Initiatives of Ministry of the Environment for Reconstruction and Revitalization from the Great East Japan Earthquake

March, 2022

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Ministry of the Environment

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1. Environmental Restoration Efforts

The Accident at TEPCO's Fukushima Daiichi Nuclear Power Station

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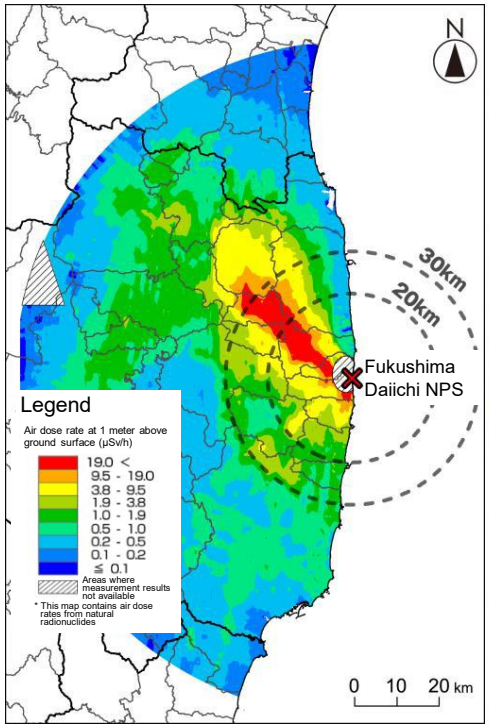
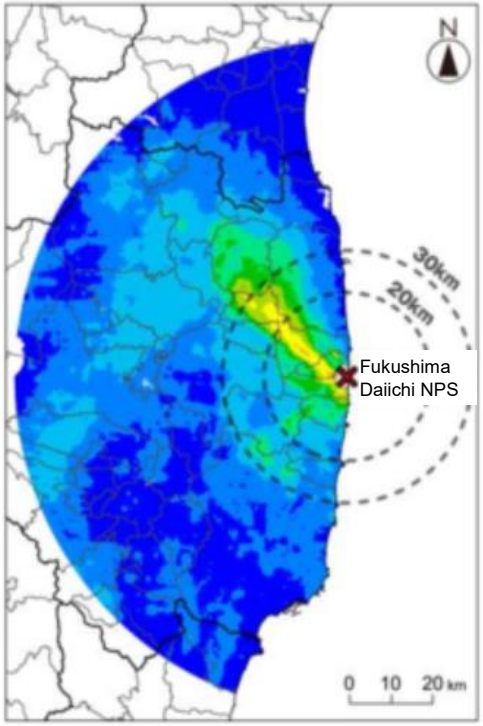
- ○ On March 11, 2011, a major earthquake and tsunami hit the Tohoku area causing extensive and devastating damage. Due to the resulting accident at TEPCO's Fukushima Daiichi Nuclear Power Station（NPS）, large amounts of radioactive materials were released into the environment.
- ○ On the same day, the Japanese government set up the Nuclear Emergency Response Headquarters and declared a nuclear emergency. Due to the evacuation order, many affected people were forced to live in evacuation centers for a long period of time.
- ○ Radioactive materials emitted were carried by wind, etc., became attached to dust and rain, and fell onto the ground and other locations. Widespread environmental pollution occurred, including soil contamination and waste. In order to restore the living environment, it was necessary to quickly reduce the impact.

Air dose rate distribution map with an 80 km radius

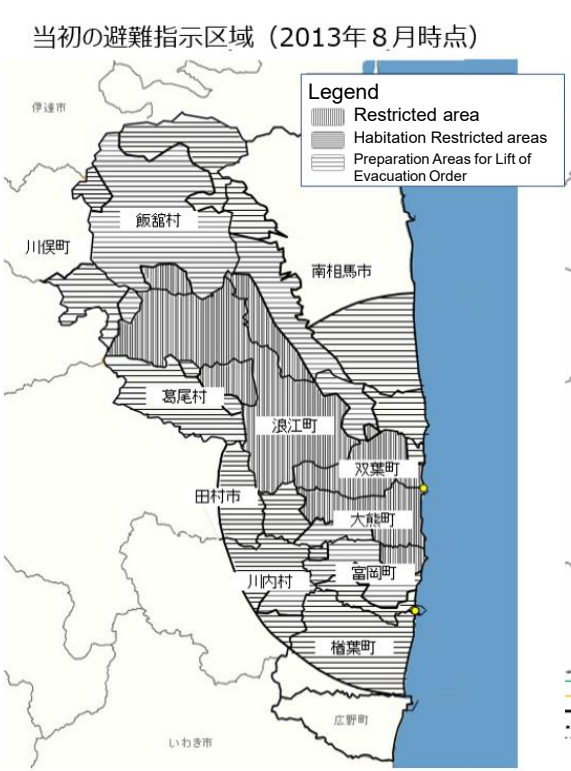
<April 2011>

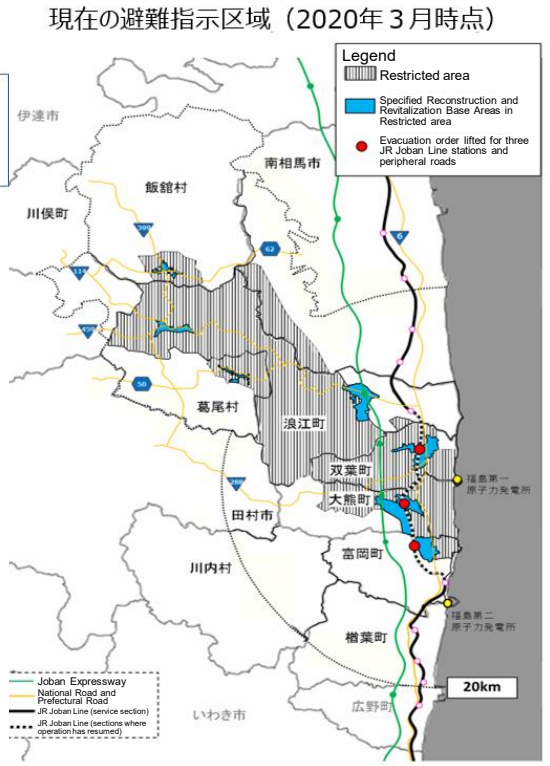


<October 2020>



Change in the Areas under Evacuation Orders





Overview of Initiatives for Environmental Restoration from the Accident

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- ○ Due to the accident at TEPCO's Fukushima Daiichi NPS, large amounts of radioactive substances were released into the environment, causing environmental pollution.
- ○ Under the Act on Special Measures concerning the Handling of Environment Pollution by Radioactive Materials*, **environmental restoration initiatives including decontamination and disposal of contaminated waste** are being carried out.

* Act on Special Measures concerning the Handling of Environment Pollution by Radioactive Materials Discharged by the NPS Accident Associated with the Tohoku District - Off the Pacific Ocean Earthquake that Occurred on March 11, 2011 (Act No. 110 of 2011)

- ○ To store large amounts of the soil and waste removed in off-site decontamination work in Fukushima Prefecture, **the Interim Storage Facility** was constructed and efforts were made to **recycle removed soil** to realize final disposal outside the prefecture.
- ○ Whole area decontamination was completed in all municipalities, except for "Restricted area," where return was deemed difficult. In the area, **decontamination and demolition of houses and other buildings within the Specified Reconstruction and Revitalization Bases** have been in accordance with the Act on Special Measures for the Reconstruction and Revitalization of Fukushima.
- ○ In addition, the **"Fukushima Regeneration / Future-Oriented Project" is being developed to** promote future-oriented environmental measures (decarbonizationcycles, and natural symbiosis) for the reconstruction of Fukushima.

Overview of Decontamination and Waste Treatment based on the Act on Special Measures

◆ Areas where evacuation order was issued

(Decontamination)

National government

- ・Designated Special Decontamination Area
- ・Developed decontamination implementation plan
- ・**Implemented decontamination**

(Waste)

National government

- ・Designated contaminated waste countermeasure area
- ・Developed waste disposal plan within the countermeasure area
- ・**Disposed of waste generated in the countermeasure area**

* Contaminated waste countermeasure area covers the same countermeasure area with Special Decontamination Area

◆ Other areas

(Decontamination)

National Government designated Intensive Contamination Survey Area

Municipalities

- ・Developed decontamination implementation plan
- ・**Implemented decontamination**

(Waste)

Designated waste containing radioactive materials at a concentration of exceeding 8,000 Bq/kg was disposed of by **the national government, and other waste by municipalities or waste emitters**


Decontamination of residential land


Demolition of affected houses and other buildings

Disposal Flow of Removed Soil and Waste within Fukushima Prefecture

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Decontamination

Directly generated by decontamination by the national government and municipalities

- **Soil**
- **Waste** (grass clippings, gutter deposits, etc.)

Reduced as much as possible

Waste disposal

Specified waste of which the national government is responsible for disposal

- **Designated waste**
  (waste with radioactivity level of exceeding 8,000 Bq/kg)
- **Waste in the countermeasure area**
  (demolished houses in the areas where evacuation order was issued, tsunami debris, etc.)

Reduced as much as possible

Exceeding 100,000 Bq/kg

100,000 Bq/kg or below

The Interim Storage Facility

[Okuma Town, Futaba Town]

Final disposal outside Fukushima Prefecture within 30 years from the start of transportation to the Interim Storage Facility, after reducing the volume and recycling as much as possible

Specified Waste Landfill Facility

<Specified waste, etc. outside the Restricted area>

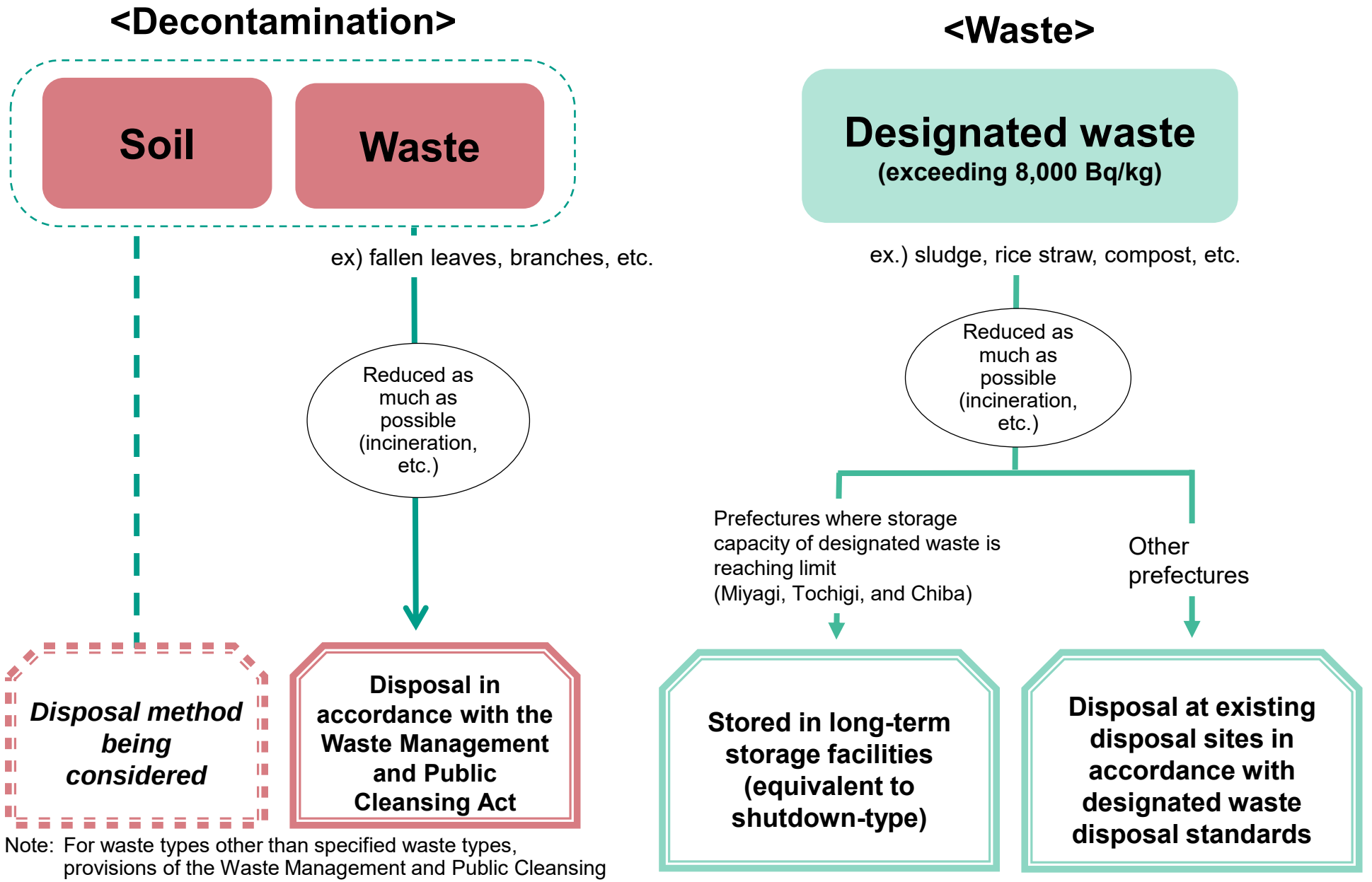
- **Former Fukushima Ecotech Clean Center** [Tomioka Town]
  (a private industrial waste landfill site was nationalized)[1]

<Specified waste, etc. within the Restricted area[2]>

- **Clean Center Futaba [planned]** [Okuma Town]
  (Landfill site of Futaba Regional Wide-Area Municipalities Association)

1 The route to bring in the waste goes through the adjacent Naraha Town
2 Within the Specified Reconstruction and Revitalization Base Areas

Disposal Flow of Removed Soil and Waste outside Fukushima Prefecture



Note: For waste types other than specified waste types, provisions of the Waste Management and Public Cleansing Law are applied. (Standards based on the Act on Special Measures concerning the Handling of Environment Pollution by Radioactive Materials are also partly applied.)

FY2022 Budget for Environmental Restoration in the Affected Areas

333.4 billion yen (353 billion yen)

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Key Points of FY2022 Budget

- ○ With the understanding of the local community, Ministry of the Environment (MOE) will steadily implement the Interim Storage Facility project, making safety our utmost priority. In addition, MOE will promote technological development for volume reduction and recycling of removed soil and waste.
- ○ MOE will smoothly restore the Temporary Storage Sites and return them to their original conditions after the removal of the soil.
- ○ In Restricted area, MOE will steadily carry out decontamination and waste disposal based on the Reconstruction and Revitalization Plans for Specified Reconstruction and Revitalization Base Areas (6 towns and villages).
- ○ Transportation of waste to the specified waste landfill facility (former Ecotech) has started, and will be steadily advanced from volume reduction and then to landfill.

FY2022 Budget

Interim Storage Facility-related projects

198.1 billion yen (187.2 billion yen)

(Construction of facilities, management and operation, transportation of removed soil and waste, acquisition of land, development of technologies for volume reduction and recycling, etc.)

Specified Reconstruction and Revitalization Base development projects

44.5 billion yen (63.7 billion yen)

(Decontamination, waste disposal, etc. based on the Reconstruction and Revitalization Plans for Specified Reconstruction and Revitalization Base Areas (6 towns and villages)

Proper management of removed soil and waste and land restoration

27.1 billion yen (25.3 billion yen)

(Management of removed soil and waste at Temporary Storage Sites, land restoration after completion of removal, volume reduction, follow-up such as monitoring, etc.)

Radioactive waste disposal projects, etc.

63.8 billion yen (76.8 billion yen)

(Disposal of specified waste, temporary storage of designated waste, promotion of disposal of agricultural and forestry waste, monitoring of waste disposal facilities, etc.)

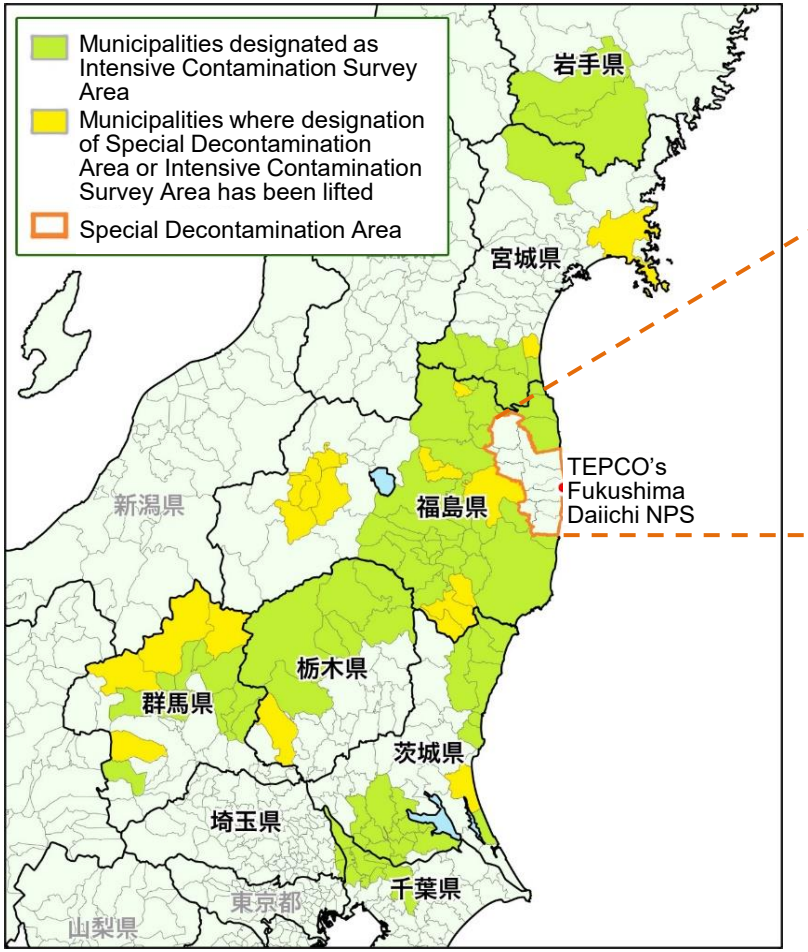
Note: Amounts in parentheses are the initial budget for FY2021

(1) Decontamination

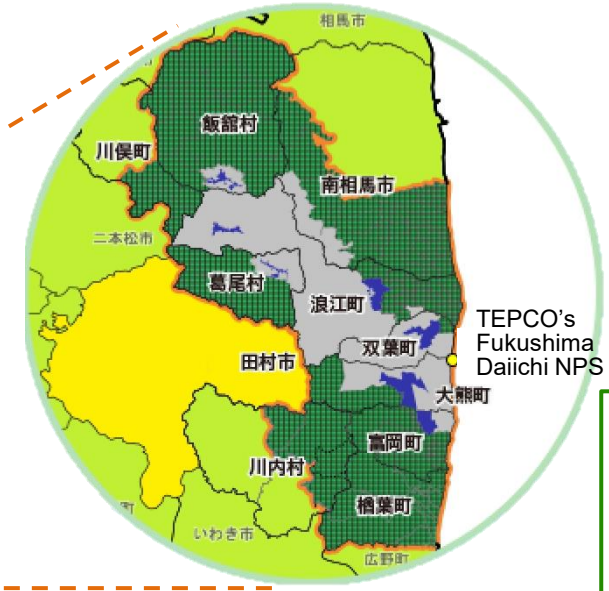
Progress of Decontamination

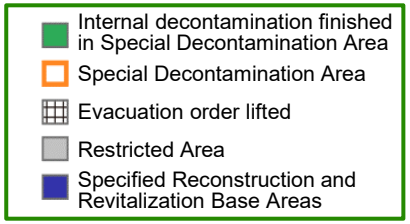
○ Whole area decontamination was completed in **100 municipalities of 8 prefectures** by March 19, 2018, except for Restricted area.
(Decontamination is ongoing in the Specified Reconstruction and Revitalization Base Areas in the Restricted area)

<Intensive Contamination Survey Area (decontamination by municipalities)>



<Special Decontamination Area (decontamination by the national government)>





	Municipalities where whole area decontamination has been completed		
		Intensive Contamination Survey Area (93)	Special Decontamination Area (11)
Fukushima Pref.	43*	36	11
Outside Fukushima Pref. (7 prefectures)	57	57	—
Total	100	Completed in March 2018	Completed in March 2017

* Minamisoma, Tamura, Kawamata, and Kawauchi were designated as both Special Decontamination Areas and Intensive Contamination Survey Areas.

