2021

White Paper
Disaster Management in Japan

Cabinet Office

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Special Feature　Disaster Management under COVID-19 crisis

COVID-19 infection has seen a widespread in some regions. The government has been taking measures to address this issue as an important crisis management issue, including the establishment of disaster management headquarters on March 26th, 2020. Under these circumstances, various parts of Japan in fiscal year (hereafter referred to as “FY”) of 2020 saw torrential rain, earthquakes, heavy snowfall, and other disasters. Particularly, disasters caused remarkable damage such as the Heavy Rain Event of July 2020, the heavy snowfall from December 2020 to January 2021, and the Earthquake Centered offshore of Fukushima Prefecture in February 2021. In the event of a natural disaster while under COVID-19 crisis, it is still necessary to continue to maintain and improve disaster prevention and other measures based around the infection status of COVID-19 to be able to provide necessary support and infection control measures to residents.

The "Special Feature" of the White Paper on Disaster Management in FY 2021 focuses on disaster management as its main theme under COVID-19 crisis, and outlines preparations for natural disasters under COVID-19 crisis, the damage caused by the major disasters that occurred in FY 2020, and responses by the government (Chapter 1). Adding to the foundation of Chapter 1, as a further expansion of disaster management, outlined are the "Act for Partial Amendment of the Basic Act on Disaster Management" and measures for evacuation behavior of residents (Chapter 2). Furthermore, the "Five-Year Acceleration Plan for Disaster Prevention, Disaster Mitigation, and Building National Resilience" will be outlined (Chapter 3).

Chapter 1 Disasters in FY 2020

Section 1 Disaster Management under COVID-19 crisis

1-1 Measures of Shelters based on the Infection Status of COVID-19

The government is working to prevent the spread of COVID-19, and as such, based on the "Basic Policies for Novel Coronavirus Disease Control" (decided by the Novel Coronavirus Response Headquarters on March 28, 2020), issued a series of notices since April 2020 and provided a variety of advice as follows to local governments on their efforts to take all possible measures against COVID-19 with related ministries and agencies : (1) disseminating of actions for dispersed evacuation, (2) promoting the establishment of as many shelters as possible by making use of hotels and inns, (3) disseminating information on how to respond to COVID-19 in shelters, and (4) sharing information on patients with COVID-19 in the event of a disaster.

(References:
http://www.bousai.go.jp/taisaku/hinanjo/pdf/korona.pdf
http://www.bousai.go.jp/taisaku/hinanjo/pdf/hinan_korona.pdf)

The government has established various guidelines* for shelters and has informed municipalities to take the necessary measures at shelters as part of the efforts to combat infectious diseases in shelters.

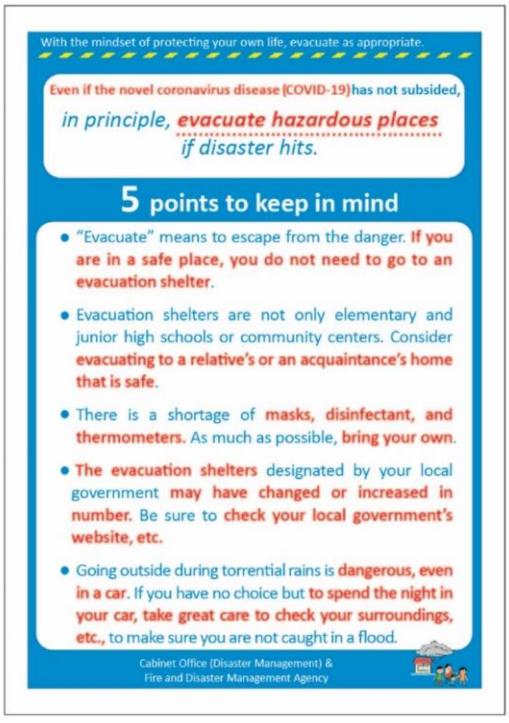
* Guidelines for Ensuring Satisfactory Living Conditions at Shelters (Cabinet Office)
(Reference: http://www.bousai.go.jp/taisaku/hinanjo/pdf/1605kankyokakuho.pdf)
Shelter Management Guidelines (Cabinet Office)
(Reference: http://www.bousai.go.jp/taisaku/hinanjo/pdf/1605hinanjo_guideline.pdf)

Guidelines for Health Management of People Living in Evacuation Shelters (Ministry of Health, Labour and Welfare)
(Reference: https://www.mhlw.go.jp/stf/seisakunitsuite/bunya/0000121878.html)

(1) Disseminating of Actions for Dispersed Evacuation

Even without complete control over the spread of COVID-19, those who are in places with increasing risk of disaster should evacuate to safer places, including shelters. From the perspective of contributing to the avoidance of the "three Cs", local governments were asked to distribute or circulate fliers to each household for residents to recognize the following: 1. "evacuation" is "to avoid dangerous places," which means those who are in safe places do not need to evacuate, 2. evacuation destinations should include not only evacuation sites/shelters, but also the homes of people in safe places, such as those of relatives and acquaintances.
(Reference: http://www.bousai.go.jp/kokusai/evacuation_points/pdf/point_en.pdf)

Evacuation During Disasters while COVID-19 is Not Under Control



Source: Cabinet Office data

(2) Promoting the Establishment of as Many Shelters as Possible by Making Use of Hotels and Inns

Depending on the disaster and the situation of the affected, it is important to open as many shelters as possible in addition to previously designated shelters, taking into consideration the capacity of each shelter. For this reason,

we have notified local governments to promptly consider the use of not only their own public facilities, but also hotels, inns, and training facilities provided by the government and other organizations.

1. Making Use of Hotels and Inns

In the event of a disaster, there is possibility of a need to immediately open hotels or inns as shelters. It is important for prefectures to support the smooth operation of shelters in each municipality by understanding the needs of shelters in each municipality, and leading hotels and inns to requesting and confirming the needs by cooperating with lodging organizations, if necessary. In this case, it is necessary for prefectures at departments in charge of disaster prevention and health and welfare departments to cooperate and coordinate well in light of the infection status of COVID-19. The Cabinet Office, the Fire and Disaster Management Agency, and the Ministry of Health, Labour and Welfare have taken such initiatives and issued notices for local governments to promptly consider the use of hotels and inns, urging them to take actions.

In addition, the Ministry of Health, Labour and Welfare and the Japan Tourism Agency supported the efforts of local governments, asking prefectural accommodation organizations for cooperation to prepare in advance lists of available hotels and inns and rent them out in case local governments need.

(References:
http://www.bousai.go.jp/taisaku/hinanjo/pdf/corona_hotel_0429.pdf
http://www.bousai.go.jp/taisaku/hinanjo/pdf/428_taiou.pdf)

2. Utilization of Training Facilities Owned by Ministries and Independent Administrative Agencies

The Cabinet Office and the Fire and Disaster Management Agency requested ministries and agencies to cooperate with renting out training centers, lodging facilities, and other facilities they own as shelters. At the same time, they requested to make lists of available facilities whose jurisdiction were ministries and agencies.

Those lists which were prepared by each ministry and agency were provided by the Cabinet Office through prefectures to the main departments of municipalities in charge of disaster prevention.

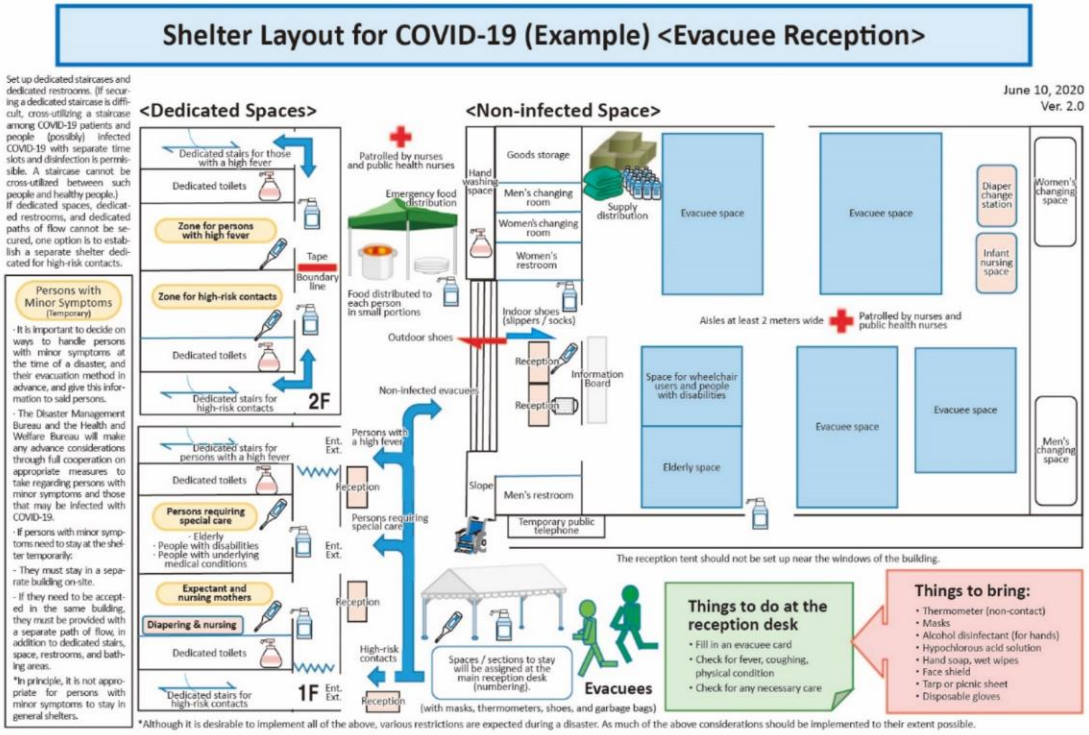
(Reference: http://www.bousai.go.jp/taisaku/hinanjo/pdf/syukuhaku.pdf)

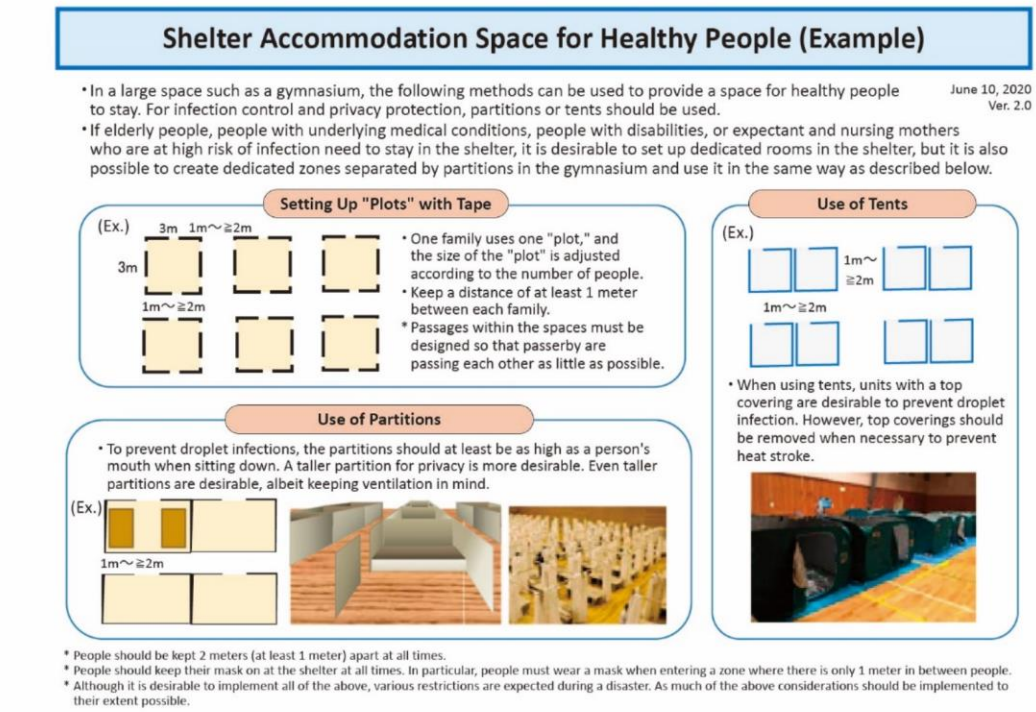
(3) Disseminating Information on Responses to COVID-19 in Shelters

1. Layout of Shelters and Ways to Use Space

The government supported the response in the field by creating reference examples such as layouts of shelters in dealing with COVID-19, space layouts for healthy people to stay in shelters using partitions and tents, and private room layouts for those with symptoms such as fever and coughing and others in close contact, and disseminated these references to local governments.

(Reference: http://www.bousai.go.jp/pdf/0610_corona.pdf)





Source: Cabinet Office data

2. Notes Concerning Health Management of Evacuees and Hygiene Management of Shelters

As reference for the establishment and operation of shelters in local governments, the government created a collection of Q & As, key points, and online videos, notified local governments under the joint names of the relevant ministries and agencies, and requested them to make preparation in advance as follows: consider shelters for

people to receive treatment at home, prepare for evacuee healthcare, consider private shelters for those in close contact, examine the use of space for hygiene management in shelters, ensure sanitary conditions in shelters, provide adequate ventilation and space, and so on.

(References:
http://www.bousai.go.jp/pdf/corona_QA2.pdf
http://www.bousai.go.jp/pdf/covid19_tsuuchi.pdf
http://www.bousai.go.jp/coronam.html)

3. Emergency Stores of Relief Supplies

As a response to COVID-19 in shelters before disasters occur, the Cabinet Office and the Fire and Disaster Management Agency have informed local governments that they could make use of a temporary grant for local development in response to COVID-19 for the costs of emergency stores of relief supplies such as masks, antiseptic solutions, cardboard beds and partitions, in order to proceed with creating an emergency store of relief supplies.

(4) Sharing Information on Patients with COVID-19 in the Event of a Disaster

From the perspective of appropriate response at the time of disaster, because it is considered worthwhile to share information on COVID-19 managed by prefectures, cities with public health centers and the health and welfare departments in special zones with the disaster prevention departments of prefectures and municipalities in a timely and appropriate manner, the Cabinet Office, the Ministry of Health, Labour and Welfare and others informed local governments of the points to keep in mind when sharing information during ordinary times, when there is a possibility of a disaster coming due to an approaching tropical cyclone and the like.
(Reference: http://www.bousai.go.jp/pdf/corona_0708.pdf)

1-2 Securing Relief Supplies based on the Infection Status of COVID-19

In the event of a large-scale disaster, it is fundamental for local governments to stockpile necessary supplies for shelters. On the other hand, not all the local governments have sufficient stores of relief supplies such as partitions and hygiene products necessary to prevent COVID-19 due to difficult logistics by the start of the flood season in 2020.

Therefore, the Cabinet Office worked with the Ministry of Health, Labour and Welfare and other related organizations to support local governments in securing relief supplies for infectious diseases and provided technical advice that stocks of masks and other items could be exchanged between sanitary or civilian departments and disaster management departments of local governments. Also, the Cabinet Office made efforts to assist local governments in quickly securing relief supplies by providing information on mask vendors whose jurisdiction fell under the Ministry of Health, Labour and Welfare and supported the purchasing of ethanol for hand sanitizing with the use of the priority supply scheme, which was unprecedented as a cross-ministerial measure.

Then, the Cabinet Office prepared for pushed-mode support in early stages with stockpiling sanitary supplies

(masks, disinfectant, etc.) necessary to combat COVID-19 and other anti-infection supplies such as partitions, in addition to cardboard beds that had been stored in the Cabinet Office. This was because early support was thought to be necessary from the perspective of improving the living environment in shelters, however, it was thought that manufacturing could take some time to catch up with sudden demand.
(References: http://www.bousai.go.jp/pdf/0612_mask.pdf
http://www.bousai.go.jp/pdf/20200617_corona_ethanol.pdf
http://www.bousai.go.jp/pdf/0619_corona_mask_ethanol.pdf)

1-3 Other Methods of Response

(1) Issuance of Disaster Affected Certificates

The Cabinet Office compiled measures to prevent infections and disseminated them to local governments nationwide because there was a concern due to COVID-19 that the three Cs (closed spaces, crowded places, and close-contact settings) might occur when surveying damaged houses and issuing disaster affected certificates.
(Reference: http://www.bousai.go.jp/taisaku/pdf/colona_risai.pdf)

(2) Dispatch of National Staff for Support

Under the circumstances of the ongoing COVID-19 outbreak, dispatch of national staff for support was implemented on a basis that those staff members had been in good health for a long time and that there had been no persons in close contact with said staff members who had been in poor health, paying attention to infection prevention measures such as wearing masks, disinfecting their hands, and disinfecting any shared items.

During the Heavy Rain Event of July 2020, based on a request from Kumamoto Prefecture, each provincial office disseminated items on checklists for hygiene which was prepared by prefectures to all thoroughly before dispatching national staff. After arriving at their destinations, physical condition management including checking daily temperature and subjective symptoms such as abnormal taste was thoroughly investigated. In addition, it was made known among the relevant ministries and agencies that the health status of such staff should be reported to the person in charge of each local department.

Also, regarding the dispatch of supporting staff from local governments, because it is important to take all possible measures to prevent the spread of infectious diseases, and in order to promptly dispatch support to the affected areas, points to be noted in response were notified such as only dispatching staff after checking their health condition and thoroughly managing the health of dispatched staff during their dispatch and after their return.
(Reference: https://www.soumu.go.jp/main_content/000689055.pdf)

(3) Disaster Volunteers

Volunteers often play an important role in the recovery and reconstruction of affected areas and in reconstructing the lives of the affected. For example, in the event of a disaster, volunteers from inside and outside the affected area will rush to the affected area to carry out various support activities for the affected. However,

under COVID-19 crisis, it is necessary to consider prevention of further infection at places where volunteers perform support activities in affected areas. Therefore, the Japan Voluntary Organizations Active in Disaster, which coordinates volunteer activities (hereinafter referred to as "JVOAD"), and Japan National Council of Social Welfare indicated matters to be kept in mind regarding volunteer activities under COVID-19 crisis. In response to this, the Cabinet Office notified local governments of further collaboration between the government, Social Welfare Councils and NPOs, and urged local governments to take action so that support activities for those affected by disasters are carried out effectively even under conditions where there are restrictions on the number of active personnel, such as limiting the acceptance of volunteers to affected areas and neighboring areas due to COVID-19. (Reference: http://www.bousai.go.jp/pdf/tsuchi/volunteer/partnership.pdf)

1. “Guidelines for Disaster Response by Volunteers, NPOs, and Others in Situations of Concern for Infection with COVID-19” (By JVOAD)

The following three items are the basic policies for disaster response, and other points that differ from traditional disaster response, the nature of the activities of NPOs and other support organizations, and what should be prepared and confirmed in providing support in the field.

(1)	Support should be considered on the premise that local intentions should be taken into account.
(2)	Support should be provided mainly within the affected area, and in principle, external support should be provided mainly through remote response.
(3)	When requested by the local Disaster Management Headquarters or the government, supporters who have the necessary know-how for support may work in the affected area.

2. "Establishment and Operation of Disaster Volunteer Centers in Situations of Concern about COVID-19: The Approach of Japan National Council of Social Welfare VCs" (By INCSW)

The following points are provided for the establishment and operation of disaster volunteer centers (hereinafter referred to as "Disaster VCs" in this section) under COVID-19 crisis.

(1)	[Establishment and Operation of Disaster VCs] The decision to establish a Disaster VC should be made based on the needs of the affected people, based on the opinions of experts, and after consultation with the local government. In order to make a quick decision on the establishment of a Disaster VC, necessary information should be discussed with the concerning local governments and decided before disaster strikes.
(2)	[Basic Approach to Recruiting and Accepting Volunteers] The expansion of the scope of volunteer recruitment should be determined through consultation with the local government (prefectural and municipal governments), based on the needs, opinions, and intentions of the residents of the affected areas, in accordance with the local government's basic response policy.
(3)	[Operating with Preventing Spread of Infection in Mind] When performing disaster volunteer activities, thorough measures must be taken to prevent the spread of infection. A pre-registration system should be devised to avoid crowded conditions caused by unspecified large numbers of visitors to Disaster VCs.

Section 2 Major Disasters in FY 2020

Japan is prone to various types of disasters due to its natural conditions, and natural disasters such as floods, Sediment Disaster (Landslide Disaster), earthquakes, and tsunamis occur almost every year. In recent years, the area was severely damaged by the Great East Japan Earthquake in 2011, the Kumamoto Earthquake in 2016, the Heavy Rain Event of July 2018, and the Typhoon Faxai in 2019 (T1915) and Typhoon Hagibis in 2019 (T1919). In FY 2020, notable damage was caused by the Heavy Rain Event of July 2020, heavy snow from December 2020 to January 2021, and the Earthquake Centered Off the Coast of Fukushima Prefecture in 2021. In particular, the Heavy Rain Event of July 2020 caused extensive damage to not only lives and homes but also lifelines and local industries in the Kyushu, Chubu, and Tohoku regions. In addition, since December, intermittent heavy snow fell mainly on the Sea of Japan side from northern to western Japan, and some areas in Kyushu and Shikoku, where snowfall is usually scarce, also received snowfall.

Major Disasters that Occurred in 2020

Major Storm and Flood Disasters (10 or more houses flooded above floor level)

Incident Name	Month	Main Affected Areas
The Heavy Rain Event of July 2020	Jul 2020	Akita, Yamagata, Gifu, Yamaguchi, Fukuoka, Saga, Nagasaki, Kumamoto, Oita, Kagoshima Prefectures

Major Earthquakes

Incident Name	Month	Main Affected Areas
Earthquake with epicenter in Noto region, Ishikawa Prefecture	Mar 2020	Wajima City, Ishikawa Prefecture (seismic intensity: 5+)
Earthquake off the east coast of Chiba Prefecture	Jun 2020	Wajima City, Ishikawa Prefecture (seismic intensity: 5+)
Earthquake with epicenter in the Reihoku area of Fukui Prefecture	Sep 2020	Sakai City, Fukui Prefecture (seismic intensity: 5-)
Earthquake with epicenter off the coast of Ibaraki Prefecture	Nov 2020	Tokai-mura, Ibaraki Prefecture (seismic intensity: 5-)
Earthquake with epicenter off the coast of Iwate Prefecture	Dec 2020	Hashikami-cho, Aomori Prefecture (seismic intensity: 5-)
Earthquake with epicenter in the coastal waters of Tokyo	Dec 2020	Toshima-mura, Tokyo (seismic intensity: 5-)
Earthquake off the east coast of Aomori Prefecture	Dec 2020	Morioka City, Iwate Prefecture (seismic intensity: 5-)
Earthquake with epicenter off the coast of Fukushima Prefecture	Feb 2021	Zao-machi, Miyagi Prefecture; Kunimi-machi, Sonta City, Shinchi-machi, Fukushima Prefecture (seismic intensity: 6+)
Earthquake with epicenter in northern Wakayama Prefecture	Mar 2021	Yuasa-cho, Wakayama Prefecture (seismic intensity: 5-)
Earthquake with epicenter off the coast of Miyagi Prefecture	Mar 2021	Ome City, Osaki City, Wakuya-cho, Misato-machi, Iwanuma City, Miyagi Prefecture (seismic intensity: 5+)

The Heavy Rain Event of July 2020 (Kurume City, Fukuoka Prefecture)

The Heavy Rain Event of July 2020 (Ooe-machi, Yamagata Prefecture)

Volcanic Alert Level (3 and Over)

Sakurajima	Year-round	Volcanic alert level 3
Kuchinoerabujima	Year-round	Volcanic alert level 3
Suwanosejima	Dec 28, 2020	Volcanic alert level 3

- Volcanic alert level 1: Be careful that the volcano is active
- Volcanic alert level 2: Do not approach the crater
- Volcanic alert level 3: Do not approach the volcano
- Volcanic alert level 4: Evacuation preparations
- Volcanic alert level 5: Evacuate

Major Sediment Disaster (Landslide Disaster)

Incident Name	Month	Main Affected Areas
The Heavy Rain Event of July 2020	Jul 2020	Kumamoto, Nagano, Kagoshima, Fukuoka, Kanagawa Prefectures

The Heavy Rain Event of July 2020 (Tsunagi-machi, Kumamoto Prefecture)

Eruption of Sakurajima (Sakurajima Akamizu-cho, Kagoshima Prefecture)

The Heavy Rain Event of July 2020 (Hitoyoshi City, Kumamoto Prefecture)

Path of Typhoon Maysak (2009)
Path of Typhoon Haishen (2010)
Path of Typhoon Dolphin (2012)
Path of Typhoon Chan-hom (2014)

Legend
- Storm and flood disasters ... Main affected areas
- Sediment disasters (Landslide Disaster) ... Main affected areas
- 5- ... Earthquake (seismic intensity)
- Eruption (alert level 3 or higher)

Source: Flood Disaster Report 2020 (Ministry of Land, Infrastructure, Transport and Tourism, Japan)

2-1 Disasters Caused by the Heavy Rain Event of July 2020

(1) Overview

The seasonal rain front expanded and almost stagnated from central China through around the Kyushu region to East Japan from July 3 to July 8, 2020. The rain front was very active, which caused heavy rain in West and East Japan. Especially in the Kyushu region, there was record heavy rain from July 4 to 7. There was also intermittent heavy rain around Gifu Prefecture from July 6, and record heavy rain from July 7 to 8. The Japan Meteorological Agency disseminated a heavy rain emergency warning to seven prefectures: Kumamoto, Kagoshima, Fukuoka, Saga, Nagasaki, Gifu, and Nagano Prefectures, expressing the maximum level of alert.

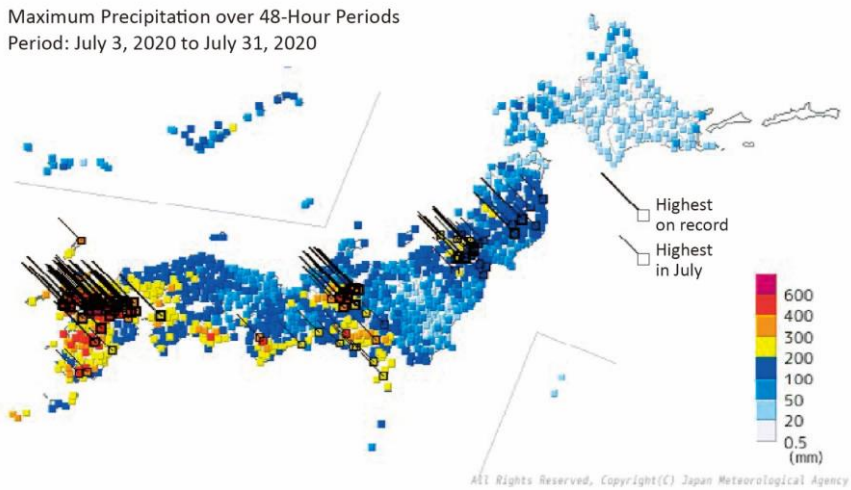
After that, the rain front stagnated around the main island of Japan, with many rainy days across a large region

from West Japan to the Tohoku region. Particularly, there was heavy rain in mainly based around the Chugoku region from July 13 to 14 and mainly around the Tohoku region from July 27 to 28.

The total precipitation from July 3 to 31 was more than 2,000 mm in some locations across Nagano Prefecture and Kochi Prefecture. The 24-, 48-, and 72-hour precipitation amounts exceeded the highest values in recorded history at many locations in the southern and northern Kyushu regions, the Tokai region, and the Tohoku region.

Taking this into account, the Heavy Rain Event of July 2020 became the first event that caused large scale disasters under COVID-19 crisis.

Maximum Precipitation over 48-Hour Periods (July 3 to 31)



Major Precipitation Events (July 3 to 31)

Prefecture	Municipality	Location Name	Precipitation amount (mm)
Nagano Prefecture	Otaki-mura, Kiso-gun	Ontakesan	2135. 5
Kochi Prefecture	Umaji-mura, Aki-gun	Yanase	2032. 5
Gifu Prefecture	Gero City	Hagiwara	1810. 0
Oita Prefecture	Hita City	Tsubakigahara	1714. 5
Wakayama Prefecture	Tanabe City	Gomadanzan	1672. 0

Source: Compiled by the Cabinet Office from the website of the Japan Meteorological Agency

(2) State of Damage

The Heavy Rain Event of July 2020 resulted in 84 deaths (1 in Toyama Prefecture, 1 in Nagano Prefecture, 1 in Shizuoka Prefecture, 2 in Hiroshima Prefecture, 2 in Ehime Prefecture, 2 in Fukuoka Prefecture, 3 in Nagasaki Prefecture, 65 in Kumamoto Prefecture, 6 in Oita Prefecture, 1 in Kagoshima Prefecture), 2 missing (2 in Kumamoto Prefecture), 25 seriously injured (1 in Yamagata Prefecture, 2 in Nagano Prefecture, 1 in Gifu Prefecture, 2 in Hiroshima Prefecture, 5 in Fukuoka Prefecture, 1 in Nagasaki Prefecture, 12 in Kumamoto Prefecture, 1 in Oita Prefecture), and 55 slightly injured. As for damage to homes, 1,620 were completely destroyed, 8,103 were half or partially destroyed, and 6,825 were flooded above or below floor level (Fire and Disaster Management Agency information, as of February 26, 2021).

(Reference: https://www.fdma.go.jp/disaster/info/items/210226_ooame56.pdf)

Human and Housing Damage (as of February 26, 2021)

■ Human Damage

Prefecture	Deaths	Missing Persons	Major and Minor Injuries
Hiroshima	2	0	3
Fukuoka	2	0	9
Nagasaki	3	0	1
Kumamoto	65	2	47
Oita	6	0	2
Other	6	0	18
Total	84	2	80

■ Housing Damage

Prefecture	Completely destroyed	Half destroyed	Partial damage	inundation above floor level	inundation below floor level
Yamagata	1	62	7	150	555
Gifu	6	36	85	31	304
Fukuoka	14	992	977	681	1, 920
Kumamoto	1, 489	3, 097	2, 031	301	441
Oita	68	209	202	129	469
Other	42	113	292	360	1, 484
Total	1, 620	4, 509	3, 594	1, 652	5, 173

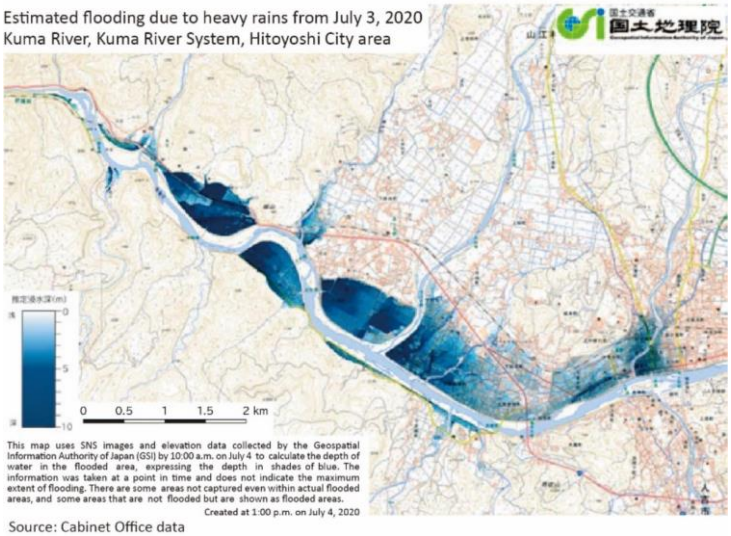
Source: Cabinet Office data

Also, electrical blackout and suspension of water supply occurred mainly in Kyushu, Tokai, and Tohoku regions. In Kumamoto Prefecture, there were approximately 8,800 households (at most) with electrical blackout and 27,000 households (at most) with suspension of water supply. In addition, lifelines such as communication systems failed, there was also severe damage to transportation infrastructure such as roads and railroads, and crops.

10 rivers in 7 water systems managed by the national government and 193 rivers in 58 water systems managed by prefectural governments overflowed due to collapse (embankments were collapsed in 2 places in 1 river managed by the national government and 3 places in 3 rivers managed by the prefectural government), and 961 cases of Sediment Disaster (Landslide Disaster) such as slope failure and debris flows occurred.

In Kuma Village, Kumamoto Prefecture, 14 residents of Senjuen, a special nursing home for the elderly, died due to flood damage. Eighty percent of the people who died due to this disaster were over the age 65, with a high percentage of elderly people affected.

Estimated Flooding Due to the Heavy Rain Event of July 2020
[Kuma River (near Hitoyoshi City)]



Source: Cabinet Office data

Damage caused by the Heavy Rain Event of July 2020

Flooding damage in Kumamoto Prefecture (Kuma Village) (Cabinet Office data)

Flooding damage in Kumamoto Prefecture (Kuma Village) (Cabinet Office data)

Flooding damage in Kumamoto Prefecture (Hitoyoshi City) (Cabinet Office data)

Flooding damage in Kumamoto Prefecture (Kuma Village) (Cabinet Office data)

In addition, the Disaster Relief Act was applied to 98 municipalities in 9 prefectures. Evacuation instruction (emergency) and evacuation recommendation were issued in a total of 34 prefectures, mainly in municipalities of Kumamoto Prefecture. The number of evacuees in shelters reached more than 10,963 at the peak (the Cabinet Office and the Fire and Disaster Management Agency information).

(3) Response by the Government

When the first heavy rain emergency warning was issued at 4:50 A.M. on July 4, 2020, the government gave instructions on the "timely and accurate information sharing with the public," "evacuation support and other pre-disaster measures," and "government-wide disaster response measures in the event of damage" from then Prime Minister Abe. Since the same day, a Ministerial Meeting had been held, and Cabinet Office Survey Teams had been dispatched to the Kumamoto and Kagoshima prefectural governments. The police, the fire department, Self-Defense Forces, the Ministry of Land, Infrastructure, Transport and Tourism, and other organizations dispatched units from all over Japan to the affected areas immediately after the disaster to conduct rescue and relief activities, secondary disaster prevention activities, and livelihood support.

On July 5, the first meeting of “the Major Disaster Management Headquarters of the Heavy Rain Event of July 2020" was held with Prime Minister Abe in attendance (the same meeting was held 12 times through July 30).

On July 13, then Prime Minister Abe and then Minister of State for Disaster Management from the Cabinet Office Takeda conducted a site visit to Kumamoto Prefecture. In addition, then Minister of State for Disaster Management from the Cabinet Office Takeda conducted a site visit to 5 prefectures (Kumamoto Prefecture on July 4, 5, and 8, Fukuoka Prefecture on July 7, 15, and 16, Kagoshima Prefecture on July 9, Oita Prefecture on July 16, and Gifu Prefecture on July 23), and Minister of State for Disaster Management from the Cabinet Office Okonogi conducted a site visit to Kumamoto Prefecture (September 26).

On July 6, the " Team to Support the Daily Lives and Livelihood Restoration of Affected People" was established under the direction of then Prime Minister Abe, consisting of officials at the level of vice-ministers from various ministries and agencies. On July 30, the team decided on the "Package for the Restoration of Lives and Livelihoods of the Affected," as a set of urgent measures to be taken, based on the needs of the affected areas and the characteristics of each area. In addition, on July 14, the Cabinet Office decided to use reserve funds of approximately 2.21 billion yen, and on July 31, 101.7 billion yen together with the formulation of this Package of Measures.

For the affected local governments, the government procured and shipped supplies necessary for daily life and anti-infectious disease (masks, antiseptic solution, and partitions), and provided support for those affected (push-mode support). In this case, the "Relief Goods Procurement and Transport Coordination Support System," which had been in operation since April 2020, was used to transport relief supplies more efficiently than in the past, based on inventory information registered in advance by the affected local governments.

On August 25, 2020, the Cabinet approved a cabinet order to designate disasters caused by torrential rain during the period from May 15 to July 31, 2020 as severe disasters (See APPENDIX 14-1 (A-33～A-35)).

In addition, support staff were dispatched to the affected local governments based on the "Staff allocation system to support local governments in affected areas." General Adviser Teams from 10 prefectures and cities consisting of a total of approximately 460 members were dispatched, and supported the operation of the disaster management headquarters to support disaster management in the 8 affected municipalities of Kumamoto Prefecture. Also, a total of approximately 5,900 support staff from 11 prefectures and cities were dispatched to provide aid, such as house surveying for disaster certification, after deciding on counterpart local governments to provide support to the affected cities, towns, and villages.

The Major Disaster Management Headquarters for the Heavy Rain Event of July 2020 (1st)

The site visit by then Prime Minister Abe and then Minister of State for Disaster Management from the Cabinet Office Takeda

2-2 Response at Shelters under the Heavy Rain Event of July 2020

To utilize the experience and know-how gained from the Heavy Rain Event of July 2020 in the affected areas for future disaster response, such information, including the perspective of response under COVID-19 crisis, was compiled, and notified to local governments nationwide.

(1) Shelter Management under COVID-19 crisis

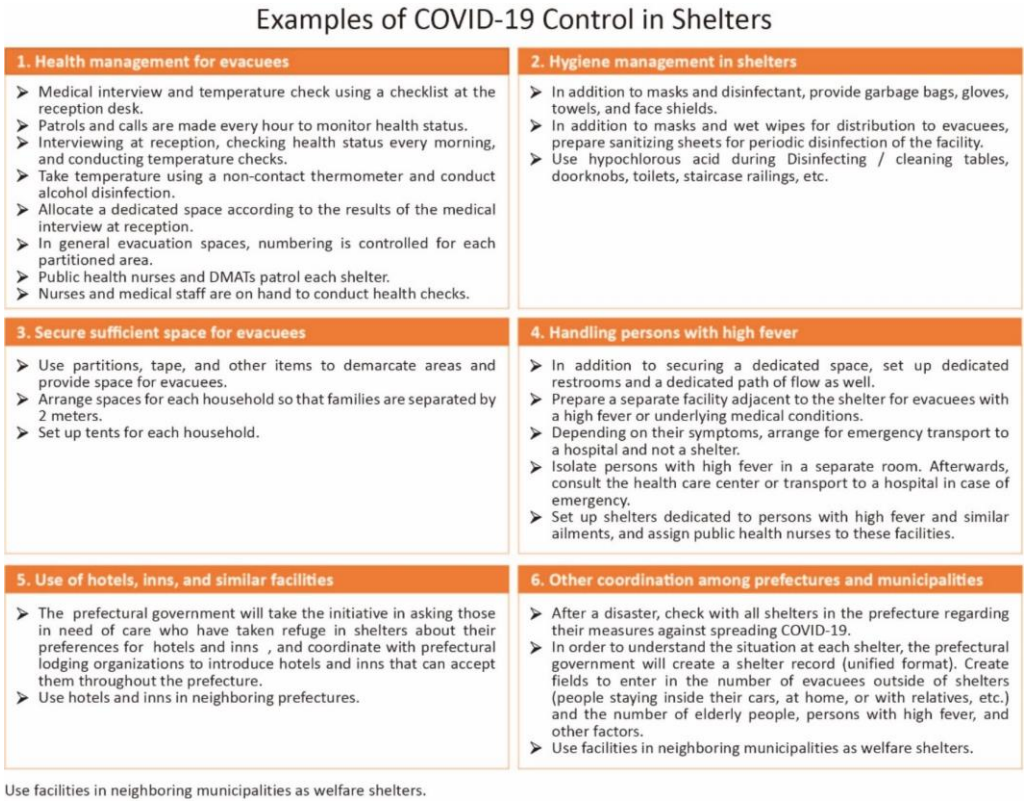
The Heavy Rain Event of July 2020 was the first large-scale disaster under COVID-19 crisis. Regarding countermeasures against COVID-19 in shelters, local governments have been urged to take measures necessary under COVID-19 crisis through notifications and other means. In order to avoid the three Cs, based on the examples of layouts in shelters and the Q & A and other notifications, health management and response to those with a fever were carried out, not only by hygiene management with masks and disinfectant at the shelters and securing sufficient space for evacuees with partitions and cardboard beds, but also by conducting temperature checks and medical interviews at the reception desk and allocating dedicated space according to the results. The government provided push-mode support such as non-contact thermometers and partitions based on the needs of the affected areas.

To cope with COVID-19 countermeasures, it became necessary to secure a larger space per person in shelters than in past cases. Due to this inevitable coordination, the capacity at each evacuation decreased to a level much lower than expected, and some facilities provided spaces as shelters which had not been planned at the time of disaster. However, countermeasures against infectious diseases in the shelters were mostly taken in an appropriate manner.

In addition, since the Heavy Rain Event of July 2020 were a summer disaster, it was urged that heat-related measures should be taken to prevent heat stroke in shelters.

Use of cardboard beds (Cabinet Office data)

Use of partitions (Cabinet Office data)



(2) Use of Hotels and Inns as Shelters

During the Heavy Rain Event of July 2020, damage was concentrated in the cities and towns along the Kuma River in Kumamoto Prefecture, and measures were taken to rent facilities (such as old school buildings) outside the cities and towns to secure shelters.

In addition, based on an agreement with the Kumamoto Prefectural Ryokan Hotel Association, Kumamoto Prefecture secured hotels and inns throughout the prefecture that were able to accept the evacuees, and decided to cover the costs of this rented space using national treasury's sharing under the Disaster Relief Act. At the same time, Kumamoto Prefecture took the initiative in securing shelters for people with special needs. In addition, with the cooperation of the Kumamoto Prefectural Ryokan Hotel Association, measures were takento temporarily repair damaged hotels and inns and utilize them as shelters.

(3) Support for Evacuees outside Shelters

Preparation is necessary so that an appropriate response can be taken because shelters will not only serve as a place to disseminate information to evacuees, including those who are outside of shelters, but will also be places to gather information and receive necessary supplies as local hubs for support.

During the Heavy Rain Event of July 2020, there were a considerable number of evacuees outside the shelters because people were urged to evacuate to their homes or the homes of relatives or acquaintances from the perspective of countermeasures against COVID-19, and isolated settlements occurred. In the affected municipalities in Kumamoto Prefecture, efforts were made to identify evacuees outside of the shelters, and support was provided in the form of necessary supplies, medical care, nursing care and other services by many ways as possible by cooperating with neighborhood associations and medical and welfare related organizations, in

addition to the government. Specifically, circumstances of the evacuees were grasped and support were provided according to their state, as follows:

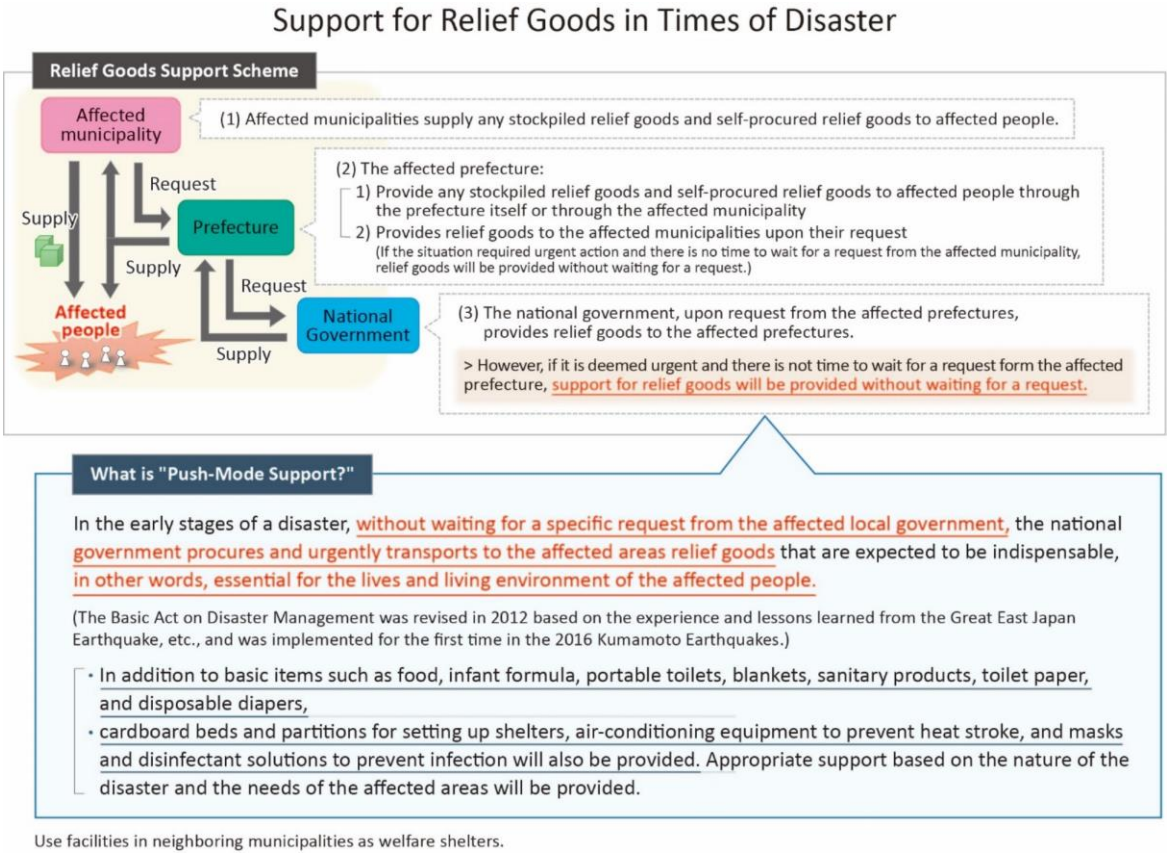
1. For those who require assistance evacuating such as the elderly and people with special needs who require nursing care, monitoring the state of safety and health by care managers.
2. For elderly and people with disabilities households, conducting home visits by health centers based on information provided by welfare volunteers.
3. For other households, identifying evacuees and their support needs at the time of application for disaster affected certificate.

2-3 Measures for Push-Mode Support during the Heavy Rain Event of July 2020

(1) Push-Mode Support

In the event of a large-scale disaster, it is difficult for the affected local governments to quickly procure necessary supplies on their own, as it takes time for them to obtain accurate information and the capacity of private sector supply is reduced.

In such cases, the national government should not wait for specific requests from the affected prefectures. Instead, relief supplies are being provided to shelters through a push-mode support that procures relief supplies that are expected to be essential, mainly for evacuees in shelters, and urgently transports the relief supplies to the affected areas (push-mode support has been implemented for the 2016 Kumamoto Earthquake, the Heavy Rain Event of July 2018, the Hokkaido Eastern Iburi Earthquake, the Typhoon Hagibis in 2019 (T1919), and the Heavy Rain Event of July 2020.).



In the Heavy Rain Event of July 2020, approximately 1.37 million items of relief supplies were provided to Kumamoto Prefecture. Specifically, in addition to food and beverages, necessary material support was provided based on the needs of the affected areas, including cardboard beds to improve the environment of shelters, cooling equipment to prevent heat stroke, and partitions and non-contact thermometers for COVID-19 countermeasures.

