Reconstruction from 2011 Great East Japan Earthquake

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1. Great East Japan Earthquake and Tsunami (2011)
Great East Japan Earthquake and TEPCO Fukushima Daiichi Nuclear Power Station Accident in 2011

(1) **Scale**

- Date: March 11, 2011 at 14:46 JST
- Epicenter: 130 km off the Pacific Coast of Tohoku Region
- Scale: Magnitude 9.0
  (The largest earthquake ever recorded in Japan)

(2) **Damage** (as of March 2019)

- No. of human casualties:
  - Deceased: 19,689
  - Missing: 2,563
- No. of damaged buildings:
  - Completely destroyed: 121,995
  - Half destroyed: 282,939
  - Partially destroyed: 748,109

Seismic intensity distribution
(Seismic intensity from 4 to 7)
View from Miyako City Hall, Iwate Pref

(Photo courtesy: Miyako City)
Takata, Rikuzentakata City, Iwate Pref.

(Photo credit: Iwate Quake and Tsunami Disaster Archives/courtesy of Rikuzentakata City)
Kamaishi City, Iwate Pref

(Photo credit: Iwate Quake and Tsunami Disaster Archives/courtesy of Coast Regional Development Department, Iwate Prefecture)
Before the disaster (Yamada Town, Iwate Pref., July 2006)

After the disaster (March, 2011)
Main disasters: Mikawa Earthquake (2,306), Typhoon Makurazaki (3,756)

Main disaster: Nankai Earthquake (1,443)

Main disaster: Typhoon Kathleen (1,930)

Main disaster: Fukui Earthquake (3,769)

Main disaster: Nankai torrential rains (1,124)

Main disaster: Typhoon Touyamaru (1,761)

Main disaster: Typhoon Isewan (5,098)

Major disaster: Great Hanshin-Awaji Earthquake (6,437)

Major disaster: Great East Japan Earthquake (22,118)

Source: 1945 year, the deaths / missing person due to major disasters (according to science chronology). 1946 to 52 year, annual report of Japan Meteorological Agency. 1953 to 1962 materials of the National Police Agency, and Since 1960, from material of Cabinet Office based on Fire and Disaster Management Agency.
### Cause of Death

#### 1923 Great Kanto Earthquake
- Dead & missing: 105,385
- 87.1% Burned
- 11.9% Crushed
- 1.2% Drowned or buried

#### 1995 Great Hanshin Earthquake
- Dead & missing: 6,437
- 83.3% Crushed
- 3.9% Burned
- [VALUE] Unknown

#### 2011 Great East Japan Earthquake
- Dead & missing: 22,252
- 92.4% Drowned
- 4.4% Crushed
- 1.1% Burned
- 2.0% Unknown

(Source: Director General for Disaster Management, Cabinet Office)
Support from the World

- 163 countries and areas as well as 43 international organizations expressed their intention of assistance
- 24 countries and areas plus five international organizations dispatched rescue teams
- We have received relief supplies and donations from 128 countries, areas and organizations

(Source: https://www.mofa.go.jp/j_info/visit/incidents/index.html)
2. Establishment of the Reconstruction Agency
Reconstruction Agency

Reconstruction Agency is the principal agency of the Government of Japan tasked with the reconstruction process following the March 11, 2011 Great East Japan Earthquake, which precipitated the triple disaster of earthquake, tsunami and nuclear accidents. The Agency’s main role is to accelerate structural reconstruction and revitalization in the affected areas, by supporting implementation of government policies and managing coordination of reconstruction strategy and initiatives between various branches of the Government at the national level in coordination with local municipalities.

History

March 11, 2011
Emergency Disaster Response Headquarters established in the Cabinet Office

June 24, 2011
Reconstruction Response Headquarters established under the Cabinet

February 10, 2012
Reconstruction Agency established under the Cabinet
### Guidelines & Budgets for Reconstruction

#### Basic Guidelines for Reconstruction in response to the Great East Japan Earthquake, released on July 29, 2011

#### Basic Guidelines for Reconstruction in Response to the Great East Japan Earthquake in the “Reconstruction and Revitalization Period,” released on March 11, 2016

#### Revised Basic Guidelines for Reconstruction in Response to the Great East Japan Earthquake in the “Reconstruction and Revitalization Period,” released on March 8, 2019

