

White Paper on Disaster Management 2011

Executive Summary (Provisional Translation)

Cabinet Office, Government of Japan

Structure of the White Paper 2011

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Note: "The 2011 off the Pacific coast of Tohoku Earthquake" refers to the earthquake hazard of magnitude 9.0 that occurred on 11 March. "The Great East Japan Earthquake" refers to the disaster caused by The 2011 off the Pacific coast of Tohoku Earthquake and the accompanying accidents at nuclear power stations.

An accurate overall assessment of the extremely severe damage resulting the Great East Japan Earthquake has yet not been figured out. Supporting the livelihood of afflicted people is still an unrealized priority. Recovery operations are still ongoing and the discussion for reconstruction has barely started. Moreover, the “Committee for Technical Investigation on Countermeasures for Earthquakes and Tsunami Based on the Lessons Learned from The 2011 off the Pacific coast of Tohoku Earthquake” was established under the Central Disaster Management Council. Full inspections of the disaster and a subsequent study of lessons learned from the disaster will be conducted more intensively in future. In addition, regarding the accident at the nuclear power plant, maximum effort has been focused on settling the situation as quickly as possible. The “Committee for the Investigation and Verification of the Accident at the Tokyo Electric Power Company Fukushima Nuclear Power Plant” will conduct the investigation and verification of the accident.

Though we are only about halfway in the phase of recovery from this disaster, this white paper will cover the current situation (as of the end of May 2011) and the responses to it.

Chapter 1

Overview of the Earthquake and Tsunami, and Countermeasures for Them

1-1-1 Overview of the earthquake and tsunami disaster

1-1-1-1. Overview of the earthquake and tsunami

- On 11 March 2011, at 14:46, an earthquake of magnitude 9.0 occurred offshore at Sanriku, 130km east-southeast of the Ojika Peninsula. This was the largest earthquake observed in Japan's history.

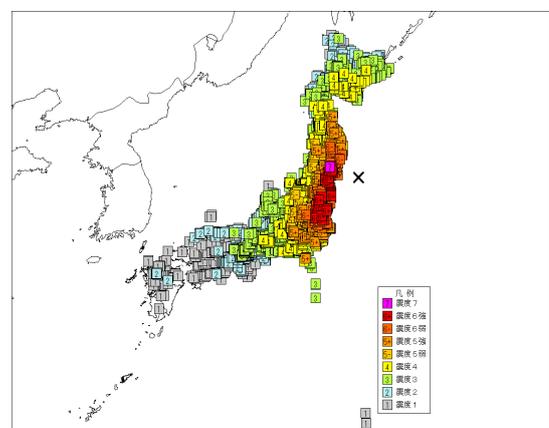
⇒ Seismic intensity level was measured as 7 (maximum) in the northern area of Miyagi Prefecture. The seismic ground motion was observed in a wide area in Japan from Hokkaido to Kyushu, and was felt most acutely in East Japan.

- The earthquake generated a massive tsunami.

* The recorded maximum height of the tsunami tide was 9.3m (Soma City, Fukushima Prefecture)

* The run-up height of the tsunami wave was recorded at 40.5m, the highest ever observed in Japan.

Figure 1. Seismic intensity of the Off the Pacific Coast of Tohoku Earthquake

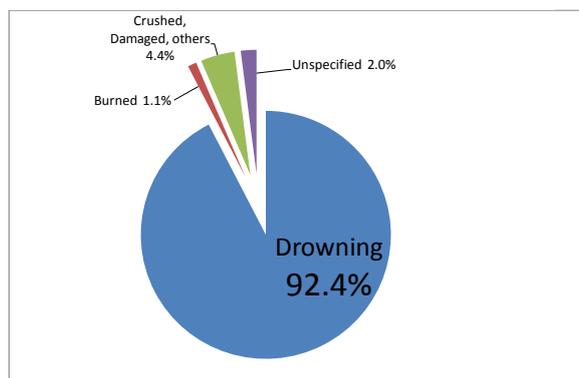


- ⇒ Large tsunami waves were observed all over Japan.
- There is a possibility that the source region includes six zones for long-term risk assessment conducted by the Earthquake Research Committee of the Headquarters for Earthquake Research Promotion.
- ⇒ The scale and probability of earthquakes in each of the above six zones have been assessed. However, an earthquake that interlocks all of those zones simultaneously has not been predicted to occur.

