



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

April, 2023



Table of Contents

1.Environmental Restoration Efforts.....	3
(1) Decontamination	6
(2) The Interim Storage Facility.....	17
(3) Recycling and Final Disposal	28
(4) Specified Waste	33
(5) Sea Area Monitoring regarding Discharge of ALPS-Treated Water into the Sea	45
2. Radiation Risk Communication.....	47
3. Initiatives to Prevent Damage by Wild Mammals.....	49
4. Future-Oriented Projects	51

1. Environmental Restoration Efforts

Overview of Initiatives for Environmental Restoration from the Accident

- 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 Base Areas** 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 (decarbonization, resource circulation 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 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**



FY2022 Budget for Environmental Restoration in the Affected Areas

333.4 billion yen (353 billion yen)



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).
- MOE will also steadily advance waste disposal by volume reduction and landfill.

FY2022 Budget

Interim Storage Facility-related projects

178.6 billion yen (198.1 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

43.6 billion yen (44.5 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

16.9 billion yen (27.1 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.

73.0 billion yen (63.8 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.)

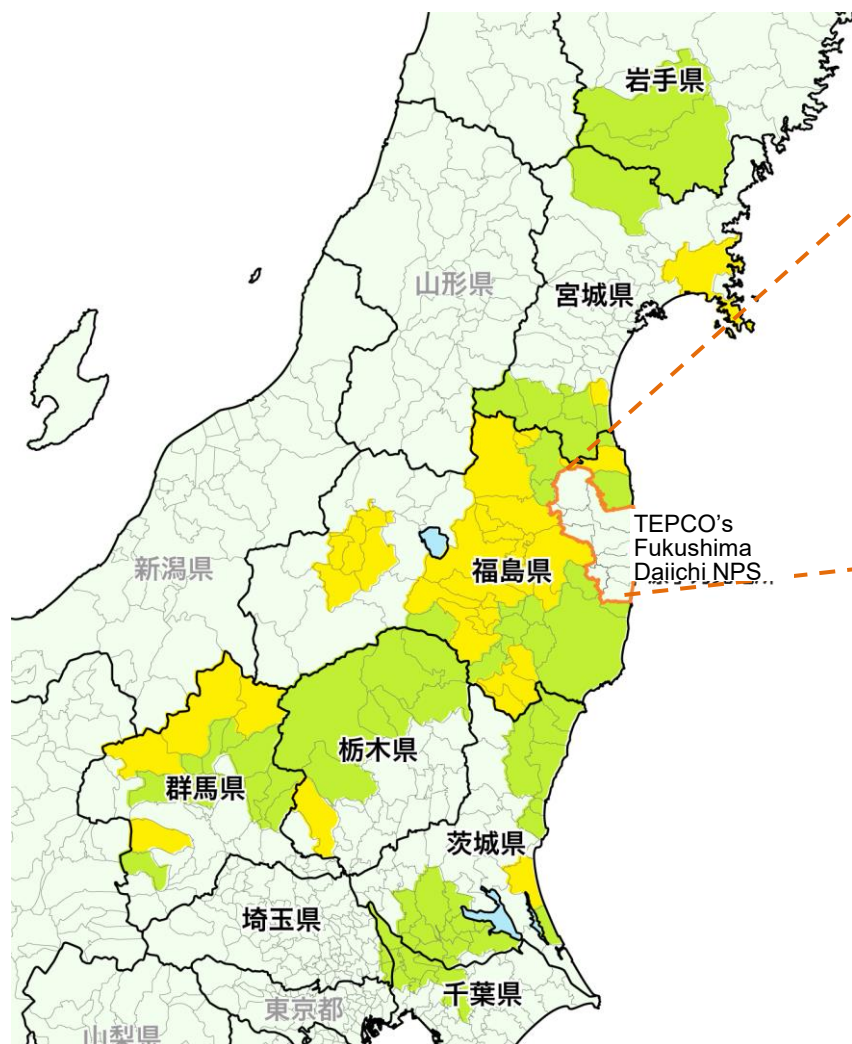
Note: Amounts in parentheses are the initial budget for FY2021

(1) Decontamination

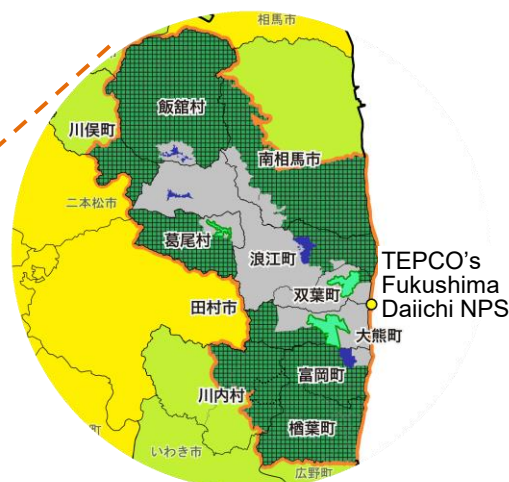
Progress of Decontamination

- 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 designated as Intensive Contamination Survey Area
- Municipalities where designation of Special Decontamination Area or Intensive Contamination Survey Area has been lifted
- Whole area decontamination finished in Special Decontamination Area
- Special Decontamination Area
- Restricted Area
- Specified Reconstruction and Revitalization Base Areas
- The Specified Reconstruction and Revitalization Base Areas where evacuation order is lifted

	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

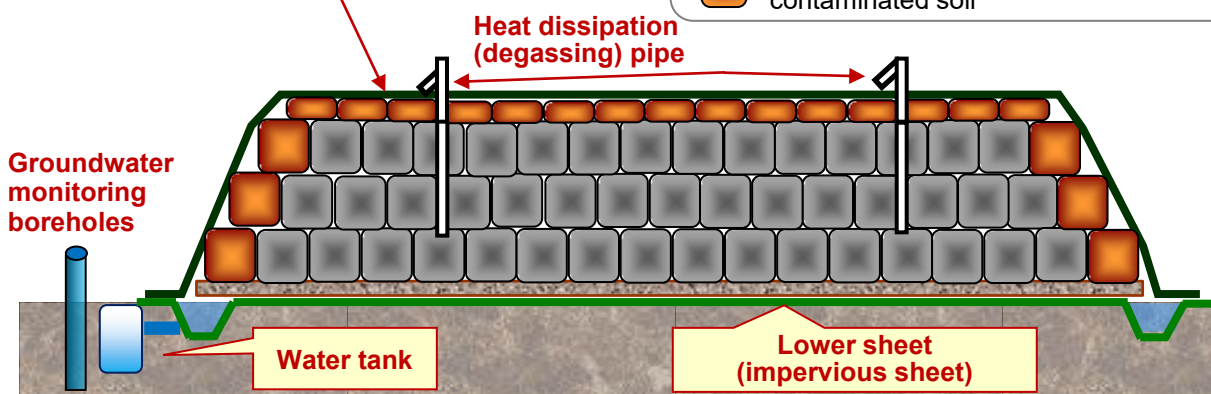
* Minamisoma, Tamura, Kawamata, and Kawauchi were designated as both Special Decontamination Areas and Intensive Contamination Survey Areas.

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 31 sites managed by the national government (as of the end of Nov. 2022) and 3 sites managed by municipalities (as of the end of Sep. 2022).

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

Upper sheet (air permeable waterproof sheet, impermeable sheet, etc.)



Management and inspection

Daily inspection	Weekly	<ul style="list-style-type: none"> Visual inspection Air dose rate measurement
	Monthly	<ul style="list-style-type: none"> Groundwater measurements
When necessary		<ul style="list-style-type: none"> Water tank Leachate measurement and treatment Repair of defective parts
Emergency inspections during extreme weather and earthquakes		<ul style="list-style-type: none"> 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	31 locations / 331 locations	—	Approx. 490,000 bags / approx. 11.06 million bags
Of which, Specified Reconstruction and Revitalization Bases	15 locations / 29 locations	—	Approx. 230,000 bags / approx. 1.72 million bags
Managed by municipalities ²	48 locations / 1,086 locations	31,176 locations / 221,425 locations	Approx. 480,000 m ³ / approx. 7.33 million m ³
Of which, Fukushima Prefecture	3 locations / 1,041 locations	770 locations / 191,019 locations	Approx. 10,000 m ³ / approx. 6.86 million m ³

1 Managed by the national government: as of November 30, 2022

2 Within Fukushima Pref.: as of September 30, 2022; outside Fukushima Pref.: as of Mar. 31, 2022

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

- Temporary Storage Sites from 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.
- **In FY2021, about 229 Temporary Storage Sites were restored; in FY2022, MOE aims to complete restoration of about 150 sites.**

[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



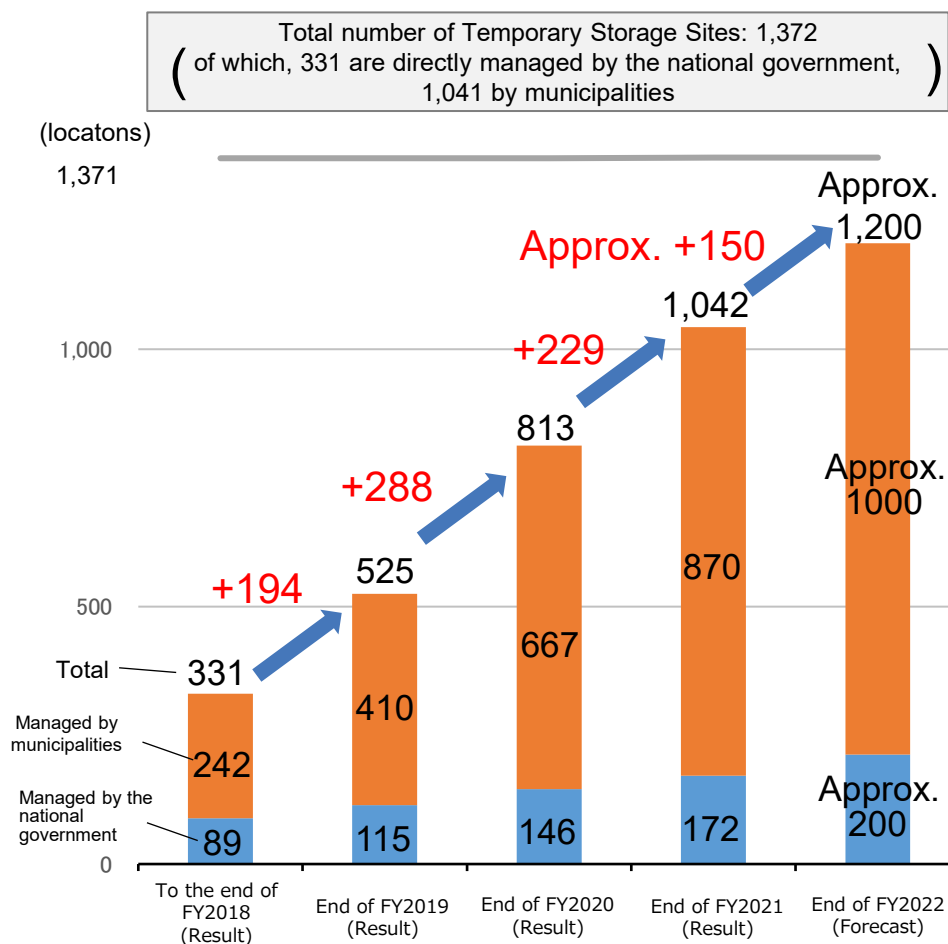
After land restoration



Restart of farming by landowners



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



Comprehensive Efforts to Restore Forests and Forestry in Fukushima

(Reconstruction Agency, Forestry Agency, and Ministry of the Environment, March 2016)



