Progress on Decontamination & Interim Storage Facility

10th September, 2014

Ministry of the Environment, Japan

Outline

- Overview of decontamination areas
- Progress in the Special Decontamination Area
- Progress in the Intensive Contamination Survey Area
- Efforts to secure Interim Storage Facilities
- Decontamination technologies

Decontamination based on the “Act on Special Measures”

1) Special Decontamination Area (SDA)

Designation of SDA by the Minister of MOE

Development of the decontamination implementation plan in the SDA by the Minister of MOE

Implementation of measures such as decontamination by the national government

2) Intensive Contamination Survey Area (ICSA)

Designation of ICSA by the Minister of MOE

Survey measurement by the mayors of municipalities

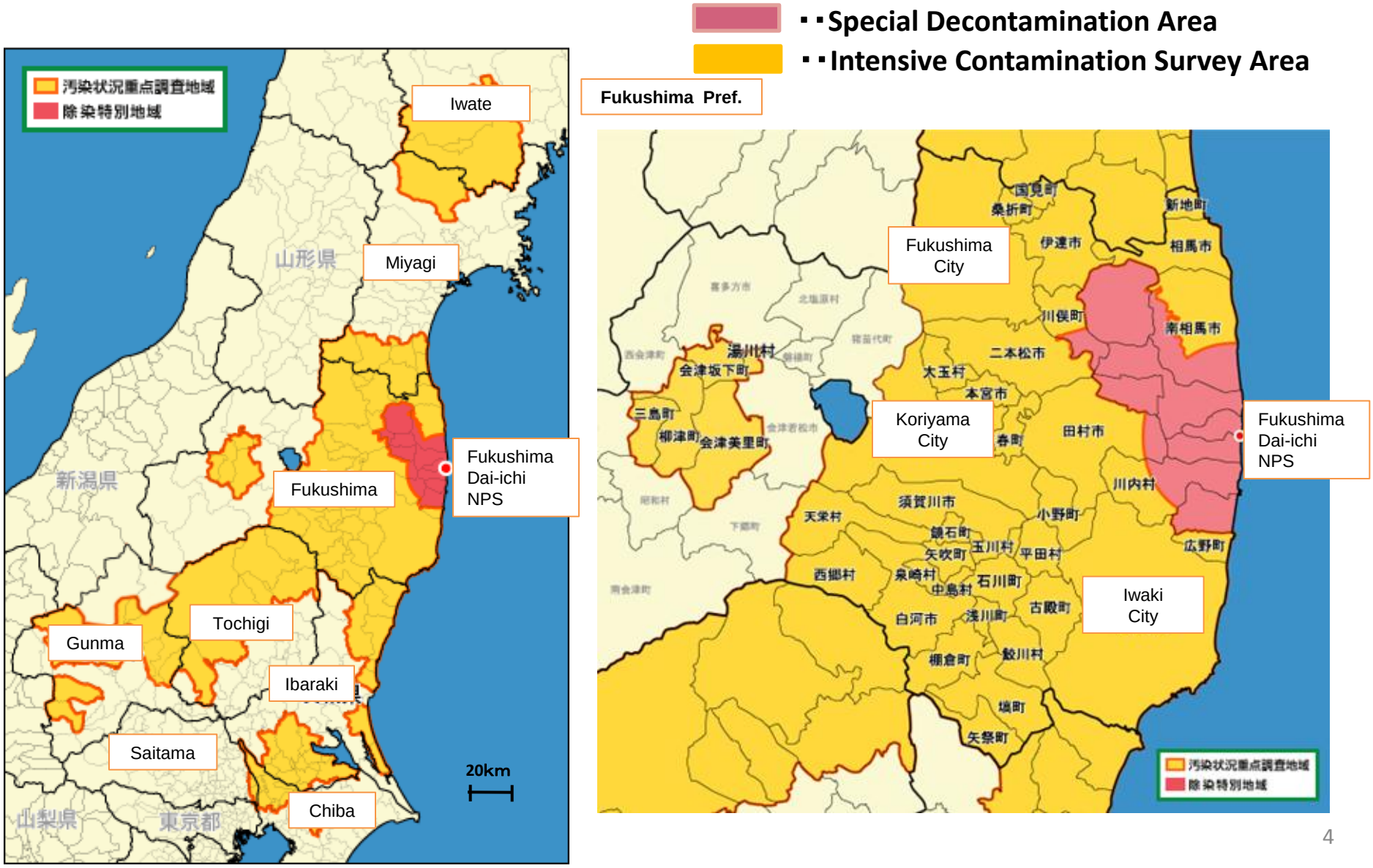
Development of the decontamination implementation plan in the ICSA by the mayors of municipalities

Implementation of measures such as decontamination based on the plan by the mayors of municipalities, etc.

Measures on decontamination of Soil and disposal of removed soil generated from the work

Implemented by related nuclear power plant operational company (TEPCO)

Special Decontamination Area and Intensive Contamination Survey Area



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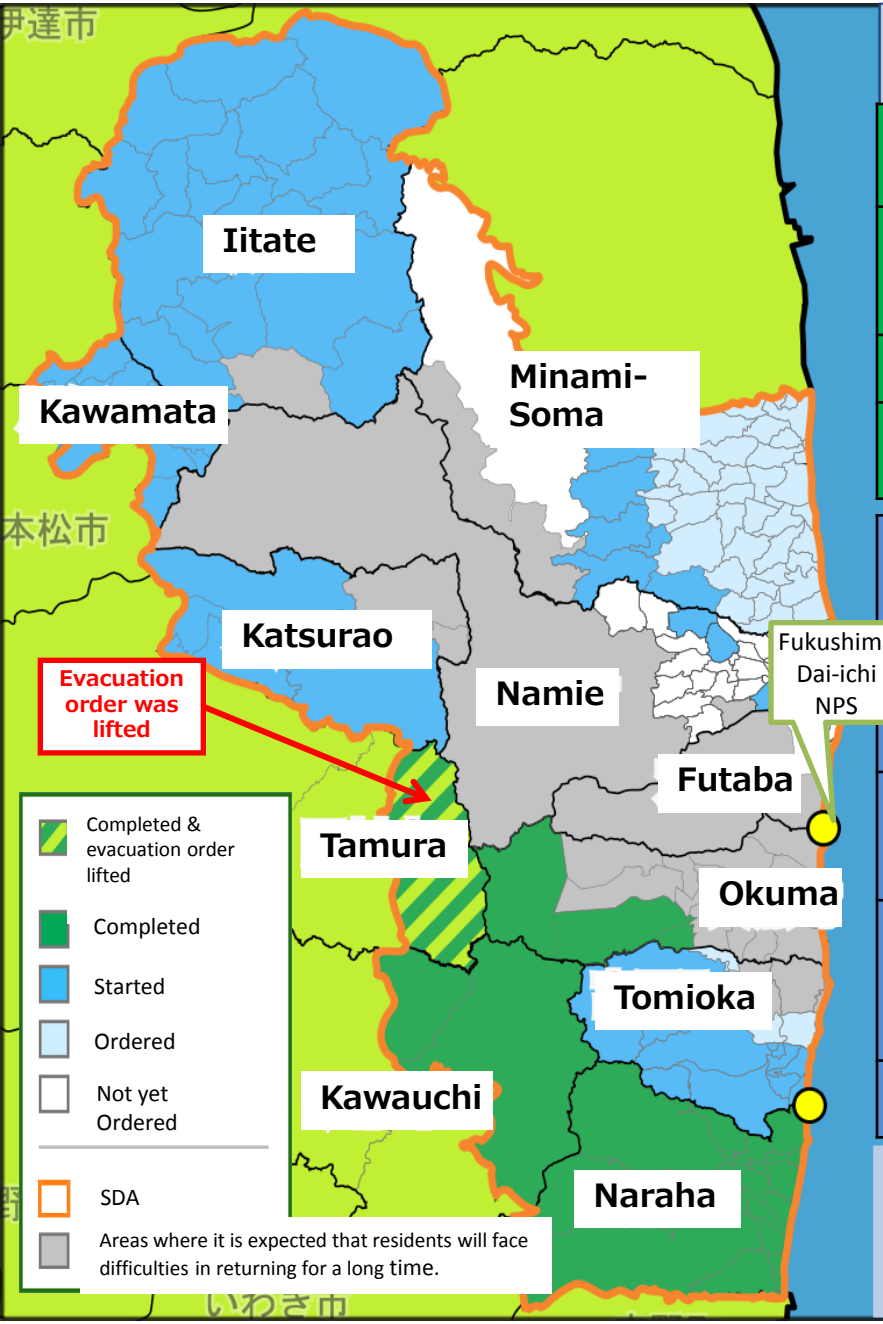
Progress in the Special Decontamination Area ①