Chart 1. Overview of The 2011 off the Pacific coast of Tohoku Earthquake

Date	11 March 2011, at 14:46
Hypocenter and the scale (estimate)	Sanriku offshore (latitude 38.6 north, longitude 142.52 east, around 130km east-southeast of Ojika Peninsula) 24km deep Magnitude of 9.0
Source region	approx. 450km long approx. 200km width

Figure 2. Causes of Death in the Great East Japan Earthquake (Iwate, Miyagi and Fukushima Prefecture)

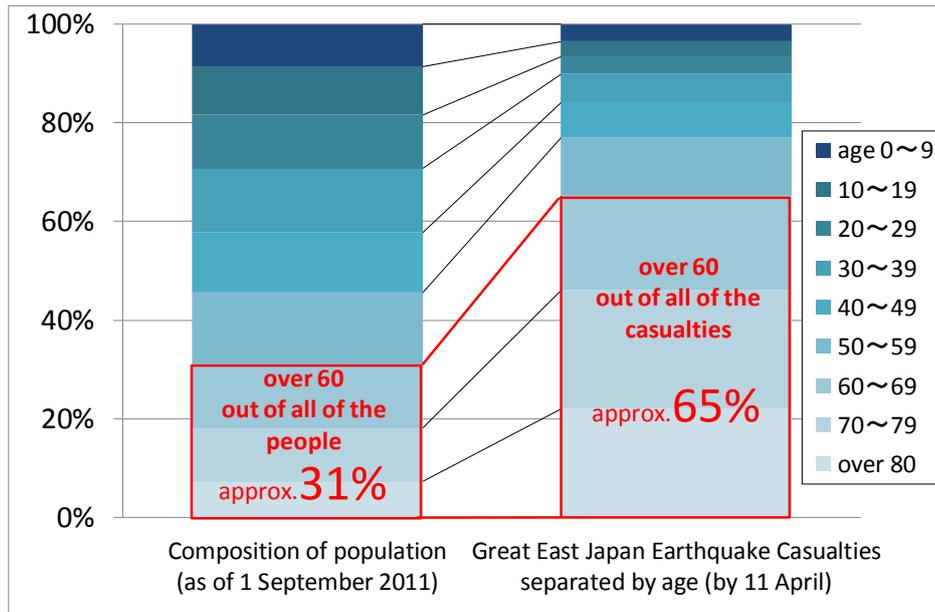


Data provided by National Police Agency

1-1-1-2. Overview of the damage

- 15,270 deaths, 8,499 missing (more than 90% of deaths were caused by drowning and 65% of the dead were over 60)
- Housing : approx. 100,000 demolished, 60,000 partially destroyed
- Direct damage to the stock (social capital, housing and private corporate facilities) : approx. 16-25 trillion yen
- Inundation area caused by tsunami was 561 square kilometers throughout Japan. Much wider areas were inundated as compared to the prediction of Hazard Maps.

Figure 3. Comparison of the number of casualties and the area population by age



1-1-1-3. Comparison with great disasters in the past

- Massive earthquake of magnitude 9.0, the maximum scale ever observed in the country
- Severe damage was caused by tsunami and the devastated area is widespread
- Greatest number of casualties, since World War II



Unprecedented Disaster

1-1-2 Emergency response

1-1-2-1. Initial response

- Initial response and the establishment of the emergency headquarters
 - 11 March, 14:50 Established the Response Office at Prime Minister's Office Convened the Emergency Response Team
 - 15:14 Established the Extreme Disaster Management Headquarters (the first establishment after the enactment of the law)
 - 15:37 1st meeting of the Extreme Disaster Management Headquarters (adopted a basic policy on disaster response countermeasures)
 - 18:42 Dispatched government inspection team (to Miyagi Prefecture)
 - 19:23 3rd meeting of the Extreme Disaster Management Headquarters (direction on relief measures for stranded commuters)
 - 12 March 6:00 Established the Local Headquarters for Extreme Disaster Management (in Miyagi Prefecture)

By 17 March, 12 meetings of the Extreme Disaster Management Headquarters had been held, and the following emergent measures were taken:

- (Since 11 March) Application of the Disaster Relief Act
 - (12 March) Designation of an Extremely Severe Disaster
 - (Since 12 March) Application of the Act on Support for Livelihood Recovery of Disaster Victims
 - (13 March) Designation as a Specified Major Disaster
 - (14 March) Decision of the liquidation of the reserve fund for relief supplies to the disaster-stricken area
- etc.

