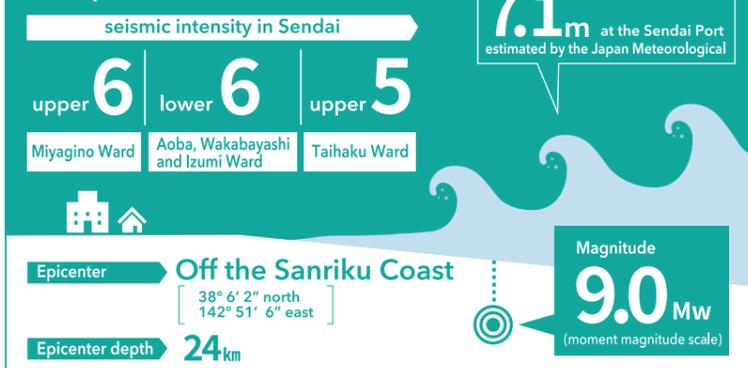


Overview of the 2011 Disaster

The 2011 off the Pacific coast of Tohoku Earthquake
2:46 p.m. on March 11, 2011.



Details of Damage in Sendai City as of March 1, 2022

Casualties

904 fatalities **27** missing **2,305** injured

Damage to Buildings

30,034 destroyed **27,016** severely damaged **5,728** Residential Areas Confirmed to be Either "Dangerous" or "Requiring Caution"

82,593 partially damaged **116,046** minor damage

Tsunami Flooded

8,110 households affected Approximately **4,500ha** flooded area (including approximately 1,860ha of farmland)

Cost of the Damage in Sendai City

Approximately **1,304.1 billion yen**

City-owned facilities	Approximately 262.1 billion yen	Houses and residential land	Approximately 608.6 billion yen
Other public facilities	Approximately 145.2 billion yen	Related to commerce and industry	Approximately 214.7 billion yen
Related to agriculture, forestry and fishery	Approximately 73.5 billion yen		

Amount of Debris Disposed

Approximately **2,720 thousand tons**

[Given that 370 thousand tons of waste is annually disposed of, this value is equivalent to 7 years' worth of garbage.]