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Providing Health and Living Support</td>
<td>2.1</td>
<td>0.4</td>
<td>2.5</td>
</tr>
<tr>
<td>Rebuilding of Houses and Reconstructing Communities</td>
<td>10.0</td>
<td>3.4</td>
<td>13.4</td>
</tr>
<tr>
<td>Reviving Industry and Livelihoods</td>
<td>4.1</td>
<td>0.4</td>
<td>4.5</td>
</tr>
<tr>
<td>Revitalizing and reconstructing Fukushima</td>
<td>1.6</td>
<td>0.5</td>
<td>2.1</td>
</tr>
<tr>
<td>Others</td>
<td>7.8</td>
<td>1.7</td>
<td>9.5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>25.5</strong></td>
<td><strong>6.5</strong></td>
<td><strong>32.0 (about 263 billion USD)</strong></td>
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</tbody>
</table>

[unit: trillion yen]
3. Challenges and Our Efforts
## Current Status of Reconstruction and Challenges

<table>
<thead>
<tr>
<th>1. Support to the affected</th>
<th>Fine-tuned response to challenges according to each reconstruction phase</th>
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</thead>
<tbody>
<tr>
<td>Continued support to the affected—Mental and nursing care, “reconstruction of the heart” project in order to create community and motivation in life, counseling service on housing and living</td>
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</tbody>
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<table>
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<tr>
<th>2. Reconstruction of houses and towns</th>
<th>Steady house rebuilding, to be completed by March 2021</th>
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</thead>
<tbody>
<tr>
<td>➢ Arrangement of public housing and residential areas in preparation for rebuilding victims’ houses (to be completed by March 2021)</td>
<td></td>
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<tr>
<td>➢ Transportation and logistics network as development bases, such as roads, railways and ports</td>
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<tr>
<th>3. Revival of industry and workplaces</th>
<th>Production facilities almost restored; Assisting tourism promotion and prevention of unfounded rumors</th>
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</thead>
<tbody>
<tr>
<td>➢ Assistance for seafood processing industry and tourism industry that still face damaging rumors</td>
<td></td>
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<tr>
<td>➢ Support for resuming shopping districts so as to restore lively neighborhood</td>
<td></td>
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<tr>
<td>➢ Support for reviving industry and workplaces as well as attracting new enterprises in order to return locals to 12 municipalities in Fukushima and rebuild life there</td>
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<thead>
<tr>
<th>4. Reconstruction and revival of Fukushima</th>
<th>Evacuation orders lifted except Difficult-to-Return Areas; Time for full-scale reconstruction</th>
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<tbody>
<tr>
<td>➢ Designation of Special Reconstruction and Restoration Bases in Difficult-to-Return Areas</td>
<td></td>
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<tr>
<td>➢ Preparation of living environment for return in areas where evacuation order lifted</td>
<td></td>
</tr>
<tr>
<td>➢ Acceleration of reconstruction and recovery from the nuclear accidents by way of interim storage facilities, Fukushima Innovation Coast Framework, independence support by a joint private and public team, response to damaging rumors</td>
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</tr>
</tbody>
</table>
Fine-tuned response to challenges arising in each reconstruction phase

- Number of evacuees decreased from maximum 470,000 to current 48,000
- As evacuees move from shelters to temporary houses, public houses and eventually permanent houses, the number of inhabited temporary houses decreased from maximum 124,000 to current 7,500.
- As evacuation is prolonged and public housing develops, support for health care, isolation prevention and community creation becomes important
Left: Watching services by counselors helping livelihood

Right: Gathering on preparing an event at new location with aim to build a new community
Steady house rebuilding, to be completed by March 2021

1) Self rebuilding
   150,000 houses has been rebuild or in the process

2) Relocation to higher ground
   Planned: 18,000 houses
   ➢ Completed by March 2021

3) Public housing
   Planned: 30,000 houses
   ➢ Completed by March 2021
After the disaster (May 2011)

Construction in progress (Nov 2014)

Houses are being built on the new land area (Nov 2016)
Public Housing for the Affected
Reviving Industry and Livelihood

Production lines almost restored; Promoting tourism and preventing unfounded rumors

1) Production level of the affected prefectures almost restored
   - 92% of farmland available for planting
   - All the fishing ports’ function restored; Catches returned to 70% of the volume before earthquake; 96% of seafood processing facilities resumed

2) Sales restoration varies depending on the industry
   - 70% of the construction industry have been restored
   - Only 16% of the marine products factories earn as much as, or more than, before the earthquake

Seafood processing facility (Minamisanriku Town, Miyagi Pref.)
New market (Ishinomaki City, Miyagi Prefecture)
Seapal-Pier Onagawa (Onagawa City, Miyagi Pref.)