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

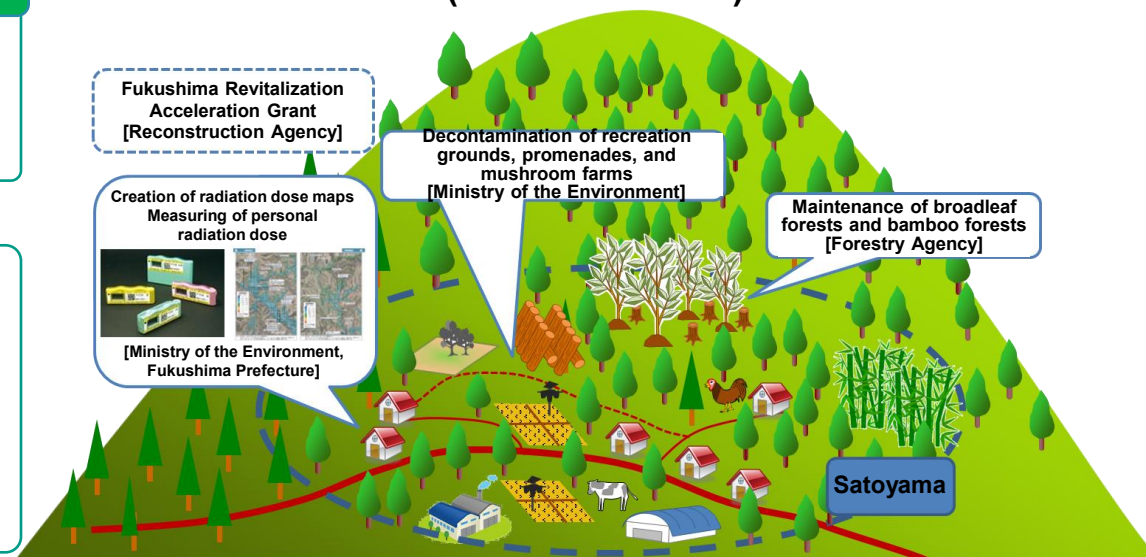
II. Future-oriented Initiatives for Research and Studies

- 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)

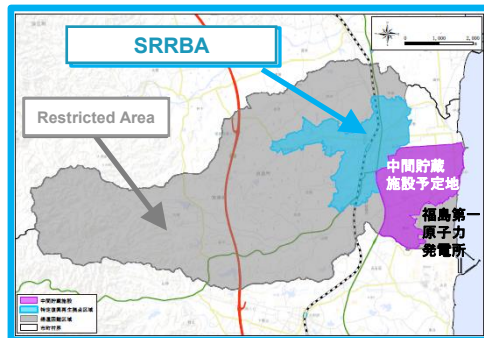
- The project promotes the creation of a safe and secure environment for residents by combining measures to ensure safety and security of residents in accordance with the conditions of each satoyama area.
 - Decontamination, reforestation, and radiation dose measurement will be carried out all together 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)

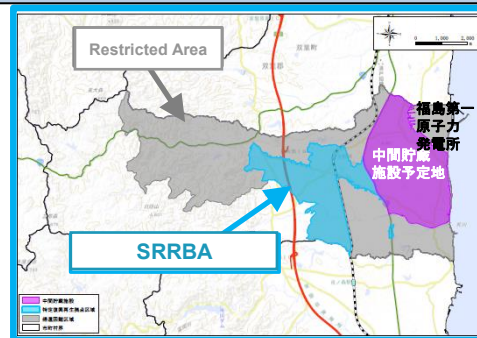
- For **Restricted area**, mayors of municipalities prepare plans for the designation of **Specified Reconstruction and Revitalization Base Areas** and **environmental improvement (decontamination, infrastructure development, etc.)** within these areas in accordance with the Act on Special Measures for the Reconstruction and Revitalization of Fukushima.
- Based on the plan, decontamination and demolition of houses, etc. are underway.
(In the areas, the evacuation order for Katsurao Village was lifted on June 12, Okuma Town on June 30, and Futaba Town on August 30, in 2022. In 2023, the evacuation order for Namie Town was lifted on March 31, and for Tomioka Town on April 1. For Iitate Village, it is scheduled to be lifted in this spring.)

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



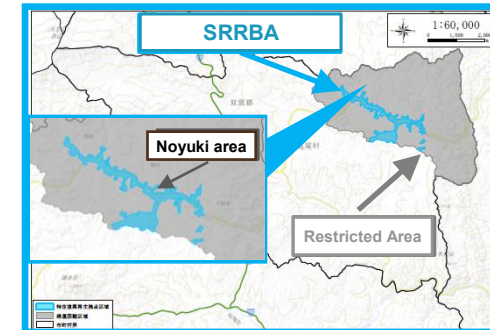
Evacuation order was lifted on August 30, 2022

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



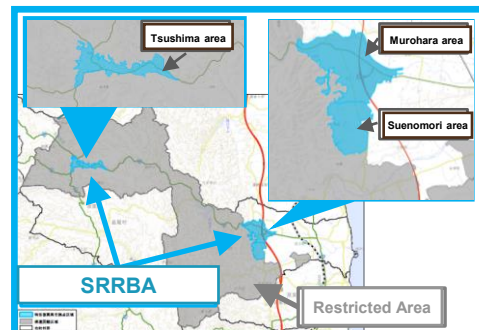
Evacuation order was lifted on June 30, 2022

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



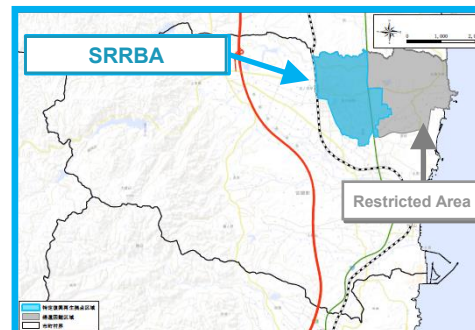
Evacuation order was lifted on Jun 12, 2022

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



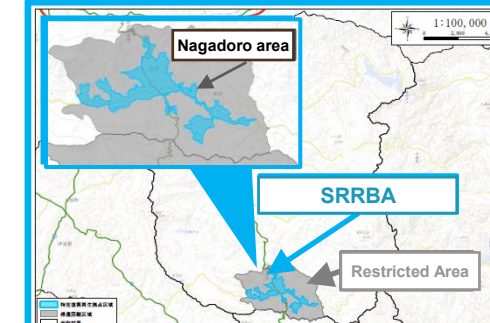
Evacuation order was lifted on March 31, 2023

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



Evacuation order was lifted on April 1, 2023

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



Evacuation order scheduled to be lifted in this spring

Progress of Demolition in Specified Reconstruction and Revitalization Base Areas

○ In Specified Reconstruction and Revitalization Base Areas, the progress rate for demolition (in relation to the number of applications received) is approximately 85%. Progress in each municipality is as follows. As of December 31, 2022

Town/Village	Application status	Number of applications received ※	Number of houses demolished
Namie Town	Open	569	388
Futaba Town	Open	1,163	1,013
Okuma Town	Open	1,603	1,451
Tomioka Town	Open	974	805
Iitate Village	Closed	90	90
Katsurao Village	Closed	47	47
Total		4,446	3,794

※ Total number of applications excluding canceled

(Futaba Town)
Futaba Town Gymnasium



Before demolition



On demolition



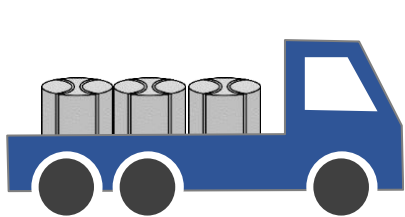
After demolition

Disposal of Removed Soil Outside Fukushima Prefecture

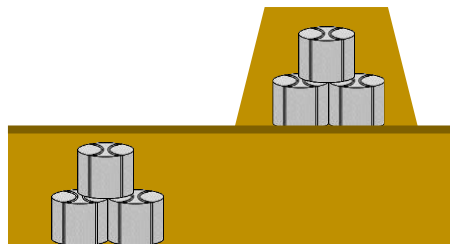
- When municipalities outside Fukushima conduct landfill disposal of removed soil, they are required to follow the disposal method stipulated by the national government in its enforcement regulations, but such regulations have not yet been formulated. The total amount of removed soil stored outside Fukushima is approximately 330,000 m³ (53 municipalities in 7 prefectures).
- The Study Team for Disposal of Removed Soil was established under the Environmental Restoration Study Committee, and it 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: Ongoing).

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 2,000 Bq/kg.

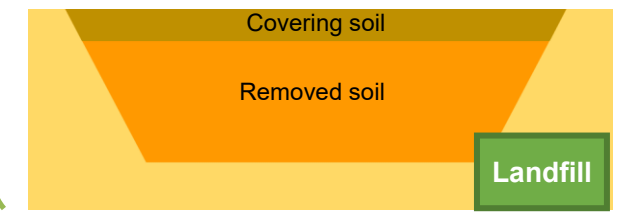
Collection and transport (Regulated under Enforcement Regulation)



Storage (Regulated under Enforcement Regulation)



Disposal (No enforcement regulations)



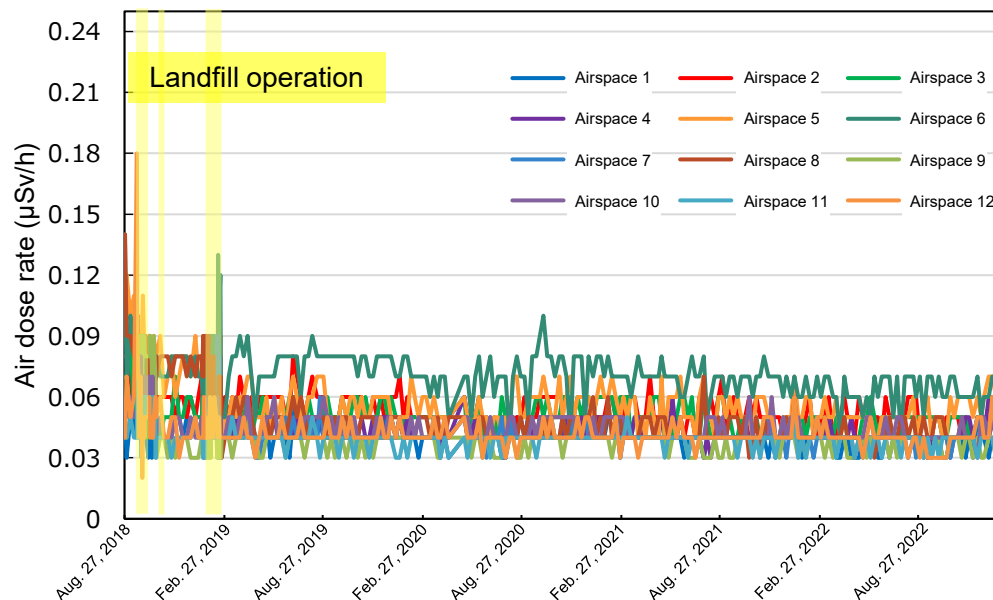
Demonstration Project Results for Landfill Disposal of Removed Soil Outside Fukushima

- No Change in Either Air Dose Rates or Seepage Water -

Tokai Village, Ibaraki Pref.

- Conducted at the JAEA Nuclear Science Research Institute site using removed soil (1,428 m³) stored on-site at two locations in the village.

<Change in air dose rate at site boundaries>



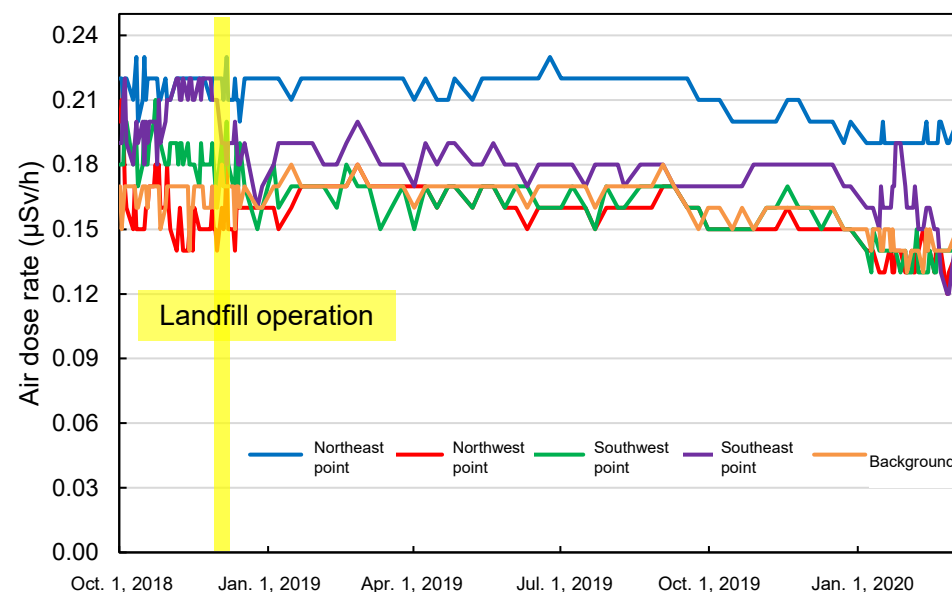
<Radioactivity concentration in seepage water>

All below the detection limit
(detection limit: 1 Bq/L or less)

Nasu Town, Tochigi Pref.