Milestones in Recovery and Reconstruction from the Great East Japan Earthquake

- 2011**
- Mar. 11 Great East Japan Earthquake struck (tsunami hit the area)
 - Mar. 11 Evacuation centers opened (a peak of 105,947 evacuees on Mar.12 and a peak of 288 evacuation centers on Mar.14)
 - Mar. 28 Construction of prefabricated temporary housing began (Asuto-Nagamachi area)
 - Apr. 01 Sendai City Basic Policy for Earthquake Disaster Reconstruction announced
 - Apr. 22 Tsunami-flooded residential area debris removal began (tsunami-flooded Eastern area)
 - May 30 Sendai City Earthquake Disaster Reconstruction Vision formulated
 - Jun. 15 All 1,505 prefabricated temporary housing units completed
 - Jul. 31 Debris removal in tsunami-flooded residential area completed (tsunami-flooded Eastern area)
 - Jul. 31 All evacuation centers in Sendai closed
 - Oct. 01 Debris incineration began with temporary incinerators
 - Nov. 30 Sendai City Earthquake Disaster Reconstruction Plan formulated
- 2012**
- May Farming restarted on farmlands where recovery work and desalination was completed
 - Sep. 03 Minami-Gamo Wastewater Treatment Plant repairs began (groundbreaking ceremony)
 - Oct. 10 Elevated road project started on Shiogama-Watari Prefectural Road
- 2013**
- Mar. 11 "Activity Records from First Year after the Disaster" published
 - Sep. 29 Debris (combustible) incineration completed
 - Oct. 25 National Eastern Sendai Land Improvement Project (farmland development) groundbreaking ceremony
 - Dec. 27 Debris treatment and disposal completed
- 2014**
- Nov. 18 Damage recovery work began in Kaigan Park
- 2015**
- Mar. 14 The Third UN World Conference on Disaster Risk Reduction took place in Sendai (until Mar.18)
 - Mar. 26 Residential land for seven areas of Disaster Prevention Collective Relocation Land Handing-Over Ceremony and all residential land completed (tsunami-flooded Eastern area)
 - Aug. 10 Northern Gamo Disaster-Affected Area Urban Redevelopment Project started
 - Aug. 12 Construction started on Kaigan Park Evacuation Hill
 - Dec. 06 Sendai Subway Tozai Line began operation
- 2016**
- Feb. 13 Sendai 3/11 Memorial Community Center fully opened
 - Mar. 12 2016 Sendai Symposium for Disaster Risk Reduction and the Future held
 - Apr. 01 Minami-Gamo Wastewater Treatment Plant repairs fully completed
 - May. 20 G7 Finance Ministers and Central Bank Governors' Meeting, Sendai held (until May 21)
 - Jun. 30 All 3,206 houses for Disaster Reconstruction Municipal Housing completed
 - Sep. 30 4 Kaigan Park Evacuation Hills completed
- 2017**
- Mar. "Sendai City's Five-year of Recovery from the Disaster" published
 - Mar. 12 2017 Sendai Symposium for Disaster Risk Reduction and the Future held
 - Mar. 23 All 13 Tsunami Evacuation Facilities completed
 - Mar. 28 Prefabricated temporary housing dismantled
 - Apr. 30 Disaster Ruins of Sendai Arahama Elementary School opened to the public
 - Nov. 25 The World BOSAI Forum / Davos International Disaster and Risk Conference (IDRC) in Sendai 2017 held (until Nov.28)
- 2018**
- Mar. 09 2018 Sendai Symposium for Disaster Risk Reduction and the Future held
 - Jul. 08 Kaigan Park fully reopened for use
- 2019**
- Mar. 10 2019 Sendai Symposium for Disaster Risk Reduction and the Future held
 - Aug. 02 Disaster Ruins: Residential foundations in Arahama District, Sendai opened to the public
 - Nov. 09 The World BOSAI Forum / Davos International Disaster and Risk Conference (IDRC) in Sendai 2019 held (until Nov.12)
 - Nov. 10 Sendai Symposium for Disaster Risk Reduction and the Future held
 - Nov. 30 Opening of elevated road(Eastern Reconstruction Road Project)
- 2020**
- Mar. 30 2020 Sendai Symposium for Disaster Risk Reduction and the Future: Video released
- 2021**
- Feb. 05 National Sendai East Land Improvement Project (Field Improvement) Inauguration Ceremony
 - Mar. 06 2021 Sendai Symposium for Disaster Risk Reduction and the Future held(until March 07)
 - Sep. 30 Completion of the Land Readjustment Project for Reconstruction of Gamo North Urban Disaster Area
- 2022**
- Mar. 05 2022 Sendai Symposium for Disaster Risk Reduction and the Future held

AFTER

Toward Sendai's Future



Next-Generation Synchrotron Radiation Facility

NanoTerasu

The NanoTerasu, a facility which will allow one to observe the structure and function of materials at the nano-level by synchrotron radiation, aims to start its operation in 2024. The facility is anticipated to be utilized in a variety of fields, including pharmaceutical science, medical technology, energy conservation, environmental protection and food safety. The goal is to create innovations through industry-academia-public-private partnerships, leading to development not only in Sendai but also in Tohoku region.



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Realizing a future-oriented society

The Super City Concept

As the leading city in Tohoku region, the City of Sendai has been promoting several challenging yet rewarding approaches, including bold tax reforms and creation of innovative services. One example is the Super City Concept. In pursuit of realizing a future-oriented society in collaboration with Tohoku University and private companies, this initiative will further boost the regional economy, improve the convenience of citizens' life and create solutions for issues that Tohoku region is currently facing.



The 40th National Urban Greenery Fair Sendai

Mirai no Mori Sendai 2023 ~Feel green!~

The largest flowers and greenery fair in Japan will be held in Sendai starting from April 26, 2023. A large flower bed of about 6,700 square meters will welcome visitors in Aobayama Park, the Main Venue of the event. Efforts on regenerating greenery in the aftermath of the Great East Japan Earthquake will be showcased in the Tobu Area Venue, and various activities will take place in each venue.