Push-Mode Support Items for Kumamoto Prefecture after the Heavy Rain Event of July 2020

Location Name	Quantity (arrived)
Food (packed rice, retort food)	118,679
Beverages (water, tea, sports drinks, vegetable juices)	199,554
Cardboard beds	1,500
Cooling equipment (air-conditionning units, portable AC units)	316
Temporary and portable toilets (temporary toilets include western type and multipurpose)	80
Childcare and nursing supplies (wipes, diapers, baby bottles, wheelchairs, etc.)	5,460
Emergency materials (sandbags, dust masks/ goggles, blue tarps, etc.)	747,790
Electrical appliances (refrigerators, washing machines, LED lanterns, etc.)	2,968
Other household goods (clothing, underwear, bedding, sanitary products, cleaning products, various miscellaneous goods)	271,138

Location Name	Quantity (arrived)
Fabric partitions	1,939
Tent-type partitions	120
Non-contact thermometers, body temperature measurement devices	208
Other infection prevention supplies (masks for adults and children, disinfectant, face shields)	17,860

Contribute to rapid environmental improvement and prevention of infectious diseases in shelters

Source: Cabinet Office data

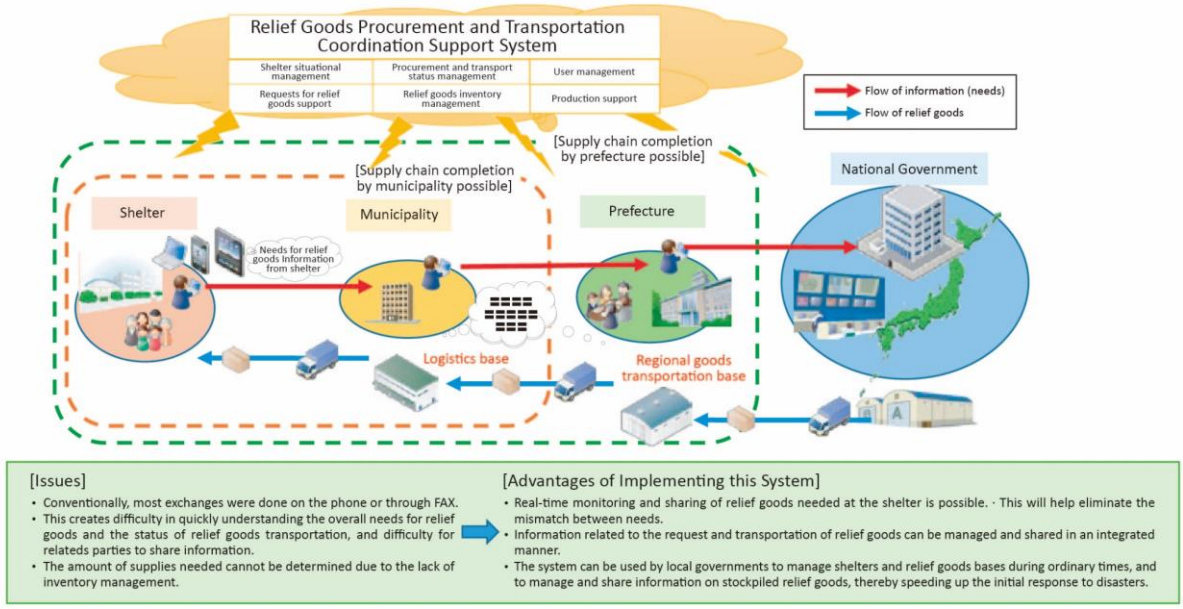
(2) Support System for Coordinating Relief Supplies and Transportation

The Cabinet Office shared necessary information on coordinating the relief supplies and transport with the national government, prefectures, and municipalities in real time, and developed a support system for coordinating the relief supplies and transport, which enables efficient coordination, and put the system into operation since FY 2020.

In addition, in March 2021, operation and information transmission training for the "Relief Goods Procurement and Transport Coordination Support System" on the assumption of Nankai Trough earthquake was conducted to help local government officials learn to operate the system for prefectures and municipalities that fall under the "Municipalities Designated as Areas for the Promotion of Nankai Trough Earthquake Disaster Risk Reduction Countermeasures."

Relief Goods Procurement and Transportation Coordination Support System Outline

- This system is designed to share information necessary for the procurement and transportation of relief goods between the national and local governments, and to streamline coordination in order to provide relief goods to affected people promptly and smoothly.
- A system was developed to enable the national government, prefectures, and municipalities to share information regarding relief goods (needs, procurement and transportation status, etc.) at prefectural or municipal bases for relief goods and at shelters. This system started operation in FY2020.



[Issues]
- Conventionally, most exchanges were done on the phone or through FAX.
- This creates difficulty in quickly understanding the overall needs for relief goods and the status of relief goods transportation, and difficulty for relateds parties to share information.
- The amount of supplies needed cannot be determined due to the lack of inventory management.

[Advantages of Implementing this System]
- Real-time monitoring and sharing of relief goods needed at the shelter is possible. · This will help eliminate the mismatch between needs.
- Information related to the request and transportation of relief goods can be managed and shared in an integrated manner.
- The system can be used by local governments to manage shelters and relief goods bases during ordinary times, and to manage and share information on stockpiled relief goods, thereby speeding up the initial response to disasters.

Source: Cabinet Office data

2-4 Response by Volunteers, NPO and Others

(1) Volunteer Response to the Major Disasters that Occurred in 2020

During the Heavy Rain Event of July 2020, 28 disaster volunteer centers (hereinafter referred to as "Disaster VCs" in this section) were set up by Social Welfare Councils in Yamagata, Gifu, Shimane, Fukuoka, Nagasaki, Oita, and Kumamoto Prefectures, and a cumulative total of 48,000 volunteers worked through these Disaster VCs (as of April 15, 2021). At the beginning of a disaster, the volunteers carried out activities such as removing mud from houses and clearing away furniture. During the recovery and reconstruction period, support activities for affected people were carried out according to local conditions, such as “looking after” activities, which included watching over the elderly and people with disabilities. In order to prevent the spread of COVID-19, volunteers were recruited only within the affected prefecture and municipalities. The volunteers were asked to take basic infection prevention measures such as wearing masks, washing their hands, and keeping a safe distance between themselves and others. In Kumamoto Prefecture, to compensate for the decrease in the number of volunteers and to provide support through reconstructing livelihoods of the affected people, removal of disaster waste and sediment from the affected houses, which was previously normally carried out by volunteers, was outsourced to local private business operators through the city's disaster waste disposal project. In implementing the project, there was coordination for the division of labor with volunteer activities. In this way, the government, private business operators, and volunteers worked together to implement the project.

In addition to the support provided by volunteers through the Disaster VCs, NPOs and other organizations with expertise provided support in a wide range of fields, including technical assistance to homes of the affected, such as removal of mud and collision of debris, handling of disaster waste in the affected areas, support for the operation of shelters, support for evacuees at home, support for temporary housing, and support for livelihoods.

Activity Status of Disaster Volunteer and Information Sharing Meetings

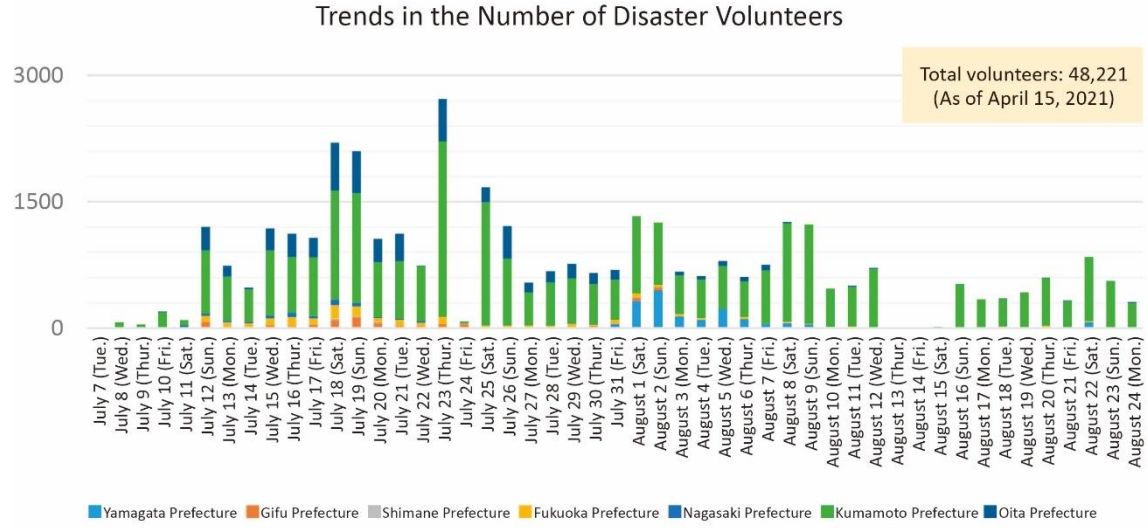
	The Heavy Rain Event of July 2020 (as of April 15, 2021)
Number of disaster VCs	28
Number of disaster volunteers (total) *1	48,221
Number of NPOs and other organizations engaged in volunteer activities *2	196

*1: Number of volunteers managed by a disaster VC

*2: Number of organizations that participated in information sharing meetings in Fukuoka, Kumamoto, and Oita Prefectures

Source: Cabinet Office survey

Trends in the Number of Disaster Volunteers



Source: Cabinet Office data

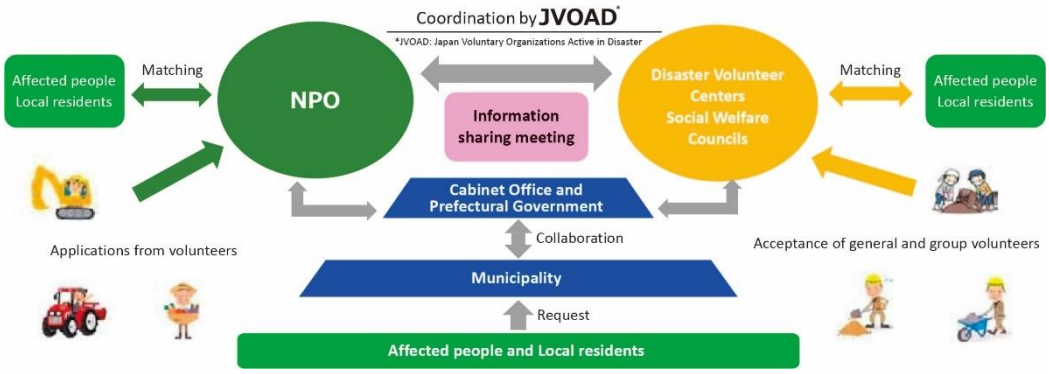
Volunteer activities at the time of the Heavy Rain Event of July 2020

(2) Development of Cooperation Among Various Entities for Disaster Relief Such as Government, Volunteers, and NPOs

Since the 2016 Kumamoto Earthquake, it has become a well-established practice that, in the event of large-scale disasters, various support entities for disaster relief such as the government, Social Welfare Councils, and NPOs in the affected areas set up information sharing meetings to share information on support activities and coordinate their activities.

Regarding the Heavy Rain Event of July 2020, regular information sharing meetings were held in each affected area (Gifu, Fukuoka, Saga, Kumamoto, and Oita Prefectures) after July 7, 2020, and coordinated support was provided by the government, volunteers, and NPOs to address the shortage of volunteers and to support evacuees at home. Particularly in Kumamoto Prefecture, collaboration and coordination was achieved in Hitoyoshi City and Kuma Village, where NPOs supported the operation of shelters.

Cooperation Among Various Entities Supporting Affected People - Government, Disaster VCs, NPOs, etc.



Status of Information Sharing Meetings held in Each Affected Prefecture

Gifu Prefecture	Gifu Prefecture disaster volunteer liaison and coordination meetings (7/13, 7/21)
Fukuoka Prefecture	Fukuoka Prefecture information sharing meetings on the Heavy Rain Event of July 2020 (7/11, 7/21, 7/30, 8/6)
Saga Prefecture	"Hagakure" meetings (7/17, 7/24)
Kumamoto Prefecture	Fire Nation meetings (daily from 7/7~, every Tuesday and Thursday from 8/4~) *Held periodically since the Kumamoto Earthquake, but from July 8, 2020, discussions related to the Heavy Rain Event of July 2020.
Oita Prefecture	Let's Think Together about the Affected Areas in Oita! (7/11, 7/16, 7/22, 7/29, 8/5, 8/12, 9/2)

A regular information sharing meeting in Kumamoto Prefecture

As a nationwide measure, the Cabinet Office, JVOAD, the Japan National Council of Social Welfare, the Project Meeting for Supporting Disaster Volunteer Activities (Support P), and other organizations held a "National Core Meeting for Information Sharing" to study ways to support the affected areas without a major migration of people, due to fears of spreading COVID-19.

The National Information Sharing Core Conference

【Column】

Manual on Disaster Waste Management Developed

Between the Ministry of the Environment and the Self-Defense Forces

In recent large-scale disasters such as the 2016 Kumamoto Earthquake, the Heavy Rain Event of July 2018, the Typhoon Hagibis in 2019 (T1919), and the Heavy Rain Event of July 2020, enormous amounts of disaster waste were generated over wide areas, and there were cases where this waste accumulated on the streets because municipalities and private business operators alone could not establish an adequate collection and transportation system. For this reason, the affected local governments have established collection and transportation systems with the support of assisting municipalities and private business operators, and related ministries and agencies, including the Ministry of the Environment (MOE), the Self-Defense Forces, and volunteer organizations.

Based on the know-how accumulated through these efforts, and in accordance with the Basic Disaster Management Plan, MOE and the Ministry of Defense (MOD) formulated the "Manual for Coordinated Response for Removal of Disaster Waste" in August 2020. The manual outlines the division of roles among the parties involved, including MOE, MOD, local governments, and NPOs, as well as measures to be taken in normal times and in the event of a disaster.

In the manual, it is assumed that the municipalities are in principle responsible for the disposal of disaster waste, and that these municipalities will work together with related organizations to address the problem. Based on this, MOE will be responsible for the overall coordination of the division of roles at the time of the disaster, informing municipalities of financial support measures, and providing advice, including promoting the conclusion of agreements with private business operators. On the other hand, MOD, the Self-Defense Forces, upon request from the affected prefectures, will carry out "emergency measures in cases where the situation is deemed unavoidable," after clarifying the purpose of removing disaster waste, as well as the scope and the duration of operations.

In the manual, the "One NAGANO" initiative in Nagano City, Nagano Prefecture is discussed as a concrete example of good practices for collaboration among stakeholders. This initiative realized effective removal of the waste generated by the Typhoon Hagibis in 2019 (T1919) by dividing roles among stakeholders so that all involved, including citizens, volunteers, prefectural and municipal governments, MOE, the Self-Defense Forces, and private businesses, could work together efficiently.

The "Manual for Coordinated Response for Removal of Disaster Waste" can be found on MOE's Disaster Waste Management Information Website and other sites. We will continue to strengthen cooperation in order to respond smoothly and promptly to the generation of disaster waste.

(Source: http://kouikishori.env.go.jp/action/cooperation/pdf/cooperation_01.pdf (Japanese only))

Before and after the Self-Defense Forces work (July 16, Kuma Village, Kumamoto Prefecture)

【Column】

Cooperation with the Self-Defense Forces and Utilization of Civilian Power in Handling Disaster Waste from Houses in Hitoyoshi City

The Heavy Rain Event of July 2020 caused damage in Kumamoto Prefecture and other parts of Kyushu and Chubu regions of Japan, resulting in the generation of considerable amounts of disaster waste. MOE dispatched a local support team consisting of MOE staffs, staffs from supporting local governments, and experts from the Disaster Waste Treatment Support Network (D.Waste-Net). In addition, it dispatched garbage and waste collection vehicles from local governments and private business operators in and outside of the prefecture in cooperation with the Japan Waste Management Association and private organizations, and provided in-depth technical support via regional environmental offices, as well as financial support for disaster waste processing and facility restoration.

In Hitoyoshi City, Kumamoto Prefecture, one of the municipalities severely affected by disaster waste, support for the removal of large disaster waste was provided to those who had difficulty disposing of it during the initial phase of the disaster. While tatami mats, furniture, home appliances, and metals are heavy and sometimes difficult to handle in the removal of waste, through smooth cooperation with the Self-Defense Forces and private business operators, these four items were removed and cleanup work made progress due to the removal of sorted bulky waste, thus strongly contributing to the rebuilding of people's lives. Specifically, taking into account the fact that the disaster occurred under COVID-19 crisis, local companies and volunteers were informed in advance and they first carried out the removal of waste from houses in the city area. After transporting bulky disaster waste from houses to the collection points, Self-Defense Forces personnel loaded tatami mats, furniture, home appliances, and metals from the collection point onto trucks, unloaded them at special temporary storage sites, and had them transported to disposal sites by private business operators under the supervision of local government employees. In addition, MOE, in cooperation with supporting local governments and related organizations in the private sector, implemented steadily wide-area treatment of disaster waste by road and sea transport, and established a system for demolishing damaged houses.

In the event of a large-scale disaster, assistance and cooperation from a variety of parties, including private business operators and volunteer groups, is essential for waste management, so we will continue to build a system of cooperation in preparation for such an event at ordinary time.

Support for removal of bulky disaster waste (Hitoyoshi City, Kumamoto Prefecture)

1. Before the removal of bulky disaster waste (July 11)

2. Self-Defense Forces at work (July 11)

3. After the SDF operations (July 11)

4. Clean-up operation in progress (July 12)

5. After all operations (July 12)

【Column】

About Typhoon Haishen in 2020 (T2010)

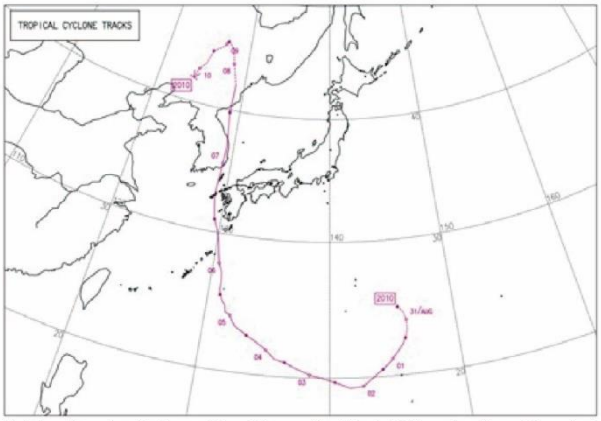
Typhoon Haishen in 2020 (T2010), a large and very strong typhoon, developed to an emergency warning level from September 5 to 7, 2020, and approached the Okinawa and Amami regions. It continued to move northward while maintaining its emergency warning level, and there was a possibility that it would approach or make landfall in Kyushu. At the time, it was expected that areas possibly hit by the typhoon would need to take the greatest precautions against record-breaking rainfall, windstorms, high waves, and storm surges. On September 4 and 6, the Minister of State for Disaster Management, Takeda, issued a call for the early evacuation of the people. On September 5, the Cabinet Office, the Fire and Disaster Management Agency, the Ministry of Health, Labour and Welfare, the Ministry of Land, Infrastructure, Transport and Tourism, and the Japan Meteorological Agency sent a message to the prefectures concerned, asking governors and vice governors to call on their residents to evacuate urgently, to do what is needed for disaster prevention and evacuation, and to send the same message to the mayors of their municipalities.

Typhoon Haishen in 2020 (T2010) approached the Nansei Islands and Kyushu with extremely strong force from September 5 to 7, and then made landfall on the Korean Peninsula, changing to an extratropical storm at 3:00 a.m.

on September 8. The maximum wind speed was 44.2 meters per second and the maximum wind gust speed was 59.4 meters per second at Nomozaki in Nagasaki Prefecture, while violent or extreme windstorms were observed mainly in the Nansei Islands and Kyushu, exceeding the highest values in recorded history. In addition, a severe storm across the Nansei Islands and Kyushu caused high waves of 11.4 meters were observed off Hyuga, Miyazaki Prefecture, and 10.4 meters off Yakushima Island, Kagoshima Prefecture. The total precipitation in Mikado, Miyazaki Prefecture from the 4th to the 7th was 599.0 mm, and the 24-hour precipitation exceeded 400 mm at four locations in Miyazaki Prefecture. The 24-hour precipitation exceeded 200 mm in western Japan and the Pacific Ocean coast of eastern Japan, which were far from the center of the typhoon.

Typhoon Haishen in 2020 (T2010) caused human casualties, including 3 deaths and 3 missing persons, as well as damage to 7 houses that were completely destroyed, 40 houses that were partially destroyed, and 1,637 houses that were partially damaged, mainly in the Kyushu region centered on Kagoshima Prefecture. In addition, Sediment Disaster (Landslide Disaster) occurred and approximately 530,000 households with electrical black out, 4,600 households with suspension of water supply, and roads, railroads, and other transportation infrastructure, as well as crops, were damaged.

Route Map of Typhoon Haishen in 2020 (T2010)



The "○" symbols on the path indicates position at 9:00 a.m. and the "●" symbols indicates the position at 9:00 p.m. (both times are Japan Standard Time) on the day indicated there-beside, and the →| symbol indicates dissipation. The solid line indicates the path of the typhoon, and any dashed lines indicate periods of tropical and extratropical cyclones.

Source: Cabinet Office data

Human Casualties and Housing Damage (as of December 10, 2020)

■ **Human casualties**

Prefecture	Fatality	Missing Persons	Injured
Saga	1	0	7
Nagasaki	0	0	16
Kumamoto	0	0	22
Miyagi	1	3	7
Kagoshima	1	0	14
Other	0	0	55
Total	3	3	110

■ **Housing damage**

Prefecture	Completely destroyed	Half-destroyed	Partially damaged	Above-floor flooding	Below-floor flooding
Mie	0	0	1	7	83
Fukuoka	0	1	195	0	0
Nagasaki	4	15	24	0	0
Miyagi	2	0	6	0	5
Kagoshima	1	20	1,276	1	3
Other	0	4	135	23	145
Total	7	40	1,637	31	236

Source: Cabinet Office data

2-5 Facilitating Evacuation in Future Tropical Cyclones based on Typhoon Haishen in 2020 (T2010)

Typhoon Haishen in 2020 (T2010) was expected to approach or make landfall on Kyushu while maintaining strong wind forces. As such, the highest level of caution was required. However, there were many cases where shelters reached their capacity, requiring residents to be referred to other shelters. This occurred even though relevant local governments urged residents for immediate evacuation, and many acted for early evacuation with a sense of crisis.

The Cabinet Office conducted a survey on the actual operation of shelters in regions which had many evacuees due to Typhoon Haishen in 2020 (T2010), summarizing important points for local governments to be aware of both at ordinary time and during a potential future tropical cyclone approach, and sent them to local governments all over Japan. The following are the main points to keep in mind.

(1) Publicity and Public Relations to Promote the Securing of Various Evacuation Sites

To consider effective means of disseminating information even at ordinary time, for example, to utilize services such as distributing evacuation information to household wireless radio receivers and landlines and providing information on local governments' websites. This is for spreading information to residents such as which evacuation sites to go to, timely details including how congested shelters are, and so on. This is an important point because it has been made aware that the municipal disaster management radio communications system can become difficult to hear during a tropical cyclone.

(2) Publicity of Capacity for Facilitating Evacuation

During Typhoon Haishen in 2020 (T2010), shelters were required to avoid the "three Cs" as COVID-19 countermeasures, and the capacity at each shelter was limited. They were over their capacity in many municipalities. This led to the following types of responses:

1. Referring residents to other shelters (when weather permits).
2. Opening additional evacuation spaces inside shelters which were not originally intended for that purpose.
3. Establishing additional shelters in haste.

Based on the above types of responses, we announced the following to local governments.

1. At ordinary time, prepare to urge residents to evacuate at early stages of a disaster.
2. Spread information to decentralize evacuation by telling residents to evacuate to safe locations such as the homes of relatives or acquaintances, hotels, inns, and so on. In addition, make an announcement that those that are already in safe locations are not required to evacuate.
3. Many municipalities, to inform residents that the capacity at shelters had been exceeded, posted announcements on bulletin boards or provided information directly from staff at the shelters. On the other hand, some municipalities spread or publicized the status of newly established shelters and their capacities to the residents using their local government website, disaster prevention emails /apps, disaster prevention radio services.

4. To prevent evacuees from concentrating in specific shelters, updating the status of shelters on the Internet enabled residents to evacuate based on appropriate information and was an effective method because it prevented the evacuees from moving between shelters.

(3) Opening of Necessary Shelters at the Outset of Disaster

As some shelters reached their capacity, residents were referred to other shelters. As much as possible, it is important to establish any necessary shelters from the outset of a disaster by judging the magnitude of the disaster appropriately. While some municipalities were able to open shelters as necessary, information of new shelter may not reach residents quickly enough, which may lead to risks as residents must be moved from one shelter to another.

2-6 Disasters Caused by Heavy Snow from December 2020 to January 2021

(1) Overview

Heavy snowfall from December 2020 to January 2021 caused heavy damage such as stranded vehicles and fatalities due to accidents during snow-removal work.

As for the Heavy Snowfall since December 16, 2020, a strong winter pressure system from December 14 to 21 caused intermittent snowfall mainly on the Sea of Japan side from northern to western Japan, and the total amount of snowfall for the period (December 14 to 21) was 291 cm at Fujiwara, Gunma Prefecture. In addition, snowfall rose to 278 cm in Tsunan, Niigata Prefecture, and 243 cm in Sukayu, Aomori Prefecture, and heavy snowfall occurred mainly in the mountainous areas of the Kanto, Hokuriku, and Tohoku regions. Also, in Fujiwara, Gunma Prefecture, the maximum snowfall for periods of 48 and 72 hours were the highest ever recorded in Japan (based on Automated Meteorological Data Acquisition System (AMeDAS) observations). This heavy snowfall caused road closures, suspension of operations of rail services, stopped flight and ship services, and other traffic disruptions from northern to western Japan, as well as accidents during snow-removal work. In particular, more than 2,000 vehicles were stranded on the Kan-etsu Expressway in Niigata Prefecture and Gunma Prefecture, and it took more than two days to move the vehicles and lift the road closure. During this heavy snowfall, the Disaster Relief Act was applied to a city and a town in Niigata Prefecture.

In the heavy snowfall that began on January 7, 2021, a rapidly developing low pressure system and a strong winter-type pressure system caused intermittent heavy snowfall mainly on the Sea of Japan side from northern to western Japan. There were places where snow accumulated even in Kyushu, where snowfall is usually rare. Snowfall amounts for the period from the 7th to the 11th were 213 cm in Takada, Niigata Prefecture, 192 cm in Shirakawa, Gifu Prefecture, 158 cm in Ono, Fukui Prefecture, and 21 cm in Nagasaki, Nagasaki Prefecture. In addition, as snow clouds continued to move in from the 7th to the 9th, a significant snowfall of over 20 cm per 3 hours was observed in the general Hokuriku region. Also, on January 9, in Takada, Niigata Prefecture, 103 cm of snowfall for 24 hours was observed, recording the highest amount of snowfall in history. This heavy snowfall and other factors caused electrical blackout across a wide area of Akita and Niigata prefectures, as well as accidents during snow-removal work. In addition, traffic disruptions such as road closures, suspension of operations of rail services, and stopped aircraft and ship services occurred from northern to western Japan, and vehicles were

stranded in Fukui Prefecture and other areas (on the Hokuriku Expressway, approximately 1,600 vehicles were delayed due to large vehicles getting stuck in the snow, etc.). In this heavy snowfall, the Disaster Relief Act was applied to 4 cities, 2 towns, and a village in Akita Prefecture, 6 cities in Niigata Prefecture, 5 cities in Fukui Prefecture, and 4 cities in Toyama Prefecture.

On January 19, the Tohoku Expressway off-ramp (northbound) in Osaki City, Miyagi Prefecture, a traffic accident in which first, a large-sized vehicle crashed with a passenger vehicle, was followed by the accident of multiple collisions over a total distance of approximately 7 km in 5 locations (175 vehicles (approximately 200 people) were involved). At the time of the accident, the site was reportedly in whiteout conditions due to a snowstorm, and the accident resulted in a fatality, 4 serious injuries, and 14 slight injuries.

The number of fatalities due to snow this winter (up to April 30, 2021) was 110, with 675 seriously injured and 1,030 slightly injured (Fire and Disaster Management Agency information, as of May 14, 2021).

(2) Response by the National Government

In response to the Heavy Snowfall since December 16, 2020, the national government held Inter-Agency Disaster Alert Meetings from 1:00 p.m. on December 16, 2020. The next day, at 6:55 a.m. on the 17th, the liaison office was established, and at 7:45 a.m. on the same day, it was reorganized as the Emergency Response Office in the Prime Minister's Office. In addition, a Ministerial Meeting on the Heavy Snowfall was held at 3:35 p.m. on the same day.

In response to the heavy snowfall that began on January 7, the national government held Inter-Agency Disaster Alert Meetings from 1:15 p.m. on January 6, 2021. Then, at 3:30 p.m. on the 8th of the same month, a Ministerial Meeting on the Heavy Snowfall was held. Also, on the 14th of the same month, Minister of State for Disaster Management, Japan, Okonogi, visited the sites of Niigata and Toyama Prefectures.

In addition to ensuring the safety and security of the affected people, on January 22, the national government compiled a list of measures, including support for the affected people and affected local governments, so that the affected local governments can tackle snow removal and other rehabilitation measures without hesitation.

Stranded vehicles on the Kan-etsu Expressway (December 18, 2020)
(Ministry of Land, Infrastructure, Transport and Tourism data)

2-7 Disasters Caused by Earthquake Centered Off the Coast of Fukushima Prefecture in 2021

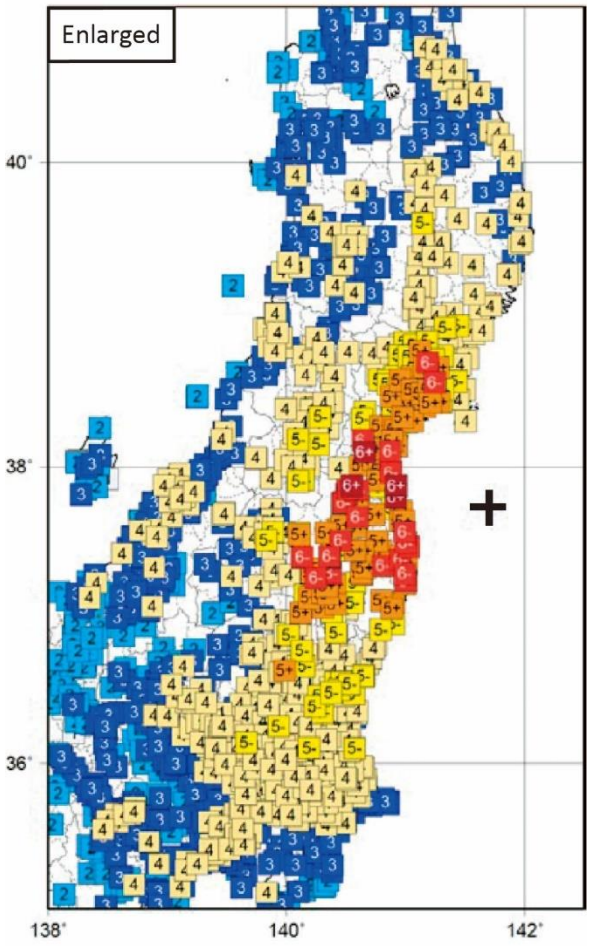
(1) Overview

At 11:07 p.m. on February 13, 2021, a magnitude 7.3 earthquake occurred at a depth of 55 km offshore of Fukushima Prefecture. The seismic intensity was 6+ in Kunimi-machi, Soma City, and Shinchi-machi, Fukushima Prefecture, and Zao-machi, Miyagi Prefecture, and 6- to 1 in the area through Hokkaido to Chugoku region, and the Tohoku region was mainly affected.

As a result of this earthquake, a 0.2 m tsunami was observed at the Ishinomaki Port in Miyagi Prefecture, and a 0.1 m tsunami was observed at Ayukawa, Ishinomaki City, the Sendai Port in Miyagi Prefecture, and Soma City in Fukushima Prefecture (tsunami observation values are preliminary).

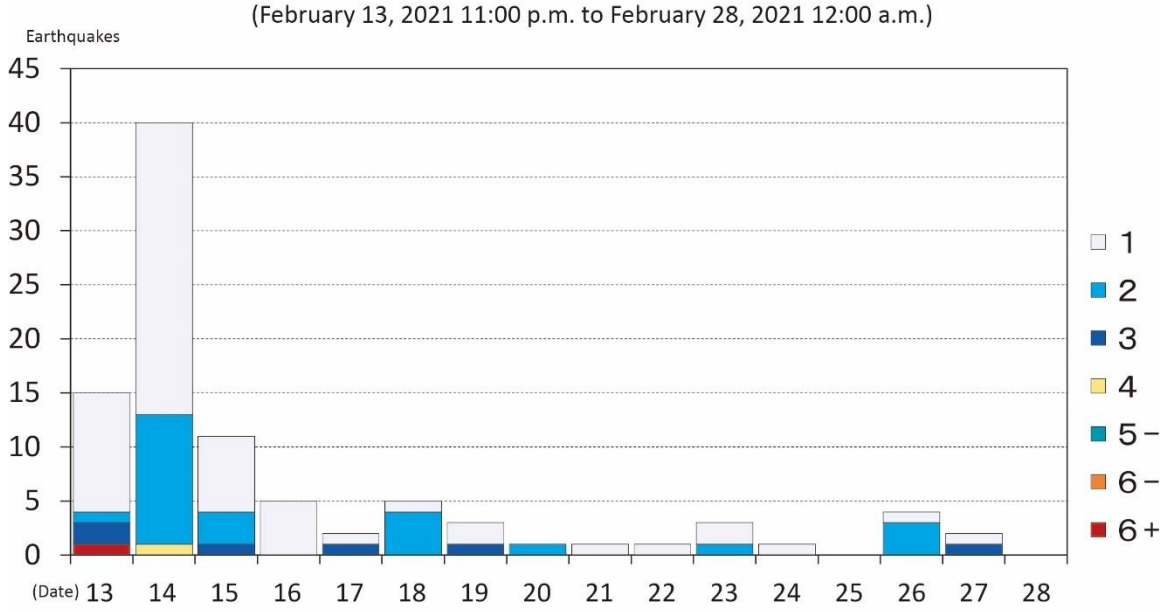
Since this earthquake occurred, earthquake activity remained active near the epicenter, with 93 earthquakes of seismic intensity 1 or higher recorded by February 28, including 7 earthquakes of seismic intensity 3 or higher.

Seismic Intensity Distribution



Source: Compiled by the Cabinet Office from the website of the Japan Meteorological Agency

Graph of the Number of Earthquakes with a Seismic Intensity of 1 or Higher, by Day
(February 13, 2021 11:00 p.m. to February 28, 2021 12:00 a.m.)



Source: Compiled by the Cabinet Office from the website of the Japan Meteorological Agency

(2) State of Damages

The earthquake killed 1 person (in Fukushima Prefecture), seriously injured 16 (1 in Iwate Prefecture, 6 in Miyagi Prefecture, 4 in Fukushima Prefecture, 3 in Tochigi Prefecture, 1 in Saitama Prefecture, and 1 in Chiba Prefecture), and slightly injured 170 (Fire and Disaster Management Agency information, as of May 21, 2021).

Human Casualties (as of May 21, 2021)

	Fatality	Seriously Injured	Lightly Injured
Miyagi Prefecture	0	6	58
Fukushima Prefecture	1	4	95
Other	0	6	17
Total	1	16	170

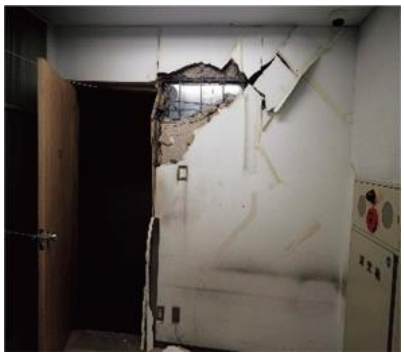
Source: Cabinet Office data

As for damage to houses, 96 houses were completely destroyed and 28,985 houses were half or partially destroyed (Fire and Disaster Management Agency information, as of May 21, 2021).

As a result of this earthquake, up to 950,000 households in the areas served by Tokyo Electric Power Company Holdings and Tohoku Electric Power Company experienced electrical blackout, and over 26,000 households in Miyagi, Fukushima, Ibaraki, and Tochigi Prefectures experienced suspension of water supply. In addition to such damage to lifelines, there was also damage to transportation infrastructure such as road closures due to slope failure and suspension of operations of rail services.

In addition, the Disaster Relief Act was applied to 8 cities and 9 towns in Fukushima Prefecture.

Cracks in the road surface
(Nihonmatsu City, Fukushima Prefecture)



Cracks in the wall of a hotel
(Koriyama City, Fukushima Prefecture)

(3) Response by the National Government

The national government established an Emergency Response Office in the Prime Minister's Office at 11:09 p.m. on February 13, 2021, and at the same time, Prime Minister Suga gave instructions on "early assessment of damages," "all-out efforts for disaster response measures such as lifesaving and rescue," and "timely and accurate information sharing with the public." On the following day, at 1:05 a.m., the Cabinet Office Survey Team departed for Fukushima Prefecture Government Office, and at 9:00 a.m. on the same day, a Ministerial Meeting (the first meeting) was held.

On February 16, Minister of State for Disaster Management, Japan, Okonogi, visited sites in Fukushima Prefecture.

On February 26, based on the needs and characteristics of the areas affected by the Great East Japan Earthquake, the government compiled the "Set of Support Measures for the Earthquake Centered Off the Coast of Fukushima Prefecture in 2021" to urgently implement measures to help affected people rebuild their lives and livelihoods.

Minister of State for Disaster Management, Cabinet Office, Mr. Okonogi, making a site visit

Section 3 Disaster Management Based on Disasters in FY 2020

3-1 Expansion of Targets of Support Grants for Reconstructing Livelihoods of the Affected

The “Act on Support for Reconstructing Livelihoods of the Affected due to Disaster (Act No. 66 of 1998)” is a law to support the reconstruction of livelihoods by providing support grants through a fund contributed by prefectures from the perspective of mutual assistance for affected people who have suffered significant damage to their livelihoods when a natural disaster occurs which causes damage difficult for the affected municipality or prefecture to handle on their own. Since its enactment in 1998, the act has been revised several times.

In recent years, there have been a series of large-scale disasters, including the 2016 Kumamoto Earthquake and the Heavy Rain Event of July 2018, and there have been calls to expand this system of support. In June 2019, the "Working-level Conference on the System on Support for Reconstructing Livelihoods of the Affected due to Disaster (hereinafter referred to as the "Working-level Conference") was established based on the recommendations of the National Governors' Association in November 2018. Furthermore, based on the Heavy Rain Event of July 2020, on July 22 of the same year, the National Governors' Association made an urgent request to the government for an early conclusion to be reflected in the policy and for it to be applied to the damage caused by the Heavy Rain Event of July 2020 as to expanding the scope of the System on Support for Reconstructing Livelihoods of the Affected due to Disaster into partially destroyed households, which the National Governors' Association has been requesting. Based on these requests, on the 30th of the same month, the Working-Level Conference compiled a report on the results of a study to expand the scope of support into some partially destroyed households, which received damage not surmounting to households with 40 to 50% destruction.

Based on the results of this study, the government proceeded with coordination and deliberation, and as a result, the "Bill for Partial Amendment of the Act on Support for Reconstructing Livelihoods of the Affected due to Disaster " was submitted to an extraordinary Diet Session in November 2020, and after deliberation by both the House of Representatives and House of Councilors, the act was unanimously passed and enacted on December 2, 2020, and was promulgated and enforced on December 4, 2020 (Act No. 69 of 2020).

The revised law adds households which were partially destroyed and were deemed difficult to live in without substantial repairs (households with homes partially destroyed in the 30% range) as eligible households. This law ensures 1,000,000 yen for construction or purchase of a house, 500,000 yen for repair, and 250,000 yen for rent, and applies to disasters that occurred after the Heavy Rain Event of July 2020.

Amount of Support Grants for Reconstructing Livelihoods of the Affected

Category of affected household	Proportion of damage (*)	Amount of grant provided		
		Basic support fund	Additional grant	
			Basic support fund	Amount
Completely destroyed	50% or more	1,000,000 yen	Construction/purchase	2,000,000 yen
			Repair	1,000,000 yen
			Loan	500,000 yen
Largely destroyed	Over 40%	500,000 yen	Construction/purchase	2,000,000 yen
			Repair	1,000,000 yen
			Loan	500,000 yen
Minor destruction	Over 30%	—	Construction/purchase	2,000,000 yen
			Repair	500,000 yen
			Loan	250,000 yen

*The percentage of economic damage to the main components of the dwelling to the total value of the dwelling, which is determined by a damage assessment by the municipality and is reflected in the description of "completely destroyed" or "major largely" on the disaster affected certificate.

【Column】

Promotion of Insurance and Mutual Aid

The expansion of the scope of support grants for reconstructing livelihoods of the affected is intended to enhance the measures of "public support" for reconstruction of livelihoods of affected people, but it is also important to take "self-help" measures for recovery from natural disasters. In this regard, the report of the Working-level Conference states that "it is necessary to promote self-help measures to rebuild livelihoods in the event of a natural disaster, such as by encouraging people to purchase appropriate insurance and mutual aid."

By purchasing insurance and mutual aid, people can prepare for damage to their houses and household goods caused by disasters such as floods, storm surges, and slope failure. In the case of fire insurance, which is the most common type of insurance, there are products that cover not only fire, but also wind, water, snow, lightning, and other forms of wind and water damage caused by storm and flood disaster, provided that the storm and flood disaster exceeds a certain amount. However, it should be noted that the types of disasters covered and the nature of the coverage vary depending on the insurance company, mutual aid organization, and product.

When considering the purchase and confirming the contents of insurance or mutual aid, it is important to have a clear understanding of the disaster risk of one's home using hazard maps, etc., and to confirm the details with each insurance company or mutual aid organization to secure the necessary coverage. In addition, it is important to consider the coverage, including household goods, according to the conditions of one's own residence, as follows.

・For homeowners: coverage for both building and household goods

・For tenants: coverage for household goods only

・For rented apartments: check if the management association has insurance for common areas

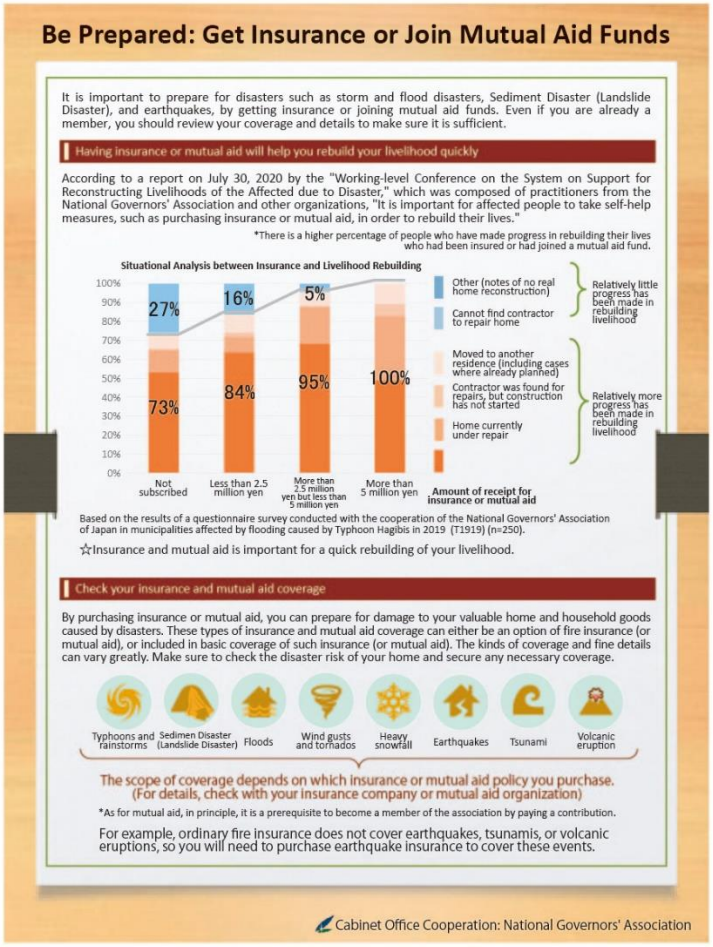
・For condominiums: The exclusive area is treated as the owner's home, so consider whether the building should be included in the coverage in addition to the household goods, taking into account the number of floors

・For car owners: covered by vehicle insurance

As described above, it is hoped that the "self-help" approach, in which people confirm the disaster risk and the condition of their homes and secure the necessary insurance, and the "public support" approach under the “Act on Support for Reconstructing Livelihoods of the Affected due to Disaster” will work together to enable people to quickly rebuild their lives after a disaster has occurred.

(Source: http://www.bousai.go.jp/taisaku/seikatsusaiken/pdf/saikenshien_kekka.pdf)

(Source: http://www.bousai.go.jp/taisaku/seikatsusaiken/pdf/201204leaf.pdf)



(See: http://www.bousai.go.jp/taisaku/seikatsusaiken/pdf/201204leaf.pdf)

3-2 Operation of the Disaster Relief Act based on Actual Conditions, Issues in Affected Areas

In the Heavy Rain Event of July 2020, the Kuma River overflowed, causing extensive damage to houses and other structures mainly in Kumamoto Prefecture, and many affected people had to evacuate. Municipalities in the mid-hills and mountainous areas, which were particularly hard hit, faced challenges in quickly securing emergency temporary housing such as a shortage of construction sites and private rental housing that could be used to provide emergency temporary housing.

In light of these situations, for the smoothest and most appropriate implementation of rescue, the following efforts were made to apply the "Disaster Relief Act" according to the actual conditions and challenges faced by the affected areas.

(1) Use of Emergency Temporary Housing during the Emergency Repair Period

Emergency temporary housing, which is for those who cannot use their houses due to total destruction, and emergency repair, which allow people to live in their houses after repairs, were systems that were not allowed to be used together because their purposes and objectives were different.

However, based on the "Report on the Results of the Administrative Evaluation and Monitoring of Housing Security at the Time of Disaster: From the Perspective of Supporting the Reconstruction of the Livelihoods of Affected People," which was compiled by the Ministry of Internal Affairs and Communications on March 31, 2020, a recommendation that "it should be possible to provide emergency temporary housing to those who had to continue living in their damaged houses and to wait for a long time until repairs were completely done after applying for the Emergency Repair System" was put together.

(Reference: https://www.soumu.go.jp/menu_news/s-news/hyouka_200331.html#kekkahoukoku)

Furthermore, in recent years, due to a shortage of contractors and other factors, the repair period for emergency repairs has become longer and longer and there are many households that have no choice but to continue living in shelters until repairs were completed. Also, on the occasion of the Heavy Rain Event of July 2020, there were calls from the affected local governments to secure housing for the affected people while their homes were being repaired.