- Conducted in the Iono-Sanson Plaza using removed soil (217 m³) stored on-site.

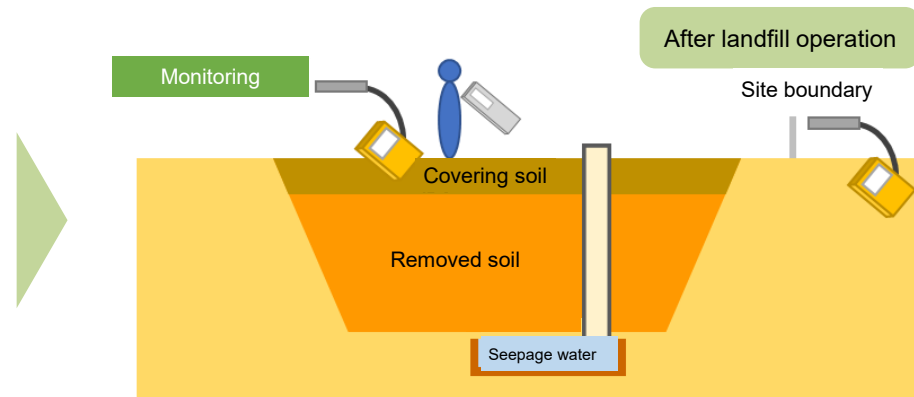
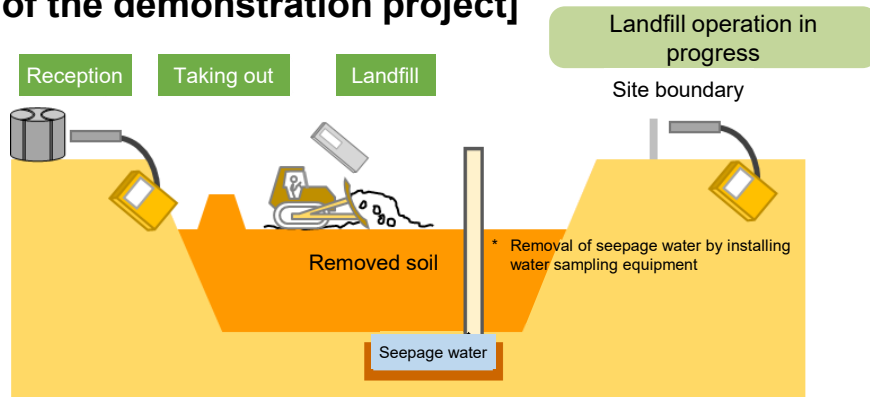
<Change in air dose rate at site boundaries>



<Radioactivity concentration in seepage water>

All below the detection limit (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 Fiscal 2021 -

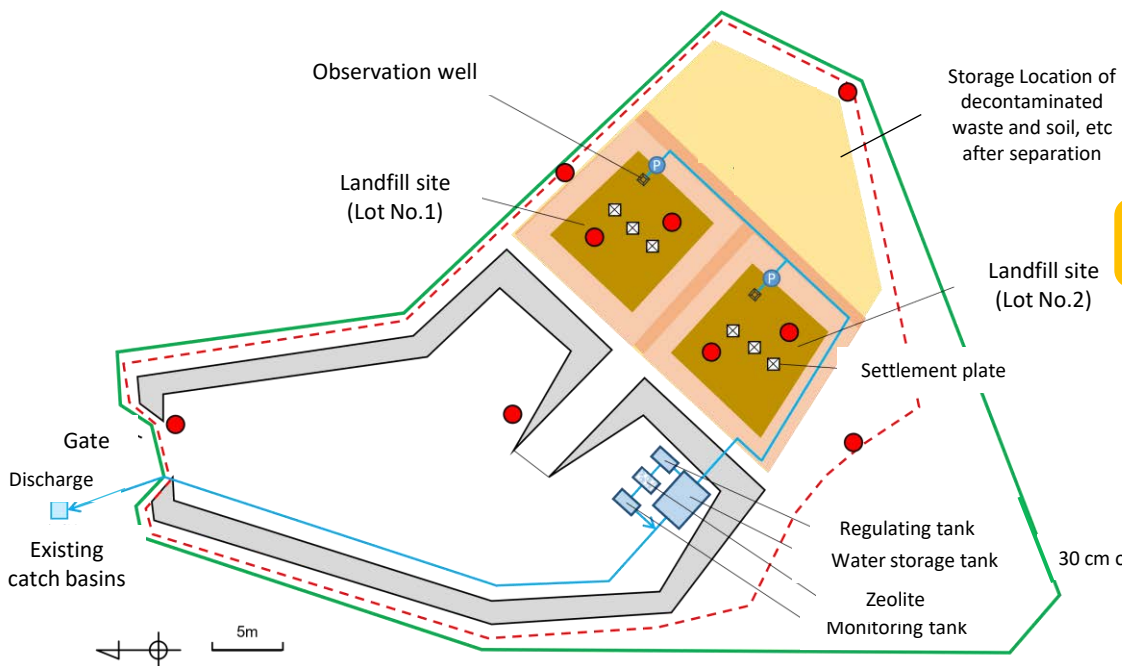
Purpose

To separate removed soil and waste of approximately 2,800 bags stored at Kamitaki Temporary Storage Site into soil and combustibles, etc.

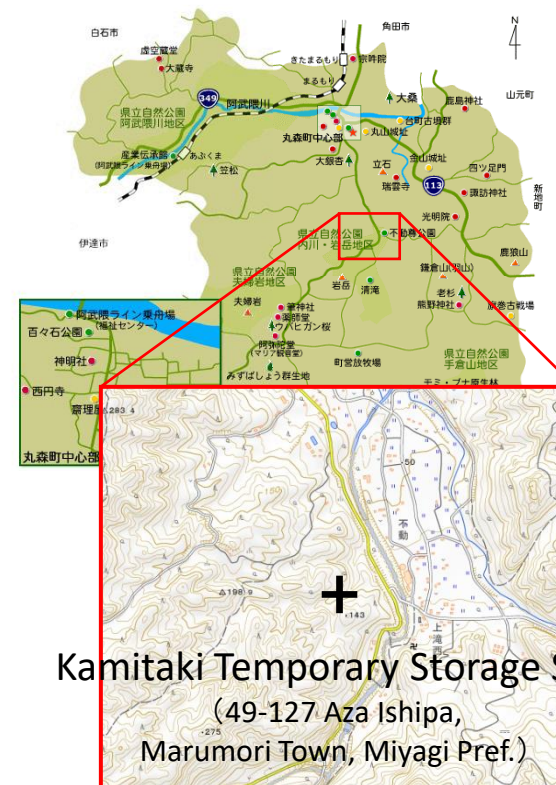
After the separated soil is landfilled at the site, monitoring of air dose and radioactive concentration of seepage water will be conducted to accumulate data on the safety of the landfill disposal of the soil.

Diagram

● : Air dose measurement points (9 locations)



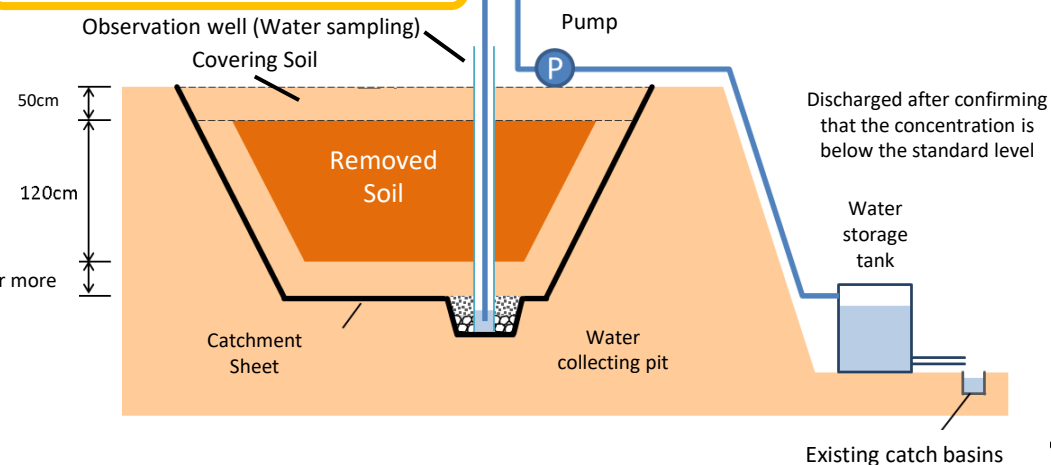
Source: Marumori Town website



Kamitaki Temporary Storage Site
(49-127 Aza Ishipa,
Marumori Town, Miyagi Pref.)