Comprehensive Efforts to Restore Forests and Forestry in Fukushima
(Reconstruction Agency, Forestry Agency, and Ministry of the Environment, March 2016)

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I. Efforts to Restore Forests and Forestry

1. Efforts to ensure safety and security of the living environment
   - Decontamination of forests near residential areas and installation of barriers to prevent soil runoff where necessary (Ministry of the Environment)
2. Efforts to restore satoyama (border zone between mountain foothills and arable flat land) around residential areas
   - Decontamination of sites within forests for use for leisure and relaxation or those which are used on a daily basis (Ministry of the Environment)
   - Initiatives for forestry restoration in broadleaf forests, etc. (Forestry Agency)
   - Select model areas and comprehensively advance initiatives to promote *satoyama* restoration (Satoyama Restoration Model Project) (Forestry Agency, Ministry of the Environment)
3. Efforts to revitalize forestry in the remote mountains (Forestry Agency)
   - Forest thinning to improve forest environment and necessary measures to eliminate radioactive substances, and promotion of demonstration projects for forestry restoration
   - Creation of an easy-to-understand guidebook for safety and security measures in regard to radioactivity for workers

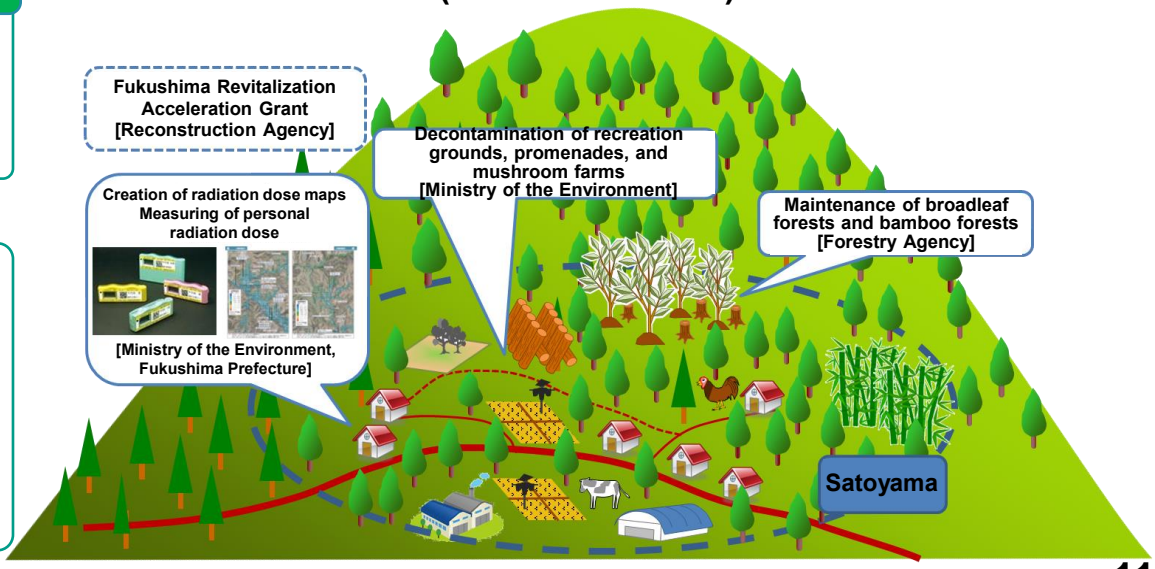
II. Future-oriented Initiatives for Research and Studies

- Continue efforts to restore forests and forestry, including monitoring of radiation doses in forests, elucidating the dynamics of radioactive materials, and conducting research and studies to reduce radiation doses

III. Information provision and Communication

- Provide up-to-date information on the national government's initiatives for the restoration of forests and forestry through websites, PR magazines, etc.
- Continue efforts to ensure the safety and security of people in Fukushima through communication, including the dispatch of experts

Satoyama Restoration Model Project (FY2016-FY2019)



Satoyama Restoration Model Projects and Satoyama Restoration Projects

Satoyama Restoration Model Projects (2016-2019)

○ The following projects were implemented in 14 model areas (red dots in the figure below) selected based on municipalities' requests.

- Decontamination: Removal of sediments, removal of residues, etc. (Responsible organizations: Ministry of the Environment, municipalities)
- Forest maintenance: Thinning, construction of work paths, terracing works, etc. (Responsible organizations: Forestry Agency, municipalities)
- Radiation dose measurement: Air dose rate, exposure dose measurement, etc. (Implementing entities: Ministry of the Environment, Fukushima Prefecture, municipalities)

Results (examples)

Hirono Town: Around J-Village Stadium

Decontamination: weeding, sediment removal

Forest maintenance: Thinning, terracing works

○ Air dose rates at the project sites were reduced by an average of 26% (including by natural attenuation) in the two years before and after the project.

○ Control surface soil runoff with thriving vegetation in the lower layer soil, etc.

Satoyama Restoration Project (From 2020)

○ The project promotes the creation of a safe and secure environment for residents by combining measures to ensure safety and security of residents in accordance with the conditions of each satoyama area.

○ Decontamination, reforestation, and **radiation dose measurement** will be carried out all together or in some combination, depending on the requests of the municipalities.

⇒ So far, the national government have already decided on sites in Koriyama City, Aizu Misato Town, Naraha Town, Iitate Village, Tomioka Town, and Namie Town.

Efforts in Restricted Area

(decontamination, demolition of houses and other buildings in Specified Reconstruction and Revitalization Base Areas)

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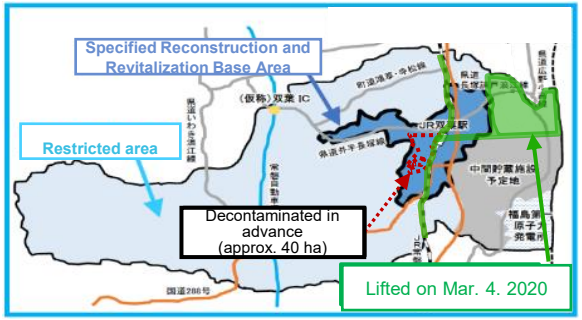
○ For **Restricted area,** mayors of municipalities prepare plans for the designation of **Specified Reconstruction and Revitalization Base Areas** and **environmental improvement (decontamination, infrastructure development, etc.)** within these areas in accordance with the Act on Special Measures for the Reconstruction and Revitalization of Fukushima, which are approved by the prime minister. The goal is to lift the evacuation order five years after the approval of the plan.

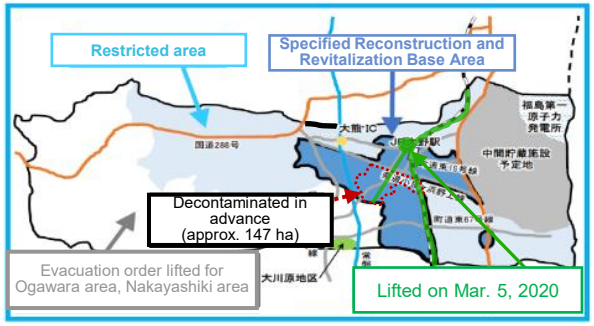
○ In all towns and villages where the plans have been approved (Futaba Town, Okuma Town, Namie Town, Tomioka Town, Iitate Village, and Katsurao Village), decontamination and demolition of houses and other buildings, is in progress.

Futaba Town
(approved on Sept. 15, 2017, approx. 560 ha)



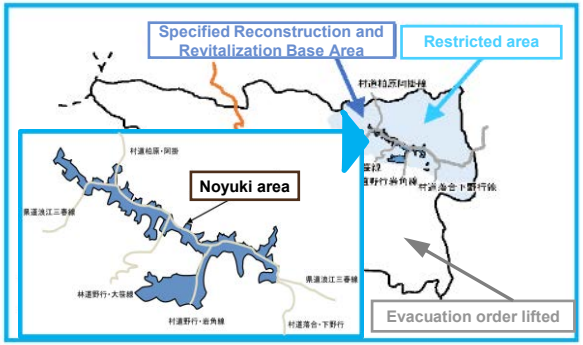
Evacuation order scheduled to be lifted in or after June 2022

Okuma Town
(approved on Nov. 10, 2017, approx. 860 ha)



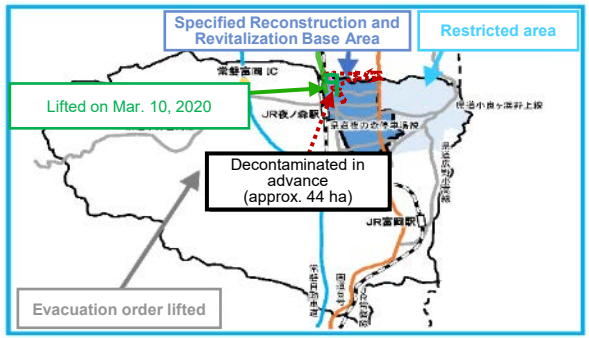
Evacuation order scheduled to be lifted around spring 2022

Katsurao Village
(approved on May 11,2018, approx. 95 ha)



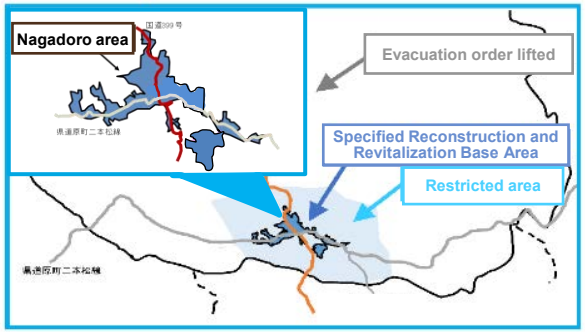
Evacuation order scheduled to be lifted around spring 2022

Tomioka Town
(approved on Mar. 9, 2018, approx. 390 ha)



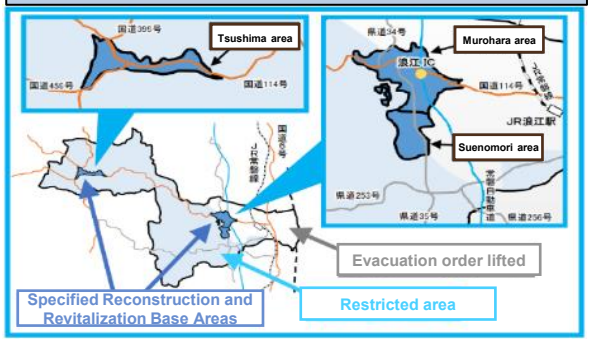
Evacuation order scheduled to be lifted around spring 2023

Iitate Village
(approved on Apr. 20, 2018, approx. 190 ha)



Evacuation order scheduled to be lifted around spring 2023

Namie Town
(approved on Dec. 22, 2017, approx. 660 ha)

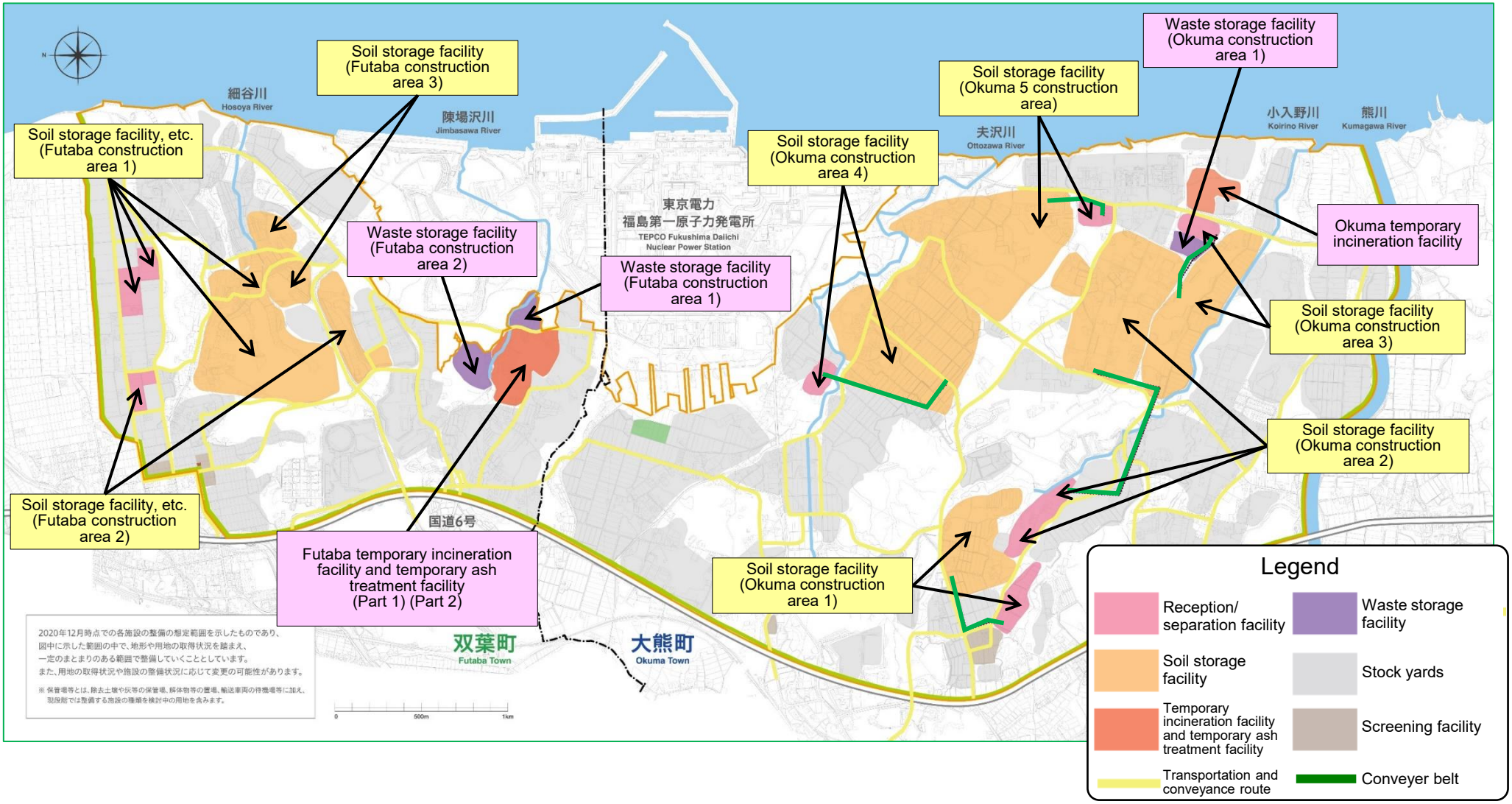


Evacuation order scheduled to be lifted in March 2023

(2) The Interim Storage Facility

Overview of the Interim Storage Facility

- ○ The Interim Storage Facility was built to safely and intensively manage and store removed soil, waste, and incinerated ash (>100,000 Bq/kg) generated by decontamination in Fukushima Prefecture until final disposal outside the prefecture within 30 years from the start of transportation to the Interim Storage Facility.
- ○ Okuma Town and Futaba Town agreed to the request to build the facility, which was a very important decision. MOE will continue to work on the Interim Storage Facility project with a “Safety First” approach.
- ○ The Interim Storage Facility area is about 1,600 ha (about the same area as Shibuya Ward).



Status of the Interim Storage Facility Sites

○ When acquiring land, it is most important for MOE to have the trust of landowners as well as their understanding of the Interim Storage Facility project, and MOE will continue our efforts while providing landowners with all necessary information.
○ Approximately 80% of the total sites sought (over 90% privately owned) have been acquired as of the end of Mar. 2022.

Whole area Approx. 1,600 ha	**Item**	**Percentage of the whole area**	**Percentage and number of landowners registered out of total (2,360[1])**
	Landowners considering contract	**Approx. 1,590 ha[1] 99.4%**	**Approx. 2,100 persons[1] 89.0%**
Private land Approx. 1,270 ha (approx. 79%)	**Private land Approx. 1,178 ha (+1.2 ha) 92.8%[3]**	**Total Approx. 1,266ha (+1.5 ha) 79.1%**	**<Reference> Approx. 1,508 ha (94.3%)**
Public land Approx. 330 ha (approx. 21%)	**Public land Approx. 88 ha (+1.2ha) 26.6%[4]**		
	Other public land	**Approx. 242 ha 15.1%**	

Already contracted

Already contracted

Total

1,841 persons (+2) 78.0%[2]

Proportion of 2,100 landowners considering contract: 87.7%

Includes the following:
(1) Town-owned land, prefectural-owned land, state-owned land, etc. that will maintain its original infrastructure, such as roads, waterways, etc.
(2) Town-owned land, prefectural land, state-owned land, etc. whose offer or contract as the Interim Storage Facility sites may be changed depending on the progress of the project.

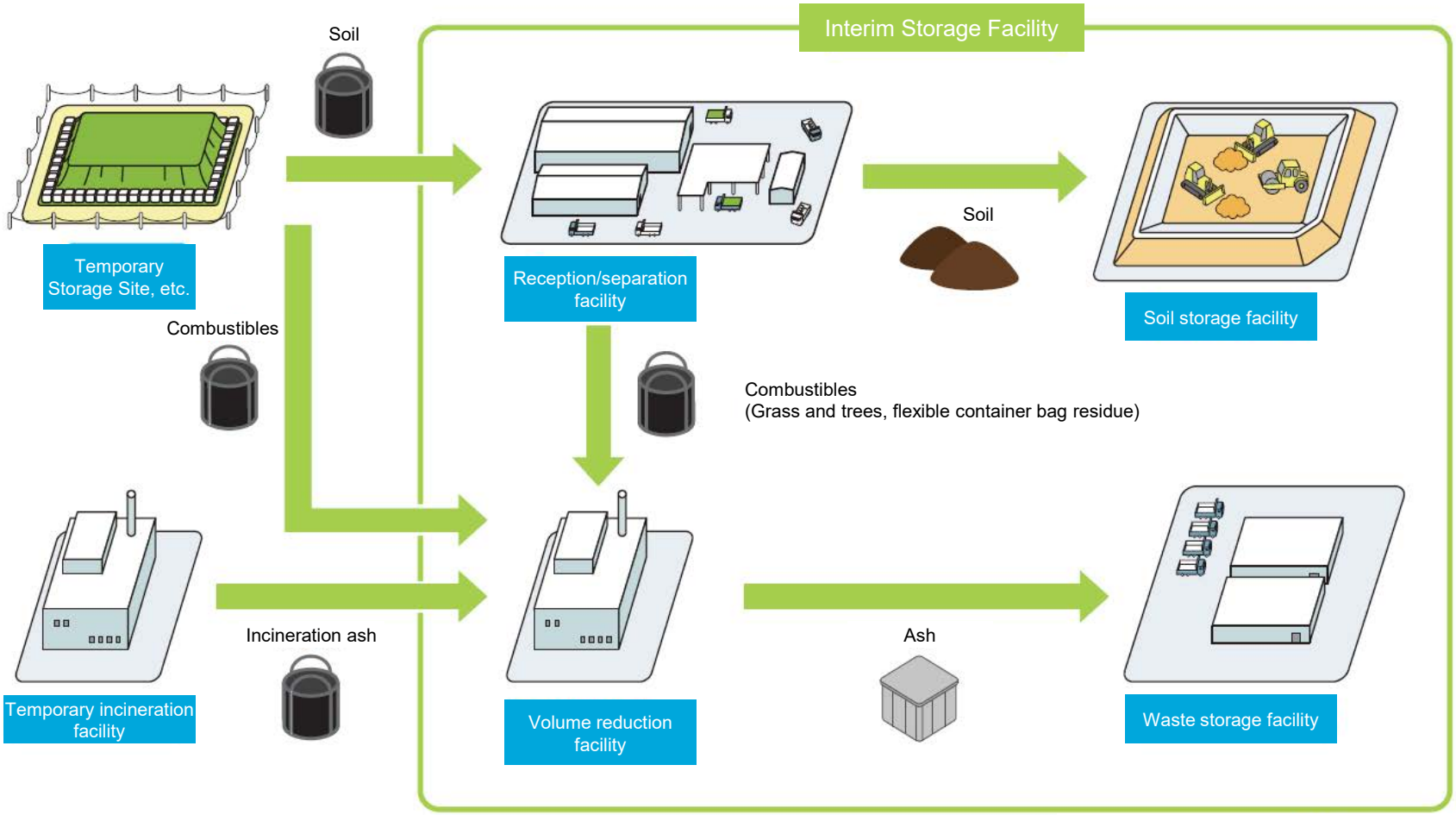
1 Including national and local governments
2 Private landowner: 1,837; Public land: 2 owners
3 Percentage of private land (approx. 1,270 ha)
4 Percentage of public land (approx. 330 ha)

(Note) The figures may not sum due to rounding. Figures in parentheses in “Already contracted” indicate the increase from the end of the previous month. (As of Mar. 31, 2022)

Process inside the Interim Storage Facility

○ Removed soil and waste transported from Temporary Storage Sites and incinerated ash transported from temporary incineration facilities are processed and stored at the Interim Storage Facility.
○ In March 2020, the entire process from treatment to storage of removed soil and waste began operation at the Interim Storage Facility.