In light of these circumstances, the purpose of the project was set to secure emergency temporary housing for affected people during the emergency repair period, and to encourage affected people who were moving into emergency temporary housing to rebuild their homes in their hometowns. A decision was made to enable providing emergency temporary housing for 6 months from the date of the disaster for households whose houses were partially destroyed or more, and for which emergency repairs were expected to take a long time.

This policy has been in effect since the Heavy Rain Event of July 2020, and since then it has been a permanent policy, covering disasters covered by the “Disaster Relief Act."

Use of Emergency Temporary Housing during Emergency Repair Period

In addition to securing temporary housing for the affected people during the emergency repair period, the project will also encourage those who have moved into emergency temporary housing to rebuild their homes in their hometowns.

<Background and Issues>

- Due to the shortage of construction workers, the emergency repair period has been prolonged, and there are many households that have to continue living in shelters or temporarily move in with relatives or acquaintances until repairs are completed.
- The municipalities affected by the recent Heavy Rain Event of July 2020 have made earnest requests to secure housing for the victims affected people during the emergency repair period.

Support the affected people to rebuild their homes in their hometowns by allowing them to move into temporary housing until emergency repairs are completed.

<Summary>

- **Eligibility:** Affected people who are expected to undergo emergency repairs for more than one month, and whose homes are damaged to the extent that they cannot be used as a residence (half-destroyed) or more, and who have difficulty securing other housing.
- **Use period:** In principle, six months from the date of the disaster (if emergency repairs are completed, the room will be vacated as soon as possible)
- **Expenses:** Actual costs (based on local conditions)

(2) Provision of Emergency Temporary Housing Using Discontinued Public Housing

In Hitoyoshi City, Kumamoto Prefecture, which was severely damaged by the Heavy Rain Event of July 2020, there was a shortage of private rental housing that could be used as emergency temporary housing and public housing available for immediate occupancy for the affected people who were unable to live in their homes. It was assumed impossible to build enough emergency temporary housing due to the lack of suitable sites. For this reason, 160 vacant units of public housing were discontinued, renovated with water and heat resistant paint in bathrooms, installation of air conditioners, ventilation fans, bathtubs and water heaters, wallpaper replacement and so on, which were necessary for the affected people to move in, and provided as emergency temporary housing.

Renovation of Discontinued Public Housing (Hitoyoshi City, Kumamoto Prefecture)

【Column】

Emergency Temporary Housing in Kumamoto Prefecture After the Heavy Rain Event of July 2020

In Kumamoto Prefecture, which was particularly hard hit by the Heavy Rain Event of July 2020, effective measures were taken to provide emergency housing to affected people as quickly as possible in order to ensure their safety and security.

1. Early notification of the expected availability of emergency temporary housing and other housing for affected residents

Kumamoto Prefecture, in cooperation with the municipalities affected by the disaster, estimated the number of housing units needed to secure housing for the affected people based on the damage to houses ascertained from the number of Disaster Affected Certificates issued, and other data. The number of units needed for emergency rental housing, emergency construction housing and public housing was discussed and presented at a meeting of the Disaster Management Headquarters of the prefecture. For affected people who live in shelters after a disaster and are anxious about their housing arrangements, it is reassuring to know that local governments will provide early information on housing. Thus, in order to secure emergency temporary housing and other housing for affected people, it is important to make a forecast of the number of units needed as early as possible in the event of a disaster and work to secure them.

Response to Emergency Temporary Housing

Municipality	Estimated number of units needed to be secured for housing	Emergency housing secured					Details of temporary housing for which construction has already begun			
		Number of units expected to be used for rental emergency housing	Use of public housing, etc. (including planned)	Number of units needed for construction-type emergency housing	Number of units under construction	Number of units needed in the future	Temporary complex name	Units	Ground-breaking	Scheduled move-in
Kuma-mura	400+α	60	7	300+α	269	31+α	Multipurpose Square Temporary Housing Complex	33	7/16	8/2-
							Kuma-mura Ground Temporary Housing Complex	133	8/1	Late Sep.
							Sakura Dome Temporary Housing Complex	35	8/7	Mid Sep.
							Daiobaru Park Temporary Housing Complex (Nishiki-machi)	88	8/7	Mid Oct.
Hitoyoshi City	600-800	150	186	290-490	265	25-225	Hitoyoshi Castle Sites Temporary Housing Complex	15	7/11	Mid Aug.
							Kozueyama Ground Temporary Housing Complex	33	7/15	Early Sep.
							Murayama Ayame Plaza Temporary Housing Complex	16	7/19	Early Sep.
							Shimoharada No.1 Temporary Housing Complex	18	7/30	Mid Sep.
							Shimoharada No.2 Temporary Housing Complex	11	7/30	Mid Sep.
							Nishiaida-Kami-machi Temporary Housing Complex	51	8/1	Late Sep.
							Ishino Park Temporary Housing Complex	37	8/13	Mid Oct.
							Murayama Park Temporary Housing	84	8/13	Mid Oct.
Yatsushiro City	300-600	200-500	42	40+α	40	+α	City Stadium Temporary Housing	26	7/19	Early Sep.
							Koga-Naka-machi Temporary Housing Complex	14	8/9	Early Oct.
Ashikita-machi	120	30	30	60	50	10	Meshima Yume Moyai Green Space Temporary Housing Complex	50	7/15	Early Sep.
Tsunagi-machi	10	-	-	10	10	-	Tsunagi-machi Otokojima Temporary Housing Complex	10	7/28	Late Sep.
Sagara-mura	25	-	1	24	24	-	Wanpaku Hiroba Temporary Housing Complex	16	7/13	Mid Aug.
							Sports Park Temporary Complex	8	8/1	Mid Sep.
Yamae-mura	25	-	-	25	25	-	Central Ground Temporary Complex	25	7/11	Mid Aug.
Total	Approx.1,500-2,000	440-740	266	800-1,000	683	100-300	-	683		

Source: "Kumamoto Prefecture Disaster Management Headquarters of the Heavy Rain Event of July 2020" (See: https://www.pref.kumamoto.jp/soshiki/1/51182.html)

2. Early provision of emergency temporary housing using mobile homes

In the wake of the Heavy Rain Event of July 2018, trailer houses and container houses were utilized as emergency temporary housing. These can be provided quickly if the infrastructure such as water and sewage at the site is in good condition. Following the Heavy Rain Event of July 2020, Kuma Village in Kumamoto Prefecture was able to start construction of 33 emergency temporary housing units within two weeks of the disaster that struck on July 4, by transporting and using mobile homes that had been set up at exhibition sites in other local governments' areas such as Hokkaido and Ibaraki Prefecture. These houses were ready for use within a month. Eventually, Kumamoto Prefecture provided 68 units of emergency temporary housing using mobile homes.

Emergency temporary housing constructed in Kuma Village
(Mobile home on the left front and back, wooden temporary housing on the right)

(3) Rescue by Public Support and Support related to Administrative Work for Coordination with Volunteer Activities

In order to ensure the smooth and effective implementation of "public support" in disaster relief activities such as shelter management and obstacle removal, it is necessary to coordinate between rescue through "public support" and volunteer activities through "mutual support" (e.g., dividing roles at the disaster site, matching the needs of affected people, etc.). However, in recent years, the amount of such coordination has increased as volunteer activities have flourished. Thus, taking the opportunity from the Heavy Rain Event of July 2020, regarding administrative work for coordination between rescue by 'public support' and volunteer activities, when outsourcing to disaster volunteer centers established by Social Welfare Councils, etc. (hereinafter referred to as "Disaster VCs" in this section), a decision was made that expenses (personnel expenses (limited to overtime work allowance for staff who were setting-up/operating Disaster VCs and wages of temporary and part-time employees newly hired directly by the staff who were setting-up/operating) and traveling expenses (travel expenses for staff dispatched from outside the affected local governments to the Disaster VCs)) required to secure the personnel necessary for this work would be covered by the national treasury's sharing of disaster relief expenses.

This system has been in effect since the Heavy Rain Event of July 2020, and since then it has been a permanent system, covering disasters covered by the "Disaster Relief Act."

【Column】

Disaster Volunteer Centers

Disaster volunteer centers (Disaster VCs) are set up in the event of a disaster of a scale that cannot be dealt with by the mutual aid of neighboring residents alone. These centers are established and operated mainly by the Social Welfare Councils of the prefectures and municipalities in the affected areas to provide support for the affected people and for recovery with the help of volunteers. According to the Japan National Council of Social Welfare, Disaster VCs are operated based on the three principles of "affected people-centered," "locally-led," and "collaborative." With the cooperation of specialized NPOs and other organizations, they coordinate and liaise with the government and other related organizations, identify the needs of the affected people and match them with volunteer activities, procure equipment and materials, and disseminate information, as well as coordinate many other activities related to disaster relief.

The main volunteer activities carried out through the Disaster VCs (activities by general volunteers) include removing mud and cleaning affected houses, transporting and sorting relief supplies, supporting the operation of shelters (e.g., improving living conditions and serving food), and helping people move into temporary housing.

Reception at the disaster volunteer center

Removing mud from damaged houses

3-3 Countermeasure Package for the Restoration of Lives and Livelihoods of the Affected

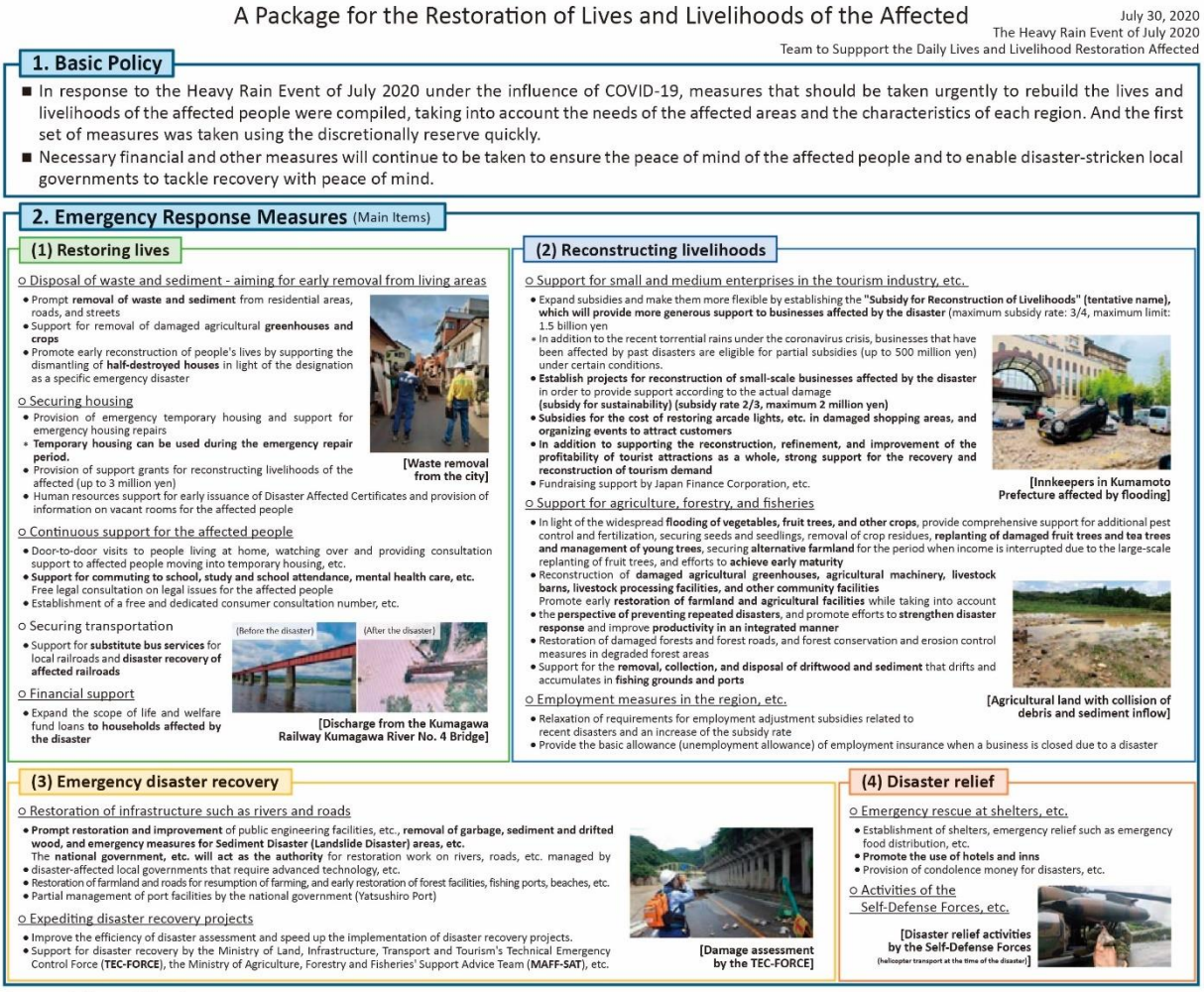
(1) **Support for the Heavy Rain Event of July 2020**

The Heavy Rain Event of July 2020, which occurred under COVID-19 crisis, caused extensive inundation due to river flooding as well as extensive damage to lifelines such as roads, railroads and water supply, and to local industries such as agriculture and tourism in the Kyushu region and other wide regions of Japan.

The national government had been doing their best to rescue lives and cope with emergency rehabilitation and had been providing push-mode support in the form of relief supplies such as cardboard beds and air conditioners as well as masks and antiseptic solutions in response to COVID-19, collaborating with affected local governments. In the affected areas, however, many people were forced to live in shelters, and spent their days in anxiety. In addition, many small and medium enterprises and small/micro enterprises faced the harsh reality that they may lose their will to resume their business due to the heavy damage caused by this torrential rain under a worsening economic situation due to COVID-19.

In light of this situation, by the national government as a whole for further accelerate measures toward recovery, instructions were given by then Prime Minister Abe to establish the Team to Support the Daily Lives and Livelihood Restoration of Affected People at the first meeting of the Major Disaster Management Headquarters held on July 5, 2020, in order to provide more detailed, prompt, and powerful support for the livelihood of the affected people due to the Heavy Rain Event of July 2020. In addition, at the 7th meeting for the Major Disaster Management Headquarters held on the 13th of the same month, instructions were issued to quickly put together a Restoration of Lives and Livelihoods of the Affected, being led by the Team to Support the Daily Lives and Livelihood Restoration of Affected People. In response to this, on July 30 of the same year, the national government formulated the "Package for the Restoration of Lives and Livelihoods of the Affected" as an urgent response for rebuilding lives and livelihoods in the affected area to the Heavy Rain Event of July 2020, and on the following day of the 31st, the use of approximately 101.7 billion yen in reserve funds was decided through a Cabinet decision.
(Reference: http://www.bousai.go.jp/pdf/r2ooame_saiken_pack.pdf)

This package of measures based on the needs of the affected areas and the characteristics of each region under COVID-19 crisis is organized by four pillars to ensure the security of affected people: (1) Life Restoration, (2) Livelihood Restoration, (3) Disaster Response Recovery, and (4) Disaster Relief. At the same time, this package was established to take necessary financial measures so that the affected local governments could work on recovery with peace of mind. Specifically, in order to rebuild the lives of affected people, in addition to support for demolishing partially destroyed houses and the rapid removal of waste and earth and sand from residential areas, roads and towns, the government has decided to secure emergency housing and allow affected people to use temporary housing during the emergency repair period. In addition, in order to rebuild livelihoods, a decision was made to create the "Subsidy for Reconstruction of Livelihoods" which was expanded and made more flexible by the existing group subsidies and local government partnership subsidies, to support the refinement and improvement of profitability of tourist sites to rebuild the tourism industry in the affected areas, and to implement measures for affected areas in the Go To Travel program. A decision was also made to provide comprehensive measures for agriculture, forestry, and fisheries, including support for replanting of fruit trees and agricultural machinery, and support for disposal of driftwood and sediment at fishing ports.



Source: Cabinet Office data

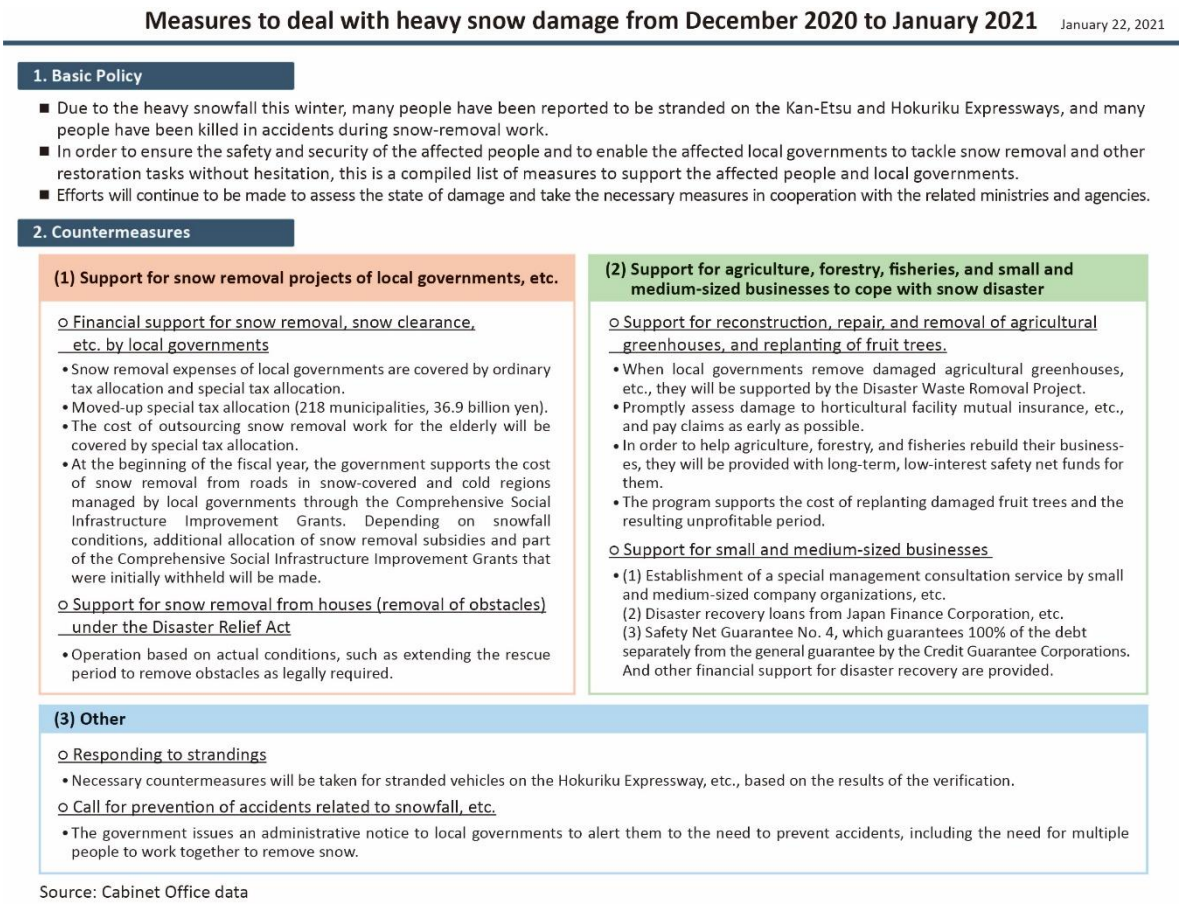
(2) Support for the Heavy Snow Damage from December 2020 to January 2021

Due to the heavy snow from December 2020 to January 2021, a lot of damage such as stranding on the Kan-Etsu and Hokuriku Expressways and fatal accidents during snow-removal work occurred.

The national government had been taking all possible precautions and responding to these disasters by holding Ministerial Meetings and Inter-Agency Disaster Alert Meetings/Countermeasure Meetings, then in order to ensure the safety and security of the affected people, and to enable the affected local governments to tackle snow removal and other rehabilitation tasks without hesitation, measures such as support for affected people and affected local governments were compiled on January 22.

(Reference: http://www.bousai.go.jp/pdf/210122_setugaitaiou.pdf)

The measures include support for snow removal and exclusion by local governments, and support for agriculture, forestry, fisheries, and small and medium-sized business operators to deal with snow disaster. As for the cost of snow removal and disposal by local governments, on January 22, a decision was made to give a grant to 218 municipalities, towns and villages, including organizations covered by the Disaster Relief Act by using an advance of 36.9 billion yen of the special tax allocation that was to be delivered in March.



Measures to deal with heavy snow damage from December 2020 to January 2021 January 22, 2021

1. Basic Policy

- Due to the heavy snowfall this winter, many people have been reported to be stranded on the Kan-Etsu and Hokuriku Expressways, and many people have been killed in accidents during snow-removal work.
- In order to ensure the safety and security of the affected people and to enable the affected local governments to tackle snow removal and other restoration tasks without hesitation, this is a compiled list of measures to support the affected people and local governments.
- Efforts will continue to be made to assess the state of damage and take the necessary measures in cooperation with the related ministries and agencies.

2. Countermeasures

(1) Support for snow removal projects of local governments, etc.

○ Financial support for snow removal, snow clearance, etc. by local governments

- Snow removal expenses of local governments are covered by ordinary tax allocation and special tax allocation.
- Moved-up special tax allocation (218 municipalities, 36.9 billion yen).
- The cost of outsourcing snow removal work for the elderly will be covered by special tax allocation.
- At the beginning of the fiscal year, the government supports the cost of snow removal from roads in snow-covered and cold regions managed by local governments through the Comprehensive Social Infrastructure Improvement Grants. Depending on snowfall conditions, additional allocation of snow removal subsidies and part of the Comprehensive Social Infrastructure Improvement Grants that were initially withheld will be made.

○ Support for snow removal from houses (removal of obstacles) under the Disaster Relief Act

- Operation based on actual conditions, such as extending the rescue period to remove obstacles as legally required.

(2) Support for agriculture, forestry, fisheries, and small and medium-sized businesses to cope with snow disaster

○ Support for reconstruction, repair, and removal of agricultural greenhouses, and replanting of fruit trees.

- When local governments remove damaged agricultural greenhouses, etc., they will be supported by the Disaster Waste Romoval Project.
- Promptly assess damage to horticultural facility mutual insurance, etc., and pay claims as early as possible.
- In order to help agriculture, forestry, and fisheries rebuild their business-es, they will be provided with long-term, low-interest safety net funds for them.
- The program supports the cost of replanting damaged fruit trees and the resulting unprofitable period.

○ Support for small and medium-sized businesses

- (1) Establishment of a special management consultation service by small and medium-sized company organizations, etc.
  (2) Disaster recovery loans from Japan Finance Corporation, etc.
  (3) Safety Net Guarantee No. 4, which guarantees 100% of the debt separately from the general guarantee by the Credit Guarantee Corporations.
  And other financial support for disaster recovery are provided.

(3) Other

○ Responding to strandings

- Necessary countermeasures will be taken for stranded vehicles on the Hokuriku Expressway, etc., based on the results of the verification.

○ Call for prevention of accidents related to snowfall, etc.

- The government issues an administrative notice to local governments to alert them to the need to prevent accidents, including the need for multiple people to work together to remove snow.

Source: Cabinet Office data

(3) Support for Damage Caused by the Earthquake Centered Off the Coast of Fukushima Prefecture in 2021

Late at night on February 13, 2021, as the tenth anniversary of the Great East Japan Earthquake, which caused unprecedented damage to the region was approaching, an earthquake with a maximum seismic intensity of 6.0 + struck the areas affected by the Great East Japan Earthquake, with its epicenter offshore of Fukushima Prefecture.

The national government held a Ministerial Meeting, and made every effort to implement disaster response measures, while the people of the region, who have been making tremendous efforts to recover from the Great East Japan Earthquake, had faced a harsh reality that they may lose the will to get their life back and restart their businesses due to the extensive damage caused by Typhoon Hagibis in 2019 (T1919), and furthermore, the earthquake occurred under a worsening economic condition caused by COVID-19.

In light of this situation, in order for the national government to provide support to the affected people as soon as possible so that their hopes for recovery would not be lost, at a Ministerial Round Table on February 19, Prime Minister Suga issued instructions for the relevant ministers to work together to quickly compile support measures for this earthquake. In response to this, on the 26th of the same month, the national government compiled the "Set of Support Measures for the Earthquake Centered Off the Coast of Fukushima Prefecture in 2021" as a set of measures that should be taken urgently to rebuild the lives and livelihoods of the affected people, considering the needs and characteristics of the areas affected by the Great East Japan Earthquake.

(Reference: http://www.bousai.go.jp/pdf/210226_fukushima.pdf)

The support measures included rebuilding the lives and livelihoods of the affected people through subsidies for small and medium-sized companies and other groups, which had been strongly requested by the affected areas,

and support for the rehabilitation of public facilities that were scheduled to be used as vaccination sites for COVID-19. A Cabinet Decision was made to use reserve funds of about 3.1 billion yen of subsidies for small and medium-sized companies, which required immediate additional budgetary measures.

Summary of Support Measures for the Earthquake Centered Off the Coast of Fukushima Prefecture in 2021

February 26, 2021 Disaster Management Bureau of the Cabinet Office

1. Basic Policy

■ For the earthquake centered off the coast of Fukushima Prefecture which occurred when the 10th anniversary of the Great East Japan Earthquake, which caused unprecedented damage was approaching, measures that should be taken urgently to rebuild the lives and livelihoods of the affected people will be compiled taking into account the needs and characteristics of the areas affected by the Great East Japan Earthquake, and prompt action will be taken. Prompt response support for the early recovery of the affected areas under the novel coronavirus crisis will be promoted, and vaccination implementation will not be hindered. In addition, firm action will be taken on issues in the affected areas, disaster prevention and mitigation, and for National Resilience.

■ Utmost efforts will be made for the rapid restoration of the affected areas, the restoration of people's lives and livelihoods, in cooperation with the affected local governments, from the perspective of the affected people.

2. Emergency Response Measures (Main Items)

(1) Rebuilding lives

○ Securing housing

- Provision of support grants for reconstructing livelihoods of the affected (up to 3 million yen)
- Implementation of emergency repairs, etc. under the Disaster Relief Act and support for **seismic retrofitting,** etc.
- Support for the establishment of consultation offices and on-site consultation for home repair, etc.

○ Removal of disaster waste

- **Early reconstruction support through special dismantling support for half-destroyed houses, etc.**
- Support for the removal of damaged agricultural greenhouses, etc.

○ Support for students in the affected areas

- Consideration for **students in disaster areas** (supplementary exams, make-up exams, etc.)
- Studying support (tuition reduction and exemption, scholarships, etc.), psychological care, etc.

○ Financial support, etc.

- Flexible repayment deferment and other measures by financial institutions, and support for debt restructuring for affected people under the Guidelines of Workout for Restructuring Debt Owned by Victims of Natural Disasters

(2) Restoration of livelihoods

○ Support for small and medium-sized businesses

- **Special measures for group subsidies for small and medium-sized companies,** etc., to support business resumption and continuation **(subsidy rate: up to 3/4)**

* **Fixed subsidies** (up to 500 million yen) for businesses that are in the process of recovering from the Great East Japan Earthquake and have been affected by the novel coronavirus crisis, subject to certain requirements.

- Fundraising support by Japan Finance Corporation, etc.

[A hotel damaged by the earthquake]

○ Support for agriculture, forestry, and fisheries

- **Comprehensive support** for securing seeds, harvesting and preparation work, reconstruction of community facilities, agricultural greenhouses, and barns, etc., for **resumption of farming.**
- Support for the reconstruction, repair, and removal of facilities for the promotion of special forest products and joint use of fisheries.
- Fundraising support by Japan Finance Corporation, etc.

[Equipment damaged in a greenhouse]

○ Support for the recovery of tourism

- **As a countermeasure against rumors, accurate information on the disaster area will be disseminated** through social media and official websites, supporting the **refinement of tourism attractions and their appeal.**

(3) Disaster recovery and lifeline support

○ Quick disaster recovery of public civil engineering facilities, etc. (disaster recovery of damaged public civil engineering facilities, agriculture, forestry, and fisheries facilities, etc.; support by TEC-FORCE and MAFF-SAT) ○ Support for restoration of public facilities, etc. (restoration of medical, water supply, school, social education, social welfare facilities, etc.) ○ Support for public transportation

○ Reconstruction projects following the Great East Japan Earthquake (support for ongoing reconstruction projects)

- As for the burden to local governments caused by this support measure, appropriate local fiscal measures will be taken so as not to interfere with the financial management of the affected local governments.

Source: Cabinet Office data

Chapter 2 Further Expansion of Disaster Management

Section 1 Act for Partial Amendment of the Basic Act on Disaster Management

1-1 Background and Necessity of Amendment

With regard to Typhoon Hagibis in 2019 (T1919) and other named tropical cyclones that caused serious disasters, the issue of difficulty in understanding evacuation information provided by the government, such as the distinction between evacuation recommendation and evacuation instruction, became apparent. In addition to this, because there were many cases of people suffering due to failure to evacuate or delayed evacuation, suffering in moving to another location outdoors during heavy rain and flooding and the elderly and people with special needs' victims, the "Working Group on Evacuation from Disasters Caused by the Typhoon Hagibis in 2019 (T1919) (hereinafter referred to as the "the Typhoon Hagibis in 2019 (T1919) WG") was newly established under the Disaster Management Implementation Committee.

In the report on the Typhoon Hagibis in 2019 (T1919) WG in March 2020, in addition to indicating measures to be implemented by the FY 2020 flood season*1, as the items that should continue to be considered in FY 2020, the following issues were raised: handling of evacuation recommendation and evacuation instruction as stipulated in the "Basic Act on Disaster Management (Act No. 223 of 1961)", ensuring the effectiveness of evacuation for the elderly and people with special needs, and region-wide evacuation*2.
(Reference: http://www.bousai.go.jp/fusuigai/typhoonworking/index.html)

*1: The flood season differs depending on the region and river, but is usually around June (due to snowmelt, the flood season in cold regions such as Hokkaido is often around April).

*2: Evacuation of residents beyond the zones of the municipality or prefecture at the stage when there is a possibility of disaster.

Therefore, as for the items that should continue to be considered in 2020, a study was carried out by the "Sub-Working Group Concerning Evacuation Information and Region-Wide Evacuation Based on Typhoon Hagibis in 2019 (T1919)" (hereinafter referred to as the "SWG on Evacuation Information.") which has continued since June 2020, and the "Sub-Working Group Concerning Evacuation of Elderly and Other People with Special Needs Based on Typhoon Hagibis in 2019 (T1919)" (hereinafter referred to as the "SWG for the Elderly"), and each report was compiled (see Special Feature, Chapter 2, Section 2, p.50～p.60). Based on this study, in order to address these issues for consideration, in March 2021, the "Act for Partial Amendment of the Basic Act on Disaster Management" was submitted to the 204th session of the Diet, then after deliberation by both the House of Representatives and House of Councilors, the law was passed and enacted on April 28 of the same year (Act No. 30 of 2021).

Firstly, in order to further promote smooth and speedy evacuation in the event of a disaster, this law takes the following measures such as:

- Integrating evacuation recommendation/ evacuation instruction into a single evacuation instruction.
- Making it a duty for municipalities to make efforts in preparing "individual evacuation plans," which are plans to provide evacuation support for those who require assistance evacuating, such as the elderly and people with disabilities who have difficulty evacuating on their own.
- Establishment of National Disaster Management Headquarters at a stage when a disaster is

likely to occur.

- Application of the Disaster Relief Act in a case where the relevant headquarters has been established.
- Improvement of provisions concerning acceptance of residents pertaining to region-wide evacuation.

Secondly, in response to the growing need for government assistance, in order to strengthen the system for implementing disaster management, this law takes the following measures:

- Change of the head of the Major Disaster Management Headquarters to the Prime Minister.
- Establishment of Authorized Disaster Management Headquarters headed by the Minister of State for Disaster Management, Japan in the Event of a Disaster of which Scale is not as Large as an Emergency Disaster.
- Mandatory Positioning of the Minister of State for Disaster Management, Japan in the Cabinet Office.

As for the date of enforcement of this law, it was set as "a date specified by Cabinet Order within a period not exceeding one month from the date of promulgation" of this law, and it shall be implemented by the time of the next rainy season, when large-scale floods are likely to occur. Therefore, it was put into effect on May 20, 2021.

The details of each revision are written in the next section.

Source: Cabinet Office data

1-2 Regarding Each Amendment

(1) Ensuring Smooth and Rapid Evacuation in the Event of Disaster

1. Integrating evacuation recommendation/ evacuation instruction into a single evacuation instruction (See Special Feature Section 2, 2-2 p.52～p.54)

According to a survey of residents conducted by the Typhoon Hagibis in 2019 (T1919) WG, many people mistakenly perceived the evacuation recommendation as "the stage to start preparations for evacuation" or "the

stage to voluntarily evacuate although it is not yet the stage to start evacuation." In addition, only about a quarter of the respondents said that the actual timing of evacuation was when the evacuation recommendation was issued, indicating that people did not understand that they should evacuate when the evacuation recommendation was issued.

It was also revealed that many people still did not understand the difference between an evacuation recommendation and an evacuation instruction and did not evacuate until the evacuation instruction was issued, or in other words, the residents were “waiting for instructions.”

In addition, in a survey conducted to the mayors of municipalities who actually issue evacuation information by the SWG on Evacuation Information, due to the following reasons, a number of respondents requested that evacuation recommendations and evacuation instructions be consolidated into a single evacuation instruction, and that evacuation information be issued at the same alert level (alert level 4):

- The current system seems to have two timings for evacuation, making it difficult to understand and take actions toward evacuation.
- From the residents' point of view, both are the same in the sense of evacuation, and not many residents understand the difference between “recommendation” and “instruction,” so there is no point in making a distinction.
- If there are two levels, people may misunderstand that they do not have to evacuate when there is an evacuation recommendation, which may lead them to wait for instructions.

Based on the above, a comprehensive review of evacuation information was conducted, including Integrating evacuation recommendation and evacuation instruction into a single evacuation instruction.

2. Creating Individual Evacuation Plans (See Special Feature, Section 2-3, p.55～p.60)

In recent years, many elderly people and people with disabilities have been affected by disasters. In the final report, SWG for the Elderly and People with Special Needs states that it was necessary to ensure smooth and rapid evacuation of the elderly and people with special needs by further promoting the preparation of individual evacuation plans for providing evacuation support for those who require assistance evacuating (such as the elderly and people with disabilities who had difficulty evacuating on their own). In response to their final report, some municipalities have been preparing individual evacuation plans. From the perspective of promoting this movement nationwide, a decision was made to make the preparation of such a plan a duty of effort for municipalities.

In addition, such measures as the following have been taken to improve the effectiveness of evacuation for those who require assistance evacuating: in ordinary times, when the consent of those who require assistance evacuating and the evacuation supporters is obtained, or if there is a special provision in Ordinance, the information written in an individual evacuation plan can be provided to firefighting organizations, Welfare Volunteers, and other parties involved in evacuation support. In the event of a disaster, such information could be provided to those involved in evacuation support without obtaining the consent of those who require assistance evacuating and evacuation supporters.

3. Establishment of National Disaster Management Headquarters at the Stage when a Disaster Is Likely to Occur/ Application of the Disaster Relief Act in Case Where the Headquarters Have Been Established

In recent years, weather forecasting technologies have been improving in terms of the accuracy of tropical cyclone forecasting year by year, which makes it possible to predict the occurrence of large-scale disasters with a certain degree of accuracy even before they occur. Under these circumstances, the Japan Meteorological Agency has started to issue an "emergency warning" since August in 2013 when extraordinary phenomenon, far exceeding the criteria to issue weather warnings, is expected and where there is a significant risk of a serious disaster. In addition, if there is a possibility that the emergency warning is to be issued (in the case of a tropical cyclone, 12 hours in advance), it is announced several days in advance. Thus, in order to make the most use of this ability to predict the occurrence of major disasters with a certain degree of accuracy, it is important to act as soon as possible to prepare for a disaster, including advanced preparation for natural phenomena that are likely to cause the announcement of a heavy rain emergency warning.

However, when Typhoon Hagibis in 2019 (T1919) hit in 2019, in response to an emergency warning issued by the Japan Meteorological Agency, problems such as traffic jams on the way to shelters and people giving up on evacuation due to traffic jams occurred after calling for region-wide evacuation of residents in the estimated flooded zone.

In light of the above, a decision was made that the national Disaster Management Headquarter can be established even at a stage when a disaster is “likely to occur” to carry out comprehensive coordination with related organizations so that disaster response measures such as the smooth evacuation of residents are promptly implemented even before a disaster occurs.

At the same time, a decision was made that when the Headquarters are established, prefectural governors could implement rescue (i.e. let municipalities provide shelters) under the Disaster Relief Act in the areas of municipalities designated as the jurisdictional districts of the Headquarters.

4. Improvement of Provisions Concerning Acceptance of Residents Pertaining to Region-Wide Evacuation (See Special Feature, Section 2, 2-2, p.52～p.54)

As mentioned above in 3, there is a growing need to encourage residents to evacuate not only after a disaster but also at an earlier stage such as when a disaster is predicted to occur. In particular, region-wide evacuation is being considered by municipalities across Japan, including the Koto five wards (Sumida, Koto, Adachi, Katsushika and Edogawa Wards).

In this regard, even at a stage when a disaster is only predicted, the transportation of residents for region-wide evacuation and evacuation should be carried out based on agreements concluded in advance between other local governments and transportation business operators. However, as in the case of issues at post-disaster, it is possible that agreements may not function sufficiently as described below:

- Because the local governments that were scheduled to serve as region-wide evacuation sites are also likely to be affected by the disaster, it would be difficult to accept residents of other municipalities.
- If there is a risk for a disaster to occur on a greater scale than expected through the agreement, it would be necessary to request additional transportation business operators.

Based on the above, as promoting the conclusion of agreements among local governments or between local governments and transportation companies, provisions for consultation regarding the acceptance of residents among local governments, and agreements between local governments and transportation business operators and

acceptance of evacuees from other municipalities have been improved to ensure the smooth implementation of region-wide evacuation at a stage where a disaster is likely to occur.

(2) Strengthening the System for Implementing Disaster Management

1. Change of the head of the Major Disaster Management Headquarters to the Prime Minister

In recent years, as social demands for a smooth and rapid response to disasters have increased, in Major Disaster Management Headquarters, a precise and prompt response is needed for disaster response measures which require advanced and complex coordination.

Therefore, from the respect of strengthening the functions of the disaster prevention command and promoting cooperation among government ministries and agencies in the emergency response and the recovery phase, in practice, the Prime Minister and relevant cabinet ministers attend the Major Disaster Management Headquarters, and the Prime Minister issues instructions to the relevant ministers.

In light of this situation, based on the "Basic Act on Disaster Management," for disaster response measures, which requires a high level of judgment and coordination in order to provide prompt and detailed support to affected people, a decision was made to strengthen the implementation system by designating the Prime Minister and relevant cabinet members as members of the Major Disaster Management Headquarters, and also by granting the authority of instructions from the head of the Headquarters to the head of the relevant designated administrative organization.

2. Establishment of Authorized Disaster Management Headquarters headed by the Minister of State for Disaster Management, Japan in the Event of a Disaster of which Scale is not as Large as an Emergency Disaster

In addition to “1.” mentioned above, in recent years, although the scale of major disasters has not reached the certain level needed under the "Basic Act on Disaster Management," because there have been a certain number of disasters which require special responses such as the national government needing to hold Ministerial Meetings, these disasters are characterized by the following:

- The need for rapid disaster response measures has risen under a circumstance where it is difficult to cope with the limited resources of the affected local governments after significant damage due to large-scale Sediment Disaster (Landslide Disaster) and slope failure on non-main islands of Japan.
- The need for agile and effective disaster response measures has risen in the coordination of evacuation and rescue by the national government, cooperating with related organizations including affected local governments and neighboring local governments, in case where the disaster occurs in more than one prefecture.

In recent years, the government should handle various social demands and local circumstances. Specifically, an aging society coupled with a low birthrate, the number of people who have difficulty evacuating on their own and require assistance in evacuation is increasing. On the other hand, social demands for rapid evacuation, rescue, and supply of goods are increasing as necessary disaster response measures at the time of a disaster. Therefore, the government's system for implementing disaster management needs to be strengthened in order for the relevant national organizations to work together to implement disaster response measures in a flexible and effective manner in the event of a disaster such as the one described above.

Based on the above, a decision was made that it was possible to establish an Authorized Disaster Management Headquarters headed by the Minister of State for Disaster Management, Japan for authorized disasters for which there is a special need to promote disaster response measures in consideration of local conditions and other circumstances in the disasters of which the scale is not large.

3. Mandatory Positioning of Minister of State for Disaster Management, Japan in the Cabinet Office

As mentioned above, disaster prevention policies have been further positioned as an important issue in national politics. At the same time, as for disaster reduction measures implemented by the Cabinet Office, the role of the Minister in Charge of Disaster Reduction is becoming more important with the position being required to address medium to long term perspectives such as preparing for the Nankai Trough Earthquake and the Tokyo Inland Earthquake, and raising awareness, namely awareness for improvement of disaster prevention. In addition, it is necessary to unify the policies of each administrative department at a high level because many specific measures require cooperation among multiple ministries and agencies to be implemented.

In the past, especially after the reorganization of the central ministries in January 2001, the Minister of State for Disaster Management, Japan has been appointed by each Cabinet. However, the Minister of State for Disaster Management has been legally mandated to take charge of disaster management so that the government's disaster management system can be further strengthened in terms of organization in order to respond appropriately to increasingly frequent large-scale disasters and to work together as a government for the safety of the people.

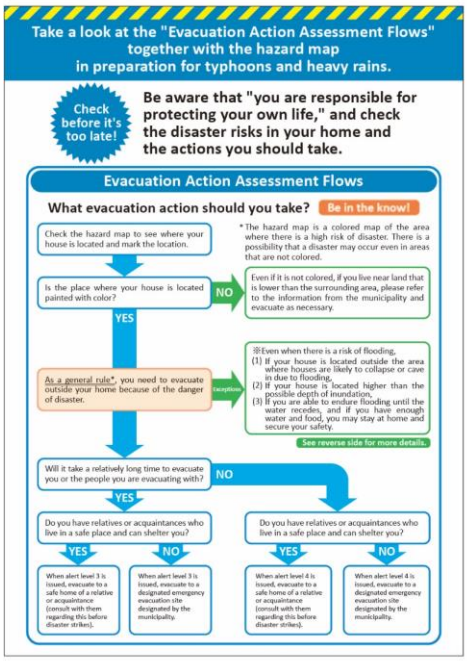
Section 2 Evacuation Action Countermeasures for Residents

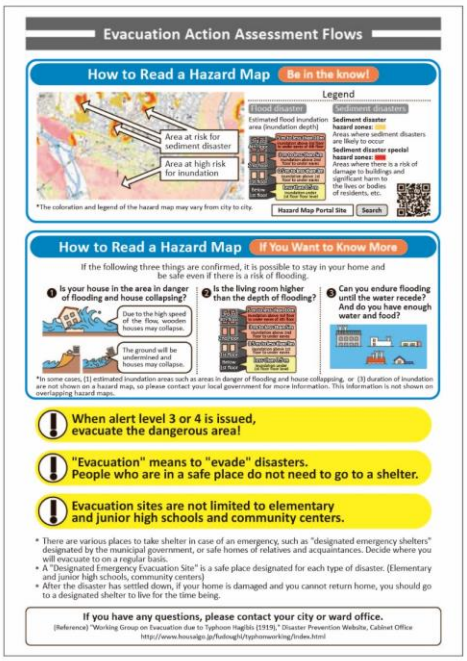
2-1 Background of Considered Evacuation Measures by Government based on Typhoon Hagibis in 2019 (T1919)

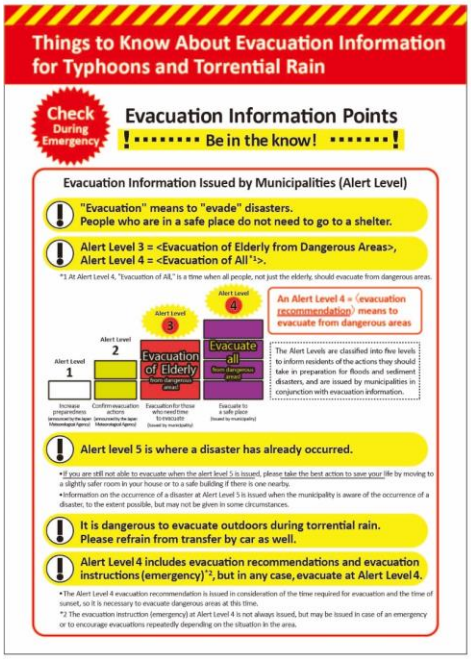
Based on the lessons learned from Typhoon Hagibis in 2019 (T1919), in order to study the strengthening of evacuation measures in response to increasingly severe and frequent heavy rain events, the Typhoon Hagibis in 2019 (T1919) WG, which was established under the Disaster Management Implementation Committee of the National Disaster Management Council, discussed various measures. One of the points of discussion was measures to be promptly implemented by the flood season in FY 2020, and the second was drastic measures to be considered after FY 2020 and to be concluded at an early stage. The WG concentrated on related things to public awareness, such as campaigns to improve understanding of disaster prevention to encourage evacuation behavior for the purpose to raise awareness of the importance of "protecting one's own life" among all people by the flood season in FY 2020. They then outlined the main issues that needed addressing for systematic consideration, such as ensuring the effectiveness of evacuation information and region-wide evacuation, and evacuation of those who require assistance evacuating. The SWG on Evacuation Information and the SWG for the Elderly and People with Special Needs examined these issues.

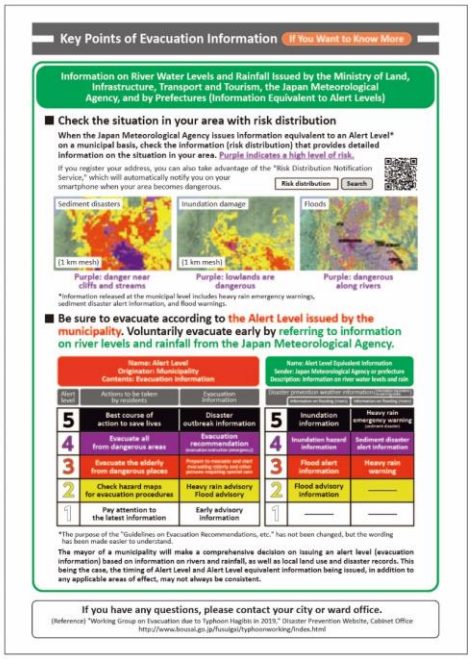
Additionally, in the campaigns to improve the understanding of evacuation, all entities participated in those campaigns to promote the understanding of evacuation among people by the flood season in FY 2020. Municipalities distributed or circulated hazard maps, evacuation action assessment flows, and evacuation information points to each household. Educational institutions and people involved in welfare promoted the understanding of evacuation by using the evacuation action assessment flows. At the same time, private companies promoted remote work, staggered work hours, and planned closing to enable employees to refrain from going out unless it is essential/ urgent.