Municipalities in which the decontamination work has been completed according to the plan

Tamura	Whole area decontamination was completed in June, 2013 Evacuation order was lifted on Apr. 1, 2014
Kawauchi Naraha Okuma	Whole area decontamination was completed in Mar., 2014
Katsurao	Decontamination of residential area was completed in Jul., 2014
Joban Expressway	Completed (Reopened between Hirono and Joban-Tomioka)

Kawamata	Aiming at the completion of decontamination of residential area in summer, 2014 Aiming at the completion of decontamination of remaining areas within 2015
Katsurao	Aiming at the completion of decontamination of remaining area within 2015
Iitate	Aiming at the completion of decontamination of residential area within 2014 Aiming at the completion of decontamination of remaining area within 2016
Minami-Soma, Namie, Tomioka	Aiming at the completion of decontamination of residential area within FY 2015 Aiming at the completion of decontamination of remaining area within FY 2016
Futaba	Aiming at the completion of decontamination within FY 2015

- ◆The plan was already reviewed at the end of 2013
- ◆Decontamination will be accelerated with full force and will be implemented based on the reviewed plan for evacuees to return home

Progress in the Special Decontamination Area②

Decontamination Plan has been established in all the 11 municipalities, and the progress has been made.
Decontamination has been completed in Tamura in June, 2013, and in Naraha / Kawauchi / Okuma in March, 2014.

		Population in Decontamination Target Area(person) (approx. Figure)	Decontamination Target Area (ha) (approx. figure)	Rearrangement of the Restricted areas, etc.	Progress of the Decontamination Work < as of the end of Jul., 2014 >				Schedule	
					Decontamination Plan	Temporary Storage Site	Consent of landowners, etc.	Decontamination activities	Residential Areas completed	The rest of other areas completed
Whole area decontamination was completed	Tamura	400	500	Apr. 2012	Apr. 2012	Secured	Completed	Completed in June. 2013	Already completed in FY2013	
	Naraha	7,700	2,100	Aug. 2012	Apr. 2012	Secured	completed	Completed in March, 2014	Already completed in FY2013	
	Kawauchi	400	500	Apr. 2012	Apr. 2012	Secured	Completed	Completed in March, 2014	Already completed in FY2013	
	Okuma	400	400	Nov. 2012	Dec. 2012	Secured	Completed	Completed in March, 2014	Already completed in FY2013	
Decontamination of residential area was completed	Katsurao	1,400	1,700	Mar. 2013	Sep. 2012	approx. 70% Secured	Almost completed	In progress	Already completed in summer, 2014	Within 2015
Decontamination is under operation & in preparation	Iitate	6,000	5,600	Oct. 2012	May 2012	approx. 90% secured	approx. 90%	In progress	Within 2014	Within2016
	Kawamata	1,200	1,600	Aug. 2013	Aug. 2012	approx. 90% Secured	Almost completed	In progress	Summer, 2014	Within 2015
	Namie	18,800	3,300	Apr. 2013	Nov. 2012	approx. 30% Secured	approx. 50%	In progress	FY2015	FY2016
	Tomioka	11,300	2,800	Mar. 2013	Jun. 2013	approx. 50% secured	approx. 60%	In progress	FY2015	FY2016
	Futaba	300	200	May, 2013	Jul. 2014	Under coordination	Under coordination	Under preparation	FY 2015	

Note 1: Necessary areas for securing Temporary Storage Sites might be reviewed in future survey
Note 2: In the municipalities where decontamination was completed, such as Tamura, Naraha, Kawauchi, and Okuma, remaining decontamination shall be implemented for the residents who did not yet consent but newly request decontamination.

Progress in the Special Decontamination Area ③-1

As of the end of July, 2014 < Unit: % >	Tamura		Naraha		Kawauchi		Iitate		Kawamata	
	Executing ratio	Ordering ratio	Executing ratio	Ordering ratio	Executing ratio	Ordering ratio	Executing ratio	Ordering ratio	Executing ratio	Ordering ratio
Residential area	100	100	100	100	100	100	13	100	66	100
Farmland	100	100	100	100	100	100	5	40	12	100
Forest	100	100	100	100	100	100	11	45	31	100
Road	100	100	100	100	100	100	3	28	0.3	100

Note 1: Executing ratio is calculated as follows: ①Areas in which decontamination works (weeding, removal of sediment, and cleaning, etc.) are completed / ②Target areas to be decontaminated

Note 2: Ordering ratio is calculated as follows: ③Areas already contracted for decontamination / ②Target areas to be decontaminated

Note 3: ①, ②, ③ might be modified with further review

Progress in the Special Decontamination Area ③-2

As of the end of July, 2014	Katsurao		Okuma		Minami Soma		Tomioka		Namie	
	Executing ratio	Ordering ratio	Executing ratio	Ordering ratio	Executing ratio	Ordering ratio	Executing ratio	Ordering ratio	Executing ratio	Ordering ratio
Residential area	100	100	100	100	2	99.9	2	100	3	11
Farmland	1	100	100	100	1	65	0.3	100	4	15
Forest	99	100	100	100	8	79	1	100	6	14
Road	1	100	100	100	0.3	65	45	100	5	23

Note 1: Executing ratio is calculated as follows: ①Areas in which decontamination works (weeding, removal of sediment, and cleaning, etc.) are completed / ②Target areas to be decontaminated

Note 2: Ordering ratio is calculated as follows: ③Areas already contracted for decontamination / ②Target areas to be decontaminated

Note 3: ①, ②, ③ might be modified with further review

Progress of Decontamination Work on Joban Expressway
< Hirono ～ Joban-Tomioka >

◆Decontamination work on Joban expressway was implemented between Dec. 2012～Jun. 2013. Target section=approx. 3.3km: over 3.8μSv/h～less than 9.5μSv/h (in a part of Hirono～Joban-Tomioka, 16.4km)

◆ The survey by a monitoring car found that the air dose rate has been much more decreased than the target value described in the "Decontamination Policy"*

Target Value Less than approx. 3.8μSv/h by the reopening

Actual Value 1.5～1.7μSv/h average (as of Jan. 23, 2014)

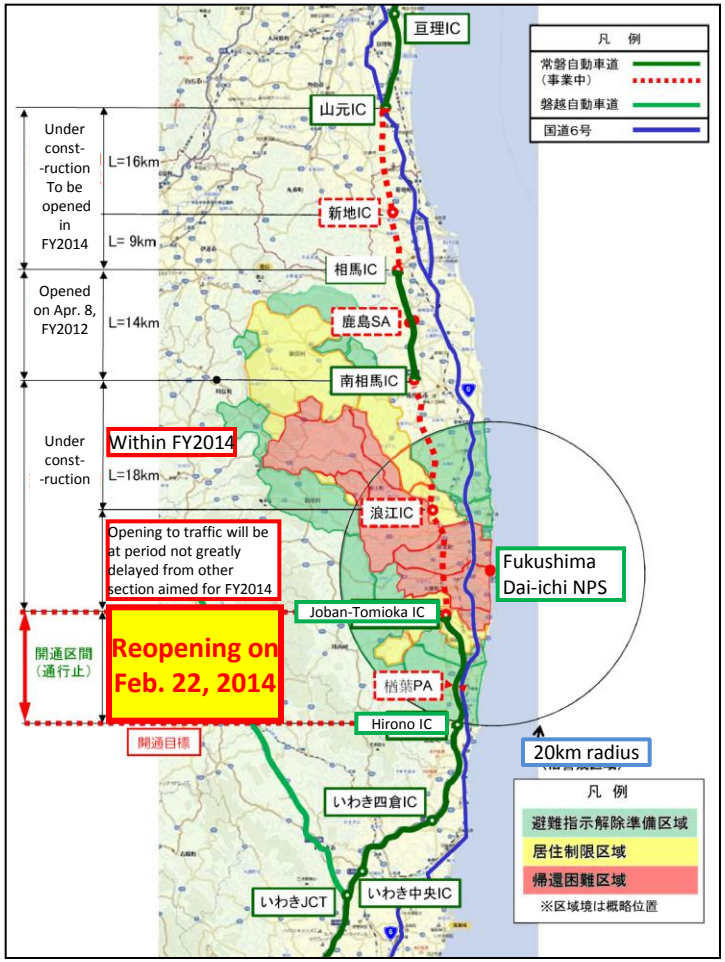
*The Decontamination Policy makes an allowance for a decrease in radiation dose that will be expected by the roadwork such as road pavement etc.