Disaster-Resilient and Environmentally-Friendly City Promotion Office, City of Sendai
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(Published in March 2023)



● Cover photo: "NanoTerasu" under construction (photo courtesy of Kahoku Shimpo)

International Conferences in Sendai

The 3rd United Nations World Conference on Disaster Risk Reduction

The 3rd United Nations World Conference on Disaster Risk Reduction was held in Sendai from March 14 to 18, 2015. More than 6,500 people, including the government representatives from 185 nations, as well as the delegates of intergovernmental organizations, NGOs and international institutions took part in the conference. As the result, the Sendai Framework for Disaster Risk Reduction 2015-2030 was adopted. The framework, a guideline for international initiatives related to disaster risk reduction, stipulates its expected outcome and goal, guiding principles, priorities, role of stakeholders and international cooperation. In architecting the framework, Japan advocated proactive commitments of diverse entities, active investment in disaster risk reduction, and the significance of "Build Back Better". All of these elements was incorporated into the final product.



World BOSAI Forum

The World BOSAI Forum is an international civic forum under the initiative of Japan in collaboration with the International Disaster and Risk Conferences in Davos, Switzerland, which brings together people involved with disaster risk reduction (DRR) from home and abroad. Launched in 2017 in Tohoku region, an area that was devastated by the Great East Japan Earthquake, this event was initiated with the hopes that no more people will be affected by disasters in the future. The objective of the organizer is for the forum to serve as an international platform where global citizens can freely participate and engage in actively discussions about DRR. The 2nd World BOSAI Forum was held in 2019 and the 3rd in 2023.



G7 Finance Ministers and Central Bank Governors' Meeting in Sendai

The ministerial meeting was held on May 20 and 21, 2016 in Akiu, Sendai, with the participation of the G7 finance ministers, central bank governors, EU Committee members, and the heads of the European Central Bank and Eurogroup. Key figures of international institutions, including the IMF managing director and the president of the World Bank, also joined far-reaching discussions on how to revitalize the global economy and how to establish a resilient international financial structure. As a part of the official conference schedule, participants also visited areas affected by the 2011 disaster to learn about the status of recovery and reconstruction.



