, and requests the city to start discussions as soon as possible about measuring recycling materials.

Source: “Proposal of Committee on Promotion of Sorting and Recycling Processing of Removed Soils from Decontamination” (Minamisoma City Decontamination Promotion Committee, December 2016)

⑤ Katsurao Village

In Katsurao Village, the reconstruction committee held 12 times since 2011 and has also been considering decontamination.

Table 5-15 Implementation status of the "Reconstruction Committee " (Katsurao Village)

Year	No.	date	Venue	Main Agenda
FY2011	1st	December 7, 2011	Miharu Common Building	1. Proposal for "Katsurao Village Reconstruction Vision"(draft)
	2nd	December 19, 2011	Miharu Common Building	1. Reflecting the discussion results to "Katsurao Village Reconstruction Vision"
	3rd	January 12, 2012	Miharu Common Building	1.Summarize the "Katsurao Village Reconstruction Vision"
	4th	February 13, 2012	Miharu Common Building	1.Decision of the "Katsurao Village Reconstruction Vision"
	5th	March 19, 2012	Miharu Common Building	1. Reconstruction measures based on "Katsurao Village Reconstruction Vision"
FY2012	1st	May 17, 2012	Miharu Common Building	1.About "Reconstruction Plan (First)" draft
	2nd	November 14, 2012	Miharu Common Building	1.Summarize the "Reconstruction Plan (First)"
FY2013	1st	June 27, 2013	Katsurao Village Miharu Branch office	1. About the "Reconstruction Plan of Katsurao Village" 2. About decontamination plan 3. On the issue of reconstruction planning 4. On how to proceed with reconstruction planning based on villagers' intent
	2nd	November 20, 2013	Katsurao Village Miharu Branch office	1. On the progress of restoration project (report) 2. On the progress of decontamination (report) 3. Results of district councils etc. and how to proceed (Report) 4. About the project of reconstruction community development (explanation exchange)
	3rd	March 24, 2014	Katsurao Village Miharu Branch office	1. Outline of main point for Katsurao Village's reconstruction (draft) and exchange of opinions
FY2014	4th	May 30, 2014	Katsurao Village Miharu Branch office	1. About the "Katsurao Revitalization Strategy Plan (draft)" (explanation) · Positioning of the draft plan and future plans · Presentation of draft plan · Outline of results such as public comment and reflection policy 2. Opinions etc. on the proposed plan (exchange of opinions)
FY2015	1st	December 3, 2015	Katsurao Village Miharu Branch office	1. About the situation of reconstruction and restoration project 2. About "population vision"

<The Reconstruction Committee > (Honorific titles omitted)

Name	Affiliation
Kazunori Akutagawa	Professor, Fukushima College of Technology
Hisao Matsumoto	Chairman, Katsurao Village Administrative District Congress

Source: Katsurao Village "Katsurao Village The Reconstruction Committee " meeting material (FY2011~FY2015)

⑥ Kawamata Town

In Kawamata Town, there have been meetings of a verification committee on decontamination in the Yamakiya area, and a smart community promotion committee, etc. The verification committee on decontamination in the Yamakiya area held a total of six times since 2015, and recommendations were published in March 2016.

Table 5-16 Implementation status of the "Committee for the Verification of Decontamination" (Kawamata Town)

No.	Date	Venue	Main Agenda
1st	April 16, 2015	Kawamata Town Health Center Multipurpose Hall	1. Inside of evacuation area inspection 2. About the committee's schedule 3. Materials related to analysis and verification 4. Exchange of opinions on draft proposals for interim report
2nd	May 11, 2015	Kinki University Tokyo Center	1. Discussion on draft Interim Report
3rd	June 15, 2015	Fukushima Reconstruction Bureau Special Conference Room	1. About the Interim Report (draft)
4th	July 3, 2015	Kawamata Town Health Center Multipurpose Hall	1.About the Interim Report
5th	March 5, 2015	Kinki University Tokyo Center	1. About the wording that "If the farmland decontamination around the residential area is promoted, the dose reduction effect in the further residential area can be expected " 2. Overall Evaluation
6th	March 29, 2016	Kawamata Town Central Public Hall temporary 2nd conference room	1. About the Final Report

<The Committee for the Verification of Decontamination> (Honorific titles omitted)

Name	Affiliation
Tetsuo Ito	Professor, Atomic Energy Research Institute, Kindai University
Hirokuni Yamanishi	Professor, Atomic Energy Research Institute, Kindai University
Akihiko Kondo	Professor, Center for Environmental Remote Sensing, Chiba University.
Makoto Miyazaki	Assistant, Radiation Disaster Medical Center, Fukushima Medical University
Kazuo Imanishi	Associate professor, The Faculty of Economics and Business Administration, Fukushima University
Junichiro Tada	Director, Specific Nonprofit Corporation Radiation Safety Forum (RSF)

Source: Kawamata Town "Kawamata Town Committee for the Verification of Decontamination" meeting material (1^{st} ~ 6^{th})

Table 5-17 Recommendation of Committee for the Verification of Decontamination

Content of Recommendation
1. Realistic radiation protection map ・As routine methods of radiation protection, there are means such as every meal inspection of food ingredients, carrying a dosimeter at any time, but it is difficult to carry out in reality. First of all, voluntary protection by creating a large-scale radioactive contamination map and knowing the situation of pollution is efficient. For that purpose, it is necessary to have a system to continuously monitor the distribution of the air dose rate and the radioactivity concentration of foods. By collecting the measured results as "map of the area," residents can use it for radiation protection. Technically, the creation of this "map of the area" is established as a geographical information system (GIS), and it could be a powerful tool of radiation protection. As for the sharing and disclosure of obtained information, it is necessary to formulate a sufficient agreement to operate it. 2. Countermeasures against radioactivity in forests where people routinely enter - Requirements and possibilities ・From the traditional practical use of satoyama (community managed lands) in the Yamakiya area, there is a need to implement radiation control measures in the forest in order to restore the area, including livelihoods and agriculture. Because the forest is so extensive, it is necessary to have a mechanism to continuously implement countermeasures, including isolation and containment, by prioritizing according to the relationship with people's livelihood for each satoyama as the smallest unit of the living area, instead of uniform decontamination. It is necessary to consider careful measures in forest areas in order to make effective use of satoyama, which are an important part of livelihoods in mountain villages. 3. Consultation ・Although a certain dose reduction due to decontamination was confirmed, it takes some time for the complete recovery of the environment in the Yamakiya area. Therefore, a mechanism is necessary to respond to the questions, anxiety and concerns of residents in a straightforward manner until the achievement of the reconstruction of the Yamakiya area. From now on, various tasks are anticipated including the restoration of the business. It is necessary to secure experts who can provide appropriate advice on these problems and to promote realization of one stop service for various tasks under the cooperation system of the government and the district.

4. Accelerate environmental recovery on daily life

- There are several realistic issues with living in the Yamakiya area, which are clear from surveys of resident's opinions, etc. It is necessary to accelerate efforts based on these issues.
- About half of households whose representatives are in their 50s or older have an intention to return to the area. Considering this situation, it is necessary to think about how to restore the environment in daily life.
- When implementing projects aimed at restoring the environment of daily life, it is necessary to sufficiently listen to the residents' high intention requests for medical and welfare-related, housing-related, and commercial facility-related, and to proceed with resumption and maintenance systematically.
- Because temporary storage sites give anxiety and discomfort to many residents, they are hindrance to the returning intention of residents and business, especially farming resumption, so it is necessary to realize improvement including provisional relocation, removal, reduction of the sites as soon as possible, and to promote the development of agricultural infrastructure for resuming farming.
- It is desirable to arrange food radioactivity measurement equipment in Yamakiya area so that residents can measure whenever they want to measure. Moreover, it is desirable to prepare a system that can take intake measurements by whole body counter whenever concerned about the intake of radioactive cesium.

5. Measures for domestic and foreign markets

- Although five years have passed since the accident of TEPCO Fukushima Daiichi NPS, rumors still exist. When Yamakiya area products such as agricultural products are shipped, it is necessary to aim for realization a mechanism not to receive disadvantageous treatment in the market by cooperation with the national government etc.

Source: Kawamata Town Yamakiya District Verification Committee on Decontamination, etc. "Report of the verification committee on decontamination of Kawamata Town Yamakiya District" (March, 2016)

⑦ Namie Town

In Namie Town, meetings were held by the Committee for the Verification of Decontamination and the reconstruction plan formulation committee, etc. The Committee for the Verification of Decontamination held a total of eight times since 2016.

Table 5-18 Implementation status of the "Committee for the Verification of Decontamination" (Namie Town)

Year	No.	date	Venue	Main Agenda
FY2016	1st	June 3, 2016	Namie Town Office Nihonmatsu branch office	1. About Namie Town Decontamination Verification Committee 2. About decontamination situation in Namie Town 3. About future directions
	2nd	July 4, 2016	Namie Town Office conference room	1. About the decontamination implementation status of Kiyohashi district 2. Opinions about decontamination from districts About questions 3. Field inspection 4. Response to decontamination unaided person
	3rd	August 26, 2016	Namie Town Office conference room	1. About the decontamination implementation status in Namie Town (Namie-Town 6 areas) 2. Opinions and questions about decontamination from districts 3. Field inspection
	4th	October 21, 2016	Nihonmatsu Welfare Center	1. About the decontamination implementation status of the Gongendo area 2. Opinions and questions about decontamination from districts
	5th	November 14, 2016	Namie Town Office conference room	1. About the decontamination implementation situation in Namie Town (Karino/ Obori area) 2. Opinions and question about decontamination from districts
	6th	December 20, 2016	Namie Town Office Nihonmatsu branch office	1. About the progress and effectiveness of decontamination 2. Concerning specific measures for each issue 3. About the situation of decontamination etc. in Namie Town
FY2017	1st	June 19, 2017	Namie Town Office conference room	1. About Namie Town decontamination result report in FY2016 2. Investigation on the dynamics of the Forestry Agency due to the Jumanyama field fires
	2nd	August 21, 2017	Namie Town Office conference room	1. A survey on the dynamics of Fukushima Prefecture accompanying the Jumanyama field fires 2. On Namie East junior high school and about the situation of Namie Nijiiro nursery school

<The Committee for the Verification of Decontamination> (Honorific titles omitted)

Name	Affiliation
Junichiro Ishida	Senior Advisor, Japan Atomic Energy Agency
Tadashi Inoue	Honorary Advisor, Central Research Institute of Electric Power Industry
Hirofumi Tsukada	Vice Director, Institute of Environmental Radioactivity, Fukushima University
Shinji Tokonami	Professor, Institute of Radiation Emergency Medicine, Hirosaki University

Source: Namie Town "Namie Town Committee for the Verification of Decontamination" meeting material (FY2016~ FY2017)

⑧ Tomioka Town

In Tomioka Town, meetings were held by the Committee for the Verification of Decontamination, a community development review committee, and a life improvement committee, etc. The Committee for the Verification of Decontamination held a total of 11 times since 2015, and recommendations were published in October 2016.

Table 5-19 Implementation status of the "Committee for the Verification of Decontamination" (Tomioka Town)

No.	Date	Venue	Main Agenda
1st	September 1, 2015	Tomioka Town Office, Kuwano branch office	1. Outline report of Tomioka Town 2. Report on decontamination status in Tomioka Town 3. Confirmation on how to proceed with Tomioka Town decontamination verification committee
2nd	October 13, 2015	Tomioka Town Office (Health Center)	1. Pioneering Action Plan for Tomioka Town Reconstruction and Development 2. On the effect of decontamination in Tomioka Town 3. On the result of gamma ray visualization camera (interim report)
3rd	December 22, 2015	Tomioka Town Office, Koriyama office (annex)	1. About the Interim Report 2. Recommendations from the Committee 3. Matters to be considered by the verification committee (4th and later) 4. Results of the air dose rate survey (interim report)
4th	February 22, 2016	Tomioka Town Office, Kuwano branch office	1. On the verification of decontamination effect at the present time from the result of decontamination of residential area 2. About the contents of supplemental decontamination 3. About forest decontamination
5th	March 29, 2016	Tomioka Town Office	1. About Forest Decontamination 2. About the soil survey etc. carried out by the town 3. About dose map
6th	May 9, 2016	Tomioka Town Office	1. About the interim report (2nd) of Tomioka Town Decontamination Verification Committee 2. Results of decontamination in FY2015 3. About survey of dose etc. carried out by town
7th	September 1, 2016	Tomioka Town Office, Kuwano	1. Outline report of Tomioka Town 2. Report on decontamination status in Tomioka Town 3. Confirmation on how to proceed with Tomioka Town

		branch office	Decontamination Verification Committee
8th	August 9, 2016	Tomioka Town Office	1. About the implementation status of supplemental decontamination 2. About Tomioka Town Decontamination Verification Committee Report (draft) 3. Future dose prediction
9th	October 4, 2016	Tomioka Town Office, Koriyama office	1. Report from MOE 2. About the Decontamination Verification Committee Report
10th	December 27, 2016	Tomioka Town Office (Health Center)	1. Status of decontamination implementation in Tomioka Town
11th	March 17, 2017	Tomioka Town Office, Koriyama office	1. Confirmation of previous consideration (the 10th meeting minutes summary) 2. Progress of decontamination 3. About the last field survey (the 10th) 4. On radiation dose prediction 5. About Tomioka Town Decontamination Verification Committee schedule

<The Committee for the Verification of Decontamination> (Honorific titles omitted)

Name	Affiliation
Takeshi Iimoto	Associate Professor, Division for Environment, Health and Safety, The University of Tokyo
Tadashi Inoue	Advisor, Central Research Institute of Electric Power Industry
Reiko Fujita	Manager, Office for the Impulsing Paradigm Change through Disruptive Technologies Program, Japan Science and Technology Agency
Junichiro Ishida	Senior Advisor, Japan Atomic Energy Agency
Kencho Kawatsu	Project Professor, Faculty of Symbiotic Systems Science, Fukushima University

Source: Tomioka Town "Tomioka Town Committee for the Verification of Decontamination" meeting material (1^{st} ~ 11^{th})

Table 5-20 Recommendation of the Committee for the Verification of Decontamination

Content of Recommendation
1. Recommendations for safety and security of townspeople · Implementation and public announcement of radiation dose monitoring in town For the safety and security of the townspeople, it is necessary to continue carrying out air dose surveys and soil surveys in the town, and to make the results easy to understand, and publish them using the town press newsletter and website etc. · Construction of exposure dose management system It is important to utilize individual cumulative dosimeters etc., owned by the town, to carry out continuous radiation dose management of townspeople, and monitor health of the townspeople from long-term perspective. · Establishment of consultation desk and promotion of risk communication activities It is recommended to set up a consultation desk related to radiation, provide conscientious responses

from the perspective of townspeople.
It is important to hold periodically workshops or roundtable meetings, etc., on radiation to improve the knowledge of townspeople and to promote understanding.

Source: Tomioka Town Committee for the Verification of Decontamination "Tomioka Town Committee for the Verification of Decontamination Report" (October, 2016)

Column	"Verification by Tomioka Town Committee for the Verification of Decontamination" Mr. Kencho Kawatsu, member of committee

Tomioka Town is situated in the south to southwest within 20 km of the TEPCO Fukushima Daiichi NPS. Its area was 68.47 km^2, and population was 15,830 people (end of Mar. 2011). The entire town was forced to evacuate due to the nuclear power station accident.