Main Method of Decontamination

Slope : Weeding
Road surface & ditches: High pressure water spray

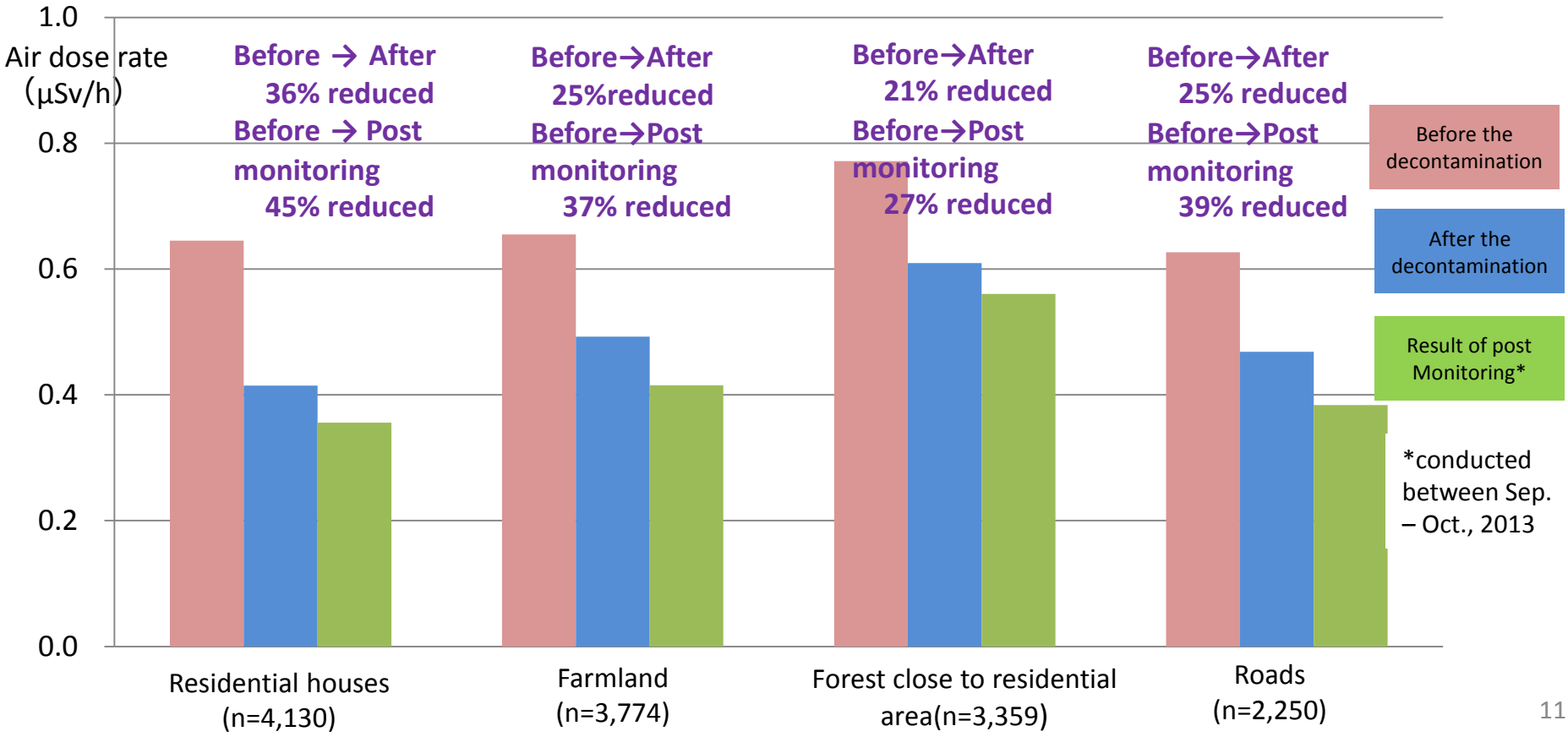
Weeding of slope

High pressure water spray on the road surface



Results on Decontamination Work in Tamura (in Special Decontamination Area)

- ◆Decontamination work decreased radiation dose:
  e.g. approx. 36% in residential area
- ◆It is confirmed that the effect on decontamination work in whole area has been maintained, and post monitoring survey shows that radiation dose has been continuously decreasing.



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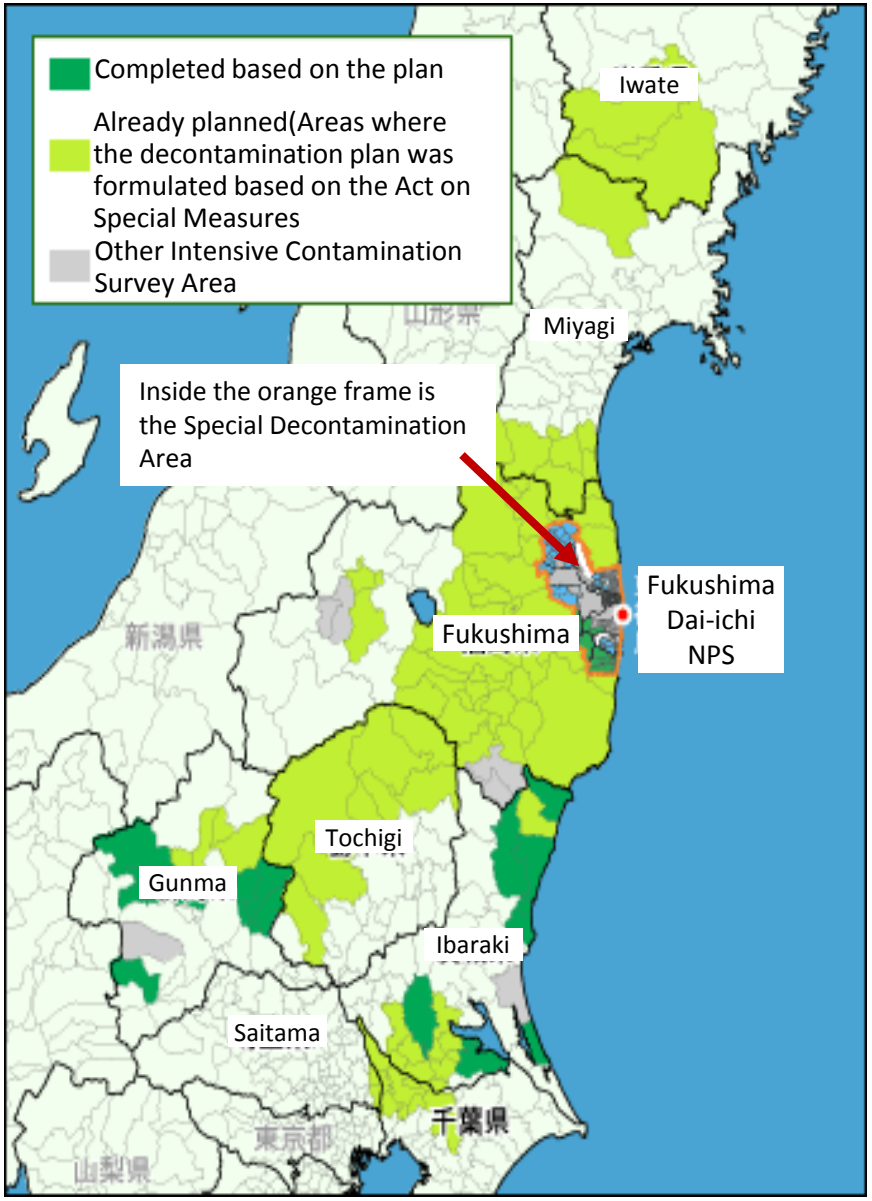
Progress in Intensive Contamination Survey Area ①

As of the end of June 2014



◇Planned decontamination projects of public facilities including living environment for children are coming to an end. More than 70% of them has been completed.