○ Rescue Operation

- National Police Agency: Dispatched approx. 307,500 staff (as of 31 May)
- Fire and Disaster Management Agency : Dispatched 1,558 Emergency Fire Response Teams, 6,099 staff (maximum, as at 18 March, 11:00), total of 27,373 teams, approx.103,600 firefighters joined (as of 31 May)
- Japan Coast Guard: Dispatched total of 4,413 boats, 1,564 airplanes, 1,510 staff of Special Rescue Teams (as of 30 May)

Ministry of Defense: approx. 107,000 corps of Japan Self-Defense Force at maximum (the first call-up of Ready Reserve Self-Defense Officials)

- Total number of rescued people by Police, Fire Departments, Japan Coast Guard and Japan Self-Defense Force was 26,707 (as of 30 May)

○ Acceptance of international rescue teams

- Rescue teams and experts' teams from 28 countries, regions, and organizations
 - "Operation Tomodachi (friendship)" by US Forces
- ⇒ Dispatched more than 16,000 corps, approx.15 ships, approx. 140 airplanes (maximum)

Emergency Fire Response Teams
(Kesenuma City, Miyagi Prefecture)



Photo provided by Fire and Disaster Agency,
Taken by Tokyo Fire Department

Cooperation by United States Forces Japan



U.S. Navy photo by Mass Communication Specialist 1st Class
Matthew M. Bradley/Released

- Fire extinction, emergency medical care, procurement and transporting of essential commodities of life
 - Total of 313 cases of fire (in particular, 163 cases in Miyagi Prefecture)
 - Emergency medical care, such as the dispatch of Disaster Medical Assistance Teams (DMAT, maximum 193 teams).
 - Decide to liquidate approx. 30.2 billion yen from FY2010 reserve fund for the procurement and transporting of relief supplies, such as essential commodities of life (Cabinet decision on 14 March). The initial needs from the devastated area in the aftermath of the disaster were water, food, and blankets, but they gradually shifted into commodities.
 - To supply gasoline smoothly, emergency measures were taken, such as requests to related industries, reducing the imposed oil stock level of private companies, controlling exports and demand, promoting coordination among oil companies, providing a great number of tankers, transporting by railways, and developing hub gasoline stations.
 - Secured emergency roadways for lifesaving and transportation of emergency relief goods

1-1-2-2. Response to infrastructure and lifeline damage

- Transportation facilities

Great impact on railways, roadways, ports, and aviation traffic
→ gradually recovered afterward

(ex.) Service restored on all Tohoku Shinkansen (bullet train) lines (29 April), Tohoku Expressway opened for regular vehicles (24 March), service restored in Sendai Airport for civil aviation (13 April)
- Lifelines

Damage to electricity, gas, water, sewage, telecommunications, broadcasting, petroleum refining plants, etc. → gradually recovered afterward

(ex.) Initially 8.91 million houses were hit by blackouts in the area covered by the Tohoku Electric Power Company → reduced to 300 houses (as of 27 May).
Initially gas supply for 480,000 houses was stopped → almost recovered (as of 3 May)
- Public buildings
 - Damaged approx. 6,400 facilities of public schools
- Rivers and coastal facilities, agricultural facilities and fisheries facilities

1-1-2-3. Measures to assist the lives of afflicted people

- Establishment of the Special Headquarters for Measures to Assist the Lives of Disaster Victims (decided 17 March), renamed afterward as Team in Charge of Assisting the Lives of Disaster Victims (9 May)
- Procurement and transporting of essential commodities of life (handed over from the Extreme Disaster Management Headquarters)
 - procured supplies: food (approx. 26 million meals), drink (approx. 8 million bottles), blankets (approx. 410,000), fuel (approx. 16,000 kilo-liters), diapers (approx. 400,000), medicine (approx. 240,000 boxes), partitions (approx. 66,000), etc.
 - Transportation : Japan Truck Association (total 1,900 trucks), airplanes of Japan Self-Defense Force (total 150), police and private helicopters (5), ships (8)
 - * Above numbers for the procurement of supplies and transportation are the total including those handled by the Extreme Disaster Management Headquarters
- Support and information provision for the evacuees
 - Number of evacuees : approx. 470,000 (at maximum), decreased to currently approx. 100,000 (as of 30 May)
 - Improvement of the living environment at evacuation shelters (conducted condition surveys regularly)
 - Provision of information for supporting afflicted people (issued "wall newspapers" and distributed various handbooks)
- Dispatch of staff to local governments (dispatch of national officials and officials from other local governments)
- Securing services of health, medical care, welfare, and education
 - Dispatch of more than 12,000 medical workers such as medical doctors, dentists, nurses, and pharmacists.
 - Acceptance of 9,433 afflicted children in other prefectures. Reduction and exemption of school expenses
- Toward the reconstruction of lives
 - Distributing monetary aid for reconstruction of afflicted peoples' lives, disaster consolatory aid, etc.
 - Employment and job support ("Japan as One" initiative for employment support) (support for small and medium-sized enterprises and agriculture and fishing industries and support for the employment of afflicted people)