The Tomioka Town Committee for the Verification of Decontamination was launched on September 1, 2015 when full-scale decontamination has begun. The purpose was to collect and review information on decontamination projects of MOE, consider if contamination was being reduced effectively, and to have the work analyzed and verified by the town's own initiative. Members of the verification committee were all experts on radiation. In addition, stakeholders from MOE, the Reconstruction Agency, Fukushima Prefecture and Tomioka Town participated as observers.

Although the committee received explanations from MOE on the implementation of decontamination works and exchanged opinions and verified things on-site, it was the common understanding of members that "discussions would take the townspeople's perspective."

There was a big gap between the thinking toward scientific safety versus feelings of security of the townspeople, but the discussion always considered how the townspeople think and feel, as well as listening to the opinion of the town authorities.

In the process the committee made urgent recommendations twice to Mr. Miyamoto, mayor of Tomioka Town.

The recommendation included that Habitation Restricted Areas (HRA) that were decontaminated and Areas where Returning is Difficult (ARD) that were not decontaminated were separated by a single road in residential areas, and during the period of consideration for lifting of evacuation orders, the residents adjacent to the ARD were likely to hesitate to return, so it is necessary to conduct a certain degree of decontamination work on areas adjacent to ARD. Also, there were places where high doses were locally found in previously decontaminated residential areas, so the re-decontamination of those places was requested.

With regard to these recommendations, Mayor Miyamoto made a request to MOE, and as a result, MOE is promoting decontamination projects based on the intention of the town authorities and residents, such as decontaminating 20 m from the living area of ARDs adjacent to HRAs.

The verification committee met nine times up to October 2016. It verified progress of decontamination work and verified the recommendations, and the summarized report was submitted to Mayor Miyamoto on October 4, 2016.

In this report, as a general review, the reduction of air dose rate by decontamination was confirmed to a considerable extent, and it was acknowledged that the recovery of the environment for the townspeople who wanted to return early was largely being done.

After that, this report was also reported to the "Tomioka Town Committee to Discuss Returning" organized by stakeholders in the town, and it became important material for the decision as a town to accept the lifting of the evacuation order in April 1, 2017.

Tomioka town lifted the evacuation order excluding the ARD on April 1, 2017, and the number of townspeople returning to Tomioka town is gradually increasing, coupled with the development of infrastructure and living environment

The Committee for the Verification of Decontamination will continue to discuss the following issues which are important for the townspeople.

- Issues affecting the lives of townspeople who have returned.
- Decontamination of farmland, irrigation ponds, and forests.
- Decontamination of ARD.

(2) Cooperation with Municipalities in Areas under Evacuation Orders (AEO), Responses and Explanations to Municipalities under the AEO (All members' council)

1) Purpose

Regarding decontamination, it was regarded as an important matter for the town under evacuation order, and discussion was held in the form of all members of the town council, rather than creating a committee.

At the all members' council, MOE provided explanations on proceeding with the decontamination, the implementation status and impacts, etc.

2) Contents and features of main discussion

At the all members' council, many reports were provided for the planning of the decontamination implementation, and report also covered the status of progress and results of decontamination, and the results of post decontamination monitoring and supplemental decontamination.

Reporting and discussions at the all members' council fostered local understanding and helped to promote an understanding of local circumstances.

As decontamination and discussions on the lifting of evacuation orders progressed, the all members' council often discussed decontamination as a part of discussions about the lifting of evacuation orders, along with infrastructure restoration and environmental improvements.

(3) Community Meetings and Briefing Sessions in Special Decontamination Areas

1) Purpose

In conducting decontamination, it is necessary to agree on the provision of temporary storage sites and decontamination implementation, so it is necessary to give local residents prior explanations to seek their cooperation and understanding regarding decontamination towards the lifting of evacuation orders, post decontamination monitoring, and supplemental decontamination, etc., so these were conducted in the form of direct dialogue with the residents at places of evacuation, etc.

2) Contents and features of main discussion

(a) Special Decontamination Areas

It was necessary both to promptly start decontamination, and to conscientiously explain to residents to obtain their understanding. Therefore, meetings were held several times in each area, and in some cases, held in areas where there were many evacuees.

The center of discussion at the beginning of the briefing sessions for residents was securing temporary storage sites. Initially, areas such as national forests were used through cooperation between governments, but various difficulties arose, including the amount of time required to prepare temporary storage sites, securing roads for transport, and the yield of storage amounts. As a result, there were examples of being able to accelerate decontamination work by returning to local residents seeking their cooperation to allow farmland to be utilized for temporary storage sites.

Also, in conducting decontamination, it was necessary to obtain individual consent from each landowner, but by explaining the decontamination method, etc., beforehand at community meetings, etc., it was

possible to shorten the time for individual consent acquisition. Through this, some municipalities made it possible to start decontamination quickly.

On the other hand, there are strict opinions such as unconvinced decontamination method, insufficient decontamination, reparation should be ahead, etc. In order to restore confidence for the government, not only by the staff in charge but also with the cooperation of risk communication experts a great effort was made to provide explanations. Similar to the discussions at meetings of the Committee for the Verification of Decontamination and the all-member council, community meetings also highlighted differences in demands in relation to different doses and regional circumstances. For example, the desire to have dam reservoirs dredged was strong in municipalities that have a dam, but residents were able to better understand the situation thanks to the efforts of municipalities and water management organizations responsible for ensuring water quality. Also, upon requests by owners of pastureland to plant their own seeds at the appropriate time and manage the pastures after topsoil removal, an enabling framework was created by providing compensation.

(b) Intensive Contamination Survey Areas

In Intensive Contamination Survey Areas as well, where it was decided that discussion with residents was necessary for the municipality to promote decontamination going forward, some municipalities held community meetings and explanatory meetings, similar to what was done in municipalities in Special Decontamination Areas. In one city, the decontamination schedule was decided in advance by holding a workshop-style decontamination implementation study meeting with the participation of the leaders of local community organizations, etc. Based on the schedule, residents' briefing sessions were held to obtain the understanding of residents for the decontamination plan in each area.

(4) Study Sessions held with the Cooperation of Four Cities

In 2014, three years after the earthquake disaster, it was confirmed that in addition to the effects of decontamination work, air dose rates had also declined due to physical decay and weathering effects.

On the other hand, some issues were pointed out, as follows:

(a) Implementation of decontamination and a reduction in the air dose rate have not necessarily led to the elimination of residents' anxiety. Especially, the idea that the numerical value of 0.23 μSv/h was the goal of decontamination had spread widely and was causing anxiety.

(b) The scope and method of decontamination may differ depending on the municipality, which is one reason for the sense of unfairness and distrust among residents.

(c) In order to further accelerate reconstruction, it is necessary for local governments' policy not to focus only on decontamination but also on environmental restoration and reconstruction.

For this reason, the government (MOE and Reconstruction Agency) and four cities (Fukushima City, Koriyama City, Soma City, and Date City) collaborated to obtain advice from experts and summarize the findings to date. A study group was organized to discuss opinions on decontamination and other aspects of radiation protection, and a discussion meeting with experts was held on June 15, 2014. On August 1, 2014, an "Interim report of the efforts of the four cities and the national government toward acceleration of decontamination and reconstruction" was issued. Based on the discussions and consultation of opinions at

the study meetings and meetings with experts, it compiled information on the effects of decontamination, the relationship between air dose rate and individual exposure dose, and the decontamination goals indicated by the government, and summarized the improvement of radiation protection focused on individual exposure doses, enhancing risk communication, resolving anxiety about reconstruction and environmental remediation, and the overall promotion of radiation prevention measures.

In addition, fact books were made that organized related findings with an interim report.

5.3.3. Verification by International Institutions

(1) IAEA International Missions and Experts Meetings

1) IAEA International Mission

The International Atomic Energy Agency (IAEA), an international organization, came to Japan in October 2011 to review decontamination work in Japan and provide advice. Its findings were summarized in the report "IAEA International Mission on Remediation of Large Contaminated Areas Off-Site the Fukushima Dai-ichi NPP."

The report covers 9 highlights of important progress and 12 points of advice.

Table 5-21 Examples of 9 fields showing important progress and 12 points of advice in "IAEA International Mission on Remediation of Large Contaminated Areas Off-site the Fukushima Dai-ichi NPP"

【Examples of nine highlights of important progress】

The team appreciates that Japan has been going forward very quickly and with the allocation of the necessary resources (legal, economic and technological) to develop an efficient programme for remediation to bring relief to the people affected by the Fukushima Daiichi nuclear accident. Priority has been given to children and to those areas where they typically spend most of their time.

- The Fukushima Decontamination Promotion Team, consisting of resident staff in Fukushima from the Ministry of the Environment (MOE), the Local Emergency Response HQs and the Japan Atomic Energy Agency (JAEA), shares information and coordinates with the relevant ministries and agencies, communicating with and providing technical support to the Fukushima Prefecture and relevant municipalities. The Team welcomes the Japanese efforts to establish a practical catalogue of remediation techniques.
- The team believes that using demonstration sites to test and evaluate various decontamination methods is a very useful tool to support the decision-making process.

【Examples of 12 points of advice】

- The Japanese authorities involved in the remediation strategy are encouraged to cautiously balance the different factors that influence the net benefit of the remediation measures to ensure dose reduction. They are encouraged to avoid over-conservatism which could not effectively contribute to the reduction of exposure doses. This goal could be achieved through the practical implementation of the Principles of Justification and Optimization under the prevailing circumstances. Involving more radiation protection experts (and the Regulatory Body) in the organizational structures that assist the decision makers might be beneficial in the fulfillment of this objective. The IAEA is ready to support Japan in considering revised , new and appropriate criteria.
- It is appropriate to consider further strengthening coordination among the main actors through the establishment of a more permanent liaison between the organizational structures of the Government of Japan and the prefectural and municipal authorities.
- Before investing substantial time and efforts in remediating forest areas, a safety assessment should be carried out to indicate if such action leads to a reduction of doses for the public. If not, efforts should be concentrated in areas that bring greater benefits. This safety analysis should make

use of the results of the demonstration tests.

2) IAEA International Follow-up Mission

In October 2013, an international follow-up mission team came to Japan for the main purpose of evaluating the progress of the on-going remediation works achieved since the previous mission in October 2011. The report was published on January 23, 2014.

Table 5-22 Example of 13 items highlighting important progress and eight points of advice in "The Follow-up IAEA International Mission on Remediation of Large Contaminated Areas Off-site the Fukushima Daiichi Nuclear Power Plant"

【Examples of 13 highlights of important progress】

- The Team acknowledges the institutional arrangements implemented by Japan to address the remediation needs of the areas affected by TEPCO's Fukushima Daiichi NPP accident. The Team appreciates that Japan makes enormous efforts to implement the remediation programme in order to reduce exposures to people in the affected areas, to enable, stimulate and support the return of people evacuated after the accident, and to support the affected municipalities in overcoming economic and social disruptions. The review Team recognizes the involvement of a wide range of ministries and agencies, as well as institutions of the municipalities, to support remediation by providing financial resources, technical guidance and institutional assistance.
- The Team welcomes the critical evaluation of the efficiency of the removal of contaminated material compared with the reduction in dose rate offered by different methods of decontamination, recognizing that this is an important tool in the application of decontamination methods. In addition, the Team notes a welcome change from guiding remediation efforts based on surface contamination reduction, to a reduction in air dose rates. This is leading some municipalities to conclude that an additional 1 mSv/y is more applicable to long-term dose reduction goals.
- The Mission Team found significant progress in the development and implementation of temporary storage facilities by municipalities and the national government for contaminated materials generated by on-going remediation activities. In addition, the Mission Team notes the progress made towards the establishment of Interim Storage Facility by the national government with the cooperation of municipalities and local communities.

【Examples of 8 points of advice】

- Japanese institutions are encouraged to increase efforts to communicate that in remediation situations, any level of individual radiation dose in the range of 1 to 20 mSv/y is acceptable and in line with the international standards and with the recommendations from the relevant international organizations, e.g. ICRP, IAEA, UNSCEAR and WHO. The appropriate application of the optimization principle in a remediation strategy, and its practical implementation, requires a balance of all factors that influence the situation, with the aim of obtaining the maximum benefit for the health and safety of the people affected. These facts have to be considered in communication with the public, in order to achieve a more realistic perception of radiation and related risks among the population. The Government should strengthen its efforts to explain to the public that an

additional individual dose of 1 mSv/y is a long-term goal, and that it cannot be achieved in a short time, e.g. solely by decontamination work. A step-by-step approach should be taken towards achieving this long-term goal. The benefits of this strategy, which would allow resources to be reallocated to the recovery of essential infrastructure to enhance living conditions, should be carefully communicated to the public. The IAEA – and very likely also the international scientific community – is ready to support Japan in this challenging task.

3) Director's Report on Fukushima Daiichi Accident

On August 31, 2015, the IAEA published the final report of the Director General that summarizes TEPCO Fukushima Daiichi nuclear accident. For the restoration of the off-site environment affected by the accident, the following summary has been prepared.

Table 5-23 Summary of "Director General's Report on the Fukushima Daiichi Accident"

- The long term goal of post-accident recovery is to re-establish an acceptable basis for a fully functioning society in the affected areas. Consideration needs to be given to remediation of the areas affected by the accident in order to reduce radiation doses, consistent with adopted reference levels. In preparing for the return of evacuees, factors such as the restoration of infrastructure and the viability and sustainable economic activity of the community need to be considered.
- Prior to the Fukushima Daiichi accident, policies and strategies for post-accident remediation were not in place in Japan, and it became necessary to develop them in the period after the accident. The remediation policy was enacted by the Government of Japan in August 2011. It assigned responsibilities to the national and local governments, the operator and the public, and created the necessary institutional arrangements for the implementation of a coordinated work programme.
- A remediation strategy was developed and implementation began. The strategy specifies that priority areas for remediation are residential areas, including buildings and gardens, farmland, roads and infrastructure, with emphasis on the reduction of external exposures. External dose from radionuclides deposited on the ground and other surfaces is the main pathway of exposure. The remediation strategy is therefore focused on decontamination activities to reduce the levels of radiocesium present in priority areas, thereby reducing the potential for such exposures. Internal doses continue to be controlled by restrictions on food, as well as through remediation activities on agricultural land.
- Following the accident, the authorities in Japan adopted a 'reference level' as a target level of dose for the overall remediation strategy. This level was consistent with the lower end of the range specified in international guidance. The application of a low reference level has the effect of increasing the quantity of contaminated materials generated in remediation activities, and thereby increasing the costs and the demands on limited resources. The experience obtained in Japan could be used in developing practical guidance on the application of international safety standards in post-accident recovery situations.
- Two categories of contaminated areas were defined on the basis of additional annual doses estimated in the autumn of 2011. The national Government was assigned responsibility for formulating and implementing remediation plans in the first area (the 'Special Decontamination Area') — within a radius of 20 km of the TEPCO Fukushima Daiichi site and in areas where additional annual doses

arising from contamination on the ground were projected to exceed 20 mSv/y in the first year after the accident. The municipalities were given responsibility for implementing remediation activities in the other area (the 'Intensive Contamination Survey Area'), where the additional annual doses were projected to exceed 1 mSv/y but to remain below 20 mSv/y. Specific dose reduction goals were set, including a long term goal of achieving an additional annual dose of 1 mSv/y or less.