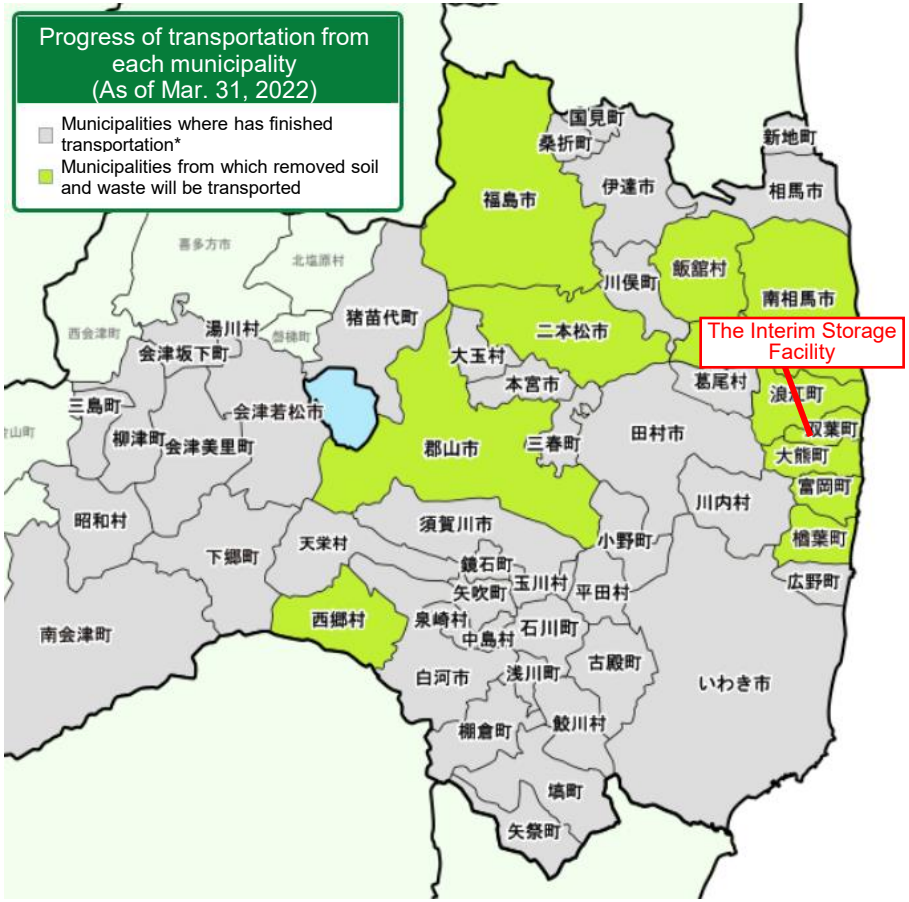
Process flow in the Interim Storage Facility



• The above shows an outline of the concept.

Transportation to the Interim Storage Facility (1)

- ○ Transportation of the soil and waste from Temporary Storage Sites to the Interim Storage Facility has been implemented mostly using 10-ton dump trucks.
- ○ Transportation began at the end of FY2014, and in FY2021 removed soil and waste were transported from 18 municipalities.
- ○ Safe and secure transportation is being conducted through managing the whole amount of material to be transported and operation of trucks used for transportation, and conducting environmental monitoring, etc.
- ○ In FY2022, while obtaining the understanding of local communities, MOE implements the transportation of the removed soil and waste generated in the Specified Reconstruction and Revitalization Base Areas, etc. in a safe and secure manner to the Interim Storage Facility.



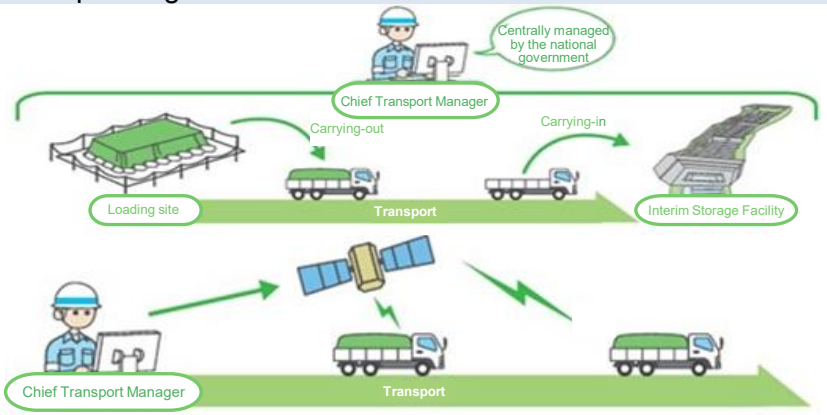
Management and monitoring of transportation

Management of the whole amount of material to be transported

- Objects to be transported from Temporary Storage Sites are all managed centrally by the unit of storage container.

Management of operation of trucks used for transportation

- Obtain real-time information on the location of transport vehicles using the GPS system
- Provide instructions for time adjustments and route changes depending on the situation.

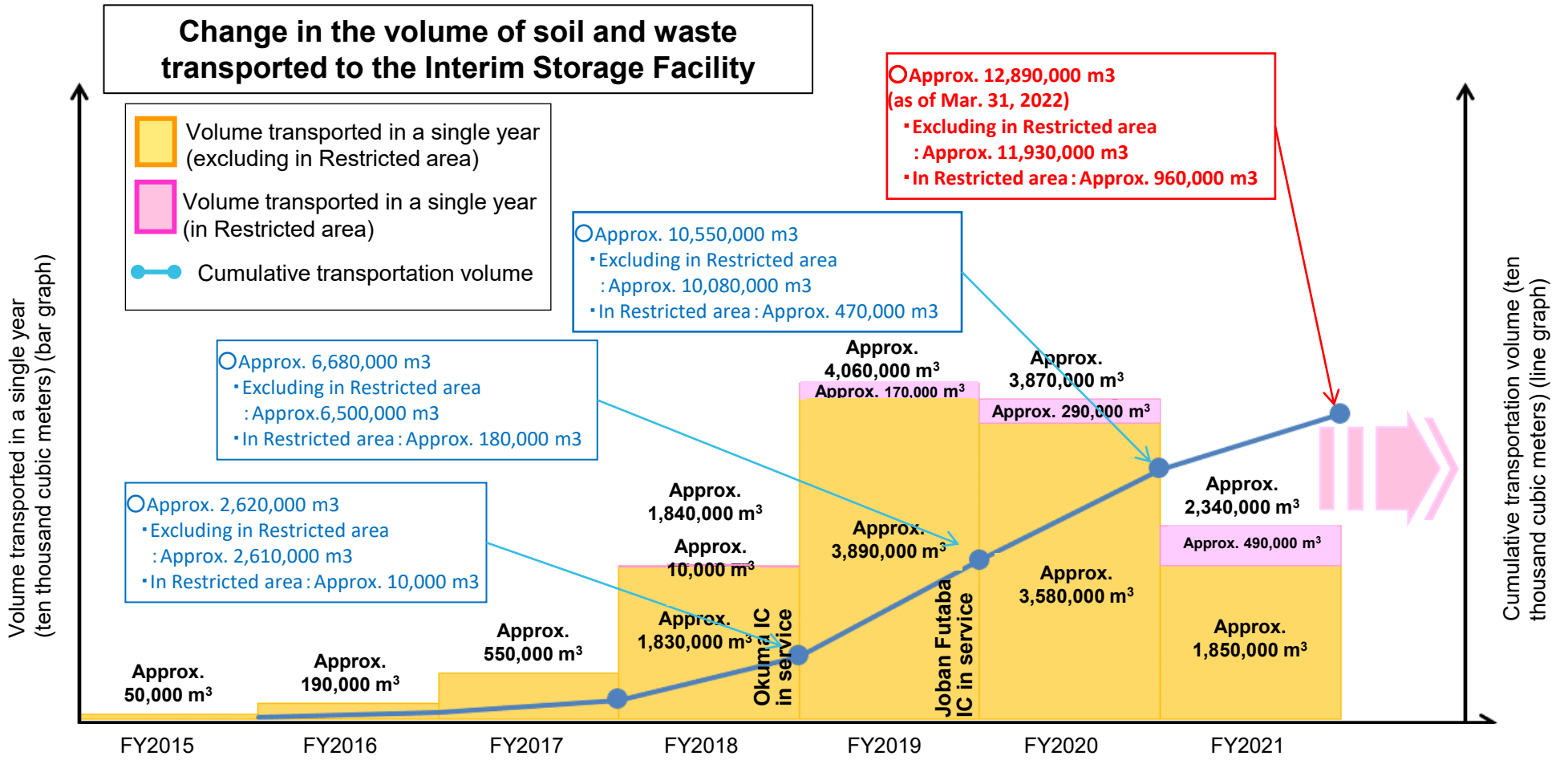


* Even in municipalities where transportation has been completed, if any object that needs to be transported is generated, such object is to be transported to the Interim Storage Facility.

Transportation to the Interim Storage Facility (2)

○ When transporting soil and waste to the Interim Storage Facility, MOE makes **safety the first priority, and ensure** transportation will be carried out with **the understanding of local communities.**

○ To date, **approximately 12.89 million m³ of removed soil and waste (including those in Restricted area)** has been **transported to the Interim Storage Facility** (as of the end of March 2022).



(Note) In and after FY2022, planning is largely focused on the transportation of soil and waste removed as a result of decontamination, etc. in the Specified Reconstruction and Revitalization Base Areas.

(Note) Total figures may not match due to round-off.

Transportation Status of Removed Soil and Waste (excluding those in Restricted area) to the Interim Storage Facility, etc. (as of March 31, 2022)

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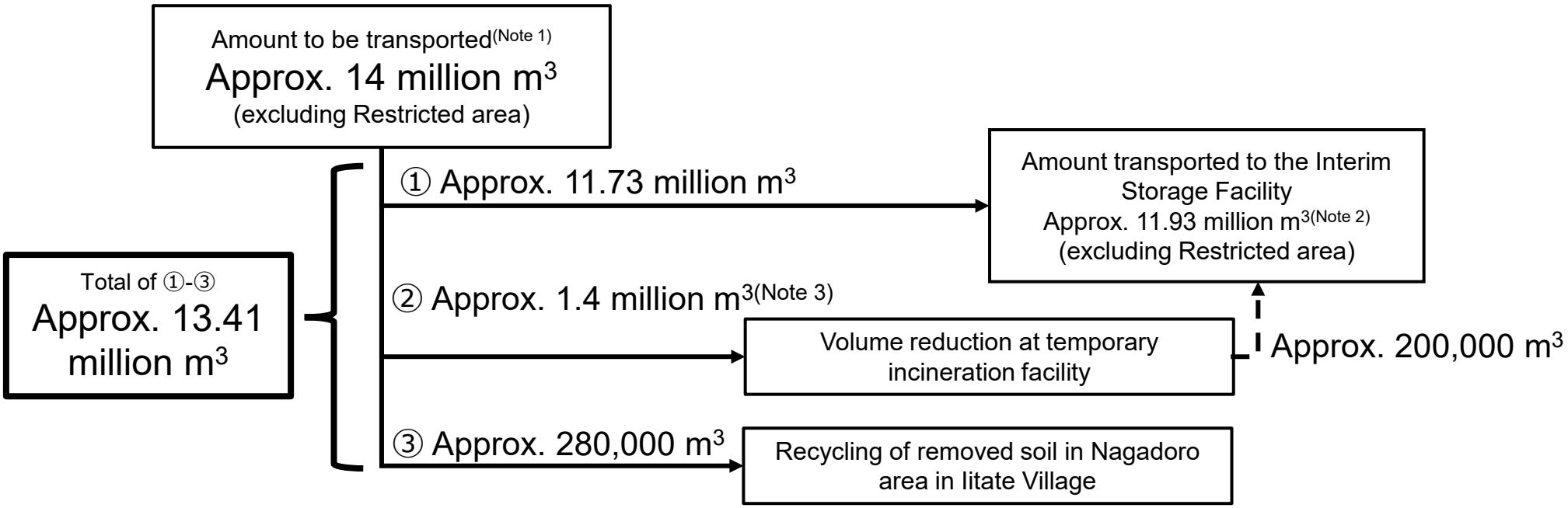
○ MOE has set a goal to complete the transportation of removed soil and waste stored in Fukushima Prefecture, excluding those in Restricted area, to the Interim Storage Facility by the end of this fiscal year and MOE is proceeding with the transportation with the understanding and cooperation of local people, making safety our first priority.

○ Out of the approx. 14 million ㎥ (Note 1) of the amount to be transported as of October 2018, the total amount of materials transported to the Interim Storage Facility and temporary incineration facility and the amount of soil removed and recycled in the Nagadoro area in Iitate Village totaled approx. 13.41 million ㎥ as of the end of March 2022. The amount of materials transported to the Interim Storage Facility, excluding the amount reduced at the temporary incineration facility and the amount recycled in the Nagadoro area in Iitate Village, totaled approx. 11.93 million ㎥.

○ In FY2022, in a safe and secure manner, MOE will continue transportation of removed soil and waste generated in the Specified Reconstruction and Revitalization Base Areas, etc., in addition to those that have not been removed by the end of FY2021 due to local situation, etc.



1 Amount to be transported as of October 2018 (amount already transported to the Interim Storage Facility + amount stored at Temporary Storage Sites and volume reduction facilities, etc.)
2 The total amount transported to the Interim Storage Facility, including that in Restricted area, is approx. 12.89 million m3 (as of the end of March 2022)
3 Figures after October 2018

Major Traffic Safety Measures for Transportation

- Training for new and current workers
  Conducted training for new drivers of transport vehicles and other new workers on the transportation of removed soil and waste to the Interim Storage Facility.
  In addition, workers who are already engaged in transportation operations are required to undertake training every fiscal year.

- Pre-running of transportation routes
  All drivers drive the transportation route in advance and confirm any potential hazards and points to be heeded.
  Raising driver safety awareness and preventing deviations from the route.

- On-site check of driving conditions
  In areas where drivers need to monitor their speed or where there is heavy traffic, driving conditions of transport vehicles are checked (including when returning to the base)

- Awarding of excellent drivers
  To maintain and improve safety awareness and driver motivation, those who have driven safely for 100 days or longer are eligible to receive an Excellent Driver certificate (to be placed on the driver's helmet and vehicle dashboard), issued through the vendor

Advance notification of transportation routes and hazardous stretches

Check of driving conditions (Route 114)

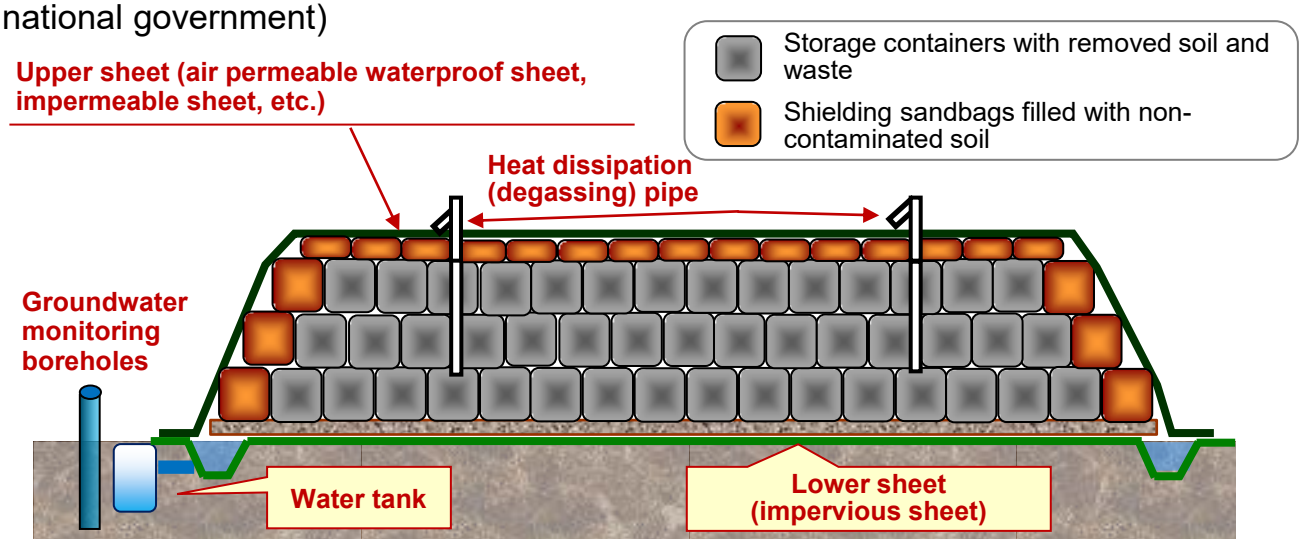
Issuance of an Excellent Driver certificate

Storage in Temporary Storage Sites

○ Removed soil and waste generated by decontamination is safely managed in Temporary Storage Sites.

○ In Fukushima Prefecture, **transportation of removed soil and waste** to the Interim Storage Facility, etc. **has been completed at approximately 95% of Temporary Storage Sites.** As a result, there are now 55 sites managed by the national government (as of the end of Mar. 2022) and 7 sites managed by municipalities (as of the end of Mar. 2022).

[Basic structure and management/inspection of Temporary Storage Sites] (example of Temporary Storage Sites managed by the national government)



Management and inspection

Daily inspection	Weekly	・Visual inspection ・Air dose rate measurement
	Monthly	・Groundwater measurements
When necessary		・Water tank ・Leachate measurement and treatment ・Repair of defective parts
Emergency inspections during extreme weather and earthquakes		・Visual inspection ・Air dose rate measurement

[Number of Temporary Storage Sites, etc. and amount of removed soil and waste (number of items stored)]

Amount / out of total	Number of Temporary Storage Sites	Number of on-site storage locations	Amount of removed soil and waste (Number of items in storage)
Managed by the national government[1]	**55 locations / 331 locations**	–	**Approx. 840,000 bags / approx. 10.86 million bags**
Of which, Specified Reconstruction and Revitalization Bases	**16 locations / 29 locations**	–	**Approx. 290,000 bags / approx. 1.54 million bags**
Managed by municipalities[2]	**51 locations / 1,085 locations**	**31,240 locations / 221,420 locations**	**Approx. 560,000 m^3 / approx. 7.33 million m^3**
Of which, Fukushima Prefecture	**7 locations / 1,041 locations**	**830 locations / 191,010 locations**	**Approx. 90,000 m^3 / approx. 6.86 million m^3**

1 Managed by the national government: as of March 31, 2022

2 Within Fukushima Pref.: as of March 31, 2022; outside Fukushima Pref.: as of Mar. 31, 2021

Progress of Restoring Temporary Storage Sites in Fukushima Prefecture to their Original Condition

環境省

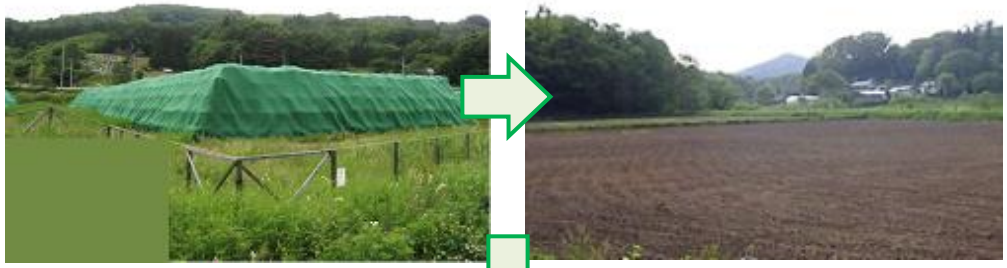
- ○ Temporary Storage Sites for which removal of soil and waste has been completed are restored to their original state based on the previous land use pattern and the site use plan. Operations are coordinated with the landowners and municipalities regarding the restoration method and the land is returned to the landowner.
- ○ **<u>In FY2021, about 229 Temporary Storage Sites were restored; in FY2022, MOE aims to complete restoration of about 150 sites.</u>**

[Image of removal and land restoration]

Removal to the Interim Storage Facility, etc. and restoration of Temporary Storage Sites to their original condition