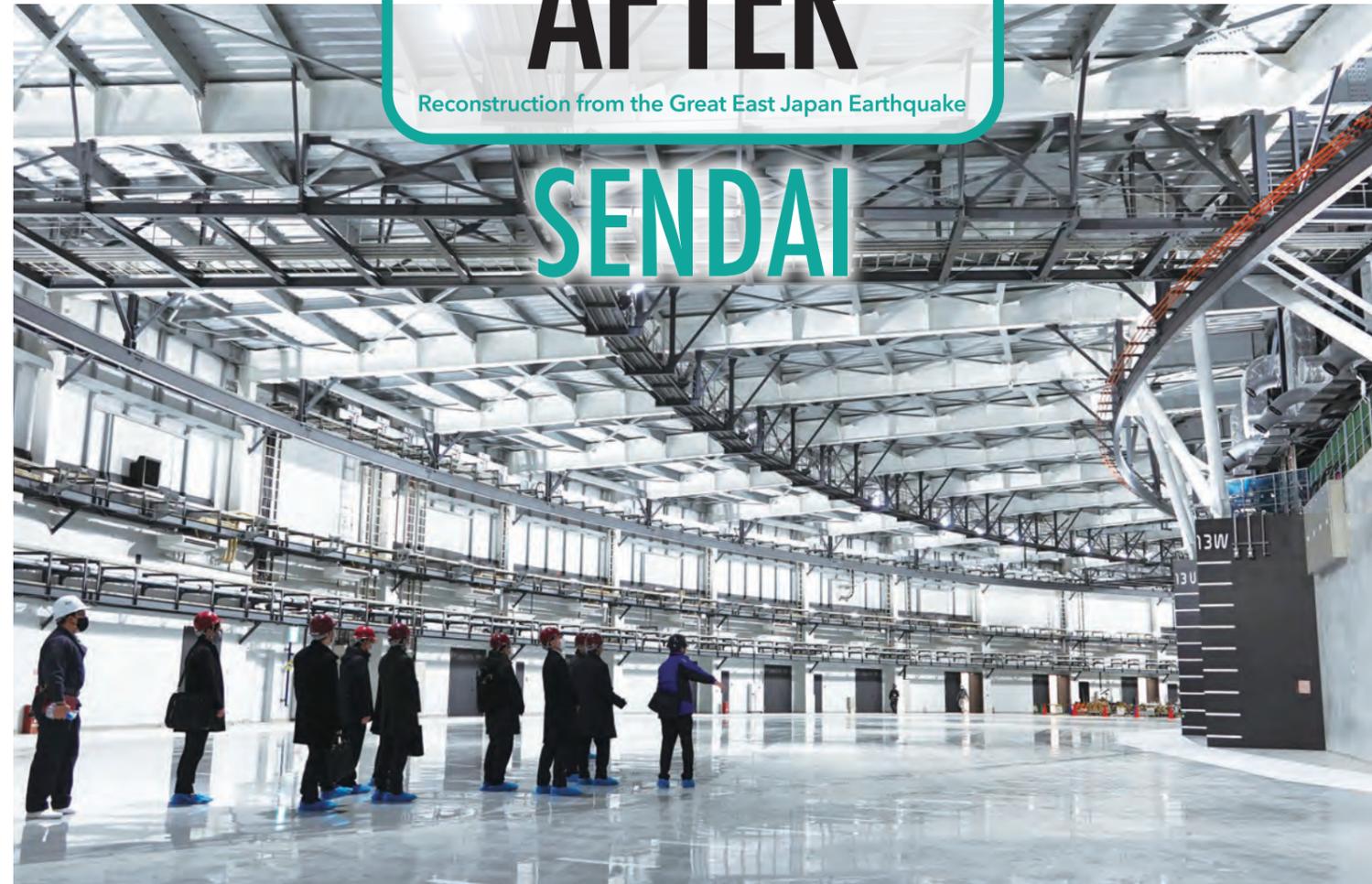
G7 Science and Technology Ministers' Meeting in Sendai

Ministers of Science and Technology of G7 nations will convene in Akiu, Sendai from May 12 to 14, 2023, to discuss critical issues including strengthening cooperation in the field of science and technology in order to address global level challenges. Taking this opportunity, the City of Sendai will showcase the next-generation synchrotron radiation facility NanoTerasu and city planning efforts using advanced technologies, including the Tsunami Evacuation Announcement Drone which automatically broadcasts evacuation announcements when a Tsunami Warning is issued. In addition to showing the city's path toward recovery and reconstruction after the 2011 disaster, the City of Sendai will convey its appreciation to the world for extending support to disaster affected areas.



**3.11
BEFORE
&
AFTER**
Reconstruction from the Great East Japan Earthquake

SENDAI



BEFORE

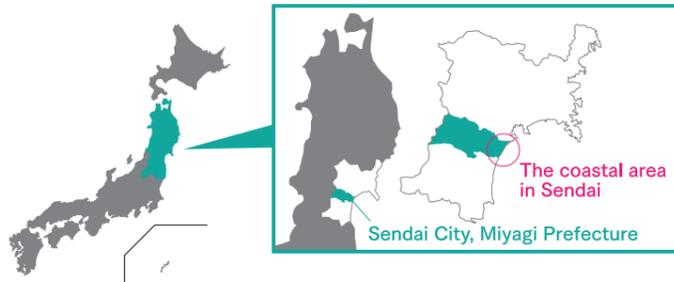
The coastal area in Sendai

2011.3.11

The Great East Japan Earthquake

RECONSTRUCTION

Fro



★ Scenery of homestead woodlands, "Iguno" (2001)



Idyllic rural scenery and town landscape

Before the disaster, the coastal area in Sendai was rich in amazing rural landscape with small ships crossing along the canals.