4) IAEA-MOE Experts Meeting on Environmental Remediation

The MOE received experts from the IAEA and conducted total four expert meetings up to November 2017, in order to effectively implement environmental remediation efforts such as decontamination, to obtain knowledge and advice from international and professional perspectives, and to share the experiences of Japan with the international community.

After each meeting, a summary report was published by the IAEA, and the summary of the meeting and recommendations on future environmental recovery activities of affiliated authorities in Japan were made.

Table 5-24 Implementation status of IAEA-MOE Experts Meeting on Environmental Remediation

No.	Date	Major agenda
1st	February 2016	· Environment recovery in Fukushima Prefecture and neighborhood after TEPCO nuclear power station accident · Status of examination concerning volume reduction and recycling technology etc. of decontamination soil · About treatment of designated waste · "Report on decontamination" (prepared in FY2014)
2nd	November 2016	· Environment recovery in Fukushima Prefecture and neighborhood after TEPCO nuclear power station accident · Status of examination concerning volume reduction and recycling technology etc. of decontamination soil · Knowledge management on environment recovery (knowledge management)
3rd	April 2017	· Environment recovery in Fukushima prefecture and neighborhood after TEPCO nuclear power station accident · Lessons learned from environmental conservation (1) - What does the data in Date City speak? · Lessons learned from environmental conservation (2) - How should the effect of full-scale decontamination be evaluated? · Lessons learned from the environment (3) - How to share relevant technologies and lessons to the international community。
4th	November 2017	· Latest status of environmental recovery activities and plans for the future · Lessons learned from environmental recovery activities (Decontamination business magazine) · Communication of local stakeholders in the decision making process and environmental restoration activities to the international community · Follow-up the recommendations of the IAEA experts at the 3rd expert meeting

After each meeting, the summary report was made public by the IAEA, summarizing the results of the meeting and recommendations for relevant Japanese authorities on future environmental recovery activities.

Table 5-25 Summary Report of the 3rd IAEA-MOE Experts Meeting on Environmental Remediation (excerpt)

- The overall process of environmental remediation was strongly influenced by interactions with stakeholders to facilitate the return of evacuees to their homes and the provision of sustainable living conditions.
- A broad range of techniques were used in the remediation strategies according to the specific objects being decontaminated (e.g., houses and buildings, gardens, roads, schoolyards, farmlands, forests).
- The IAEA team concluded that MOE has made significant progress with the remediation in the offsite areas affected by the accident, and that steady progress on the ISF construction and soil/waste transportation to this facility has been made. The milestone, namely, the completion of the "full-scale" decontamination in the SDA was achieved by MOE, and because of this achievement, many municipalities in the SDA have had their evacuation orders lifted.
- The remediation process in the ICSA was implemented by the municipalities with the support of MOE. In this regard, the accumulated experience and the ways of remediation work might have differed from municipality to municipality depending on prevailing circumstances in each of them.
- The IAEA team views that it is important for MOE to continue its efforts to share its experience of the "full scale" decontamination with both national and international communities through developing a series of decontamination reports.
- Immediately after the accident, the mayor of Date City, with the support of the local community, decided to use municipality funds to implement immediate remediation works to protect the citizens from exposure to ionizing radiation and to promote the return of the citizens to their normal lives as soon as possible. The decisions were made in the absence of pre-established laws or guidelines. The creation of the first Temporary Storage Site took place in October 2011 after an intense process of engagement with the technical experts (invited by Date City) and local stakeholders. At the present moment, there are 50 Temporary Storage Sites totaling 29 ha in inhabited areas.
- The IAEA team is of the opinion that experience accumulated by the municipalities regarding the engagement with the communities and interaction with the national government is of high relevance to illustrate practical aspects of stakeholder-related issues in a mass scale remediation effort after a major nuclear accident.
- The IAEA team believes that the remediation efforts implemented in Date City, in particular, the early initiation of the decontamination of the school yards and houses are worth being highlighted. In this respect, the IAEA team notes that the Mayor's leadership and support from members of the public were the important factors that together contributed to the expedient implementation of protective and remedial actions.
- There were some key aspects of the remediation programme in Date City, such as: an objective to return to normal life as soon as possible being shared among the Mayer, municipal government and

the citizens; the active role of the Decontamination Promotion Centers; the direct involvement of trusted and recognized experts; and the availability of financial resources within the local budget.

- It was also reported by the officials of Date City that the municipality faced various challenges to implement the remediation works, including the lack of proper national remediation policy and response framework; the influence of sometimes contradicting information in mass media; and the lack of practical experience in remediation and management of large volumes of the residual radioactive materials.
- The MOE explained that it would continue to manage the removed soil and to monitor the effects of remediation, and, whenever necessary, implement supplemental remediation and measures for reducing radiation doses in forests
- It would be more useful if the data of different cities (under different circumstances) could be presented, so that a better understanding of the variability in the effectiveness of the work done could be captured and subsequently analyzed.
- The classification of the amounts of soil according to the radioactivity concentration intervals was based on information about where the soils came from and not on individual determinations of the radioactivity concentration of the materials contained in each bag. It is advisable to consider the adequateness of establishing straightforward procedures for sampling and analyzing soils in the bags.
- Reduction in ambient dose rates did not necessarily lead to proportional reductions in individual doses, due to variability in the living habits of citizens in the affected areas and the spatial distribution of the contamination.
- The IAEA team emphasized the need to consider individual doses, as measured with personal dosimeters, to support remediation decisions. It would be appropriate to recommend an optimized monitoring programme to follow the behavior of the affected media (soil, vegetation, etc.).
- The IAEA team learned from the experience of the "Investigation Committee" created by Tomioka Town to examine and verify the results of remediation works carried out by MOE in that municipality. The Japanese presenter explained that, upon return, the evacuees would likely resume their normal activities, including farming and the consumption of locally produced food items.
- In all actions implemented by MOE, the stakeholder engagements were an essential part of the remediation process. Many of the decisions were driven by the stakeholders, especially in the Intensive Contamination Survey Areas where the municipalities were in charge of remediation. Some of the adopted decisions are being reconsidered by the stakeholders in terms of their appropriateness
- The IAEA team noted that it would be helpful for MOE to assess the overall practices of stakeholder engagement in the decision-making process and extract important lessons learned. If considered appropriate, reorient future practices accordingly, especially during the repopulation of the evacuated areas and continuous remediation to reach the long term clean-up goal.
- It is evident that progress is continuously being made with the remediation activities in Japan, and a milestone for completing the planned decontamination has been met on the timescales originally foreseen. Major challenges remain in the future management of the decontamination wastes and soils.

(2) Framework of Bilateral Cooperation

Japan has arrangements with the United States, United Kingdom, France, Ukraine and Belarus through bilateral agreements and joint declarations signed at bilateral summits, regarding strengthening cooperation when Japan is engaged in decontamination and reactor decommissioning. For each bilateral partner, Japan holds meetings with government officials and experts participating about once a year.

Each time, MOE also dispatches personnel to share information with these countries on progress and prospects on decontamination and interim storage projects as well as experience and knowledge gained through these projects.

With regard to the United States, three experts from that country were hosted by MOE in Japan in February and March 2013, as part of cooperation on decontamination.

The three experts visited decontamination sites and related organizations and received information on the current status of decontamination in Japan. They also provided expertise and advice based on experiences in the U.S.

In addition, in July 2013, a “Japan-US Workshop” was held with the aim of sharing the latest technology and knowledge between Japan and the United States, for the purpose of future use for decontamination, etc. The government officials and experts from Japan and the US shared knowledge and exchanged views on themes such as the behavior of cesium in the environment, stakeholder communication, monitoring and data management, and decontamination and environmental restoration processes. The findings obtained here were reported at the Committee on Environmental Remediation in August of the same year and were utilized for examining policies for decontamination.

5.3.4. Situation After Decontamination

(1) Individual Exposure Dose

In Fukushima City, starting in FY2011, municipalities have been ascertaining radiation doses from personal dosimeters, mainly for children and pregnant women.

The annual individual dose is decreasing from year to year, and about 99.4% [45] (sample size about 3,000 persons)in Fukushima City were found to have a rate of 1 mSv/y or less in FY2017.

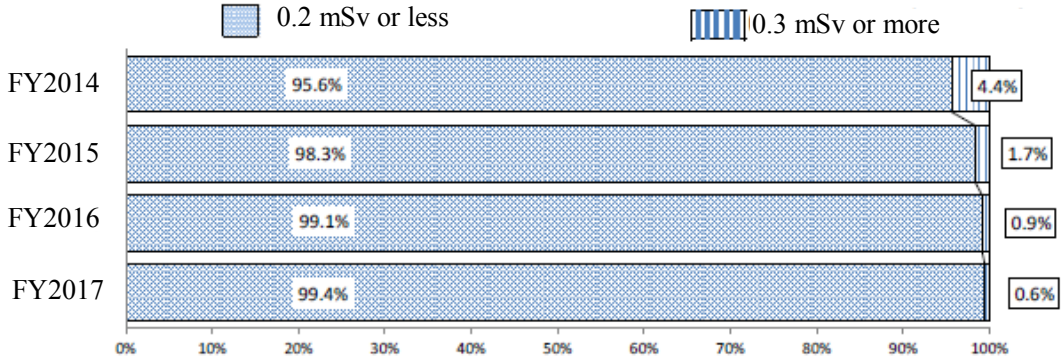


Figure 5-34 Annual trend in 3-month additional exposure dose for all ages [45]

(2) Current Situation and Safety in Fukushima

1) Measures against radioactive substances in drinking water and well water

① Tap water

Regarding tap water, the World Health Organization (WHO) indicates a guidance level for radioactive substances in drinking water, and Japan uses the same control target value of 10 Bq/L (total of 134Cs and 137Cs).

Currently, tap water is inspected for radioactive substances by each water supplier, and according to monitoring inspection results[46] so far, radioactive cesium exceeding 10 Bq/L has not been detected in tap water (purified water) since June 2011, and not in raw water since May 2011.

In addition, radioactive cesium was detected in dam reservoir sediment, which raised concerns about tap water safety.

For example, at the Koyama Water Purification Plant managed by the Futaba Regional Water Supply Corporation, monitors radioactive substances, and no radioactive substances have been detected from purified water to date.

② Well water

According to an urgent survey[47] conducted on groundwater in the affected areas in Fukushima Prefecture, neither radioactive iodine (131I) nor radioactive cesium (134Cs, 137Cs) were detected.

Also, from the measurement results[48] of radiation monitoring action plans for Preparation Areas for

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[45] Fukushima Prefecture, “FY2017 Summary of Fukushima City Glass Badge Measurement Result” (March, 2018).

[46] Fukushima Reconstruction Station "Drinking water monitoring result / related information"(http://www.pref.fukushima.lg.jp/site/portal/ps-drinkingwater-monitoring.html)

[47] MOE "Measurement results of radioactive substance concentration in monitoring survey of groundwater quality in Fukushima Prefecture (1st report - 4th report)" (June 21, July 7, July 14, August 4, 2011)

[48] MOE, “Radioactive Substance Monitoring Action Plan.” (http://www.env.go.jp/jishin/monitoring/actionplan.html)

Lifting of Evacuation Orders (FY2012, drinking well water, etc., in Minamisoma City, Tamura City), radioactive cesium was not detected exceeding a reference value (10 Bq/L) from the drinking wells.

③ Stream water

It was decided to strengthen the monitoring of stream water used by residents in Special Decontamination Areas in the report of "On the immediate arrangement of future decontamination methods in forests" (September, 2012 Committee on Environment Remediation), so a monitoring survey of radioactive substances in stream water[49] was started for the purpose of confirming safety starting in December 2012.

Radioactive cesium exceeding the target value (10 Bq/L) of drinking water has not been detected in stream water since September 2013.

Figure 5-35 Example of sampling point of stream water (Iitate Village)

2) Thorough food inspection system

Considering dietary habits and population age in Japan, the standard value of radioactive materials in food is set lower than in Western countries as a value to ensure safety regardless of what kind of food, and thorough examination is carried out so as not to distribute foods that exceed standards.

Standard value of radioactive cesium in food

	Japan Standard (.2012.4~)	Codex Alimentary Commission	EU	USA	Korea
Drinking water	10	1,000	1,000	1,200	370
Milk	50	1,000	1,000	1,200	370
Food	100	1,000	1,250	1,200	370
Baby food	50	1,000	400	1,200	370

unit: Bq/kg

Figure 5-36 Standard value for food safety

Source: MOE, National Institute of Radiological Sciences "Unified basic data on radiation health effects, etc. Part I Basic knowledge of radiation and health effects (2014 revised edition, edition July 2015)

[49] MOE " Monitoring results of stream water" http://www.env.go.jp/jishin/monitoring/results_r-mr.html)

Fukushima Prefecture constructed systems that allow only safe agricultural, forestry and fishery products to be distributed and consumed by conducting emergency environmental radiation monitoring such as agricultural, forestry and fishery products by national guidelines, and inspection of radioactive substances of agricultural, forestry and fishery products including full inspection of rice bags.

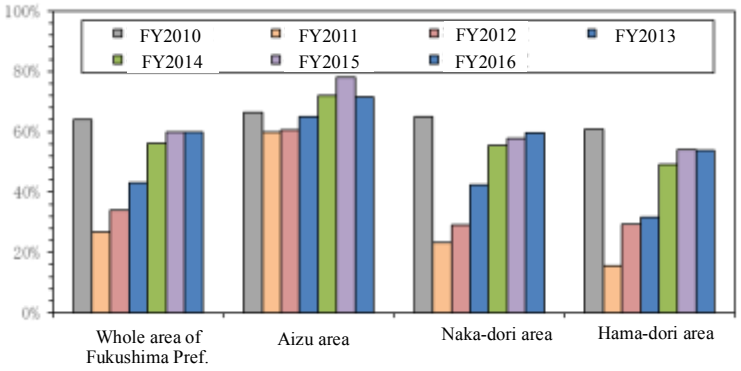
According to the results of over 10,000 monitoring tests of vegetables, fruits, livestock, and the inspection of more than 400,000 bags of brown rice in FY2016, nothing exceeded the regulated standards except for one case of vegetables and· fruits, one case of wild vegetables and mushrooms, and two cases of fish from rivers and lakes.

Figure 5-37 Example of inspection result of radioactive materials of agricultural, forestry and fishery products

Source: Fukushima Prefecture 'History of Fukushima Reconstruction' Summary Edition <21st Edition> '(November, 2017)

Explanation	Changes in public perception of the safety of the air and water environment in Fukushima Prefecture

According to public opinion polls conducted by Fukushima Prefecture, it is becoming clear that public perceptions about the safety of the water and atmospheric environment are recovering to levels that existed before the TEPCO Fukushima Daiichi NPS accident, although there were some differences in perception depending on the region.



The Fukushima Prefectural opinion polls asked, “Do you think that a safe living environment is secured with respect to environmental pollution such as water and the atmosphere where you live?” Graph shows the percentage of respondents answering “Yes” or “Somewhat yes” (respondents under 20 years of age and non-responses are excluded).