Storage in Temporary Storage Site

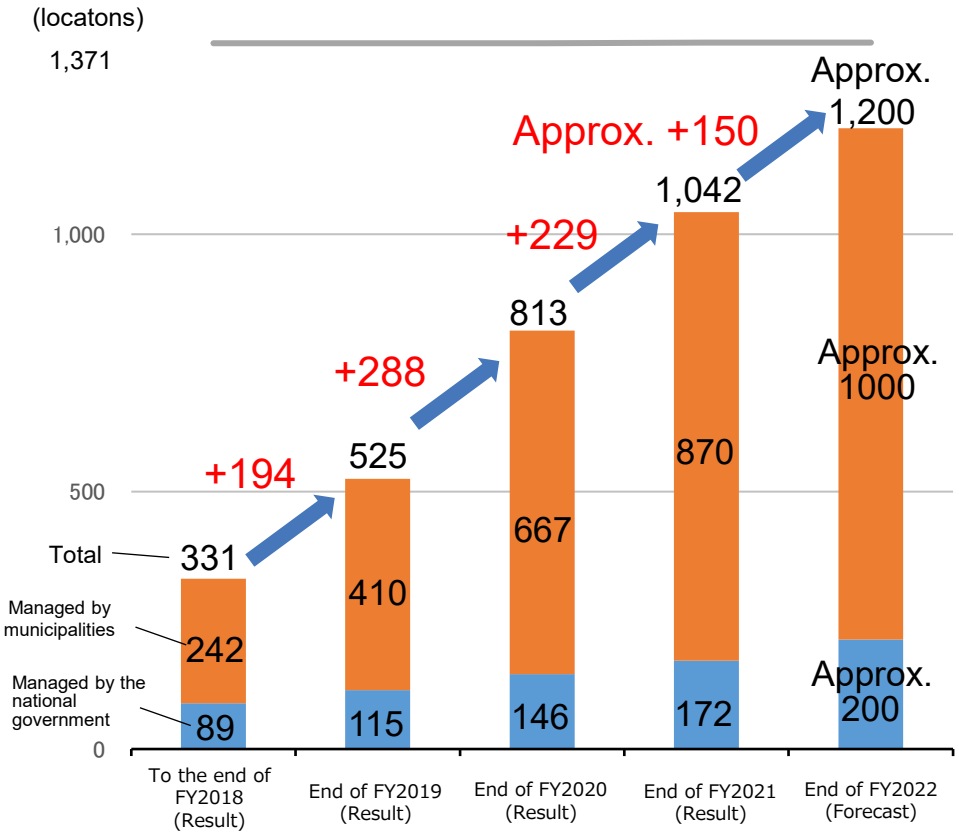
After land restoration



Restart of farming by landowners

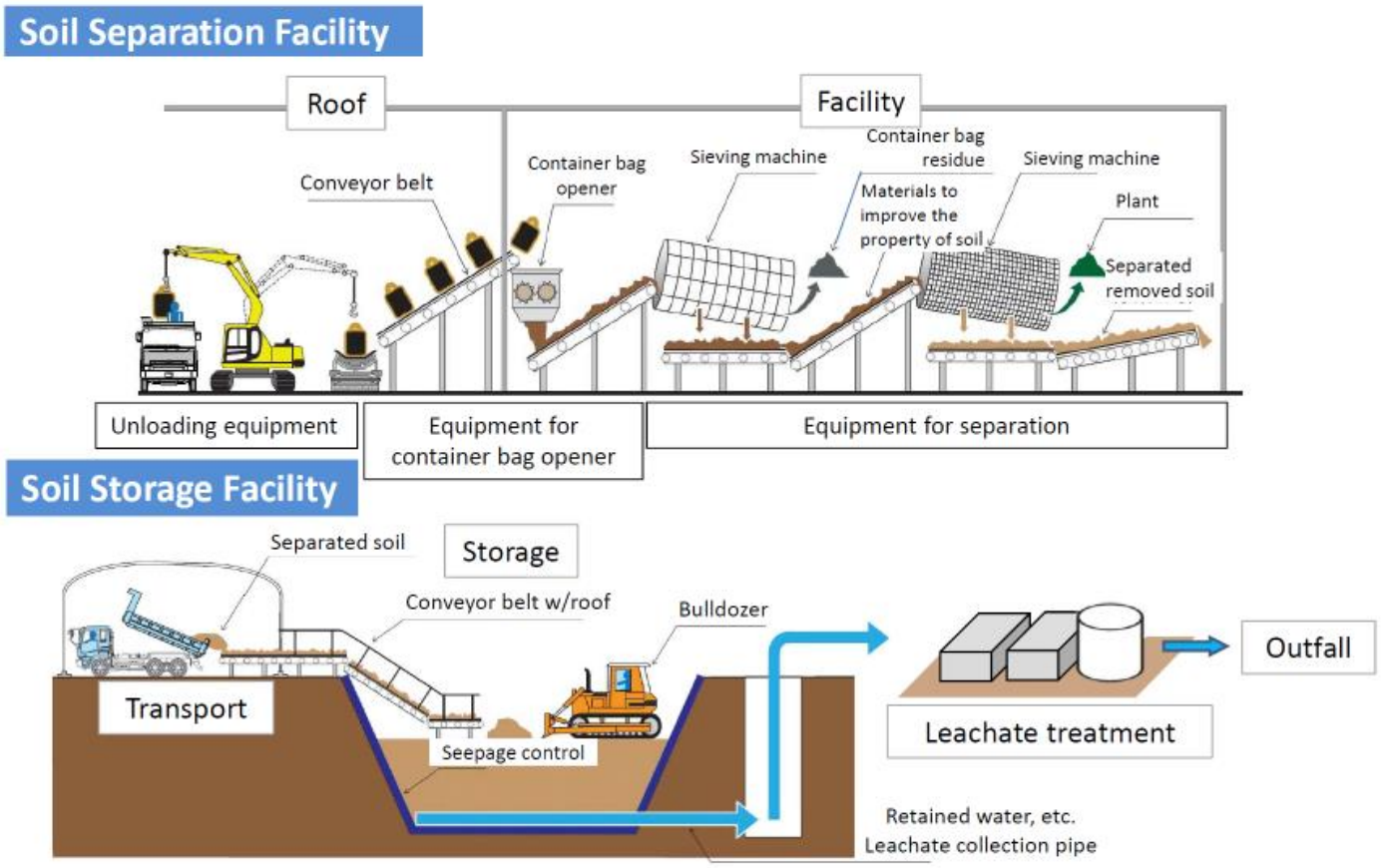
[Cumulative total of the number of Temporary Storage Sites restored to their original condition] (some data are estimates)

Total number of Temporary Storage Sites: 1,372
(of which, 331 are directly managed by the national government, 1,041 by municipalities)



Construction of Reception/Separation Facilities and Soil Storage Facilities

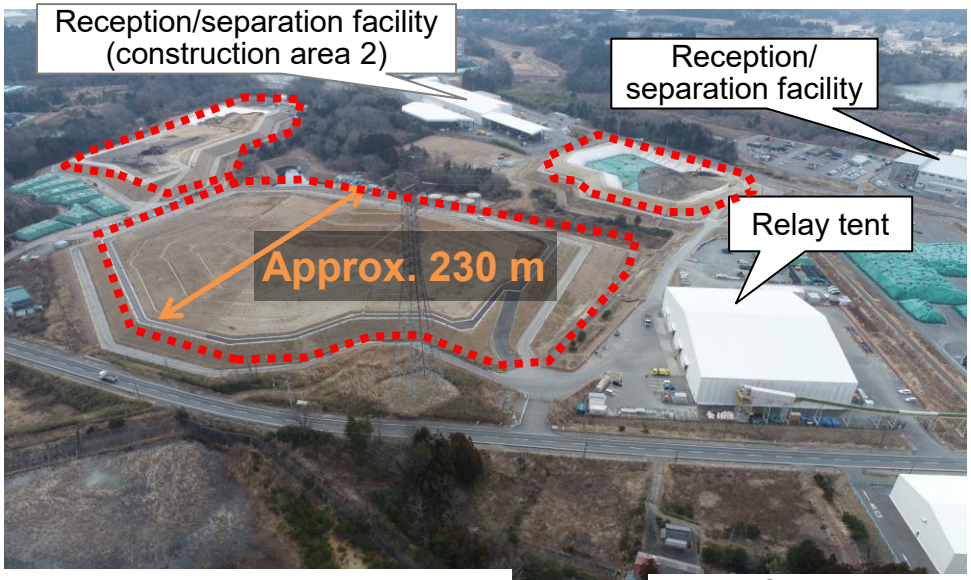
- ○ Construction of reception/separation facilities and soil storage facilities began in November 2016 in Okuma Town and Futaba Town.
- ○ Separation and treatment of removed soil started in June 2017, and storage of separated soil in soil storage facilities began in October 2017 (storage of removed soil began in October 2017 in the Okuma construction area and in December 2017 in the Futaba construction area).
- ○ In March 2020, the entire process from treatment to storage of removed soil and waste at the Interim Storage Facility began operation.



Reception/separation facility (Okuma construction area 1)

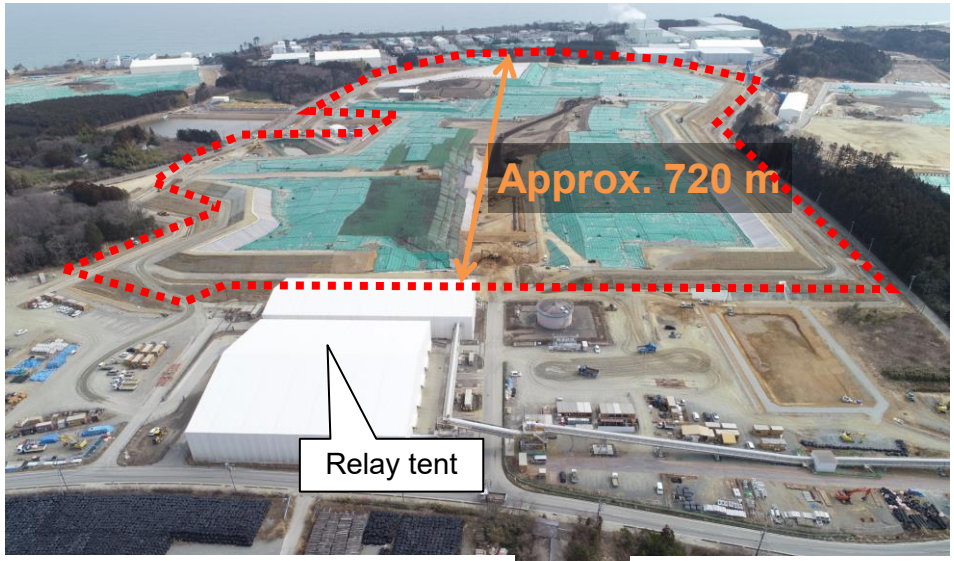
Soil storage facility (Okuma construction area 3)

Construction of Soil Storage Facilities, etc.



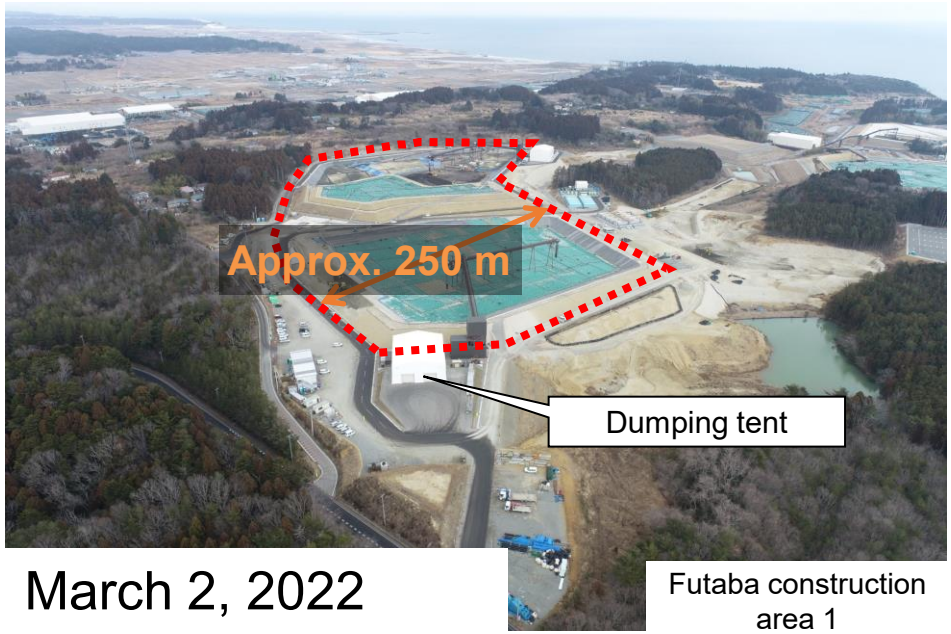
March 2, 2022

Okuma construction area 1



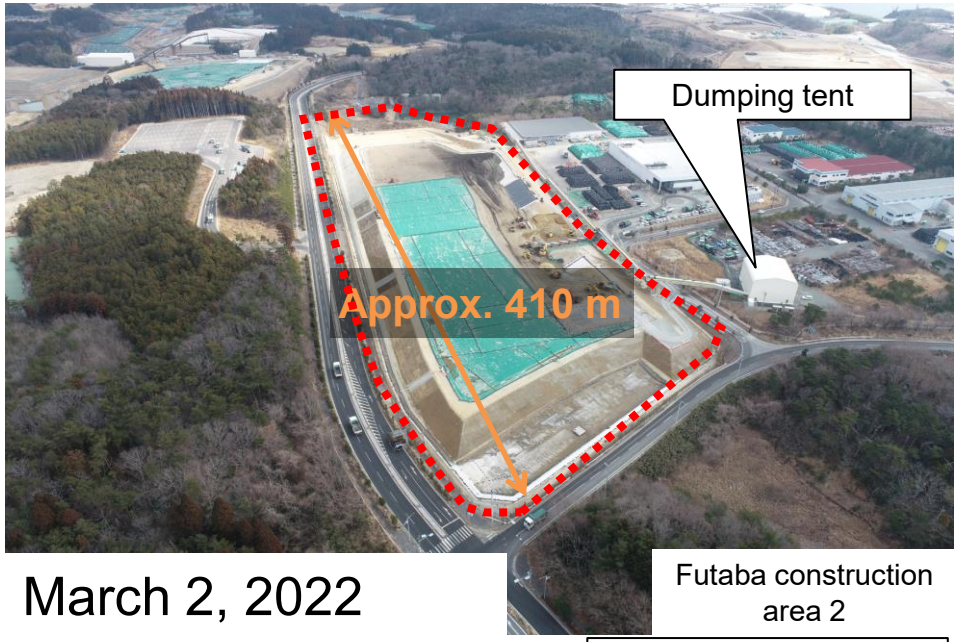
March 1, 2022

Okuma construction area 2



March 2, 2022

Futaba construction area 1



March 2, 2022

Futaba construction area 2

Legend
Soil storage facility within the construction area

Status of Reception/Separation and Soil Storage Facilities (as of the end of Mar. 2022)

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Construction area	Okuma construction area 1	Okuma construction area 2	Okuma construction area 3	Okuma construction area 4	Okuma construction area 5	Futaba construction area 1	Futaba construction area 2	Futaba construction area 3
No. of reception/ separation facilities[1]	1	2	1	1	1	2	1	–
Storage capacity[2]	Approx. 1 million m^3	Approx. 3.3 million m^3	Approx. 2.1 million m^3	Approx. 1.6 million m^3	Approx. 2 million m^3	Approx. 1.4 million m^3	Approx. 900,000 m^3	Approx. 800,000 m^3
Storage volume[2]	1,000,000 m^3	2,830,000 m^3	1,271,000 m^3	1,234,000 m^3	1,663,000 m^3	759,000 m^3	917,000 m^3	455,000 m^3
Start of construction	Sept. 2017	Nov. 2016	Nov. 2017	Oct. 2018	Oct. 2018	Nov. 2016	Jan. 2018	Sept. 2018
Reception/ separation facilities schedule	Operation started in Jul. 2018	Operation started in Aug. 2017 Jul. 2018	Operation started in Jul. 2018	Operation started in Aug. 2019	Operation started in Aug. 2019	Operation started in Jun. 2017 Sept. 2018	Operation started in Feb. 2019	(None)
Soil storage facilities schedule	Operation started in Jul. 2018	Operation started in Oct. 2017	Operation started in Oct. 2018	Operation started in Mar. 2020	Operation started in Apr. 2019	Operation started in Dec. 2017	Operation started in May 2019	Operation started in Dec. 2019
Vendor	Kajima JV	Shimizu JV	Obayashi JV	Shimizu JV	Obayashi JV	Maeda JV	Taisei JV	Ando/Hazama JV

1 Treatment capacity per facility at the time of order is 140 t/hour. Futaba construction area 3 does not have reception/separation facilities.

2 Storage capacity and storage volume are based on the amount transported from Temporary Storage Sites, etc. (1 bag = 1 m3). These figures are subject to change depending on the availability of land and other factors.

Status of Temporary Incineration Facilities and Temporary Ash Treatment Facilities

Facility	Okuma Town	Futaba Town (No. 1)	Futaba Town (No. 2)
Scale	Temporary incineration facility: 200 tons/day × 1 furnace (stoker furnace)	Temporary incineration facility: 150 tons/day × 1 furnace (shaft furnace) Temporary ash treatment facility: 75 t/day × 2 furnaces (surface melting furnace)	Temporary incineration facility: 200 t/day × 1 furnace (stoker furnace) Temporary ash treatment facility: 75 t/day x 2 furnaces (coke bed ash melting furnace)
Site area	Approx. 5.0 ha	Approx. 5.7 ha	Approx. 6.8 ha
Start of construction	Land clearing development began in July 2016	Land clearing and development began in June 2018	Land clearing and development began in June 2018
Construction schedule	Began in December 2016	Began in January 2019	Began in January 2019
Treatment schedule	Began in February 2018	Began in March 2020	Began in March 2020
Vendor	Mitsubishi/Kajima JV	Nippon Steel, Kubota, Obayashi Corporation, TPT JV	JFE/Maeda JV
Exterior view			

Status of Waste Storage Facilities (end of March 2022)

Construction area	Okuma construction area 1	Futaba construction area 1	Futaba construction area 2
Building structure	Steel-framed reinforced concrete (2 buildings)	Steel-framed reinforced concrete (1 building)	Steel-framed reinforced concrete (1 building)
Storage capacity*	29,280 containers	14,678 containers	30,028 containers
Storage volume*	4,810 containers	6,348 containers	–
Site area	Approx. 2.4 ha	Approx. 2.2 ha	Approx. 3.7 ha
Start of construction	Site development started in Jul. 2018 Construction started in Dec. 2018	Site development started in Jun. 2018 Construction started in Nov. 2018	Site development started in Dec. 2019 Construction started in Dec. 2019
Storage schedule	Storage began in April 2020	Storage began in March 2020	Scheduled after completion of storage in Futaba construction area 1
Facility maintenance vendor	Kajima Corporation	Obayashi Corporation	Kajima Corporation
Installation and maintenance vendor	Kajima Corporation		
Exterior view			

* Storage capacity and storage volume: Number of steel rectangular containers (internal dimensions: approx. 1.3 m [W] x 1.3 m [D] x 1.1 m [H])

Safety Measures for Construction Works

○ Safety is the top priority of the project, and safety measures are thoroughly implemented in all aspects of the construction of the Interim Storage Facility, etc.

○ Specific measures are:

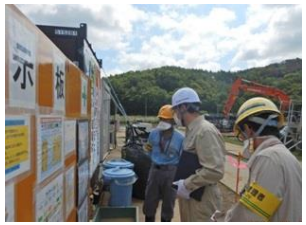
(1) Safety inspections, (2) Safety patrols by client, (3) Hazard prediction training workshops, (4) Interim Storage Facility Disaster Prevention Council, and (5) Interim Storage Construction Council and Interim Storage Safety Conference

(1) Safety inspections

Unannounced safety inspections by MOE personnel and occupational safety consultants

(2) Safety patrols by client

To prevent accidents and disasters, MOE personnel check the work safety management status, construction system chart maintenance status, etc.



(3) Hazard prediction training workshops

Hazard prediction training under the guidance of occupational safety consultants for supervisors and JESCO-contracted supervisors

(4) Interim Storage Facility Disaster Prevention Council

Held under the guidance of the Fukushima Labour Bureau and the Tomioka Labour Standards Inspection Office to further improve safety management standards at work sites pertaining to the Interim Storage Facility operations

(5) Interim Storage Construction Council and Interim Storage Safety Conference

Hazards and near-misses and measures to prevent recurrence are shared, and the status of each contractor's initiatives and issues are discussed in order to strengthen and improve safety measures at each work site

Policy of the Interim Storage Facility Project in FY2022 (1)

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General remarks

○ Making safety the first priority, advance the project with the understanding of the local municipalities.

Transportation

○ Promote the transportation of removed soil and waste generated in the Specified Reconstruction and Revitalization Base Areas, etc.