Campaigns to Improve Understanding of Evacuations


Take a look at the "Evacuation Action Assessment Flows" together with the hazard map in preparation for typhoons and heavy rains.
Check before it's too late!
Be aware that "you are responsible for protecting your own life," and check the disaster risks in your home and the actions you should take.
Evacuation Action Assessment Flows
What evacuation action should you take?
Be in the know!
Check the hazard map to see where your house is located and mark the location.
Is the place where your house is located painted with color?
NO
YES
As a general rule*, you need to evacuate outside your home because of the danger of disaster.
Will it take a relatively long time to evacuate you or the people you are evacuating with?
NO
YES
Do you have relatives or acquaintances who live in a safe place and can shelter you?
YES
NO
Do you have relatives or acquaintances who live in a safe place and can shelter you?
YES
NO







Source: Cabinet Office data
(See: http://www.bousai.go.jp/oukyu/hinankankoku/h30_hinankankoku_guideline/pdf/campaign.pdf)

Structures for Discussion in FY2020

○ Based on the recommendations of the Working Group on Evacuation from Disasters Caused by the Typhoon Hagibis in 2019, the following 2 sub-working groups will discuss systematic issues.

National Disaster Management Council

Disaster Management Implementation Committee

Working Group on Evacuation from Disasters Caused by the Typhoon Hagibis in 2019 (continued)

Report

Sub-Working Group on Evacuation Information and Wide-area Evacuation in the Wake of the Typhoon Hagibis in 2019

- Academic knowledge (mainly composed of members of the WG on evacuation of the National Disaster Management Council)
- Chiefs (recommended by the Japan Association of City Mayors and the National Association of Towns and Villages)

(Main issues: related to evacuation recommendation and instructions)

(1) Consideration of the nature of evacuation recommendation and instructions
(2) Consideration of indoor safety assurance as an evacuation action
(3) Consideration of positioning the start of evacuation for the elderly and those who require assistance evacuating

(Main issues: related to wide-area evacuation)

(1) Consideration of the development of a national headquarters system
(2) Consideration of securing arranged wide-area evacuation sites
(3) Consideration of securing transportation for evacuated residents during wide-area evacuation
(4) Organize and consider cost sharing for wide-area evacuation

Sub-Working Group Concerning Evacuation of the Elderly and those whoe requre assistance evacuating Based on Typhoon Hagibis in 2019

- Academic knowledge (mainly composed of members of the WG on evacuation of the National Disaster Management Council)
- Chiefs (recommended by the Japan Association of City Mayors and the National Association of Towns and Villages)
- Organizations related to people with disabilities
- Welfare related organizations

(Main issues: Evacuation of the elderly, etc.)

(1) Consideration of the list of those who require assistance evacuating
(2) Discussion of individual plans
(3) Consideration of welfare shelters
(4) Consideration of Community Disaster Management Plan

Source: Cabinet Office data

2-2 Report on “Sub-Working Group on Evacuation Information and Wide-Area Evacuation in the Wake of Typhoon Hagibis in 2019 (T1919)”

(1) Background of Consideration

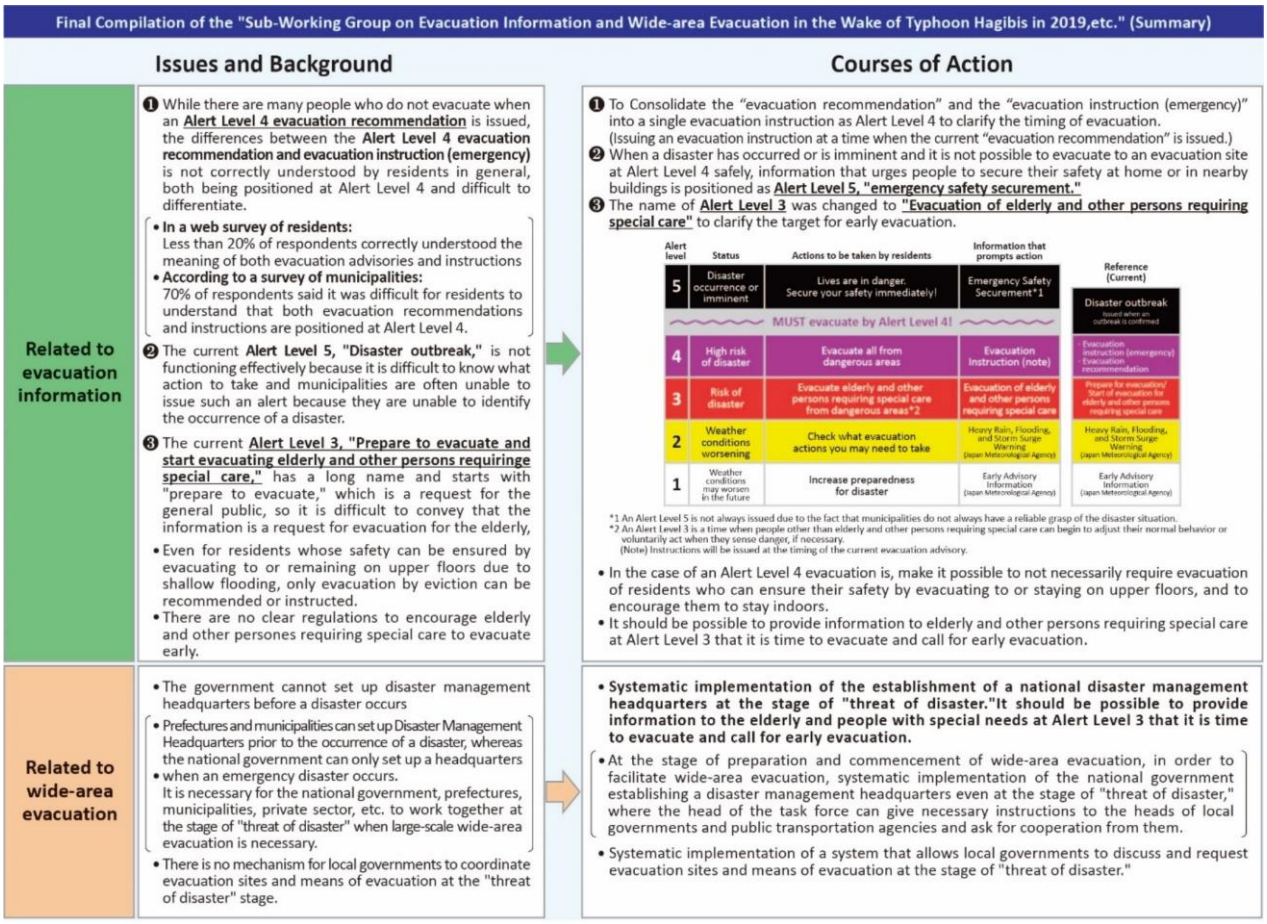
The SWG on Evacuation Information started its study on June 1, 2020 and discussed the direction of improvement in the system for evacuation information and region-wide evacuation. Then, on December 24 of the same year, the " Ideal State of Evacuation Information and Region-Wide Evacuation Based on Typhoon Hagibis in 2019 (T1919) (Final Report)" was released.

(Reference: http://www.bousai.go.jp/fusuigai/subtyphoonworking/index.html)

(2) Summary of the Final Report

In the final report, the main directions for action were presented as follows.

1. Consolidated the “evacuation recommendation” and the “evacuation instruction (emergency)” into a single evacuation instruction as Alert Level 4 to clarify the timing of evacuation.
   (Issuing an evacuation instruction at a time when the current “evacuation recommendation” is issued.)
2. Placed the type of notice, which urges residents to change their behavior from evacuating to a shelter to staying at home or in nearby buildings to urgently secure safety as an Alert Level 5 "emergency safety securement," when a disaster had already occurred or is imminent and it is impossible to safely evacuate to a shelter at Alert Level 4.
   (Alert Level 5 can be issued not only when a disaster is confirmed, but also when a disaster is imminent, because the alert is expected to change the behavior in situations where disaster is imminent (a situation where there is a high probability that an outbreak has already occurred even though it has not been occurred or confirmed yet.))
3. Revised the name of Alert Level 3 into "Evacuation of the elderly and people with special needs" in order to clarify the objective of urging early evacuation.
4. Established a Disaster Management Headquarters at the stage of "threat of disaster" to facilitate large-scale and region-wide evacuation.
5. Establish a system that allows local governments to discuss region-wide evacuation and request transportation of residents at the stage of "threat of disaster."



Source: Cabinet Office data

Based on points 1 to 3 above, the Alert Level, situation, actions to be taken by residents, and information used to urge action are summarized as shown in the following table. The Alert Levels correlate "actions to be taken by residents" and "information used to urge action", which are classified into five levels according to the rise of threat of a disaster. At this time, for ease of understanding, a column for "Status" is added. In the future, when using a register of Alert Levels for public awareness and disseminating the new Alert Levels, the following notation should be used based on the "Points to be Noted in Notation" at the bottom of the figure.

Table of New Alert Levels

Alert level	Status	Actions to be taken by residents	Information that prompts action
5	Disaster occurrence or imminent	Lives are in danger. Secure your safety immediately!	Emergency Safety Securement*1
		MUST evacuate by Alert Level 4!	
4	High risk of disaster	Evacuate all from dangerous areas	Evacuation Instruction (note)
3	Risk of disaster	Evacuate elderly and other persons requiring special care from dangerous areas*2	Evacuate elderly and other persons requiring special care
2	Weather conditions worsening	Check what evacuation actions you may need to take	Heavy Rain, Flooding, and Storm Surge Warning (Japan Meteorological Agency)
1	Weather conditions may worsen in the future	Increase preparedness for disaster	Early Advisory Information (Japan Meteorological Agency)

*1 An Alert Level 5 is not always issued due to the fact that municipalities do not always have a reliable grasp of the disaster situation.
*2 An Alert Level 3 is a time when people other thanthe elderly and people with special needs can begin to adjust their normal behavior or voluntarily act when they sense danger, if necessary.
(Note) Instructions will be issued at the timing of the current evacuation advisory.

Notes on notation of the table of Alert Levels
(1) To indicate that Alert Level 5 is an extremely life-threatening level that differs from Alert Levels 4 and below, there should be a separation between Alert Levels 5 and
(2) those below. If a space is available for a separator with text, the purpose of the separator should be to indicate that people "MUST evacuate by Alert Level 4!"
(3) To make it clear that evacuation should be conducted when Alert Level 4 or 3 is issued, Alert Levels 4 and 3 should be emphasized (bold letters, higher line height, etc.). The color scheme (R,G,B) used is black (12,0,12) for Alert Level 5, purple (170,0,170) for 4, red (255,40,0) for 3, yellow (242,231,0) for 2, and white (255,255,255) for 1.

Source: Cabinet Office data

Also, the improvement of evacuation information, of which the SWG on Evacuation Information indicated the direction, alone is not enough. It is necessary to recognize evacuation as something that should be done voluntarily by oneself and to link it to actual evacuation actions. To facilitate this recognition, residents can be involved in the preparation of a Community Disaster Management Plan, or deepen the understanding of disaster prevention in local schools in order for residents to be aware of the need to "protect their own lives" and to be able to evacuate independently based on evacuation information in the event of a disaster. Additionally, it is essential to develop human resources who can provide guidance on such matters.

It is important to do everything possible to support the evacuation of residents. Residents should be aware of the need to "protect their own lives" and take appropriate evacuation actions. Local communities should strengthen their local disaster management systems to make the most use of evacuation information. Administrative Organizations should provide evacuation information that residents can easily understand. During the flood season in 2020, many people fell victim to flood disasters and Sediment Disaster (Landslide Disaster), including the Heavy Rain Event of July 2020. A society with a high awareness of disaster prevention must be built up as soon as possible so that necessary studies and measures can be steadily implemented, and fewer people lose their lives to these kinds of flood disasters and Sediment Disaster (Landslide Disaster).

2-3 Report on "Sub-Working Group Concerning Evacuation of the Elderly and people with special needs Based on Typhoon Hagibis in 2019 (T1919)"

(1) Background of Consideration

The SWG for the Elderly and People with Special Needs started making considerations on June 19, 2020, and discussed the direction for improvement of systematic aspects of Community Disaster Management Plan in respect to registers of those who require assistance evacuating such as the elderly and people with disabilities who have difficulty evacuating on their own, individual evacuation plans concerning evacuation of those who require assistance evacuating, and welfare shelters. And then, on December 24 of the same year, the "Ideal State of Evacuation of Elderly and Other People with Special Needs Based on Typhoon Hagibis in 2019 (T1919) (Final Report)" was released.

(References:

http://www.bousai.go.jp/kaigirep/r1typhoon/index.html

http://www.bousai.go.jp/fusuigai/koreisubtyphoonworking/index.html)

(2) Summary of the Final Report

In the final report, the main directions for action were presented as follows based on systematic issues such as individual evacuation plans.

Final Compilation of the Sub-Working Group on Evacuation of the Elderly and People with Special Needs based on Typhoon Hagibis in 2019 (Summary)

	Issues and Background	Courses of Action
List of those who require assistance evacuating	○ Although 98.9% of municipalities have completed the preparation of the list of those who require assistance evacuating, they may not be able to accurately identify those who truly require evacuation support.	○ Collaboration with key people and organizations in the community, in addition to welfare professionals and medical professionals such as family doctors, in order to prevent people who should be listed on the list of those who require assistance evacuating from not being listed.
Individual plans (*A plan that includes information on evacuation support personnel and evacuation sites for those who require assistance evacuating (the elderly, people with disabilities, etc).")	○ In light of the fact that the elderly and people with disabilities have suffered* in past disasters, some measures are needed to make evacuation support even more effective in times of disaster. *Percentage of deaths attributed to the elderly in past disasters ・The Heavy Rain Event of July 2020: approx. 79% (65 years and older) (of which, approx. 85% in Kumamoto Prefecture) ・Typhoon Hagibis in 2019: approx. 65% (65 years and older) ・The Heavy Rain Event of 2018: approx. 70% (among those dead in Ehime, Okayama, and Hiroshima Prefectures, 60 years and older) (of which, approx. 80% in Mabi-cho, Kurashiki City, which has the largest number of fatalities by municipalities) (70 years and over) ○ When considering the priority of those who need individual plans and the contents of these individual plan, information on the physical and mental conditions and actual living conditions of the person concerned is necessary.	○ In order to make evacuation support effective in times of disaster, it is effective to formulate individual plans. Position individual plans as something that municipalities must strive to formulate under the system, and further measures are promoted. ○ The municipality takes the lead in formulating the plan, in collaboration with welfare professionals, Social Welfare Councils, Welfare Volunteers and other daily supporters, and local residents. ○ Formulate individual plans starting with those with the highest priority, such as those who live in areas at high risk of disaster. At the same time, formulate an individual plan to be filled out by the person (or community, depending on the situation). ○ It is important to create a system to support the securing and training of human resources, to provide financial support for the efforts of municipalities to formulate individual plans, and to implement and verify measures by setting up model districts.
Welfare shelters, etc.	○ Some people request that they may be able to evacuate directly to the facilities they use on a regular basis. ○ It has been pointed out that if they are announced as designated shelters, there is a concern that the evacuation of affected people who are not expected to be accepted will hinder their response as welfare shelters, thus preventing the securing of welfare shelters as designated evacuation centers. ○ In addition, there is a lack of clarity on the positioning and nature of welfare shelters and other facilities and spaces where persons requiring special care can evacuate to and receive welfare support.	○ Through the process of formulating individual plans, coordinate the recipients of each welfare shelter in advance, and promote direct evacuation to welfare shelters. ○ For each welfare shelter, the target group of acceptees will be specified and publicly announced at the time of designation in order to clarify that the shelter is for evacuation of these acceptees and their families only, and to promote acceptance of evacuees at welfare shelters. ○ Clarify that even small facilities and spaces should be designated as welfare shelters if they are expected to be used mainly by persons requiring special care.
Community Disaster Management Plan	○ The Community Disaster Management Plan is expected to contribute greatly to evacuation behavior at the local community level and to play a very important role in putting individual plans into practice by identifying those who require assistance evacuating and calling for evacuation. ○ With regard to the dissemination of Community Disaster Management Plans, one of the challenges is that there is a lack of planning supporters (e.g., local experts on disaster prevention, municipal officials) who can provide advice and guidance to increase the momentum of local residents when they prepare a draft plan.	○ In addition to measures for the dissemination and education of Community Disaster Management Plans, such as through case studies, establish a system to support the preparation of draft plans and a system to develop human resources. ○ In addition to encouraging the development of individual plans and prioritizing those with the highest risk of disaster, create an environment where people from various fields in the community, such as those who understand disaster prevention, welfare, and medical care, are involved so that the development of the draft of the Community Disaster Management Plan can involve all people in the district and be consistent with the individual plans, if any.

Source: Cabinet Office data

1. Direction of Measures regarding the Registers of Those Who Require Assistance Evacuating

- Status of Measures as to the Registers of Those Who Require Assistance Evacuating

Under the amendment of the Basic Act on Disaster Management in 2013, municipalities are obligated to prepare registers of those who require assistance evacuating in response to the lessons learned from the Great East Japan Earthquake, such as an inadequate response to the elderly and people with special needs. These registers have been becoming widespread, being prepared in 99% of municipalities as of October 1, 2020.

- Utilization of the Registers of Those Who Require Assistance Evacuating

There is a possibility that those who should be registered are not registered in the register of those who require assistance evacuating. Collaboration is necessary among key people and organizations in the communities such as neighborhood associations, district Social Welfare Councils, and Welfare Volunteers and Child Welfare Volunteers, who can detect and understand those who are dormant and isolated. In addition to these, cooperation is also necessary among medical professionals including welfare professionals and family doctors.

2. Direction of Response Regarding Individual Evacuation Plans

- Status of Measures for Individual Evacuation Plans

In order for evacuation support to be effective in the event of a disaster, it has been considered appropriate to proceed with the creation of individual evacuation plans in conjunction with the creation of registers of those who require assistance evacuating in the "Guidelines for Supporting the Evacuation Behavior of Those Who Require Assistance Evacuating" (hereinafter referred to as the "Guidelines") in August 2013. However, as of October 1, 2020, the ratio of municipalities that have completed creating individual evacuation plans related with all the persons in the registers of those who require assistance evacuating is approximately 10%. Approximately 57% of municipalities have completed the creation of individual evacuation plans of a portion of their registered persons. (Reference: http://www.bousai.go.jp/taisaku/hisaisyagyousei/youengosya/h25/pdf/hinansien-honbun.pdf)

- Clarification of Systematic Positioning

Many elderly people have been affected and there have been cases where people with disabilities were not evacuated properly in recent disasters. In light of this fact, it would be valid to create individual evacuation plans for more effective evacuation support in the event of disasters. To promote this creation of individual evacuation plans, it is necessary to clarify the systematic position of these individual evacuation plans.

On the current situation of creating individual evacuation plans, some municipalities find it difficult to create them all at once, at least for the time being, as new plans are required by many people. Moreover, some municipalities have no choice but to create these plans incrementally according to the situational necessity of those who require assistance. Therefore, when considering the systematic positioning of individual evacuation plans, it is necessary to consider the circumstances surrounding each municipality. As such, systematically, individual evacuation plans can be thought to take the position of an objective that municipalities must strive to create.

- Policy and System for Preparing Individual Evacuation Plans

Individual evacuation plans need to be prepared primarily by the municipality, in collaboration with relevant parties. As a practical matter, some part of the preparation work can be outsourced according to the division of roles among the parties concerned in the municipalities.

- Creating Individual Evacuation Plans based on Priorities

Within the limited system of the municipalities, it is appropriate to prepare individual evacuation plans for those who require assistance evacuating as early as possible, starting with those who have the highest priority. The following things are what municipalities can consider to determine the priority of evacuation plan creation:

- Status of hazards in the zone (e.g., probable inundation areas (the Flood Control Act (Act No. 193 of 1949)), Sediment Disaster (Landslide Disaster) hazard zones (Act on Sediment Disaster Countermeasures for Sediment Disaster Prone Areas (Act No. 57 of 2000))
- The physical and mental condition of persons concerned, and the degree to which one needs assistance in obtaining information and making decisions.
- Actual conditions of the residence such as a person living alone or in social isolation.

While working to create individual evacuation plans according to the priority, it is needed to create plans for all of those who require assistance evacuating as soon as possible within the limited resources of each municipality. For this purpose, it is appropriate for municipalities to promote preparation of individual evacuation plans by 2 ways as follows:

1: To create plans according to the priority receiving support of the municipality.

2: To create plans by the form filled in by the person who require assistance evacuating, or depending on their conditions, their family member or a person of the voluntary disaster management organization that carry out disaster prevention activities in the community (hereinafter referred to as the "Individual Evacuation Plan for Individual and Community Entry").

The Individual Evacuation Plan for Individual and Community Entry is also based on the perspective of empowerment to the citizens to protect their own lives.

- Support for Measures to Create Individual Evacuation Plans

It is important to establish a system to support the securing and training of human resources who are expected to play a central role in the preparation of individual evacuation plans.

In order to prepare for individual evacuation plans, it is expected that a certain amount of expense will be required for the participation of welfare professionals and others involved in the preparation of individual evacuation plans. In order to make this system sustainable, it is important to provide stable financial resources. In addition, it is important to provide financial support so that disparities do not occur among local governments.

In order to disseminate the preparation of individual evacuation plans, it is important for the national government, with the cooperation of local governments, to set up model districts, while identifying and verifying issues by implementing initiatives with an awareness of the PDCA cycle. It will then be essential to make any improvements based on these results and roll these improvements out nationwide.

Specific details regarding the preparation and operation of individual evacuation plans should be determined based on the actual conditions of the region and the results of local discussions. In the near future, the national government is expected to amend the Guidelines for initiatives and to provide notes and examples for reference.

Discussions to create an individual evacuation plan with the participation of those who require assistance evacuating (provided by Hyogo Prefecture)

An evacuation drill conducted to confirm the effectiveness of the individual evacuation plan, with the participation of those who require assistance evacuating (provided by Beppu City, Oita Prefecture)

3. Direction of Response Regarding Welfare Shelters

- Direct Evacuation to Welfare Shelters

As people with disabilities may face difficulties in spending time in shelters that are not welfare shelters (hereinafter referred to as "general shelters"), it has been pointed out that evacuation to a general shelter may be difficult in some cases. With this type of situation, some have voiced that they would like to evacuate directly to facilities that they use on a regular basis.

Direct evacuation to welfare shelters is still possible under the current system. Some examples are being implemented such as in Kumamoto City, and with these examples as a guide, through the process of creating community disaster management plans and individual evacuation plans, it is appropriate to adjust the number of people to be accepted at each welfare shelter in advance, and promote direct evacuation to welfare shelters, where safety is ensured according to the type of disaster when necessary for evacuation.

- Establishment of a Public Notification System to Identify Those Who Will Be Accepted into Welfare Shelters

Some facilities may not desire to be designated as a welfare shelter, with concerns that being designated as such may invite unexpected affected people. As such, it is appropriate to establish a system that can clarify that the facility is only for accepted recipients and their families by specifying the accepted recipients and publicly notifying them in advance at the time of designation at each welfare shelter.

With the establishment of this system, the evacuation destination for persons with special needs will be clarified, and the unexpected evacuation of affected people will be eliminated. At the same time, this system will be useful as a way to consider the number of evacuees, the support that needs to be provided to those who are to be accepted, and the contents and quantity of relief supplies, as well as to stockpile relief supplies and prepare equipment such as emergency power generators.

4. Direction of Response Regarding Community Disaster Management Plan

- Support for the Preparation of a Draft of Community Disaster Management Plan

With regard to Community Disaster Management Plan, in preparing a draft, it is important to encourage creating a draft starting with the priority areas where the disaster risk is higher. It is also important to create an environment in which people from various fields in the community, such as disaster prevention, welfare, and if possible, medical care can get involved, and to develop human resources who can coordinate and link related parties in local governments so that the plans can be inclusive and consistent with individual evacuation plans.

- The Role of Community Disaster Management Plan

The roles requested of Community Disaster Management Plan include planning for community-wide evacuation support, increasing the effectiveness of evacuation of the elderly who are healthy through planning, and promoting collaboration between disaster prevention and welfare by using disaster prevention, a common concern of all residents, as an entry point for building community ties.

Workshop on training to support the preparation of Community Disaster Management Plan
in Misato Town, Shimane Prefecture (Cabinet Office data)

(3) National Response Based on the Report

An amendment to the "Basic Act on Disaster Management," based on the direction of the report, was enacted in April 2021, made it obligation to make effort for municipalities to make individual evacuation plans. In May of the same year, amendments to the enforcement regulations of the Basic Act on Disaster Management established a public notification system to identify those who are eligible to be accepted into welfare shelters. In the same month, the measurement directions and guidelines were revised to facilitate the smooth operation of the system.

In FY 2021, new local allocation tax measures were put in place to be provided to municipalities for the expense of preparing individual evacuation plans. Also, as a budgeted project, a model project is being implemented to create a model for the creation of effective and efficient individual evacuation plans which will be rolled out nationwide.

Furthermore, in the future, there are plans to support such as sharing of case studies from all of Japan through the websites and training programs.

With regard to Community Disaster Management Plan, in addition to encouraging the creation of district disaster prevention plans in areas with higher risks of disaster, just like individual evacuation plans are created, an

environment in which people from various fields in the community, including those who understand disaster prevention, welfare, and medical care, can be involved will be created in order to ensure that the plans are created with the participation of all people in the district, and that they are consistent with the individual evacuation plans if there are any in place.

Section 3 Act for Partial Amendment of the Act on Countermeasures against Flood Damage of Specified Rivers

3-1 Background and Necessity of Amendment

In recent years, flood disasters have become more severe and frequent throughout Japan, such as Typhoon Hagibis in 2019 (T1919) and the Heavy Rain Event of July 2020. Due to the effects of climate change, it is estimated that by the end of the 21st century, the national average rainfall will have increased by 1.1 times and the frequency of flooding will have doubled.

In light of these circumstances, in addition to accelerating and enhancing infrastructure development to cope with increased rainfall and reviewing flood control plans, there has become an urgent need to develop a legal framework to increase the effectiveness of "basin flood control" through having a bird's eye view of an entire river basin such as its upstream, downstream, the main river and tributary rivers, with all parties, including the national government, local governments in the basin, businesses, and residents working together.

Therefore, presenting amendments to the "Watershed Flood Control Bill," which consists of nine related acts such as the “Act on Countermeasures against Flood Damage of Specified Rivers (Act No. 77 of 2003),” the “Flood Control Act (Act No. 193 of 1949),” the “Sewerage Act (Act No. 79 of 1958),” the “River Act (Act No. 167 of 1964),” the “City Planning Act (Act No. 100 of 1968)” and the “Act on Special Financial Support for Promoting Group Relocation for Disaster Mitigation (Act No. 132 of 1972)” to the 204th Diet, the bill was passed in April 2021 after deliberations in both the House of Representatives and the House of Councilors, and it was promulgated as the “Act for Partial Amendment of the Act on Countermeasures against Flood Damage of Specified Rivers (Act No. 31 of 2021)” in May of the same year.

The Act provides for the following measures to be taken with the aim of enhancing the effectiveness of basin flood control:

- Strengthening plans and systems for basin flood control.
- Measures for as much flood prevention as possible.
- Measures to reduce the number of persons and things that fall victim to damage.
- Measures to mitigate damage and achieve early recovery.

The effective date of this Act shall be "the date specified by a Cabinet Order within a period not exceeding three months or six months from the date of promulgation" of this Act respectively, depending on each amendment. Therefore, the specific timing of implementation is currently under consideration.

The details of each revision are as follows.

● **Act for Partial Amendment of the Act on Countermeasures against Flood Damage of Specified Rivers** (Act No. 31 of 2021)

[Promulgation: May 10, 2021/Effective: Date specified by Cabinet Order within 3 months or 6 months from the date of promulgation]
<Budget-Related Acts>

Background and Necessity

○ In recent years, water-related disasters have become more severe and frequent in many parts of Japan, such as the Typhoon Hagibis in 2019 (T1919) and the Heavy Rain Event of July 2020. Due to the effects of climate change, it is estimated that by the end of the 21st century, the average national rainfall will have increased by 1.1 times and the frequency of flooding will have doubled (compared to the end of the 20th century).

In order to cope with the increase in rainfall, it is necessary to accelerate and enhance structural development, review flood control plans, and develop a legal framework, the **"flood-control-related-laws,"** to enhance the effectiveness of **"basin flood control,"** which is a collaborative effort among all parties involved, including the national government, local governments, businesses, and residents, by taking a bird's-eye view of the entire river basin, including upstream and downstream, main rivers and branch rivers.

Outline of the Act

1. Enhancement of basin flood control plan and systems [Specified Urban River Act]

◆ **Expand the number of rivers that use the basin flood control plan**
- In addition to rivers where it is difficult to prevent damage through river maintenance due to the progress of urbanization, rivers where damage prevention is difficult due to natural conditions have been added to the list (expanded to all rivers in Japan)

◆ **Creation of a council for watershed flood disaster management and enhancement of the plans**
- Officials from the national, prefectural, and municipal governments gather to discuss the enhancement of rainwater harvesting and infiltration measures by the public and private sectors, and land use in flooded areas.
- Incorporate the results of consultations into the basin flood control plan and implemented them without fail

Basin flood control concept

2. Measures to prevent flooding as much as possible [River Act, Sewerage Act, Specified Urban River Act, City Planning Act, Urban Green Space Act]

◆ **Enhance measures in rivers and sewerage systems** ◎**Further promote structural measures such as embankment maintenance** (budget)
- Creation of a council (with participation of river administrators, water users such as electric power companies) to expand pre-release water discharge from water utilization dams (*budget and taxation)
- Position a target amount of rainfall in the plan where flooding damage can be prevented by the sewerage system, accelerate maintenance
- Mandate the establishment of operation rules for sewer gutters to ensure the prevention of backflow from rivers, into urban areas

◆ **Enhance rainwater harvesting measures in basin**
- Create storage function conservation areas to secure land with water retention and recreational functions along rivers
- Preserve green space in urban areas and use them as green infrastructure with storage and infiltration functions
- Support the development of municipal and private rainwater harvesting and infiltration facilities through certification systems, subsidies, and special taxation measures (*budget related and taxation)

3. Measures to reduce subjects of damage [Specified Urban River Act, City Planning Act, Act on Special Measures for Disaster Prevention Group Relocation, Building Standards Act]

◆ **Collaboration with urban development and living arrangements that address flood prevention and disaster prevention**
- Create flood damage prevention zones and check the safety of houses and facilities for persons requiring special care in advance (approval basis)
- Promote relocation from dangerous areas by expanding the area requirements for the project for promoting group relocation for disaster prevention (*budget related)
- Enhance the safety of urban areas through the development of evacuation centers and district-based flood control measures in the event of a disaster (*budget related)

4. Measures for mitigation of damage and early recovery [Flood Control Act, Act on Sediment Disaster Countermeasures for Sediment Disaster Prone Area, River Act]
- Expand the preparation of hazard maps for floods, to small and medium-sized rivers as a way to eliminate gaps in risk information
- Ensure the effectiveness of evacuation by providing advice and recommendation form municipalities on evacuation plans and drills to facilities used by persons requiring special care
- Expanded the scope of authority delegating to the Minister of Land, Infrastructure, Transport and Tourism to include removal of sediment deposited by disasters and secondary rivers

Objectives and Effects: Basin flood control to cope with increased rainfall due to climate change
(KPI) Number of rivers with probable inundation areas: 2,092 rivers (FY2020) → approx. 17,000 rivers (FY2025)

Source: Ministry of Land, Infrastructure, Transport and Tourism

3-2 Regarding Each Amendment

(1) Strengthening Plans and Systems for Basin Flood Control

As a measure to increase the effectiveness of basin flood control, the first step is to expand the number of rivers (specified rivers) that utilize the Watershed Flood Disaster Management Measures, which takes a position in the

Act on Countermeasures against Flood Damage of Specified Rivers. Specifically, in addition to rivers where damage prevention is difficult by river maintenance due to the progress of urbanization or natural conditions can be designated as specified rivers.

Also, a decision was made to create an environment in which measures can be assuredly implemented by creating a council by people from the national government, prefectures and municipalities gathering together. The council is to discuss Watershed Flood Disaster Management Measures, including strengthening rainwater harvesting and infiltration measures and land use in flooded areas by public and private sectors, and it is positioned in the Watershed Flood Disaster Management Measures Plan.

(2) Measures for as Much Flood Prevention as Possible

Secondly, as part of the strengthening of measures in rivers, a decision was made to create a council to expand pre-release water discharge at water utilization dams, with the participation of river administrators and power companies.

In addition, as part of strengthening measures in the sewerage systems, a decision was made that a target amount of rainfall where inundation damage becomes a concern in the sewerage system should be positioned in the plan, and that measures should be taken to accelerate maintenance. A decision was also made to take measures to ensure the prevention of backflow from rivers into urban areas by the establishment of rules for the operation of sewerage sluice gates.

Furthermore, as a part of measures to strengthen rainwater storage measures in watershed zones, a decision was made to support the development of rainwater harvesting and infiltration facilities of local governments and the private sector through certification systems, subsidies, and special taxation. Additional measures include securing lands with water retention and control functions along rivers by creating a storage function conservation area, and preserving green spaces in urban areas, utilizing those lands as green infrastructure with storage and filtration functions.

(3) Measures to Reduce the Number of Persons or Things that Fall Victim to Damage

Thirdly, from the perspective of promoting coordination with urban development and ways of living that respond to water disasters, a decision was made to create flood damage prevention zones, establish a system of development and building permissions to be checked in advance regarding safety against flooding of homes in areas with significant risk of flooding damage and facilities for persons requiring special care, promote the relocation of families from areas at risk from flooding by expanding the area requirements for project for promoting group relocation for disaster prevention, and to strengthen the safety of city areas by building evacuation centers in the event of disasters and taking measures against inundation at the district level.

(4) Measures to Mitigate Damage and Achieve Early Recovery

Fourthly, from the perspective of mitigating damage, a decision was made to eliminate gaps in risk information by expanding the scope of hazard map preparation with small and medium-sized rivers as flood corresponding areas, and to ensure the effectiveness of evacuation by establishing a system for municipalities to provide advice

and recommendations on evacuation plans and evacuation drills for facilities used by persons requiring special care during floods.

Additionally, from the perspective of promoting early recovery from disasters, a decision was made to expand the authority of the Minister of Land, Infrastructure, Transport and Tourism in the River Act, expand the scope where the National Government may act as an authority for river construction from Second Class Rivers to locally designated rivers, and to remove sediment deposited in rivers at the time of disaster by the national government on behalf of prefectures.

Section 4 Efforts of “Disaster Prevention × Technology”

4-1 Background of Consideration and Establishment of Task Force of “Disaster Prevention Measures × Technology”

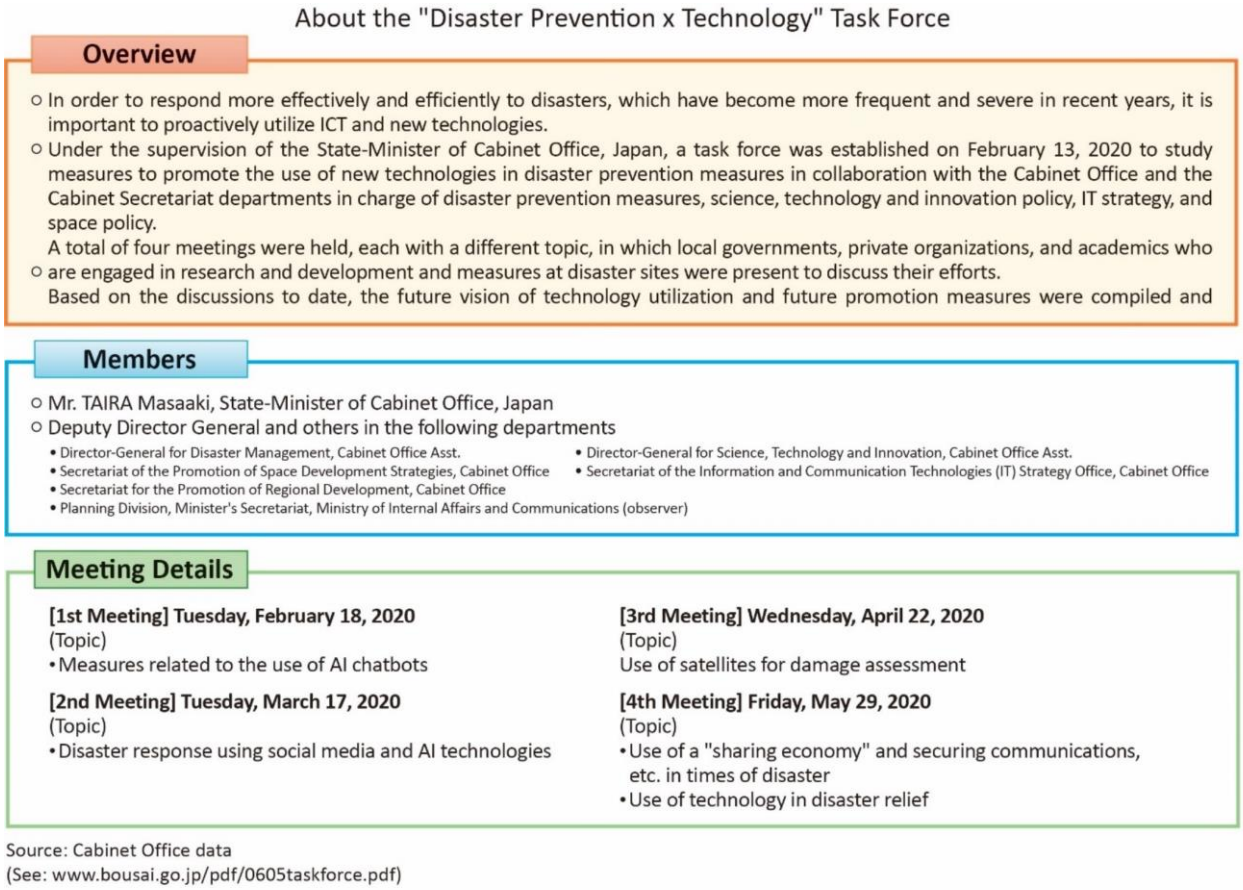
To more effectively and efficiently respond to disasters, which have become more frequent and severe in recent years, it is important to proactively utilize ICT and new technologies.

In light of these circumstances, on February 13, 2020, the Cabinet Office has established the "Disaster Prevention x Technology" Task Force (hereinafter referred to as the “Task Force”). The Task Force will study strategies to promote the use of new technologies in disaster management, under the leadership of the State Minister of the Cabinet Office, the Cabinet Office and the Cabinet Secretariat's departments in charge of disaster management, science, technology and innovation policy, IT strategy, and space policy all working together.

The Task Force held a total of four meetings, including a web conference, from February to May 2020, where local governments engaged in the use of technology, private organizations promoting research and development, and academics presented their initiatives and held discussions. The specific themes for each session are as follows.

Part 1: Initiatives for the Use of AI Chatbots, etc.
Part 2: Disaster Response Using Social Media and AI Technology
Part 3: Using Satellites to Assess Damage
Part 4: Using the Sharing Economy in Times of Disaster, Securing Communications, and Using Technology in Disaster Relief Procedures for the Affected People

Based on these discussions, the Task Force compiled a summary of the future vision of technology utilization and future promotion measures, and published it on June 5, 2020.



Source: Cabinet Office data
(See: www.bousai.go.jp/pdf/0605taskforce.pdf)

4-2 Organizing Task Force of "Disaster Prevention Measures × Technology"

In the event of large-scale disasters, an enormous amount of disaster response work is required, but the human resources of local governments are limited. To respond swiftly and accurately, it is important to improve the efficiency of work, save labor, and standardize operations.

At present, various organizations are working on research and development of advanced technologies such as AI, SNS, and satellites that may contribute to increasing efficiency and saving labor in disaster response operations, as well as digitization of procedures for various systems.

In light of this situation, the task force decided to promote the following initiatives in collaboration with the relevant departments of the task force in order to encourage the use of technology at the local government level.

- With regard to the provision of disaster risk and evacuation information, further technological development and field tests will be carried out to enable AI-based chatbots for disaster management to "provide information that encourages appropriate evacuation behavior based on each individual's situation" and "collect local disaster information from residents" via smartphones.
- For damage assessment, further technological development and field tests will be carried out to enable rapid collection and sharing of images of the damage over a wide area via satellite.
- With regard to the digitization of disaster relief, a database will be developed to allow easy searches of various disaster relief. The effectiveness and challenges of digitizing procedures for various disaster relief

(e.g., Disaster Affected Certificates, and victim's registry.) will be verified to create examples of effective use and to consider ideal systems.

- With regard to securing evacuation facilities through “mutual support,” a model disaster management agreement will be considered and disseminated to promote the use of the sharing economy in the provision of evacuation sites, food, and other disaster support services to the affected people.
- As for redundant communications, in order to "confirm safety and send emergency information using the communication functions of the quasi-zenith satellite (QZS)," information on effective applications of the QZS and how to use it will be publicized. In addition, to enable the "provision of communication networks by unmanned aerial vehicles flying at high altitudes with onboard base stations (HAPS: High Altitude Platform Station)," further technological development for stable communication will be carried out to make this a reality.

At present, in order to promote the use of technology at the local government level, the relevant departments are promoting further research, development and commercialization of the initiatives described in the task force's summary.

Summary of "Disaster Prevention x Technology" Task Force (June 5, 2020)

○ In the event of a large-scale disaster, an enormous amount of disaster response work will be required. However, human resources of local governments are limited, and in **order to respond quickly and accurately, it is important to streamline work, save labor, and standardize operations.**
○ At present, research and development of various advanced technologies such as AI, social media, and satellites that may contribute to the efficiency and labor saving of disaster response operations, as well as measures to digitize the procedures of various systems, are underway. In order to **promote the use of this technology in the field of local governments,** the relevant departments of **the departments involved in"Disaster Prevention x Technology" Task Force will collaborate to promote the following measures.**

The Future of Technology Use in Disaster Response		Future Measures
Provision of disaster risk and evacuation information	Chatbots for disaster management using AI via smartphones • Provide information that encourages appropriate evacuation actions, taking into account each individual's situation • Collect local disaster information from residents	Establish the "Disaster Prevention x Technology Public-Private Partnership Platform" (hereinafter referred to as the "Public-Private Partnership PF") to provide support for matching the needs of local governments and other entities with advanced technologies such as chatbots for disaster management using AI, and introduce examples of their use, and to develop recommended data formats considering open data (such as disaster risk information) (FY2021 and on) [Lead] Disaster Prevention
Assessing the state of damage	Rapid collection and sharing of disaster footage over a wide area by satellite	In the second phase of SIP, further technology development, demonstration experiments, creation of implementation guidelines, and promotion of collaboration with SIP4D (up to FY2022) [Lead] Technology
Digitization of the disaster relief system	Setting up a database for easy search of various disaster relief systems	Construction of a database of the System on Support for Reconstructing Livelihoods of the Affected due to Disaster (for individuals) provided by each government agency (FY2021 and on) [Lead] Disaster Prevention
	Digitization of procedures for various disaster relief systems (e.g., Disaster Affected Certificates, victim's registry)	In the Public-Private Partnership PF, model municipalities will be selected to demonstrate the effects and challenges of digitizing procedures for various disaster relief systems (e.g., systematization through the use of cloud computing that can be used jointly), to create effective examples of use, and to study an idea of the ideal system (FY2021 and on) [Lead] Disaster Prevention
Secure evacuation facilities through mutual support	Provision of disaster relief services such as shelters and food to affected people through the use of a sharing economy	Study and dissemination of model disaster prevention agreements (FY2020 and on) [Lead] IT Strat. Office
Communication redundancy	Safety confirmation and emergency information transmission using the communication function of the Quasi-Zenith Satellites	Dissemination of effective applications and usage of Quasi-Zenith Satellites (FY2020 and on) [Lead] Space Strat.
	Provision of communication networks by unmanned aerial vehicles, or High Altitude Platform Stations, (HAPS).	Further technological development for stable communications that can be implemented (FY2020 and on) [Lead] Ministry of Internal Affairs and Communications

Source: Cabinet Office data
(See: www.bousai.go.jp/pdf/0605taskforce.pdf)

Section 5 Efforts of “Climate Change × Disaster Prevention”

5-1 Background of Consideration of “Climate Change × Disaster Prevention”

The planet's average temperature has already risen by about 1 degree Celsius since pre-industrial times, and climate change has become a reality with frequent meteorological disasters occurring around the world. In Japan too, severe floods and Sediment Disaster (Landslide Disaster) have occurred frequently in recent years due to such meteorological disasters. Among them are the Northern Kyushu Torrential Rain in July 2017, the Heavy Rain Event of July 2018, and Typhoon Hagibis in 2019 (T1919). It is predicted that the frequency of heavy rains and floods will increase due to climate change. It is important to recognize that we have entered an era in which weather-related disasters that exceed expectations will occur more frequently in more regions.

From February 2020, the Cabinet Office and the Ministry of the Environment joined forces to hold 3 meetings to exchange opinions on policies from the perspective of "Climate Action x DRR" with experts. This was done to raise further awareness of climate change and disaster risk management among all citizens, to determine what disaster management measures should be taken to adapt to climate change, and to provide a direction for fundamental disaster prevention and mitigation measures and climate change adaptation.

The third meeting for exchanging opinions (June 3, 2020)

Then Minister of State for Disaster Management, Cabinet Office, Takeda, exchanging views with experts

Then Minister of State for Disaster Management, Cabinet Office, Takeda, and Minister of the Environment, Koizumi, at the Opinion Exchange Meeting

5-2 Strategy of “Climate Change × Disaster Prevention” in Climate Risk Age -From Restoration to Adapted Reconstruction-

Based on the discussions at the opinion exchange meeting, the joint message of Mr. Takeda, the then Minister of State for Disaster Management, and Mr. Koizumi, the Minister of the Environment, was released on June 30, 2020 under the title of " Climate Action x DRR Strategy in an Age of Climate Crisis: From Restoration to Original Form to Adaptation and Reconstruction." The message was designed as a strategy to effectively coordinate climate change adaptation with disaster prevention and mitigation measures, while taking into account future climate change projections, taking a bird's-eye view of social issues, and looking to achieve the SDGs.

A summary of the message is as follows.

- Mainstreaming Climate Action x DRR

Climate action and disaster risk reduction are cross-cutting issues that need to be addressed in all fields. In the future, we will pursue the mainstreaming of these issues by incorporating Climate Action x DRR into policies in various fields.