Note that the bar for FY2010 indicates survey results before the Great East Japan Earthquake.

Source: Fukushima Prefectural Center for Environmental Creation

5.4. Risk Communication

5.4.1. Risk Communication Initiatives

Risk communication involves mutual communication with all stakeholders, such as citizens, industry, government, etc., and its purpose is not to convince others to accept one's own opinion.

Also, it is not necessarily intended to result in consensus among all parties concerned. Rather, risk communication is a process of deepening trust and understanding.[50]

Decontamination, etc., can be better promoted with an understanding and the cooperation of not only landowners and other stakeholders, but also local residents, municipal councils, administrative districts, and mayors, etc.

It was also important to pay particular attention to the media response that may affect it.

The MOE and municipalities both worked on risk communication in Special Decontamination Areas, and the municipalities did so in Intensive Contamination Survey Areas.

It was decided to hold explanatory meetings for residents, etc., at each stage of formulation of decontamination implementation plans, Temporary Storage Site selection, monitoring, decontamination implementation, control of removed soil, etc., and verification of effectiveness, etc. There was repeated dialogue with the residents. Depending on the scale and contamination situation of municipalities, and depending on the municipality, explanatory meetings for residents, plus round-table meetings, and workshops, etc., were carried out more than once a week and more than 100 times a year, using weekday evenings and weekends.

Selection of the Temporary Storage Sites was the biggest challenge in radiation risk communication, but it was a valuable experience for the communities to promote decontamination, since the government and the residents shared issues with each other, established relationships to cooperate in the selection of candidate sites, and monitoring of temporary storage sites, etc.

The Decontamination Information Plaza (now the Environmental Regeneration Plaza) was established in January 2012 as a base for accurate information on radiation and decontamination, jointly by MOE and Fukushima Prefecture, and its management was entrusted to a private company.

It could conduct projects such as public relations relating to decontamination and the dispatch of experts in a different position from the government, and take on the role of experts, facilitators, etc., in risk communication.

Below is an introduction of the details of what was implemented by the national government, prefecture, etc., as systems to support risk communication implemented on site by cities, towns and villages, etc., plus information tools created for risk communication.

Since the circumstances surrounding radioactive contamination countermeasures (decontamination), including the understanding and anxiety about radiation have been changing since the occurrence of the accident in March 2011 to the present, for the sake of convenience, the description of the societal situation surrounding radiation and responses to it are divided into stages based on the period of the decontamination work.

・Emergency Response Period ~ Preparation Period for Decontamination (from TEPCO Fukushima

[50] MOE "Chemical Substance Advisor Certification Review Text (2008 version)"

Daiichi Nuclear Power Station Accident to enforcement of the Act on Special Measures: from March to around December 2011)

Areas under Evacuation Orders were set up and concern about the radiation of the whole prefecture continued, it was thoroughly requested to provide basic and correct information on radiation to reduce anxiety.

・Decontamination Initial Period ~ Decontamination Promotion Period (from after the Act on Special Measures enforcement to Revision of Decontamination Implementation Plan: from January 2012 to December 2013)

Full implementation of the Act on Special Measures, review of Areas under Evacuation Orders, and formulation of Decontamination Implementation Plans, etc., were conducted and preliminary decontamination, whole area decontamination, securing Temporary Storage Sites, etc., were started.

・ Decontamination acceleration period (previous term) (from after revision of decontamination plan to Lifting of Evacuation Orders started: from January 2014 to around September 2015)

In Special Decontamination Areas, the workers engaged in decontamination peaked at an average of about 20,000 per day from the summer to fall of 2014.

Reorganization of Areas under Evacuation Orders, etc., was carried out, pilot transportation, etc., to Interim Storage Facility, etc., started.

・ Decontamination acceleration period (late stage) (From Lifting of Evacuation Orders start to Completion of whole area decontamination: from October 2015 to around March 2017)

Whole area decontamination of the municipalities in some Areas under Evacuation Orders was completed and the return of residents began.

・ Supplemental period after decontamination (from end of whole area decontamination onward: from April 2017 to date)

In Special Decontamination Areas, whole area decontamination was completed, and evacuation orders were lifted in nine municipalities that were under evacuation orders, excluding Areas where Returning is Difficult.

In Intensive Contamination Survey Areas, decontamination was completed in most areas.

(1) Emergency Response Period to Decontamination Preparation Period

(From the accident to enforcement of the Act on Special Measures: from March to around December 2011)

1) Societal situation surrounding decontamination and radiation

In the first experience of having to cope with radioactive substances and radiation released into the environment, confusion occurred due to contradictory information or the lack of information provided to society and residents.

Also, since the reliability of the radiation measuring instruments was not necessarily high, there was confusion, including a lack of confidence in measurement results from the national and prefectural governments.

Therefore, it was important to properly communicate the situation of the radiation in the environment, such as how people were affected, how to protect oneself from released radioactive substances, and how to remove radioactive substances, and there was a need to promptly provide information and take countermeasures against such things through trial and error in various places.

In particular, prefectural officials, municipal officials, districts, chairpersons of neighborhood associations, etc., who were in direct contact with the residents, conducted vigorous explanations on the current situation and provided advice for reducing radiation exposure to residents through explanatory meetings, etc., referring to the information from the national government / prefecture or the opinions of experts who have personal connections, without sufficient information themselves.

Prior to the start of full-scale decontamination work by the national and local governments, it was necessary to arrange and provide methods for reducing the radiation dose with details that can be implemented by residents and volunteers who wanted to support Fukushima.

2) Main efforts

(a) Establishment of call centers

In December 2011, MOE opened call centers in Tokyo and Fukushima in order to respond to inquiries concerning decontamination and waste from the people in and outside of the disaster area.

In order to promptly and uniformly respond to various inquiries, a system was set-up to respond by using a Q & A manual and report the contents of the response to MOE by daily report.

Immediately after the establishment of the call centers (from opening in December 2011 by March 31, 2012), there were 2,233 inquiries ranging from decontamination, radiation, and air dose, to disaster waste.

From June 2017, it has been operating as the “Contact Desk for Decontamination and Interim Storage Facility.”

(b) Other efforts

Fukushima Prefecture compiled information necessary for decontamination work, etc., as “Guidelines” and disseminated information so that prefectural residents themselves can decontaminate living spaces close to schools such as school routes.

In addition, a regional dialogue forum was held in collaboration with the Atomic Energy Society of Japan and various cities in the prefecture in order to resolve residents’ anxieties and doubts concerning

radiation influences and decontamination, and to foster safety and security.

Fukushima Prefecture dispatched experts, etc., to gatherings at neighborhood associations, etc., as support for holding explanatory meetings for residents from October 2011 onward.

In Intensive Contamination Survey Areas, municipalities conducted explanations on decontamination.

Each municipality responded to questions about radiation, provided basic information on radiation, explained the situation of radiation dose, gave advice for radiation protection, and promoted the understanding of radioactive materials released into the environment and their countermeasures (decontamination), through explanatory meetings for residents, etc., while referring to information from the national government and prefecture, opinions of experts, etc.

Table 5-26 Main information providing tool list during emergency response period to decontamination preparation period

Publisher	Name of tool	Overview		First production date
Fukushima Prefecture	"Guidance on countermeasures against radiation dose reduction in living space" (overview brochure, detailed version)		A brochure compiled in an easy-to-understand manner so that it can be utilized for decontamination work of familiar living space so that the residents can decontaminate themselves.	July 2011

(2) From Decontamination Commencement Period to Decontamination Promotion Period

(From the enforcement of the Act on Special Measures to the revision of the Decontamination Implementation Plans: from January 2012 to around December 2013)

1) Societal situation surrounding decontamination and radiation

Full implementation of the Act on Special Measures, review of Areas under Evacuation Orders, and formulation of Decontamination Implementation Plans, etc., were conducted, and preliminary decontamination, whole area decontamination, securing temporary storage sites, etc., were started. Under such circumstances, it was important to explain decontamination about method, removal soil treatment, storage (temporary storage sites), etc. Regarding radiation it was necessary to explain the dynamic behavior of radioactive cesium in the environment in an easy-to-understand manner and provide information, easy to understand, based on their structure, measured data, dynamics of radioactive cesium, etc. to a wide target for responding questions and anxiety about the safety of temporary storage sites that is how much radiation effect to the air and groundwater by the construction. It was necessary to deal with the concern about improper decontamination.

Table 5-27 Main comments heard at Decontamination Information Plaza (2012)

- When will my house be decontaminated? I want it to be decontaminated sooner.
- There is a high dose spot in my neighborhood. Please remove it promptly.
- I understand the necessity of decontamination, but I do not want the temporary storage site to be constructed a nearby my house.
- How far along is the decontamination now?
- What is thinking of decontamination of forests and rivers?
- How will the decontamination be done in each municipality?
- How many years will decontamination take?
- Why is it different in progress among each municipalities?
- Is there any decontamination method that we can do ourselves by learning the basics about decontamination and radiation?
- At school, decontamination including replacement of soil in the schoolyard has been completed, but what should be done about trees?
- For decontaminating the route to school by the community, I want guidance and advice.
- How long will it take to decontaminate a house?
- I would like you to disseminate more publicity and information about the progress of decontamination.
- I would like you to transmit more about correct knowledge information regarding radiation.

And so on

Table 5-28 Main comments heard at Decontamination Information Plaza (2013)

- I think that young people will not return home even after decontamination.
- Decontamination seems to be ineffective, so I think I will refuse decontamination of my home. Is it really effective?
- I am watching to see the air dose in Fukushima every day on television, and it exceeds 1 μSv/h every day, so decontamination has no effectiveness.
- I am afraid the water from decontaminating of the roadside gutters is flowing downstream and contaminate rivers and the sea.
- I am afraid the radioactive cesium blows from mountains, not decontaminated, and re-contaminates the area.
- Regarding progress of the decontamination under the direct control of the government, acquiring consent has been taking time.
- Decontamination in each municipality has not advanced much.
- I've heard that decontamination is not progressed because the places for temporary storage sites cannot be found.
- It seems that decontamination of areas where municipal government and residents get along well is progressing.
- I've heard that there is lack of decontamination workers.
- It is strange that the decontamination method is different from each municipality in Fukushima Prefecture. The government should decide the most complete way, and it should be done uniformly under the responsibility of the government.
- The degree of contamination in Fukushima don't have to be required decontamination. This should be strongly publicized. You should focus on education.
- The national government should take the responsibility to more strongly publicize the safety of Fukushima.

And so on.

2) Main efforts

① Establishment of Decontamination Information Plaza

In collaboration with Fukushima Prefecture, MOE opened "Decontamination Information Plaza" (DIP, now the Environment Restoration Plaza ERP) in January 2012 near Fukushima Station for the purpose of providing accurate and up-to-date information on decontamination and radiation promptly and clearly, and established a steering committee consisted of experts.

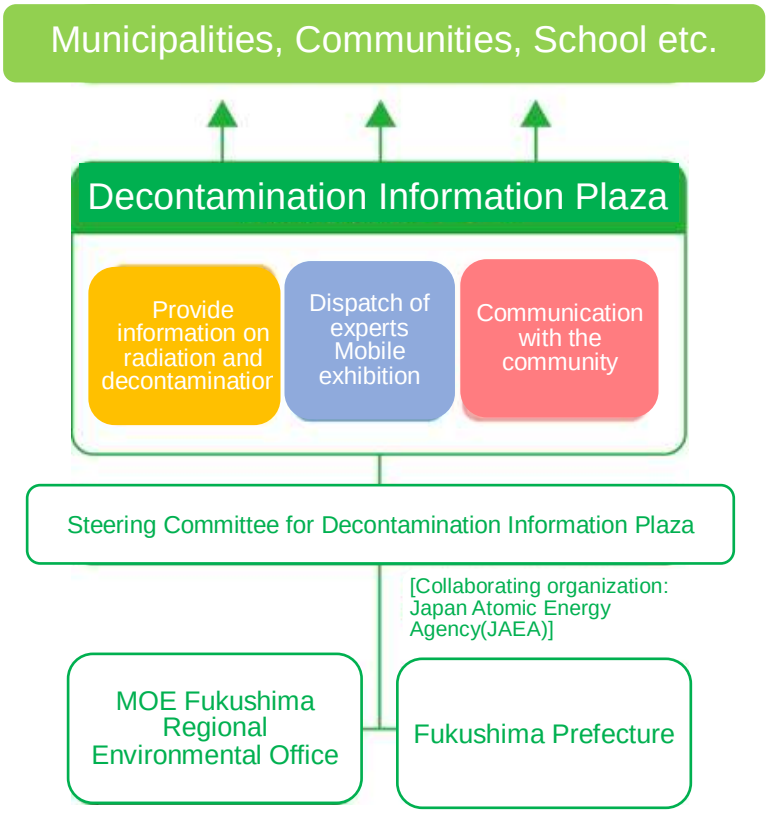


Figure 5-38 Structure of the Decontamination Information Plaza

The Plaza began efforts to promote communication with the community through various activities. For example, it provided displays and materials on decontamination and radiation; organized workshops and discussion meetings; dispatched experts to local governments and local communities; provided support to local governments engaged in decontamination to explain things to residents; and responded to inquiries from the community.

For the general public and businesses, as well as prefectural, municipal and educational personnel, the Plaza also started to make presentations on radiation and decontamination, provide on-site advice, offer movable displays, and promote the exchange of opinions (Positive Cafe) by residents and local non-profit organizations. It also prepared and distributed publications entitled “For Volunteers Participating in Decontamination” to answer concerns of volunteers.

Experts from the Cleanup Subcommittee of the Atomic Energy Society of Japan volunteers on weekends and holidays, totaling a cumulative 800 volunteers from March 2012 to the end of 2017.

The Plaza also interviewed people involved in decontamination and other Fukushima recovery efforts, and published the “Decontamination Activity Report.”

Figure 5-39 Example of "Decontamination Activity Report"

Currently, through exchanging opinions with local governments in the prefecture, the Plaza is fulfilling the function of sharing and developing good practices related to decontamination with other local governments and provides materials and information necessary for municipalities to explain decontamination to residents, and has been supporting in public relation to explain decontamination and understanding of radiation.

In addition, as the decontamination work progresses, the information necessary for local residents has gradually changed from explanations on decontamination and radiation, etc., and in recent years, it has become necessary to foster a radiation protection culture in society as a whole (improvement of radiation literacy), establishing and strengthening the explanation, advice, and awareness-raising functions by local governments and familiar persons (counselors, local government officials, school teachers, workers and organizations, community leaders, etc.) who have gained the trust of residents, and continuing activities such as dispatching experts under the cooperation of related organizations such as Atomic Energy Society of Japan.