○ The following measures will be taken to ensure safer and smoother transportation:
- Ensure safe transportation through traffic safety measures such as driver training and road repairs
- Prevent and level off the concentration of vehicles at certain times of the year or in certain time slots by adjusting the time of departure for smooth transportation

○ In cooperation with Fukushima Prefecture and municipalities, implement systematic transportation while giving due consideration to Okuma and Futaba, where the Interim Storage Facility is located

Policy of the Interim Storage Facility Project for FY2022 (2)

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Site

○ To ensure steady implementation of the project, acquire necessary land according to the progress of facility development and generation of removed soil and waste while making every effort to keep relevant parties fully informed.

Facilities

○ Reception/separation facilities and soil storage facilities

- Operate the reception/separation facilities safely and in accordance with a plan.
- Operate the soil storage facilities safely and use them in order from the locations where development has been completed. Facilities where soil storage has been completed to be maintained and managed while ensuring safety.

○ Waste-related facilities

- Temporary incineration facilities, ash treatment facilities, and waste storage facilities to be operated safely and effectively.

Policy of the Interim Storage Facility Project for FY2022 (3)

Recycling and final disposal

- ○ To reduce the volume and recycle the removed soil and waste (so as to reduce the final disposal volume), conduct technological development and demonstration projects with the understanding of the local communities and the cooperation of related organizations, and promote the realization of recycling destinations.
- ○ Promote activities to foster understanding of the background and necessity of final disposal outside the prefecture, and the necessity and safety of volume reduction and recycling throughout Japan.
- ○ Promote discussions for final disposal outside the prefecture, including further development and verification of volume reduction and stabilization technologies.

Communication

- ○ Discuss additional measures in order to share information on environmental restoration efforts and views of local communities

(3) Recycling and Final Disposal

Background Related to Removed Soil Recycling

Nov. 11, 2011 Basic Policy based on the Act on Special Measures concerning the Handling of Environment Pollution by Radioactive Materials **(Cabinet decision)**

● Basic Policy Based on the Act on Special Measures concerning the Handling of Environment Pollution by Radioactive Materials Discharged by the NPS Accident Associated with the Tohoku District - Off the Pacific Ocean Earthquake that Occurred on March 11, 2011 (excerpt)

5. Basic matters concerning the collection, transportation, storage, and disposal of the removed soil; and
... In addition, from the viewpoint of securing Temporary Storage Sites, etc., it is necessary to reduce the volume of removed soil as much as possible at the time of storage or disposal, while taking technological progress into account, and to consider recycling, etc., ensuring the safety of removed soil with low contamination levels, such as that separated as a result of volume reduction.

Nov. 17, 2014 Japan Environmental Storage & Safety Corporation Act (Revised JESCO Act) enacted

● Japan Environmental Storage & Safety Corporation Act (excerpt)

(Responsibility of the national government)
Article 3 (omitted)
2. As measures set forth in the preceding paragraph, the national government shall, in particular, develop the facilities necessary for interim storage and ensure their safety, and take necessary measures to obtain the understanding and cooperation of local residents and other concerned parties. In addition, the national government shall take necessary measures to complete the final disposal outside Fukushima Prefecture within thirty years from the start of **transportation to the Interim Storage Facility**.

Feb. 25, 2015 Agreement on Safety Assurance, etc. in Areas Surrounding the Interim Storage Facility (Fukushima Prefecture, Okuma Town, Futaba Town, Ministry of the Environment)

● Agreement on Safety Assurance, etc. for Areas Surrounding the Interim Storage Facility (excerpt)
(Measures necessary to complete final disposal)
Article 14
4 C [The Ministry of the Environment] shall endeavor to promote the recycling of removed soil and waste with the understanding of the people of Fukushima Prefecture and other citizens, but if it is difficult to secure a recycling site, final disposal shall be conducted outside of Fukushima Prefecture.

Dec. 20, 2019 Basic Guidelines for Reconstruction from the Great East Japan Earthquake After the "Reconstruction and Revitalization Period" (Cabinet decision)

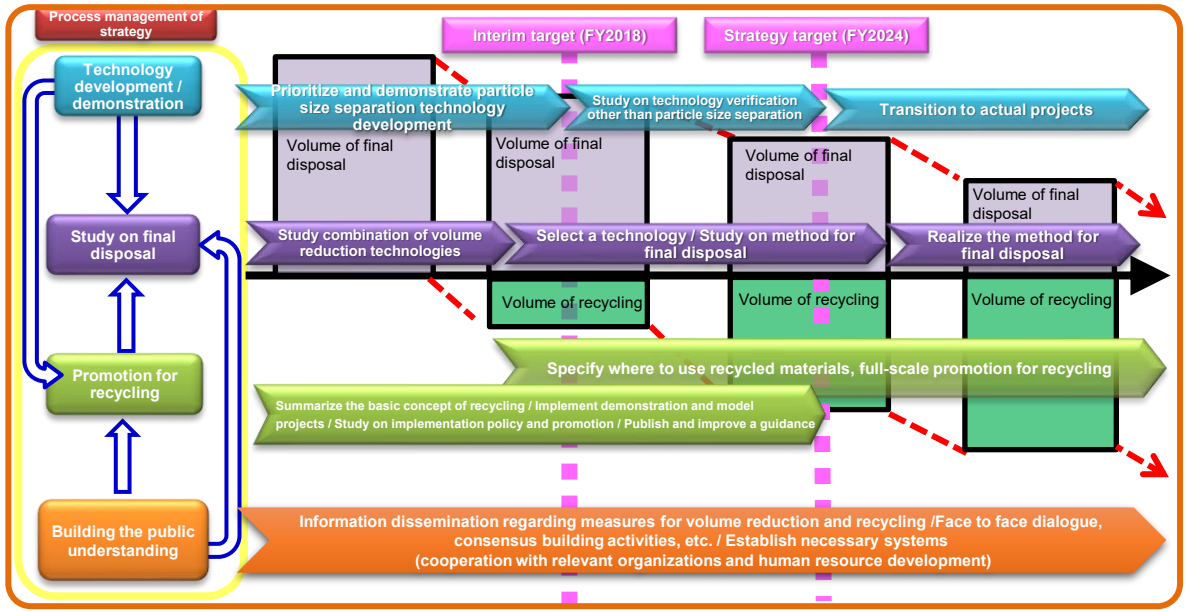
● Basic Guidelines After the "Reconstruction and Revitalization Period" (excerpt)
1. Basic stance of reconstruction and actions in each sector
(2)(ii) Actions to restore the environment
In order to reduce the final disposal volume, it is important for the government to work together to reduce and recycle the removed soil and waste with the understanding of local communities. ... Efforts shall be made with the government working together to strengthen cooperation among related ministries and agencies to create destinations for recycling.

Technology Development Strategy for Volume Reduction and Recycling; Basic Concept of Recycling

○ Regarding the removed soil and waste generated in Fukushima Prefecture, the national government is to take necessary measures to complete final disposal outside the prefecture within 30 years from the start of transportation to the Interim Storage Facility. In order to reduce the final disposal volume, the national government is making efforts to reduce the volume and recycle the removed soil and waste.

○ In promoting volume reduction and recycling, specific efforts are being made in accordance with the "Technology Development Strategy for Volume Reduction & Recycling of the Removed Soil and Waste under Interim Storage" and the "Process Chart," which were formulated in 2016 and reviewed in 2019.

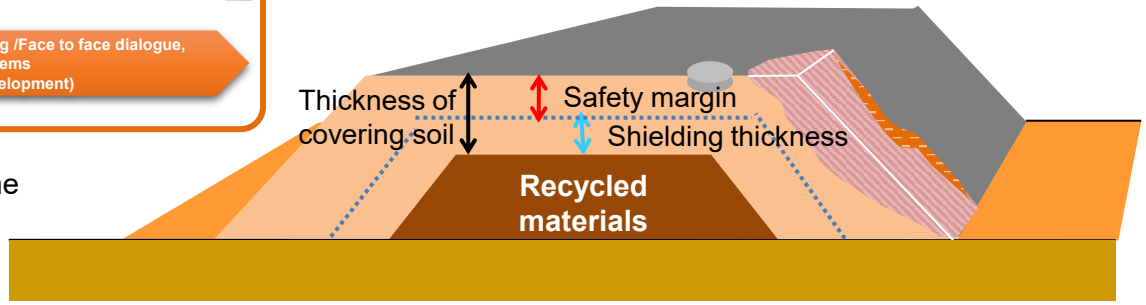
○ In particular, with regard to recycling, MOE is implementing demonstration projects based on the Basic Concept for Safe Use of Removed Soil Processed into Recycled Materials compiled in 2016 as a guideline, as well as working to foster understanding throughout the nation.



(Above) Outline of "Technology Development Strategy for Volume Reduction & Recycling of the Removed Soil and Waste under Interim Storage"

(Below) Outline of "Basic Concept for Safe Use of Removed Soil Processed into Recycled Materials"

- **Limit the use of recycled materials** Their use is limited to embankment materials for roads, etc. in public works projects, (for which the management entity and responsible system are clearly defined)
- **Appropriate management to limit additional exposure doses** (limiting the radioactivity concentration of recycled materials, appropriate thickness of covering soil, etc.)



Thickness of cover layer of soil should be determined so as to ensure the shielding thickness which limits additional exposure dose even during general repair of a civil engineering structure.

Need for Recycling Removed Soil

Amount of removed soil and waste transported to the Interim Storage Facility:

Equivalent to volume of 11 Tokyo Domes*

Toward final disposal outside the prefecture:

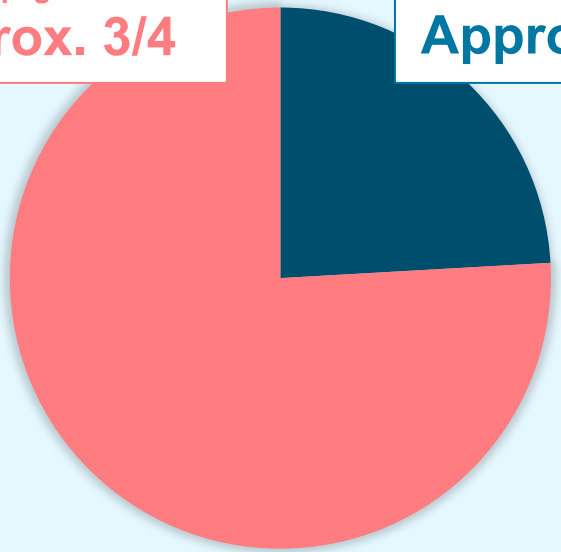
Reducing the final disposal volume is key

Distribution of radioactivity concentration in removed soil

Soil of **low** concentration

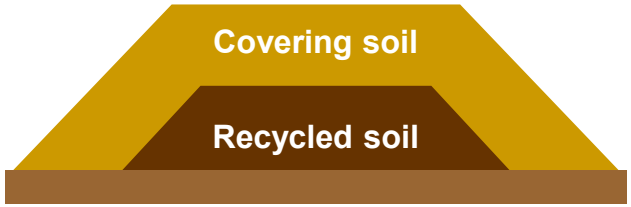
8,000 Bq/kg or lower
Approx. 3/4

More than 8,000 Bq/kg
Approx. 1/4



Recycling

Recycling with management in public work projects, etc.

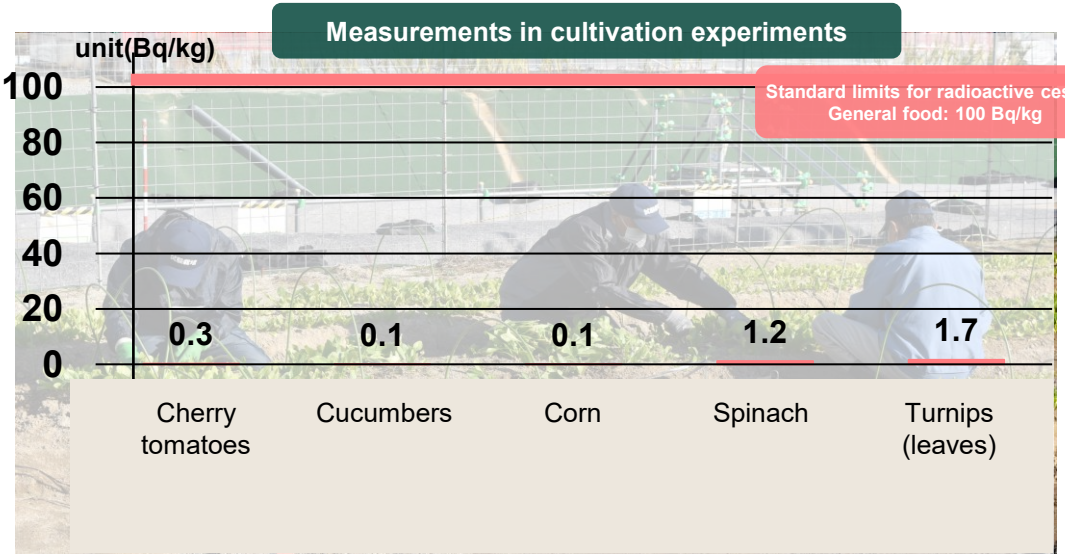


After reducing the volume

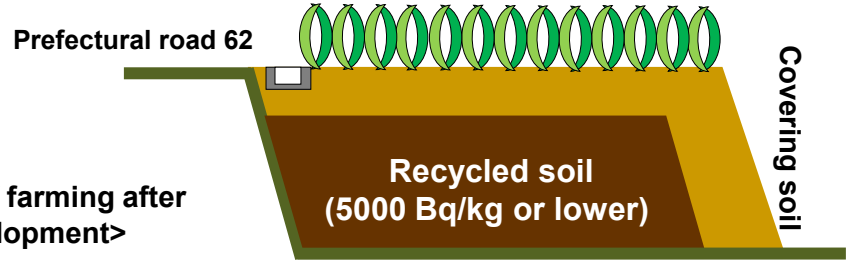
Complete final disposal outside Fukushima within 30 years from the start of transportation to the Interim Storage Facility

Demonstration Project for Recycling of Soil in Nagadoro Area of Iitate Village in Fukushima Prefecture

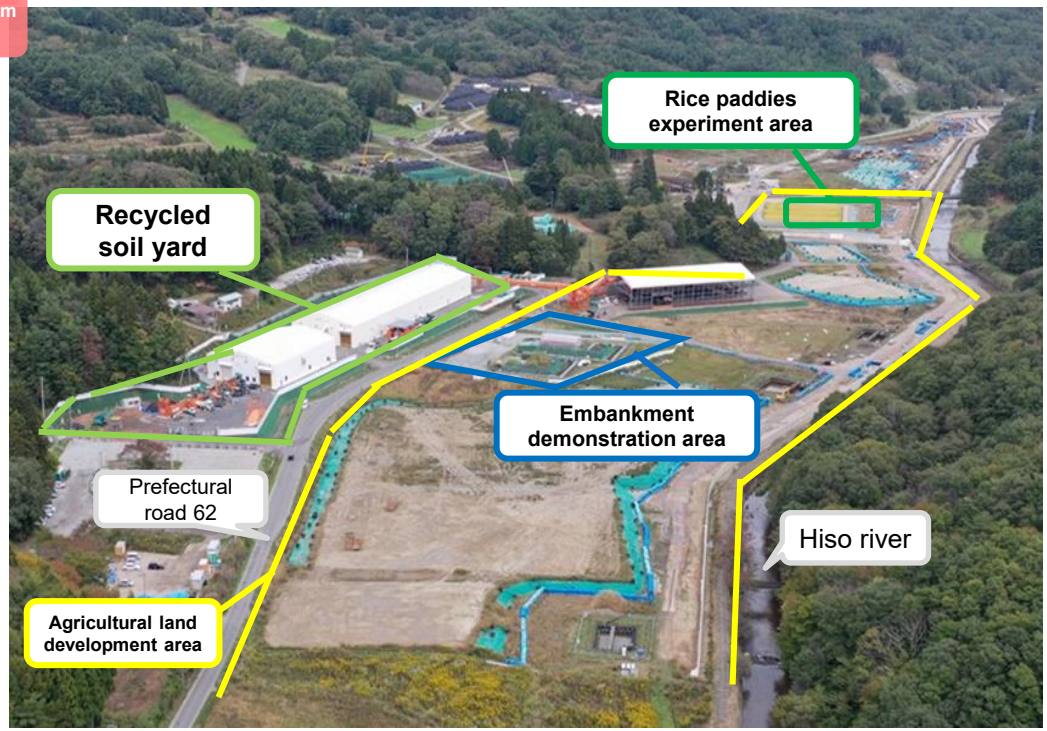
- In the Specified Reconstruction and Revitalization Base Areas in Iitate Village, which was approved in April 2018, a demonstration project has been implemented to convert soil generated by decontamination operations (removed soil) into recycled material, use it as fill material, cover it with soil, and use the site as agricultural land.
- The results and progress of the demonstration project are as follows
  - Based on the requests of local residents, experimental cultivation of vegetables, flowers, etc. began in FY2019 in the embankment demonstration area, and the **radioactivity levels of vegetables** cultivated in FY2021 ranged **from 0.1 to 2.5 Bq/kg, all well below the standard values.**
    Note: The standard value for radioactive cesium in general foods is 100 Bq/kg.
  - Monitoring to date has shown **no increase in air dose rates and no radioactive cesium has been detected in the embankment seepage water.**
  - Preparatory work for agricultural land development began in June 2020, and filling with recycled materials began in April 2021



<Radioactive cesium measurement results from cultivation experiments conducted in FY2021 (excerpt)>



<Image of farming after development>



Aerial drone photo of Nagadoro area

Efforts to Foster Understanding Toward Recycling

○ Potted plants using removed soil from Fukushima Prefecture were placed at the MOE headquarters. In addition, pots were placed at the Prime Minister's Office, the Reconstruction Agency, the LDP headquarters, and the Komeito headquarters in July 2021. In December, pots were placed at five MOE-related facilities.

○ To promote awareness and understanding of the demonstration project in the Nagadoro area of Iitate Village, a site tour of the project area was held targeting the general public. The tour was held 13 times from July 2021 to March 2022.

○ MOE is working to strengthen activities to foster understanding of the necessity and safety of volume reduction and recycling to reduce the final disposal volume of removed soil and waste by holding dialogue meetings in various parts of Japan.

◆ Use of removed soil from Fukushima Prefecture by the MOE and other entities

MOE headquarters

Prime Minister's Office of Japan

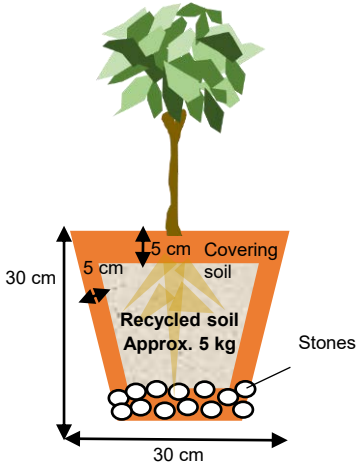


Image of use and radiation doses in the vicinity

→ **No change in air dose rate** around the potted plants before and after their installation (Air dose rate: 0.06 μSv/h)

◆ Site tour of recycling demonstration project

◆ The 3rd Dialogue Forum (Dec. 18 in Nagoya)

The 1st forum was held in May 2021 and 2nd in September, And the 4th in March 2022.

Disposal of Removed Soil Outside Fukushima Prefecture

○ When municipalities outside Fukushima conduct landfill disposal of removed soil, they are required to follow the disposal method stipulated by the national government in its enforcement regulations, but such regulations have not yet been formulated. The total amount of removed soil stored outside Fukushima is approximately 330,000 m^3 (53 municipalities in 7 prefectures).

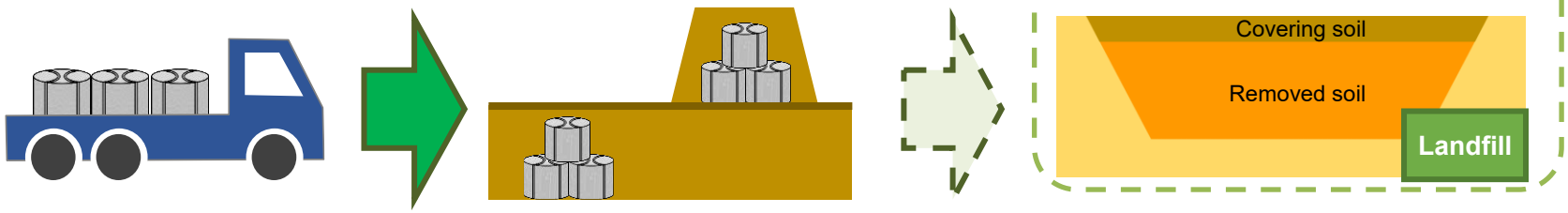
○ The Study Team for Disposal of Removed Soil was established under the Environmental Restoration Study Committee, and is currently discussing methods of disposal under management from a professional standpoint.