◇As for decontamination of residential houses, farmland/meadows and roads, orders have been placed for more than 60% of the planned projects .

◇17 out of 58 municipalities outside Fukushima prefecture completed their plans, and 24 of them has almost done.

○Number of municipalities designated as Intensive Contamination Survey Area:
104 (at first) → 100 (at present)
If the conditions would not be fulfilled, the designation of Intensive Contamination Survey Area can be lifted
The designation was lifted in 4municipalities up to now because of radiation dose decrease, etc.

○Decontamination implementation plans formulated (for all municipalities which have the intention): 94municipalities

○Publicly announced the completion of decontamination work based on the plan (monitoring survey will be continued): 17municipalities

○In process of implementing decontamination work based on the plan: 77municipalities
Completion of the plan is set between FY2015~FY2016 (34municipalities) in Fukushima prefecture and most of other municipalities, between FY2012~FY2013 (45municipalities)

○The progress within Fukushima pref. (as of the end of June 2014)
Public facilities: approx. 70% Residential houses: approx. 40%
Roads: approx. 30%
The progress of outside Fukushima pref. (as of the end of June 2014)
Schools & nurseries: almost completed Residential Houses: approx. 90%
Roads: approx. 90%

Progress in Intensive Contamination Survey Area ②

Decontamination implementation plans were formulated in 94municipalities, and progress has been made (As of the end of June, 2014)

	Number of municipalities	Municipalities designated as Intensive Contamination Survey Area		
		Already formulated the plans		No plan at present
		decontamination work in progress	Completed	
Iwate	3	3		
Miyagi	8	8		
Fukushima	40	36		4
Ibaraki	20	8	11	1
Tochigi	8	8		
Gunma	10	3	6	1
Saitama	2	2		
Chiba	9	9		
Total	100	77	17	6

Progress in Intensive Contamination Survey Area ③

Within Fukushima prefecture (As of the end of July, 2014)	Ordering Ratio (Number of ordering/Number of planning	Executing Ratio (Number of actual achievement/Number of planning)
Public facilities, etc.	approx. 80%	approx. 70%
Residential houses	approx. 80%	approx. 50%
Roads	approx. 60%	approx. 30%
Farmlands & meadows	approx. 90%	approx. 70%
Forests(in living areas)	approx. 60%	approx. 30%

Note: The chart is based on the investigation result conducted by Fukushima prefecture.
The number of planning is the total number until the end of FY2015, which might be increased in future depending on each municipality's status.

Outside Fukushima pref. (As of the end of June, 2014)	**Ordering Ratio （Number of Ordering/number of planning）**	**Executing Ratio (Number of actual achievement/number of planning）**
Schools and nurseries	completed	almost completed
Park, Sports facilities	almost on order	almost completed
Residential houses	approx. 90%	approx. 90%
Other facilities	approx. 90%	approx. 80%
Roads	approx. 90%	approx. 90%
Farmlands & meadows	completed	almost completed
Forests(in living areas)	approx. 90%	approx.50%

Note: The number of planning is the total number including future plans as of the end of 2014, and might be increased aftertime

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What is an ISF(Interim Storage Facility)?

- ○A Large quantities of Soils and Waste which contain radioactive-materials has been generated by decontamination work in Fukushima prefecture.
- ○It is difficult to clarify the methods of final disposal at the current stage.
- ○Until the final disposal, it is necessary to establish ISF(Interim Storage Facilities) in order to manage and store them safely and intensively.

Following materials generated in Fukushima prefecture will be stored in ISF.

1. Soils and wastes (fallen leaves, branches) generated by decontamination work which has been stored at Temporary Storage Sites.

2. Incinerated ash with radioactive concentration in excess of 100,000 Bq/kg.

※ In principle, combustible materials will be incinerated and stored as ash.

Note) Policy, such as incinerated ash with radioactive concentration of 100,000 Bq /kg or less, will be finally disposed at private managed disposal site in Tomioka (Fukushima Eco Tec)

Efforts to secure Interim Storage Facility ①

Oct., 2011 Ministry of the Environment announced the Basic Principles for Interim Storage Facility (ISF) (the roadmap)

※Main Contents

- The National Government shall secure, maintain and manage ISF
- The National Government shall make utmost efforts **to start the operation of ISF within about 3 years(by January, 2015)**
- Materials to be stored are limited to soil and waste generated in Fukushima prefecture
- The above materials will be finally treated in outside Fukushima prefecture after stored 30years in Interim Storage Facility

Dec., 2011 The Ministry requested Fukushima Prefecture and 8 towns in Futaba County to examine location sites within Futaba county

Mar., 2012 The Ministry explained the Fukushima Prefecture and 8 towns that IFS may be located separately in 3 towns (Futaba, Okuma and Naraha)

Aug., 2012 The Ministry proposed the investigation for ISF to Fukushima Prefecture and 8 towns

Nov., 2012 The Governor of Fukushima Prefecture announced the acceptance of the investigation proposed by the Ministry at the consultation meeting with the mayors of Futaba County's towns and villages

Apr., 2013 Obtaining the consent from the local residents, field survey and boring survey started

Jun.-Sep., 2013 Studies by a Study Group on environmental protection and safety measures for ISF

Efforts to secure Interim Storage Facility ②

Dec., 2013 The Ministry requested the Fukushima prefecture and 3 towns (Futaba, Okuma and Naraha) to accept the establishment of ISF

Dec., 2013- A study group on transportation was established

Feb., 2014 The Governor of Fukushima prefecture requested the Ministry to review the plan to consolidate ISF in Okuma and Futaba

Mar., 2014 The Ministry accepted the request

Apr.-May, 2014 The Government explained the installation of ISF to Fukushima pref., Okuma and Futaba towns, and requested to hold explanatory meetings.
Both towns accepted it in May

May.-Jun., 2014 The Ministry held the explanatory meetings for residents (total 16 times, 10 times inside Fukushima, 6 times outside Fukushima)

Jul. - Aug, 2014 Based on the opinions raised at the explanatory meetings for residents, the Ministry showed the government's basic policy including financial support measures to Fukushima prefecture, Okuma and Futaba.

Sep.1, 2014 Minister of MOE, Minister of Reconstruction Agency, Governor of Fukushima, Mayors of Okuma and Futaba had a meeting.
The Governor accepted the construction of interim storage facility and both Mayors took the Governor's acceptance seriously and agreed that the government would explain it to the landowners. The Prime-Minister, Mr. Abe, the Governor of Fukushima and Mayors of Okuma and Futaba had a meeting on the same day, and the Governor reported the Prime Minister on the same subject.

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Demonstration Project for Decontamination Technologies

1. Overview

   The national government solicits decontamination technologies potentially usable in decontamination works, aiming to contribute to diffusion of similar technologies and progress of decontamination consequently, by supporting new technologies' development and evaluating effectiveness, economical aspects, and efficiency, etc. of the technologies.