- Promoting Comprehensive Measures to Build a Decarbonized and Disaster-Resilient Society

All actors will take comprehensive measures for climate change adaptation and disaster prevention and mitigation in their respective fields. National spatial planning, infrastructure development, and land use will be promoted through both hard and soft measures to cope with complex risks, including not only weather-related disasters but also infectious diseases and heat stroke.

In doing so, we will not be limited to the idea of restoring the area to its original state before the disaster, but will learn from the ancient wisdom of using nature to cope with disasters, and adapt to climate change through flexible measures including land use control to create a society that can heal from disasters, adapt and rebuild quickly. For this reason, in order to be able to respond quickly after a disaster strike, it is necessary to look to the future even before that happens, and to consider and share the vision of the post-disaster society and town with the local community in order to achieve an "even better recovery."

- Raising the Awareness and Changing the Behavior of Individuals, Businesses, and Communities, and Promoting Emergency Preparedness and Cooperation

In addition to governmental disaster management (public support), citizens and businesses should understand the current situation of the climate crisis, where meteorological disasters are becoming more severe and frequent, and be aware of the importance of self-help (protecting one's own life) and mutual-support (surviving together) in preparing against disasters. Measures to ensure that local disaster risks are known and that disaster prevention actions including evacuation are taken in the event of a disaster, along with measures to respond to disasters through coordination and cooperation among various entities, including residents, volunteers, private business operators, and governments, will be accelerated.

- Promoting International Cooperation and Overseas Development

We will take the initiative in demonstrating to the world the current system in which the parties responsible for climate change and disaster management measures work in cooperation and collaboration. Also, we will aim to simultaneously achieve the Paris Agreement, the Sendai Framework for Disaster Risk Reduction, and the SDGs as the "Three Pillars of the Strategy for Climate Action x DRR." We will further stimulate overseas development and international cooperation by the public-private sectors, making full use of Japan's disaster experience, technologies for DRR/ DRM and environmental technologies.

Outline of the Strategy of 'Climate Change x Disaster Prevention in the Age of Climate Crisis (Joint Message) June 30, 2020

[Natural Factors]
- Climate change is causing meteorological disasters to become more severe and frequent, and the frequency of heavy rainfall and flooding is expected to increase in the future.
- We have entered an era in which meteorological disasters that exceed previous expectations occur more frequently in various regions.

[Social Factors]
- Increase in the those who require assistance evacuating and decrease in the number of generations of supporters due to an aging society coupled with a low birthrate
- Increased disaster risk due to population concentration in cities
- Combined risk of infectious diseases and natural disasters occurring simultaneously

- Drastic disaster prevention and mitigation measures based on climate change risks are needed
- Demonstrate a strategy to make an effective collaboration of climate change adaptation with disaster prevention and mitigation measures, with a view to achieving the SDGs

Mainstreaming Strategy of 'Climate Change x Disaster Prevention'

- Climate change and disaster prevention are cross-cutting issues that should be addressed by all sectors.
- Mitigation measures will be put in place to reduce greenhouse gases in order to minimize the risk of climate change as much as possible.
- The "Strategy of 'Climate Change x Disaster Prevention'" will be worked into policies in various fields and to make it a mainstream policy.

Challenges	Direction	Example of Future Measures
Promotion of comprehensive measures to build a decarbonized and disaster-resilient society	• Comprehensive implementation of climate change adaptation and disaster prevention and mitigation measures by all actors in various fields and through various methods • Building a society that "avoids disasters and rebuilds quickly" • Respond with the concept of "adaptive recovery," which promotes adaptation to climate change through flexible responses, including control of land use	• Promote the decentralization of population and industries that are excessively concentrated in Tokyo and other regions • Development of infrastructure facilities based on standards and plans that take climate change into account Land use that prevents people from living in disaster risk areas as much as possible, and living in a way that adapts to disaster risk • Full-scale implementation of "green infrastructure" and "disaster prevention and mitigation using ecosystems," • learning from ancient wisdom and utilizing the diverse functions of nature to reduce disaster risks • Effective use of social innovation (telework, etc.) in the digital age • Responding to the risk of infectious diseases and heat stroke in shelters and other places • Transition to a decarbonized society, including accelerated introduction of renewable energy
Raising awareness and changing behaviors of individuals, companies, and communities, preparing for emergencies, and promoting collaboration	• Promoting awareness of "self-help" (protecting one's own life by oneself) and "mutual-help" (saving together with others), appropriate disaster prevention actions, and disaster countermeasures in which all actors cooperate and collaborate	• Measures to raise awareness and change behavior to encourage evacuation behavior • Promotion of the formulation of Community Disaster Management Plans, individual plans for those who require assistance evacuating, and corporate business continuity plans, taking into account the intensification of meteorological disasters • Creating an environment where multiple generations can learn about climate change and disaster prevention and have a preparedness against disaster at the local level • Collaboration among many parties beyond the public and private sectors in disaster relief activities, including cooperation in flood control, provision of evacuation shelters from local businesses to residents, and collection and transportation of disaster waste
Promote international cooperation and overseas development	• Simultaneously achieve the Paris Agreement, Sendai Framework for Disaster Reduction, and SDGs as the trinity of the "Strategy for Enhancing the Synergy between Climate Action and Disaster Risk Reduction"	• Contributing to the improvement of disaster resilience in various countries by using Japan's technology and know-how in disaster prevention • Reinforcing international adaptation measures through the Asian Disaster Reduction Center (ADRC) and the Asia-Pacific Climate Change Adaptation Information Platform, and promoting collaboration among platforms

Source: Ministry of the Environment, Cabinet Office
(See: http://www.bousai.go.jp/pdf/0630_kikohendo.pdf)

On June 30, 2020, the day of the release of the joint message, Mr. Takeda, the then Minister of State for Disaster Management, and Mr. Koizumi, the Minister of the Environment, attended the International Symposium on Climate Action x DRR (online). They discussed the nature of disaster prevention and mitigation measures in light of climate change, and Japan's role in the international development of climate action and disaster management strategies. Mami Mizutori, the United Nations Special Representative of the Secretary-General for Disaster Risk Reduction and the Head of the United Nations Office for Disaster Risk Reduction (UNDRR) also participated in the discussions. After the symposium, a joint press conference was held to explain the joint message.

International Symposium and Joint Press Conference (June 30, 2020)

Then Minister of State for Disaster Management, Cabinet Office, Takeda, speaking at the symposium

The Joint Press Conference

(Reference: https://bousai2020.tokyo/)

Section 6 Working Group to Consider Future Disaster Prevention and National Resilience Measures

In recent years, natural disasters have become more frequent and devastating, and mega-disasters such as the Nankai Trough Earthquake and the Tokyo Inland Earthquake are becoming more imminent. Five years after the Kumamoto Earthquake, ten years after the Great East Japan Earthquake, and a quarter of a century after the Great Hanshin Awaji Earthquake, it is time to consider new measures to drastically reduce the number of lives lost due to massive natural disasters. To this end, various working groups were established in December 2020 under the private advisory body of the Minister of State for Disaster Management and the Panel on National Resilience (Disaster Prevention and Mitigation), with the participation of experts and related ministries and agencies. The working groups will examine matters related to digital technologies, reducing the disaster risk in advance, Disaster Risk Reduction (DRR) Education and disaster volunteers (The status of the discussions in the following working groups is as of April 30, 2021.).

6-1 Working Group Concerning Technology of Digital and Disaster Prevention

Currently, much of the data that could be useful for reducing disaster risk in advance and rescuing lives after a disaster is scattered and buried. Such data needs to be digitized and analyzed to detect and eliminate problems, and to support decision-making for preemptive action.

To this end, the Cabinet Office has decided to convene a "Digital and Disaster Management Technology Working Group" to study measures to promote digitalization in the area of disaster management.

This working group consists of two teams: the "Future Vision Team" and the "Social Implementation Team". The former discusses the future picture of digital and disaster management technologies that should be pursued on a medium- to long-term (10 years or more) time scale with an eye to future technological innovations, even if they are difficult to realize with current technologies. The latter discusses the implementation of technologies that are already in use on a medium- to short-term (5 years or more) time scale from both technological and institutional perspectives, by identifying issues and suggesting improvements.

The Future Vision Team started its examination on December 21, 2020, and is currently studying the feasibility of digitalization in reducing disaster risks in advance and lifesaving situations such as the ones below.

- Simulation of disaster and response using digital twins
- Real-time information collection and sharing of spatial and infrastructure data using drones, and sensors.
- Digital relocation of administrative organizations, etc., to enable online completion of meetings and administrative procedures.

In addition, the Social Implementation Team started its review on January 18, 2021, and has been studying the problems of digitization in the field of disaster management, such as

- Standardization of data items and acquisition time required in case of disaster.
- Organizing the handling of personal information related to disaster response by local governments.
- Establishment of a system that enables related organizations to collect, analyze, process, and share necessary information without human intervention, as well as the direction of improvement and sophistication of the usability and functions of various systems.

Digital and Disaster Management Technology Working Group
Future Vision Team (The 1st meeting)

6-2 Working Group Concerning Pre-Disaster Prevention-Complex Disasters

Recent flood disasters, such as the Typhoon Hagibis in 2019 (T1919) and the Heavy Rain Event of July 2020, have caused damage to elderly welfare facilities in the flood-prone areas, and have raised issues in terms of reducing disaster risk in advance in disaster hazard areas. In addition, in preparation for an intense tropical cyclone hitting Tokyo Bay, it is necessary to accelerate countermeasures against storm surges in the lowlands of the Tokyo Bay waterfront area, etc., while gaining widespread understanding of the scale of the anticipated disaster.

Furthermore, initiatives for reducing disaster risk in advance of catastrophic natural disasters such as the Nankai Trough Earthquake and the Tokyo Inland Earthquake, as well as responses to complex disasters such as catastrophic natural disasters and infectious diseases, are also urgent issues.

For this purpose, the Cabinet Secretariat established the Working Group on Reducing Disaster Risk in Advance and Complex Disasters under the the Advisory Committee on National Resilience (Disaster Reduction and Mitigation) to discuss the direction of future initiatives in response to the above issues.

Starting with the first working group meeting on January 19, 2021, discussions are now underway on items such as:

- Based on the current status of measures against storm surges in Tokyo Bay, it is necessary to focus on measures in the coastal areas of Tokyo Bay, including the zero-meter zone and areas outside the embankment, where the risk of disaster will increase due to future climate change. The significance of storm surge countermeasures needs to be recognized and measures are to be taken in the same manner as earthquake and flood disaster management.
- With regard to issues and measures for flood control and land use in the basin, it is necessary to focus on the development of areas where the level of development is relatively low in the sections managed by local governments, such as the confluence of tributary rivers, in order to improve the flood control safety of the basin as a whole. In terms of land use, it is important to take a long-term perspective of coexisting with risks and promoting cooperation with urban development. There are also significant differences between regions, so it is necessary to take careful measures to deal with existing facilities and new locations, both long-term and short-term.

- With regard to reducing disaster risk in advance of large-scale earthquakes such as the Nankai Trough Earthquake, there is a need for all parties concerned to work together to consider countermeasures for each type of earthquake, since the characteristics and damage of Nankai Trough Earthquakes, a Tokyo Inland Earthquake, and Subduction Zone Earthquakes in the Vicinity of the Japan and Chishima Trenches differ. It is also necessary to consider countermeasures for recovery based on the assumption of complex natural disasters such as earthquakes and storm surges, floods.
- Regarding the issue of disaster response under conditions of infectious disease epidemics, disaster management is needed to cope with the combined effects of natural disasters and infectious diseases, including measures other than shelter management that take into account countermeasures against new coronavirus infections.
- Enhancement of the vulnerability assessment for national resilience so that it can lead to region-specific measures based on the assumption of multi-hazards and local characteristics.

6-3 Working Group Concerning Disaster Prevention Education-Public Awareness

In order for all citizens to be able to protect their own lives from disasters, it is important to educate them and raise their awareness of disaster risk reduction so that they can acquire the necessary disaster prevention knowledge and proactive disaster risk reduction behavior from childhood. In addition, to ensure that lives saved from disasters are not lost as disaster-related deaths during post-disaster evacuation life, etc., and that the affected people can lead a dignified evacuation life, raising public awareness of mutual support while enhancing support for evacuees by motivated disaster volunteers, and creating an environment conducive to improving life in evacuation are effective measures.

The Cabinet Office has established the Working Group on Disaster Risk Reduction Education and Public Awareness to consider these issues. In this context, 2 teams have been set up. One is the "Disaster Risk Reduction Education Team" that examines the contents and impact of disaster risk reduction education that needs to be enhanced and how to disseminate the contents of such education. The other is the "Disaster Volunteer Team" that examines the systems to motivate local disaster volunteers to improve their skills in supporting evacuees and play an active role in improving evacuees' lives, including the operation of local shelters.

The Disaster Risk Reduction Education Team began its deliberations on December 18, 2020. So far, they have been studying the situation and issues in schools and communities surrounding disaster risk reduction education, as well as the best practices of disaster risk reduction education actually implemented in schools and communities. Also, they are examining the content of disaster risk reduction education that should be aimed for in the future to enable all children to acquire the ability to protect their lives from disasters, such as:

- Implementation of practical disaster risk reduction education and evacuation drills in all elementary and junior high schools to teach the necessary knowledge about local disaster risks and normalcy bias.
- Fostering a proactive and self-motivated attitude toward evacuation, as well as a compassionate attitude toward others through disaster risk reduction education
- Enhancing disaster risk reduction education at the early childcare education level, where parents are highly receptive to disaster risk reduction education and a relatively flexible on-site response is possible.

Implementing seamless disaster risk reduction education from the early childcare to elementary, middle, and high school levels.

- Implementing disaster risk reduction education through cooperation between local communities and schools.

They are also discussing concrete ways to develop such disaster risk reduction education in schools and communities. The significance and necessity of disaster risk reduction education is being examined through the study of its wide-ranging effects, including non-cognitive skills such as resourcefulness and survival skills, love for one's hometown, and a sense of responsibility for the community.

The Disaster Volunteer Team began deliberations on December 25, 2020. So far, they have summarized the following: the lack of manpower and specialized skills of local government officials in managing shelters during large-scale disasters; the fact that although limited in number, disaster volunteers and NPOs with excellent skills are contributing to the improvement of evacuees' living environment; and the fact that in the event of a disaster under the current pandemic conditions or in the event of a mega-disaster, local disaster volunteers will be the main players. In order to improve the support for evacuees' daily lives, the following points are being considered as mechanisms to harness the power of local disaster volunteers:

- Support for disaster volunteer personnel, including systematic training, career path models, and the establishment of a system for certifying the completion of training so that they can improve their skills in supporting evacuees on their own initiative and motivation.
- Establishing local systems to match disaster volunteers with advanced support skills with local communities, developing a database to register such volunteers, and promoting support activities to improve evacuees' living environment through cooperation and collaboration among municipalities, local residents, and disaster volunteers.

In the future, the team will summarize the contents of these activities to determine the necessity of establishing an overall system for evacuation life support and human resource development for disaster volunteers, as well as the specifics of such a system.

【Column】

About the Women's Association for Disaster Management

Disaster response from a woman's perspective is essential for disaster prevention and mitigation, and for building a disaster-resistant society. Women have been involved in the management of shelters and the provision of relief supplies that take women's needs into consideration.

Since FY 2020, the Government has strengthened its efforts by adding the Gender Equality Bureau of the Cabinet Office as a member of the Panel of related ministries and agencies on disaster response, and by including staff of the Gender Equality Bureau in the Cabinet Office Survey Team that is dispatched to affected areas when a disaster occurs.

To further enhance these efforts, the Women's Association for Disaster Management was formed in December 2020 by female employees from the Cabinet Office's Disaster Management Bureau and from the Gender Equality Bureau.

The Women's Association for Disaster Management conducted a survey to find out the needs and challenges of women in times of disaster and how to respond to them. The survey was based on the opinions of the affected and interviews with local government officials, NPOs and other staff members who are involved in disaster response. In addition, from the perspective of ensuring the diversity of the staff, an important factor in responding to disasters from the perspective of women, a questionnaire survey was conducted on the staff at the Cabinet Office Disaster Management Bureau asking about the issues surrounding the staff and their solutions, given the current situation where there are few female members in the Cabinet Office Disaster Management Bureau.

Based on the above, the association is planning to make recommendations on promotion of support for the affected from the viewpoint of women and strengthening of the disaster management system to incorporate women's perspectives in disaster management (as of April 30, 2021).

Chapter 3 Five-Year Acceleration Plan for Disaster Prevention, Disaster Mitigation, and Building National Resilience

Section 1 Conducting “Five-Year Acceleration Plan for Disaster Prevention, Disaster Mitigation, and Building National Resilience”

In recent years, meteorological disasters have become more catastrophic and frequent due to the effects of climate change, and the occurrence of large-scale earthquakes, such as the Nankai Trough Earthquake, Subduction Zone Earthquakes in the Vicinity of the Japan and Chishima Trenches, and the Tokyo Inland Earthquake, is becoming more imminent. In addition, the infrastructure intensively developed in and after Japan's period of rapid economic growth will become decrepit all at once in the future. Therefore, it is necessary to ensure the maintenance and renewal of infrastructures. However, a preventive maintenance cycle has not yet been established, and if appropriate measures are not taken, this will not only lead to an increase in total costs over the medium to long term, but there is also concern that Japan's administrative and socioeconomic systems will become dysfunctional. To overcome such a national crisis, protect the lives and properties of the people, and maintain vital national and social functions, it is necessary to accelerate and deepen efforts for disaster prevention and mitigation, and national resilience, and to build a resilient nation that does not succumb to disasters. Also, the use of digital technology, which has been rapidly developed in recent years, is indispensable in order to achieve more efficient disaster prevention and mitigation, as well as national resilience. In December 2020, the Cabinet approved the "Five-Year Acceleration Plan for Disaster Prevention, Disaster Mitigation, and Building National Resilience" (hereinafter referred to as the "Five-Year Acceleration Plan").
(Reference: https://www.cas.go.jp/jp/seisaku/kokudo_kyoujinka/5kanenkasokuka/index.html)

The Five-Year Acceleration Plan will further accelerate and deepen the following three areas: (1) measures against increasingly severe storm and flood disasters and impending large-scale earthquakes, (2) measures against aging infrastructure to shift to preventive maintenance of infrastructure, and (3) promotion of digitalization and other measures to efficiently promote policies for national resilience. Medium- and long-term goals will be set for 123 measures, including flood control measures in the basin by advance discharge of water from dams, and the construction of recreational areas, measures for aging roads, bridges and school facilities, improvement of road management efficiency with IT, and upgrading of weather information for disaster management. These measures will be implemented intensively over a five-year period from FY 2021 to FY 2026.

The first year of the Five-Year Acceleration Plan is funded by the third supplementary budget for FY 2020, with a national budget of about 2.0 trillion yen (of which about 1.7 trillion yen is for public works). The FY 2020 third supplementary budget also includes about 0.3 trillion yen in government expenditure (of which about 0.1 trillion yen is for public works) as urgent expenses for the steady promotion of measures to strengthen national resilience based on the Fundamental Plan for National Resilience Basic Plan. Moreover, the initial budget for FY 2021 includes a national budget of about 4.4 trillion yen for national resilience.

These budgets will be used to mobilize a combination of structural and non-structural measures and to vigorously promote disaster prevention, disaster mitigation, and national resilience in cooperation with relevant government ministries and agencies. The government will also strive for active publicity at specific locations and sites to make its efforts visible at the regional level. While further accelerating and deepening the efforts to strengthen national resilience based on the Five-Year Accelerated Plan, Japan will continue to systematically and vigorously promote the creation of a safe, secure, and resilient nation based on the Fundamental Plan for National Resilience Basic Plan with all their strength.

Five-Year Accelerated Measures for Disaster Prevention and Mitigation and National Resilience - Summary

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1. Basic Concept

- In recent years, meteorological disasters have become more severe and frequent due to the effects of climate change, and large-scale earthquakes, such as the Nankai Trough Earthquake, are becoming more imminent. In addition, infrastructures that were intensively developed during the period of rapid economic growth will begin to age all at once as time goes on, and if appropriate measures are not taken, not only will the burden increase, but the socio-economic system may also become dysfunctional.
- In order to overcome such crises, protect the lives and properties of the people, and maintain the important functions of society, it is necessary to accelerate and deepen measures for disaster prevention, disaster mitigation, and National Resilience. In addition, the use of digital technologies is indispensable for the efficient implementation of measures for National Resilience.
- To this end, the government will further accelerate and deepen its efforts in the fields of "countermeasures against increasingly severe windstorms and floods and impending large-scale earthquakes," "acceleration of countermeasures against aging infrastructure to shift to preventive maintenance," and "promotion of digitalization for efficient implementation of measures related to National Resilience." The scale of additional projects that will be required in the next five years until FY2025 will be determined, and prioritized and intensive measures will be taken.

2. Prioritized measures and scale of projects

- Number of measures: **123 measures**
- Scale of additional projects required: **Aim of roughly 15 trillion yen**

1. Countermeasures against increasingly severe windstorms and floods and impending large-scale earthquakes [78 measures].	Roughly 12.3 trillion yen
(1) Measures to prevent and minimize damage to human life and property [50 measures]	
(2) Measures to maintain transportation networks and lifelines, and to support the national economy and livelihoods [28 measures]	
2. Countermeasures against aging infrastructure to shift to preventive maintenance [21 measures]	Roughly 2.7 trillion yen
3. Promotion of digitization, for efficient implementation of measures related to National Resilience [24 measures]	Roughly 0.2 trillion yen
(1) Digitization of measures related to National Resilience [12 measures]	
(2) Sophistication of disaster-related information forecasting, collection, accumulation, and communication [12 measures]	
Total:	Roughly 15 trillion yen

3. Duration of measures

- Period during which the scale of projects, etc. will be determined and measures will be implemented intensively: a period of five years from FY2021 to FY2025

Five-Year Accelerated Measures for Disaster Prevention and Mitigation and National Resillience - Examples

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1. Countermeasures against increasingly severe windstorm and floods and impending large-scale earthquakes [78 measures].

(1) Measures to prevent and minimize damage to human life and property [50 measures]

- Basin flood control measures (improvement of rivers, sewerage systems, erosion control, coasts and agricultural water use facilities, improvement of storage functions of rice paddies, and acceleration of the development of recreational areas and storage facilities using state-owned land) (Ministry of Land, Infrastructure, Transport and Tourism, Ministry of Agriculture, Forestry and Fisheries, and Ministry of Finance)
- Tsunami measures for ports, measures for dense urban areas that are extremely dangerous during earthquakes, and measures to form disaster-resistant urban areas (Ministry of Land, Infrastructure, Transport and Tourism)
- Disaster prevention and mitigation measures for priority agricultural reservoirs, forest conservation measures in mountain disaster risk areas, and measures to make fishing port facilities earthquake-resistant, tsunami-resistant, and wave-resistant (Ministry of Agriculture, Forestry and Fisheries)
- Measures to enhance the disaster resistance of medical facilities and social welfare facilities (Ministry of Health, Labour and Welfare)
- Measures related to materials and equipment necessary for disaster management in the police force, and measures related to the disaster resistance of police facilities (National Police Agency)
- Measures to improve and enhance Emergency Fire Response Teams for large-scale disasters, and measures concerning fire corps volunteers that play a central role in regional disaster resilience (Ministry of Internal Affairs and Communications)

etc.

(2) Measures to maintain transportation networks and lifelines, and to support the national economy and livelihoods [28 measures]

- Measures to enhance the functions of the road network by eliminating missing links and making High-Standard Highways four-lane, creating a double network of High-Standard Highways and national highways under direct control, and measures to eliminate utility poles on emergency transport roads in urban areas (Ministry of Land, Infrastructure, Transport and Tourism)
- Measures to improve and reinforce power transmission networks and disaster response capabilities of service stations, etc. (Ministry of Economy, Trade and Industry)
- Measures to reinforce the disaster resistance of water supply facilities (such as water purification plants) and measures to make water supply pipelines more earthquake-resistant (Ministry of Health, Labor and Welfare)

etc.

2. Countermeasures against aging infrastructure to shift to preventive maintenance [21 measures]

- Measures for aging river management facilities, roads, ports, railroads, and airports, and disaster prevention and mitigation measures by rebuilding aging public housing (Ministry of Land, Infrastructure, Transport and Tourism)
- Measures for aging of agricultural water utilization facilities, and measures for these facilities against heavy rains and earthquakes (Ministry of Agriculture, Forestry and Fisheries)

Measures for aging public elementary and junior high school facilities, measures for aging national university facilities, and measures to reinforce disaster prevention functions (Ministry of Education, Culture, Sports, Science and Technology)

etc.

3. Promotion of digitization, for efficient implementation of measures related to National Resilience [24 measures]

(1) Digitization of measures related to National Resilience [12 measures]

- Measures for infrastructure maintenance and management, including the establishment of a collaborative infrastructure data platform (Cabinet Office)
- Measures to improve the safety and productivity of unmanned construction technologies, and measures to enhance the road management system using IT (Ministry of Land, Infrastructure, Transport and Tourism)

etc.

(2) Sophistication of disaster-related information forecasting, collection, accumulation, and communication [12 measures]

- Disaster prevention and mitigation measures using supercomputers, and climate change adaptation through high-precision forecast information (Ministry of Education, Culture, Sports, Science and Technology)
- Measures to upgrade disaster prevention meteorological information, such as improving the prediction accuracy of line-shaped precipitation systems, and measures to upgrade disaster prevention information in the fields of rivers, erosion control, and coastal areas (Ministry of Land, Infrastructure, Transport and Tourism)

etc.

Examples of Five-Year Accelerated Measures (Basin Flood Control Measures)

Basin flood control measures

(improvement of rivers, sewerage systems, erosion control,coastal and agricultural water use facilities, improvement of storage functions of rice paddies, and acceleration of the development of recreational areas and storage facilities using state-owned land)

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Overview: The related ministries and agencies will work together to promote "basin flood control measures," which are flood control measures that are implemented throughout the river basin through the collaboration of all parties involved in the river basin. **(Rivers and Dams)** Excavation of river channels, improvement of embankments, reinforcement of embankments, earthquake-resistance measures, promotion of pre-release water discharge from dams, improvement of dams and recreational areas **(Sewerage)** Urban inundation countermeasures through sewerage, making sewage treatment plants and rainwater pumping stations watertight **(Erosion Control)** Sediment Disaster (Landslide Disaster) management **(Coastal)** Tsunami and storm surge countermeasures **(Agricultural Water Use Facilities)** Repair and renewal of existing agricultural water use facilities, and maintenance of agricultural water use facilities **(Paddy Fields)** Promote agricultural land improvement projects implemented in areas where rice paddy dams are being built to improve the storage function of paddy fields **(State-Owned Land)** Development of recreational areas and storage facilities by utilizing unused state-owned land

Government ministries and agencies: Ministry of Land, Infrastructure, Transport and Tourism; Ministry of Agriculture, Forestry and Fisheries; Ministry of Finance

Targets to be Achieve Through these Measures (excerpt)

◆ **Medium- and long-term goals**

(Rivers and Dams)

- Rate of improvement of Class A rivers to cope with great floods in postwar period
  Current status: approx. 65% (FY2019) ⇒ Medium- to long-term goal: 100%
  * Accelerate the year of achievement by these measures: from around FY2050 to around FY2045
- Percentage of Class B rivers that have been upgraded to cope with floods of recent disasters
  Current status: approx. 62% (FY2019) ⇒ Medium- to long-term goal: 100%
  * Accelerate the year of achievement by these measures: from around FY2050 to around FY2045

(Agricultural Water Use Facilities)

- Achievement rate for agricultural land and surrounding areas where waterlogging damage will be newly prevented through the construction of drainage pump stations, etc.
  Medium- to long-term goal: 100% (approx. 210,000 ha) (FY2025)
  * Accelerate the year of achievement by these measures: from FY2027 to FY2025

(State-Owned Land)

- By utilizing new unused state-owned land, recreational areas will be developed and storage facilities with a goal of 50 locations nationwide

◆ **Main Operators National Government, Japan Water Agency, the prefecture of Japan, municipalities, land improvement districts, etc.**

◆ **Five years later (FY2025)**

(Rivers and Dams)

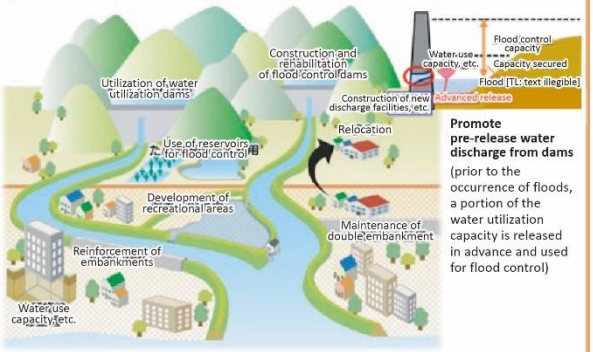
- Achievement target: approx. 73% (Class A rivers), approx. 71% (Class B rivers)

(Agricultural Water Use Facilities)

- Achievement target: 100% (approx. 210,000 ha)

(State-Owned Land)

- Achievement target: 100% (aiming for the earliest possible date, by FY2025)



Basin flood control measures through collaboration among related ministries and agencies

Source: National Resilience Promotion Office, Cabinet Secretariat
(See: https://www.cas.go.jp/jp/seisaku/kokudo_kyoujinka/5kanenkasokuka/index.html)

Part 1 Status of Disaster Management in Japan

Japan is prone to various types of disasters due to its geographical conditions, and FY 2020 also witnessed disasters such as the Heavy Rain Event of July 2020. Part 1 describes recent disaster management, focusing on the status of priority measures implemented in FY 2020.

Chapter 1 Status of Measures related to Disaster Management

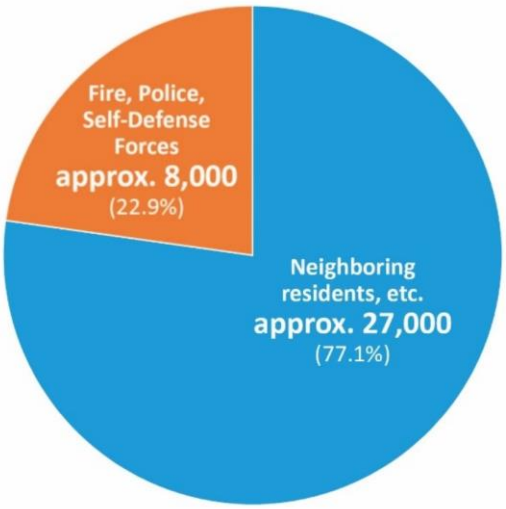
Section 1 Facilitation of Disaster Prevention Activity by Pre-Disaster Prevention through Self-Help, Mutual Support and by Collaboration with Diverse Actors

1-1 Improvement of National Consciousness for Disaster Prevention

Japan is prone to many natural disasters, so the government is constantly working to provide "public support." During normal times we take both structural and non-structural measures, such as building levees and other infrastructure and preparing hazard maps. In the event of a disaster, efforts such as emergency lifesaving, human resources support through the dispatch of personnel from the national and local governments to affected areas, push-type material support to urgently transport essential supplies to shelters and evacuees without waiting for requests from the affected areas, and financial support through designation as a Disaster of Extreme Severity and through the Act on Support for Reconstructing Livelihoods of the Affected due to Disaster.

However, concerns have been raised about the limitations of public support in the event of a large-scale disaster affecting a wide area, such as the Nankai Trough Earthquake now expected. In fact, in the Great Hanshin Awaji Earthquake, about 80% of the people were rescued through self-help (including family members) and mutual support (by neighbors), and only about 20% were rescued through public support represented by rescue teams, according to a survey (Figure 1-1-1). The environment surrounding local governments is becoming increasingly severe, as municipalities become more widespread due to mergers and the number of local governments decreases. Also, the number of people who require special care is on the rise in our aging society. Therefore, it is important for each and every citizen to think of disasters as a personal matter, rather than as someone else's problem. Raising awareness of disaster prevention and disaster mitigation, and taking concrete actions to prevent disasters, will help build a community in which people are aware of the importance of protecting their own lives and helping each other.

FIG. 1-1-1 Main rescuers and number of rescued people in the Great Hanshin-Awaji Earthquake

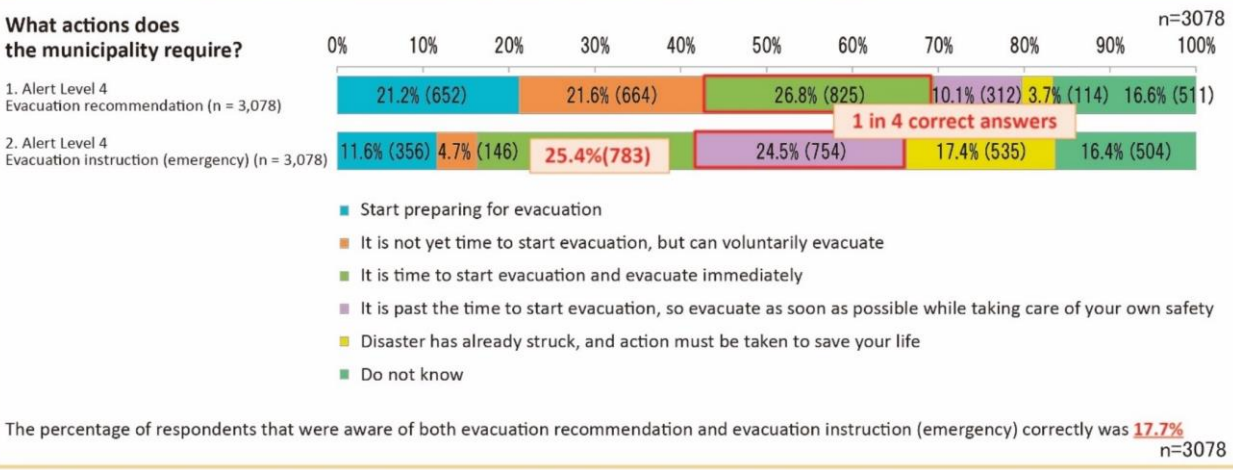


Source: KAWATA Yoshiaki (1997) "Prediction of Loss of Human Lives Due to Catastrophic Earthquake Disaster," prepared by the Cabinet Office based on National Science, Vol. 16, N0. 1 (Published in the 2016 edition of the White Paper on Disaster Management, Special Feature: "Disaster Reduction for the Future")

Specific actions for disaster prevention and mitigation include understanding the disaster risks in the area and making preparations in advance such as checking evacuation routes and storing emergency supplies of food. In order to protect oneself from floods, which have become more frequent in recent years, it is important to first properly understand the disaster risks in the region through hazard maps, etc. Then, it is also important to correctly understand the meaning of disaster prevention information such as weather information and evacuation instructions issued by local governments, and to evacuate as soon as possible when required.

A questionnaire survey was conducted with web monitors in municipalities where human casualties resulted from Typhoon Hagibis in 2019 (T1919). The results showed that, at that time, warning level 4 of the five warning levels required the following actions: "Evacuation instruction" and "Evacuation recommendation" meaning, respectively, "Start evacuation now and evacuate immediately", and "Evacuation should have started already. Evacuate immediately while taking personal safety into consideration." Only 1 in 4 respondents knew the correct meaning of these warnings and instructions. A large percentage of respondents (25.4%) mistakenly believed that the Evacuation Order meant that "Start evacuation now and evacuate immediately." (Figure 1-1-2).

FIG. 1-1-2 **Awareness of what Alert Level 4 pertains among residents of municipalities where human casualties were caused by Typhoon Hagibis in 2019**

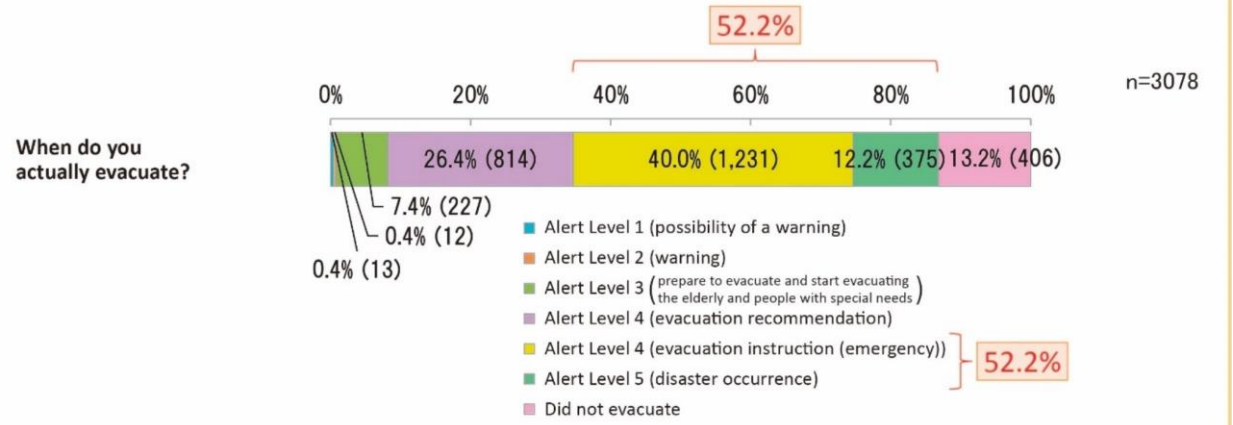


Source: Working Group on Evacuation from Disasters Caused by the Typhoon Hagibis in 2019, etc. Results of Questionnaire for Residents"
Prepared by the Cabinet Office based on a survey conducted between January 11 and 13, 2020

It is important to have an accurate understanding of the evacuation information issued by the local government in order to determine whether you need to evacuate and, if so, when. Based on the lessons learned from the Heavy Rain Event of July 2018, the five warning levels, which were first put into operation from the flood season of 2020, are designed to provide disaster prevention information in an easy-to-understand manner so that residents can intuitively understand what actions to take. At Level 3, those who take more time to evacuate should start evacuation; at Level 4, all those who are in areas at risk of disaster should evacuate. At Level 5, a disaster has already occurred and it may be dangerous to move outdoors, for example, to a designated emergency evacuation site. This means to take the best action to protect your life, such as evacuating to a safer upper floor or a room further away from the mountain side.

When asked about the warning level at which they would actually evacuate, about 40% of the respondents answered that they would evacuate when alert level 4 "Evacuation instruction (Emergency)" was issued, while over 10% said they would evacuate when alert level 5 "Disaster information" was issued. This indicates that about half of the respondents (52.2%) mistakenly believed that they should start evacuating later than they should, which is warning level 4 "Evacuation recommendation." It became clear that the warning levels for evacuation were not sufficiently understood (Figure 1-1-3).

FIG. 1-1-3 Actual evacuation Alert Levels for Typhoon Hagibis in 2019



Source: Working Group on Evacuation from Disasters Caused by the Typhoon Hagibis in 2019, etc. "Results of Questionnaire for Residents"
Prepared by the Cabinet Office based on a survey conducted between January 11 and 13, 2020

From the above, it is clear that many people confuse evacuation instructions with evacuation recommendations. In fact, during Typhoon Hagibis in 2019 (T1919), many residents did not evacuate when they should have, and were thus affected by the disaster. Therefore, in order to avoid confusion between evacuation recommendations and evacuation instructions, and to reduce the number of affected people due to delayed evacuation, evacuation recommendations and evacuation instructions were combined into one. The evacuation instructions are now issued from the stage of the conventional evacuation recommendations, thus comprehensively reviewing the nature of evacuation information (see Special Feature, Chapter 2, Section 1-1-2 (p.45～p.49)).

Based on such survey data and the lessons learned from disasters, the Cabinet Office and related ministries and agencies will continue to provide opportunities for awareness-raising and training, and to promote measures such as Community Disaster Management Plans and Individual Evacuation Plans. These measures are designed to make each of citizens can acquire knowledge about disaster risks and actions to be taken, and improve their ability to take action based on such knowledge, so that they ensure disaster prevention and disaster mitigation through safe evacuation behavior, and build a community of mutual support.

From this perspective, this section focuses on reducing the disaster risk in advance through self-help and mutual support, and outlines various measures to promote cooperation among diverse actors.

【Column】

Efforts to Build a Monument to Preserve Knowledge of Natural Disasters

Due to its location, topography, geology, weather, and other natural conditions, Japan has suffered from numerous natural disasters throughout history. Every time suffering from a disaster, our predecessors inscribed the events and lessons learned on stone and other monuments, and left them for posterity.

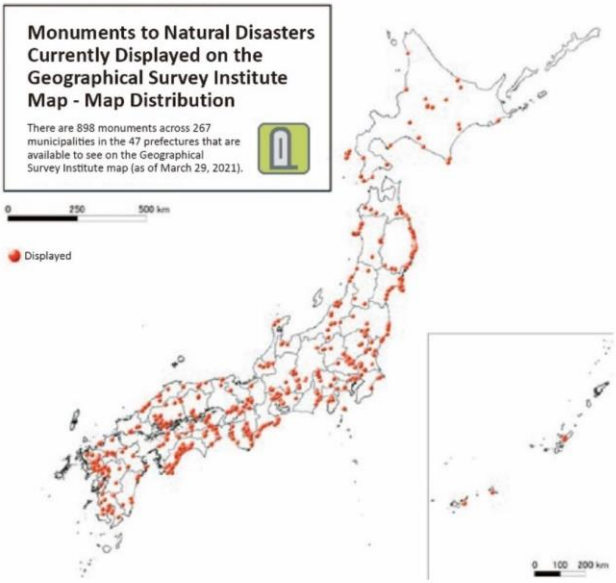
On the other hand, in the areas where many people lost their lives in the Heavy Rain Event of July 2018, there are stone monuments that tell the story of the floods that occurred more than 100 years ago. However, some

residents said that they had not paid attention to the inscriptions and had never thought deeply about floods. Thus, the valuable messages left behind by these monuments do not seem to have been adequately taken advantage of.

In light of this, the Geospatial Information Authority of Japan (GSI), as a contribution from the field of cartography and surveying to pass on the lessons of disasters, will include these (stone) monuments on topographic maps as "Monuments to Natural Disaster Legacies." The aim is to properly convey the lessons of past natural disasters to local residents and to mitigate damage through appropriate disaster prevention actions based on the lessons learned.

A look at the web map
"Geographical Survey Institute Map"

A look at a map on a 25,000:1 scale



Examples of "Monuments to Natural Disasters"

Earthquake and Tsunami (Osaka City, Osaka Prefecture)

"The Great Earthquake:
Ryokawaguchi Tsunami Chronicles"

The tsunami that followed the Ansei Nankai Earthquake of December 24, 1854, caused great damage to people who took refuge on boats anchored in the Anji and Kizu Rivers. It was built as a reminder to future generations that the lessons learned from a similar disaster during the 1707 Hōei Earthquake could not be put to use.

Storm Surge (Nagoya City, Aichi Prefecture)

"Monument to the Victims of the Isewan Typhoon"

The Isewan Typhoon struck in the middle of the night on September 26, 1959, inundating the southern coastal area due to the storm surge, and more than 2,000 people were lost.

Source: Monuments to Natural Disasters: https://www.gsi.go.jp/bousaichiri/denshouhi.html

1-2 National Council for Promoting Disaster Risk Reduction and National Conference on Promoting Disaster Risk Reduction

The “National Council for Promoting Disaster Risk Reduction,” consisting of experts from various fields, including six local governments, the business community, the academic community, and the medical and welfare sectors, was established in 2015. Its mission is to promote the exchange of information and opinions among various sectors and to cooperate with the National Disaster Management Council in promoting and raising public awareness of disaster prevention.

(1) 2020 National Conference on Promoting Disaster Risk Reduction

On October 3, 2020, the “National Conference on Promoting Disaster Risk Reduction (BOSAI Kokutai) 2020” was jointly organized by the Cabinet Office, the National Council for Promoting Disaster Risk Reduction, and the Council for Promoting Disaster Risk Reduction (an organization consisting of industry groups and other organizations working to promote a national movement to reduce damage from disasters). The event aims to introduce the disaster prevention activities of various organizations, including government, public interest groups, academia, private companies, and NPOs. The theme of the conference was “Preparing for Frequent Large-Scale Disasters - 'Disaster Mitigation by Everyone' through Mutual Support,” with the aim of promoting self-help and mutual- support efforts, cooperation among various actors, and raising disaster preparedness awareness. In light of the infection status of COVID-19, the conference was held online, with an emphasis on dissemination from Hiroshima, the originally scheduled venue.

In the opening session (opening remarks and high-level dialogue), Mr. Okonogi, then Minister of State for Disaster Management, Japan delivered the opening remarks, stating, "I hope that the new encounters and connections in the field of disaster management made during this conference will lead to the further strengthening of Japan's capacity to respond to disasters." Then, Mr. Otsuka, Chairperson of the National Council for Promoting Disaster Risk Reduction (President of the Japanese Red Cross Society) gave a welcome address from the organizers, while Mr. Yuzaki, Governor of Hiroshima Prefecture, and Mr. Matsui, Mayor of Hiroshima City, gave a welcome address from the host venue. In the high-level dialogue, on the theme of "Progress of Efforts to Promote Evacuation from Flood and Sediment Disaster (Landslide Disaster)," the experts discussed Japan's evacuation efforts, based on lessons learned from the Sediment Disaster (Landslide Disaster) that occurred in Hiroshima in the past, stressing the importance of evacuation to protect lives.

The conference featured 25 sessions, 11 workshops, and 84 presentations. In the thematic sessions held by the Cabinet Office and various other organizations, there were discussions on the self-help and mutual- support initiatives that will be needed in the future in light of the Heavy Rain Event of July 2018. In the "High-Level Session: Disaster Experience and Strengthening Local Disaster Preparedness," the mayor of Hiroshima, the Director-General of the Chugoku Regional Development Bureau, persons in charge of disaster prevention at the Cabinet Office, Mazda and other public and private organizations, together with local residents exchanged opinions on issues and measures to promote evacuation behavior among residents, measures to enhance local disaster resilience, and cooperation among organizations. It was suggested that it is important to build lateral and visible relationships among local residents and organizations related to disaster prevention from normal times. In the "Top Management Dialogue: How to Prepare for Frequent Torrential Rains and Impending Massive Earthquakes,"

Hiroshima Governor Yuzaki and Mie Governor Suzuki each introduced lessons learned from past disasters and their current disaster prevention efforts. In the "Talk Session: Hiroshima City Seminar on Disaster Prevention- Passing on the Lessons Learned", local residents introduced their efforts to pass on the lessons learned from disasters in Hiroshima, as well as examples of school education on disaster prevention, and discussed the importance of making use of such lessons.

In addition, other workshops were held on the theme of the new coronavirus outbreak and the Sediment Disaster (Landslide Disaster) in Hiroshima. Many disaster prevention leaders from all over Japan gathered to share examples of their daily efforts in disaster prevention and mitigation, as well as problems and issues they face. In the presentations, many disaster-prevention and mitigation initiatives were introduced, including the legacy of the Great East Japan Earthquake and the latest technologies related to disaster prevention, and in some cases, online interviews were held between exhibitors and participants.