Disaster prevention forest spread along the coast line.



Kaigan Park surrounded by greenery (2009)



★ There used to be a canal basin alongside the Teizan Canal (2007).



Residential area buried under rubble



Minami-Gamo Wastewater Treatment Plant flooded by the tsunami



Countryside devoured by the tsunami



Debris scattered over a paddy field



Coastal area engulfed by the tsunami



Vehicles washed away by the tsunami



Kaigan Park devastated by the tsunami

Preparedness Against Tsunamis

The coastal area entirely devastated by the tsunami



Regenerating Green and Revitalizing Agriculture

Inundated paddy field



Inland Relocation and Revitalizing Communities

Only the housing foundations were left behind in the aftermath of the tsunami.



Handing Down Experiences and Lessons Learned from the Disaster

Sendai Arahama Elementary School devoured by the tsunami



Evacuation facilities were completed in 2016.

13 evacuation facilities were built in the eastern area that is likely to be flooded by potential tsunamis.



A-1 Coastal levee was completed in 2017.

A coastal levee of about 9 km in length and T.P.+7.2 m in height was constructed. T.P. stands for TokyoPeil, mean sea-level of the Tokyo Bay.



A-2 Elevated road opened in 2019.

A 10 km long road was elevated by 6 meters to serve as an embankment in the case of emergency.



How have things changed?

Combining "Multiple defenses" to mitigate tsunami risk by improving roads, seawall and other facilities, "Evacuation" with "Relocation" has contributed to ensure safe and security against possible tsunamis.

B-1 Regenerating green has been underway since 2014.

With the aim of restoring the rich greenery landscape and attracting more people to come, various efforts have been carried out, including rebuilding disaster prevention forests and homestead woodlands.



B-2 Restoring Kaigan Park was completed in 2018.

With focus on protecting the natural environment and mitigating disaster risk, 4 zones were developed as new spots for social interactions.

Farmland improvement was completed in 2021.

Farmlands were consolidated for upsizing farms.



How have things changed?

The natural environment and landscape around the coastal areas, both of which were damaged by the tsunami, have been restored. With regard to revitalizing agriculture, the basis of agricultural production was strengthened to enable efficient production by using big agricultural machines.

Inland relocation was completed in 2015.

1,540 households living along the coastline relocated inland in the face of the possible tsunami risk.



C-1 The Sendai Subway Tozai Line started its operation in 2015.

Thanks to its opening, access to the affected areas in the coastal areas improved.

C-2 Good use of the sites after relocation since 2020.

The vacant land after owners' moving out has been leased to citizens and businesses so that the place would serve as a catalyst to create new charms for the community.



How have things changed?

In parallel with encouraging locals living in the coastal areas to relocate inland, a variety of programs have been carried out to regain the prosperity in the coastal areas to make them new spots for social interactions.



D-2 Ruins of the Great East Japan Earthquake: Sendai Arahama Elementary School opened in 2017.

Showing the devastated school building as it is, this ruin is conveying and handing down the experience and lessons learned from the tsunami disaster to future generations.



D-3 Ruins of the Great East Japan Earthquake: Residential Foundations in Arahama District, Sendai opened in 2019.

Preserving the foundations of the houses washed away by the tsunami, these ruins are conveying the memories and livelihoods of local people as well as telling the threats of tsunami.

How have things changed?

Sharing the memories and lessons from the disaster as well as recovery efforts among citizens, the City of Sendai is putting the disaster memorial facilities in place in order to link the experience and lessons of past disasters to future and worldwide disaster risk reduction.



- Evacuation stairs
- Evacuation facility
- Evacuation hill
- Evacuation road



D-1 Sendai 3/11 Memorial Community Center opened in 2016.

Being directly connected to Arai Station of the Sendai Subway Tozai Line and serving as a gateway to the eastern coastal area, this center is exhibiting the memories and experience of the Great East Japan Earthquake and handing down them to the next generation.