2. Targeted Technologies

   -1. Technologies to improve efficiency of decontamination works
   -2. Technologies to reduce volume of contaminated waste and soil
   -3. Technologies to treat contaminated waste
   -4. Technologies to transport and store removed object

3. Budget: JPY 21million(including tax) max. per case

4. Status:

   Cabinet office – 25 new technologies (Nov. 2011 – Feb. 2012)
   Ministry of the Environment – 22 new technologies (May 2012 – Sep. 2012),
   15 new technologies (Nov. 2012 – Mar. 2013),
   11 new technologies (Aug.2013 — Dec.2013),
   10 new technologies (Aug.2014 — Dec.2014)

FY2014 Selected Verification Projects of Decontamination Technology

No	Technology Field	Subject	Theme of Project	Executing Agency
1	Volume reduction of removed soils and wastes	Sludge	Demonstration test for reduction of radiological exposure using Cloth traveling Filter Press	ISHIGAKI COMPANY,LTD
2		Soil	Demonstration of classifying and washing the contaminated soil by movable system on the truck, and the validation for reusing the cleansed soil	HITACHI KIKAI Co.
3		Organic matter	Demonstration of the Bio-coke technology for volume reduction and stabilization of contaminated organic matter, and Verification of transport efficiency improvement, safety and economical efficiency by volume reduction	Chugai Ro Co., Ltd.
4	Treatment of contaminated wastes	Fishing nets etc.	Demonstration of the secure treatment method by thermal decomposition processing for fishing nets or wastes ,which are difficult to dispose of, left in the areas under Evacuation orders.	Nihon Plant Construction Corporation
5		Captured wild harmful animals	Demonstration of the safe composting system for treatment of dead bodies of captured animals	Kyowa Kako Co., Ltd.

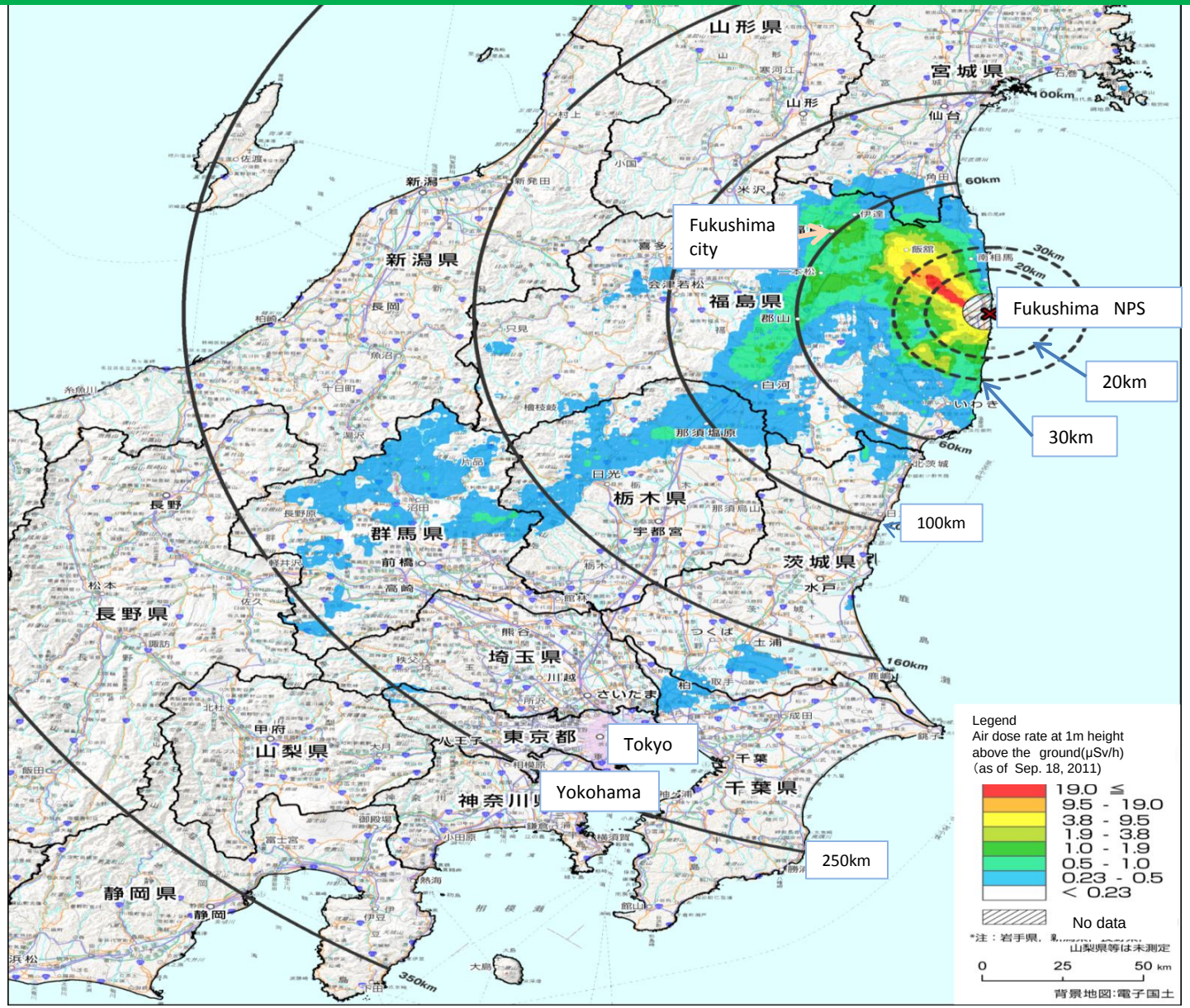
FY2014 Selected Verification Projects of Decontamination Technology

No	Technology Field	Subject	Theme of Project	Executing Agency
6	Technologies for transportation, temporary storage and interim storage of removed materials	Construction method	Effective construction method for low permeability layer of radioactive storage facility by simply crushing in-situ excavated soil	Taisei Corporation
7		Transportation	Demonstration of mass transportation management system using Dedicated Short Range Communications (DSRC) to transport the removed soils in Fukushima prefecture	Hanshin Expressway Company Limited
8		Breaking of flexible container bags	Technology demonstration of non-contact, high efficiency and energy conserving Water-Jet-Cutter for breaking flexible container with low level radioactive materials in interim storage facility	SHIMIZU CORPORATION
9		Bag breaking and polluted water processing	Demonstration of the container-bag unloading and breaking system requiring no worker and cleanup technology for polluted water in container bags	Obayashi Corporation
10		Soil sorting	Demonstration test of the Contaminated Soil Sorting Unit for radioactive soil preselected by the roll screen method	AREVA NC Japan Projects Co., Ltd.

Reference

Decontamination information web site;
http://josen.env.go.jp/en/

Radioactive Pollution Caused by the Accident at TEPCO's Fukushima Dai-ichi NPS



Framework of Decontamination

Legislation for Promoting Decontamination

- The Act on Special Measures Concerning the Handling of Radioactive Pollution came into force on January 1, 2012.
- Based on this Act the followings are carried out:
  - Planning and implementation of decontamination work
  - Collection, transfer, temporary storage, and final disposal

Special Decontamination Area

- 11 municipalities in (former) restricted zone or planned evacuation zone (<20km from the NPS, or annual cumulative dose is >20mSv)
- Decontamination is implemented by the national government

(*) Entire area of Naraha, Tomioka, Okuma, Futaba, Namie, Katsurao, and Iitate.
Some area of Tamura, Minami Soma, Kawamata, and Kawauchi.

Intensive Contamination Survey Area

- 100 municipalities in 8 prefectures (*), in which air dose rate is over 0.23 μSv/hour, are designated. (0.23 μSv/hour is a value estimated from the long-term target of annual additional exposure dose, 1 mSv/year, under a certain condition)
- Decontamination is implemented by each municipality. The national government will take financial and technical measures.

(*) Iwate, Miyagi, Fukushima, Ibaraki, Tochigi, Gunma, Saitama, and Chiba

(Reference) Related responses towards evacuees returning home

"The Policy for accelerating Fukushima's reconstruction from the nuclear disaster" (Cabinet Decision, December 20, 2013)

Integrated and multi-tiered protective actions are taken by the related ministries in collaboration with each other. The ministries conduct, or continue to examine, measures of measuring and managing individual doses, reducing radiation exposure in various manners, and establishing a consultation system. With these measures, we continue to pursue the long-term goal (additional individual dose of 1mSv per year or below) for the returned evacuees.

URL; http://japan.kantei.go.jp/96_abe/actions/201312/20gensiryoku_e.html

"Practical Measures for Evacuees to Return Their Homes" (Nuclear Regulation Authority, November 20, 2013)

One of the practical measures for evacuees to return their home is to focus on the individual dose. For the evacuees to return home, measures that contribute to measure, manage the individual dose, and to reduce radiation exposure of residents are suggested. Also, to establish a system of supporting the evacuees who choose to return home in a comprehensive manner, the necessity of allocating counseling staff and developing a system of supporting them was suggested.