After the disaster (March, 2011)

Construction under progress (October, 2017)

Shopping mall at the railway station
Factories Reopened in Temporary Facilities

(Shidazawa District, Minamisoma City, Fukushima Pref.)
Objectives
- To work with affected local bodies so that Tokyo 2020 Olympics and Paralympics serve as a boost to reconstruction
- To demonstrate the recovering affected areas as the world focuses on Japan
  Baseball and softball games to be held at Fukushima Azuma Baseball Stadium, soccer games at Miyagi Stadium

Key steps
- To collaborate with affected local governments and relevant agencies
  • Olympic Flame to be displayed in affected prefectures; Torch Relay also planned
  • Prior events to be held in affected prefectures
  • Arigato (Thank You) Host Towns for Supporting Reconstruction—local municipalities in affected areas interacting with participating countries
  • Foods and materials from affected areas to be used in Olympic villages and other venues
Tokyo 2020 Olympic and Paralympic Games in the Affected Prefectures


* J-Village was used by TEPCO as its operational base for dealing with the Fukushima Daiichi Nuclear Power Station accidents in 2011. Such usage was ended in March 2017. It resumed full operation as a sporting facility in April 2019.
4. Upgrade of Legal System
Legal responsibilities of municipalities and prefectures

Municipality

- Municipalities have responsibilities to implement disaster risk reduction policies and disaster response policies.
- To achieve the responsibilities of municipalities, mayors have a lot of legal authority.

<Examples>
- Evacuation recommendation and direction
- Setting alert area and restriction of entrance to the area
- Temporal use of private properties and facilities
- Work order to residents for disaster management

Prefecture

- Prefectures have responsibilities to implement disaster risk reduction policies and disaster response policies, and to support policy implementation of municipalities and coordinate the policies of municipalities under the prefecture.
- To achieve the responsibilities of prefectures, governors have a lot of legal authority.

<Examples>
- Work order for doctors, other experts and residents, storage order to private companies
- Use and management of hospitals
- Direction for mayors to implement disaster management and support other municipalities.

- Implement responsibilities of mayors when mayors cannot fulfill all or part of responsibilities.
- When mayors request the support, governors cannot neglect the request.
When large scale disaster occurs...

National (HQ for Emergency Management)
Chief: Minister of Disaster Management

- Work order to the fire, police and water protection group
- Evacuation direction, alert area designation and entry restriction to such area
- Temporal use of real estate and private buildings
- Designation of evacuation sites
- Provision of the list of people who require special support for evacuation
- Issuance of disaster damage certificate
- Request for support to other municipalities and prefecture

National (HQ for Very Urgent Emergency Management)
Chief: Prime Minister

- Work order for related entities
- Traffic control
- Request support to designated local semi-public authorities
- Request dispatch of Self Defense Force and others
- Request support to Prime Minister (for affected municipalities)

Municipalities (Emergency Management Headquarters)

- Evacuation direction, alert area designation and entry restriction to such area
- Temporal use of real estate and private buildings
- Designation of evacuation sites
- Provision of the list of people who require special support for evacuation
- Issuance of disaster damage certificate
- Request for support to other municipalities and prefecture

Inform situation and disaster management policy implementation

Prefectures (Emergency Management headquarters)

- Work order for related entities
- Traffic control
- Request support to designated local semi-public authorities
- Request dispatch of Self Defense Force and others
- Request support to Prime Minister (for affected municipalities)

Inform situation and disaster management policy implementation
Act on Reconstruction from Large Scale Disaster (enacted in 2013)
Establishment of Reconstruction Framework based on the lessons and challenges from the Great East Japan Earthquake