Source: Geospatial Information
Authority of Japan website

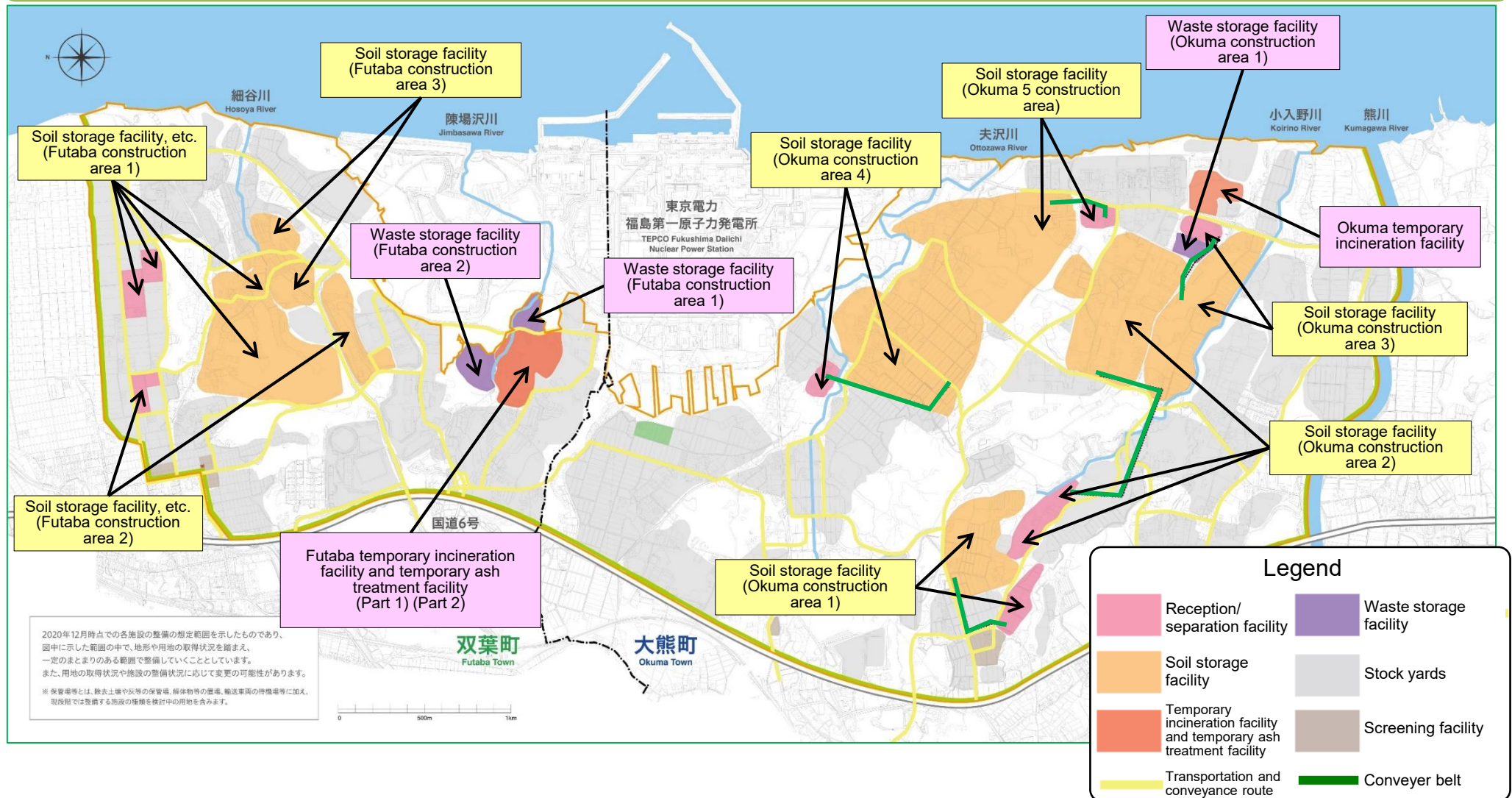
Cross-sectional view



(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 and waste generated by decontamination in Fukushima Prefecture, and incinerated ash (>100,000 Bq/kg) until final disposal outside the prefecture within 30 years from the start of transportation to the 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 gain the trust of landowners as well as their understanding of the Interim Storage Facility project, and MOE will continue the efforts while providing landowners with all necessary information.
- 80% of the total sites sought (over 90% privately owned) have been acquired as of the end of Dec. 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%)	<div> <div>Already contracted</div> <div> Private land Approx. 1,186 ha (+2.1 ha) 93.4%³ </div> </div>	<div> <div>Already contracted</div> <div> Total Approx. 1,280ha (+2.1 ha) 80.0% </div> </div>	<div> <div>Already contracted</div> <div> Total 1,852 persons (+5) 78.5%² </div> </div>
Public land Approx. 330 ha (approx. 21%)	<div> <div>Public land</div> <div> Approx. 94 ha (+0.0ha) 28.6%⁴ </div> </div>	<div> <div>Other public land</div> <div> Approx. 236 ha 14.7% </div> </div>	<div> <div><Reference></div> <div> Approx. 1,516 ha (94.7%) </div> </div>
Includes the following:		<div> <div>Proportion of 2,100 landowners considering contract: 88.2%</div> </div>	
(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: 1,850; Public land: 2 owners 3 Percentage of private land (approx. 1,270 ha) 4 Percentage of public land (approx. 330 ha)	

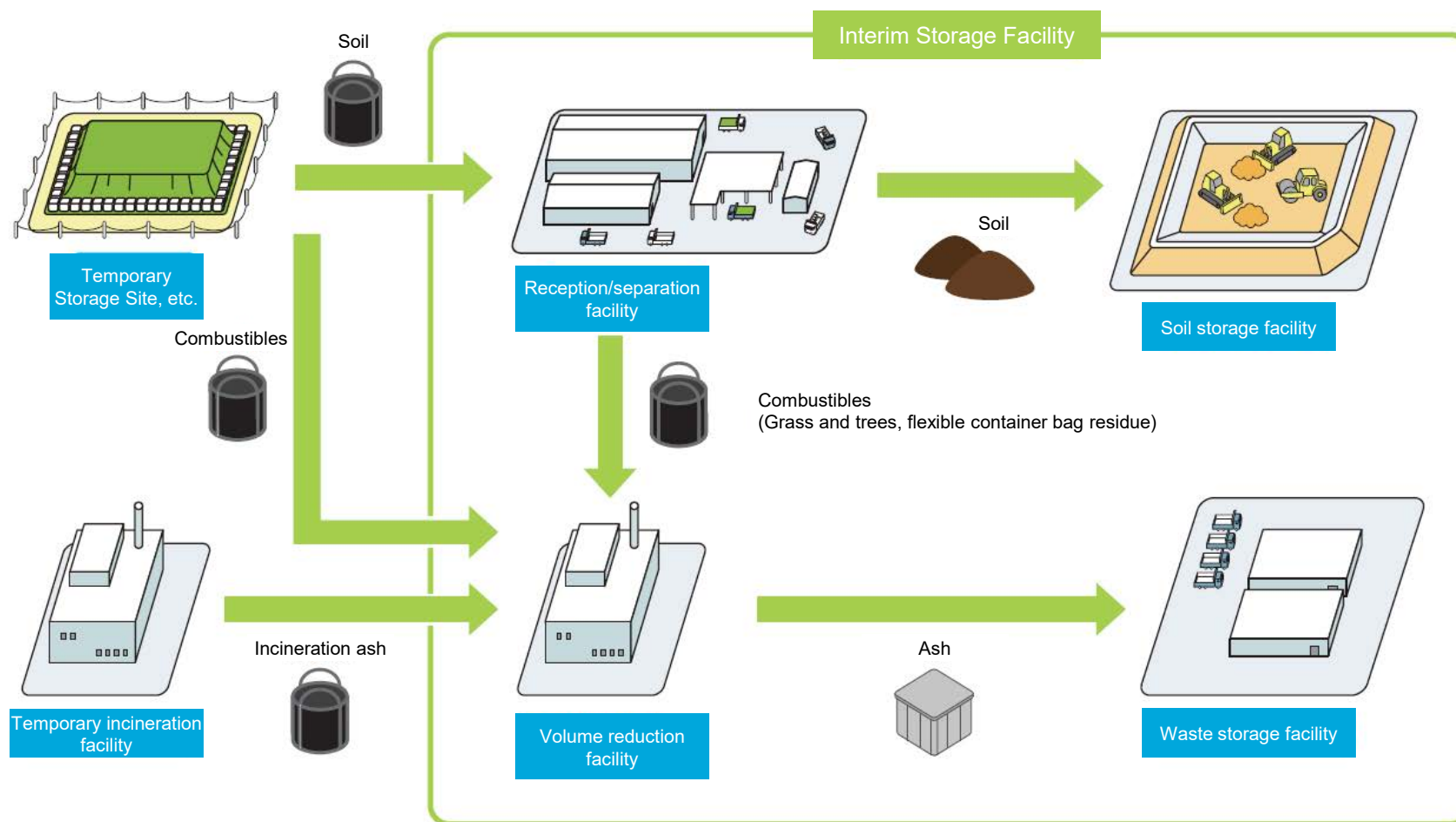
(Note) The figures may not sum due to rounding. Figures in parentheses in “Already contracted” indicate the increase from the end of the previous month.

(As of Dec. 31, 2022)

Process flow 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.

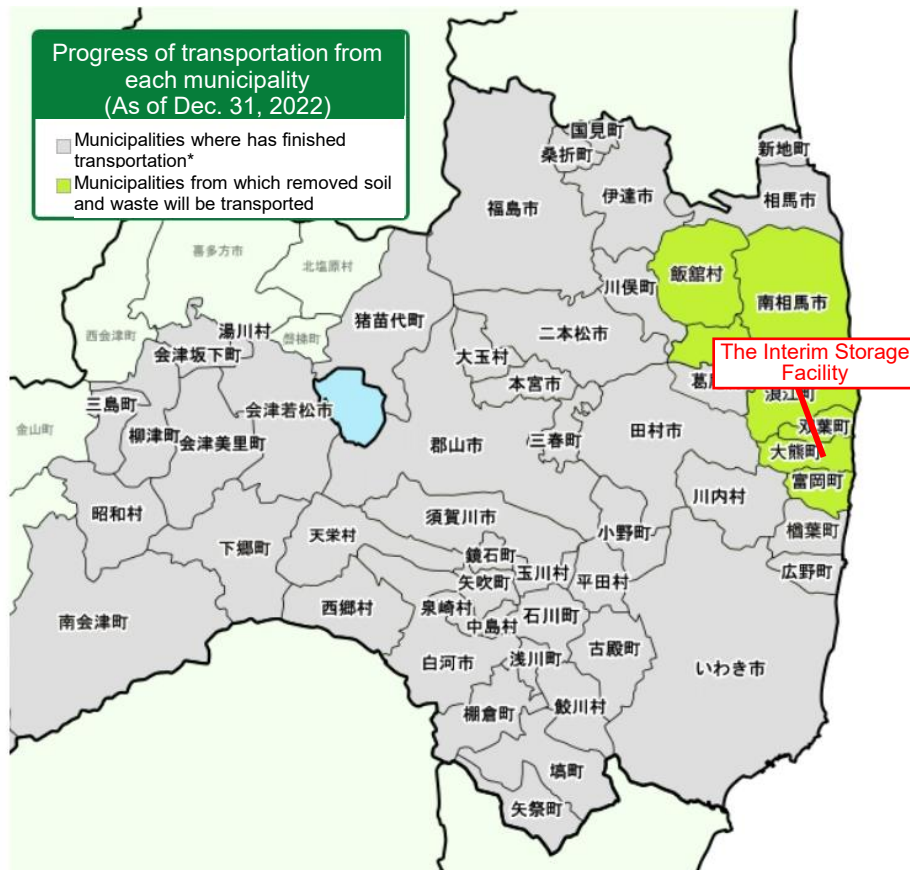
Process flow in the Interim Storage Facility



• 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.



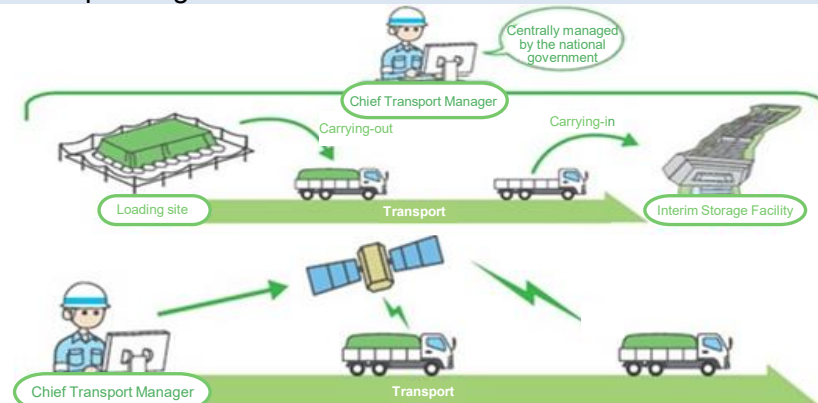
Management and monitoring of transportation

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

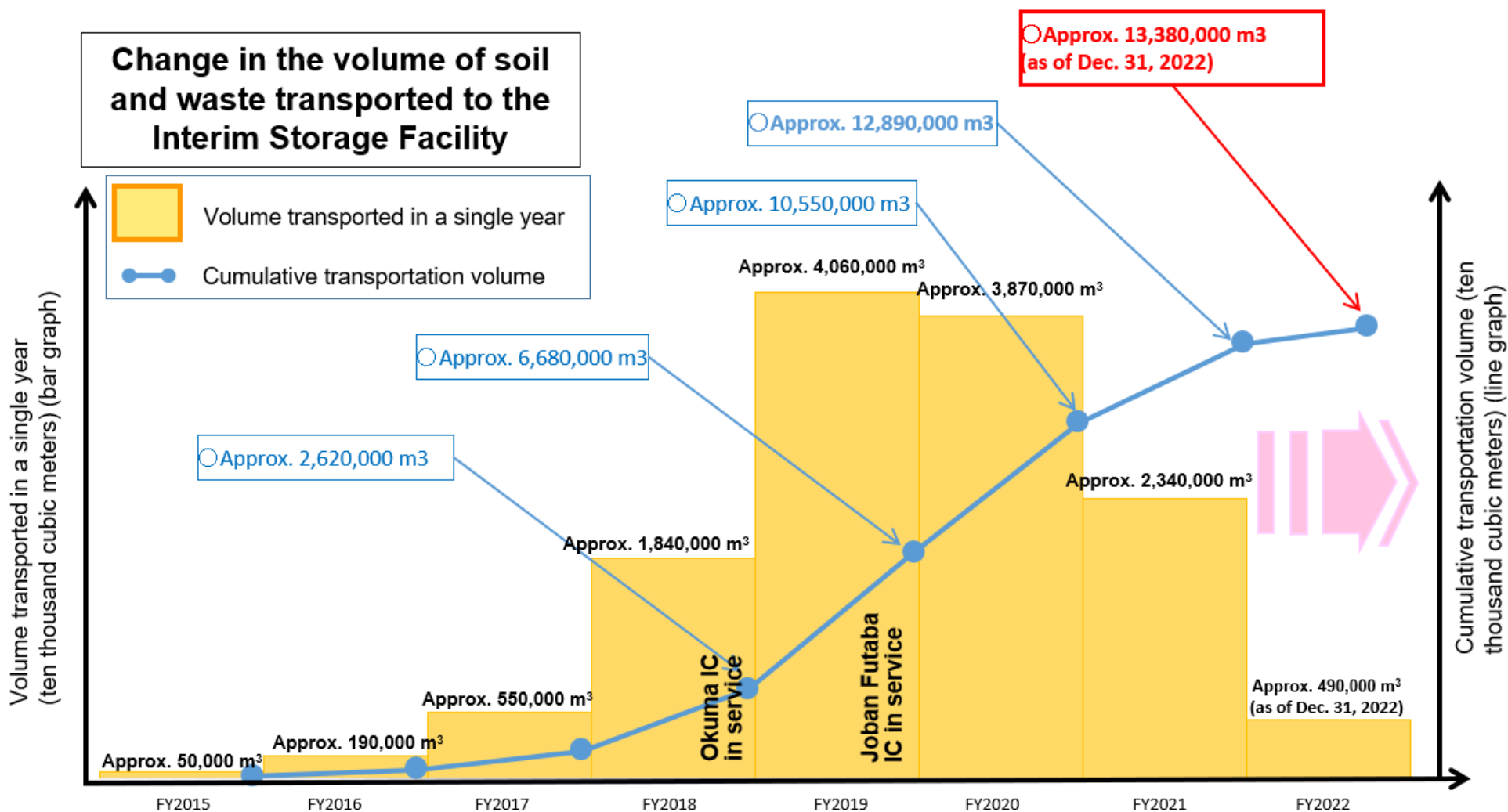
- Obtain real-time information on the location of transport vehicles using the GPS system
- Provide instructions for time adjustments and route changes depending on the situation.