URL; http://www.nsr.go.jp/english/library/data/special-report_20140204.pdf

Summary on Decontamination Effect

Effect of decontamination works by the national and local governments (Major results)

Air dose rate[*1,2] (Measured at 1m height)	Before decontamination: **0.36-0.93** μSv/h ↓ After decontamination: **0.25-0.57** μSv/h		
Reduction rate (average) of air dose rate[*2,3]	<1μSv/h before decontamination	1-3.8μSv/h before decontamination	> 3.8μSv/h before decontamination
	32%	**43%**	**51%**
Example of reduction rate of surface concentration of contamination [*4]	Asphalt-paved roads: 50-70% by washing, 30-70% by high-pressure washing Playground(Soil): 80-90% by stripping off surface-dirt		

*1: Range from 25 to 75 percentile values of the air dose rate.
*2: Data measured at 50cm height in children's living environment are not included.
*3: Average reduction rate of the air dose rate for different dose levels before decontamination.
(Reduction rate (%)= (1-air dose rate after decontamination / air dose rate before decontamination) x100.)
*4: Already in press release of "Announcement on 'Effectiveness of decontamination work which is implemented by the national government and relevant municipalities in decontamination project'（Jan. 18, 2013）"

<Original Data>

○Projects: Mostly, decontamination projects after FY2012

(Projects by national government: 10 municipalities;
Projects by municipalities: 90 municipalities in 8 prefectures)

○Data measurement term : Roughly from Mar. 2012 to Oct. 2013

○Measured item: Air dose rate (measured at 1m and 50cm heights; Unit: μSv/h)

○Number of data: About 250,000 (A pair of data collected before and after decontamination is counted as one item of data)

For Acceleration of Decontamination and Reconstruction

- Interim report of the strategies of the national government and the 4 cities -

Background

- The 4 cities (Fukushima, Koriyama, Soma, Date) requested the national government to accelerate the decontamination and reconstruction and to provide accurate information that could remove public misinterpretation of the target of decontamination.
- The national government and the 4 cities developed together an interim report as their common view of the strategies.

New findings

(1) Air dose rate

Decontamination and radioactive decay over the past three years have decreased air dose rates.

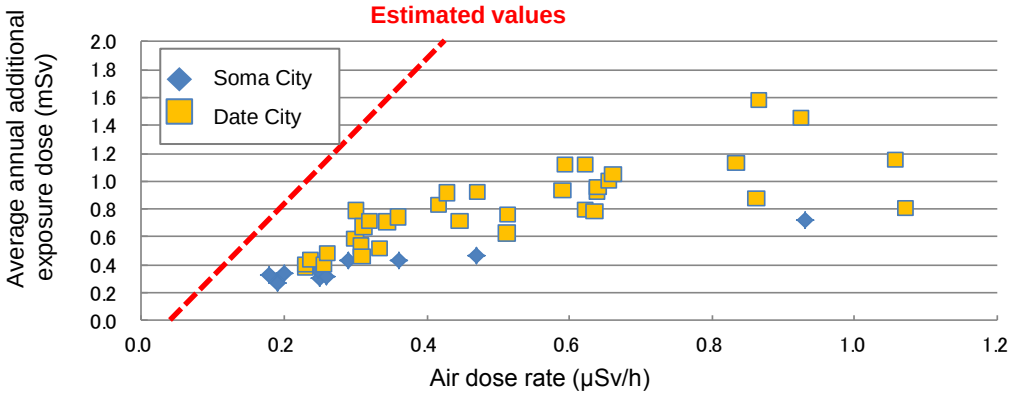
(2) Individual exposure dose

The level of annual individual additional exposure is about 1 mSv for many residents.
Individual additional exposure is approx. 1 mSv/yr for the residents living in the area where the air dose rate is about 0.3-0.6 μSv/h.
Actual exposure dose tends to be lower than that is estimated from the air dose rate. (Based on the estimation, annual additional exposure of 1 mSv is converted to air dose rate of 0.23 μSv/h.

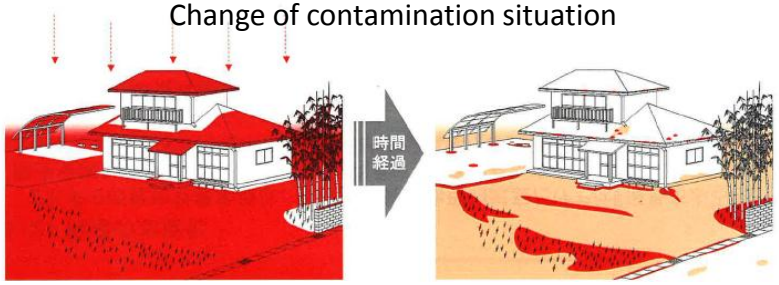
(3) Change of contamination situation

Contamination tends to be topically concentrated under rain gutters etc. in a garden due to weathering and human activities, while it was widespread early on in the incident.

Correlation between the Average Air Dose Rate and the Average Annual Additional Exposure Dose
- Soma City (elementary school pupils) and Date City (0 to 15 years old) -



Change of contamination situation

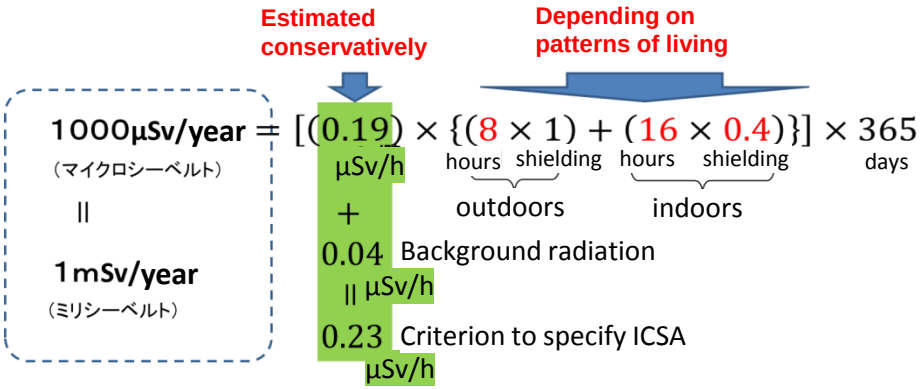


For Acceleration of Decontamination and Reconstruction

- Interim report of the strategies of the national government and the 4 cities -

What the national government could not correctly convey

The long term target of radiation protection is the additional exposure dose of 1 mSv/yr. Decontamination is only one of the radiation protection methods. 1 mSv/yr is not a limit of exposure or a boundary between safety and danger. The government uses the value of air dose rate 0.23 μSv/h as a criterion to specify the Intensive Contamination Survey Area but does not set it as a goal to be achieved only by decontamination activities. 0.23 μSv/h is a numerical value conservatively estimated based on a hypothetical life pattern.



Direction of the future strategies

(1) Promote radiation protection of the public, focusing on individual exposure dose

- Enhance activities for radiation protection, focusing on individual exposure dose in areas where decontamination was done as planned.
- Promote monitoring of individual doses by providing residents with personal dosimeters.

(2) Enhance risk communication

- Convey clearly and deliberately the government policy on decontamination, scientific knowledge about radiation, and new findings on effects of decontamination and relationships between air dose rate and individual exposure dose.
- Improve officials' knowledge about decontamination and health impacts of radiation.
- Secure and cultivate human resources who can convey knowledge and ideas of the government and experts.

(3) Conduct decontamination effectively, depending on the situation of contamination

- Determine whether to conduct decontamination and select appropriate measures, depending on the radiation level.
- Improve effectiveness and efficiency of decontamination activities.

(4) Enhance comprehensive policies to secure radiation protection and address anxieties of the public

- By effectively combining policies of (1)-(3), address people's concern and retrieve their sense of security.