Table 5-29 Number of visitors to the "Decontamination Information Plaza"

	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017
Number of visitors	1,001	5,899	6,699[1)]	4,027	3,560	2,648	546

Note:1. From February to March 2014, students from 47 prefectures visited the "Decontamination Information Plaza" as part of the "Kikkake Bus 47" project.
2. From February 2012 to June 30, 2017

Source: Decontamination Information Plaza "Plaza's activity record (January 20, 2012 to June 30, 2017)"

Table 5-30 Trend of number of Experts dispatched by Decontamination Information Plaza

Attendance attributes	Main contents	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017
Municipality	Advice at decontamination site Training session on radiation	2 cases 78 persons	30 cases 1,311 persons	43 cases 1,434 persons	90 cases 1,960 persons	38 cases 918 persons	37 cases 1,654 persons	3 cases 68 persons
Company	Training session on radiation Support for monitoring	6 cases 460 persons	14 cases 800 persons	8 cases 372 persons	5 cases 134 persons	1 case 34 persons	18 cases 762 persons	0 case 0 person
General public	Training session on radiation	9 cases 532 persons	100 cases 4,786 persons	88 cases 2,721 persons	30 cases 824 persons	51 cases 2,148 persons	40 cases 1,859 persons	5 cases 105 persons
Educator	Training session on radiation Support for monitoring	1 case 40 persons	59 cases 4,672 persons	114 cases 5,987 persons	99 cases 7,139 persons	140 cases 10,732 persons	80 cases 5,288 persons	18 cases 1,740 persons
Prefecture	Training session on radiation, decontamination	1 case 150 persons	6 cases 415 persons	4 cases 23 persons	33 cases 1,382 persons	32 cases 1,781 persons	33 cases 1,510 persons	3 cases 50 persons
Total		19 cases 1,260 persons	209 cases 11,984 persons	257 cases 10,537 persons	257 cases 11,439 persons	262 cases 15,613 persons	208 cases 11,073 persons	29 cases 1,963 persons

Note) from January 20, 2012 to June 30, 2017

Source: Decontamination Information Plaza "Plaza's past activity record (from January 20, 2012 to June 30, 2017)"

Table 5-31 Trend of number of mobile exhibition by Decontamination Information Plaza

	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017
Number of venues	87	106	143	102	78	7
Opening days	166	123	166	115	92	8
Number of visitors	18,821	10,624	10,633	9,328	5,232	728

Note) from July 2012 to June 30, 2017

Source: Decontamination Information Plaza "Plaza's past activity record (from January 20, 2012 to June 30, 2017)"

② Establishment of Decontamination Information Website

In order to disseminate information mainly to residents, MOE launched a website entitled “Information Site on Environmental Contamination by the Radioactive Materials” (currently the Decontamination Information Website) in January 2012, and presented it as a portal site to aggregate and transmit information and tools on decontamination work, updated daily. The website design and functions were updated and enhanced to respond to information needs.

This website provided visual material on the purpose and methods of decontamination, progress of decontamination, handling of processed material, and provided information on seminars and conferences, guidelines, etc., with the aim of being a one-stop source of information. Pamphlets and other reference materials and links to the relevant government websites were also posted.

[Main contents of Decontamination Information Website]

- Decontamination progress map, progress and supplemental on decontamination work, Interim Storage Facility information, etc.
- Programs, events, etc. (TV, radio, Internet, etc.)
- Policy documents and guidelines
- Links to relevant government agencies and municipalities

Figure 5-40 Decontamination Information Website

Source: MOE “Decontamination Information Website (http://josen.env.go.jp/)

In January 2013, MOE launched an English version of the “Decontamination Information Website” as “Off-site Decontamination Measures” (now: “Environmental Remediation”) to distribute information overseas.

Figure 5-41 “Environmental Remediation” English version of “Decontamination Information Website”

Source：MOE「Environmental Remediation」http://josen.env.go.jp/en/

③ Public relations via media

As it was necessary to transmit information on decontamination in an easy-to-understand manner, MOE planned and produced 30-minute special programs on four subjects of high interest to residents and provided them through the familiar medium of television. Also, in order to communicate in a spontaneous and easy-to-understand manner, MOE used two local radio stations to provide information.

In order to gain understanding about decontamination, it is necessary not only to respond to questions concerning anxiety and decontamination of radiation, but also information on the progress of decontamination and the effect of decontamination on onsite change for environmental recovery, MOE put advertisements titled “Fukushima Saisei” (“Fukushima Revitalization”) more than 100 times in two local newspapers from June 2012.

Figure 5-42 Examples of “Fukushima Saisei” (“Fukushima Revitalization”Report)

④ “Inappropriate Decontamination #110” (reporting hotline)

In January 2013, MOE established a consultation desk for receiving information by telephone or Internet when local people witnessed an activity suspected of improper decontamination work.

If there was a report to the “Inappropriate Decontamination # 110” or a media report (newspaper, television, etc.) concerning inappropriate decontamination, the information collection, decision of response policy, investigation of facts, and public reporting were handled as follows.

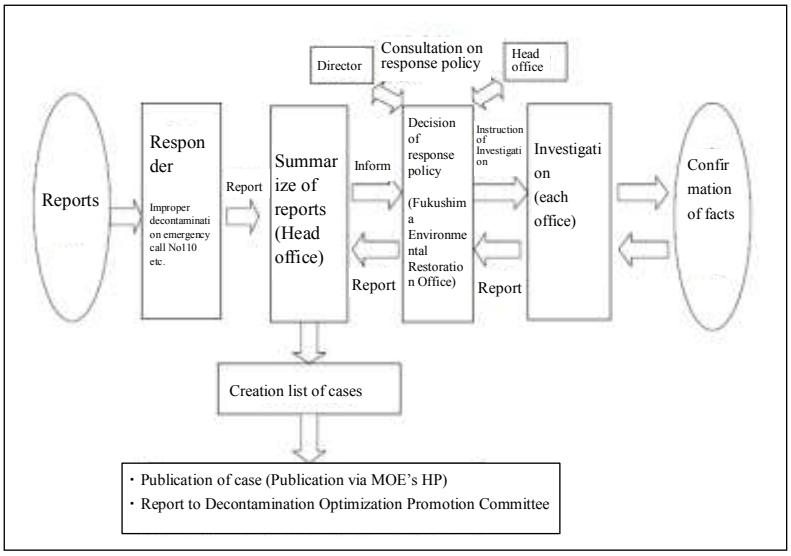


Figure 5-43 Response system for reports of improper decontamination

⑤ Establishment of decontamination consultation desk

In Special Decontamination Areas, decontamination consultation desks were set up in each municipality starting in February 2012, and about 2,593 cases of consultation had been received as of March 31, 2017.

Table 5-32 Decontamination consultation desks (Special Decontamination Areas)

Municipality	Established date	Installed place	Reception Method	Number of consultation(cases)
Katsurao Village	June 1, 2012	Fukushima Office for Environmental Restoration central and south branch Office	Station desk or Phone	65
Kawauchi Village	July 2, 2012	Kawauchi Village Office	Station desk or Phone	291
Tamura City	March 1, 2014	Fukushima Office for Environmental Restoration central and south branch Office	Station desk or Phone	19
Iitate Village	April 1, 2014	Iitate Village Office	Station desk or Phone	unknown

Municipality	Established date	Installed place	Reception Method	Number of consultation(cases)
Naraha Town	August 1, 2014	Naraha Town Office	Station desk or Phone	about 1,000
Namie Town	November 4, 2014	Namie Town Office	Station desk or Phone	197
Kawamata Town	August 31, 2015	Kawamata Town Office, Yamakiya branch Office	Station desk or Phone	unknown
Tomioka Town	October 1, 2015	Tomioka Town Health Center Office	Station desk	1,021
Minamisoma City	May 20, 2016	Minamisoma City Odaka area Office	Station desk or Phone	unknown
Okuma Town	-	-	-	-
Futaba Town	-	-	-	-
Total	-	-	-	about 2,593

Note: No decontamination consultation desk was established in Okuma Town and Futaba Town.

⑥ Actions by decontamination contractors

- Launched a website and distributed a mini-communication paper created in collaboration with local governments as part of information disclosure on decontamination status and progress, etc.
- Set up a residents' consultation desk and call center on decontamination work and carefully responded to requests and questions from residents.
- Tried to eliminate anxiety by making staff in charge more visualize.
- At the time of preliminary meeting on decontamination, they explained decontamination specifications to the residents. MOE staff also attended and carefully explained in detail what can and cannot be done.
- In all resident evacuation areas, they conducted an on-site tour for each district.
- At temporary storage sites, they had residents confirm that the air dose is lower than the surrounding area after the set-up of temporary storage sites, and tried to reduce the anxiety about the safety of the temporary storage sites.
- On-site inspections and explanatory meetings were carried out for owners of houses and others during decontamination work.
- While conducting local employment and community contribution activities, they strove to build understanding for decontamination work and trusting relationships with residents.

Figure 5-44 Reducing public anxiety by introducing real workers

(Photo by Maeda Corporation)

Figure 5-45 Example of Call Center

(Photo by Taisei Corporation)

Figure 5-46 Example of "Kawara Ban" made jointly with a town

(Photo by Maeda Corporation)

Figure 5-47 Example of Home Page

⑦ Other efforts

To gain public support and understanding for the temporary storage sites, MOE and Fukushima Prefecture offered explanations at many community briefing sessions and on-site tours, shared know-how about other successful cases in municipalities such as Date City, and prepared and distributed images and videos showing the design, safety, and safety management of temporary storage sites.

In order to promote the decontamination works, since the understanding of the press was important, MOE held study sessions and on-site tours for reporters, and discussions between the Minister of the Environment and the WAIHAN Club (an association that is consisting of leaders in newspaper companies, communications companies, and a broadcasting companies based in Fukushima Prefecture) were held periodically.

Fukushima Prefecture created a "picture-story show" and its supplemental reader, in order to respond to the needs that the curriculum of radiology education is incorporated after the second semester of 2012 and teaching materials taught to children in easy to understand format from school education scenes, etc. Also, in order to promote residents' understanding on decontamination and temporary storage sites, Fukushima

Prefecture tried to show things understandably in photos and videos, and posted them on the Fukushima Prefecture's website "Fukushima Reconstruction Station."

Figure 5-48 Sample content

In addition, Fukushima Prefecture held on-site inspection tours a total of eight times starting in July 2012, in order to deepen the understanding about temporary storage sites, eliminate concerns, and promote the installation of temporary storage sites.

Prior explanation

Dose measurement

福

Figure 5-49 On-site inspection tour of Temporary Storage Sites

(Photo by Fukushima Prefecture)

Various teaching materials and supplies, visual and easy-to-understand materials, etc., were created as risk communication tools. Some are available to public through the website of the "Environmental Regeneration Plaza.

Table 5-33 Main information providing tool list during decontamination commencement period to decontamination promotion period (Handbook etc.)（1/2）

Publisher	Name of tool	Overview		First production date
MOE	Basic knowledge of Radiation measurement in living space "(Handbook)		Explanation about measurement method of radiation etc.	August 2012
	Measurement result recording sheet		Record for residents to grasp the air dose rate and its transition in living space.	August 2012
	How is decontamination done?		For residents in Fukushima Prefecture Explain necessity and procedure of decontamination, cases of decontamination of municipalities in an easy-to-understand manner.	October 2012
	~ Before decontamination begins ~ I want to know, Decontamination of our house		For Special Decontamination Areas (for residents who are scheduled to decontaminate at home from now) Explain in an easy-to-understand manner the basic knowledge on radiation and decontamination, procedure of decontamination, how to store and remove after decontamination.	October 2012
	What should We know about radiation and decontamination?		For residents of Fukushima prefecture Intensive Contamination Survey Area. Explain in an easy-to-understand manner on radiation characteristics, health effects, protection methods, decontamination subjects and directions, decontamination cases etc.	December 2012
	What is the need of a storage site? ~ Storage on decontamination site ~(Handbook)		Clearly explained about storage at decontamination site.	March 2013
	What is the need of a storage site? ~ Storage at Temporary Storage Site ~(Handbook)		Clearly explained about storage at Temporary Storage Site.	March 2013

Table 5-33 Main information providing tool list during decontamination commencement period to decontamination promotion period (Handbook etc.)（2/2）

Publisher	Name of tool	Overview		First production date
Fukushima Prefecture	Newspaper that inform Fukushima now		Fukushima Prefecture distribute information on "What is Fukushima doing now?" such as the status of support for evacuees and the movement for reconstruction, on the web for the residents who are evacuated inside and outside Fukushima Prefecture and those concerned with the victims and evacuees.	August 2012
	"For proper use of radiation measuring equipment" (brochure)		Explanatory material to the doubts of residents. "Why is the value measured by the measuring instrument on hand different from the monitoring post installed in public facilities?"	February 2013
Decontamination Information Plaza	To everyone participating in decontaminati on volunteers		For decontamination volunteers Explanation about precaution (safety, diffusion prevention) of decontamination work.	March 2012
	How do you think about the influence of radiation?		For residents in Fukushima Prefecture. Commentary on radiation characteristics, health effects, protection methods, etc.	December 2012
	Examine and Grasp Note		It focuses on fundamental knowledge about radiation, and applies it to events in daily life and invites interest.	March 2013
	Picture-card show ” What is the radiation?		Picture-card show for middle and high elementary school. A picture-story show that tells the story of question related to radiation.	March 2013
	Side Reader “Examine and Grasp Note”		Materials for middle and high elementary school. Commentary on important matters and children's doubts that come out in the picture-story show "What is Radiation!"	March 2013

Table 5-34 Main information providing tool list during decontamination commencement period to decontamination promotion period (Video contents)

Publisher	Name of tool	Overview		First production date
MOE・United Nations University	Living in Fukushima: A story about decontamination and reconstruction		Video from the view point of mothers, farmers, community leaders, evacuees, include how decontamination is done in the living, what wishes are put in the reconstruction of Fukushima.	October 2013
Decontamination Information Plaza	What is decontamination? ~ Removal ~		A video explaining using model about "Removal" which is one way of decontamination.	July 2012
	What is decontamination? ~ Intercept ~ (Cases in parks, grounds, etc.)		A video explaining by using model about “Intercept” (deep plowing) which is one way of decontamination.	July 2012
	Basic structure of temporary storage sites		Video describing the basic structure of temporary storage sites using illustration.	July 2012
	State of temporary storage sites installation		Video showing the state of temporary storage sites setting using slide.	July 2012
	Safety of temporary storage sites (Distance version)		A live video explaining about "to reduce radiation dose by keeping away" which is one of temporary storage sites safety measures.	October 2012
	Safety of temporary storage sites (Intercept version)		A live video explaining about "radiation dose is lowered by intercepting" which is one of temporary storage sites safety measures.	October 2012
	Let's observe radiation in Wilson chamber		A video of the state of observation of invisible radiation with "Wilson chamber".	March 2012

(3) Decontamination Acceleration Period (First period)

(From the revision of the decontamination implementation plans to the start of lifting of evacuation orders: January 2014 to around September 2015)

1) Societal situation surrounding decontamination and radiation

Whole area decontamination was implemented, Areas under Evacuation Orders were reorganized, and pilot transportation to Interim Storage Facility, etc. began.

With the decontamination almost complete, it was necessary to provide the information such as actual exposure doses, the relationship between the reduction of the air dose by decontamination and the actual exposure dose including individual dose based on decontamination effects, and actions after decontamination.