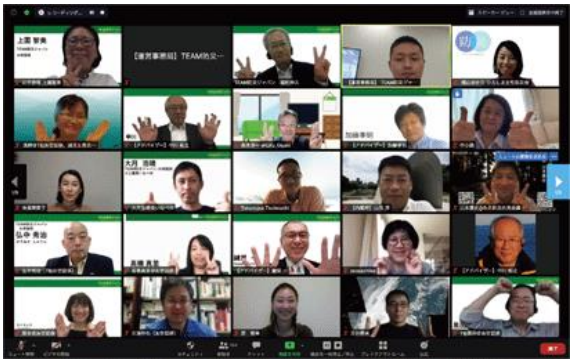
In the closing session, Mr. Akimoto, Vice Chairman of the National Council for Promoting Disaster Risk Reduction, gave a speech as the organizer, and Prof. Kaibori of Hiroshima University delivered a general comment. As a conclusion, Mr. Akazawa, State-Minister of Cabinet Office, expressed his gratitude to the participants and his expectations for the next conference (to be held in Kamaishi City, Iwate Prefecture). The conference, which was watched by about 15,000 people, confirmed the importance of building a disaster-aware society that is prepared against all kinds of natural disasters by raising awareness of disaster prevention in the entire community, through a combination of "self-help," in which each citizen prepares against disasters knowing that they will protect their own lives, and "mutual support," in which communities, businesses, schools, and volunteers help each other, as well as "public support."

Mr. Okonogi, Minister of State for Disaster Management, Japan

Opening remarks by Mr. Otsuka, Chairman

High-level dialogue: Progress of Efforts to Promote Evacuation from Flood and Sediment Disaster (Landslide Disaster)

Hiroshima Governor X Mie Governor Top Management Dialogue: How to Prepare for Frequent Torrential Rains and Impending Massive Earthquakes



Cabinet Office, TEAM Disaster Prevention Japan Workshop: Now is the time to connect online

Organizer's closing greeting by Vice Chairman Akimoto

(2) The 6th National Council for Promoting Disaster Risk Reduction

The 6th National Council for Promoting Disaster Risk Reduction was held on December 15, 2020 from the conference room of the Prime Minister's Office via videoconference due to the infection status of COVID-19. At the beginning of the meeting, Prime Minister Suga expressed his gratitude to the organizations of the National Council for Promoting Disaster Risk Reduction. He said, "In the COVID-19 Crisis, thanks in part to the awareness-raising activities of each organization evacuation drills and other activities focused on the prevention of infection were conducted, and when the disasters struck, countermeasures against infectious diseases at shelters and other facilities were able to control the spread of infection in the affected areas. It is important that the people of Japan work together as one to respond to disasters that are becoming more frequent and severer, and to this end, efforts and cooperation in all fields are indispensable," he added, expressing his expectations for the conference.

Next, there were reports on the activities of the National Conference on Promoting Disaster Risk Reduction 2020 and other events, and the Japan Firefighters Association, the Japan Fire and Disaster Prevention Association, and the Federation of Primary School Principals Associations presented their efforts to raise awareness of disaster prevention through self-help and mutual support.

The 6th National Council for Promoting Disaster Risk Reduction
(Prime Minister Suga in attendance)

1-3 Measures for Disaster Management Drill

In the event of a disaster, disaster management agencies such as the national government, local governments, and designated public corporations are required to work together to take appropriate measures in cooperation with residents. Therefore, it is important for related organizations to conduct drills and other disaster prevention activities even in normal times. For this purpose, disaster management related organizations are required to conduct disaster drills to verify and confirm emergency measures in the event of a disaster and to raise awareness of disaster prevention among residents, in accordance with the Basic Act on Disaster Management, the Basic Disaster Management Plan, and various other regulations.

In FY 2020, the following drills were conducted based on the "2020 Comprehensive Disaster Management Drill Framework," which stipulates the basic policy for conducting disaster prevention drills and the government's comprehensive disaster management drills.

(1) Comprehensive Disaster Management Drill on "Disaster Prevention Day"

On September 1, 2020, Disaster Prevention Day, a government headquarters operation drill was held on the assumption that an earthquake had just occurred. First, then Prime Minister Abe and other cabinet members gathered at the Prime Minister's Office on foot and conducted an operational drill of the Extreme Disaster Management Headquarters. The Headquarters assessed the damage situation and requests for assistance through video conferences with Tokushima Governor Iizumi, Kochi Governor Hamada, and Oita Governor Hirose, received reports on the damage and response from each cabinet minister, confirmed the policy of putting human life first, dispatched a government investigation team, and established on-site disaster management headquarters. In cooperation with local governments and other organizations, a system for implementing emergency measures immediately after the earthquake was secured and procedures were confirmed. A part of the meeting was also opened to the media. After the meeting, then Prime Minister Abe held a press conference, which was broadcasted by NHK (Japan Broadcasting Corporation), urging the public to take life-saving actions and announcing the government's initial response, including support for the operation of shelters to prevent the spread of COVID-19.

(2) Drills in conjunction with a joint emergency drill involving nine prefectures and cities

On November 1, 2020, a joint emergency drill involving nine prefectures and cities was held in Kawaguchi City, Saitama Prefecture, attended by Prime Minister Suga and related ministers. Prime Minister Suga flew from the Prime Minister's Office to the drill site by helicopter and first participated in the shelter management drill to cope with the COVID-19. He then observed rescue drills from buckled buildings and multiple collisions in a tunnel, and fire prevention drills by the police, fire department, and Self-Defense Forces. He also participated in a real-time broadcast drill of a local FM station and conveyed messages on stocking up on food and other necessities and actively participating in disaster prevention drills.

Assessing the damage situation and other information via video conferencing during the government headquarters disaster management drill

Prime Minister Suga participates in an evacuation center management drill
(Source: Prime Minister's Office website)

(3) Government tabletop exercise

In July 2020, an operational of the Secretariat of the Extreme Disaster Management Headquarters drill was conducted on the premise of a Nankai Trough earthquake. In this drill, officials from relevant government ministries and agencies as well as local governments in the Nankai Trough Earthquake Disaster Management Promotion Area participated in requesting and distributing relief supplies using the online support for Relief Goods Procurement and Transport Coordination Support System.

In December 2020, another similar operational drill was held on the assumption of a Tokyo Inland Earthquake. In this drill, officials from relevant ministries and agencies discussed issues and strategies related to support for affected people in consideration of the COVID-19 countermeasures. This was done online and at different venues, in order to protect against COVID-19.

These drills enhanced the knowledge and skills of the relevant ministry and agency staff, and strengthened cooperation with relevant organizations. In addition, based on these drills, the effectiveness of emergency measures stipulated in various plans and manuals was verified.

The Secretariat of the Extreme Disaster Management Headquarters drill with assumption of the Nankai Trough Earthquake

The Secretariat of the Extreme Disaster Management Headquarters drill with assumption of the Tokyo Inland Earthquake

As part of the drills for each regional block, the prefectures expected to be affected by the disaster collaborated to conduct regional drills for running on-site extreme disaster management headquarters on the assumption of a Nankai Trough Earthquake. In this exercise, the participants discussed issues that require cooperation among related organizations in the event of a disaster. Due to the need for COVID-19 countermeasures, joint online meetings were used to limit the number of participants at the training sites in Shikoku and Chubu in November 2020 and Kyushu in December 2020, while online meetings were used for the entire drill in Kinki in January 2021.

In June 2020, a large-scale flood response exercise was held in Tokyo, with the participation of the prefectures concerned, on the assumption that the Arakawa River flooded. In this exercise, lectures by experts were given via online conferencing after reviewing the response policies of each organization on issues that require cooperation among related organizations in the event of flooding of the Arakawa River.

Parliamentary Vice-Minister of Cabinet Office, Wada, participating online in the Kinki Secretariat of the Extreme Disaster Management Headquarters drill

Then State-Minister of Cabinet Office, Japan, Taira, addressing the participants in a large-scale flood response exercise

1-4 Measures for Tsunami Disaster Prevention

In the event of a tsunami, prompt and appropriate action can considerably reduce the damage to human life. On November 5, “Tsunami Disaster Prevention Day” and “World Tsunami Awareness Day,” the Cabinet Office, related ministries and agencies, local governments, and private companies are organizing various events to raise disaster prevention awareness related to tsunami disasters.

(1) Tsunami evacuation drills

In FY 2020 around the “Tsunami Disaster Prevention Day (November 5),” the national government (10 ministries and agencies), local governments (118 organizations), and private companies (39 bodies) held earthquake and tsunami disaster drills nationwide, attracting about 1.08 million participants.

Among these, the Cabinet Office, in cooperation with local governments, held drills with the participation of residents in 6 locations across Japan (Furubira Town, Hokkaido; Kisosaki Town, Mie Prefecture; Kainan City, Wakayama Prefecture; Izumo City, Shimane Prefecture; Tamano City, Okayama Prefecture; and Nakatosa Town, Kochi Prefecture). A total of about 1,000 citizens participated in these drills, which included drills to protect oneself in the event of an earthquake (shakeout drills) and drills to evacuate to the nearest evacuation site after the tremors subsided (evacuation drills). In addition, in accordance with the local disaster management plans and in

conjunction with various drills, drills for establishing shelters and disaster management headquarters were held, along study sessions and lectures on evacuation plan, taking into account local damage estimations and geographical conditions.

evacuation drill to higher ground
(Furubira Town, Hokkaido)

drills to protect oneself
(Kisosaki Town, Mie Prefecture)

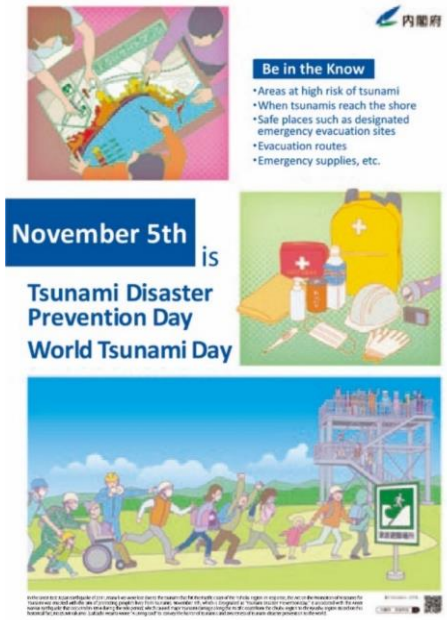
drills which take into account the evacuation
of persons requiring special care
(Kainan City, Wakayama Prefecture)

drills for establishing shelters
(Tamano City, Okayama Prefecture)

(2) Public awareness campaigns

1. Tsunami disaster public awareness campaign

In order to promote awareness of appropriate tsunami evacuation behavior, various media channels were used in FY 2020, such as educational posters at companies and local governments nationwide and displays at the cash registers of major convenience stores and supermarkets.



2. FY 2020 “Tsunami Disaster Prevention Day” educational events

On November 5, Tsunami Disaster Prevention Day, the Cabinet Office, the National Council for Promoting Disaster Risk Reduction, and the Council for Promoting Disaster Risk Reduction organized a special online "Tsunami Disaster Prevention Day Special Event" leveraging benefits of the online event to promote and raise public awareness of tsunami disaster risks.

First of all, as a pre-event, videos of experts explaining about Community Disaster Management Plans for tsunami preparedness, as well as videos introducing initiatives for tsunami disaster prevention in various areas of Japan were posted on the event website to promote the event. The areas covered were: Utoro (Shari Town, Hokkaido), Toi (Izu City, Shizuoka Prefecture), Izari (Minami Town, Tokushima Prefecture), Hamamachi (Kuroshio Town, Kochi Prefecture), and Shimoji (Kochi City, Kochi Prefecture). By posting these videos, momentum for the event on November 5 increased.

In his opening remarks on November 5, Mr. Okonogi, then Minister of State for Disaster Management, Japan, spoke about the government's concerted efforts to build a tsunami-resilient nation and community. He also mentioned that the government is providing support to increase the number of communities working on tsunami disaster prevention through Community Disaster Management Plans. He explained the importance for local residents to understand the risk of disasters before they happen, to overcome the so-called "normality bias," and to be prepared for disasters as a whole community.

In his keynote speech, Professor Imamura, Director of the International Research Institute of Disaster Science

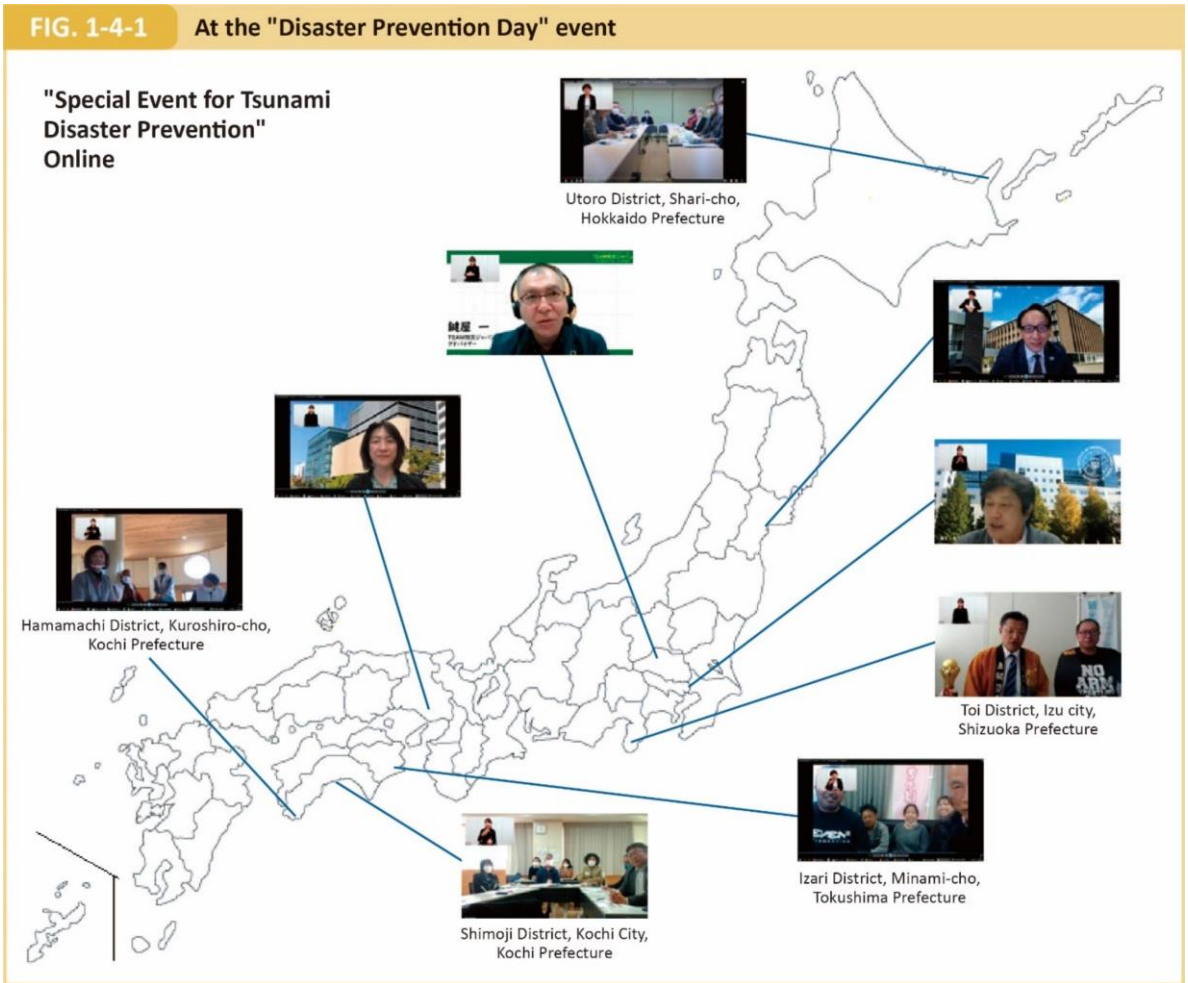
at Tohoku University, explained that although the damage caused by tsunamis is serious, proper evacuation can reduce human losses to zero. There are lives that can be saved by being prepared and lives that can be saved by learning from the lessons of the Great East Japan Earthquake 10 years on and other large-scale tsunami disasters. He also discussed the importance of expanding the concept of resilience.

In the online session, the five districts in Japan covered by the videos were connected online to introduce case studies and exchange opinions (Figure 1-4-1).

Opening remarks by Minister of State for Disaster Management, Japan, Okonogi

(Video message)

FIG. 1-4-1 At the "Disaster Prevention Day" event



1-5 Resident-Centered Measures (Promotion of Community Disaster Management Plan)

The Community Disaster Management Planning System was established in 2013 as a result of the revision of the Basic Act on Disaster Management in order to promote voluntary disaster prevention activities through self-help and mutual support by local residents (individuals and business operators with offices) in cooperation with municipalities, and to enhance the disaster preparedness of the community. This allows community residents, etc. to prepare a draft of local disaster management plans and propose it to the Municipal Disaster Management Council for inclusion in the Municipal Disaster Management Plan.

As of April 1, 2020, 4,170 areas were engaged in activities for the formulation of local disaster management plans, and in 901 areas, Community Disaster Management Plans were stipulated in the Municipal Disaster Management Plans. 7 years have passed since the establishment of the system, and it is expected that Community Disaster Management Plans will become even more widespread (Figure 1-5-1).

FIG. 1-5-1 Status of creating Community Disaster Management Plans (as of April 1, 2020)

Applied to regional disaster management plans: 30 prefecture, 73 municipalities, 901 districts

	R2			R2			R2			R2	
Prefecture	Municipalities	Districts	Prefecture	Municipalities	Districts	Prefecture	Municipalities	Districts	Prefecture	Municipalities	Districts
Hokkaido	3	18	Tokyo	4	76	Shiga			Kagawa	2	14
Aomori			Kanagawa	3	24	Kyoto	1	6	Ehime	2	18
Iwate	3	9	Niigata	1	1	Osaka	2	11	Kochi	1	1
Miyagi	1	11	Toyama			Hyogo	3	7	Fukuoka	1	1
Akita	1	1	Ishikawa	1	1	Nara	1	2	Saga		
Yamagata			Fukui			Wakayama			Nagasaki		
Fukushima	1	3	Yamanashi	1	510	Tottori	1	2	Kumamoto	2	21
Ibaraki	4	52	Nagano	5	34	Shimane			Oita		
Tochigi	2	2	Gifu	2	14	Okayama	1	1	Miyazaki		
Gunma			Shizuoka	6	21	Hiroshima			Kagoshima	7	13
Saitama	5	16	Aichi	4	4	Yamaguchi			Okinawa		
Chiba			Mie	2	7	Tokushima			Total	73	901

(1) Significance of the Community Disaster Management Plan

The Community Disaster Management Plan is a plan that links mutual support and public support through discussions among various actors in the community. These include residents, businesses, and people involved in welfare, who discuss local disaster risks, disaster prevention behavior and activities in both normal times and times of disaster. They then freely define the contents of the draft plan, which is later included in the local disaster management plans in municipalities. The process of creating the plan, including not only the contents but also the repeated discussions among local residents, is important in strengthening the power of mutual support.

(2) Trends in Community Disaster Management Plans

The Cabinet Office analyzed the cases of 74 districts in 22 cities, wards, towns and villages that had community disaster management plans included in their local disaster management plans in 2019, and found the following characteristics.

1. To help the residents to understand the disaster risks in their communities, some presented local conditions in an easy-to-understand manner. For example, maps were used to show disasters that are expected to cause

damage in the area or to remind people of the damage (e.g., Yonawa District, Tsuru City, Yamanashi Prefecture, and Myojin Elementary School District, Ichihara City, Chiba Prefecture). In other cases, maps and photos were used to show disasters that occurred in the past (e.g., Oishi District, Matsusaka City, Mie Prefecture). In addition, there were cases (e.g., Utoro District, Shari Town, Hokkaido) where residents collaborated with tourism-related organizations and companies to disseminate disaster information and evacuation information to domestic and foreign tourists, thereby going beyond disaster prevention for residents (Figure 1-5-2).

FIG. 1-5-2 Collaboration with various organization and mutual support rules in Utoro District

▼ **Disaster management system and division of roles in Utoro District** (as of February 28, 2020)

	Phase I	Phase II	Phase III
Utoro Branch Office	・Disaster prediction survey ・Public relations ・Evacuation guidance	・Collection of disaster information, etc. ・Contact disaster headquarters ・Contact relevant organizations ・Public relations ・Set up shelters (prepare stationed radios) ・Evacuation guidance ・Relief activities for the affected people	・Emergency rehabilitation ・Procurement of materials and equipment and arrangement of heavy machinery ・Damage assessment and reporting ・Liaison and coordination of shelters ・Supply planning for food and other daily commodities ・Matters related to emergency response plans ・Acceptance of volunteers
Utoro Police Substation	・Evacuation guidance	・Disaster security ・Collection of disaster information ・Public relations ・Evacuation guidance ・Traffic control ・Rescue operations	・Disaster security ・Emergency actions (setting up hazard zones, etc.)
Utoro Substation	・Public relations ・Evacuation guidance	・Public relations ・Contact the fire corps volunteers for dispatch ・Evacuation guidance ・Relief activities for the affected people	・Relief activities for the affected people
Shari Fire Corps Volunteers Company No. 6 (female fire corps volunteers, etc.)	・Evacuation guidance	・Disaster field activities ・Evacuation guidance ・Relief activities for the affected people	・Relief activities for the affected people
Shiretoko Utoro School	・School closures during weather warnings ・Liaison and coordination with child guardians	・Liaison and coordination with child guardians ・Emergency planning for opening shelters	・Emergency planning for disasters during school (cooperation of teachers and staff)
Utoro Neighborhood Association	・Contact the head of each neighborhood association ・Evacuation guidance for the elderly, young children, and those who require assistance evacuating ・Public relations for residents ・Communication of weather warnings to residents	・Contact the head of each neighborhood association ・Evacuation guidance for the elderly, young children, and those who require assistance evacuating ・Protection of rescuers and affected people ・Public relations for residents ・Communication of weather warnings to residents	・Management and operation of evacuation sites ・Protection of rescuers and affected people ・Cooperation in transporting personnel and relief supplies ・Collection and provision of disaster information ・Public relations for residents
Utoro Fishries Cooperative (Youth Division, Women's Division)			・Dispatch of ships to transport personnel and relief supplies when roads are blocked ・Procurement of food ・Cooperation in transporting personnel and relief supplies ・Emergency food distribution
Roadside Station Utoro Shiretoku (Shiretoko Shari-cho Tourist Association) **Shiretoko National Park Nature Center** (Shiretoko Nature Foundation) **Shiretoko World Heritage Conservation Center** **Shiretoko Forest Ecosystem Conservation Center**	・Provision of disaster information and evacuation guidance to tourist facilities and tourists Guiding guests and employees to evacuate and ascertaining the number of guests and employees	・Provision of disaster information and evacuation guidance to tourist facilities and tourists ・Guiding guests and employees to evacuate and ascertaining the number of guests and employees ・Protection of rescuers and affected people	・Cooperation in food procurement ・Emergency food distribution

▼ **Mutual support rules for tourist evacuation**

- For the evacuation of domestic and foreign tourists visiting the Utoro District, a system will be established to transmit disaster information and evacuation information, guide evacuation, and receive tourists in collaboration with organizations and companies involved in tourism.
- Consideration and installation of evacuation guidance signs for foreign persons

▼ **New indispensable collaborators**

Utoro District Disaster Prevention Liaison Meeting

+

- **Road Administrator**
  Abashiri Development and Construction Department, Hokkaido Regional Development Bureau
- **Medical Facilities**
  Hokkaido Utoro Clinic

Source: Utoro District (Shari-cho, Hokkaido)

2. In many cases, neighborhood associations, and voluntary disaster management organizations are indicated as the "main creators" of the plans. In addition, in a few cases, school districts and community development councils were the main actors. It is expected that the entities responsible for preparing the plans will be diverse according to the social characteristics of the community (Figure 1-5-3).

FIG. 1-5-3 Entity preparing the Community Disaster Management Plan

Planning entity	No. of districts
Town councils / Neighborhood Associations	27
Voluntary Disaster Management Organizations	52
Community Development Councils	4

N = 74 (*some overlapping)

Source: Cabinet Office survey (survey as of April 2020)

(3) Cabinet Office Measurements

1. Convening the Community Disaster Management Plan then 2021

The Cabinet Office held the "Community Disaster Management Plan Forum 2021: Community Building via Disaster Risk Management" online on February 14, 2021. The event aimed to promote the formulation of community disaster management plans by sharing examples and experiences. After opening remarks by Mr. Okonogi, then Minister of State for Disaster Management, Japan, the forum connected online with Kumamoto Prefecture affected by the 2016 Kumamoto Earthquake, Tokyo, Ehime, Okayama, and Fukuoka Prefectures. Participants engaged in lively discussions about the efforts of local disaster prevention organizations of which the areas experienced disasters and the roles of their supporters.

Video message from Minister of State for Disaster Management, Japan, Okonogi

Forum Overview

2. Supporting the Activities of Chikuboz, a Network of Local Governments to Promote Community Disaster Management Plans

Chikuboz is a platform where local government officials supporting the preparation of community disaster management plans exchange information and share experiences on issues related to the preparation of such plans on a more routine basis. On March 19, 2021, the "Chikuboz Online Meeting 2021" was held to discuss what kind of local efforts are being made to promote disaster prevention activities and the preparation of community disaster management plans, to share concerns in the field, and to discuss how the entire local government office can be involved.

3. Building a Library of Community Disaster Management Plans

A library of community disaster management plans categorized by the content (targeted issues, countermeasures, and actors) has been established and can be viewed on the Cabinet Office website to support the creation of such plans defined in the local disaster management plans.

1-6 Improving the Environment for Volunteer Activities

When disasters strike, volunteers, NPOs, and various other organizations gather in the affected areas and provide detailed support to the affected people, playing an important role. The Cabinet Office has been working

to enhance the environment for volunteers to provide smooth support to the affected people. In recent years, it has become a common practice for various entities supporting affected people, such as governments, volunteers, and NPOs, to collaborate, share information, and coordinate their activities in times of large-scale disasters.

(1) Promoting Collaboration Among Disaster Victim Supporting Entities Such as the Government, NPOs, and Volunteers

According to the "Survey on Collaboration and Coordination Among Various Affected People Supporting Entities" conducted by the Cabinet Office in June 2020, a total of 40 prefectures responded that in preparation for disasters, they have established collaboration systems for sharing and discussing information between entities supporting affected people including governments, volunteers and NPOs even under non-emergency conditions. Later, the Cabinet Office interviewed the remaining 7 prefectures that answered, "in preparation," or "no collaboration system," and confirmed that all are working to build collaboration systems with government, volunteers, NPOs, and others, and have systems in place to collaborate and share information in times of disasters. However, the survey revealed that although collaboration systems are in place, the status of collaboration varies from prefecture to prefecture. Within the government, the need to organize the roles of the government, volunteers, NPOs, and others in activities to support affected people when a disaster occurs, and the role of the government in particular, is not sufficiently organized or understood.

(2) Disaster Reduction and Volunteer Meeting

On February 6, 2021, "Disaster Reduction and Volunteer Meeting" was held online by the Cabinet Office. In the first section, under the theme of "Ten Years Since the Great East Japan Earthquake, Collaboration and Coordination", individuals from 3 prefectures of Tohoku region (Iwate, Miyagi, and Fukushima Prefectures) who dedicated their efforts to the collaboration and coordination in the areas affected by the Great East Japan Earthquake, which marks its 10th year since 2011 held a panel discussion.

In the second part, under the theme of "Disaster Volunteer Activities under COVID-19 Crisis: Kumamoto Prefecture's Experience" a panel discussion was held among the government, the Social Welfare Council, and NPOs on collaboration and activity innovations, challenges and lessons learned in the affected areas under COVID-19 crisis.

Disaster Reduction and Volunteer Meeting

The first section

The second section

(3) Training Courses for Promoting Collaboration Among Disaster Victim Supporting Entities Such as the Government, NPOs, and Volunteers

For smooth collaboration and coordination among government, volunteers, NPOs, and others in the event of a disaster, it is necessary to deepen exchanges and develop mutual understanding through activities such as trainings from normal time. The Cabinet Office holds training courses for government officials, persons involved in volunteer centers such as the Social Welfare Council, NPOs, and others to meet face-to-face and discuss issues related to collaboration and coordination to enhance mutual understanding.

In FY 2020, the "Training Course on Promoting Collaboration Among Various Public and Private Affected People Supporting Entities (Basics)" was held in 5 prefectures and 1 city (Tokushima, Gunma, Aichi, Kagoshima, Shizuoka Prefectures, and Saitama City) (Some sites were conducted online as COVID-19 countermeasures). At each site, approximately 60 to 100 people from the government, the Social Welfare Council, NPOs, and others participated. This training course was held for the purpose of understanding the necessity of collaboration and coordination among various entities supporting affected people including the government, volunteers, NPOs, and others to ensure smooth support for the affected people in the event of a disaster, and to build a collaboration and coordination system and energize activities within the community. In the course, the Cabinet Office, and Japan Voluntary Organizations Active in Disaster (JVOAD) gave lectures on the necessity of collaboration and coordination among various entities in times of disaster. Also, officials from the government, the Social Welfare Councils, and NPOs, who have been involved in collaboration among various entities in affected areas in past disasters, explained the effects and challenges of such collaborations, and the participants performed group work on understanding the needs of the affected people during disasters and examining specific responses, and the approaches of each entity in times of disaster.

Training Course on Promoting Collaboration Among Various Public and Private Affected People Supporting Entities (Basics)

Also, a new "Training Course on Core Human Resource Development for Promoting Collaboration Among Public and Private Affected People Supporting Entities" was held online. This training program was held 4 times with the aim of developing human resources who will play a central role in coordination activities both among and within support entities such as governments, Social Welfare Councils, and NPOs in each prefecture. Approximately 200 people from 30 prefectures participated in each session. In this training course, lectures were given on the overall picture of support for the affected people by the government and private support organizations, how the needs of

affected people change in different phases such as recovery and rehabilitation periods, and support provided by private support organizations during the recovery period. There were also exercises to study the planning and management of information sharing meetings, and to study specific responses to provide support to affected people staying at home and residents in emergency temporary housing. The exercises were followed by discussions among the participating prefectures, providing an opportunity to talk about what should be done during disasters and normal times.

Training Course on Core Human Resource Development for Promoting Collaboration Among Public and Private Affected People Supporting Entities

1-7 Building a Business Continuity System

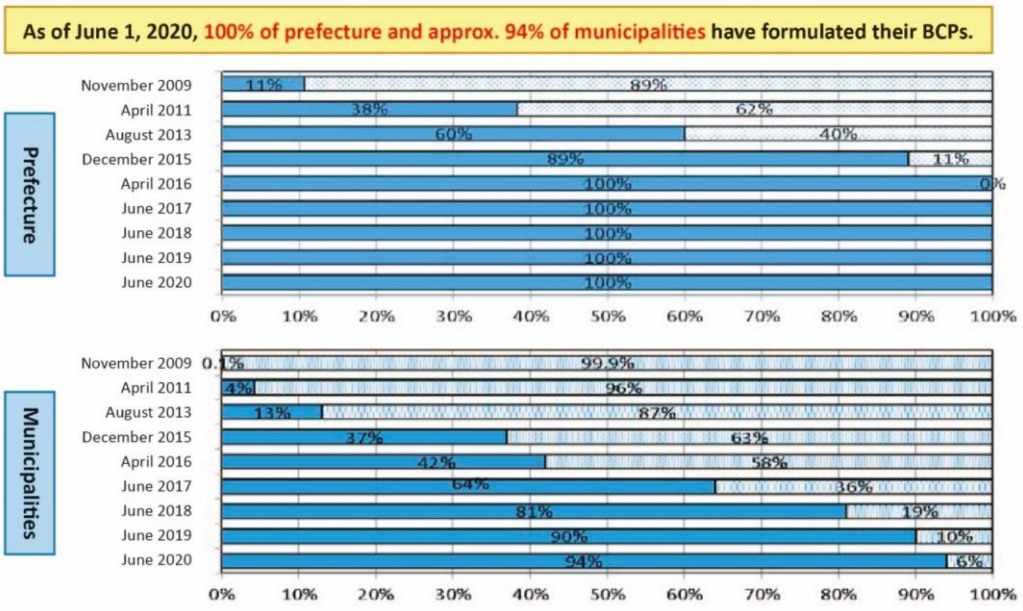
(1) Building Business Continuity Systems of Central Government Ministries and Agencies

In response to the Cabinet approving the “Business Continuity Plan of the Central Government (Measures against a Tokyo Inland Earthquake)” in March 2014, the national government's ministries and agencies, which are the administrative organs of this country, have been reviewing their business continuity plans based on this plan. Based on this plan, the Cabinet Office has been working to improve the effectiveness of ministerial business continuity plans throughout the fiscal year through training in collaboration with ministries and agencies and evaluations by experts. The Cabinet Office will also construct a business continuity system to ensure the smooth continuation of operations as the National Government even in the case of a Tokyo Inland Earthquake.

(2) Building Business Continuity Systems of Local Governments

Local governments must ensure that administrative functions are maintained, and operations continue even when a disaster occurs. For this reason, it is extremely important for local governments to formulate business continuity plans and construct business continuity systems. The status of the formulation of business continuity plans by local governments reached 100% for prefectures in FY 2016. Municipalities as of June 2020, the ratio is 94%, which is a 4% increase compared to the previous year (Chart 1-7-1).

FIG. 1-1-7 Rate of formulation of business continuity plans by local governments



Source: November 2009: Survey on the Status of Business Continuity Systems in the Event of an Earthquake (survey by the Cabinet Office Disaster Prevention and Fire and Disaster Management Agency, Ministry of Internal Affairs and Communications)
April 2011: Overview of Local Information Management (Survey by the Regional Information Policy Office, Local Administration Bureau, Ministry of Internal Affairs and Communications, March 2012)
August 2013: Preliminary Figures for the Rate of BCP Formulation for Natural Disasters such as Large-Scale Earthquakes (Fire and Disaster Management Agency survey, Ministry of Internal Affairs and Communications)
December 2015: Survey on the "Status of Formulation of Business Continuity Plans" and "Status of Formulation of Specific Standards for Issuing Evacuation Recommendations" in Local Governments (Fire and Disaster Management Agency survey, Ministry of Internal Affairs and Communications)
April 2016, June 2017, June 2018, June 2019, June 2020: Results of a Survey on the Status of Business Continuity Planning in Local Governments (Fire and Disaster Management Agency survey, Ministry of Internal Affairs and Communications)

The Cabinet Office developed the “Business Continuity Plan Formulation Guidelines for Municipalities” in May 2015 to support municipalities in formulating business continuity plans and to make it easier for smaller municipalities to formulate business continuity plans. Also considering past disaster cases, the “Business Continuity Manual for Local Governments During Earthquake Disasters” was revised in February 2016 as the “Business Continuity Manual for Local Governments During Major Disasters” and notified to local governments.

In the event of a large-scale disaster, it will be difficult for the affected municipalities to handle the enormous amount of disaster response work alone. Therefore, to build a business continuity system, it is necessary for local governments to develop a system to accept quick and accurate support from such sources as the national government, local governments, private companies, and volunteer groups to share information and make various adjustments, along with their business continuity plans. In April 2020, the Cabinet Office formulated the “Guide to Formulate Aid Acceptance Plans Regarding the Receipt of Human Support for Municipalities” to help municipalities that lack dedicated disaster management personnel or have other concerns about their disaster management systems understand how to improve their aid acceptance systems and develop aid acceptance plans with minimum burden.

Furthermore, to support local governments in building business continuity systems, joint seminars have been held annually since FY 2015 by the Cabinet Office and the Fire and Disaster Management Agency for municipal staff in charge.

Through these measures, collaborating with the Ministry of Internal Affairs and Communications and the Fire and Disaster Management Agency, support towards the construction of business continuity systems in local governments, enhancing the 6 critical elements* of the formulated business continuity plans, and developing support acceptance systems will continue.

*The 6 critical elements (Source: Cabinet Office, “Business Continuity Manual for Local Governments During Major Disasters”).

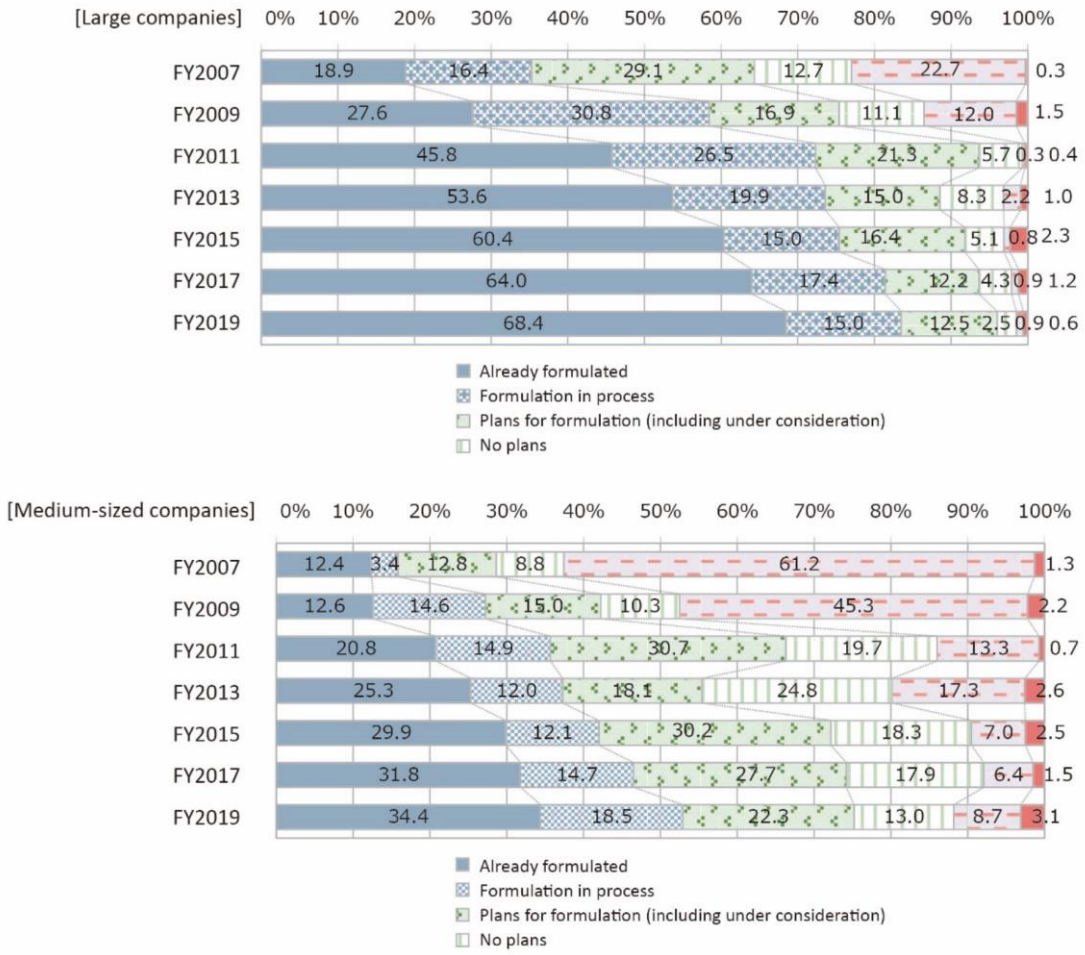
(1) clear order of representation in the absence of the head of the government and a system to gather staff; (2) designation of alternative government buildings in case the main government building becomes unavailable; (3) securing of electricity, water, food, etc. (for staff to carry out their duties); (4) securing of various communication means that can be easily connected even in times of disaster; (5) backup of important administrative data; (6) sorting out the priority tasks in case of an emergency.

(3) Status of Business Continuity Systems of Private Companies

After the Great East Japan Earthquake in 2011, it became apparent that Business Continuity Management (hereinafter referred to as “BCM”) incorporated into management strategies during normal times was crucial. For this reason, the Cabinet Office published a revised version of the “Business Continuity Guidelines Third Edition - Strategies and Responses to Overcome All Crisis Events” in 2013 that incorporates the concept of BCM and is currently recommending its widespread use, and the formulation of Business Continuity Guidelines based on the Third Edition of the Guidelines.

The Cabinet Office conducts a survey every other fiscal year on the actual situation of private companies, which includes for example the rate of BCP formulation. The results of the “2019 Fact-finding Survey on Company Business Continuity and Disaster Preparedness Initiatives” conducted in February 2020 show that the number of companies that have formulated BCPs increased to 68.4% for large companies (64.0% in the previous survey) and 34.4% for medium-sized companies (31.8% in the previous survey), and including those in the process of formulating BCPs, approximately 83% of large companies and 53% of medium-sized companies are taking action (Chart 1-7-2 and Chart 1-7-3).

FIG. 1-7-2 Status of BCP formulation by large and medium-sized companies



Source: Prepared by the Cabinet Office based on the "FY2019 Survey on Business Continuity And Disaster Prevention Measures by Businesses"

FIG. 1-7-3 Status of questionnaire collection for the Company Survey (FY2019) (large and medium-sized companies)

			All	Large companies (Capital: 1 billion yen or more; Number of full-time employees: over 50)	Medium-sized companies (Capital: less than 1 billion yen; Number of full-time employees: pver 50)	Other companies (Capital: Over 100 million yen; not a medium-sized company)
All		Number of companies	1651	554	518	579
		BCP formulation rate	**41.8**	**68.4**	**34.4**	**38.2**
Was there damage?	Yes	Number of companies	853	308	280	265
		BCP formulation rate	**42.0**	**65.6**	**31.1**	**40.6**
	No	Number of companies	791	245	234	312
		BCP formulation rate	**41.8**	**72.0**	**38.4**	**36.4**

Also, the Cabinet Office conducted a “Problem Extraction Survey on Examples of Corporate Responses to the COVID-19 crisis” during January and February 2021. The following are the main results of the survey (Chart 1-7-4 to Chart 1-7-9).

FIG. 1-7-4 **Survey Summary**

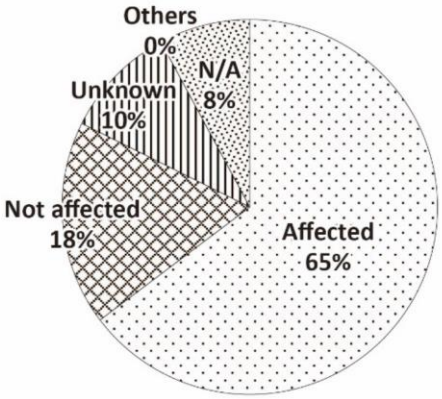
Survey targets: Trade associations, mainly those that have established industry-specific guidelines for countermeasures for COVID-19, and local associations that are actively engaged in disaster prevention activities in their communities.
Number of targets: 89 Organizations (84 Trade associations, 5 Local associations)
Number that answered: 51 Organizations (46 Trade associations, 4 Local associations, 1 Unsigned)

Main survey topics

- Effects on business continuity under the influence of COVID-19 for member companies of the associations
- New measures adopted by the associations and member companies
- Measures to promote the formulation of business continuity plans (BCPs) for member companies of the associations
- The biggest issues to business continuity in association member companies
- Lessons learned

FIG. 1-7-5 **Effects on business continuity under the influence of COVID-19 for member companies of the associations**

n=51



The following is a list of the reported effects. **(Excerpts from the comments.)**

<Not affected>

- Business continuity is required as most of the cargo stored in the warehouse are food. There is an impact on the warehousing of cargo due to the food service industry's self-restraint, but there is no major impact on business continuity itself.
- There were no effects that led to the cancellation of broadcasting.

<Affected>

(Business activities)

- Events were cancelled or rescheduled.
- Meetings, seminars, etc. were cancelled.
- Closed down factories, stopped the supply of parts, and cancelled or refrained from visiting business partners.
- Operations were suspended due to tenant closures and the disappearance of inbound demand.
- Production was reduced due to the suspension of supply chain operations and personnel reductions resulting from school closures.

(Revenues)

- "Event income" disappeared/decreased due to the continued cancellation of events.
- "Advertising revenue", which was the main source of income, decreased due to the overall economic downturn in the society.
- Corporate donations decreased.
- Rent income of real estate agents was affected due to the closure of commercial facilities.
- Demand for food products surged.

(Policies and implementation methods)

- Changed the policy to specialize in e-commerce (electronic commerce).
- Moved seminars to online.
- Broadcast programs and schedules were rearranged due to not being able to record programs or hold promotional events.
- Business continuity was achieved by avoiding the three Cs on how to hold gathering events.

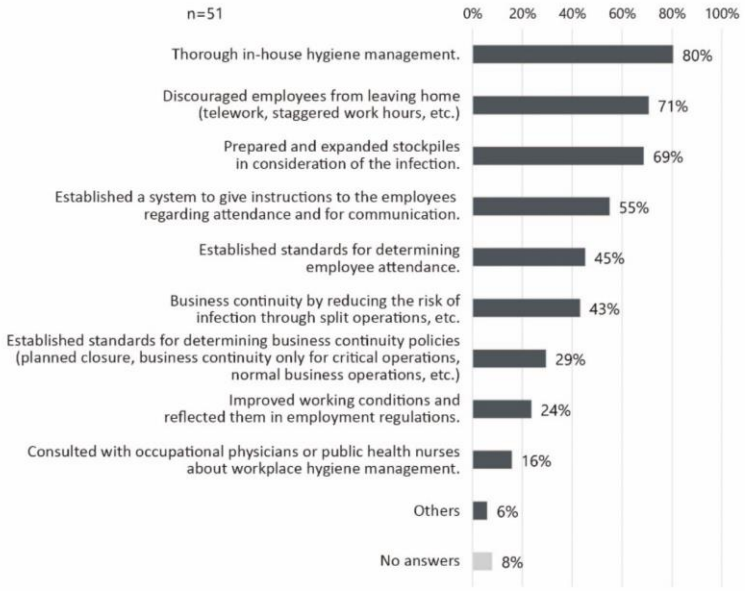
(Working styles and human resources)

- Some association member companies were not able to smoothly obtain the necessary equipment (computers, cell phones, etc.) for their employees to work remotely.
- Resignation of part-time employees due to infection risk and school and daycare closures affected employee shifts. Business hours were shortened due to staff shortages.
- There was harassment during customer service and phone calls caused by the extreme shortage of face masks and sanitizers. Employees were stressed and exhausted.

(Others)

- While the need for call centers increased due to the focus on non-face-to-face and
- non-contact services, it became necessary to avoid the 3C's, secure social distance, and reduce the number of employees coming to work, even though the early transition to telecommuting was difficult due to information security. Conflicting responses were required.
- Continued operation and management of the facility is required.
  The measures to prevent the spread of risk and infection were expanded in the workplace.