* 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 Dec. 2022).



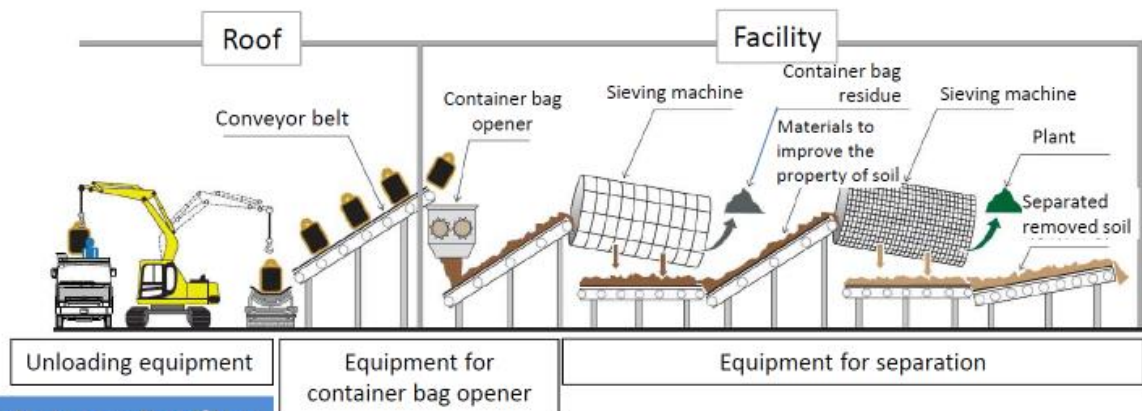
(Note) In and after FY2022, planning is largely focused on the transportation of soil and waste removed as a result of decontamination, etc. in the Specified Reconstruction and Revitalization Base Areas.

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

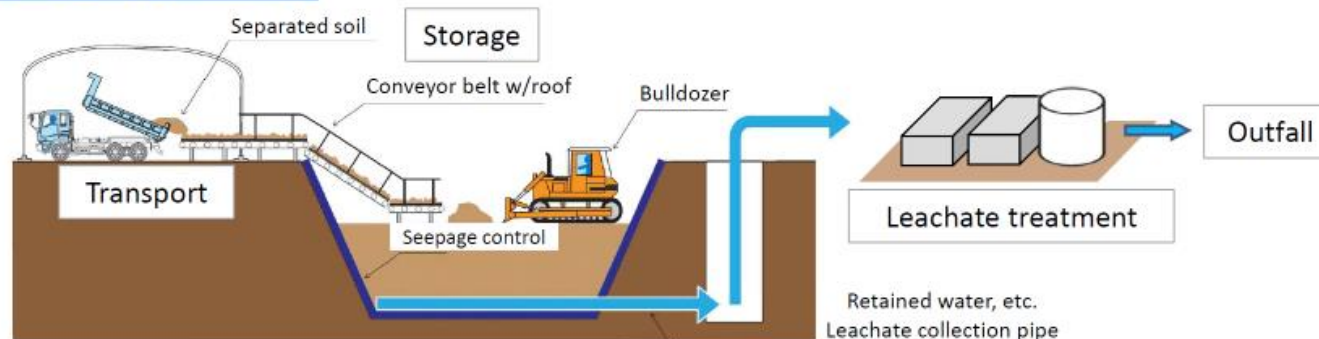
Construction of Reception/Separation Facilities and Soil Storage Facilities

- 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.

Soil Separation Facility



Soil Storage Facility



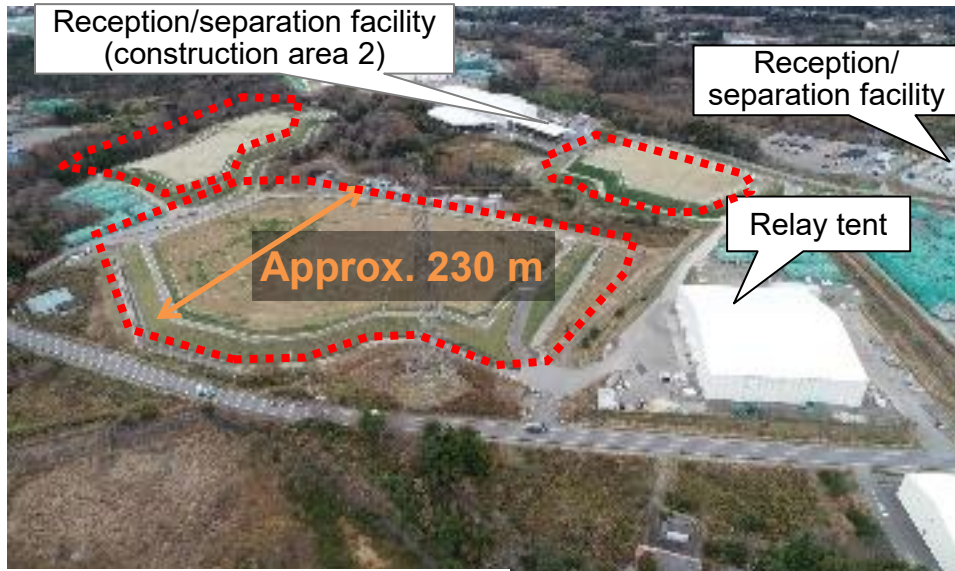
Reception/separation facility (Okuma construction area 1)



Soil storage facility (Okuma construction area 3)

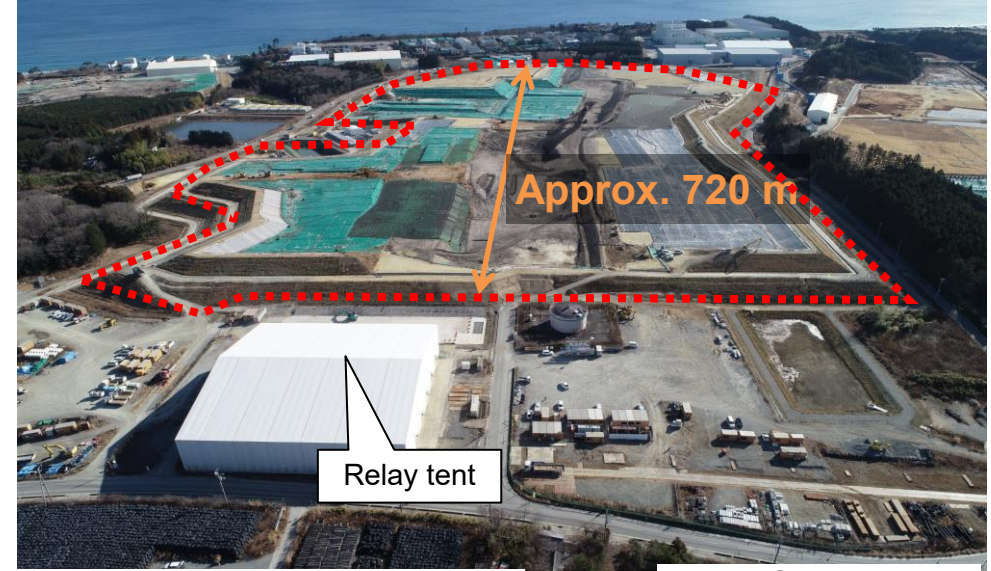


Construction of Soil Storage Facilities, etc.



January 5, 2023

Okuma
construction area 1



January 5, 2023

Okuma
construction area 2



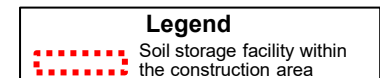
January 6, 2023

Futaba construction
area 1



January 6, 2023

Futaba construction
area 2



Status of Reception/Separation and Soil Storage Facilities (as of the end of Feb. 2023)




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	1,060,000 m ³	2,921,000 m ³	1,487,000 m ³	1,562,000 m ³	2,027,000 m ³	895,000 m ³	925,000 m ³	655,000 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 Dismantling completed in Dec. 2022	Operation started in Aug. 2017 Jul. 2018 Dismantling started in May 2022 ³	Operation started in Jul. 2018	Operation started in Aug. 2019	Operation started in Aug. 2019	Operation started in Jun. 2017 Sept. 2018 Dismantling started in Apr 2022 ³	Operation started in Feb. 2019 Dismantling completed in Oct. 2022	(None)
Soil storage facilities schedule	Operation started in Jul. 2018 Storage completed in Aug. 2022	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 Storage completed in Apr. 2022	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.

3 Dismantling was completed for one of the two facilities.

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 × 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, TPT JV	JFE/Maeda JV
Exterior view			

Status of Waste Storage Facilities (end of March 2022)

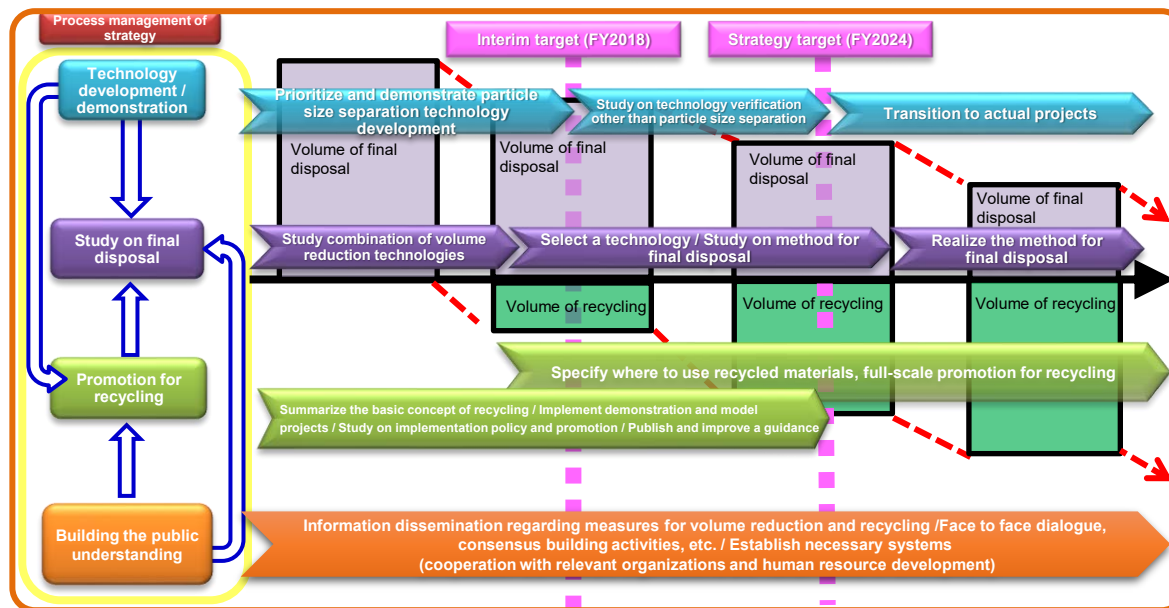
Construction area	Okuma construction area 1	Futaba construction area 1	Futaba construction area 2
Building structure	Steel-framed reinforced concrete (2 buildings)	Steel-framed reinforced concrete (1 building)	Steel-framed reinforced concrete (1 building)
Storage capacity*	29,280 containers	14,678 containers	30,028 containers
Storage volume*	6,494 containers	9,732 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])

(3) Recycling and Final Disposal

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

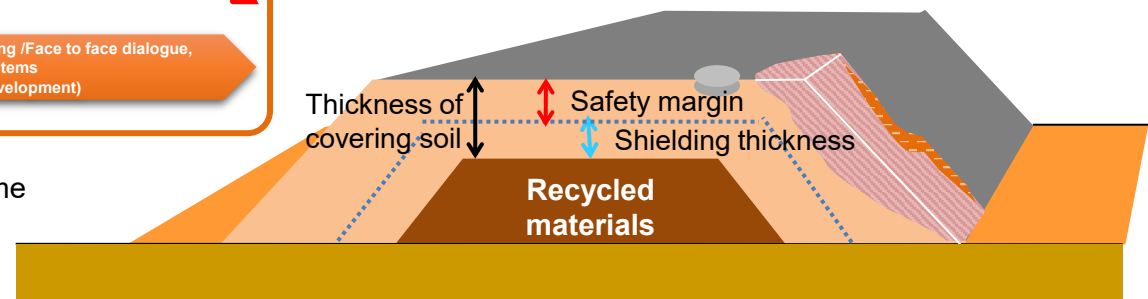
- Regarding the removed soil and waste generated in Fukushima Prefecture, the national government is to take necessary measures to complete final disposal outside the prefecture within 30 years from the start of transportation to the Interim Storage Facility. In order to reduce the final disposal volume, 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.
- With FY2024 as the strategic target, we will proceed with the development of basic technology and present several feasible options for the required area and structure of the final disposal site. Then, after FY2025, we will proceed with studies and adjustments related to the final disposal site.