Table 5-35 Main comments heard at Decontamination Information Plaza (2014)

- Three years have passed since the TEPCO Fukushima Daiichi Nuclear Power Station accident. I want you to do decontamination measures so that the dose will fall further.
- We had a rough concrete surface in our residence decontaminated, but the dose did not decrease sufficiently.
- There was consultation on logging of trees around our residence, and I consented. But I received no contact after that. When will it be logged?
- Some places on my roof have a high dose, but I was told, “We do not do roofs, only gutters.” But the dose is more than 0.23 μSv/h and it should be decontaminated.
- Why is decontamination of houses not proceeding? I want you to tell them to proceed soon.
- Although they said the aim is 1 mSv/y, it is ambiguous because there is no time line. I cannot accept it when they say that the personal dose is important and tell me to make my child wear a dose meter.
- Each municipality makes each “decontamination manual”. It should be uniformly.
- What will be the progress of decontamination in the future?
- Although there are places where decontamination is necessary, I feel that most places have no meaning to be decontaminated.
- I think the funds for decontamination should be used for other purposes..
- I wonder if the radiation dose would rise even after decontamination.
- How is the monitoring result of temporary storage sites being announced?
- How long is the in-situ storage going to last?
- What should be done if there is no place to store the removed soil?
- How is temporary storage being monitored?
- We are storing in-situ storage. Wouldn’t it be better to not make temporary storage sites and instead take the removed soil to the Interim Storage Facility?
- When will the operation of ISF start?
- It is called “decontamination,” but because radiation does not really go away, isn’t it really just “relocating the contamination”?
- Is decontamination really useful? Is it really solving the problem?

Table 5-36 Main comments heard at Decontamination Information Plaza (2015)

· I found out what I can feel relief about by looking at data, but there are still some things to watch out for. · It seems that the progress of decontamination on farmland is behind that of residential land, roads and forests for decontamination in SDA. Is decontamination on farmland technically difficult? · I'd like you to change the contractor of decontamination. · It seems that the air dose is reduced to about half by being decontaminated, but can't you lower the dose more? · The decontamination work in Fukushima City is very carefully done and appreciated. · I only worry about hot spot decontamination. Should not you peel off the entire surface? · I would like to know more information on the Interim Storage Facility. · I would like you to disseminate more information about decontamination efforts to other prefectures (nationwide). · Four years have passed since the earthquake disaster, but decontamination is still not making progress. It still takes time and effort. And so on.

2) Main efforts

① Exhibitions (Decontamination Information Plaza)

In the Decontamination Information Plaza, in the summer of 2014, a new exhibition to understand the characteristics of the local areas was established. First exhibition focused on Iitate Village and introduced traditional events such as village culture and history, festivals. It also showed us that the evacuees from the village continued practicing traditional dances and singing, and making traditional crafts.

Table 5-37 Exhibitions organized

Title	Period
Iitate Village	2014/8/25～2014/11/3
Tomioka Town	2014/11/11～2015/2/11
"East Japan Great Earthquake / Nuclear Emergency Disaster" Panel Exhibition *the scale is reduced and same time holding is underway after March 3, 2015.	2015/2/3～in progress
From decontamination to reconstruction ~ various initiatives ~ (same time holding)	201411/11～2015/3/3
Hamadori Traditional Performing Arts Culture Introduction "Jangara Nembutsu Odori"	2015/3/3～2015/5/10
Hamadori Traditional Performing Arts Culture Introduction "Shika mai, Shishi mai and Noma oi"	2015/5/12～2015/8/2
Hamadori Traditional Performing Arts Culture Exhibition "Futaba Town's "Jangara Nembutsu Odori" and Okuma Town's "Kumagawa Chigo Shika mai"	2015/8/4～2015/11/1
Now of the after decontamination area Naraha Town	2015/11/3～2016/2/26

Fukushima regeneration. Cheering message exhibition (same time holding)	2015/11/3～2016/2/26
Public awareness on decontamination and radiation at educational sites	2016/2/27～2016/10/10
Namie Town	2016/11/2～2017/2/5
Decontamination Information Plaza Planning Exhibition "Work Exhibition"	2017/2/7～in progress

Note) August 2014 to June 30, 2017
Source: Decontamination Information Plaza “Plaza's past activity record (from January 20, 2012 to June 30, 2017)”

② Counselor system

In the “Basic Concept of Safety and Security Measures for Returning (To Realize the Protection Measures According to the Dose Level)” (Recommendation of the Nuclear Regulatory Committee, November 20, 2013), recommendations were made that it is indispensable to have so-called counselors in the vicinity of residents who choose to return, in order for them to understand individual doses after returning, to take measures to reduce radiation based on the results, and to live while facing radiation.

Also, these recommendations said that it is indispensable to provide systematic and continuous support from the scientific and technological perspectives for the counselor to do activities, and a support system is necessary that can respond to the needs of the residents that are difficult to solve with counselors alone, and challenges that are difficult to solve by each municipality alone.

In response to this, the counselor system was enacted to support the dissolution of radiation anxiety concerning the returning residents in close vicinity in “Toward the acceleration of Fukushima reconstruction from nuclear disasters” (December 20, 2013 Cabinet Decision). The MOE set up a “Radiation Risk Communication Counselor Support Center” in Iwaki City in 2014, in order to support activities from the scientific and technological perspectives such as individual consultation correspondence, dispatch of experts, holding training in response to needs of counselors (hereinafter referred to as “radiation counselors”) and local municipal officials who worked in 12 cities, towns and villages where the evacuation instructions were issued at the time of the accident.

After that, the “Basic Guidelines for Accelerating Reconstruction of Fukushima from Nuclear Disasters” (December 20, 2016, Cabinet Decision) recommended that support be strengthened for the “Radiation Risk Communication Counselor Support Center,” to improve the consultation system by local governments. In addition to radiation counselors, as well as those who have many points of contact with residents such as living support counselors and school teachers, and that training on radiation knowledge would be offered, and a backup support system of experts would be also created.

In response to these recommendations, since FY2016, the “Radiation Risk Communication Counselor Support Center” has been providing assistance not only radiation counselors but also living counselors, who may be asked about radiation.

③ Other initiatives

Differences in concepts of radiation risk assessment among local governments caused confusion.

In order to respond to diverse concerns, MOE unified the information of related ministries and agencies on scientific knowledge of radiation and health effects by radiation and summarized it all in publications such as “Basic Knowledge and Health Effects.” The “Decontamination Information Plaza also dispatched the radiation experts to the meetings to share the correct information of radiation with local residents.

Fukushima Prefecture conducted the lectures and practical trainings for the students to understand the radiation correctly and share the radiation knowledge with the public through showing the current situation of decontamination projects.

・FY2014: Number of Schools：2
Number of participating students：101
・FY2015: Number of Schools：2
Number of participating students：61
・FY2016: Number of Schools：1
Number of participating students：17

Photo by Fukushima Prefecture

Figure 5-50 State of practice

Since it is necessary to transfer the information that is accurate and easy to understand about radiation, MOE made the tools for accurate and easy-to-understand information for radiation. For example, MOE made the booklets in cartoon (manga), using the data and detailed explanation.

Table 5-38 Main information providing tool list during decontamination acceleration period (first period) (Handbook etc.)

Publisher	Name of tool	Overview		First production date
MOE NIRS (National Institute of Radiological Science)	Basic knowledge of radiation and health effects		Basic knowledge of radiation, scientific knowledge on radiation health effects, and information on related ministries and agencies as "unified basic materials".	February 2014
MOE	How do I decontaminate the forest near my house? ~ About Forest Decontamination ~		Explain the current pollution situation of the forest and the method and question of forest decontamination.	January 2014
	Examine and Grasp Radiation		Revised radiation learning material "Examine and Grasp Note" and explain on basic information on decontamination and radiation clearly.	December 2014
	Comic "Nasubi's Question" Radioactive substance around us version		Explanation on the everyday question (radioactive substance around us) concerning decontamination and radiation, comic is easy to understand, detailed explanation based on data.	December 2014
	Comic "Nasubi's Question" Radioactive health effect version		Explanation on the everyday question (health effects) concerning decontamination and radiation, comic is easy to understand, detailed explanation based on data.	December 2014
	Comic "Nasubi's Question" Food version		Explanation on the everyday question (food) concerning decontamination and radiation, comic is easy to understand, detailed explanation based on data.	March 2015
	Transportation of removed soil etc. to Interim Storage Facility		Explanation of the contents of the "Basic Transportation Plan" stipulated for transportation from temporary storage sites to Interim Storage Facility.	January 2015
Reconstruction Agency	Basic information on radiation risk		In comprehensive comprehension of the basic information necessary to explain radiation health risks accurately and easily in risk communication activities.	December 2014

Table 5-39 Main information providing tool list during decontamination acceleration period (first period) (Video contents)

Publisher	Name of tool	Overview		First production date
Decontamination Information Plaza	The way of radioactive materials decrease: Half-life and decontamination		Describe the mechanism by which radioactive substances decrease.	March 2014
	Where is radioactive cesium now?		Describe the properties of radioactive cesium and wastewater treatment for decontamination.	March 2014
	Fukushima, decontamination now		Explanation about radiation reduction by decontamination.	March 2014
KFB (Fukushima Broadcasting)	Video “Nasubi's Question”		TV mini-series in which Mr. Nasubi reports various question related to decontamination and radiation.	February 2014~ Now

(4) Decontamination Acceleration Period (Second period)

(From the start of lifting of evacuation orders to the end of whole area decontamination: October 2015 to around March 2017)

1) Societal situation at that time

Whole area decontamination of the municipalities in some Areas under Evacuation Orders was completed and the return of residents began.

It was necessary to provide comprehensive information including how to reduce anxiety at the time of returning, including not only measures against radiation anxiety, but also how local communities regenerate the environment and recover from the decontamination as a foundation.

In addition, it was mentioned in the media that bullying of children of Fukushima became apparent, and how to promote understanding for young people was required, and it was necessary to respond to these issues.

Table 5-40 Main comments heard at Decontamination Information Plaza (2016)

- Although the dose rate exceeds 0.23 μ S/h, why didn't you decontaminate our home only once?
- As there seems to be progress being made with property sales contracts with landowners for Interim Storage Facility, interim storage is moving ahead?
- Even after decontamination, why will the air dose rate not return to levels as that of before the accident? If you do the work thoroughly, isn't it supposed to return to the original levels?
- Some people think that the forests should be decontaminated so that people can again eat mushrooms and wild vegetables, but what are your plans about that?
- If it is really possible to reduce the dose by decontaminating Areas where Returning is Difficult, shouldn't you start decontamination now and encourage people to return.
- It turned out that the air dose rate in some houses exceeded 0.23 μSv/h. I am concerned that this may be due to substandard decontamination work.
- If there is an air dose rate target after decontamination, why can't you do decontamination work until that target is achieved?
- Do you really think you can say it is safe to lift the evacuation orders for places that exceed 0.23 μSv/h and let residents return there?
- What is the contamination status of radioactive materials in forests and satoyama?
- Decontamination is coming to an end, and public relations communications are necessary about interim storage, homecoming and returning to the village.
- To make it possible for people outside the prefecture to see the information, you should promote PR activities in places where many people in Tokyo gather. You should continue to disseminate information, and so on.

And so on.

2) Main efforts

① Fukushima Prefectural Center for Environmental Creation

Fukushima Prefecture opened the "Center for Environmental Creation" in July, 2016, giving it four functions: (1) monitoring, (2) research and investigation, (3) information gathering and dissemination, (4) education, training and interaction. This is as a base facility for promoting environmental restoration from nuclear disasters and for the prefectural people to live safely for the future and working on recovery and creation of the environment, under the support of the national government.

The community building of the "Environment Creation Center" (known as Commutan Fukushima) is used as a facility to understand the radiation and environmental problems from a familiar viewpoint and to deepen the awareness of environmental recovery and creation, as a facility to answer concerns and questions of the citizens, in addition to the exhibition on the current situation of Fukushima environment, it has a 360 degree global type theater, a hall capable of accommodating 200 people, etc. This center aimed for a place for children and various organizations sharing the knowledge, deepening consciousness obtained from learning and experiences here, and to be a catalyst for thinking, creating and disseminating the future of Fukushima from their respective positions.

The number of visitors to "Commutan Fukushima" exceeded 100,000 in about one year from the opening in July 2016 to August 2017, and 185 schools, about 40% of all the elementary schools in Fukushima Prefecture, visited in FY2016.

In the future, in addition to establishing as a learning facility for children in Fukushima, visitors from outside Fukushima Prefecture will be encouraged and it will be expected to be utilized as a nationwide facility for the purpose of dispelling of bad rumors about Fukushima.

From Fukushima 3.11
(Looking back at the theater, chronology, newspaper reports etc.)

Fukushima Environment Now
(Dispatch Fukushima environmental restoration and creation with numerical value and video)

Radiation laboratory
(Foster the ability to know about radiation and make a proper judgment)

Environment Creation laboratory
(Efforts aimed at creating a society that is safe, secure and sustainably developable)

Messages from Children
(Children's messages for Fukushima's environment and the future)

Environment Creation Theater
(360 degree global type theater. Introducing radiation, natural science, etc. Introduced by video)

Figure 5-51 Status of "Commutan Fukushima"
Source: "Commutan Fukushima Home Page" (Fukushima Prefecture)

② Other efforts

In Fukushima Prefecture, education about radiation is carried out for about 2 to 3 hours a year in order to present correct knowledge on radiation at all elementary and junior high schools and to judge and act on their own, but some schools struggle with how to explain things, so many schools utilize experts' dispatch from the "Environment Regeneration Plaza."

As there are few teaching materials that can be utilized to educate about decontamination and basic knowledge of radiation to residents including children and their parents, Fukushima Prefecture created and distributed information on radiation education tools (picture-card show, electronic picture-card show) taking into consideration the developmental stages of children.

Table 5-41 Main information providing tool list during decontamination acceleration period (second period) (Handbook etc.)

Publisher	Name of tool	Overview		First production date
MOE NIRS (National Institute of Radiological Science)	Unified basic data on the health effects of radiation etc. Part I. Basic knowledge of radiation and health effects (2014 edition)		Unified basic data of the country. Basic knowledge of radiation and health effects, accident situation and radiation release, environmental monitoring and pollution situation, radioactive concentration in food, efforts to recover from accident, idea of decontamination, radiation exposure and prefectural health survey results.	December 2015 (revised edition)
MOE	"Learn and think about decontamination and radiation"		Slide for junior high school students and above. Explanation on TEPCO Fukushima Daiichi Nuclear Power Station accident, decontamination, Fukushima Prefecture food, and environment impact	August 2016
	"Professor Owl's Learning Radiation Class"		Three volumes of picture-card show for lower elementary school (1st to 2nd grade). Explanation about TEPCO Fukushima Daiichi nuclear accident, decontamination, Fukushima prefecture food and influence.	February 2016
	"Let's study decontamination"		Electronic picture-card show for middle and higher elementary school students and junior high school students. Explanation about TEPCO Fukushima Daiichi nuclear accident, decontamination (nature of radioactive cesium, decontamination method and effect), temporary storage sites, Interim Storage Facility.	February 2016

Table 5-42 Main information providing tool list during decontamination acceleration period (second period) (Video contents.)