Food supply by Japan Self-Defense Force



Photo by Japan Self-Defense Force

1-1-2-4. Disaster waste disposal

- Total estimated amount of disaster waste : approx. 24.9 million tons
 - ⇒ Ministry of the Environment proposed guidelines on entering private land and removing destroyed houses
 - ⇒ Increasing financial assistance by the national government for disaster waste disposal by local governments. Disaster countermeasures bonds cover all of the local governments' obligations, and tax allocation covers 100% of its redemption money for principal and interest
- Countermeasures for submergence (such as effective drainage of submergence caused by land subsidence), countermeasures for liquefaction (such as flexible application of damage approval procedures)
- Appropriate announcement of warning information
 - ⇒ Upgrade sediment disaster warning levels for local governments that had observed earthquakes of scale 5 or greater in seismic intensity scales

1-1-2-5. Promotion of housing stabilization

- Construction of emergency temporary houses (23,795 houses have been completed; 36,956 houses are under construction, and an additional 2,076 houses are planned) (as of 30 May)
- Secondary evacuation to publicly-owned houses (free provision of publicly-owned houses, support by the establishment of an information center)
- Temporary evacuation to hotels and inns (supporting acceptance of evacuees to hotels and inns beyond prefecture borders)

1-1-2-6. Cordial support for disaster-stricken area

- Relief supplies from overseas (55 countries, regions and organizations)
- Donations:
 - Domestic : approx. 236.2 billion yen (collected by Japan Red Cross, Central Community Chest of Japan, etc.)
 - Overseas : more than 16.1 billion yen (from 81 countries, regions and organizations)



Photo provided by ADRA Japan

○ Volunteers

Volunteers have played important roles in the operation of evacuation shelters, helping preparation of meals, and cleaning up of the muddy houses

- Matching by Disaster Volunteer Centers
 - accepted volunteer applicants and matched volunteers with changing needs
- Coalition of governments and volunteers
 - coalition of public and private sectors: prefectural government, prefectural disaster volunteer

1-1-3 Policy measures since the disaster

1-1-3-1. Designation of a disaster of extreme severity

The disaster was designated as a Disaster of Extreme Severity (nationwide) on the very next day following the disaster; there was no waiting for the compilation of damage data from the disaster-stricken area, because the damage was considered as obviously exceeding the designation criteria.

1-1-3-2. Designation of specified major disaster

Measures were taken to protect the rights and benefits of the afflicted people by extending the expiration dates of the rights and benefits provided by government.

1-1-3-3. Flexible application of the Disaster Relief Act

All prefectures were informed of the flexible application of the Disaster Relief Act so that not only the prefectures in the disaster-afflicted area but also those outside the afflicted area can actively provide disaster relief to afflicted people.

1-1-3-4. Tax measures

As emergency measures, special arrangements were made on national and local taxes, in consideration of the Great East Japan Earthquake's unprecedented scale of disaster.

1-1-3-5. First supplementary budget

4.0153 trillion yen supplementary budget came into effect on 2 May, as estimated necessary expenses within the fiscal year for the immediate recovery from the Great East Japan Earthquake.

1-1-3-6. Special financial support by the Special Financial Support Act for the Great East Japan Earthquake

Special assistant measures were provided such as the financial support to local governments that promote rapid relief and recovery, reduction and exemption of social insurance premiums for afflicted people, and financial assistance to small and medium-sized enterprises.

1-1-3-7. Special measures for building and construction

Considering the situation of the disaster-stricken areas by the Great East Japan Earthquake, such measures as proxy execution of disaster recovery public works by the national government and building restrictions in urban areas were taken.

1-1-3-8. Improvement of the procedures for providing monetary aid under the Act on Support for Livelihood Recovery of Disaster Victims

Measures were taken to quicken the procedures for providing aid money based on the Act on Support for Livelihood Recovery of Disaster Victims. Money is provided to household who suffered severe damage to the basis of their lives, such as the total destruction of houses.

1-1-4 The next steps

Present major concerns are the normalization of afflicted people's lives by improving their living conditions, the recovery of infrastructure and other facilities, and the reconstruction of disaster-stricken areas. Simultaneously, verification of the disaster and the development of future disaster risk reduction measures are also necessary.