(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.

Necessity 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.

Covering soil

Recycled soil

After reducing the volume

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

Demonstration Projects for Recycling in and outside of Fukushima Prefecture

- In FY2022, (1) Agricultural land development (in section 2, 3, 4), (2) Paddy field test, (3) Flower cultivation tests were conducted in cooperation with the local residents in the Nagadoro District of Iitate Village.
- **Based on the safety confirmed through the demonstration project in Fukushima Prefecture**, demonstration projects outside of Fukushima Prefecture will be conducted with the aim of realizing final disposal and recycling.
- The removed soil from Fukushima Prefecture will be recycled for **use in lawns, flower beds, etc.** at the Ministry of the Environment of Japan's affiliated facility to **confirm safety** during construction and use, and also as **a place to foster public understanding**.
- **Began explanation to the local residents in mid-December**, for the demonstration projects in ①National Environmental Research and Training Institute(NETI) and ②Shinjuku Gyoen National Garden.

◇ Demonstration Projects in the Nagadoro District of Iitate Village

- The radioactivity in general food was well below the standard value of 100 Bq/kg.
- The monitoring results to date have shown no increase in air dose rates, etc. caused by the recycled materials, confirming their safety.
- Progress of recent projects:
 - (1) Agricultural land development: From April 2021, large-scale agricultural land development (approx. 22 ha) using removed soil (approx. 230,000 m³) started.
 - (2) Paddy field tests: Since FY2021, tests have been conducted on the functions required of paddy fields (permeability, soil strength, etc.) and it was confirmed that the results were generally within the standard range.

◇ Demonstration Projects outside of Fukushima Prefecture for FY 2022 (Using removed soil from Fukushima Prefecture)

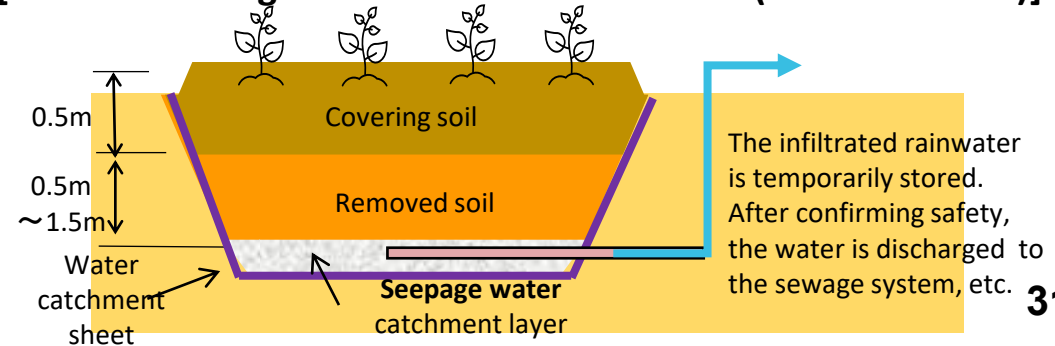
[Demonstration sites (Candidates)]



[Schedule]

- ① NETI
 - Resident information session was held on December 16, 2022
- ② Shinjuku Gyoen National Garden
 - Resident information session was held on December 21, 2022

[Schematic Image of the demonstration test (ex. Flower bed)]



Efforts to Foster Understanding toward Final Disposal and Recycling

- The level of awareness of the policy for final disposal outside of Fukushima Prefecture is **approximately 50% within Fukushima Prefecture** and **20% outside of Fukushima Prefecture**.
- **It is essential to foster understanding among all citizens** regarding the recycling and final disposal of removed soil, and **efforts such as dialogue forums attended by the Minister of the Environment and installation of potted plants using removed soil are underway nationwide**.

Nationwide Dialogue Forum



A total of eight meetings have been held so far. The dialogues are available online.

[Achievements to Date]

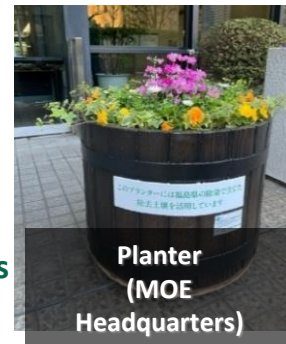
- 1st: Online distribution (May 23, 2021)
 - 2nd: Online distribution (Sep. 11, 2021)
 - 3rd: in Nagoya (Dec. 18, 2021)
 - 4th: in Fukuoka (Mar. 19, 2022)
 - 5th: in Hiroshima (Jul. 23, 2022)
 - 6th: in Takamatsu (Oct. 31, 2022)
 - 7th: in Niigata (Jan. 21, 2023)
 - 8th: in Sendai (Mar. 18, 2023)
- (Archive of the dialogue forum on Youtube.)



Installation of Potted Plants using Removed Soil



- In FY 2022, potted plants using removed soil were installed at METI, MLIT, and other related ministries and agencies. 17 facilities outside of Fukushima Prefecture have been installed as of the end of January 2023.



Radioactivity concentration level of the removed soil
↑ used in the planter is approx. 5,100 Bq/kg

Site Visits



Site tours were held for the soil storage area of the Interim Storage Facility and the demonstration project area in the Nagadoro district of Iitate Village. [Demonstration project area in Nagadoro district, Iitate Village]

A total of 608 group tour members visited the site by the end of November this fiscal year.

This fiscal year, site visit tours for the general public were also held. A total of 167 people participated by November 2022.

(4) Specified Waste

Waste to be disposed of by the National Government based on the Act on Special Measures

(1) Waste in the countermeasure areas

- Waste that meets certain requirements within the contaminated waste countermeasure area* designated by the Minister of the Environment

* Areas that meet certain requirements, such as that the waste in the area is deemed likely to be contaminated to the extent that special management is required.
(= former Restricted Area, former Deliberate Evacuation Area)

[Example of waste in the countermeasure area]

- Rubble generated by earthquake and tsunami
- Waste generated from demolition of houses, etc.

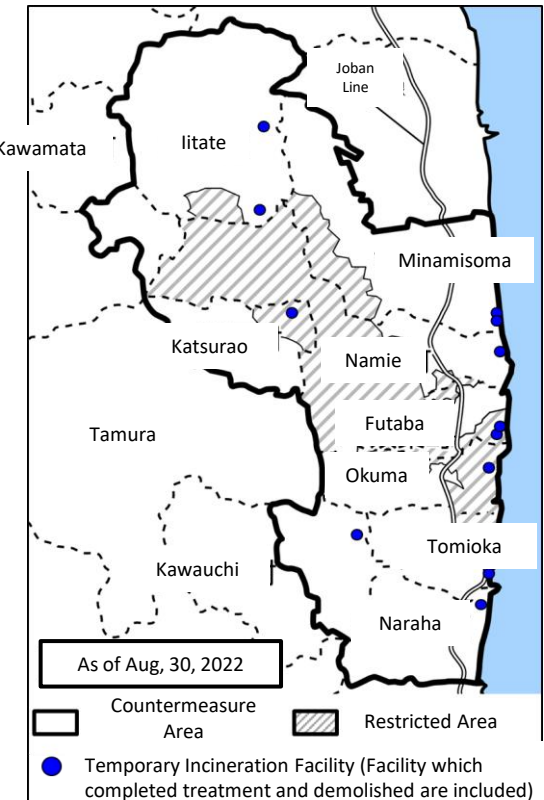
(2) Designated waste

- Waste that is deemed to be contaminated by accident-derived radioactive materials in excess of 8,000 Bq/kg and designated* by the Minister of the Environment

* Designated by the Minister of the Environment if the contamination level of the waste is deemed to exceed 8,000 Bq/kg based on the results of an investigation of the state of contamination of incinerator ash, etc. at an incineration facility or an application from the occupant of the waste.

[Example of designated waste]

- Incineration ash
- Agricultural and forestry waste (rice straw, and compost), etc.



⇒ The national government disposes of the specified waste
(Waste in the countermeasure areas, designated waste)

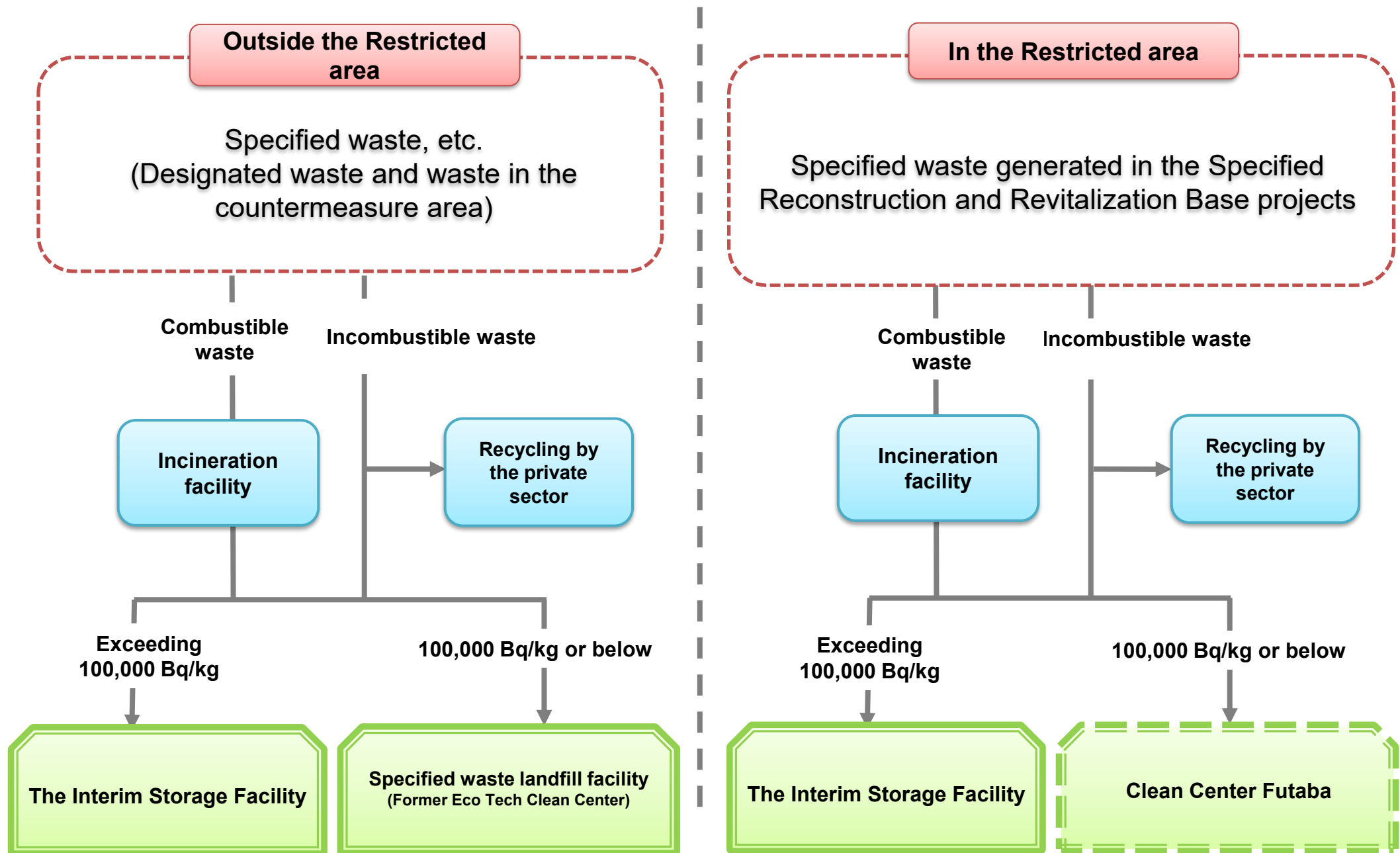
- The Basic Policy based on the Act on Special Measures concerning the Handling of Environment Pollution by Radioactive Materials (Cabinet decision dated on November 11, 2011) stipulates that designated waste generated in each prefecture **shall be disposed of within the prefecture.**

- 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 Eco Tech Clean Center (for 10 years), after that, at Clean Center Futaba. Soil and waste generated by decontamination are separated and incinerated, and then stored at the Interim Storage Facility.