Publisher	Name of tool	Overview		First production date
KFB (Fukushima Broadcasting)	TV special number "Home to life revitalization ~ Minamisoma City ~"		The introduction of Minamisoma City Odaka area traditional event (Nomaoi, fire festival), the state of evacuation order lifted, interview with Mayor of Minamisoma, return to Minamisoma, decontamination by residents activity, and introduction about the efforts of regional revitalization.	November 2016
FCT (Fukushima Central Television)	TV special number "Children returning to their home and to the future ~ Kawauchi Village · Katsurao Village now ~"		Introduction of residents' efforts toward holding Kawauchi Village's festival, decontamination and food inspection situation etc. In addition, introduction on the situation of the evacuation order of Katsurao Village, the situation after lift, the efforts of children of Katsurao elementary school named "Be Kataribe" telling stories from the village history to the present as a storyteller.	January 2017
KFB (Fukushima Broadcasting)	TV special number "Decontamination and soil and home town"		Introduction about decontamination, preliminary placement and Interim Storage Facility, explanation by site staff and experts and efforts to revitalize the area at the Prefectural Hobara High School's "Flower for Rubbles Project".	February 2017

(5) Supplemental Decontamination Period

(After the end of whole area decontamination: April 2017~)

1) Societal situation surrounding decontamination and radiation

After the whole area decontamination was completed, evacuation orders were lifted in 9 municipalities, excluding Areas where Returning is Difficult.

While the decontamination was completed, even in areas where evacuation orders were lifted, there was a continuing need to respond closely to concerns that there were cases where the radiation dose was relatively

high compared to previously lifted areas, as generally there was still a potential and vague concern that radiation still remains.

In addition, the situation of environmental restoration in Fukushima is not correctly communicated outside the prefecture and overseas, so there is a need to further strengthen information dissemination, about how to revitalize and restore the environment of local communities based on decontamination, with strengthened responses for the decontamination final stage.

Table 5-43 Main comments heard at Decontamination Information Plaza (2017)

· Although decontamination has been completed on 89% of the farmland in the prefecture, trees were washed in orchards, but there has been limited progress in decontamination of the topsoil to prevent exposure.
· I had them decontaminate the property I own, but the air dose rate still exceeds 0.23 μSv/h, so I want something to be done.
· Every month I go home for a while and I am trying to maintain the conditions such as mowing, but there is still a pile of flexible containers (storing contaminated material) in the temporary storage site near my home, so my dream of early return is being broken.
· I want you to take decontaminated soil away to Interim Storage Facility as soon as possible.
· To eliminate damage caused by rumors, it is necessary to send out more communication about food safety, etc. You need to enhance education on radiation.
And so on.

2) Main efforts

The Decontamination Information Plaza has been renamed to "Environmental Restoration Plaza" in accordance with the establishment of the "Environmental Regeneration and Material Cycles Bureau" at MOE, which centralizes work on decontamination, designated waste and interim storage. The Plaza has been redesigned and has permanent displays with comprehensive information on decontamination, radiation, interim storage, the history of Fukushima's environmental recovery, etc.

Figure 5-52 Environment Regeneration Plaza

The MOE cooperates in the production of nationwide and overseas broadcasting programs in order to widely disseminate the situation of Fukushima which is currently undergoing environmental recovery and the information that we would like people to understand in order to dispel rumors.

Table 5-44 Main information providing tool list during emergency response to supplemental decontamination period (Handbook etc.)

Publisher	Name of tool	Overview		First production date
MOE	Comics "Nasubi no Gimon" History of environmental revitalization version		Commentary on the daily question related to decontamination and radiation (the history of environmental regeneration), comic is easy to understand and detailed explanation based on data.	December 2017

Table 5-45 Main information providing tool list during emergency response to supplemental decontamination period (Video content)

Publisher	Name of tool	Overview		First production date
Discovery channel	Fukushima Diaries		Three overseas bloggers are dispersed in different destinations in Fukushima Prefecture in search of subjects of interest. Inform viewers the findings and impressions of visitors.	November 2017
TUF (TV-U Fukushima)	Fukushima Today		As the main caster of the program, setting key person in various fields to convey Fukushima's current situation where environmental restoration and reconstruction are progressing. Inform the current state and charm of Fukushima based on the theme suitable for each key person.	November 2017

Column	“Building the path to decontamination, environmental restoration and reconstruction with the Decontamination Information Plaza　Ms. Yuko Sakita, member of committee

■ **Timely opening of Decontamination Information Plaza**

The situation of radiation spreading in the general environment due to nuclear power station accident on March 11, 2011 was an unexpected event not only for citizens but also for the legal system.

Having experience with risk communication in both the environmental and energy sectors, after the earthquake, with other proponents I set up a voluntary meeting “Environment Recovery Study Group” (joint representation with professor Yuichi Moriguchi of the University of Tokyo) that connects various stakeholders such as experts in the field of environment and nuclear energy, administrative staff of the national government and region, and NGOs. We have been continually striving to share information and exchange opinions, such as predicting radiation effects, decontamination and waste management, and consideration for residents, etc.

Under the promulgation of the Act on Special Measures concerning the Handling of Environment Pollution, I participated as a committee member in the “Investigative Committee on Remediation” established by MOE in September of that same year. In order to promote decontamination and environmental restoration, I have made comments on information disclosure and participation of residents for recovery of trust. I appreciate the prompt decision to open the “Decontamination Information Plaza” as an information base of the joint project by Fukushima Prefecture and MOE in January 2012.

Since then I have been involved as a member of the Steering Committee for “Decontamination Information Plaza.”

■ **Communication with the community**

I believe that risk communication is an initiative that involves (1) disseminating “information” scientifically assessed for risk, (2) conducting “dialogue” aiming at deepening understanding, (3) fostering the “trust” of concerned parties, “aiming for risk management and reduction together.”

The “Decontamination Information Plaza” has promoted (1) information dissemination on the status of progress of decontamination by municipalities, decontamination done under the direct jurisdiction of the national government, and easy to understand information on radiation, (2) dialogue and deepening of understanding based on that information by “dispatching experts” and mobile exhibitions” in municipalities.

After that, we (3) opened the “Positive Cafe” to support information exchange of organizations promoting voluntary radiation measurement activities and other activities starting in 2013, and set up a “Corner introducing the evacuation area’s traditional culture” starting in 2014. The Plaza believes that communication with the community is important.

“Positive Cafe,” initially held in the Nakadori region, was held in the coastal area (Hamadori) in 2015 as decontamination progressed.

With the spread of interest in topics from decontamination to environmental restoration and reconstruction, an experience event “Kurumaza Cafe Fukushima Michi Sagashi” was opened in 2016, utilizing the participating organizations’ event, that is an “experience event sharing information of people who started efforts to regain everyday feelings in the face of radiation concerns.”

Tours such as “Food Safety Measures and Looking for Delicious of Fukushima” are also being conducted to visit those who have resumed agriculture and forestry.

■ **Building ”model strategies in case of emergency” based on learning from challenges**

It was meaningful that the “Decontamination Information Plaza” has been thoroughly promoting a trust relationship by disseminating information on decontamination and radiation and dialogue, and closely supporting the voluntary efforts of residents living with radiation.

However, I think that the meaning of Plaza has been widely received by residents and evacuees in Fukushima Prefecture and evacuees outside the prefecture, but unfortunately the issues that emerged are

great.
Because there has been little information and education in the general society about radiation so far, there is a great sense of concern about radiation risk, so it is important to share information and educate in the usual way, and important to consider dissemination of information about emergencies.
Especially, many people adopted a long-term decontamination goal to keep below an additional annual dose of 1 mSv/y, as an early target to relieve the intensity of concern, but some municipalities still cannot declare the end of decontamination even if the dose has gotten low.
Also, considering that the air dose 0.23 μSv/h has been emphasized as a guide to consider 1 mSv/y, sufficient consideration from the information dissemination stage in the first place is necessary, and it is necessary to respond based on this experience, such as developing a "Model Strategy for Risk Communication" regarding providing information on emergencies, dialogue and risk management, and reduction activities in cooperation with the community.

■ **Information base for the future of Fukushima**

As more people choose to return from evacuation due to the progress of decontamination, human resources close to the concerns of people living face to face with radiation are more important.
In 2013, a "Counselor System" was established which directly responds to the need for consultation, and in 2014, MOE opened the "Radiation Risk Communication Counselor Support Center" to support counselors in Iwaki City.
In 2016, the "Fukushima Prefectural Center for Environmental Creation" was established in Miharu Town with a "Research building" and a "Community building" as space for information sharing and education about radiation.
A specialized system closely responding to radiation concern and a permanent facility for information exchange, etc. have been established, and the "Decontamination Information Plaza," served as an information base on decontamination and environmental restoration after the accident. I think that it is also an important role of Plaza to connect these efforts.
In 2017, the Plaza was renamed the "Environment Restoration Plaza," and in the future, information on the transportation of contaminated soil to Interim Storage Facility will become important.
On that occasion, regional information aiming for reconstruction and "plant decommissioning information" for TEPCO Fukushima Daiichi NPS, are closely related to Fukushima in the future, etc. I hope the Plaza will continue to promote "road making" that flexibly responds to changes in the situation as an institution that is close to responding to crisis, and responding to decontamination, environmental restoration and reconstruction.

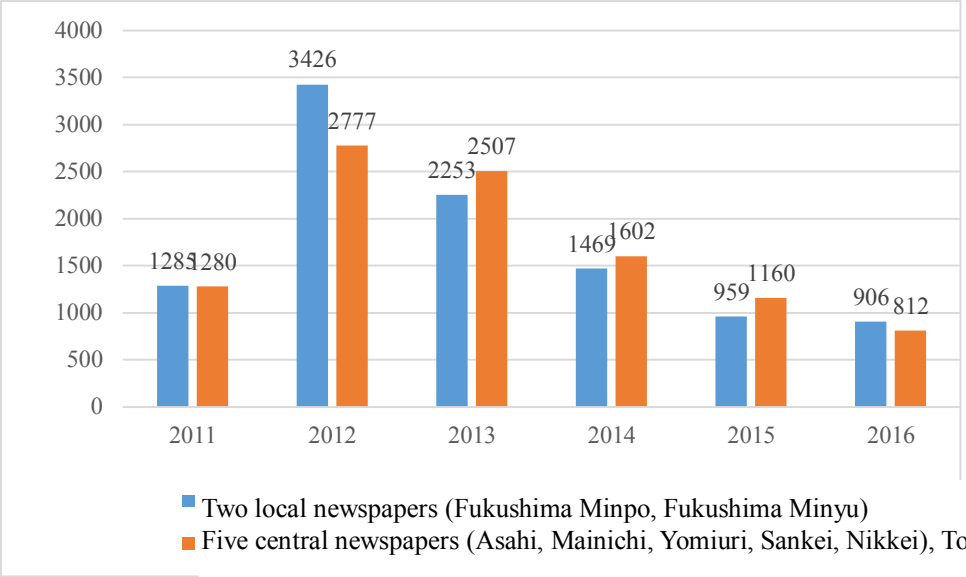


Photos: Decontamination Information Plaza

Commentary	Trends and contents of media reporting on decontamination

The total number of media reports on decontamination totaled 3,426 cases in local newspapers (Fukushima Minpo, Fukushima Minyu), and 2,777 cases in national newspapers (Asahi, Mainichi, Yomiuri, Sankei, Nikkei, Tokyo) in 2012 (calendar year).

The following year, the number of news reports on decontamination tended to decrease in both local and national newspapers.



Trends in the number of press reports on decontamination (EL Searching articles、Number of postings including "decontamination" in title and body)

The media coverage in 2012 pointed out that the prospects of the construction of Interim Storage Facility was unclear, it was difficult to secure temporary storage sites, “decontamination was delayed,” other problems of radiation insecurity and low dose exposure, and there were questions about the goal concerning the target of additional annual exposure dose 1 mSv/y.

Based on these circumstances, the Fukushima Environmental Revitalization Office (at that time) held a “First Study Meeting for Reporters” with the media in Fukushima in December 2012.

Since then, a study meeting with the prefectural administration press conference and the WAIHAN Club (see 5.4.1 (2)) has been held annually to build relationships with the media and provide accurate information on decontamination projects.

Since around 2014, the number of articles related to decontamination and reconstruction, such as articles on restarting farming in the area after decontamination has been on the increase.

Although the news value of the decontamination work seems to be relatively lower while the current situation of Fukushima is headed toward “reconstruction” seven years since the earthquake disaster, new topics such as milestone features and recycling of decontaminated soil continue to be media coverage themes.

At the end of March 2017, the whole area decontamination was completed in Areas under Evacuation Orders (Special Decontamination Areas) of 11 municipalities in Fukushima Prefecture excluding Areas where Returning is Difficult, but in order to return, the needs for themes such as “Request for re-

decontamination," "Expansion of range of forest decontamination," and others are high.

In addition, articles on draft development plans of the reconstruction base in Area where Returning is Difficult are increasing.

In Fukushima, due to efforts such as decontamination, the air dose rate has drastically decreased compared to when the TEPCO Fukushima Daiichi Nuclear Power Station accident occurred, and evacuation orders were lifted in some municipalities where decontamination was completed, so news coverage occurs with progress of the recovery.

5.4.2. Activities Contributing to the Local Areas

(1) Initiatives from MOE

1) Major efforts

Major efforts by MOE are shown in the table.

Table 5-46 Main efforts by MOE

Munucipalities	Date, Period	Activity
Tamura City	2012～June 2013	The Tamura City MOE team created communication newspaper named "To Yamagara-no-Sato " to inform the progress of decontamination and acquiring consent regarding decontamination to everyone who is evacuated from the area subject to decontamination. We struggled to report effort to make feel secure by visualizing the progress of decontamination work.
Kawamata Town	2012～2015	The Minister and Deputy Minister at that time participated in the rice planting and harvesting event with Mayor, Town Council Chairperson and farmer, we conducted activities to help PR of the Fukushima that is confirmed safety by full bag inspection all . In addition, the harvested rice was confirmed to be safe by whole bag inspection and brought to the headquarters of MOE, Tokyo and tasted cooked rice. We advertised the taste throughout the country.
Namie Town	May 16, 2014	The Minister of the environment (at that time) demonstrated cultivation at the paddy field in Sakata area of Namie Town, planting the seed of "Koshi-hikari" and "Ten no Tsubu" while was taught rice planting from local farmers, and sweat with locals towards the first step of reconstruction.
Naraha Town	May 22, 2016	The Minister of the Environment (at that time) operated a rice planting machine while learning how to operate from local farmers at there started paddy fields of Naraha Town, and sent message of the safety of rice in Naraha Town.

2) Action Plan to Boost Confidence in Decontamination Contribute to the Region

In collaboration with relevant organizations in accordance with the "Action Plan to Boost Confidence in Decontamination Contribute to the Region," MOE is leading efforts to promote reconstruction for the return of residents, safety of life, harmony with the community, and support for businesses that contribute to the region.

Figure. 5-53 Efforts of "Action Plan to Boost Confidence in Decontamination Contribute to the Region"

3) ONE Fukushima: “Thanks Helmet”

In FY2014, from the perspective of fostering community understanding regarding decontamination and decontamination workers, the “ONE Fukushima” consortium of 8 media organizations in Fukushima Prefecture (newspaper, television, radio) collaborated on an advertising campaign known as “Thanks Helmet.”