Future actions for the Areas Where it is Expected that Residents will Face the Difficulties in Returning for a Long Time

(Cabinet Decision on December 20, 2013)
Nuclear Emergency Response Headquarters announced as follows:
" The Policy accelerating Fukushima's reconstruction from the nuclear disaster"

2. Improve the measures to start a new life

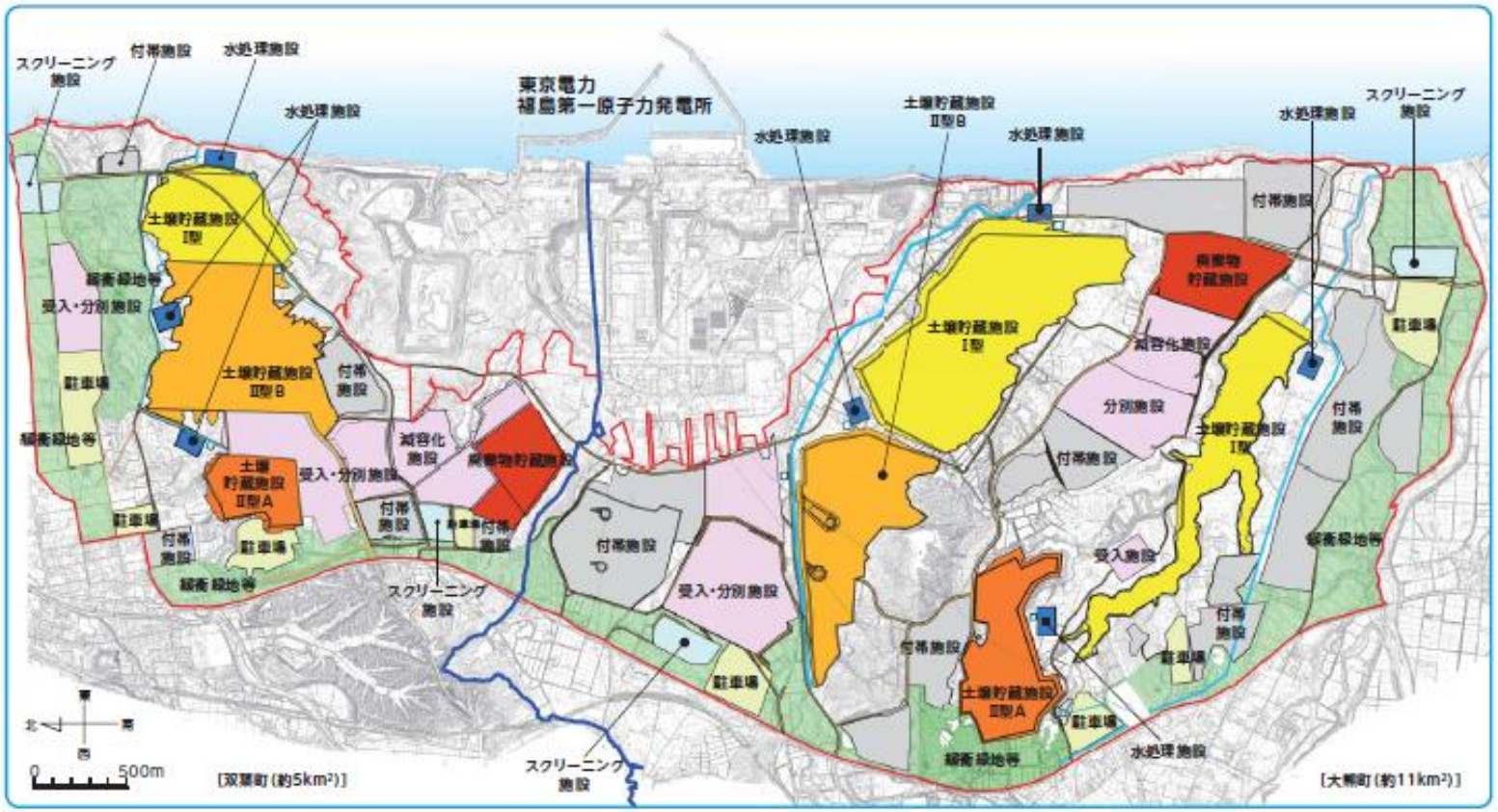
<3>Future actions for the areas where it is expected that residents will face the difficulties in returning for a long time

Regional development including decontamination will be reviewed along with the local municipalities taking into account the future radiation dose after the result of decontamination model project, evacuees' intention whether to return, and future image of industry and reconstruction.

(tentative translation)

Layout Drawing of Interim Storage Facilities (draft)

- Interim Storage Facilities will be consisted of facilities with various functions.
- Those facilities will be developed in accordance with the consent of landowners and the generation of removed contaminated soil, etc.



- Type-Ⅰ Soil Strage Facility
- Type-Ⅱ-A Soil Strage Facility
- Type-Ⅱ-B Soil Strage Facility
- Waste Strage Facility
- Emplacement&Segregation Facility/Volume Reduction Facility
- Attached facilities:Admin Office/R&D Facility/Public Information Center etc.
- Screaning Facility
- Parking Lot
- Water Treatment Facility
- Buffer Green Zone
- Boundary of lot
- Boundary of administration

Concept of Structure of Storage Facility

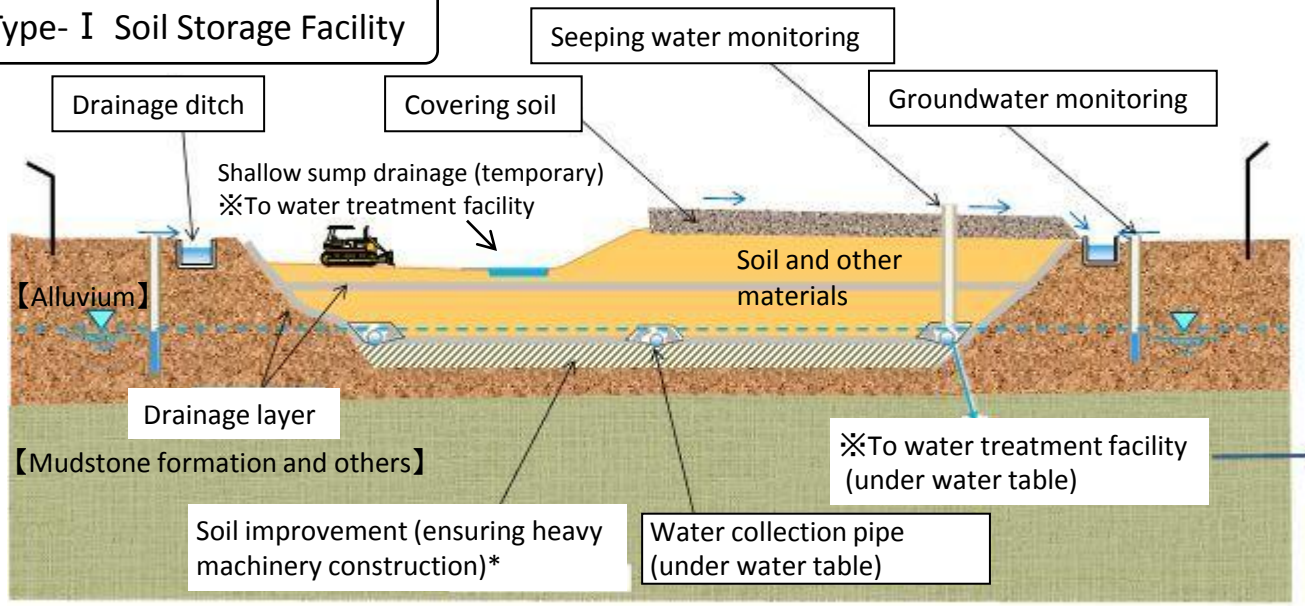
	Type-I Soil Storage Facility	Type-II Soil Storage Facility	Waste Storage Facility
Main substances for storage (Radioactive cesium concentration)	Soil and other materials that do not risk polluting public water area and groundwater with radioactive cesium （ 8,000Bq/kg or less ）	Soil and other materials exceeding the condition shown in left column (More than 8,000Bq/kg)	・Incinerated ashes coming from decontamination or specified waste generated in Fukushima Prefecture ・More than 100,000 Bq/kg
Measures to prevent water seeping into ground water	—	Seepage control and other infrastructure (Seepage control sheet and other infrastructure or low-permeability soil layer)	To prevent dispersion and spillage by enclosing into container

Schematic View of Type- Ⅰ Soil Storage Facility

<Type-I >

Applicable geography and geology
Any low land

Radioactive cesium concentration
8,000Bq/kg or less



*Basement: In the case of alluvium, soil improvement (approximately up to 1m depth) will be performed. In the case of mudstone formation, no action will be needed.