FIG. 1-7-6 New measures adopted by the associations and member companies



The following is a list of the "Others" (excerpted from the comments).

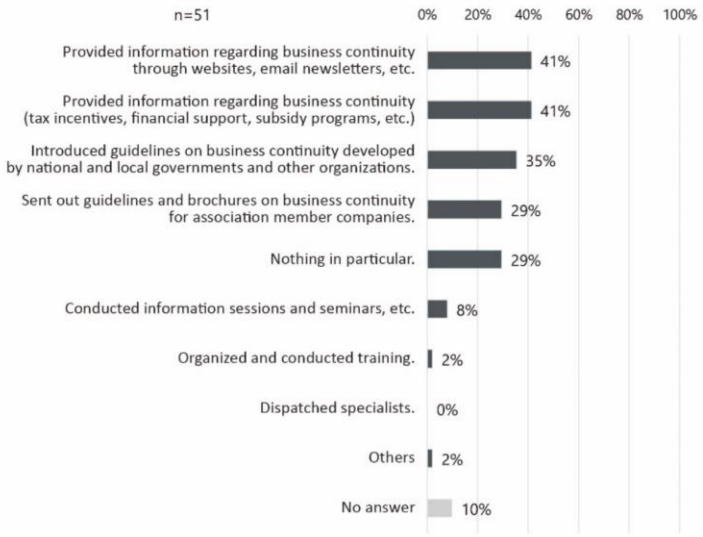
<Raised awareness by establishing guidelines.>

- Since the member companies of our association range from small companies with a few stores to listed companies with more than 1,000 stores, we used the "Guidelines for the Prevention of the Spread of COVID-19 in Retail Stores" as a basis for disseminating information according to the situation of each company.
- We formulated guidelines for the infection prevention measure of COVID-19 in businesses, and set up a customer support desk for member companies of our association.
- We formulated various guidelines. We made requests to the related ministries and agencies (Ministry of Internal Affairs and Communications and Cabinet Office) for deregulation and to obtain promotional budgets.
- We collaborated with similar associations to create and implement guidelines and posters.

<Others>

- As our industry was requested to continue operating, we operated while taking measures to prevent the spread of infection.
- Conducted temperature check, disinfection, etc.

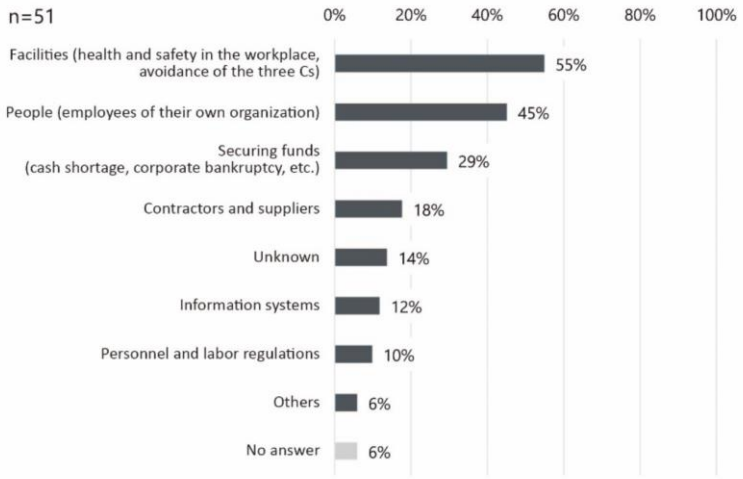
FIG. 1-7-7 **Measures to promote the formulation of business continuity plans (BCPs) for member companies of the associations.**



The following are the measures that were answered as "Others" (excerpts from the comments).

- Prepared and promoted a draft BCP model for member companies of the association, referring to guidelines for the industry and guidelines on business continuity formulated by national and local governments and other organizations.
  Provided guidelines via website.
- Have been working on it from normal times, not just for COVID-19.
- Established and promoted guidelines on COVID-19 countermeasures.
  Sent out infection control manuals.
- Shared information on how to hold events organized and sponsored by the association, as well as the online process.

FIG. 1-7-8 The biggest issues to business continuity in association member companies

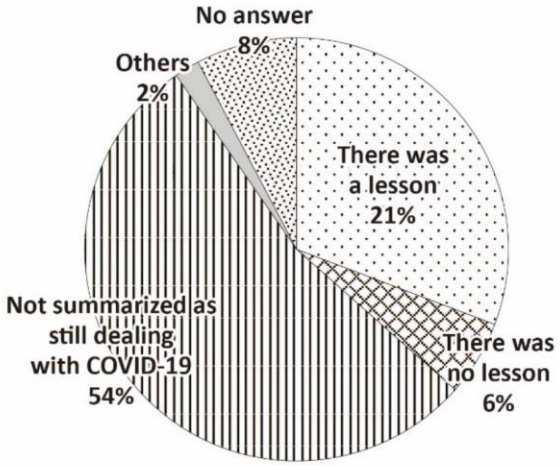


The following is a list of the "Others" (excerpted from the comments).

- Many of our association member companies are run by a small number of people. Although they are working on remote recording and devising a system of attendance based on the new lifestyle, because studios are built on the premise of being closed rooms due to sound insulation, and their offices are not large enough in some cases, ventilation is difficult in many places.
- While many small and medium-sized companies are facing a shortage of manpower, it can be difficult to secure personnel in the event of an infection.
- The issue is what measures can be taken to continue program production, event, and broadcasting operations.
- Although improvements have already been considered this year, the requirement to place official stamps on documents to be submitted to government agencies is an issue.
- There have been situations where people have had to attend work just to obtain an official stamp. The promotion of electronic applications is an issue.
- The challenge is to ensure that employees act in a way that prevents them from becoming infected.
- The issues are the digitization of accounting vouchers as confirmation and internal approval rules, the promotion of telephone transactions with business partners, and the telework of administrative work such as accounting, which has lagged even during the telework promotion period.
- We must be able to avoid the three Cs in the manufacturing sector to ensure a stable supply of pharmaceuticals.
- As our business is related to capital investment, demand has decreased due to postponement and suspension of capital investment.
- Public interest incorporated foundations have little or no internal reserves due to the principle of compensating for income and expenditure, which makes us less durable against problems like this COVID-19 crises.

FIG. 1-7-9 Lessons learned

n=51



<The following is a list of the "Others" (excerpts from the comments).>

- Our approaches so far have not been wrong.
- The office has not issued any information regarding BCP.

<Comments on lessons learned (excerpts from the comments).>

- Reviewed the system for prompt provision of information by the national and local governments, not limited to the promotion of BCP formulation.
  Since communication by post, telephone, and fax did not work well with many of the member companies working remotely, we strengthened our communication system through e-mail and the association member companies' dedicated website. However, we feel that there is a difference in the level of cooperation depending on the scale of the association member companies and the region.
- Although we had simulated the operations of the office in anticipation of a large-scale natural disaster, we had not expected that remote work would be required for a long period of time. Although we have established a system that allows remote work at all times, there are still some tasks that cannot be done remotely, and this is an issue that needs to be addressed.
- The issues to be addressed are the spread of telework, the promotion of further digitization of office work, and the thoroughness of web-based meetings and meetings avoiding close-contact .
- There is a need for rapid response to social changes in the industry.
- As the member companies of the associations differ from each other in many ways, consistent measures have been taken in the area of formulating guidelines and providing information. We would like to collaborate with other organizations and related ministries and agencies to provide more information, including that which leads to funding sources.
- We confirmed that a variety of measures, including administrative and sales-related measures, are necessary for broadcasting business continuity.
- The lessons learned include securing supply routes for equipment such as masks, remote education and training, the need for web conferencing, and the establishment of standards for holding events.
- Thorough infection prevention measures is one of the lessons we learned.
- Our association is an industry organization for long-term care insurance services, and we have promoted the use of the guidelines issued by the Ministry of Health, Labour and Welfare. In addition, the long-term care insurance system is scheduled to make the formulation of business continuity plans mandatory for all long-term care service providers, with a three-year transitional measure starting in 2021.

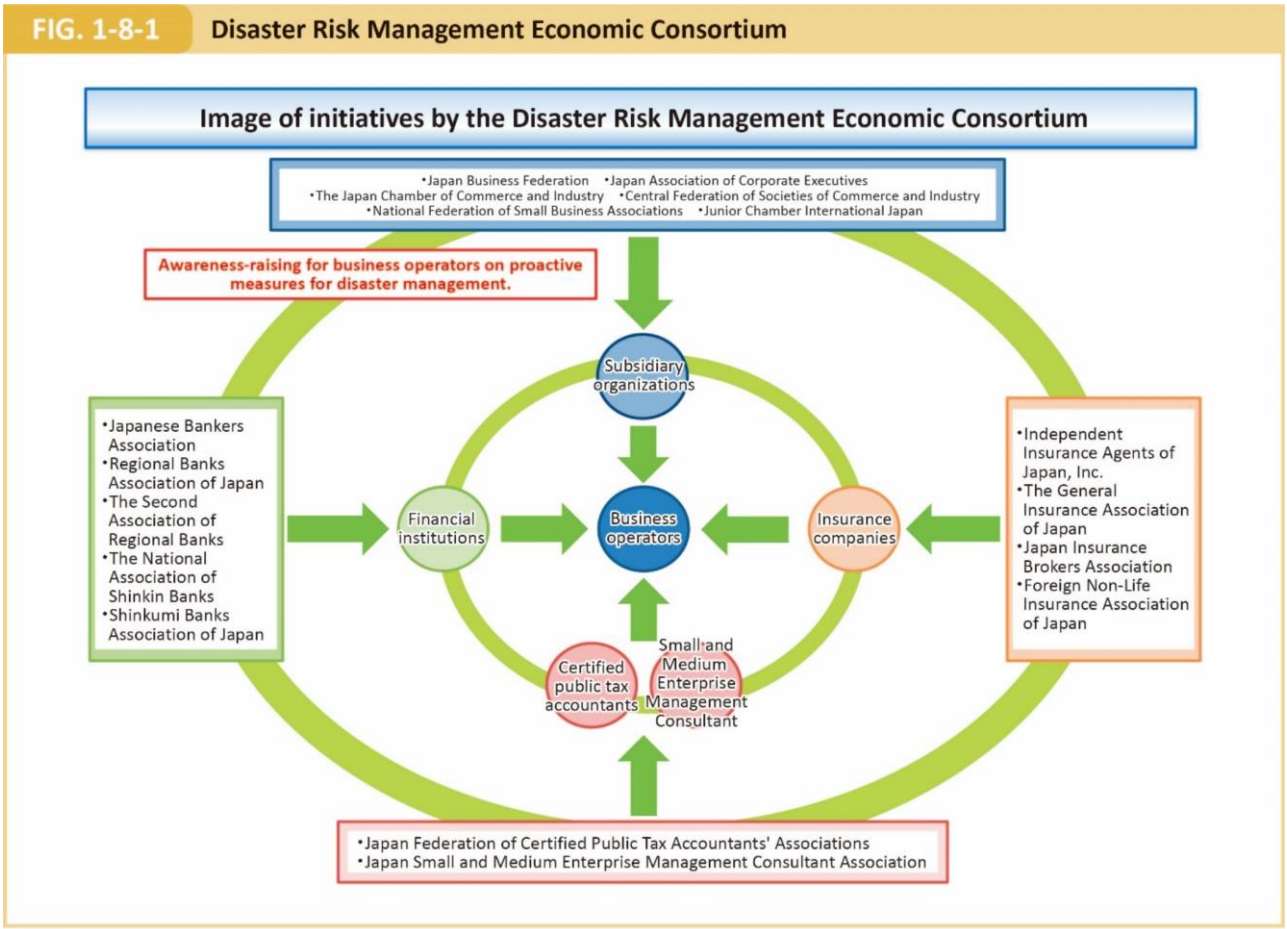
1-8 Collaboration with the Manufacturing Industry

To improve disaster risk management capabilities of society, private businesses also must enhance advance preparedness for large-scale natural disasters. This is why the “Disaster Risk Management Economic Consortium” was established on March 23, 2008, as a platform for businesses to exchange opinions and communicate (Chart 1-8-1).

The Cabinet Office has provided support by exchanging information as needed to ensure that the public and private sectors work in unison on these industrial initiatives. In FY 2020, reference indicators and examples were posted on the Cabinet Office's website to allow businesses to understand the effects of advance measures against flooding damage.

(Reference: http://www.bousai.go.jp/kyoiku/consortium/index.html)

FIG. 1-8-1 Disaster Risk Management Economic Consortium



Source: Cabinet Office documents

The “Disaster Risk Management Economic Consortium” formulates the “Principles of Disaster Management Economic Action”, a shared concept for businesses to prepare for disasters in advance (Chart 1-8-2).

In FY 2020, the members of 17 organizations mainly carried out activities to promote and spread the concept of the principles down to their own subsidiary organizations. Not only did the members have a chance to exchange their opinions, but 3 administrative meetings were also held including lectures by experts and information provided by various government agencies regarding disaster management.

FIG. 1-8-2 About the "Principles of Disaster Management Economic Action"

Principles of Disaster Management Economic Action

March 23, 2018
Disaster Management Economic Consortium

[Preamble]

Due to its natural conditions, Japan is prone to disasters.
For this reason, it is important for business operators to recognize when making business decisions that disaster risk management is a fundamental part of business management.
For large scale disasters in particular, it is critical for business operators to make preparations as described in (1) to (4) below based on self-help and mutual support approaches because of the limitations of public support.

(1) Business operators shall appropriately recognize and understand their own disaster risks.
(2) Businesses shall implement disaster prevention measures through effective disaster risk management based on a combination of risk control (e.g., seismic reinforcement, BCP measures) and financial risk management (e.g., insurance, loans, cash holdings) in accordance with their recognized and understood disaster risks.
(3) Business operators shall enhance disaster prevention education to their executives/employees to raise their awareness in order to act on their own initiative.
(4) Business operators shall implement self-help and mutual-help disaster prevention measures by collaborating and communicating with business partners, financial institutions, trade associations, and other related organizations that are indispensable to their own business operations.

The Principles of Disaster Management Economic Action should be respected in the activities of the members of the Disaster Management Economic Consortium so that business operators can prepare in advance through self-help and mutual support, resulting in an increase in disaster risk management capacity of a society as a whole.

[Principles of Disaster Management Economic Action]

Due to its natural conditions, Japan is prone to disasters.
For this reason, it is important for business operators to recognize when making business decisions that disaster risk management is a fundamental part of business management.
For large scale disasters in particular, it is critical for business operators to make preparations as described in (1) to (4) below based on self-help and mutual support approaches because of the limitations of public support.

1. The members of the Disaster Management Economic Consortium shall promote the necessary measures to achieve (1) to (4) of the [Preamble].
2. The members of the Disaster Management Economic Consortium shall share knowledge and information obtained with the Disaster Management Economic Consortium and providing them to business operators as much as possible in order to promote the improvement of disaster risk management capabilities of society as a whole.
3. The members of the consortium will promote and raise awareness to improve the disaster risk management capabilities of business operators by using creativity and ingenuity based on the characteristics of the industry to which the members belong.

End.

Source: Cabinet Office website
(Reference: http://www.bousai.go.jp/kyoiku/consortium/index.html)

1-9 Measures in Academic Fields

In Japan, research on disaster management is being performed in a variety of fields, including natural phenomena such as earthquakes, tsunamis, volcanoes, and torrential rains; structural engineering and architecture; medical and sanitary services such as emergency medical and environmental hygiene; human activities including economics, geography, and history; information; and energy and others. As a result of the Great East Japan Earthquake, disaster management and mitigation research from a comprehensive and multidisciplinary perspective in these fields is essential, and the necessity of promoting the sharing of information and exchange between different fields that transcend the boundaries of specialized fields, as well as interdisciplinary collaboration, is recognized. For this purpose, after discussions at the Science Council of Japan and related academic societies, the “Japan Academic Network for Disaster Reduction” was established in January 2016 as a

network of 47 academic societies related to disaster management, mitigation, and recovery. As of the end of March 2021, 58 academic societies are participating in this network.

In FY 2020, considering the situation of COVID-19, the organization held its first web conference, “Recent Abnormal Weather and Global Warming, Including Preparations for This Summer,” in June, and its second web conference, “Countermeasures for COVID-19 and Activities of the Japanese Association for Disaster Medicine,” in July. In January 2021, they also held the 11th Japan Academic Network for Disaster Reduction Symposium held by the Science Council of Japan, “’10 Years Memorial and Beyond Great East Japan Earthquake Disaster’ 58 Academic Societies and Japan Academic Network for Disaster Reduction” online. As the 10th anniversary of the Great East Japan Earthquake approaches, the participants reviewed the experience of the Great East Japan Earthquake and the development of activities following the disaster and presented future plans.

Commemorative photo of the 11th Japan Academic Network for Disaster Reduction Symposium held by the Science Council of Japan

1-10 Strengthening Disaster Response Measures from the Gender Equality Perspectives

The occurrence of a large-scale disaster threatens the lives of all people, especially women who account for 51.3% of the population (Ministry of Internal Affairs and Communications, “Population Estimates,” as of October 1, 2019). It is essential for disaster prevention and mitigation, and for the achievement of a disaster-resilient society, that disaster response be based on sufficient consideration of the differences between women and men in the impact of disasters.

In May 2020, the Cabinet Office issued the “Women’s Perspectives to Strengthen Disaster Response Capabilities - Guidelines for Disaster Prevention and Reconstruction from the Perspective of Gender Equality - “ (hereinafter referred to as the “Guidelines”) to promote efforts by local governments to respond to disasters from a gender equality perspective at each stage of preparedness from normal time, initial response, evacuation life, and recovery and reconstruction. The Director-General of the Cabinet Office’s Gender Equality Bureau and the Director-General for Disaster Management jointly issued a notice to local governments on the promotion of measures based on the Guidelines. Also, the Basic Disaster Management Plan was revised to add new provisions such as clarifying the roles of the Gender Equality Department and Centers for promotion of gender equality in local disaster management plans.

During the heavy rain event in July 2020, a Gender Equality Bureau staff was dispatched to the Kumamoto Prefecture Government Office for the first time as a member of the “Cabinet Office Survey Team” sent to the affected areas and supported the Gender Equality Division. More specifically, the staff visited the affected municipalities and requested local government officials involved in operation of evacuation shelters to utilize the Guidelines. Based on the request from national government, the head of the Environmental and Community Affairs Department in charge of the Gender Equality Division, encouraged the use of the Guidelines and the Evacuation Shelter Checklist at the meeting for the Disaster Management Headquarter, and handed out the Checklist to all prefectural government officials dispatched to shelters and encouraged its use. Also, officials from the Gender Equality Division were assigned to the Shelter Support Office, which was established as a subsidiary organization of the Disaster Management Headquarters.

The Fifth Basic Plan for Gender Equality, approved by the Cabinet on December 25, 2020, sets the following measures to strengthen disaster response from gender equality perspectives, targeting to increase the ratio of female members in Prefectural and Municipal Disaster Management Councils to 30% by 2025.
(Reference: https://www.gender.go.jp/about_danjo/basic_plans/5th/pdf/2-08.pdf)

- At national and local levels, disaster/risk management departments and gender equality departments shall collaborate and coordinate more intensively from normal times to promote disaster management from gender equality perspectives.
- The government shall request each prefecture to increase the proportion of female members in prefectural disaster management councils. In addition, to ensure at an early stage that all municipal disaster management councils have at least one female member, and to drive forward initiatives to increase the proportion of female members, the government shall collaborate with the prefectures and provide good examples of municipalities that actively promote female members (Chart 1-10-1, Chart 1-10-2).

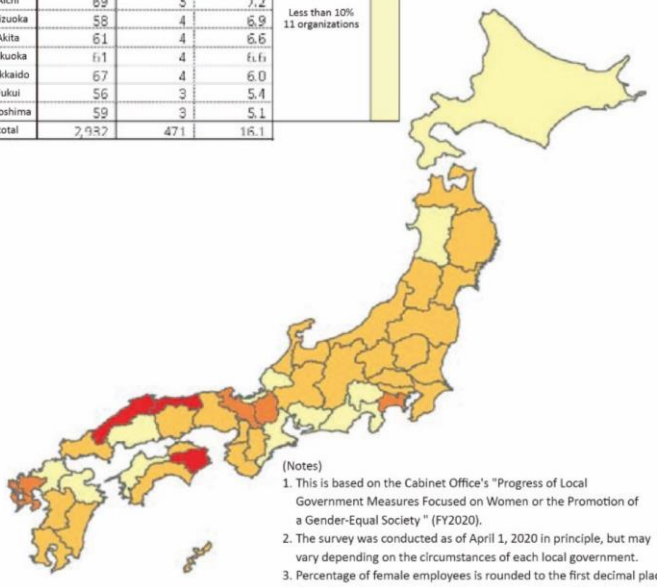
- At the local Disaster Management Headquarters, efforts shall be made from normal times to assign female officials and/or officials in charge of gender equality, and to encourage male officials who will be members of the headquarters to have a better understanding of disaster response measures from gender equality perspectives.
- The national government shall monitor and evaluate the efforts of local governments based on the Guidelines and make them “visible.”

Additionally, the Cabinet Office is revising the “Disaster Management Training Program from Gender Equality Perspectives”, aiming to enable all personnel involved in disaster response in local governments to plan and implement disaster management measures from gender equality perspectives, referring to the contents of the Guidelines.

FIG. 1-10-1 Changes in the ratio of female members of local disaster management councils

The ratio of female members of local disaster management councils

Prefectures	Total members (persons)	Female members (persons)	Raito of female members (%)	
Tokushima	81	38	46.9	More than 40% 3 organizations
Tottori	67	27	40.3	
Shimane	72	29	40.3	
Saga	70	20	28.6	20% to less than 30% 5 organizations
Shiga	60	14	23.3	
Kyoto	66	15	22.7	
Kanagawa	57	12	21.1	
Nagasaki	60	14	20.6	
Iwate	76	15	19.7	10% to less than 20% 28 organizations
Gifu	61	12	19.7	
Tochigi	56	11	19.6	
Nagano	78	15	19.2	
Niigata	76	14	18.4	
Aomori	60	11	18.3	
Chiba	53	9	17.0	
Fukushima	54	9	16.7	
Miyazaki	55	9	16.4	
Toyama	60	11	16.2	
Kagoshima	63	10	15.9	
Miyagi	58	9	15.5	
Wakayama	55	8	14.5	
Hyogo	56	8	14.3	
Okayama	50	7	14.0	
Ibaraki	52	7	13.5	
Kagawa	60	8	13.3	
Nara	61	8	13.1	
Okinawa	54	7	13.0	
Yamagata	62	8	12.9	
Gunma	48	6	12.5	
Kumamoto	57	7	12.3	
Tokyo	74	9	12.2	
Osaka	59	7	11.9	
Yamaguchi	60	7	11.7	
Saitama	73	8	11.0	
Ishikawa	70	7	10.0	
Kochi	60	6	10.0	
Yamanashi	64	6	9.4	Less than 10% 11 organizations
Oita	58	5	8.6	
Mie	60	5	8.3	
Ehime	61	5	8.2	
Aichi	69	5	7.2	
Shizuoka	58	4	6.9	
Akita	61	4	6.6	
Fukuoka	61	4	6.6	
Hokkaido	67	4	6.0	
Fukui	56	3	5.4	
Hiroshima	59	3	5.1	
total	2,932	471	16.1	



(Notes)
1. This is based on the Cabinet Office's "Progress of Local Government Measures Focused on Women or the Promotion of a Gender-Equal Society " (FY2020).
2. The survey was conducted as of April 1, 2020 in principle, but may vary depending on the circumstances of each local government.
3. Percentage of female employees is rounded to the first decimal place.
4. Some islands may be omitted for the convenience of the data notation.

Source: Based on the Cabinet Office's "Progress of Local Government Measures Focused on Women or the Promotion of a Gender-Equal Society " (FY2020)

FIG. 1-10-2 The outcome targets of prefectural disaster management councils and municipal disaster management councils under the 5th Basic Plan for Gender Equality

Items		Current status	Outcome target (deadline)
Percentage of female members of prefectural disaster management councils		16.1% (2020)	30% (2025)
Percentage of female members of municipal disaster management councils			
	Number of councils without female members	348 (2020)	0 (2025)
	Ratio of female members	8.8% (2020)	15% (Early stage) Target further to 30% (2025)

Source: The 5th Basic Plan for Gender Equality “Toward a Reiwa Society Where All Women and Girls Can Thrive and Achieve Their Full Potential” (approved by the Cabinet on December 25, 2020)

【Column】

How to Expand the Participation of Female Members in Local Disaster Management Councils

In the Fifth Basic Plan for Gender Equality (approved by the Cabinet on December 25, 2020), the target is to achieve a 30% ratio of female members in Local Disaster Management Councils by 2025. However, currently, the ratio of female members in Prefectural Disaster Management Councils averages 16.1% and in Municipal Disaster Management Councils 8.8%, which is extremely low*1.

The Local Disaster Management Council members are defined by Article 15 of the Basic Act on Disaster Management, and others. The reason for the low number of female members is that the positions are appointed from designated positions and these designated positions (heads of organizations) are mostly males. In contrast, in disaster management councils where the ratio of female members is high, each local government is making efforts to increase the number of female members under the strong leadership of its head to promote gender equality.

Tokushima Prefecture ranks first in Japan in the ratio of female members of its Local Disaster Management Council at 46.9% (FY 2020). The prefecture amended its ordinance in 2014 to increase the number of the Council's members by 20 and has been actively promoting the appointment of women. Currently, No. 5 committee members, appointed by the governor from among prefectural employees, include female managers of the Health and Welfare Department and Youth Department, making 11 out of 12 members female. Also, the No. 8 committee members, appointed from voluntary disaster management organizations, and scholars and experts by the governor, include representatives of organizations for women, childcare, the elderly, and people with disabilities, making all 21 members female*2.

In the prefecture, hardly any women turn down requests from the prefectural government to serve as members of the Disaster Management Council, as the prefecture collaborates with women leaders active in the community from normal times. In addition, the increase of female members in the Disaster Management Council has helped to make it easier to learn about women's concerns in disaster response, and to operate shelters considering the needs of women and persons requiring special care *3.

Research has shown that the higher the percentage of female members in Local Disaster Management Councils, the higher the percentage of household items, women's and infant items, and others stockpiled regularly. It has been pointed out that an increase in the ratio of female members in local disaster management councils and

decision-making bodies leads to the incorporation of women's perspectives in local disaster management plans, allowing them to meet needs and take necessary measures that are often overlooked by men*4.

The Cabinet Office will encourage local governments to encourage efforts to increase the participation of women in their Local Disaster Management Councils by providing positive examples of municipalities actively appointing female members to their Local Disaster Management Council.

*1: Cabinet Office, "Progress of Local Government Measures Focused on Women or the Promotion of a Gender-Equal Society" (FY 2020).
(Reference: https://www.gender.go.jp/research/kenkyu/suishinjokyo/suishin-index.html)

*2: Tokushima Prefecture website, "About the Disaster Management Council of Tokushima Prefecture 2020" (As of February 9, 2021).
(Reference: https://anshin.pref.tokushima.jp/docs/2020102000010/)

*3: Interview with the Tokushima Zero Strategy Section, Crisis Management and Environment Department, Tokushima Prefecture (February 4, 2021).

*4: Cabinet Office, "Women's Perspectives to Strengthen Disaster Response Capabilities - Guidelines for Disaster Prevention and Reconstruction from the Perspective of Gender Equality -" (p.12) (May 2020).
(Reference: https://www.gender.go.jp/policy/saigai/fukkou/guideline.html)

Section 2 Disaster Management System, —Correspondence and Preparation in the Event of Disaster

2-1 Revision of the Basic Disaster Management Plan

The Basic Disaster Management Plan is a basic plan for disaster reduction in Japan prepared by the National Disaster Management Council in accordance with Article 34, Paragraph 1 of the Basic Act on Disaster Management, and is subject to consideration "every year the results of scientific research on disasters and disaster prevention, the situation of disasters that have occurred, and the effects of emergency disaster response measures taken in response to such disasters, and it is revised if necessary." Based on the Basic Disaster Management Plan, local governments must prepare local disaster management plans, and designated administrative organizations and designated public corporations need to prepare and revise disaster reduction operation plans.

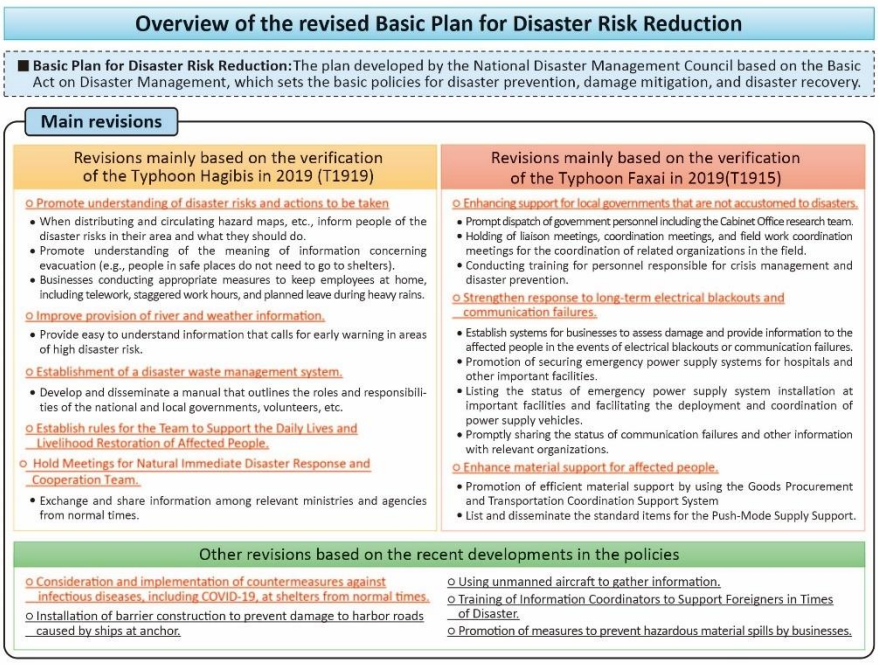
(Reference: http://www.bousai.go.jp/taisaku/keikaku/kihon.html#syusei)

Regarding FY 2020, the Basic Disaster Management Plan was revised in May 2020 (FIG. 2-1-1). Main revisions to the plan include the addition of descriptions of responses to issues that became apparent after the disasters that occurred in FY 2019.

Specifically, based on the consideration of Typhoon Faxai in 2019 (T1915), the report describes the strengthening of responses to long-term power outages and communication failures, and the enhancement of support for local governments that are not accustomed to disasters. Also, based on the consideration of Typhoon Hagibis in 2019 (T1919), the report adds descriptions of the promotion of understanding of disaster risks and actions to be taken, and the holding of the "Meetings for Natural Immediate Disaster Response and Cooperation Team" to share information among relevant ministries and agencies from normal times.

In addition, necessary revisions have been made in light of recent developments in disaster prevention measures, such as the consideration and implementation of countermeasures against infectious diseases, including COVID-19, in shelters during ordinary times.

FIG. 2-1-1 Overview of revisions to the Basic Plan for Disaster Risk Reduction (May 2020)



2-2 Enhancement of Training Content for Heads and Staffs of Local Governments

Rapid and accurate disaster response depends largely on the knowledge and experience of local government leaders and disaster management staff. To this end, the Cabinet Office has been working on the "Training of Disaster Prevention Specialists" for national and local government officials since FY 2013 in order to develop "people who can respond quickly and accurately to crisis situations" and "people who can form national and local networks."

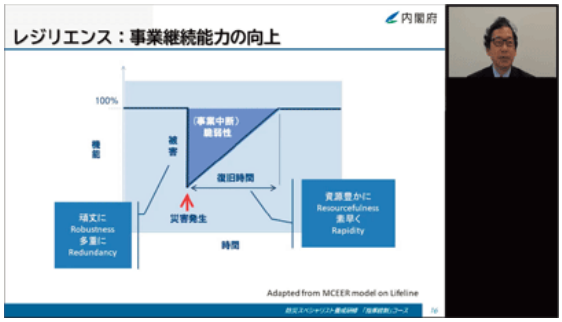
For the FY 2020 Ariake no Oka training program, working groups were held for each course to discuss and review the curriculum, training guidelines, textbooks, tests, and human network initiatives with the coordinators. In addition, the regional training program, which has been in implementation since FY 2019, has been working on human resource development related to disaster prevention among employees of local governments and other organizations by incorporating content that meets local conditions and needs. Furthermore, through the course of "follow-up trainings," those who completed the Ariake no Oka training program were encouraged to further improve their skills and strengthen their human networks. In this fiscal year, due to measures to prevent the spread of COVID-19, it was difficult to conduct these trainings in a group, so the trainings were conducted online.

In addition, we studied the standardization of e-learning creation methods with the aim of developing an e-learning program for disaster prevention specialists, mainly for municipal employees, to allow them to learn about the tasks that have been identified as disaster response issues in recent disasters.

Besides, the National Seminar on Disaster Prevention and Crisis Management for Mayors of Towns and Villages was held jointly with the Cabinet Office and the Fire and Disaster Management Agency (the seminar for mayors of cities and words was cancelled in FY 2020 in consideration of the spread of COVID-19). The seminar is designed to help improve the ability of mayors of towns and villages to make quick and accurate judgments, and to provide training on how to respond to disasters a mayor, and on the initial response of local governments that have actually been affected by disasters.

Moreover, the Cabinet Secretariat, the Cabinet Office, and the Fire and Disaster Management Agency co-hosted the "Special Seminar on Disaster Prevention and Crisis Management" for prefectural department heads and crisis management supervisors via web conference in June 2020, and the "Training for Municipal Crisis Management and Disaster Prevention Officers" for municipal officers via online training in November 2020 and February 2021.

In light of the new way of life triggered by COVID-19, efforts should be made to improve the effectiveness and efficiency of training, as well as to enhance the content of these training programs, to further improve disaster resilience and disaster response capabilities.



FY 2020 "Training of Disaster Prevention Specialists (Ariake no Oka) (Online Training)"

FY 2020 National Seminar on Disaster Prevention and Crisis Management for Mayors of Towns and Villages

2-3 Securing Designated Emergency Evacuation Sites and Designated Shelters

"Designated emergency evacuation sites" are facilities or places where residents can evacuate in an emergency to ensure the safety of their lives in the event of imminent danger from tsunamis, floods, and other dangers. “Designated shelters” are facilities where evacuated residents can stay for a necessary period of time until the danger of disaster disappears, or where residents who cannot return to their homes due to a disaster can stay temporarily.

At the time of the Great East Japan Earthquake, there was not always a clear distinction between evacuation sites and shelters, and this contributed to the spread of damage. For this reason, the Cabinet Office amended the Basic Act on Disaster Management in 2013 to require the mayor of a municipality to designate designated emergency evacuation sites and designated shelters separately in advance, and to inform residents (public notice) of the details. The status of designated emergency evacuation sites as of April 1, 2020, is as shown in FIG. 2-3-1.

FIG. 2-3-1 Designated Emergency Evacuation Sites

	Designated Emergency Evacuation Sites							
	Flooding	Sediment Disaster (Landslide Disaster)	Storm surge	Earthquake	Tsunami	Widespread fire	Flood Rainfall inundationding	Volcanic phenomena
Number of designated evacuation sites (sites)	68,961	64,141	20,823	82,798	37,051	39,497	37,569	10,003
Expected capacity (10,000 people)	12,420	13,419	5,866	23,624	8,381	16,569	7,427	2,280

Source: Formulated by the Cabinet Office based on the Fire and Disaster Management Agency report “Status of Regional Disaster Management Administration” (multiple responses permitted for each category)

In addition, designated emergency evacuation sites can be viewed on the web map "Geospatial Information Authority Map" managed by the Geospatial Information Authority of Japan (FIG. 2-3-2).

FIG. 2-3-2 Example of how designated emergency evacuation sites can be shown

Source: Geospatial Information Authority of Japan website
(Reference: https://www.gsi.go.jp/bousaichiri/hinanbasho.html)

The Cabinet Office, together with the Fire and Disaster Management Agency, has been urging local governments to promptly designate designated emergency evacuation sites. In addition, since designated emergency evacuation sites are to be designated for each type of disaster, local governments across the country are called upon to urgently initiate the maintenance of information boards according to the "Hazard Specific Evacuation Guidance Sign System (JIS Z 9098)" (March 2016), which was established to enable evacuees to make clear decisions. (FIG. 2-3-3, FIG. 2-3-4).

(Reference: http://www.bousai.go.jp/kyoiku/zukigo/index.html)

FIG. 2-3-3 Example of a signboard based on the Hazard Specific Evacuation Guidance Sign System

- A pictogram indicating it is an evacuation site (required).
- Hazard specific pictograms (required).
- Suitability/unsuitability marks ("○" for suitable and "×" for unsuitable.)

- Stating that it is an evacuation site. (Example of a evacuation site name)
- Preferably also in a foreign language.(Example in English)

FIG. 2-3-4 Standardizing pictograms for shelters etc.

Types of disasters from the Basic Act on Disaster Management	JIS approved disaster pictograms
Tsunami	Tsunami & Storm surge (Previous pictograms are also used, and general pictograms are also created)
Storm surge	
Flooding	Flooding Rainfall inundation
Rainfall inundation	
Slope failure Debris flow Landslide	Slope failure Landslide
	Debris flow
Widespread fire	Widespread fire
Earthquake	Covered by disasters that occur (tsunamis, widespread fires, etc.)
Volcano	Raise awareness of shelters, etc. for evacuation.

- **Evacuation sites are set up for each type of disaster.**
- To standardize the picograms for evacuation sites, the relevant government ministries and agencies have decided to establish a liaison conference to promote the standardization of pictograms for evacuation sites. The JIS Drafting Committee prepares the draft, and reports it to the Minister of Economy, Trade and Industry.

  →Pictograms were approved by JIS on March 22, 2016.

(Reference: Pictograms approved by JIS)

Evacuation site JISZ8210

Shelter JISZ8210

Tsunami evacuation site/ Tsunami evacuation building JISZ8210

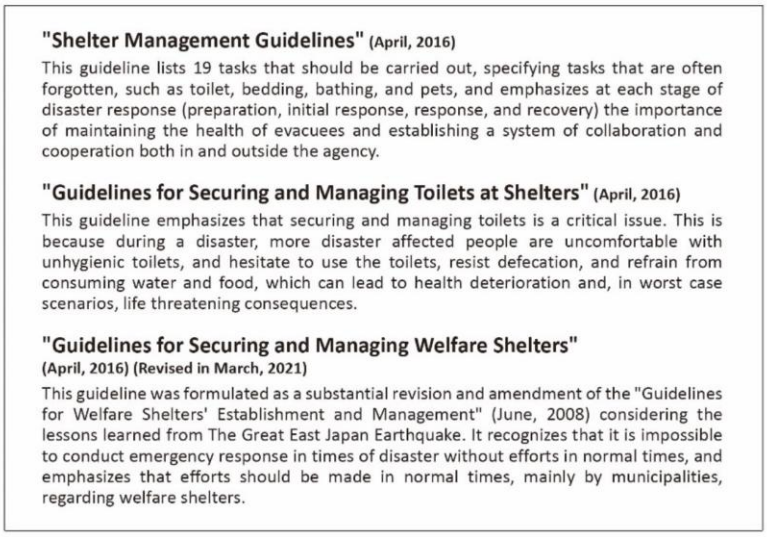
As for the state of designated shelters based on Article 49-7 of the Basic Act on Disaster Management, the number of designated shelters increased from 48,014 as of October 1, 2014, to 79,281 as of October 1, 2020, partly

due to the fact that municipalities that have not completed the designation since April 2014, when the designation system was established, have been urged to complete it promptly.

In response to recent disasters, various problems related to securing a suitable living environment in shelters and issues such as the improvement of toilets in shelters were pointed out. It is considered important to improve the quality of life and ensure a good living environment even under the circumstances where people are forced to live uncomfortably in shelters during disasters. To this end, the Cabinet Office has been holding the "Study Group on Securing Shelters and Improving their Quality" since July 2015 in order to study a wide range of issues related to promoting the designation of shelters and welfare shelters by municipalities, improvement of toilets in shelters, and development of support systems and consultation services for people in need of consideration, and to take necessary measures. In April 2016, we partially revised the "Guidelines for Ensuring Satisfactory Living Conditions at Shelters" (formulated and published by the Cabinet Office in August 2013) and published 3 guidelines based on these guidelines: "Shelter Management Guidelines," "Guidelines for Securing and Managing Toilets at Shelters," and "Guidelines for Securing and Managing Welfare Shelters" (FIG. 2-3-5).

In addition, the “Sub-Working Group Concerning Evacuation of the Elderly and people with special needs Based on Typhoon Hagibis in 2019 (T1919)” held in FY 2020, stated that it would be appropriate to establish a system to clarify that each welfare shelter is a facility for evacuation of acceptees and their families, by specifying the target population and publicly announcing it at the time of designation. In light of this, in May of 2021, the Ordinance for Enforcement of the Basic Act on Disaster Management and the "Guidelines for Securing and Managing Welfare Shelters" were revised.

FIG. 2-3-5 "Shelter Management Guidelines" (April, 2016)



Source: Cabinet Office website
(Reference: http://www.bousai.go.jp/taisaku/hinanjo/index.html)

2-4 Utilization of ICT in Disaster Management

In the Initial Response Verification Report for the 2016 Kumamoto Earthquakes (Cabinet Secretariat and Cabinet Office, 2016) and the Working Group for Emergency Response and Livelihood Support Measures (Cabinet

Office, 2016), it was pointed out that the situation in the affected municipalities was difficult to wholly understand, including the movements of evacuees and the status of relief supplies during the disaster response. Therefore, it was pointed out that it is necessary to establish a system for a disaster information hub among relevant organizations in advance, such as setting rules for handling, sharing, and utilizing various types of information.

(Reference: http://www.bousai.go.jp/updates/h280414jishin/h28kumamoto/shodotaio.html)

(http://www.bousai.go.jp/updates/h280414jishin/h28kumamoto/okyuseikatu_wg.html)

To this end, the Cabinet Office has established the National and Local Government Public-Private Disaster Information Hub Promotion Team and has been conducting studies a disaster information hub (hereinafter referred to as the "hub" (see FIG. 2-4-1)) to facilitate the use of information and communication technology (ICT), which is considered to be an effective means of information sharing, as well as rules on the method and period of information sharing among relevant organizations through under the Disaster Management Committee of the National Disaster Management Council Working Group for the Promotion of Standardization of Disaster Measures since 2017.

(Reference: http://www.bousai.go.jp/kaigirep/saigaijyouhouhub/index.html)

Based on these studies, in FY 2019, the Information Support Team (ISUT) was set up on a trial basis to support the disaster response of local governments by aggregating, mapping, and providing information on disaster damage and shelters in the event of a large-scale disaster. And it began full-scale operation in FY 2019. At the site of a disaster, some information, such as information on damage and disaster waste, changes from moment to moment and cannot be shared in advance (dynamic information). In order for disaster responders to make accurate decisions, it is very important to superimpose this information on a map and systematically understand the situation. The ISUT can collect, organize, and map such information, and share it with relevant organizations (government agencies and designated public corporations) to support quick and accurate decision-making by disaster responders.

The ISUT has responded to disasters a total of 8 times, including the Heavy Rain Event of July 2018, the Typhoon Hagibis in 2019 (T1919), and most recently, the Heavy Rain Event of July 2020. During the Heavy Rain Event of July 2020, ISUT was dispatched to Kumamoto and Kagoshima Prefectures to assist in the collection and organization of information, and the maps prepared by the ISUT (FIG. 2-4-2) were used to explain the situation at the disaster management headquarters of the affected prefectures and municipalities, and to explain the situation to the actual organizations and supporting staff from other local governments, thus contributing to effective disaster response by local governments (FIG. 2-4-3). For example, in Kumamoto Prefecture, in order to support the elimination of isolated villages, a map was created to monitor the restoration status of lifelines such as roads, electricity, and communications for each village, which was used to manage the progress of daily disaster response.

In addition, based on the challenges in consolidating and organizing information up to the previous fiscal year, the ISUT strengthened its structure by outsourcing some of its work, such as mapping, to the private business operators, which enabled the organization to conduct support activities more smoothly. This program will continue to be implemented moving forward.

In addition, in order for the ISUT to carry out its activities more quickly and effectively, we will continue to coordinate with related organizations to develop tools for more rapid information collection and sharing of disaster

information, such as photos of field activities, and to develop training programs on the use of the ISUT website.

FIG. 2-4-1 **Image of a "Disaster Information Hub"**

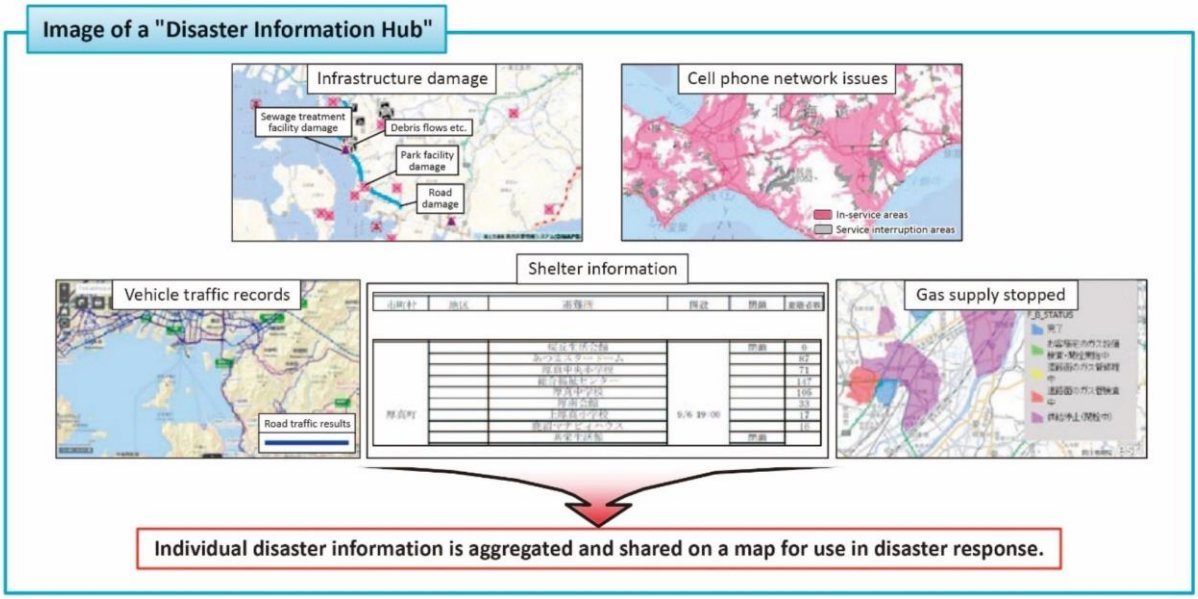


FIG. 2-4-2 **Example of a map based on the Heavy Rain Event of July 2020**
(supporting map for eliminating isolated communities).