4) Other efforts

“Futaba World 2015 in Naraha” held in Naraha Town on October 10, 2015 created opportunities for reunion and communication of residents of 8 towns and villages in the Futaba District, whose residents had been evacuated to places inside and outside of Fukushima Prefecture. It has been held since 2014 as an event aiming at reconstruction of “Furusato Futaba” by reconnecting people and community.

(2) Initiatives by Decontamination Contractors

In decontamination and other work contracted by MOE in Special Decontamination Areas, in some cases decontamination contractors implemented the following community contribution activities, through communication with decontaminating contractors, local people, local governments, etc.

· Support for local residents to inspect their property (e.g., decontaminating workers carry elderly residents on their backs to inspect their property).

· Inside the Areas under Evacuation Orders, “Lounge Rooms” where residents who came home temporarily can drop in, and “Toilets for townspeople only” are offered.

· In response to local requests that “To make town a bright city for safety and security,” offices were lit up along national highway Route 6 in Naraha Town.

· Cooperation for crime prevention was conducted by blue crime prevention patrols and rescue cooperation to handle traffic accidents.

· Patrols were done by safety patrol cars (including checking the litter situation), as well as patrols in villages and patrols of security of lodgings.

· As a traffic safety measure, a traffic safety banner is installed in a curve with bad visibility and a reduced width section.

· As part of the image improvement of temporary storage sites, there are cases where painting was performed on the temporary storage enclosure and cases where high school students painted pictures.

· A banner was set up stating that decontamination work is underway along the road in areas under decontamination work.

· Christmas with temporary house residents, Mochi-tsuki and golf tournament, etc.

· Participation and sponsorship in regional sponsored festivals and marathon events.

· Planting of flowers along local roads along with local people, releasing sweet fish fry, yamame and salmon into local rivers. At workplaces, events for recovery, such as barbeque events, displaying decorative carp streamers, and Tanabata festival decorations.

· Snow removal activities, helping senior citizens.

· Search activities for tsunami victims, and cleaning activities on highways, such as national highway Route 6.

· Offered study sessions for local corporate staff aiming to acquire national qualifications such as "Radiation handling coordinator," and carried out indirect support for qualification acquisition.

In order to contribute to the smooth execution of decontamination works and construction of Interim Storage Facility more efficiently and quickly, the Decontamination Subcommittee (now the Interim Storage and Decontamination Subcommittee) of the Japan Federation of Construction Contractors created leaflets and pamphlets, and distributed understandable information to the national and local governments, and the public, etc., explaining how construction contractors and many workers are active in decontamination work.

Table 5-47 Major regional contribution activities by decontamination companies

Municipalities	Companies	Activity
Tamura City	· Kajima/Mitsui Sumitomo /Hitachi Plant Technologies JV · Okumura /Nishimatsu/Daiho JV	· Employment of workers living in Tamura City. · Tamura City company is used as a procurement source for materials and daily necessities. · Sponsoring for "Tamura specialty lantern and firework display." · Sponsoring Tamura Municipal Green Elementary School 'Green Illumination'.
Naraha Town	· Maeda/Konoike JV	· Patrolled by safety patrol cars (including checking the litter situation), patrol in town, patrol security of lodgings. · Actively utilize local shops as a luncheon for JV staff and workers and a daily goods procurement place. · We have mutual communication from day to day, build up from small things, build trust relationship. · Joined the cheering team 'Flowers and Greenery Project'. Implementation of planting and flower beds along the national highway. · Participated in "Naraha Town Spring Cleanup Strategy." Cleanup activities in the town were carried out. · Participation in the event to be held in the community, sponsorship / support.
Kawauchi Village	· Obayashi/Toa JV · Obayashi /Toa/Morimoto/ Fujita/Tobu JV	· Volunteer activities by JV staff in the Kawauchi marathon . · Participate in the "Mochi-tsuki" event. · Association to enjoy "Shin-Soba and Cha-no-yu" held at Kawauchi Village Emergency temporary housing · Cooperation to host the 1st "Kawauchi Township marathon".
Iitate Village	· Taisei/Tokyu/Rinkai Nissan/Muramoto JV · Taisei/Seibu/ Honma/Aomi JV	· Collect aluminum cans generated at rest areas and donate the wheelchairs (3 units) they got to local people. · JV and workers involved in the Hiso district Environmental beautification activities of the whole Hiso district. · Clean roads by Armadillo. · Mowing in places where the visibility is bad such as near the intersection. · Garbage picking activity in the administrative district. · Take stairs at the intersection with the banner of the campaign during commuting time and enlighten traffic safety. · Young players participate in the Mikoshi Festival at the Kawamata Fall Festival.
Minamisoma	· Taisei/Goyo/	· Cleaning of garbage on public roads in each administrative

City	Kokudo/Sato kogyo/Mitsubishi Materials JV	district within Odaka-ku. · Help of the Noma oi Festival. · Participation in disaster prevention drills sponsored by Odaka - ku (fire fighting training etc.). · Employees and workers participate in National Highway No. 6 Cleaning Volunteer sponsored by NPO Happy Road Net (HRN). · Participation in the planting festival sponsored by Minamisoma City Reforestation Citizen Tree Planting Festival Executive Committee. · Participation in "Symposium to consider safety and security of food in the future" by Minamisoma City Living Environment Section.
Katsurao Village	· Okumura/ Nishimatsu/Daiho JV	· "Katsurao village sports festival 2016", "Katsurao village reconstruction festival", "Katsurao village summer ambassadorial baseball tournament", "First Katsurao village Bon Odori", "Tokiwa Obon dinner", "Miharu Bon Odori", sponsorship to "Futaba world 2016 in Katsurao. · Picking up garbage in the commuting route from Tamura city to Katsurao village in the accommodation place. · Improve manners up by greeting to commuters. · Participation in the villagers Indiana competition. · Participation in the "Heisei 28 Safety Challenge". · Participation in "Village Grand Recovery Memorial Recreation Softball Tournament" · Participate in road cleaning service work as a monthly event on road interaction. · Co-hosted the Katsurao Village Grand Reconstruction Memorial Recreation Softball Tournament. · Participated in "Dispatch ceremony" accompanying traffic safety movement of autumn in FY2016. · Cleaning activities around the dormitory were conducted according to the national occupational health sanitation week. · Participated in the 2nd KSC Cup soft volleyball competition. · Participated in "Dispatch ceremony" accompanying the accident prevention campaign for the year-end and new year of 2016. · Participated as a JV staff team at the goodwill ball game sponsored by the Katsurao village chamber of commerce and industry youth division.
Kawamata Town	· Taisei/Tekken/ Seibu/Honma Aomi JV	· Voluntary crime prevention patrol conducted by vehicles equipped with blue turning lights. · Pick up garbage in Roadside, sidewalk, road side belt of Route 114. · Blue patrol team participated in the exercise ceremony of Year-end New Year's Day accident prevention campaign
Namie Town	· Hazama Ando/ Toda/Fudo Tetra/Asanuma/ Iwata Chizaki Kensetsu JV	· Conducted cleaning of the roads around the dormitory installation site accompanying Minamisoma City spring clean day. · Minamisoma City reconstruction project etc. As part of the activities of the Regional Safety Liaison Committee, "Traffic Safety Street Enlightenment Activities (sentinels)" was held at intersections near business establishments.
Okuma Town	· Shimizu corporation · Shimizu/Kumagai /Toyo/Takenaka JV · Shimizu/ Obayashi/Kumaga	· Participated in National Highway No. 6 Cleanup Volunteer organized by NPO Happy Road Net · Volunteer participation in the search activities of local residents who were missing due to the tsunami. · Decontamination project voluntary crime prevention patrol car equipped with a blue rotating lamp inside the construction area. · Traffic safety sentinel for improving traffic manners, measurement and guidance of legal speed for construction related vehicles.

	i JV	· Purchase equipment and materials for construction, daily necessities etc. from the store which Okuma Town commerce association subscribes.
Tomioka Town	· Kajima/Hitachi/ Tekken/Tobishima JV · Shimizu/ Takenaka/Tokyo Power Technology JV · Obayashi/Toa/ Morimoto/Daiwa Odakyu/Toubu JV	· Implemented crime prevention patrol activities in Tomioka Town (in conjunction with site safety guidance). · Participation in the frying event of Iwana and Yamame sponsored by Tomioka River Fishery Cooperative Association. · Traffic safety campaign was carried out under the guidance of police officers OB in collaboration with "Prefectural People's Government Campaign to Prevent Traffic Accidents in the Summer of Heisei 28". · Flower planting on the flower bed of Information Center ("Hotto Station") was held to welcome town residents who are temporarily home returning during summer vacation. · Participation of crime prevention patrol corps in the falling ceremony of FY2016 traffic safety incident campaign. · Employees and workers participate in National Highway No. 6 Cleanup Volunteer organized by NPO Happy Road Net (HRN). · Flower planting on the flowerbed of "Hotto Station" opposite to the opening, according to the opening of Tomioka Town complex Sakura Mall. · At "Hotto Station", "6 years of Tomioka Town. Photo exhibition "(tentative name) held. · Flower planting on the flowerbed of a regional arterial road separation belt (several times). · Set up "Koinobori" and "Tanabata decoration" according to the season in the front plaza at the site office
Futaba Town	· Maeda/Okumura/ Tanaka JV · Maeda/Konoike/ Tanaka JV	· When dispatching traffic accidents in public roads, we dispatched heavy machinery and personnel from the construction site immediately after the accident, greatly contributing to the early cancellation of the road closure of the national road. · Opening "Fure-ai Hiroba" in Futaba Maeda JV office during the day to secure the resting place of town residents who are temporarily home to Futaba Town even during the "Bon" holiday period (holiday in summer vacation). · When Fukushima Prefectural Police, scheduled for August 11, searches for missing persons, we dispatched a "toilet car" to the search place and cooperated with the search activities. · Participation by staff and workers participate in the National Road No. 6 Cleaning Activities sponsored by Happy Road Net, a non-profit organization (NPO).

Photo by Taisei Corporation

Donation 3 wheelchairs to the local social welfare council

Photo by Taisei Corporation

Traffic induction and attention alerting to prevent traffic accidents (Iitate Village)

Photo by Okumura Corporation

Participation in regional clean up activity

Photo by Okumura Corporation

Participation in regional softball event (Katsurao Village)

Photo by Taisei Corporation

Participation in regional festivals (Kawamata Town)

Photo by Taisei Corporation

Participation in the revitalizing citizen tree planting festival (Minamisoma City)

Photo by Kajima Corporation

Releasing sweet fish fry, yamame and salmon into local rivers (Tomioka Town)

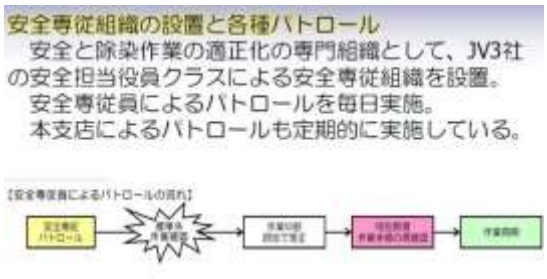
Photo by Maeda Corporation

Planting of flowers along local roads (Futaba Town)

Figure 5-54 Examples of community contribution activities

Photos by Obayashi Corporation

Figure 5-55 Example of communication with local community



Credits Maeda Corporation

Figure 5-56 Example of establishment of safety specialized organization and implementation of patrol

Photos by Maeda Corporati

地域との共生

JVの自主的活動

・「安全パトロール車」による巡回：毎月第一・第三金曜日
・巡回箇所：県道50号線、国道399号線、田村市広域農道

安全パトロール車

ポイ捨て状況確認

舎の運営・管理

宿舎・村内の巡回警備

・宿舎の巡回警備
　対象：三春熊耳宿舎、船引砂子田宿舎、常葉宿舎、滝根宿舎
　頻度：月曜日～日曜日　場内を不定時に2巡回、滝根は夕～深夜
・村内の巡回パトロール
　対象：葛尾村内（破砕施設他）
　頻度：日曜日、村内を終日巡回

滝根宿舎警備状況

村内巡回ルート

工事車両等の交通安全対策

村内の交通安全対策

葛尾村内への交通安全のぼり設置
・国道399号、県道50号、落合浪江線：9か所21本
・村道、林道：14箇所30本

敷井畑地区（見通しの悪いカーブ）

大笹地区（幅員減少部）

通勤車両等の交通安全対策

地域共生活動

一般マナーアップ活動：毎月第一週　月～水
交通安全週間：田村署出陣式参列（9/20）
交通安全のチラシ配布（9/27）

落合交差点でのマナーアップ

田村署交通安全週間出陣式

6

Figure 5-59 Example of traffic safety banner, campaign activities to promote exemplary traffic behavior

Photo by Maeda Corporation

Figure 5-60 Example of image up of Temporary Storage Site

Photo by Maeda Corporation

Figure 5-61 Example of education for workers of local companies

Photo by Maeda Corporation

Figure 5-62 Example of Futaba Fure-ai Town Square (Appearance, Inside)

Photo by Maeda Corporation

Figure 5-63 Example of light-up event in Naraha Town

Photo by Japan Federation of Construction Contractors

Figure 5-64 Leaflet etc. on efforts for decontamination and reconstruction

(3) Commendations of Excellent Providers from Fukushima Regional Environmental Office

A letter of appreciation has been awarded from MOE to decontamination contractors that have carried out regional contributions and campaign activities to promote exemplary behavior.

Table 5-48 Commendations of excellent providers for regional contributions and campaign activities to promote exemplary behavior

・FY2014 Iitate Village Decontamination Works (Part 1):	Taisei, Tokyu, Rinkai Nissan, Muramoto JV
・FY2014 Iitate Village Decontamination Works (Part 2):	Taisei, Seibu, Honma , Aomi JV
・FY2014 Katsurao Village Decontamination Works (Part 2):	Okumura, Nishimatsu, Daiho JV
・FY2014 Tomioka Town Decontamination Works (Part 2) :	Shimizu, Takenaka, Tokyo Power Technology JV
・FY2014 Tomioka Town Decontamination Works (Part 3):	Obayashi, Toa, Morimoto, Fujita, Tobu JV
・FY2014 Futaba Town Point Decontamination Works:	Maeda Corporation Tohoku Branch
・FY2015 Okuma Town Point Decontamination Works:	Shimizu, Kumagai, Toyo, Takenaka JV
・FY2015 Kawamata Town Decontamination Works (Part3):	Taisei, Tekken, Seibu, Honma, Aomi JV
・FY2015 Namie Town Decontamination Works (Part4):	Hazama Ando, Toda, Fudo Tetra, Asanuma, IwataChizaki kensetsu JV
・FY2015 Naraha Town Decontamination Works (Additional):	Maeda, Konoike JV
・FY2015 Futaba Town Decontamination Works :	Maeda, Okumura, Tanaka JV
・FY2015 Minamisoma City Decontamination Works (Part4):	Taisei, Goyo, Kokudo, Sato JV
・FY2015 Minamisoma City Decontamination Works (Part5):	Taisei, Goyo, Kokudo, Sato, Mitsubishi Material JV
・FY2016 Tomioka Town Decontamination Works (Part4):	Kajima, Hitachi, Tekken, Tobishima JV
・FY2016 Naraha Town Decontamination Works :	Maeda, Konoike JV