<table>
<thead>
<tr>
<th>Outline of the Act</th>
<th>1 Organizations for Reconstruction</th>
<th>3 Special Measures on the Reconstruction Planning</th>
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<tbody>
<tr>
<td></td>
<td>Setup of the Headquarters for Reconstruction</td>
<td>Establishment of Council for Reconstruction Planning and the one-stop management on the change of land use planning through the public announcement of reconstruction plan discussed in the Council.</td>
</tr>
<tr>
<td></td>
<td>Prime Minister can set up the HQ for Reconstruction in the Cabinet Office when judging necessary to take special measures for reconstruction.</td>
<td>Deregulation regarding reconstruction projects stipulated in the Reconstruction Plan.</td>
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<td></td>
<td>Establishment of Basic Policy for Reconstruction</td>
<td>Urban Planning for facility development of central reconstruction area.</td>
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<td></td>
<td>The National Government establish the basic policy for reconstruction.</td>
<td>Prefectures can decide on the municipality urban planning on behalf of the municipality at the request of municipalities affected by large scale disaster.</td>
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<tr>
<td>2 Reconstruction Planning</td>
<td>Municipalities affected by large scale disaster can make Reconstruction Plan in accordance with the Basic Policy, in order to achieve smooth and speedy reconstruction via rearrangement of land use and other measures</td>
<td>4 Acting Implementation of Recovery Projects by National Government</td>
</tr>
<tr>
<td></td>
<td>Prefectures affected by the large scale disaster can make Prefecture Policy for Reconstruction in accordance with the Basic Policy.</td>
<td>National Government can implement reconstruction projects including road, marine port, coastal and river management facility on behalf of the local governments affected by large scale disaster at their request.</td>
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Basic Plan for Disaster Risk Management

-Stipulated in the Basic Act on Disaster Risk Management

**National Basic Plan for Disaster Management**
(since 1963, last update in 2019)
- Approved by the National Council on Disaster Management (Chair: Prime Minister)

**Prefecture Basic Plan for DM** (47 prefectures)
- Approved by the Prefecture Council on Disaster Management (Chair: Governor)

**Municipality Basic Plan for DM**
(all municipalities; 1,718)
- Approved by the Municipality Council on Disaster Management (Chair: Mayor)

**Community Disaster Management Plan**
- Draft prepared by citizens
- Propose the draft to the municipality to be include in the Municipality Basic Plan

**Objectives:**
- Improve preparedness
- Response efficiently in case of emergency
- Facilitate recovery and reconstruction processes

**Actions in DRR phases**
1. Prevention/preparation
2. Response
3. Recovery and reconstruction

**Specific actions for each type of disasters**
- Earthquake
- Tsunami
- Water related (floods)
- Volcano
- Snow
- Maritime accidents
- Railroad accidents
- Road accidents
- Nuclear accident etc
- Reduction of human and economic damage through disaster risk reduction (DRR) is fundamental for all levels of tsunami.
- Two levels of external (natural) forces are set.

Level 1 Tsunami: Comparatively Frequent but Small to Medium Scale
- Objective: Protect human life and economic asset
- Measures: hard infrastructures

Level 2 Tsunami: Not Frequent but Large Scale
- Objective: Protect human life
- Measures: hard infrastructures + soft measures
Vision to Save People’s Lives by Tsunami Disaster Management

Area inundation is likely to occur

Facility to prevent tsunami (multiple use of road)

Facility to prevent tsunami (water gate)

Facility to prevent tsunami (elevated road)

Evacuation site (hill or elevated site)

Evacuation building

Evacuation tower

Elevated housing sites

Tsunami Alert Area (Yellow Zone)

- Mandatory description of evacuation system in municipality disaster risk management plan
- Tsunami hazard map making by municipality
- Partnership between municipality and private entity on designation and management of private owned tsunami evacuation facility
- Evacuation plan and drill by underground facility and facility used by those needing special care in evacuation

Special Tsunami Alert Area (Orange Zone)

- Floor level of bedroom must be higher than estimated tsunami level.
- Development regulation for new hospital

Area designated by ordinance (Red Zone)

- Bedroom and living room of housing cannot be constructed below tsunami estimated level
The Third UN World Conference for Disaster Risk Reduction

Held in Sendai City, in March 14–18, 2015.

- More than 6,500 participants from 187 countries and international organizations (including the 25 Head of State and more than 75 ministers). 150,000 participated when including the associated events. One of the largest international conferences organized in Japan.
- The Prime Minister delivered the opening remarks with the attendance of the Emperor. State Minister for Disaster Management, H.E. Ms. Yamatani chaired the conference.
- “Sendai Framework for Disaster Risk Reduction 2015–2030 “was adopted with the consensus of the UN Member States.

Opening Ceremony with the attendance of the Emperor

H.E. Ms. Walstrom (SRSG of the UNISDR) and H.E. Ms. Yamatani (Minister of State for Disaster Management)
Thank you very much! Arigato!