○ Demonstration projects are being implemented to check the safety of landfill disposal (Nasu Town: Completed, Tokai Village: Ongoing, Marumori Town: 2021-).

Note: The median (estimated) concentration of radioactive cesium in removed soil stored outside Fukushima is about 600 Bq/kg, with around 95% of it at less than 2,500 Bq/kg.

Collection and transport (Regulated under Enforcement Regulation)

Storage (Regulated under Enforcement Regulation)



<Key opinions of the Study Team>

○ The concentration of radioactive materials in soil removed from outside Fukushima is relatively low, and the effects of external exposure and internal exposure from groundwater, etc. are expected to be at extremely low levels.

○ The demonstration projects confirmed that landfill disposal can be conducted safely.

○ It is important to seek the views of the local government in considering the disposal method and to foster the understanding of local residents, as they have concerns over the safety of removed soil.

<Key opinions of local governments>

○ Want to dispose of the soil as soon as possible.

○ Would consider landfill disposal at the current storage site.

○ Even if standards are established, it will be difficult to gain the understanding of residents, and disposal is not likely to proceed.

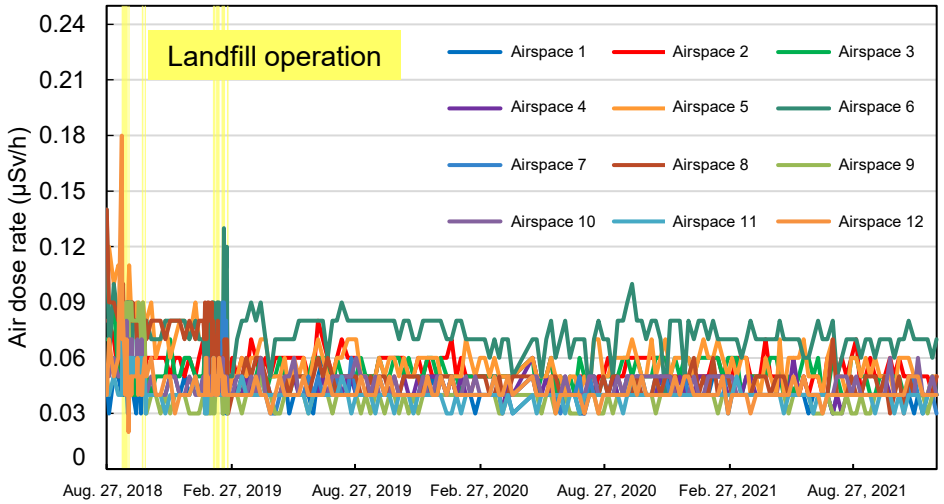
Demonstration Project Results for Landfill Disposal of Removed Soil Outside Fukushima
- No Change in Either Air Dose Rates or Seepage Water -

環境省

Tokai Village, Ibaraki Pref.

- Conducted at the JAEA Nuclear Science Research Institute site using removed soil (1,428 m^3) stored on-site at two locations in the village.

<Change in air dose rate at site boundaries>

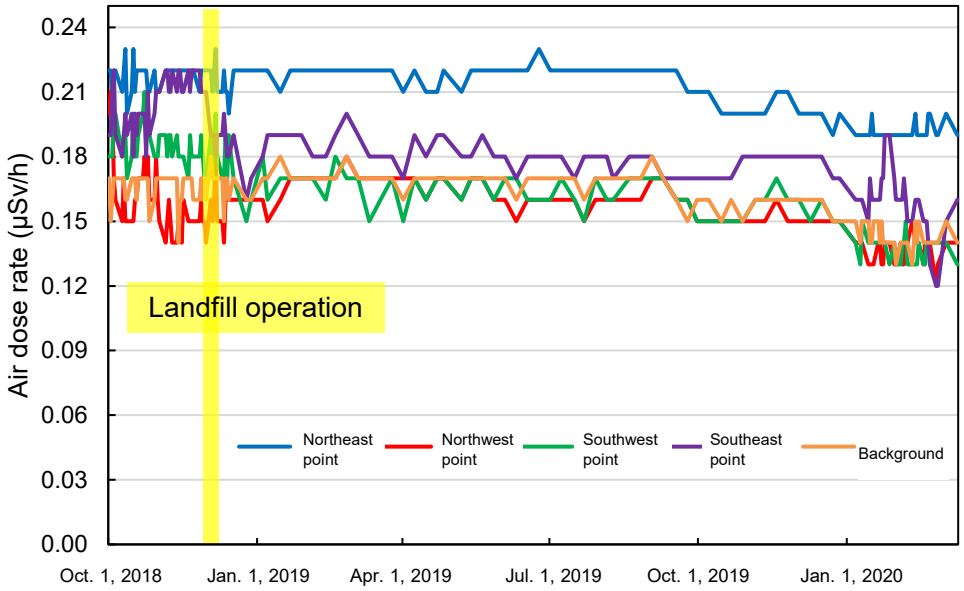


<Radioactivity concentration in seepage water>
<u>All below the detection limit</u>
(detection limit: 1 Bq/L or less)

Nasu Town, Tochigi Pref.

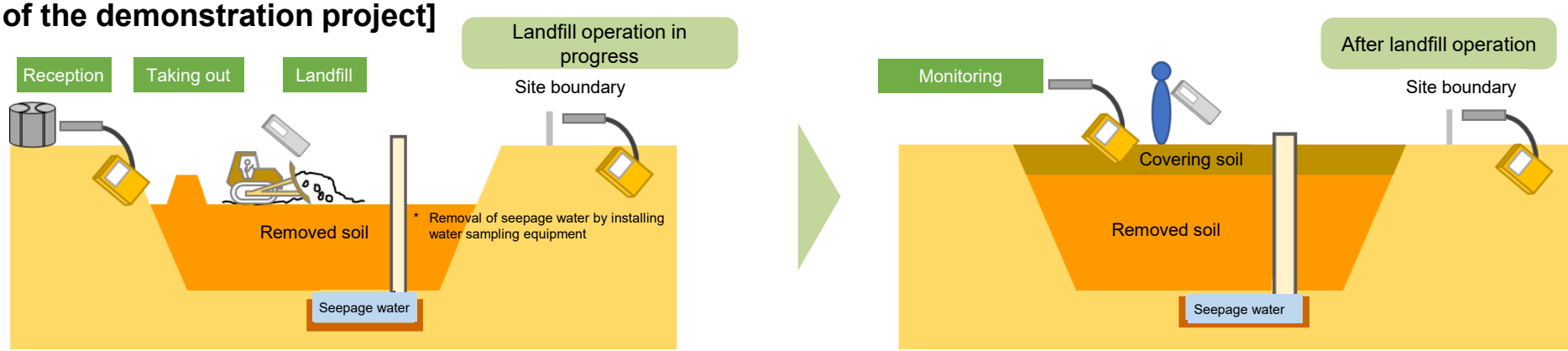
- Conducted in the Iono-Sanson Plaza using removed soil (217 m^3) stored on-site.

<Change in air dose rate at site boundaries>



<Radioactivity concentration in seepage water>
<u>All below the detection limit</u> (detection limit: 1 Bq/L or less)

[Image of the demonstration project]



Demonstration Project for Landfill Disposal of Removed Soil in Marumori Town
- Started in FY2021 -

環境省

Purpose

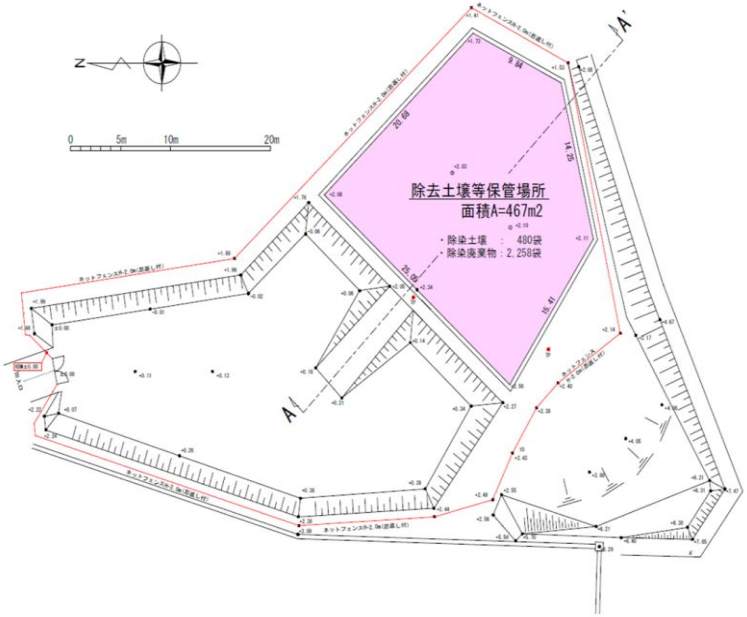
- To confirm that the landfill disposal of the removed soil does not adversely affect the health and living environment of the surrounding residents and the safety of the workers.
- To ensure that removed soil can be safely separated from decontaminated waste and disposed of in a landfill.

Objects

Removed soil: 480 bags
Decontamination waste: Removed soil separated from 2,258 bags

Location

Kamidaki Temporary Storage Site
(49-127 Aza Ishiba, Marumori Town, Miyagi Pref.)



Source: Marumori Town website / Marumori Map

Source: Geospatial Information Authority of Japan website
(https://maps.gsi.go.jp/#15/37.875091/140.778551/&base=std&ls=std&disp=1&vs=c1j0h0k0l0u0t0z0r0s0m0f1)

(4) Designated Waste

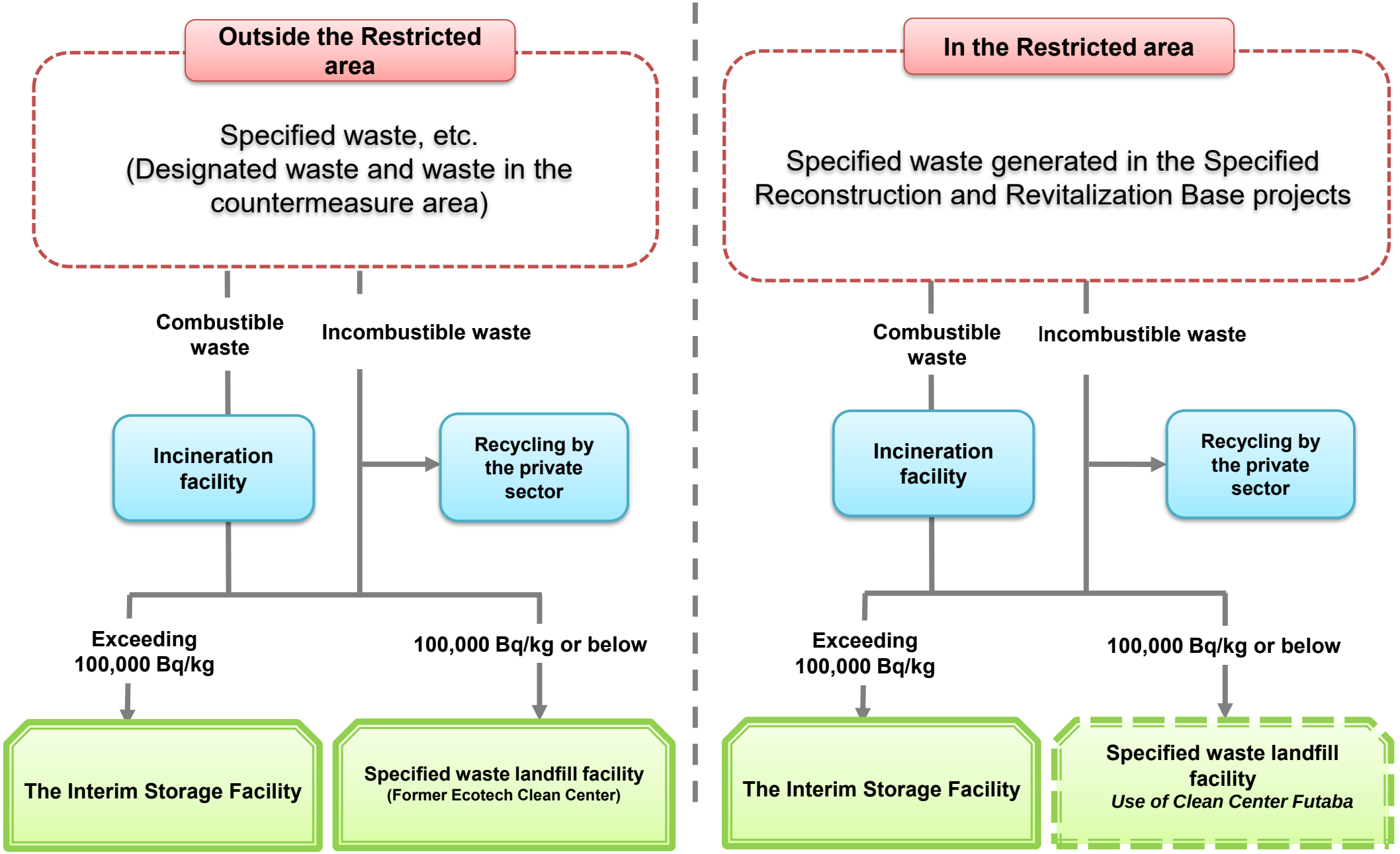
Basic Policy based on the Act on Special Measures Concerning the Handling of Environment Pollution by Radioactive Materials

○ The Basic Policy based on the Act on Special Measures concerning the Handling of Environment Pollution by Radioactive Materials (Cabinet decision dated on November 11, 2011) stipulates that designated waste generated in each prefecture **shall be disposed of within the prefecture.**

■ Basic Policy based on the Act on Special Measures concerning the Handling of Environment Pollution by Radioactive Materials Discharged by the NPS Accident Associated with the Tohoku District - Off the Pacific Ocean Earthquake that Occurred on March 11, 2011 (excerpt)

3. Basic matters concerning the disposal of waste contaminated with radioactive materials discharged due to the accident
(3) Matters concerning the disposal of designated waste
(Omitted)
In the disposal of designated waste, the following ministries shall take responsibility for the disposal of the waste under their respective jurisdictions: the Ministry of Health, Labour and Welfare, deposition substances such as sludge and other waste generated from water facilities; the Ministry of Land, Infrastructure, Transport and Tourism, sludge, etc. generated with respect to public sewerage or basin sewerage; the Ministry of Economy, Trade and Industry, deposition substances such as sludge and other waste generated from industrial water facilities; and the Ministry of the Environment in collaboration with the Ministry of Agriculture, Forestry and Fisheries, deposition substances such as sludge and other waste generated from rural community sewerage systems together with agriculture and forestry-related by-products. In addition, designated waste shall be disposed of within the prefecture from which the waste was generated.

Waste Treatment Flow in Fukushima Prefecture (within Contaminated Waste Countermeasure Area)



Note: Domestic waste from the 8 towns and villages in Futaba-gun will be landfilled at the former Ecotech Clean Center (for 10 years).
Soil and waste generated by decontamination are separated and incinerated, and then stored at the Interim Storage Facility.

Designation Status of Designated Waste

As of March 31, 2022

	Incinerated ash		Soil generated at water treatment plant (drinking water)		Soil generated at water treatment plant (industrial water)		Sewage sludge including incinerated ash		Agricultural and forestry by-products (rice straw, etc.)		Other		Total	
	Cases	Volume (ton)	Cases	Volume (ton)	Cases	Volume (ton)	Cases	Volume (ton)	Cases	Volume (ton)	Cases	Volume (ton)	Cases	Volume (ton)
Iwate Pref.	8	199.8									1	1.3	9	201.1
Miyagi Pref.			5	553.0					4	2,274.4	4	0.5	13	2,827.9
Fukushima Pref.[1]	1,353	345,238.3	36	2,445.2	11	584.1	110	8,076.9	1	7.8	433	14,984.1	1,944 (317)	371,336.3 (85,077.5)
Ibaraki Pref.	20	2,380.1					2	925.8	1	0.4	3	229.4	26	3,535.7
Tochigi Pref.	8	1,331.4	14	727.5		(26.0)[2]	8	2,200.0	27	7,928.0	6	21.3	63	12,208.1
Gunma Pref.			6	545.8	1	127.0	5	513.9			1	0.3	13	1,187.0
Chiba Pref.	46	2,719.4					1	542.0			17	455.2	64	3,716.6
Tokyo	1	980.7									1	1.0	2	981.7
Kanagawa Pref.											3	2.9	3	2.9
Niigata Pref.			4	1,017.9									4	1,017.9
Total	1,436	352,849.7	65	5,289.4	12	711.1	126	12,258.6	33	10,210.6	469	15,696.0	2,141	397,015.2

1 The 317 cases and 85,078 tons in parenthesis for the Fukushima Prefecture total represent designated waste stored by businesses and municipalities.

2 For soil generated at water treatment plant (industrial water) in Tochigi Pref., the amount (26.0 tons) was generated at a facility that also treats drinking water, and so is counted in the column for soil generated at water treatment plant (drinking water).

Status of Designated Waste in Fukushima Prefecture

環境省

○ Of the existing **1,944 cases/371,336 tons**[1] of designated waste in Fukushima, **1,452 cases/222,699 tons (about 60%[2])** have been removed for disposal at Specified Waste Landfill Facilities or storage at the Interim Storage Facility, etc.

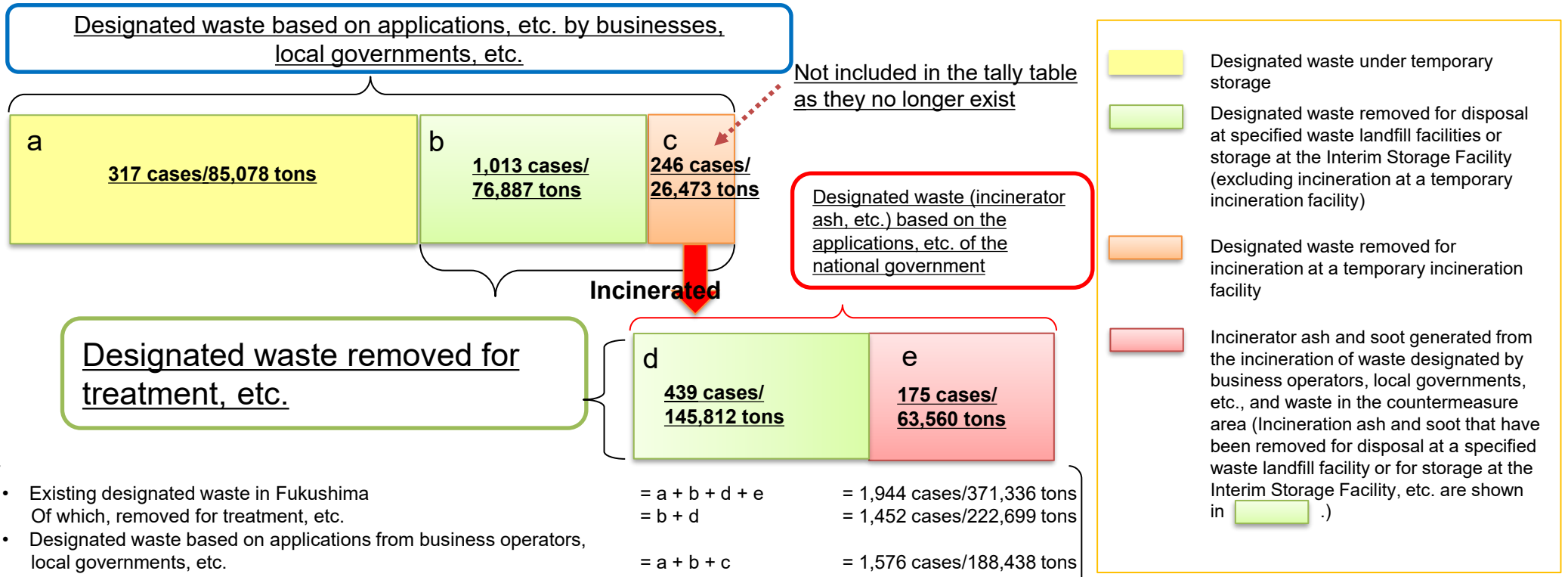
○ Of the designated waste of **1,576 cases/188,438 tons** in Fukushima designated based on applications by business operators and local governments, **1,259 cases/103,361 tons (about 55%[2])** were removed for incineration or landfill disposal. **317 cases/85,078 tons** are stored by businesses and local governments.