Concept of Structure of Storage Facility

Schematic View of Type- II Soil Storage Facility

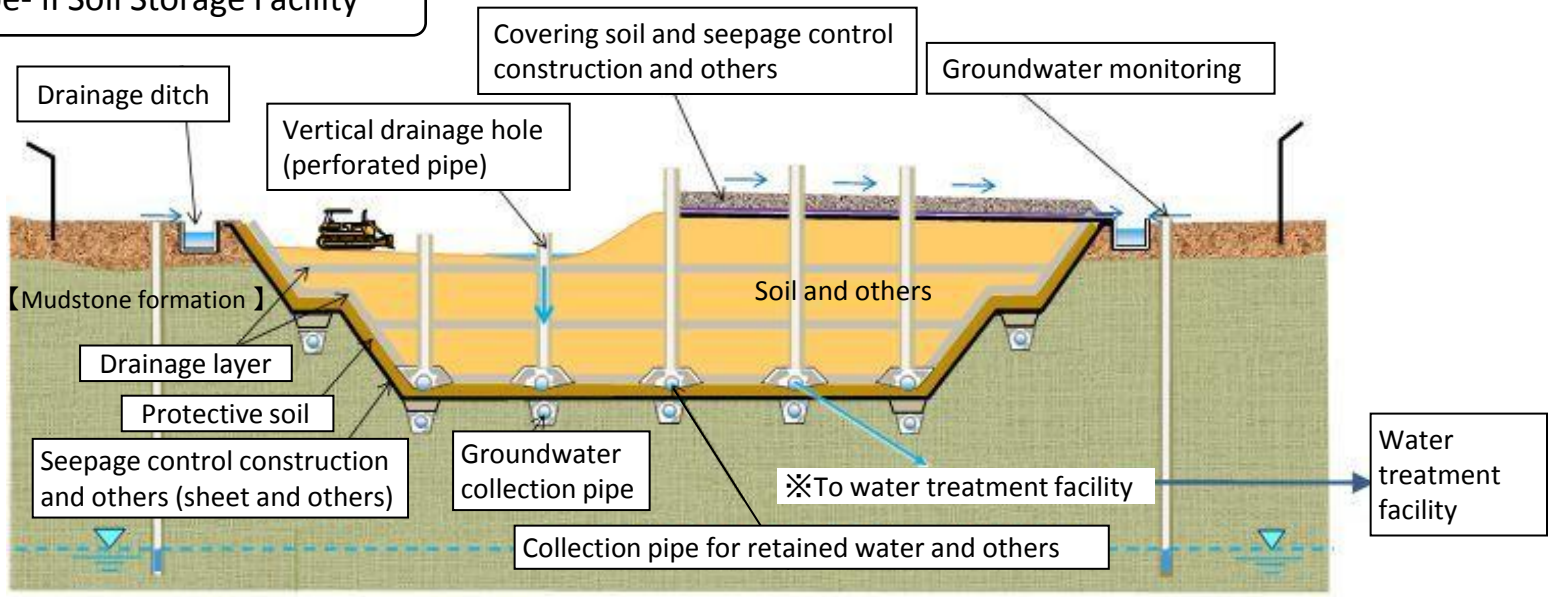
<Type – II >

Leakage control
Seepage control sheet patterns

Applicable geography and geology

Hill , Tableland

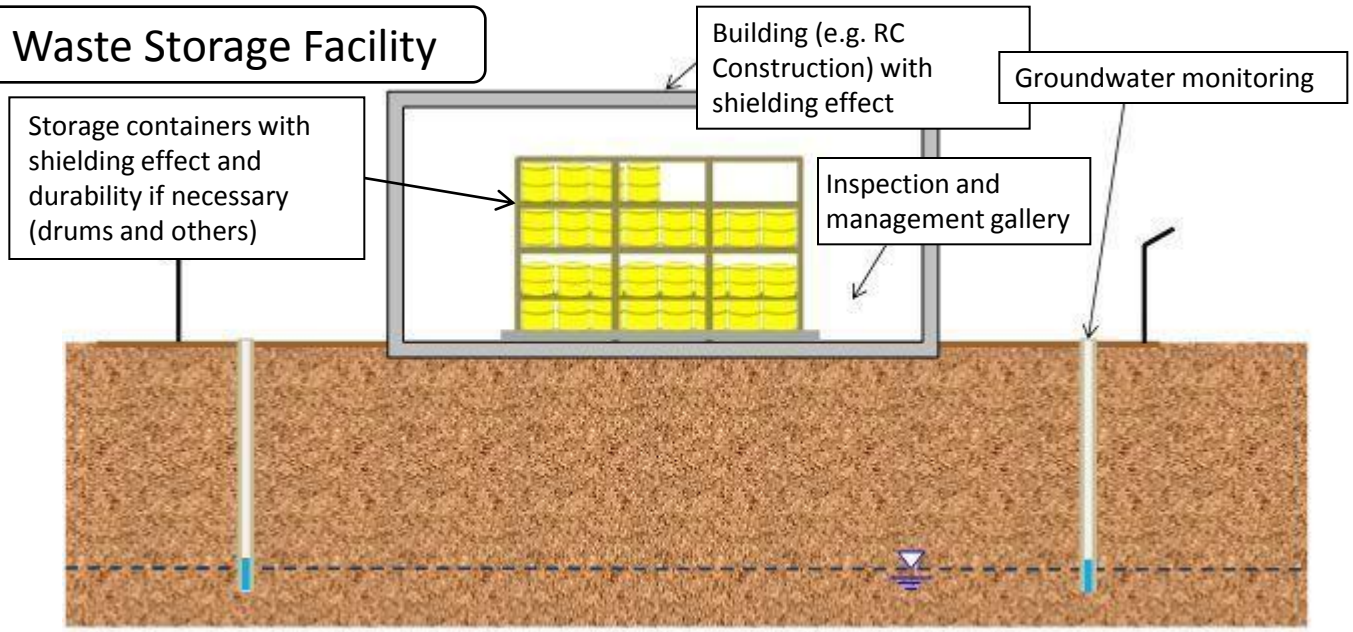
Radioactive cesium concentration
more than 8,000Bq/kg



Schematic View of Waste Storage Facility

Applicable geography and geology
Hill, Tableland

Radioactive cesium concentration
More than 100,000Bq/kg



Current Plan

From this onward, acquisition of land detailed design, stepwise installation continuously. Transportation will be carried out in sequentially site by site which is available for acceptance.

Jan., 2015~

Starting transportation of soil and other materials to the facility

Foundation of the facility

Stepwise Installation

Detailed design

Acquisition of land

Decision to accept or not by prefecture and both towns

Explanatory meetings for residents

Review & provision on actual image of the facility

Survey completed

Approx. 3 months

Survey started

(Reference) IAEA International Follow-up Mission on Remediation

● What is IAEA Follow-up Mission ?

Oct. 2011, IAEA carried out the investigation on the decontamination status in Japan.
As follow-up process, in order to make assessment on the remediation activity and to give advices to the issues, IAEA dispatched the delegation comprising of IAEA members and expert in various countries, in all 16 staffs, to Japan Oct. 2013 and performed the survey. From the viewpoint of helping the improvement in credibility of local residents, advices on 8 items are described in final report based on international standard and the experience of the activity of remediation in other countries.

○Japanese institutions are encouraged to increase efforts to communicate that (point 2)

- in remediation situations, any level of individual radiation dose in the range of 1 to 20 mSv per year is acceptable and in line with the international standards and with the recommendations
- an additional individual dose of 1 mSv per year is a long-term goal, and that it cannot be achieved in a short time, e.g. solely by decontamination work

○There needs to be a continued movement towards the use of the individual doses, as measured with personal dosimeters, to support remediation decisions (point 4).