1-1-4-1. Measures for the normalization of lives in disaster-stricken areas

Measures for upcoming three months, until the full reconstruction starts, were described in the policy document decided on 20 May. These measures include:

1. Improvement of living conditions at evacuation shelters
2. Housing support by promoting the construction of emergency temporary housing
3. Securing services such as health, medical care, welfare and education
4. Removal of debris aiming at completion by around the end of August
5. Emergency disaster prevention measures, such as secondary disasters countermeasures before the rainy season and the typhoon season
6. Recovery of lifelines, transportation networks, farms, and fishery ports
7. Securing employment

1-1-4-2. Toward reconstruction of disaster-stricken areas

The Reconstruction Design Council was established on 11 April, to discuss various ideas about reconstruction as a basis for the development of a policy outline for reconstruction. "Seven principles of the reconstruction design" was formulated and published on 10 May.

1-1-4-3. Toward future disaster management and disaster risk reduction

Disaster management and disaster risk reduction grow in sophistication on the ceaseless effort of verifying disaster situations and responses that arise after experiencing an actual disaster, drawing lessons learned from that experience and revising policies as necessary. At present, it is clear that supporting the afflicted people and the reconstruction of the disaster-stricken area are the most important

issues. Simultaneously, however, it is necessary to verify the situations and responses each time a disaster strikes, and conduct necessary policy changes to the legal, institutional, and other mechanisms as necessary for future disaster managements and disaster risk reduction policies.

The Establishment of a “Committee for Technical Investigation on Countermeasures for Earthquakes and Tsunami Based on the Lessons Learned from The 2011 off the Pacific coast of Tohoku Earthquake” was decided at the Central Disaster Management Council held on 27 April 2011 in response to the Great East Japan Earthquake.

Also, review and revision of disaster management and disaster risk reduction policies are under discussion in ministries and agencies throughout the Japanese government. Verification of the disaster and collection of lessons from it will be done more seriously from now on. However, issues at present are presented below:

1) Appropriate review of disaster risk assessment

- Following the Great East Japan Earthquake, risk assessment for predicted earthquakes (source regions, magnitude, heights of tsunami, etc.) should be revised.
- The Technical Committee under the Central Disaster Management Council will investigate the mechanisms by which the earthquake and tsunami occurred and the damages caused by them.

2) Improved tsunami countermeasures including through the Basic Disaster Management Plan

After a thorough review of the disaster risk assessment in the above-mentioned Committee, it will conclude future earthquake and tsunami countermeasures. Based on this, the revisions will be made on the Basic Disaster Management Plan and hazard maps. In relevant ministries and agencies, structural and non-structural countermeasures against earthquakes and tsunami (such as tsunami warning and the construction of coastal protection facilities) are under discussion.

3) Strengthening of the countermeasures for Tokai, Tonankai, and Nankai Earthquakes (interlocked triple earthquakes) and Tokyo Inland Earthquakes

Wide-area countermeasures must be prepared for the event of interlocked occurrence of Tokai, Tonankai, and Nankai Earthquakes; countermeasures for Tokyo Inland Earthquakes must consider the magnitude of the damages and socioeconomic impacts.

4) Response to wide area disasters

Preparation is needed for a situation in which local governments that govern

very wide areas do not function well for a long term after a disaster. Role sharing of national government and local governments, and the complementation of the functions of local governments should be verified.

5) Support of afflicted people

- Guidelines for securing living conditions at evacuation shelters, the way to support those afflicted people and the situation where many people have to stay in evacuation shelters for a long term.
- Dissemination of disaster information, support for evacuation and life support at evacuation shelters need to be improved for people requiring assistance during a disaster, including elderly people, disabled people, foreigners, babies and toddlers, and pregnant women.

6) Promotion of international cooperation in disaster reduction

Knowledge and lessons from the experience of this disaster have to be shared with other countries.

Chapter 2 Overview of the Nuclear Disaster and Its Countermeasures

1-2-1 Overview of the nuclear disaster

1-2-1-1. Accident at Tokyo Electric Power Company Fukushima Daiichi Nuclear Power Station

- Three reactors among six reactors (Reactor 1, 2 and 3) had automatically stopped by the occurrence of The 2011 off the Pacific coast of Tohoku Earthquake.
- Tokyo Electric Power Company (TEPCO) later informed the Nuclear and Industrial Safety Agency that incidents that applied Article 10 of the Special Law of Emergency Preparedness for Nuclear Disasters, and that complete loss of AC power sources at Reactors 1, 2 and 3 had occurred. The company also informed the agency that incidents that applied Article 15 of the Act had also occurred (inability to pour water to emergency reactor core cooling systems at Reactors 1 and 2, and loss of reactor cooling system at Reactor 3). Cooling down of the spent fuel pools of Reactors 1-4 also became difficult.
- Explosions considered to be hydrogen explosions had occurred at Reactor 1 (12 March), Reactor 3 (14 March) and Reactor 4 (15 March). A blast sound considered to be a hydrogen explosion was heard at Reactor 2, and fire breakout was observed at Reactor 4 (15 March). Radioactive material was released to the outside of the plants as a result of the puddle of contaminated water and its leakage to the outside of the plants.