[1] Rounded to the first decimal place (same hereafter)

[2] Indicates percentage by weight

(As of March 31, 2022)

Status of designated waste in Fukushima



• Existing designated waste in Fukushima	= a + b + d + e	= 1,944 cases/371,336 tons
Of which, removed for treatment, etc.	= b + d	= 1,452 cases/222,699 tons
• Designated waste based on applications from business operators, local governments, etc.	= a + b + c	= 1,576 cases/188,438 tons
Of which, removed for incineration, landfill disposal	= b + c	= 1,259 cases/103,361 tons

Status of Waste Disposal in the Countermeasure Area

環境省

○ Some municipalities in Fukushima have completed volume reduction of waste in the area and are steadily implementing disposal.

(As of March 31, 2022)

		Demolition and removal of damaged houses[1] (excluding Specified Reconstruction and Revitalization Base Areas)	Transportation to Temporary Storage Sites	Incineration, etc. at temporary incineration facilities[2]	Landfill disposal
Waste in the countermeasure area (disaster waste, etc.)	Minamisoma City	Completed	Completed	Treatment completed (Period : Apr. 2015 to Mar. 2020)	Being transported to specified waste landfill facility[4] (for about 6 years from Nov. 2017)
	Iitate Village (Komiya area)	Completed	Completed	Treatment completed (Period : Aug. 2014 to Mar. 2017)	
	Iitate Village (Warabidaira area)	Completed	Completed	Treatment completed (Period : Jan. 2016 to Feb. 2021)	
	Katsurao Village	Completed	Completed	Treatment completed (Period : Apr. 2015 to Mar. 2021)	
	Namie Town	Completed	Completed	Ongoing (From May 2015)	
	Futaba Town	Almost completed	Ongoing	Ongoing (From Mar. 2020)[3]	
	Okuma Town	Almost completed	Ongoing	Ongoing (From Dec. 2017)	
	Kawauchi Village	Completed	Completed	Treatment completed (Period : Dec. 2011 to Feb. 2016)	
	Tomioka Town	Completed	Completed	Treatment completed (Period : Apr. 2015 to Aug. 2018) (Wide-area treatment ongoing in Namie Town)	
	Naraha Town	Completed	Completed	Treatment completed (Period : Nov. 2016 to Mar. 2019)	
	Kawamata Town	Completed	Completed	Treatment completed at existing treatment facility	
	Tamura City	Completed	No Temporary Storage Site	Treatment completed at existing treatment facility	

[1] Demolition of houses is being implemented, with each municipality consulted on the application submission period.
[2] In Kawamata Town and Tamura City, treatment is being conducted at existing local facilities.
[3] There are two facilities in Futaba Town, the first (150 t/day) and the second (200 t/day).
[4] Waste, etc. generated from Specified Reconstruction and Revitalization Base Areas is scheduled to be transported to the Clean Center Futaba.

Landfill Disposal of Specified Waste at Controlled Landfill Site in Fukushima Prefecture

環境省

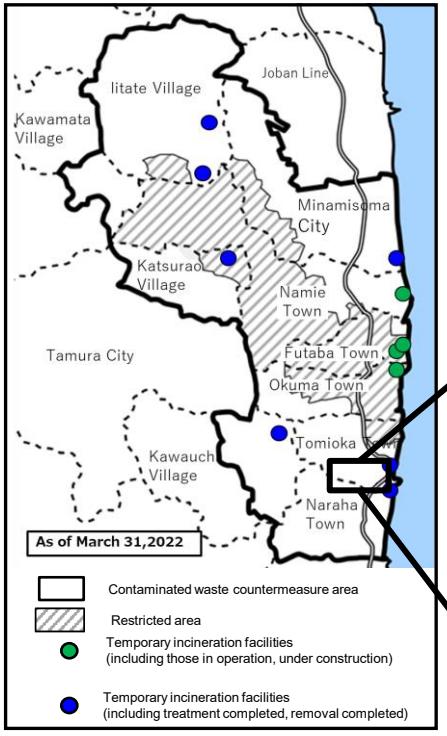
○ Transportation of specified waste, etc. started on November 17, 2017 as the specified waste landfill disposal project.
○ So far, **221,043 bags**, approximately 70% of the target, have been transported (as of March 31, 2022).
○ **No specific increase in** air dose rates, etc. **was observed in the monitoring results comparing before and after the the transportation.**

Outline of the history

○ Dec. 14, 2013: The government requested Fukushima Prefecture, Tomioka Town, and Naraha Town to accept the project
○ Dec. 4, 2015: Fukushima Prefecture, Tomioka, and Naraha conveyed the message to accept the project
○ Apr. 18, 2016: Nationalized the control landfill site (former Ecotech Clean Center)
○ Jun. 27, 2016: A safety agreement was signed between the national government, Fukushima Prefecture, and the two towns
○ **Nov. 17, 2017: Started transportation**
○ Aug. 24, 2018: Established "Reprun Fukushima", specified waste landfill information facility
○ Mar. 20, 2019: Solidification treatment facility for the specified waste started operation

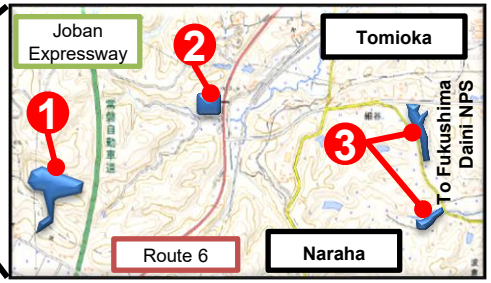
Landfill object/Transport period

○ Waste within the countermeasure area (with radioactivity concentration of 100,000 Bq/kg or below): 6 years
○ Designated waste in Fukushima Prefecture (100,000 Bq/kg or below): 6 years
○ General waste from the8 Futaba-gun municipalities : 10 years
○ Waste exceeding 100,000 Bq/kg will be transported to the Interim Storage Facility



Related facilities

1. **Specified waste landfill facility**
2. **Specified waste landfill information facility, "Reprun Fukushima"**
3. **Specified waste solidification treatment facility**



1. Store → 2. Solidification → 3. Curing → 4. Store and transport

Progress of Demolition in Specified Reconstruction and Revitalization Base Areas

環境省

○ In Specified Reconstruction and Revitalization Base Areas, approximately 83% of houses for which applications have been made have been demolished to date.

As of March 31, 2022

Town/Village	Application status	Number of applications	Number of houses demolished
Namie Town	Open	499	322
Futaba Town	Open	1,113	946
Okuma Town	Open	1,478	1,296
Tomioka Town	Open	919	751
51 Iitate Village	Closed	90	89
Katsurao Village	Closed	47	47
Total		4,146	3,451

(Futaba Town)
Futaba Town Gymnasium

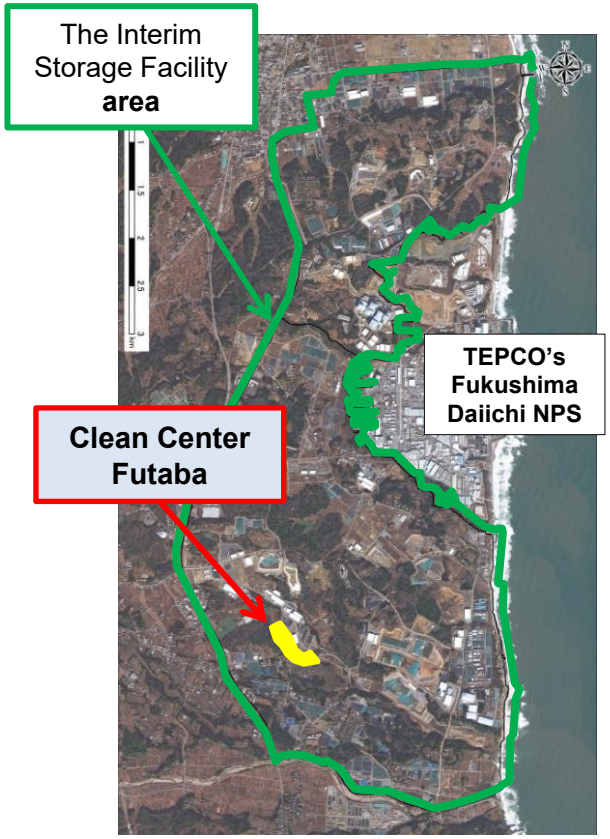
Landfill Disposal of Waste at Clean Center Futaba

環境省

○ Problems in Fukushima Prefecture include concerns for the **livelihood of residents in Futaba-gun and securing places to dispose of waste and other materials generated by the development projects in the Specified Reconstruction and Revitalization Base Areas**.

○ In order to accelerate the reconstruction of Futaba-gun, an agreement was reached with the Futaba Area Wide-Area Municipalities Association, Fukushima Prefecture, and MOE regarding the **use of the Clean Center Futaba**, a controlled disposal facility owned by the Association, **as a final disposal site for this waste. A basic agreement was signed** on August 5, 2019.

○ MOE has been working since December 2020 to prepare for the resumption of service in approximately two years.



Type of waste for final disposal

1. Household garbage from the Futaba-gun
2. Industrial waste and general waste from business activities such as infrastructure development from the Futaba-gun
3. Specified waste from the Specified Reconstruction and Revitalization Base Areas

Present condition
(photo taken on July 24, 2019)

[Present status of Clean Center Futaba]

- Location: Koirino, Okuma Town
- Established by: Futaba Area Wide-Area Municipalities Association
- Prior to the Great East Japan Earthquake, it had been utilized as a final disposal site for industrial waste and for general waste in Futaba-gun. Operation had been suspended due to the accident at TEPCO's Fukushima Daiichi NPS.

Designated Waste in 5 Relevant Prefectures

<Construction of long-term storage facilities>

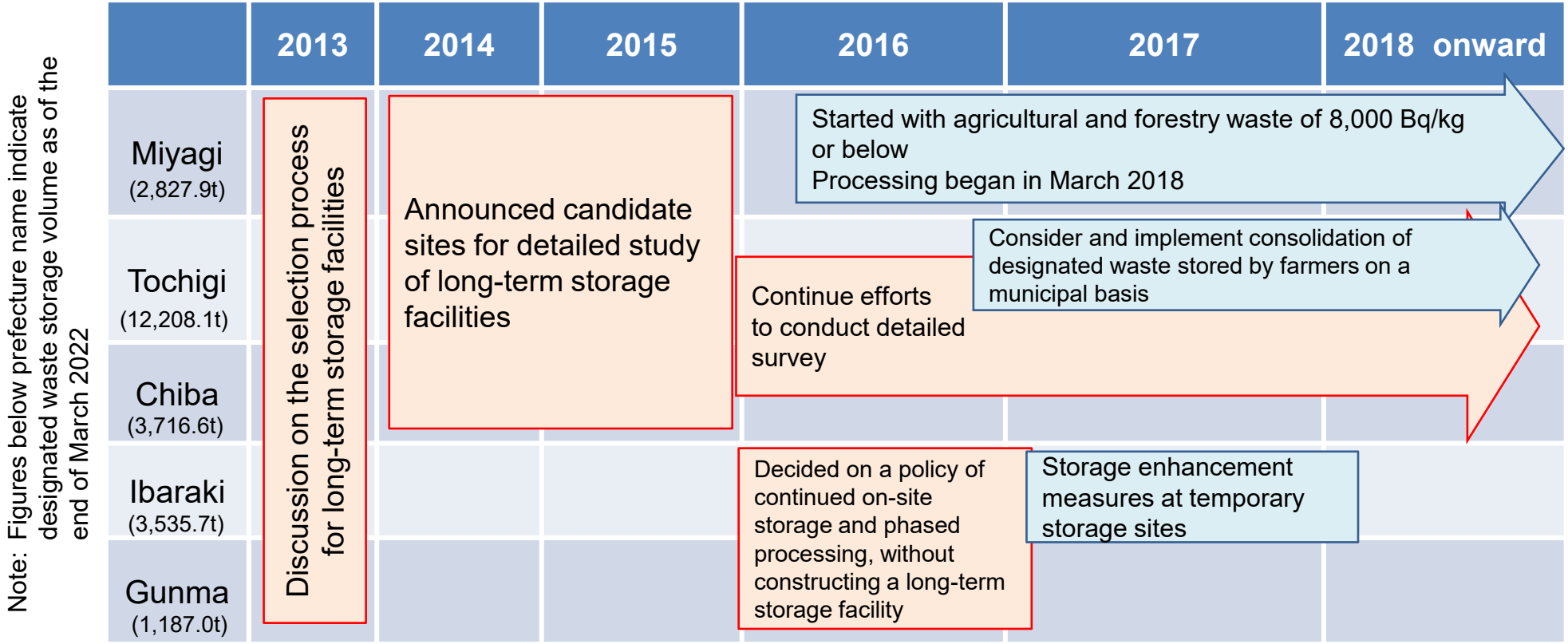
○ For five prefectures (Miyagi, Tochigi, Chiba, Ibaraki, and Gunma), the **national government is** considering **constructing "a long-term storage facility" within each prefecture.**

○ For three of the prefectures (Miyagi, Tochigi, and Chiba), candidate sites were chosen in 2014-2015, but **there is no prospect of detailed survey**. **Need to consult meaningfully with each prefecture on future policy**.

<Step-by-step efforts to resolve issues in each prefecture>

○ Although no progress has been made in establishing long-term storage facilities, **efforts** are being **made to gradually move radioactive materials away from residential areas.**

- Disposal of low-concentration agricultural and forestry waste, approximately 10 times the volume of designated waste (Miyagi)
- Enhancing storage (Ibaraki)
- Consolidation of storage sites (Tochigi) (Oct. 2021: Start of removal work for consolidation in Nasushiobara City)
- Disposal of designated waste whose radioactive dose decreased to 8,000 Bq/kg or below(considered for all prefectures concerned)



System to Lift Designation of Designated Waste

[System]

Amendment Ministerial Order announced and enforced on April 28, 2016

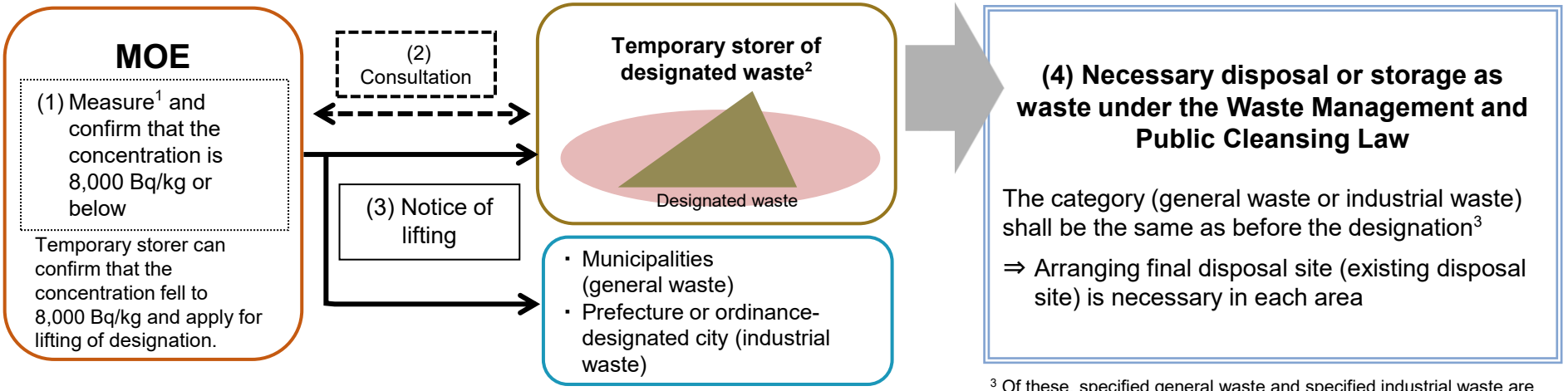
(Article 14-2 of the Enforcement Regulations of the Act on Special Measures concerning the Handling of Environment Pollution by Radioactive Materials)

○ If the radioactive concentration of designated waste is 8,000 Bq/kg or below, the minister of the environment may lift the designation after consultation with the party responsible for temporary storage and disposal (municipalities or business operators).
Note: If the parties are unable to reach an agreement, the designation will not be lifted.

○ After the lifting of the designation, municipalities shall be responsible for storing and disposing of general waste and business operators that discharged the waste shall be responsible for storing and disposing of industrial waste in accordance with the disposal standards of the Waste Management and Public Cleansing Law.
Note: MOE provides technical and financial assistance, including explanation on the safety of waste of 8,000 Bq/kg or below so that the disposal of waste after the lifting of the designation will proceed smoothly.

[Achievement]

○ Designation was lifted for a total of approximately 2,320 tons and 64 cases in seven prefectures (Chiba, Yamagata, Miyagi, Shizuoka, Iwate, Tokyo and Tochigi). (As of March 31, 2022)



[1] Measurement is conducted at the request of municipalities.

[2] If the temporary storer and responsible party for disposal are different, the responsible party for disposal is also included.

[3] Of these, specified general waste and specified industrial waste are subject to additional special treatment standards under the Act on Special Measures, in addition to the treatment standards under the Waste Disposal and Public Cleansing Law.

Project to Accelerate Disposal of Agricultural and Forestry Waste

環境省

[Objective]
Rice straw, pasture grass, etc., which were conventionally used in circulation, were contaminated by radioactive materials and were generated in large quantities as waste.
Of these, those with a radioactivity of 8,000 Bq/kg or below are planned to be disposed of by municipalities, etc. in accordance with the Waste Management and Public Cleansing Law, but as the process is delayed, they are still stored temporarily at farmers' sites, which has become a problem. If the disposal does not proceed, there will be concerns that they may rot or catch fire, and the disposal itself may become difficult.
For these reasons, part of the cost required for disposal is subsidized to promote disposal by municipalities, etc.

Examples of contaminated waste that is approaching its storage limit

Rice straw

Compost

Pasture grass

Mushroom logs

Accelerate treatment

[Outline of Project]

1 **Subsidy recipients**
Municipalities, etc. (including business associations) that dispose of waste

2 **Contaminated waste to be disposed of**
Combustible general waste that had been in circulation but was contaminated by radioactive materials from the accident up to a radioactivity level of 8,000 Bq/kg or below

3 **Project implementation period**
FY2021

4 **Subsidy rate**
1/2 (Country)
Note: For local governments, the remaining share will be fully covered by a special allocation tax for reconstruction from the earthquake disaster.

5 **Examples of processing costs**
Subsidizes the cost of a series of processes required to dispose of waste
(i) Costs of developing treatment plans, etc.
(ii) Costs of promoting understanding among local residents (air dose rate measurement expenses, etc.)
(iii) Costs of collection, transportation, treatment, and disposal of waste (installation of temporary incinerators, etc.)