Quantity of Designated Waste



37

As of September 30, 2022

	Incineration 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.											1	1.3	1	1.3
Miyagi Pref.			5	553					4	2,274.4	4	0.5	13	2,827.9
Fukushima Pref. ¹	1,383	356,845.1	36	2,445.2	11	584.1	110	8,076.9	1	7.8	301	14,432.6	1,842 (123)	382,391.8 (77,256.3)
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	13	477.5		(26.0) ^{※2}	8	2,200.0	26	7,320.9	5	13.7	60	11,343.4
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.			3	942.2									3	942.2
Total	1,458	364,256.7	63	4,963.7	12	711.1	126	12,258.6	32	9,603.5	336	15,136.9	2,027	406,930.5

1 The 123 cases and 77,256 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).

3 For volume (t), rounded to one decimal place.

Status of Designated Waste in Fukushima Prefecture

- Of the existing **1,842 cases/382,392 tons¹** of designated waste in Fukushima, **1,549 cases/238,005 tons (about 62%²)** have been removed for disposal at Specified Waste Landfill Facilities or storage at the Interim Storage Facility, etc.
- Of the designated waste of **1,594 cases/188,462 tons** in Fukushima designated based on applications by business operators and local governments, **1,471 cases/111,205 tons (about 59%²)** were removed for incineration or landfill disposal. **123 cases/77,256 tons** are stored by businesses and local governments.

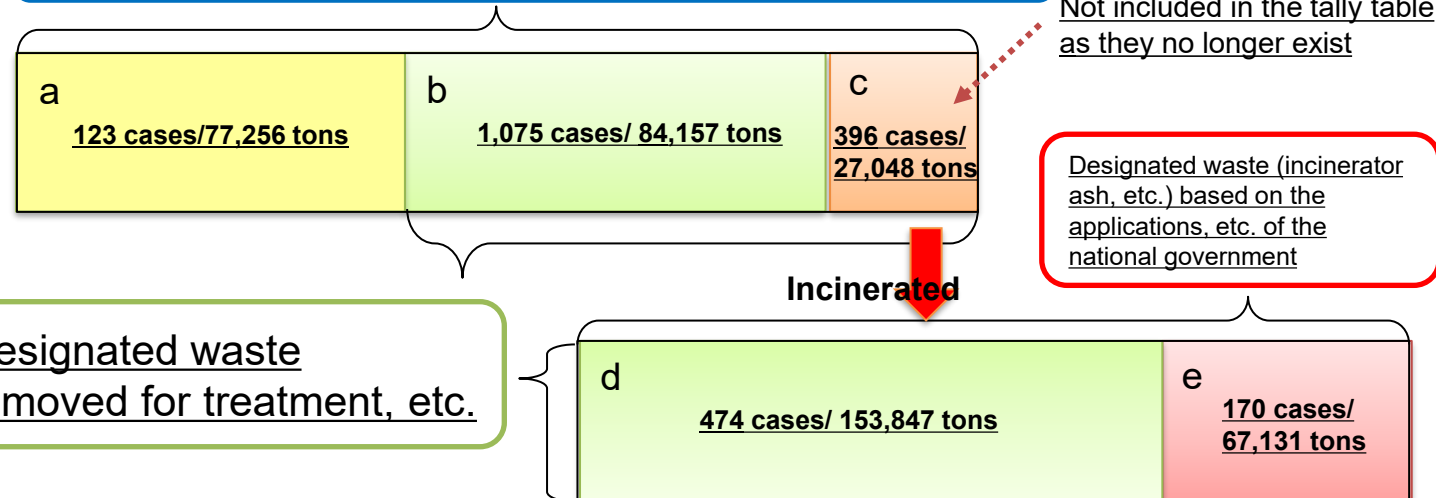
¹ Rounded to the first decimal place (same hereafter)

² Indicates percentage by weight

(As of September 30, 2022)

Status of designated waste in Fukushima

Designated waste based on applications, etc. by businesses, local governments, etc.



- Existing designated waste in Fukushima
Of which, removed for treatment, etc.
- Designated waste based on applications from business operators, local governments, etc.
Of which, removed for incineration, landfill disposal

$$\begin{aligned}
 &= a + b + d + e &= 1,842 \text{ cases/} 382,392 \text{ tons} \\
 &= b + d &= 1,549 \text{ cases/} 238,005 \text{ tons} \\
 &= a + b + c &= 1,594 \text{ cases/} 188,462 \text{ tons} \\
 &= b + c &= 1,471 \text{ cases/} 111,205 \text{ tons}
 \end{aligned}$$

Status of Waste Disposal in the Countermeasure Area



Regarding the waste in the countermeasure area, some municipalities have completed volume reduction of the waste and are steadily proceeding with treatment.

- Removal of tsunami disaster waste (excluding the Restricted area) was completed in March 2016.
- Demolition and removal of damaged houses was completed in 7 out of 11 municipalities as of December 2022.

(As of September 30, 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) Waste, etc. generated in the of Specified Reconstruction and Revitalization Base Areas will be transported to the Clean Center Futaba.
	Iitate Village (Komiya area)	Completed	Ongoing	Treatment completed (Period : Aug. 2014 to Mar. 2017)	
	Katsurao Village	Completed	Completed	Treatment completed (Period : Apr. 2015 to Mar. 2021)	
	Namie Town	Ongoing	Completed	Ongoing (From May 2015)	
	Futaba Town	Ongoing	Ongoing	Ongoing (From Mar. 2020) ³	
	Okuma Town	Ongoing	Ongoing	Ongoing (From Dec. 2017)	
	Kawauchi Village	Completed	Completed	Treatment completed (Period : Dec. 2011 to Feb. 2016)	
	Tomioka Town	Ongoing	Ongoing	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 Iitate Village, Komiya area (5 t/day) and Warabidaira area (240 t/day). There are two facilities in Futaba Town, the first (150 t/day) and the second (200 t/day).
There are two facilities in Minamisoma City, Reactor No.1 (200 t/day) and Reactor No.2 (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

- Transportation of specified waste, etc. started on November 17, 2017 as the specified waste landfill disposal project.
- So far, **258,906 bags**, approximately 90% of the target, have been transported (as of December 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 Eco Tech 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 the 8 Futaba-gun municipalities : 10 years
- Waste exceeding 100,000 Bq/kg will be transported to the Interim Storage Facility

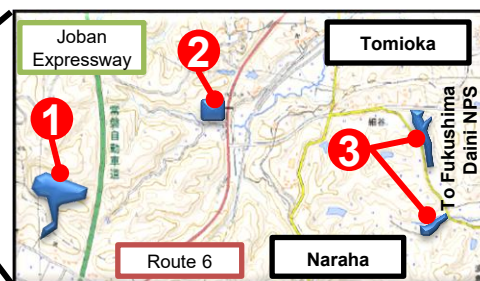


As of August 30, 2022

- Contaminated waste counter measure area
- Restricted area
- Temporary incineration facilities

Related facilities

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



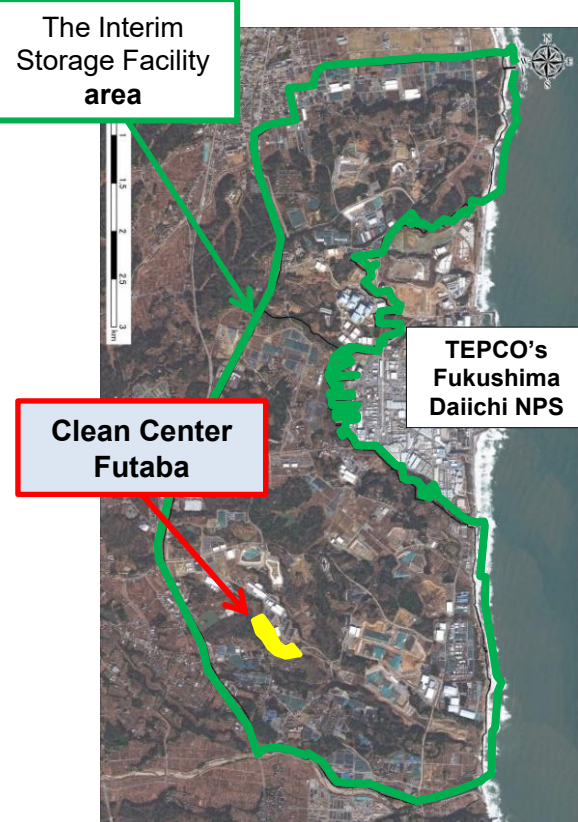
1. Store → 2. Solidification → 3. Curing → 4. Store and transport

Landfill Disposal of Waste at Clean Center Futaba

- 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.

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 August 6, 2022)

[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 **detailed survey has not been implemented. It is necessary 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)
 - Coordination for disposal of designated waste whose radioactivity dose decreased to 8,000 Bq/kg or below (all prefectures concerned)

Note: Figures below prefecture name indicate designated waste storage volume as of the end of September 2022

	2013	2014	2015	2016	2017	2018 onward
Miyagi (2,827.9t)	Discussion on the selection process for long-term storage facilities	Announced candidate sites for detailed study of long-term storage facilities			Started with agricultural and forestry waste of 8,000 Bq/kg or below Processing began in March 2018	
Tochigi (11,343.4t)					Consider and implement consolidation of designated waste stored by farmers on a municipal basis	
Chiba (3,716.6t)		Continue efforts to conduct detailed survey				
Ibaraki (3,535.7t)		Coordination for disposal of designated waste whose radioactivity dose decreased to 8,000 Bq/kg or below				
Gunma (1,187.0t)		Decided on a policy of continued on-site storage and phased processing, without constructing a long- term storage facility		Storage enhancement measures at temporary storage sites		

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 3,462 tons in seven prefectures (Chiba, Yamagata, Miyagi, Shizuoka, Iwate, Tokyo, Tochigi, and Niigata). (As of September 30, 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

[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

FY2022

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

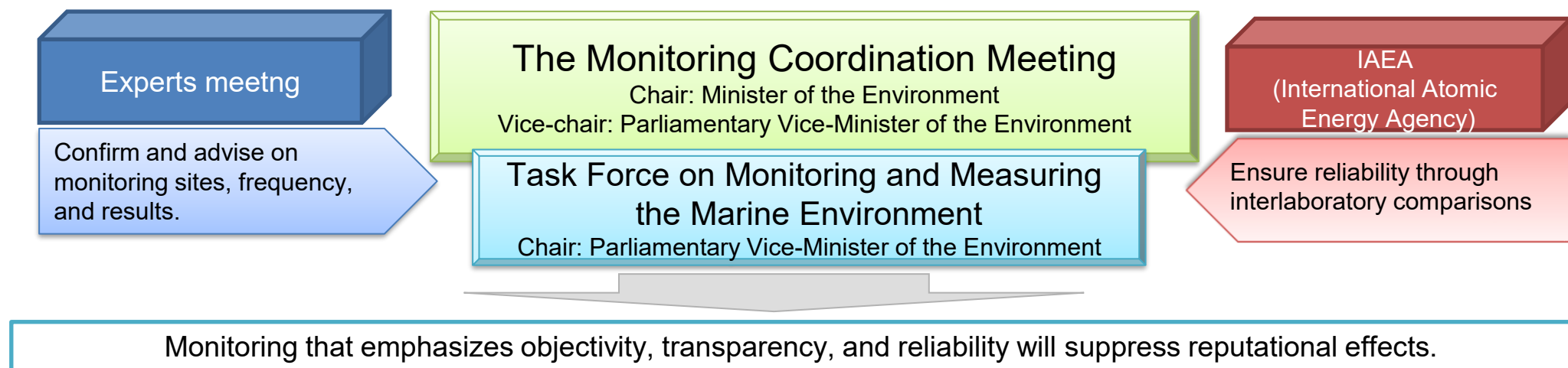
- (i) Costs of developing treatment plans, etc.
- (ii) Costs of promoting understanding among local residents (air dose rate measurement expenses, etc.)
- (iii) Costs of collection, transportation, treatment, and disposal of waste (installation of temporary incinerators, etc.)