- To settle the situation, the government ordered TEPCO to take measures to control the pressure inside the containment vessels and to pour in seawater, based on the Nuclear Reactor Regulation Law. Japan Self-Defense Force and Emergency Fire Response Teams poured in water. TEPCO conducted recovery operations of cooling down the reactors and spent fuel pools and controlling the pressure of the primary containment vessels. A unified effort by the government and TEPCO has helped to settle the situation as quickly as possible.
- The Nuclear and Industrial Safety Agency temporarily evaluated the incidents as Level 7 of INES (the International Nuclear and Radiological Event Scale) on 12 April.

Fukushima Daiichi Nuclear Power Station



(above : 26 April, below : Reactor 3, 21 March)



Photo by : Japan Ground Self-Defense Force (above) and TEPCO (below)

1-2-1-2. Accident at Tokyo Electric Power Company Fukushima Daini Nuclear Power Station

- All four reactors automatically stopped by the occurrence of The 2011 off the Pacific coast of Tohoku Earthquake.
- Afterward, TEPCO informed the Nuclear and Industrial Safety Agency that incidents that applied Article 10 of the Special Law of Emergency Preparedness for Nuclear Disasters occurred (leakage of the reactor coolant at Reactors 1 and loss of reactor heat removal function at Reactor 1, 2 and 4). The company also informed the agency that incidents that applied Article 15 of the Act had also happened (loss of pressure control function at Reactors 1, 2 and 4).
- Owing to the recovery operations taken afterward, all four reactors were cooled down and stopped, and the situation has been kept stable.

1-2-2-1. Establishment of Nuclear Disaster Management Headquarters

- The Prime Minister issued the Declaration of a Nuclear Emergency Situation on 11 March at 19:03 after the strike of the accident at Tokyo Electric Power Company Fukushima Daiichi Nuclear Power Station and Fukushima Daini Nuclear Power Station, and established the Nuclear Disaster Management Headquarters and Local Headquarters for Nuclear Emergency Response.
 - * Because of problems such as a situation in which communication with the Fukushima Nuclear Emergency Response Center (Off-site Center) was difficult due to the disaster, Local Headquarters moved to the prefectural office of Fukushima Prefecture from the Off-site Center on 15 March.
- An Integrated Government – TEPCO Headquarters for Measures against Fukushima Nuclear Power Station Accident was established on 15 March (reformed into Government – TEPCO Integrated Response Office on 9 May), headed by the Prime Minister for the government and TEPCO to integrally respond to the accident.
- On 18 March, a local coordination office was established to strengthen coordination with the Self Defense Force and other related organizations.
- On 29 March, a “Team for Supporting the Lives of the Nuclear Disaster Victims” was established under the Nuclear Disaster Management Headquarters with the Minister for Economy, Trade and Industry as the chief.

1-2-2-2. Evacuation of afflicted people and the order to designate evacuation zones

- After the accidents at TEPCO’s Fukushima Daiichi and Fukushima Daini Power Stations, to secure the safety of residents in the vicinity of the power stations, the chair of the Nuclear Disaster Management Headquarters ordered the designation of evacuation zones, after considering the opinions of Nuclear Safety Commission, for securing the safety of residents living in the vicinity of the power stations.
 - < Areas for the evacuation of residents (as of May)>
 - Evacuation Areas (apply to approx. 78,000 residents) : within 20km radius from Fukushima Daiichi Nuclear Power Station and within 8km radius from Fukushima Daini Nuclear Power Station
 - Restricted Areas (apply to approx. 78,000 residents) : within 20 km radius from Fukushima Daiichi Nuclear Power Station
 - Deliberate Evacuation Areas (apply to approx. 10,000 residents) : Iitate Village (entire area), Katsurao Village (outside of the area of 20km radius from Fukushima Daiichi Station), Namie Town (outside of the area of 20km radius within Fukushima Daiichi Nuclear Power Station), Kawamata Town (some parts of the town), Minamisoma City (some parts of the city)
 - Emergency Evacuation Preparation Areas (apply to approx. 58,500 residents) :