(5) Sea Area Monitoring Regarding Discharge of ALPS-Treated Water into the Sea

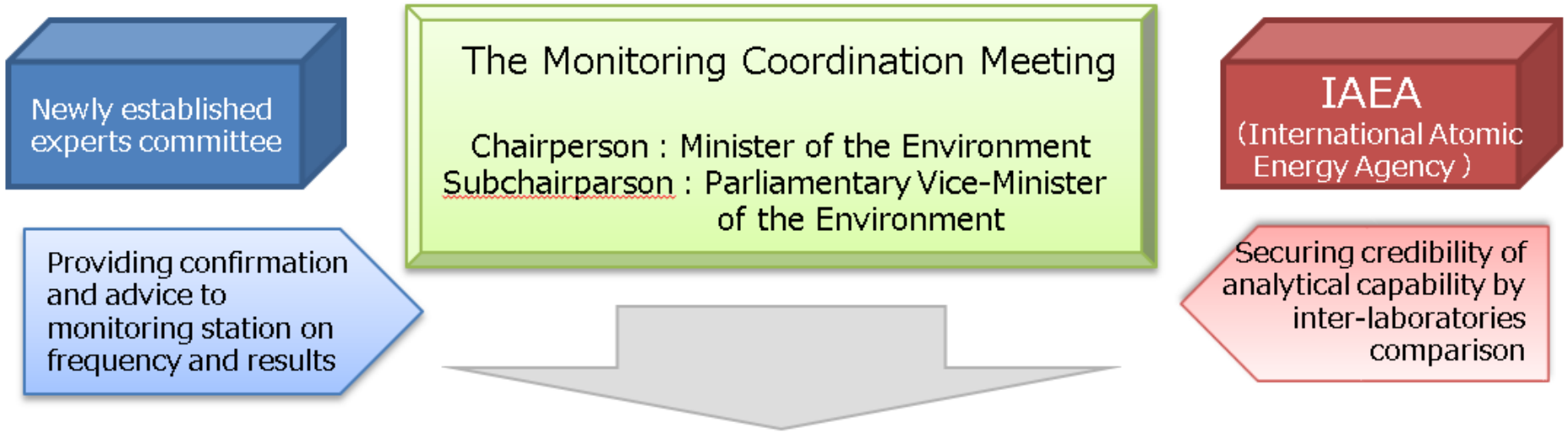
Immediate Initiatives (Ministry of the Environment)

環境省

Strengthening sea area monitoring regarding discharge of ALPS treated water into the sea

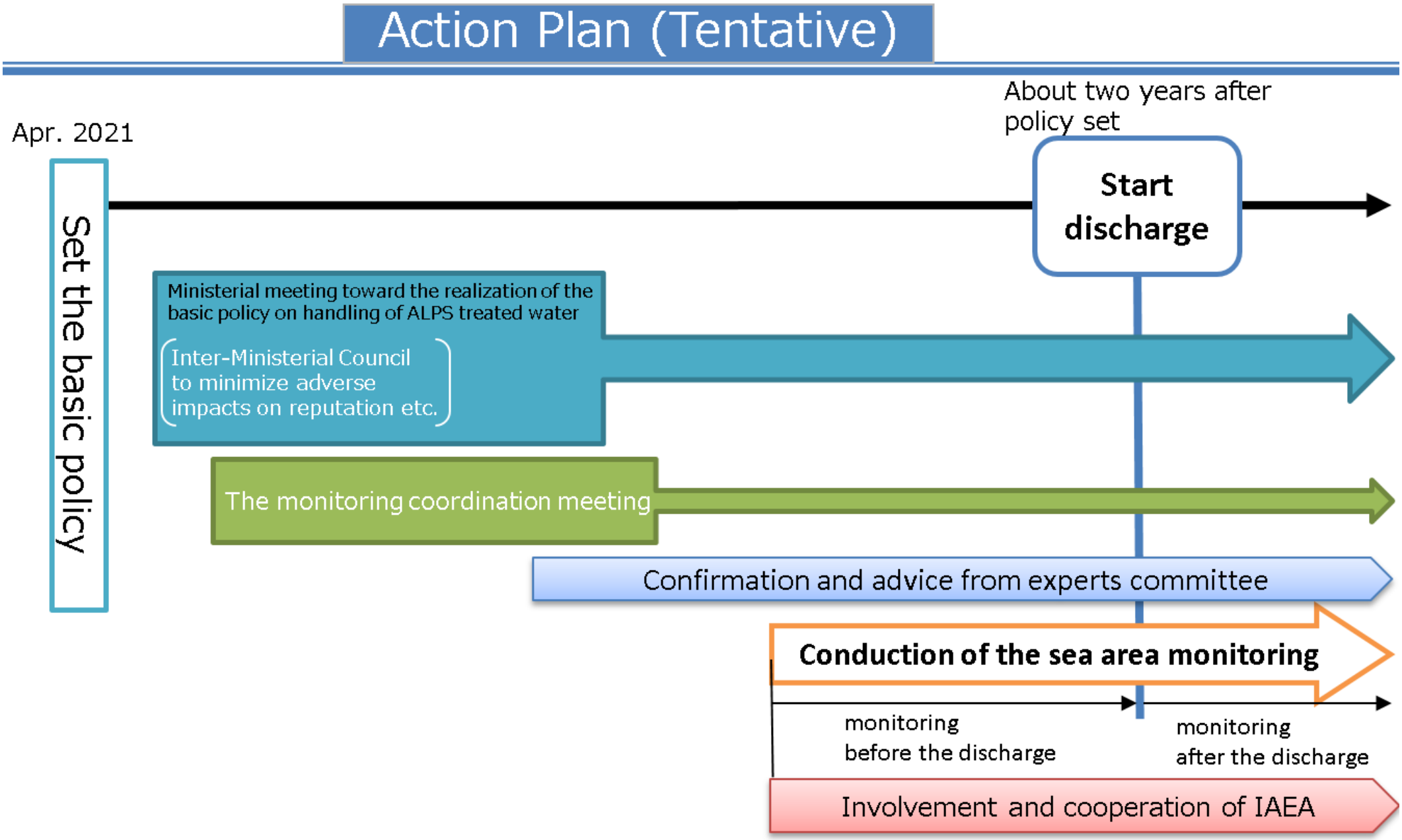
The Government and TEPCO will reinforce and expand the monitoring of tritium, by newly introducing the monitoring of tritium before and after the discharge into the sea area.

- The sea area monitoring will be conducted by collaborating with relevant ministries, under the Monitoring Coordination Meeting.
- Confirmation and advice on the sea area monitoring activities will be provided by a newly established experts committee.
- Securing credibility of analytical capability by inter-laboratories comparison project in cooperation with IAEA.



Minimize adverse impacts on reputation by maximizing the emphasis on objectivity and transparency when monitoring

Action Plan


Action Plan (Tentative)
Apr. 2021
About two years after policy set
Set the basic policy
Start discharge
Ministerial meeting toward the realization of the basic policy on handling of ALPS treated water
Inter-Ministerial Council to minimize adverse impacts on reputation etc.
The monitoring coordination meeting
Confirmation and advice from experts committee
Conduction of the sea area monitoring
monitoring before the discharge
monitoring after the discharge
Involvement and cooperation of IAEA

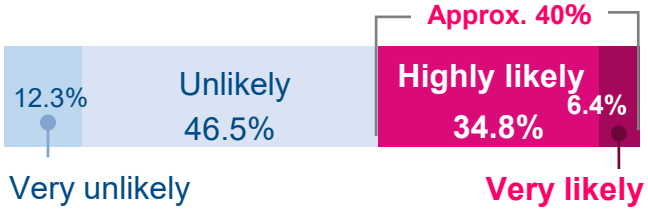
2. Radiation Risk Communication

Risk Communication and Dissemination of Information

GuGuRu Project

○ For issues related to the health effects of radiation, the **“GuGuRu Project”** was launched in July 2021 with three prongs: TsumuGu (building knowledge); TsunaGu (connecting with people, towns, and organizations); and TsutawaRu (transmitting knowledge). The “GuGuRu Project” aims at developing cognitive skills to help people avoid being misled by misinformation and promoting nationwide efforts to share accurate information in an easy-to-understand manner).

○ The goal is to reduce the percentage of people who believe that “it is highly likely that current radiation exposure will effect the health of future generations in Fukushima Prefecture” **from 40%** (in FY2020) **to 20% by FY2025**.



Source: Excerpt from the Ministry of the Environment's FY2020 questionnaire survey on information about the health effects of radiation (March 2021)

○ Radiation College

Seminars are organized at universities across Japan to provide opportunities to learn about radiation. Recording meetings were also held to make presentations which encourage to participate in GuGuRu Project.

○ GuGuRu Project official website

https://www.env.go.jp/chemi/rhm/portal/communicate/

Radiation Consultant Support Center

○ MOE established the “Radiation Risk Communication Consultant Support Center” in Iwaki City, Fukushima Pref. to provide a variety of support to consultants and municipal employees involved in risk communication activities, mainly targeting 12 municipalities, where evacuation was ordered at the time of the accident.

BOOKLET to Provide Basic Information Regarding Health Effects of Radiation

○ MOE publishes the “Basic Information on the Health Effects of Radiation BOOKLET,” which shares scientific knowledge on radiation and the efforts of related ministries and agencies. The BOOKLET, which is updated every year, is distributed at training sessions and other occasions and is also made available on the Information on Portal Site for Radiation Health Effects.

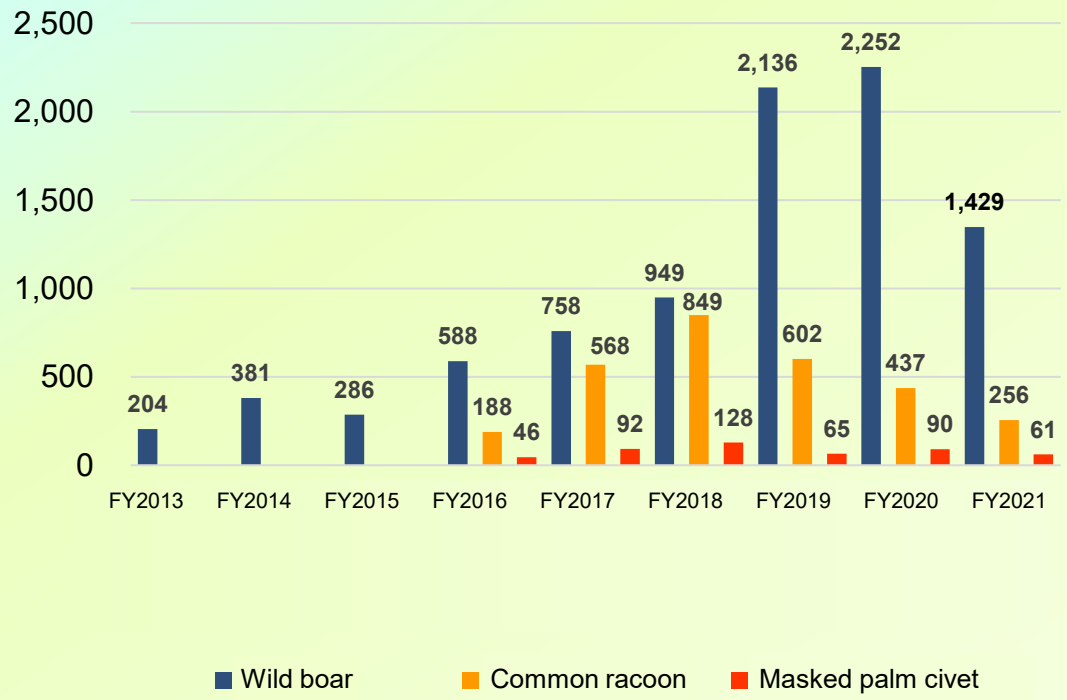
3. Initiatives to Prevent Damage by Wild mammals

Measures Against Wild Boars in Restricted Area, etc.

○ Wild mammals in Restricted area are hampering residents' preparations for return. Therefore, **MOE has been implementing a project to capture wild boars and other animals in Restricted area since FY2013** to ensure peace of mind for those who will return to their homes and support them in rebuilding their lives and the local economy.

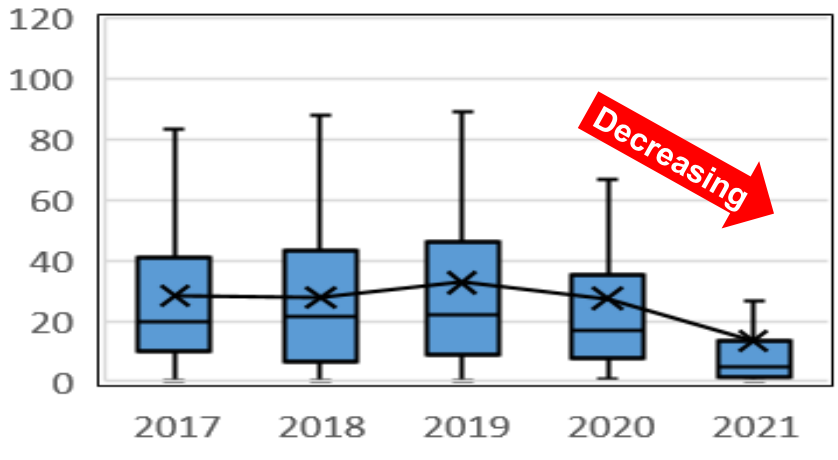
○ The number of wild boars captured in FY2021 decreased from the previous year to 1,429. The frequency of wild boars appearing in footage taken by automatic cameras in Restricted area has also been **decreasing since FY2019, so the number of wild boars is thought to be decreasing.** The number of raccoons and masked palm civets captured is also on a decreasing trend.

No. of wild boars captured



Frequency of detection of wild boars (caught on camera)

In order to grasp wild mammal numbers, automatic cameras are installed in a 2 km mesh configuration within the surveyable area of the Restricted area, and changes over time are monitored.
Surveys are conducted three times a year (each lasting about one month).



Frequency of wild boars caught on film = Number of boars caught/days of camera operation x 100

x represents the average value.
Only data from the first and second surveys were used for FY2021.

4. Future-Oriented Projects

Progress of Fukushima Regeneration / Future-Oriented Project

"Fukushima" × "Decarbonization / Material Cycles / Natural Symbiosis"

環境省

○ Launched "Fukushima Regeneration / Future-Oriented Project" in August 2018 in response to a request from the governor of Fukushima.
○ Promoted initiatives while strengthening the system by setting up the Office for Fukushima Regeneration within the Environmental Regeneration and Material Cycles Bureau in April 2021.

Basic Concept

○ In response to local needs in Fukushima Prefecture, promotes environmental restoration initiatives as well as initiatives for a new stage of reconstruction by identifying Fukushima's strengths from environmental viewpoints such as decarbonization, material cycles, and natural symbiosis.
○ Strategically develops a cross-program policy package by effectively combining MOE's various projects and working with local communities through risk communication on radiation-related health concerns, PR activities, and information dissemination.

Support for industrial regeneration

<Job creation>

● Supporting creation of waste recycling industry
A noncombustibles recycling facility established as a joint project with local enterprises was completed in October 2020.

Noncombustibles recycling facility

Advanced technology for recycling used solar panels

● Promoted demonstration of advanced recycling technology and efforts for commercialization (recycling of used solar panels and automated sorting system using AI)

Support for Fukushima Green Reconstruction

<Regeneration using natural resources>

● Promoting measures to enhance national and quasi-national parks based on "Fukushima Green Reconstruction" formulated with Fukushima Prefecture in April 2019.

● In 2021, founded a local council for the promotion of the Project to Encourage Leisure Activities in Bandai-Asahi National Park and promoted relevant initiatives.

Conceptual drawing of Ozenuma Visitor Center

Combined with MOE's expertise
Environment restoration, Risk communication
×
Decarbonization / Material cycles / Natural symbiosis
Contribute to reconstruction and revitalization

Support for decarbonized town development

<Rebuilding living environment>

● Supporting new town development to realize a decarbonized society

● In FY2021, eight feasibility studies were held; started planning autonomous and dispersed energy system in Fukushima Prefecture and providing financial support to introduce facilities.

Support for local revitalization

<Reconstruction through risk communication and information dissemination >

● Risk communication on radiation in relation to environmental restoration using "Reprun Fukushima," a specified waste landfill information center

● Provided information on environmental restoration in Fukushima at MOE-managed Shinjuku Gyoen National Garden using panels and movies.

Activities

Cooperation Agreement with Fukushima Prefecture

○ In August 2020, MOE concluded a “Cooperation agreement on promotion of future-oriented environmental measures for the reconstruction of Fukushima” with Fukushima Prefecture, based on the initiatives of past environmental restoration projects and the “Fukushima Regeneration / Future-oriented Project” to date, and Fukushima Prefecture and MOE agreed to promote initiatives through further collaboration.

○ This is the first time MOE has concluded a comprehensive agreement with a single prefectural government.

Outline of the Cooperation Agreement

Basic Concept

○ Fukushima Prefecture and MOE will work together to develop measures, that take advantage of Fukushima's environmental features, such as Fukushima Green Reconstruction and efforts aimed at becoming a pioneer in renewable energy.

○ A new form of everyday living and a new regional lifestyle will be modeled in Fukushima with reference to life during and after COVID-19.

Steady advancement of Fukushima Green Reconstruction, etc.
- **Expansion of exchange population utilizing natural resources**

Promotion of global warming countermeasures to be implemented alongside reconstruction
- **Accelerate reconstruction in the Hama-dori area and elsewhere, and contribute to global warming countermeasures**

Promotion of environmental policies that are conscious of post-COVID-19 society
- **Formation of a self-reliant, decentralized, networked society**

Common matters concerning the effective implementation of the agreement
- **Organizing symposiums and other events to communicate Fukushima's recovery to people within and outside the prefecture**

Follow-up meeting on the cooperation agreement

(held on June 10, 2021)

- As a follow-up meeting to this agreement, both Fukushima Prefecture and MOE explained the status of efforts in FY2020 and major plans for FY2021 with reference to the materials provided. The two parties then exchanged views focusing on past issues and future action policies based on those issues.
- The two parties will continue to work together to implement initiatives based on the agreement, including maintenance for promoting "workcation" and efforts for decarbonization。

Follow-up meeting

Developing New Future-Oriented Environmental Measures —Fukushima: The Next Decade—

環境省

○ Fukushima Prefecture has entered the second Reconstruction and Revitalization Period and is moving toward full-fledged reconstruction and revitalization. Taking this opportunity, MOE summarized the initiatives that it is planning to take under the theme of “Fukushima: The Next Decade.”

○ It is been 10 years the Great East Japan Earthquake, and in preparation for the next stage of full-scale reconstruction and revitalization, MOE and Fukushima Prefecture will cooperate on new future-oriented environmental measures under the three themes of decarbonization, combating misinformation about the affected areas, and preserving the collective memory of the disaster under a collaboration and partner agreement and the Fukushima Green Reconstruction project.

Examples of initiatives in FY2021

Creation of advanced decarbonization x reconstruction town planning

■ Feasibility studies (FS)

● FS of agricultural solar power generation assuming sakaki cultivation in Okuma Town

Target area: Okuma Town
Overview: Research and study on agricultural solar power generation, including building a cultivation system for long-term (15 years or longer) farming of sakaki under solar panels

■ Subsidy Program for Planning and Introduction

● Naraha Town Indoor Sports Facility Photovoltaic Installation Project

Target area: Naraha Town
Overview: Basic design for the introduction of solar power generation and energy storage facilities to the Naraha Sky Arena

Naraha Sky Arena

Passing on the Memory of Fukushima and Environmental Restoration

■ Challenge Award

Students with a connection to Fukushima are invited to submit ideas and thoughts on the past and future of Fukushima.

Rebranding as an advanced environmentally-friendly area

■ Presentation at the 26th Conference of the Parties to the United Nations Framework Convention on Climate Change (COP26)

MOE introduced decarbonization initiatives taken with Fukushima Prefecture at the 26th Conference of the Parties to the United Nations Framework Convention on Climate Change (COP26), with the aim of letting the world know about the recovery from the Great East Japan Earthquake and subsequent accident at TEPCO’s Fukushima Daiichi NPS and restoring Fukushima’s image.

■ FUKUSHIMA NEXT

Using various media both in and outside the prefecture, FUKUSHIMA NEXT introduces local people who are taking future-oriented measures to identify existing strengths of the prefecture and create new ones from an environmental perspective.

FUKUSHIMA NEXT April newspaper ad

Collaboration with Towns in Fukushima

環境省

○ MOE introduced decarbonization initiatives of Okuma Town and Namie Town at the 26th Conference of the Parties to the United Nations Framework Convention on Climate Change (COP26), with the aim of letting the world know about the recovery from the Great East Japan Earthquake and subsequent accident at TEPCO's Fukushima Daiichi NPS and restoring Fukushima's image.

○ MOE and the Department of Community Development at Koriyama Women's College in Fukushima Prefecture are promoting a project to design products using used fabrics from Futaba Town.

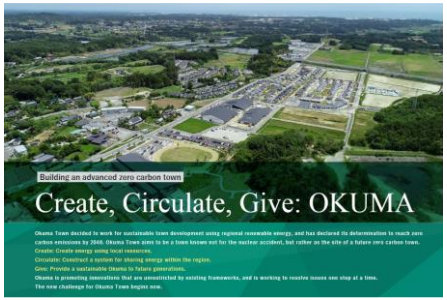
Introducing decarbonization initiatives of Okuma Town and Namie Town at COP26

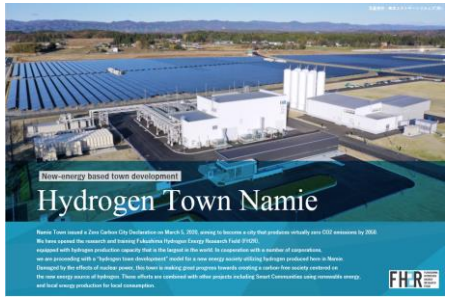
■ At the seminar

The roughly 30 seats in the seminar room on the second floor were filled before the seminar started, and around 10 people, including those standing, watched a simulcast of the seminar via a monitor on the first floor. A number of people of different nationalities attended the seminar, which promoted an accurate understanding of Fukushima's reconstruction and efforts toward decarbonization.

Left: Presentation by the mayor of Okuma Town Right: Presentation by the mayor of Namie Town

■ Special English web page introducing each town's initiatives





▲Scan the QR code for the website
http://shiteihaiki.env.go.jp/cop26/

Futaba Town "Environmental Restoration" Design Project

With the cooperation of Flex Japan Inc., which will build a plant within the reconstruction and industry base in the Nakano area of Futaba Town in the future, the project members repurposed red and white banners and curtains from Municipal Futaba Kita Elementary School and Futaba Minami Elementary School to design and produce various items. The items were presented to honorees at the Futaba Town coming-of-age ceremony.

▲ Students from Koriyama Women's College who participated in the project
(photo taken at Futaba Kita Elementary School Gymnasium)