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

Ensure objectivity, transparency, and reliability in monitoring

- The relevant ministries and agencies monitor the marine environment in cooperation under the Monitoring Coordination Meeting (chaired by the Minister of the Environment).
- In March 2022, the Comprehensive Radiation Monitoring Plan was revised to include enhanced and expanded environmental monitoring of ALPS-treated water discharged into the sea. The monitoring was started this fiscal year.
- Confirmation and advice on the implementation of the monitoring will be obtained at a experts meeting.
- Reliability of analytical capabilities will be ensured by performing interlaboratory comparisons in cooperation with IAEA.

☞ The monitoring conducted this fiscal year has shown tritium concentration ranges that are consistent with previous observations. The monitoring results have been published at any time.



Future actions

- A new website will be launched in February to provide monitoring results in an easy-to-understand manner.
- After the start of discharge, a preliminary analysis will also be utilized to strengthen monitoring.

2. Radiation Risk Communication

Risk Communication and Dissemination of Information

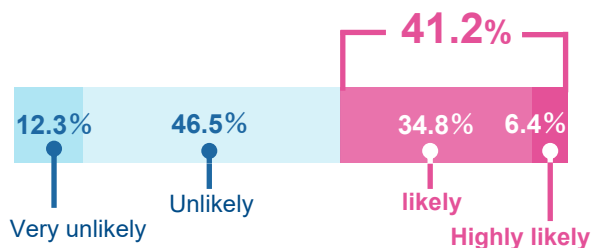
GuGuRu Project



For issues related to the health effects of radiation, the “**GuGuRu Project**” was launched in July 2021 with three prongs: つむぐ (TsumuGu — building knowledge); つなぐ (TsunaGu — connecting with people, towns, and organizations); and つたわる (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**.

How likely is current radiation exposure to have health effects on the next generation of Fukushima residents?



Source: FY2020 Ministry of the Environment Survey on the Radiation Health Effects (March 2021)

Radiation College

Seminars are organized at universities and workplaces across Japan, and recording meetings were also held to make their own presentations about what they have learned.



Seminar for Reporters



Presentation by students



Drama taken from lines idea of participants.



GuGuRu Project Website



GuGuRu Project YouTube Channel

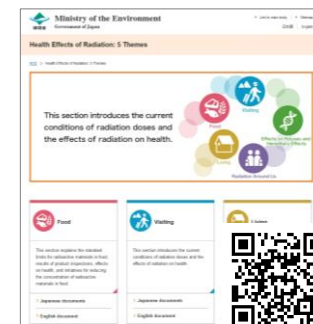
Supporting Center for Radiation Risk Communication Consultants

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



Portal Site for Radiation Health Effects

MOE publishes Portal Site for Radiation Health Effects (English and Japanese are available), where specific topics are compiled: “Food,” “Visiting,” “Living,” “Effects on Fetuses and Hereditary Effects,” and “Radiation Around Us.”

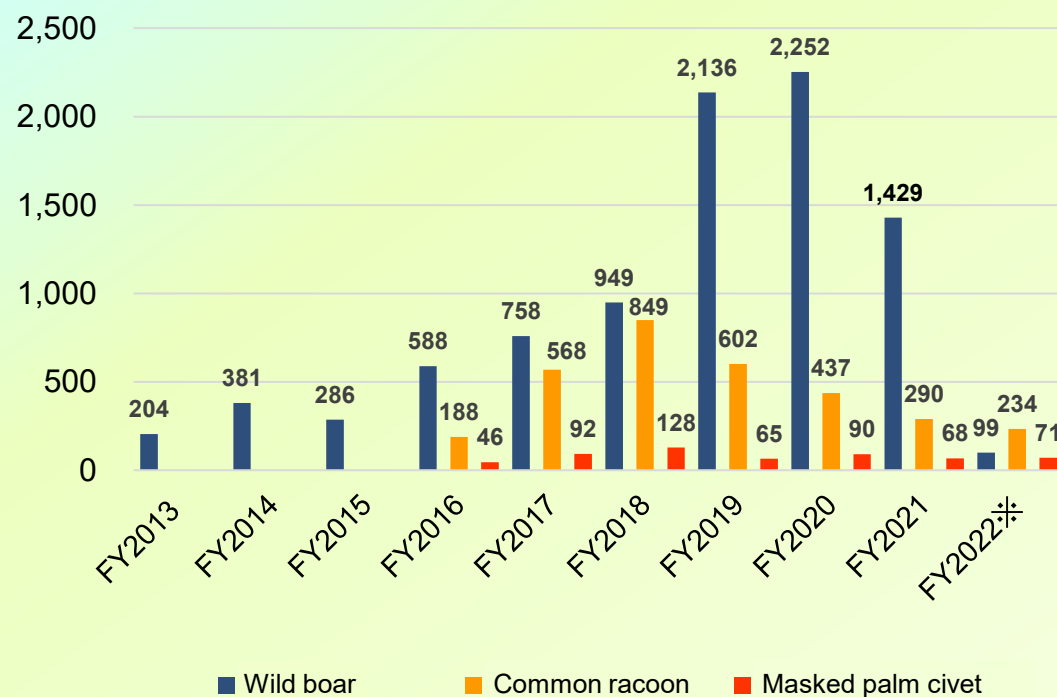


3. Initiatives to Prevent Damage by Wild Mammals

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 as of December FY2022 decreased from the previous year to 99. 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.

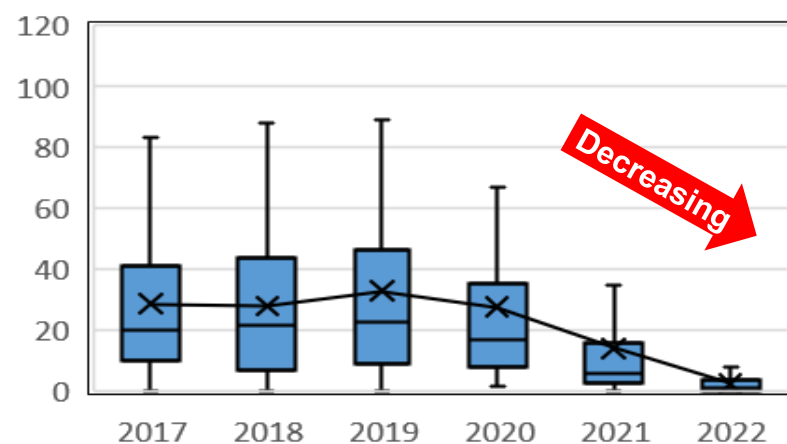
No. of wild boars captured



※as of December 2022

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.

4. Future-Oriented Projects

Progress of Fukushima Regeneration / Future-Oriented Project

“Fukushima” × “Decarbonization / Material Cycles / Natural Symbiosis”



- 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, resource circulation, 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



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

Advanced technology for recycling used solar panels

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 2022, the Bandai-Asahi National Park Enjoyment Project Bandai-Agatsuma/Inawashiro Area Step-up Program 2025 will be formulated and promoted.



Re-development of Ozenuma Visitor Center

Support for decarbonized town development

<Rebuilding living environment>

- Supporting new town development to realize a decarbonized society
- In FY2022, in addition to 6 feasibility studies, financial support is being provided for 18 projects to introduce independent and distributed energy systems in Fukushima Prefecture.



Okuma Town Hall with solar power generation system (FY2021 project)



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 facility
- 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 transmitted from Fukushima with an awareness to move toward the “new normal” of the Post-COVID19 society.

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 Hamadori Region area and elsewhere, and contribute to global warming countermeasures

Promotion of environmental policies that anticipate 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 May 25, 2022)

- As a follow-up meeting to this agreement, both Fukushima Prefecture and MOE explained the status of efforts in FY2021 and major plans for FY2022 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, such as the “Fukushima Green Reconstruction concept” and the promotion of global warming countermeasures in conjunction with reconstruction efforts.



Follow-up meeting

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

- 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 should be taken 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.

Example of Initiatives in FY2022

Creation of Advanced “Decarbonization x Reconstruction” Town Planning

■ Feasibility Studies (FS)

- FS for reconstruction town planning with wine business aiming for net zero CO2 (zero carbon)

Target area: Tomioka Town

Overview : Conduct surveys and studies related to the feasibility of net-zero CO2 emissions in the entire wine business, including grape cultivation and winemaking, as well as reconstruction town planning through branding and regional development.



Demonstration image of Photovoltaic Power Generation Glass

■ Subsidy Program for Introduction of Self-Sustained and Distributed Energy Systems

- Installation of solar power generation equipment in a logistics warehouse of a shipping company (Namie Town)
- Installation of solar power generation equipment at a hospital (Iwaki City)
- Installation of solar power generation equipment at a supermarket (Fukushima City)
- Installation of solar power generation equipment at a corporate office and local evacuation facility (Koriyama City)
- Installation of solar power generation equipment at a confectionery factory (Aizubange Town), etc.

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.



Challenge Award Ceremony

Rebranding to an Environmentally Advanced Area

■ “FUKUSHIMA NEXT” future generation tour

On August 18-20, students from all over Japan planned a five-course tour to visit Fukushima Prefecture with the aim of reviewing the current status of reconstruction and issues facing the prefecture and disseminating information from the perspective of the next generation. On August 19, all participants (about 80 people) gathered together for a roundtable discussion on the theme of “10 things we want to know and convey about Fukushima now”.



Roundtable discussion on August 19, 2022

■ 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.



Newspaper ad of FUKUSHIMA NEXT in August

■ Dissemination at the 27th Conference of the Parties (COP27) to the United Nations Framework Convention on Climate Change

A booth exhibition was held at the 27th Conference of the Parties (COP27) to the United Nations Framework Convention on Climate Change (UNFCCC) with the aim of communicating to the world about the recovery from the Great East Japan Earthquake and the accident at TEPCO's Fukushima Daiichi Nuclear Power Station and environmental restoration efforts, and to dispel rumors about Fukushima.



Collaboration with Towns in Fukushima

- At the 26th Conference of the Parties (COP26) and the 27th Conference of the Parties (COP27) to the United Nations Framework Convention on Climate Change (UNFCCC), we communicated to the world about the reconstruction efforts following the Great East Japan Earthquake and the accident at TEPCO's Fukushima Daiichi Nuclear Power Station, with the aim of dispelling rumors about Fukushima.
- MOE and the Department of Community Development at Koriyama Women's College in Fukushima Prefecture are promoting a project to design remake products using originating fabrics from Futaba Town.

Introducing decarbonization initiatives of Okuma Town and Namie Town at COP26

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



▲ Scan the QR code for the website
<https://fukushima-mirai.env.go.jp/cop26/>



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

Introduction of revitalization and community development efforts in Futaba Town, Katsurao Village, and Okuma Town at COP27

The pre-disaster, post-disaster, revitalization and future-oriented town planning of Futaba Town, Katsurao Village and Okuma Town, where the evacuation order for the Specified Reconstruction and Revitalization Bases Area has been lifted, are introduced through digital contents and other media.



<https://fukushima-mirai.env.go.jp/cop27/>

▲ Scan the QR code for the website



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)