Hirono Town (entire area), Naraha Town (outside of the area of 20km radius from Fukushima Daiichi Station), Kawauchi Village (outside of the area of 20km radius from Fukushima Daiichi Station), Tamura City (some parts of the city) and Minamisoma City (some parts of the city)

*Approx. 99,000 people in Fukushima Prefecture had evacuated (including evacuees to outside of the Prefecture and evacuees due to the earthquake and tsunami besides the nuclear accident) (as of end of May)

1-2-2-3. Emergency safety countermeasures

- On 30 March, the Minister of Economy, Trade and Industry directed electric power suppliers to implement the emergency safety countermeasures as shown below:
 - The development of the procedures and implementation of drills for emergency response measures for putting the reactors to the status of cold shutdown without releasing much nuclear materials when all the AC power supplies stop.
 - Improvement of the facilities (such as securing power source cars, equipment of fire engines and fire-fighting hoses)
 - Development of plans about tsunami protection measures (mid-term and long-term countermeasures)

The Nuclear and Industrial Safety Agency received reports of implementation status from electric power suppliers and did on-site inspections, and issued a confirmatory result on 6 May. Also, the Minister of Economy, Trade and Industry directed reprocessing companies to implement emergency safety countermeasures on 1 May.

- On 9 and 15 April, a direction was issued to secure reliability of external power sources upon the strike of an aftershock on 7 April.
- On 6 May, a request was made to suspend the operation of the Chubu Electric Power Hamaoka Nuclear Power Station (suspended by 14 May).

1-2-2-4. Working toward settling the nuclear power station accident

- TEPCO announced a "Roadmap Toward the Restoration from the Accident at Fukushima Daiichi Nuclear Power Station" on 17 April. Additionally, TEPCO announced progress and a review on 17 May.
- The government announced its "Roadmap for Immediate Actions for the Verification and Restoration from the Accident at Fukushima Daiichi Nuclear Power Station" and defined measures for cooling down of nuclear reactors and spent fuel pools, for reducing radioactive material in the air and ground, and for securing safety of work circumstance and international cooperation through IAEA.
- Currently, restoration of the accident is under way with technical and personnel

support from various countries.

1-2-2-5. Working toward supporting afflicted people at each area

- “Roadmap for Immediate Actions for the Assistance of Nuclear Sufferers” was established at Nuclear Disaster Management Headquarters on 17 May. This roadmap summarized the issues and measures for providing support to the afflicted people by the accident and afflicted local governments.
- The government will support people at evacuation areas by ensuring secondary evacuation places and by early moves to temporary housing. Additionally, temporary visits to the restricted areas started with the cooperation of local governments since 10 May.
- In Deliberate Evacuation Areas, Local Response Offices of the government were established in Iitate Village and Kawamata Town on 22 April to take measures for evacuation with close cooperation with local governments and Fukushima Prefecture.
- The government has supported postal services and improved medical facilities at Emergency Evacuation Preparation Areas.

Temporary entrance to the evacuation zone



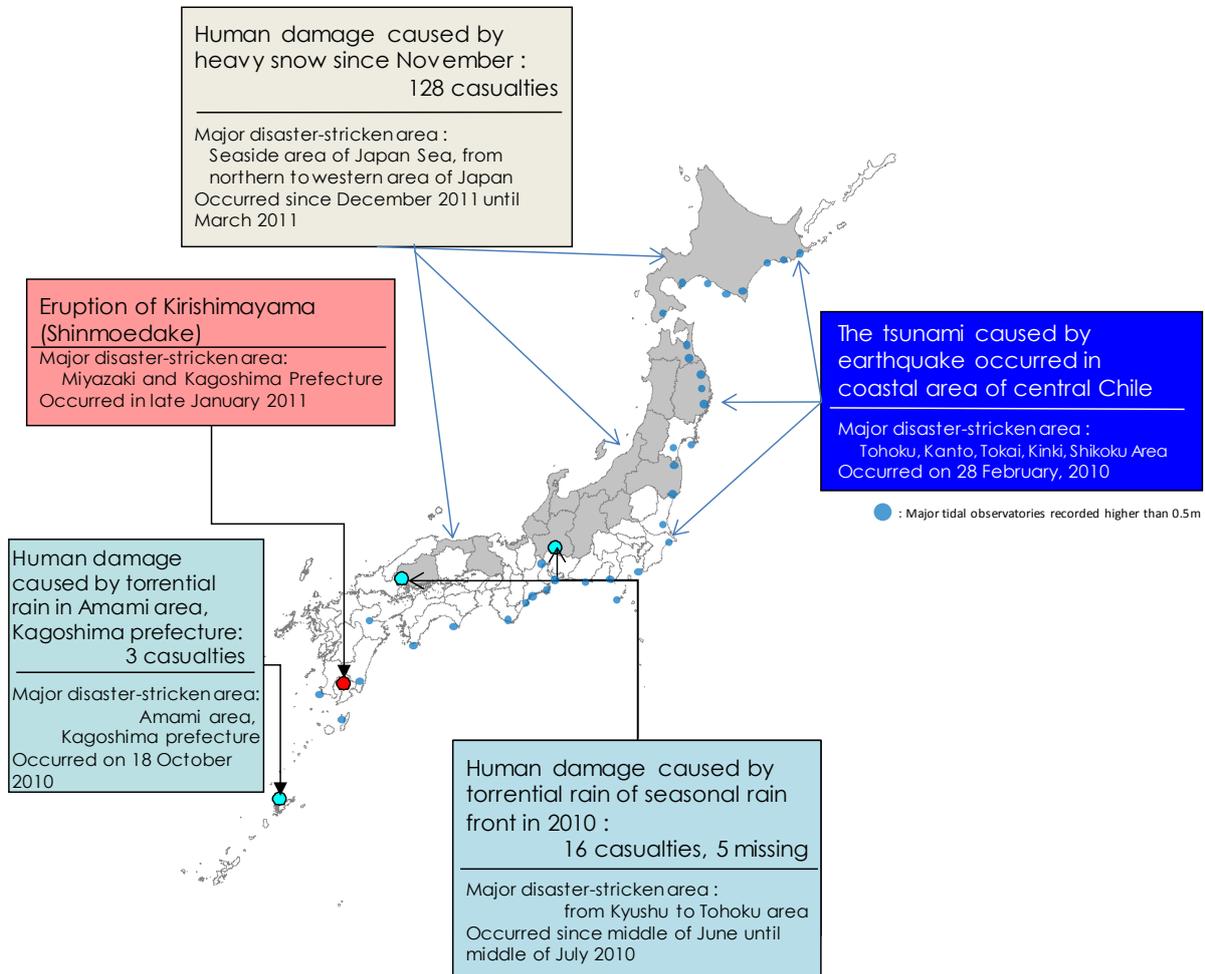
1-2-2-6. Ensuring safe and secure livelihood of disaster-stricken people

- To achieve a safe and secure livelihood for the afflicted people, along with the screening of the residents and decontamination, “Dose Measurement Map” and “Estimated Integral Dose Measurement Map” (as of 24 April) were released on 26 April, based on the “Strengthening Plan of Environment Monitoring”. These maps will be updated (updated on 16 May).

1-2-2-7. Securing employment, supporting agriculture and industry

- The government creates coordinated measures under the Nuclear Disaster Management Headquarters for securing employment and supporting agriculture and industry as well as to provide information to the governments of foreign countries, considering the situation of unique characteristics of nuclear disaster damages including damage caused by rumors.

- Disasters such as torrential rains in rainy season, torrential rain in Amami, eruption of Kirishimayama and heavy snowfall occurred.



- Expansion of the target area for disaster recovery projects of aquaculture facilities to be supported by the Extremely Severe Disasters program (promulgated in April 2010): As a criterion for the designation of municipalities, not only the percentage of the damaged facilities (over 20%), the amount of economic damages (over 20 million yen) was added.
- Revision of the standards for designating Extremely Severe Disasters on public civil engineering facilities (decided by the Central Disaster Management Council in January 2011): In the increasing tendency of localized torrential rains, significant but localized damages occur in the municipalities with small budgets, such as those in depopulated areas ⇒ Revised the standards so that if a municipality meets certain criteria (i.e. the standard tax revenue is less than 5 billion yen and assessed project cost exceeds 250 million yen), the project with its assessed cost exceeding 20% of the standard tax revenue of the municipality can be funded by the program.

Part 3

Overview of Measures Taken on Disaster Management in 2009 and Plans for Disaster Management in 2011

- Details of each Ministry's expenditure status of the 2009 budget and plan for 2011 budget.
- Structure of Part 3
 - Chapter 1 Overview of Measures Taken on Disaster Management in 2009
 - 1 : Overview
 - 2 : Improvement of the legal system
 - 3 : Research on science and technology
 - 4 : Disaster prevention
 - 5 : National land conservation
 - 6 : Disaster recovery
 - 7 : International cooperation in disaster reduction
 - Chapter 2 Plan for Disaster Management in 2011
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