Road conditions in the affected area.
- Cleared (vehicle access allowed)
- Currently clearing (vehicle traffic not allowed)
- Unresearched (unknown)

Recovery of lifelines by communities.

Roads: Unable to access the community, Electric power: Blackout, Communication: Normal

Electric power: Partially recovered

Roads: Able to access the community, Electric power: Blackout recovered, Communication: Opened

Roads not passable/ expected to be cleared
- Expected to be cleared in early August
- Expected to be cleared in mid-August
- Expected to be cleared in late August
- Expected to be cleared in early September
- Full-scale recovery required

FIG. 2-4-3 **Usage of ISUT site and map during the Heavy Rain Event of July 2020**
(Kumamoto Prefectural Government)

Usage at the Disaster Management.
Headquarters Meeting of Kumamoto Prefecture

Usage at a meeting of officials in charge of
eliminating isolated communities (hosted by the prefecture).

Usage at the aviation coordination team

Usage at the coordination meeting of
working organizations (hosted by the prefecture)

Source: Cabinet Office documents

2-5 Holding Meetings for Natural Disaster Immediate Disaster Response and Cooperation Team etc.

The government's swift and smooth initial response and emergency measures immediately after the occurrence of a large-scale disaster in recent years can be attributed to the fact that the Deputy Chief Cabinet Secretary for Crisis Management and other government directors in charge of disaster management have been able to share their experience and knowledge through successive disaster responses, enhance their sense of unity through repeated systematic learning, and build a "face-to-face relationship." Such relationship plays a big role to realize the appropriate division of roles and mutual cooperation.

In order to sustain this organizational strength, "Meetings for Natural Immediate Disaster Response and Cooperation Team" have been held periodically since FY 2020 as a meeting for exchanging and sharing information among related parties not only after the occurrence of a natural disaster but also during ordinary times.

In addition, when large-scale disasters such as the Heavy Rain Event of July 2018 and Typhoon Hagibis in 2019 (T1919) occurred, the government organized a cross-ministry Team to Support the Daily Lives of Affected People under the supervision of the Deputy Chief Cabinet Secretary (Administrative Affairs) in order to provide more detailed, prompt, and powerful livelihood support to the affected people. Through this team, the government has been able to quickly restore power and water services, assess the needs of the affected people, provide push-type support such as water, food, cardboard beds, partitions, improve the living environment in shelters, dispatch staff to the affected local governments, and secure housing. The government has been working as one to quickly provide support for the livelihoods of the affected people by putting together a package of measures to rebuild the life and livelihood of the affected areas.

Based on these experiences, since FY 2020, the Basic Disaster Management Plan has clearly stated that in the event of a large-scale disaster in the future, a "Team to Support the Daily Lives and Livelihood Restoration of Affected People" will be established to provide prompt and smooth support for the life and livelihood of affected

people, and the establishment of such a team has been made a rule.

In the aftermath of the Heavy Rain Event of July 2020, the Team to Support the Daily Lives and Livelihood Restoration of Affected People was set up on July 5, and on July 30, the team compiled a "package of measures for the reconstruction of the life and livelihoods of the affected people" as an urgent response to rebuild the life and livelihoods of the affected areas.

2-6 Publication of Case Studies of Ensuring Evacuation Operation/Implementation Plan for Facilities for Attracting Visitors in the Event of an Eruption

The “Act on Special Measures for Active Volcanoes” was amended in the wake of the Mt. Ontake Eruption disaster that occurred in September 2014. In order to ensure the smooth and swift evacuation of facility users when volcanic phenomena occur, owners of facilities designated by municipalities for attracting visitors and facilities for persons requiring special care (evacuation promotion facilities) are required to prepare an evacuation plan and conduct drills based on the plan as obligation.

The Cabinet Office prepared and published the "Guide to Preparing Volcanic Eruption Evacuation Plans for Facilities for Attracting Visitors" in 2016 to support the preparation of evacuation security plans for evacuation promotion facilities.

(Reference: http://www.bousai.go.jp/kazan/tebikisakusei/index.html)

Since FY 2019, in order to encourage the creation of evacuation operation plans for each evacuation promotion facility, evacuation plans have been collaboratively studied with prefectures and municipalities using different types and conditions of facilities as model facilities. Specific issues and solutions in the preparation of evacuation operation plans have been compiled and published in the form of "Case Studies on Preparing Volcanic Evacuation Plans for facilities for Attracting Visitors" (FIG. 2-6-1).

(Reference: http://www.bousai.go.jp/kazan/tebikisakusei/kakuhokeikaku/index.html)

FIG. 2-6-1 Case Studies on the Formulation of Volcanic Eruption Evacuation Plans for facilities

2-7 Survey and Consideration of the Use of Hospital Ships

Regarding hospital ships (ships whose main function is to provide medical services on board in times of disaster, the same applies hereinafter) in the investigations and considerations conducted by the Cabinet Office in FY 2011

and FY 2012 after the Great East Japan Earthquake, the following issues were pointed out as main issues: (1) enormous construction costs, (2) difficulty in securing medical and related staff, and (3) low potential for use during ordinary times. It was also pointed out that demonstration training using existing ships can be an effective measure. Based on this, since FY 2013, the Cabinet Office has been conducting demonstration drills for disaster medical activities using existing vessels.

In FY 2020, a collaborative effort maximizing the expertise of the Cabinet Office, the Ministry of Health, Labour and Welfare, the Ministry of Defense, and the Ministry of Land, Infrastructure, Transport and Tourism, utilizing the first supplementary budget, conducted investigations and considerations on the utilization of hospital ships to secure a place to provide medical care, based on the urgent economic measures for COVID-19 (decided by the Cabinet on April 7, 2020).

Specifically, the Ministry of Health, Labour and Welfare conducted investigations and considerations on the positioning of hospital ships in disaster medical care and infectious disease response, their required functions and necessary equipment, and methods of carrying in and out patients; the Ministry of Defense, on the ability of foreign militaries, including naval ships, to respond to infectious diseases; and the Ministry of Land, Infrastructure, Transport and Tourism, on the optimization of onboard systems for hospital ships. The Cabinet Office reviewed the necessity of hospital ships and summarized the results of the study based on the content of the investigations and considerations conducted by the ministries, focusing on the following issues: (1) the role that hospital ships should play, (2) securing personnel in times of disaster, and (3) measures to utilize hospital ships during ordinary times.

After these investigations and considerations, the Cabinet Office, Ministry of Health, Labour and Welfare, Ministry of Defense, and Ministry of Land, Infrastructure, Transport and Tourism jointly compiled and announced the government's viewpoint based on the investigations and considerations on the utilization of hospital ships on March 30, 2021. The following is a summary of this viewpoint.

In the event of a large-scale disaster such as the Nankai Trough Earthquake, a vast number of medical needs are expected to arise over a wide area. Hospital ships are expected to supplement land-based medical institutions, especially in areas where land routes are cut off and on remote islands, by taking advantage of the characteristics of ships that can operate on the sea in a self-contained manner.

On the other hand, there are three major issues that need to be addressed in order to utilize hospital ships: (1) securing medical personnel, (2) securing operating personnel, and (3) measures to utilize hospital ships during ordinary times.

In light of the current situation where these issues have not yet been resolved, for the time being, instead of starting to build new hospital ships, disaster medical activities will be realized using existing ships.

The following is a list of specific action items in using existing ships.

- Enhancing the training that has been conducted so far, in cooperation with relevant government ministries and agencies, full-scale training will be conducted on disaster medical operations on ships, from initial response (gathering of personnel) to completion (removal of patients), with the assumption that medical beds on Self-Defense Force ships will be used as well.
- Private entities that are capable of securing their own vessels and conducting disaster medical activities will also be monitored and measures for cooperation and support will be considered.

In addition, the following studies will be conducted to address the issues identified in these investigations and considerations.

- With regard to securing medical personnel, while considering the status of control over COVID-19, specific consideration will be given to the establishment of cooperative relationships with medical-related organizations, and efforts will be made to enhance medical care provision systems in times of disaster.
- Clarifying the skills and number of operating personnel required through training and consider how to secure them to respond immediately in the event of a disaster.
- In addition to paying attention to immediate response and cost-effectiveness in times of disaster, measures for use during ordinary times will continue to be considered, considering future changes in socio-economic conditions.
- The use of ships in the response to infectious diseases will also continue to be considered, based on the response to COVID-19, while fully listening to the opinions of medical personnel.

In Japan, which is surrounded by the sea, there are high expectations for the use of ships to ensure medical care in times of disaster and infectious disease outbreaks. Therefore, the government will continue to work on improving medical care provision systems in times of disaster and infectious disease outbreaks, while listening carefully to the opinions of medical organizations.

【Column】

"Ten Years After the Great East Japan Earthquake: Major Efforts by the Japan Meteorological Agency"

This year marks the 10th anniversary of the Great East Japan Earthquake. This section will introduce the main efforts that the JMA has made since the earthquake, namely the improvement of tsunami warnings and earthquake early warnings.

(1) Improvement of Tsunami Warnings

In the Great East Japan Earthquake, a very high tsunami of over 9 meters was observed in Soma, Fukushima Prefecture, and waves of tsunamis hit the Pacific coast all along the coasts from Hokkaido to Okinawa, specifically from the Tohoku region to the northern Kanto region. The Japan Meteorological Agency issues a tsunami warning about 3 minutes after an earthquake when a tsunami is predicted. However, as it can be difficult to appropriate grasp the scale of a massive earthquake that exceeds a magnitude of 8, the initial magnitude was estimated smaller than it actually was. This led to an underestimation of the expected tsunami height in tsunami warnings. In light of this, the Japan Meteorological Agency has revised the tsunami warning system so that evacuation from the area will not be hindered. When there is a possibility of a huge earthquake with a magnitude exceeding 8, in the first tsunami warning, qualitative expressions such as "huge" and "high" are used to encourage people to evacuate, and when the scale of the earthquake is accurately determined, the expected tsunami height is announced numerically. The agency started using this type of expression in 2013.

Notation of Tsunami Warnings, etc. and Expected Tsunami Heights in Light of the Great East Japan Earthquake

Information Type		Tsunami Advisory	Tsunami Warning	Major Tsunami Warning		
Expected tsunami height	Qualitative	No expression	"High"	Huge		
	Quantitative	1m (0.2m-1m)	3m (1m-3m)	5m (3m-5m)	10m (5m-10m)	over 10m (10m-)

(2) Improvement of the Earthquake Early Warning System

In the Great East Japan Earthquake, Kurihara City in Miyagi Prefecture experienced a seismic intensity of 7 and a wide area from Hokkaido to the Kyushu region, mainly in eastern Japan, experienced a seismic intensity of 6+ to 1. The Japan Meteorological Agency issued an earthquake early warning immediately after the quake but estimated the magnitude to be smaller than it actually was, and thus predicted a smaller seismic intensity. Later, when multiple earthquakes occurred simultaneously due to extremely active seismic activity, there were cases where the magnitude of the earthquake was overestimated and announced because the multiple earthquakes could not be properly identified, and the magnitude estimated. In light of the above, the Japan Meteorological Agency has been working on technical improvements to the Earthquake Early Warning System, and has introduced a method that can accurately estimate the epicenters of multiple earthquakes at the same time (IPF method, December 2016: a method that integrates data and previously used separately), and a method that can accurately predict the seismic intensity of a huge earthquake (PLUM method, March 2018: a method that predicts the seismic intensity based on the observed values of tremors in the surrounding area).

Section 3 Responding to Disaster Threats

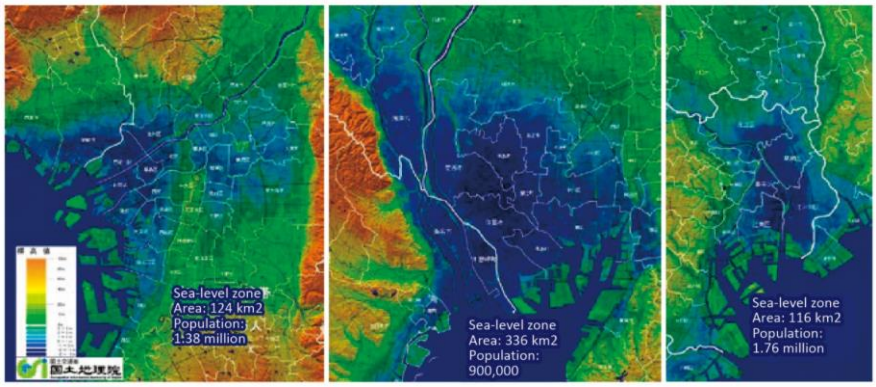
3-1 Consideration of Region-Wide Evacuation due to Overflow from Floods and Storm Surges in the Tokyo Metropolitan Area

Due to global warming in recent years, there are concerns about the intensification of tropical cyclones, and it is predicted that there will be large-scale floods in the future that will require large-scale wide-area evacuation. Each of the 3 major metropolitan areas in Japan has a wide "sea-level zones," and in the event of a large-scale flood due to a levee burst or similar disaster, it is expected that a large number of residents will evacuate, resulting in heavy congestion and a large number of isolated people due to delayed escape (FIG. 3-1-1).

For this reason, the Working Group on Large-Scale and Wide-Area Evacuation from Floods and Storm Surge Flooding, established in June 2016 under the Disaster Management Implementation Committee of the National Disaster Management Council, studied how large-scale and wide-area evacuation from floods and storm surge flooding should be carried out in the 3 major metropolitan areas. In March 2018, the "Fundamental Thought Process on Large-Scale and Wide-Area Evacuation from Floods and Storm Surge Flooding (Report)" was compiled.

(Reference: http://www.bousai.go.jp/fusuigai/kozuiworking/)

FIG. 3-1-1 Seal-Level Zones in the Three major Metropolitan Areas



Source: Cabinet Office, based on Geospatial Information Authority of Japan website

Based on this report, the Cabinet Office, in cooperation with the Tokyo Metropolitan Government, held the "Study Group on Extensive Evacuation from Large-Scale Flood Disasters in the Tokyo Metropolitan Area" 5 times from June 2020 to February 2021, with the aim of organizing matters that should be tackled in cooperation among relevant organizations, including government agencies, with a viewpoint on implementing large-scale wide-area evacuation in the event of a large-scale flood, as well as examining the nature of cooperation and role sharing among relevant organizations. The main topics discussed were securing wide-area evacuation sites, evacuation means, and evacuation guidance.

(Reference: http://www.bousai.go.jp/fusuigai/suigaiworking/suigaiworking.html)

In FY 2020, the “Sub-Working Group Concerning Evacuation Information and Region-Wide Evacuation Based on Typhoon Hagibis in 2019 (T1919),” was convened 6 times from June to December 2020 to study formulation of a system to facilitate large-scale wide-area evacuation, leading to the final complication of the "Summary of

Evacuation Information and Region-Wide Evacuation Based on Typhoon Hagibis in 2019 (T1919), etc." From FY 2021 onward, in order to promote wide-area evacuation throughout Japan, basic ideas on points to keep in mind and procedures in considering wide-area evacuation will be put together and disseminated to local governments.

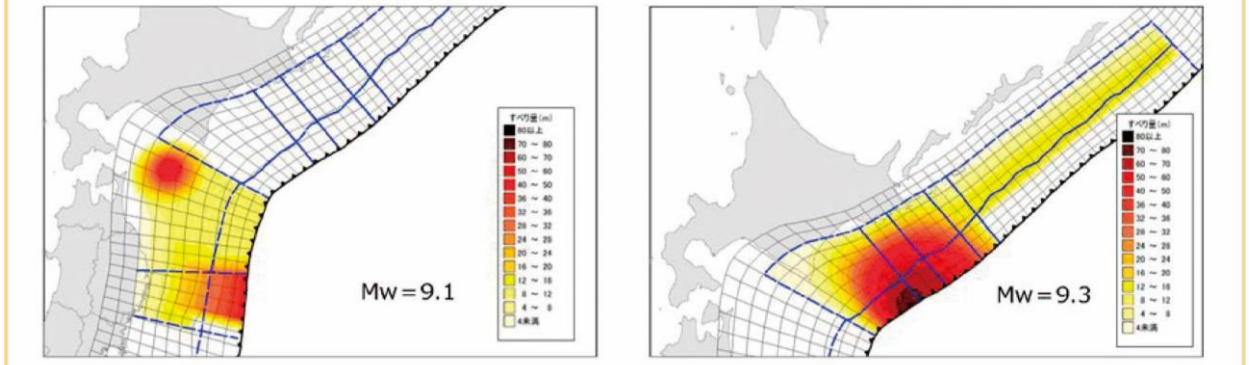
(Reference: http://www.bousai.go.jp/fusuigai/subtyphoonworking/pdf/dai19gou/hinan_honbun.pdf)

3-2 Consideration of Countermeasures against Megaquakes along the Japan Trench and the Chishima Trench

The government as a whole has been focusing on disaster prevention measures against trench-type earthquakes along the Japan Trench and the Chishima Trench based on the "Basic Plan for Promotion of Disaster Management for Trench-type Earthquakes in the Vicinity of the Japan and Chishima Trenches." However, based on the "Committee for Technical Investigation of Earthquake and Tsunami Countermeasures from the Lessons Learned from the 2011 off the Pacific coast of Tohoku Earthquake" (September 28, 2011) of the National Disaster Management Council, the government has been focusing on the establishment of comprehensive countermeasures whose top priority is to save lives against tsunamis based on the assumption that the largest class of earthquake and tsunami will occur.

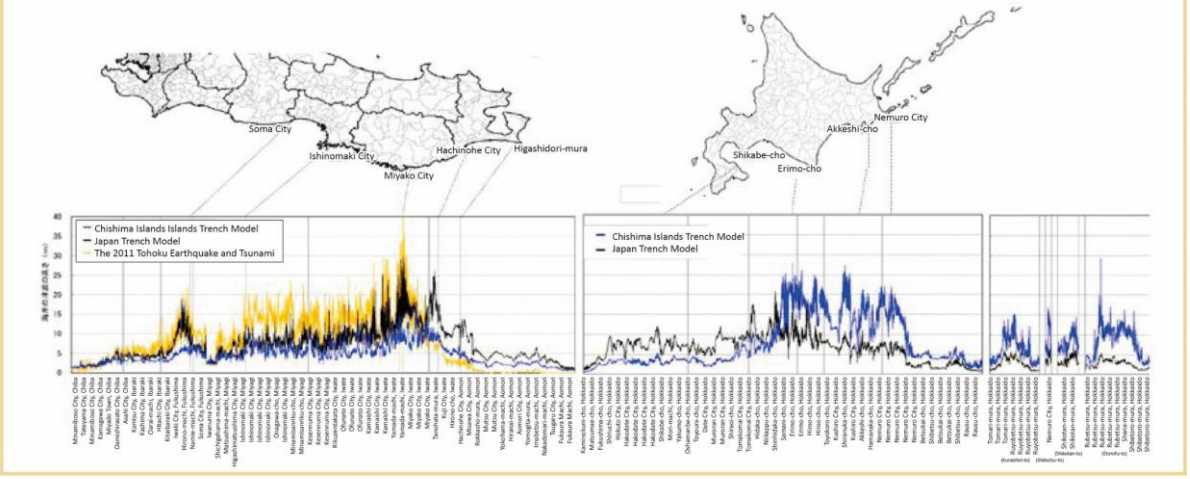
In February 2015, the Cabinet Office established the "Study Group on a Megaquake Model in the Vicinity of the Japan and Chishima Trenches," which consists of researchers in science, engineering, and other fields. Based on scientific knowledge, the committee established a model of the largest possible earthquake and tsunami fault, estimated the distribution of seismic intensity and the height of the possible tsunami along the coast (FIG. 3-2-1, FIG. 3-2-2).

FIG. 3-2-1 **Analysis of Largest Class of Tsunami Fault Models** (Left: Japan Trench Model, Right: Chishima Islands Trench Model)



Source: Study Group on a Megaquake Model in the Vicinity of the Japan and Chishima Trenches - Summary Report Reference Figures collection
(See: http://www.bousai.go.jp/jishin/nihonkaiko_chishima/model/index.html)

FIG. 3-2-2 Estimated Coastal Tsunami Height



Source: Study Group on a Megaquake Model in the Vicinity of the Japan and Chishima Trenches - Summary Report Reference Figures collection
(See: http://www.bousai.go.jp/jishin/nihonkaiko_chishima/model/index.html)

In April 2020, the "Working Group for Studying Megaquake Countermeasures in the Vicinity of the Japan and Chishima Trenches" was established under the Disaster Management Implementation Committee of the National Disaster Management Council in order to consider damage assumptions and disaster prevention measures to mitigate damage based on the investigative results of these maximum class earthquake and tsunami fault models.

In order to formulate various disaster prevention and mitigation measures that should be implemented by the national government and to promote them, the working group will first examine the nature and quantitative amount of damage to human beings, buildings, lifelines such as water, electricity, and gas, and transportation facilities such as roads and railroads that would be caused by tsunamis and tremors in a major earthquake along the Japan Trench and the Chishima Trench. After that, based on the scale of such damage, the issues to be addressed in the event of a huge earthquake along the Japan Trench and the Chishima Trench will be adjusted, and the basic concept of countermeasures against huge earthquakes will be considered. In particular, if an earthquake occurs in winter along the Japan Trench or the Chishima Trench, damage specific to snow-covered cold regions is expected, and this is being taken into consideration.

Section 4 International Cooperation for Disaster Prevention

Japan has accumulated a great deal of disaster experience, knowledge, and measures for disaster reduction, and by sharing this experience, Japan is leading the global discussion in the field of disaster reduction and contributing to disaster reduction efforts in countries around the world. In particular, based on the fact that the Third United Nations World Conference on Disaster Risk Reduction was held in Sendai City in March 2015, countries around the world expect Japan to play a leading role in the implementation of the "Sendai Framework for Disaster Risk Reduction 2015 to 2030" (hereinafter referred to as the "Sendai Framework for Disaster Risk Reduction") adopted at the conference. For this reason, the Disaster Management Bureau of the Cabinet Office and the Ministry of Foreign Affairs are actively promoting disaster reduction cooperation and Bilateral Disaster Risk Reduction Cooperation through international organizations such as the United Nations.

4-1 Cooperation in Disaster Prevention through the United Nations and Other International Organizations

(1) Cooperation in Disaster Reduction Through the United Nations Office for Disaster Risk Reduction (UNDRR)

In order to promote the Sendai Framework for Disaster Risk Reduction, the Ministry of Foreign Affairs of Japan and the Cabinet Office contributed a total of approximately 6.2 million US dollars (approximately 680 million yen) in FY2020 to support the activities of the United Nations Office for Disaster Risk Reduction (UNDRR), which monitors and coordinates the implementation of the framework and provides support to regions and countries.

The UNDRR held an online donor meeting in November 2020 to explain its performance in 2020. In the Sendai Framework for Disaster Risk Reduction, the UNDRR reported on the status of implementation of Target E (to substantially increase the number of countries with national and local disaster reduction strategies), the addition of the COVID-19 perspective to the UNDRR strategy, and the early sharing of lessons learned from COVID-19 with countries and institutions around the world, the formation of partnerships with the United Nations Framework Convention on Climate Change (UNFCCC) and the United Nations Development Program (UNDP) to strengthen coordination among the Sendai Framework for Disaster Risk Reduction, the Paris Agreement, and the Sustainable Development Goals (SDGs).

(2) International Recovery Platform (IRP)

The International Recovery Platform (IRP) was established in Kobe City, Hyogo Prefecture in March 2005 in response to the Hyogo Framework for Action adopted at the 2nd United Nations World Conference on Disaster Risk Reduction held in Kobe City, Hyogo Prefecture in 2005. The Framework was established with the following objectives: to enhance the network and the Hyogo Framework for Action to support smooth recovery; to disseminate lessons learned and develop common methods and mechanisms for recovery; and to provide advice and support for recovery planning and forming ideas. The Sendai Framework for Disaster Risk Reduction calls for strengthening the IRP as one of the international mechanisms for promoting "Build-Back-Better" recovery. The Government of Japan (Cabinet Office), as co-chair of the Steering Committee, is helping to lay the groundwork for its development and is supporting the activities of the IRP.

The International Recovery Forum for FY 2020 was held on January 22, 2021, in Kobe, Japan, both onsite and online, with the theme of "Recovery from Complex Disasters: Practices and Lessons for Better Recovery from

Natural Disasters and the COVID-19 Pandemic." There were 340 participants to the conference from 49 countries, including Governor of Hyogo Prefecture Ido and Director Kawata of the Disaster Reduction and Human Renovation Institution. The forum discussed key areas such as governance, planning, financing, and inclusion, and how lessons learned from past recovery experiences can be applied to the current recovery under COVID-19 crisis.

The International Recovery Forum

(3) Cooperation in Disaster Reduction through Asia-Pacific Economic Cooperation (APEC) Activities

The 16th APEC Emergency Preparedness Working Group (EPWG) meeting was held online on July 21, 2020. The EPWG is leading the sharing of information on COVID-19 countermeasures in APEC and is conducting a survey on COVID-19 countermeasures in APEC member economies. As they were part of the main themes of the conference as well, the Asian Disaster Reduction Center (ADRC), which attended the conference from Japan, presented examples of support measures and tools from Japan and its member countries.

(4) Cooperation in Disaster Reduction through Joint Activities with the Asian Disaster Reduction Center (ADRC)

The Asian Disaster Reduction Center (ADRC) was established in Kobe City, Hyogo Prefecture in 1998 to share disaster lessons with the Asian region, and as of March 2020, 31 Asian countries are members. The ADRC's activities are based on four pillars: sharing of disaster information, human resource development in member countries, enhancement of community disaster resilience, and collaboration with member countries, international organizations, regional organizations, and NGOs. Visiting researchers are invited from member countries (117 in total as of March 2021) and are trained to contribute to the planning of disaster reduction policies in member countries through research on disaster reduction policies. The center also collects information on disaster management systems and the latest disaster information in each country and provides them on its website, as well as satellite observations of disaster damage in the event of a disaster.

The Cabinet Office co-hosts the Asian Conference on Disaster Reduction (ACDR) with the ADRC to share information, exchange opinions, and promote cooperation on issues related to disaster prevention and disaster mitigation in Asia with the participation of member countries and international organizations. The 16th conference was held online from October 20 to October 22, 2020, under the themes of "Challenges of Increasingly Frequent and Severe Disaster Risks and Disaster Prevention and Mitigation Measures" and "Disaster Prevention and Mitigation Measures for the COVID-19 Crisis." The conference was attended by 244 participants from 22 of the 31 member countries and international organizations such as UNDRR and JICA. The participants shared information

and exchanged opinions on the status of the Sendai Framework for Disaster Risk Reduction, including disaster reduction strategies of each country. From Japan, Mr. Okonogi, then Minister of State for Disaster Management, and Mr. Akazawa, State-Minister of Cabinet Office, gave opening and closing remarks via video message, respectively. From Japan, the Ministry of the Environment gave a presentation in the session on “Challenges of Increasingly Frequent and Severe Disaster Risks and Disaster Prevention and Mitigation Measures.”

The Asian Conference on Disaster Reduction

4-2 Bilateral Disaster Risk Reduction Cooperation

In addition to its efforts through international organizations, the Cabinet Office has been deepening cooperation with disaster management departments in governments around the world by sharing experiences in disaster risk management policies through such opportunities as visits by cabinet-level officials in charge of disaster management from abroad.

Based on the Memorandum of Understanding on Cooperation (MOU) signed together with the Federal Emergency Management Agency (FEMA) in December 2014, a working plan is singed every year, in addition to the use of international conferences and video conferences for sharing information and exchanging opinions. A videoconference was held in December 2020 to exchange information on (1) evacuation procedures under COVID-19 crisis, (2) support and stockpiling of relief supplies under COVID-19 crisis, and (3) issues under COVID-19 crisis.

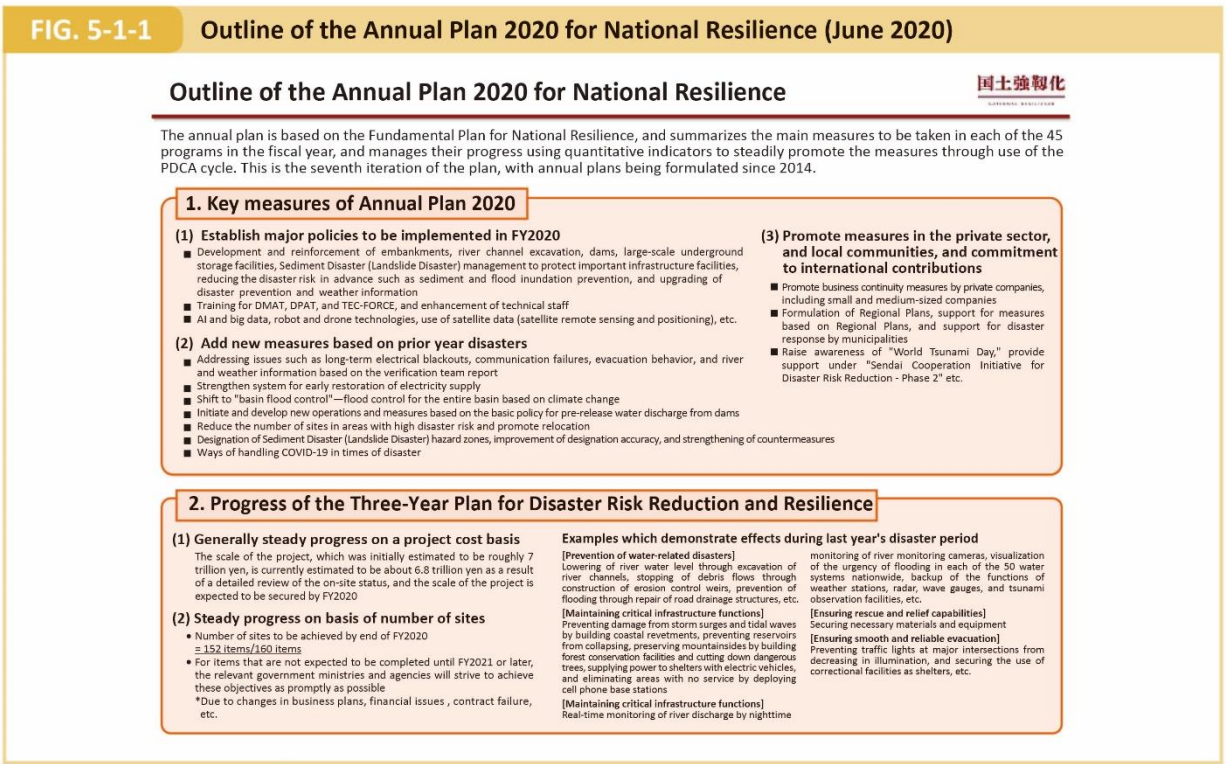
Section 5 Measures to Promote National Resilience

5-1 Annual Plan for National Resilience in 2020

The Government of Japan decided on June 18, 2020, on the "Annual Plan for National Resilience 2020" (hereinafter referred to as the "Annual Plan 2020"). In addition to existing measures such as the use of infrastructure, soft logistics, and new technologies, the Annual Plan 2020 includes new measures such as: (1) addressing issues such as long-term power outages and communication failures based on the report of the Government Review Team on Typhoon Faxai in 2019 (T1915) and Typhoon Hagibis in 2019 (T1919) (2) flood control for the entire basin in light of climate change, (3) prior flow of water from dams, and (4) response to COVID-19 during disasters. A follow-up was also conducted on the "Three-Year Emergency Response Plan for Disaster Prevention, Disaster Mitigation, and Building National Resilience" (approved by the Cabinet on December 14, 2018), and found that the project cost is expected to be secured as planned by the final fiscal year for a project scale of approximately 7 trillion yen, that 95% of the total 160 items are expected to be completed in FY 2020, and that progress is generally on track. In the typhoon disasters of 2019, the project was effective in (1) preventing damage from flooding, (2) maintaining the functions of critical infrastructure, (3) maintaining monitoring, observation, and information dissemination, (4) securing rescue and relief capabilities, and (5) ensuring smooth and reliable evacuation (FIG. 5-1-1).

In addition, based on the Annual Plan 2020, the Advisory Committee on National Resilience (Disaster Reduction and Mitigation) (chaired by Professor Satoshi Fujii of Kyoto University) held discussions on the themes of "National Resilience in Response to Climate and Natural Conditions" and "Resilience of People and Communities" as important policy issues for promoting the Fundamental Plan for National Resilience.

FIG. 5-1-1 Outline of the Annual Plan 2020 for National Resilience (June 2020)



Outline of the Annual Plan 2020 for National Resilience

国土強靱化

The annual plan is based on the Fundamental Plan for National Resilience, and summarizes the main measures to be taken in each of the 45 programs in the fiscal year, and manages their progress using quantitative indicators to steadily promote the measures through use of the PDCA cycle. This is the seventh iteration of the plan, with annual plans being formulated since 2014.

1. Key measures of Annual Plan 2020

(1) Establish major policies to be implemented in FY2020
- Development and reinforcement of embankments, river channel excavation, dams, large-scale underground storage facilities, Sediment Disaster (Landslide Disaster) management to protect important infrastructure facilities, reducing the disaster risk in advance such as sediment and flood inundation prevention, and upgrading of disaster prevention and weather information
- Training for DMAT, DPAT, and TEC-FORCE, and enhancement of technical staff
- AI and big data, robot and drone technologies, use of satellite data (satellite remote sensing and positioning), etc.

(2) Add new measures based on prior year disasters
- Addressing issues such as long-term electrical blackouts, communication failures, evacuation behavior, and river and weather information based on the verification team report
- Strengthen system for early restoration of electricity supply
- Shift to "basin flood control"—flood control for the entire basin based on climate change
- Initiate and develop new operations and measures based on the basic policy for pre-release water discharge from dams
- Reduce the number of sites in areas with high disaster risk and promote relocation
- Designation of Sediment Disaster (Landslide Disaster) hazard zones, improvement of designation accuracy, and strengthening of countermeasures
- Ways of handling COVID-19 in times of disaster

(3) Promote measures in the private sector, and local communities, and commitment to international contributions
- Promote business continuity measures by private companies, including small and medium-sized companies
- Formulation of Regional Plans, support for measures based on Regional Plans, and support for disaster response by municipalities
- Raise awareness of "World Tsunami Day," provide support under "Sendai Cooperation Initiative for Disaster Risk Reduction - Phase 2" etc.

2. Progress of the Three-Year Plan for Disaster Risk Reduction and Resilience

(1) Generally steady progress on a project cost basis
The scale of the project, which was initially estimated to be roughly 7 trillion yen, is currently estimated to be about 6.8 trillion yen as a result of a detailed review of the on-site status, and the scale of the project is expected to be secured by FY2020

(2) Steady progress on basis of number of sites
- Number of sites to be achieved by end of FY2020
  = 152 items/160 items
- For items that are not expected to be completed until FY2021 or later, the relevant government ministries and agencies will strive to achieve these objectives as promptly as possible
  *Due to changes in business plans, financial issues , contract failure, etc.

Examples which demonstrate effects during last year's disaster period

[Prevention of water-related disasters]
Lowering of river water level through excavation of river channels, stopping of debris flows through construction of erosion control weirs, prevention of flooding through repair of road drainage structures, etc.

[Maintaining critical infrastructure functions]
Preventing damage from storm surges and tidal waves by building coastal revetments, preventing reservoirs from collapsing, preserving mountainsides by building forest conservation facilities and cutting down dangerous trees, supplying power to shelters with electric vehicles, and eliminating areas with no service by deploying cell phone base stations

[Maintaining critical infrastructure functions]
Real-time monitoring of river discharge by nighttime monitoring of river monitoring cameras, visualization of the urgency of flooding in each of the 50 water systems nationwide, backup of the functions of weather stations, radar, wave gauges, and tsunami observation facilities, etc.

[Ensuring rescue and relief capabilities]
Securing necessary materials and equipment

[Ensuring smooth and reliable evacuation]
Preventing traffic lights at major intersections from decreasing in illumination, and securing the use of correctional facilities as shelters, etc.

Source: National Resilience Promotion Office, Cabinet Secretariat Website
(see: https://www.cas.go.jp/jp/seisaku/kokudo_kyoujinka/pdf/nenjikeikaku2020_01.pdf)

5-2 Budget Regarding National Resilience and Tax Reform Contributing to National Resilience

The third supplementary budget for FY 2020 includes approximately 2.0 trillion yen in government expenditure (of which approximately 1.7 trillion yen is for public works) for the first year of the "Five-Year Acceleration Plan for Disaster Prevention, Disaster Mitigation, and Building National Resilience" (hereinafter referred to as the " Five-Year Accelerated Plans "), which was approved by the Cabinet in December 2020. In addition, approximately 0.3 trillion yen in government expenditure (of which approximately 0.1 trillion yen is for public works) is appropriated for other urgent expenses to steadily promote national resilience measures based on the Fundamental Plan for National Resilience. In addition, the initial budget for FY 2021 includes a national budget of approximately 4.4 trillion yen for national resilience (see Special Feature Chapter 3, Section 1, pp. 57-59).

Moreover, there has been continual work between related ministries and agencies to further enhance the taxation system that contributes to national resilience, compiling and announcing 11 items for tax reform in FY2021, including 3 new items and 1 expansion.

5-3 Support for the Formulation of Fundamental Plans for Regional Resilience

In order to effectively promote national resilience, it is extremely important to promote regional resilience, especially by local governments. As of April 1, 2021, 1,380 municipalities in 47 prefectures have completed the formulation of Fundamental Plans for Regional Resilience (hereinafter referred to as "Regional Plans"), and 340 municipalities are working on the formulation of their Regional Plans (FIG. 5-3-1). When local governments formulated their Regional Plans, the Government of Japan held briefing sessions by government officials and provided support for local governments' efforts based on the Regional Plans through 46 grants and subsidies under the jurisdiction of relevant government ministries and agencies. As for the support by grants and subsidies, it was decided to continue to further enhance the support in FY 2021 in order to further promote the formulation of regional plans and regional efforts for national resilience.

FIG. 5-3-1 Status of formulation of Regional Plans for national resilience

Prefecture	Plan in place	
	Number of organizations	Organization name
Hokkaido	169	Hokkaido, Sapporo City, Hakodate City, Otaru City, Asahikawa City, Muroran City, Kushiro City, Obihiro City, Kitami City, Yubari City, Iwamizawa City, Abashiri City, Rumoi City, Tomakomai City, Wakkanai City, Bibai City, Ashibetsu City, Ebetsu City, Monbetsu City, Shibetsu City, Nayoro City, Mikasa City, Nemuro City, Chitose City, Takikawa City, Sunagawa City, Utashinai City, Fukagawa City, Furano City, Noboribetsu City, Eniwa City, Date City, Kitahiroshima City, Ishikari City, Hokuto City, Shinshinotsu-mura, Matsumae-cho, Fukushima-cho, Shiriuchi-cho, Nanae-cho, Shikabe-cho, Mori-machi, Yakumo-cho, Oshamambe-cho, Esashi-cho, Kaminokuni-cho, Assabu-cho, Otobe-cho, Okushiri-cho, Imakane-cho, Setano-cho, Shimamaki-mura, Suttsu-cho, Kuromatsunai-cho, Rankoshi-cho, Niseko-cho, Makkari-mura, Rusutsu-mura, Kimobetsu-cho, Kyogoku-cho, Kutchan-cho, Kyowa-cho, Iwanai-cho, Tomari-mura, Kamoenai-mura, Furubira-cho, Niki-cho, Yoichi-cho, Akaigawa-mura, Nanporo-cho, Naie-cho, Kamisunagawa-cho, Yuni-cho, Naganuma-cho, Kuriyama-cho, Tsukigata-cho, Urausu cho, Shinfotsukawa-cho, Chippubetsu-cho,Uryu-cho, Hokuryu-cho, Numata cho, Takasu-cho, Toma-cho, Pippu cho, Aibetsu cho, Kamikawa cho, Higashikawa cho, Biei-cho, Kamifurano-cho, Nakafurano cho, Minamifurano-cho, Shimukappu-mura, Wassamu-cho, Kembuchi-cho, Shimokawa-cho, Bifuka-cho, Otoineppu-mura, Nakagawa-cho, Horokanai-cho, Mashike-cho, Obira-cho, Tomamae-cho, Haboro-cho, Shosanbetsu-mura, Enbetsu-cho, Teshio-cho, Sarufutsu-mura, Hamatonbetsu-cho Nakatonbetsu-cho, Esashi-cho, Toyotomi-cho, Rebun-cho, Rishiri-cho, Rishiri-Fuji-cho, Horonobe-cho, Bihoro-cho, Tsubetsu-cho, Shari-cho, Kiyosato-cho, Koshimizu-cho, Kunneppu-cho, Oketo-cho, Saroma-cho, Engaru-cho, Yubetsu-cho, Takinoue-cho, Okoppe-cho, Nishiokoppe-mura, Omu-cho, Ozora-cho, Toyoura-cho, Sobetsu-cho, Shiraoi-cho, Atsuma-cho, Toyako-cho, Abira-cho, Hidaka-cho, Biratori-cho, Niikappu-cho, Urakawa-cho, Samani-cho, Erimo-cho, Shinhidaka-cho, Shihoro-cho, Kamishihoro-cho, Shintoku-cho, Shimizu-cho, Memuro-cho, Nakasatsunai-mura, Sarabetsu-mura, Taiki-cho, Hiroo-cho, Ikeda-cho, Toyokoro-cho, Ashoro-cho, Rikubetsu-cho, Urahoro-cho,Kushiro-cho,Akkeshi-cho, Hamanaka-cho, Shibecha-cho, Teshikaga-cho, Tsurui-mura, Shiranuka-cho, Betsukai-cho, Nakashibetsu-cho, Shibetsu-cho, Rausu-cho
Aomori	39	Aomori Prefecture, Aomori City, Hirosaki City, Hachinohe City, Kuroishi City, Goshogawara City, Towada City, Misawa City, Mutsu City, Tsugaru City, Hirakawa City, Hiranai-machi, Imabetsu-machi, Yomogita-mura, Sotogahama-machi, Ajigasawa-machi, Fukaura-machi, Nishimeya-mura, Fujisaki-machi, Owani-machi, Inakadate-mura, Itayanagi-machi, Tsuruta-machi, Nakadomari-machi, Noheji-machi, Yokohama-machi, Tohoku-machi, Rokkasho-mura, Oirase-cho, Oma-machi, Higashidori-mura, Kazamaura-mura, Sai-mura, Sannohe-machi, Gonohe-machi, Takko-machi, Nanbu-cho, Hashikami-cho, Shingo-mura
Iwate	31	Iwate Prefecture, Miyako City, Ofunato City, Hanamaki City, Kitakami City, Kuji City, Tono City, Ichinoseki City, Rikuzentakata City, Kamaishi City, Ninohe City, Hachimantai City, Oshu City, Takizawo City, Shizukuishi cho, Kuzumaki-machi, Iwate-machi, Shiwa cho, Yaba cho, Nishiwaga-machi, Kanegasaki-cho, Hiraizumi-cho, Otsuchi-cho, Yamada-machi, Iwaizumi-cho, Tanohata-mura, Fudai-mura, Noda-mura, Kunohe-mura, Hirono-cho, Ichinohe-cho
Miyagi	26	Miyagi Prefecture, Sendai City, Ishinomaki City, Shiroishi City, Natori City, Tagajo City, Iwanuma City, Kurihara City, Osaki City, Tomiya City, Ogawara-machi, Murata-machi, Shibata-machi, Kawasaki-machi, Marumori-machi, Watari-cho, Matsushima-machi, Shichigahama-machi, Rifu-cho, Taiwa-cho,Ohira-mura, Shikama-cho, Kami-machi, Misato-machi, Onagawa-cho, Minamisanriku-cho
Akita	20	Akita Prefecture, Akita City, Noshiro City, Yokote City, Odate City, Oga City, Yuzawa City, Kazuno City, Yurihonjo City, Daisen City, Kita akita City, Nikaho City, Senboku City, Kosaka machi, Mitane cho, Happo-cho, Gojoume machi, Misato cho, Ugo machi, Higashinaruse mura
Yamagata	31	Yamagata Prefecture, Yamagata City, Yonezawa City, Tsuruoka City, Sakata City, Shinjo City, Sagae City, Kaminoyama City, Murayama City, Nagai City, Higashine City, Obanazawa City, Nanyo City, Yamanobe-machi, Asahi-machi, Oe-machi, Oshida-machi, Kaneyama-machi, Mogami-machi, Funagata-machi, Mamurogawa-machi, Okura-mura, Sakegawa-mura, Tozawa-mura, Takahata-machi, Kawanishi-machi, Shirataka-machi, Ide-machi, Mikawa-machi, Shonai-machi, Yuza-machi
Fukushima	53	Fukushima Prefecture, Fukushima City, Aizuwakamatsu City, Koriyama City, Iwaki City, Shirakawa City, Sukagawa City, Kitakata City, Soma City, Nihonmatsu City, Tamura City, Minamisoma City, Date City, Kori-machi, Kunimi machi, Kawamata machi, Otama mura, Kagamiishi machi, Ten'ei mura, Shimogo machi, Hinoemata-mura, Tadami-machi, Minamiaizu machi, Nishiaizu-machi, Bandai machi, Inawashiro machi, Yanaizu-machi, Mishima-machi, Kaneyama-machi, Showa mura Aizumisato-machi, Nishigo-mura, Izumizaki-mura, Nakajima-mura, Yabuki-machi, Tanagura machi, Yamatsuri-machi, Hanawa-machi, Samegawa-mura, Ishikawa-machi, Tamakawa-mura, Hirata-mura, Asakawa-machi, Miharu-machi, Hirono-machi, Naraha-machi, Tomioka-machi, Kawauchi mura, Futaba-machi, Namie-machi, Katsurao-mura, Shinchi-machi, Iitate-mura
Ibaraki	35	Ibaraki Prefecture, Hitachi City, Tsuchiura City, Koga City, Ishioka City, Ryugasaki City, Shimotsuma City, Joso City, Hitachiota City, Takahagi City, Kasama City, Toride City, Ushiku City, Hitachinaka City, Itako City, Moriya City, Hitachiomiya City, Naka City, Chikusei City, Bando City, Kasumigaura City, Sakuragawa City, Kamisu City, Namegata City, Hokota City, Tsukuba mirai City, Omitama City, Ibaraki-machi, Oarai-machi, Tokai-mura, Daigo-machi, Miho-mura, Ami-machi,Goka-machi, Sakai-machi
Tochigi	25	Tochigi Prefecture, Utsunomiya City, Ashikaga City, Tochigi City, Sano City, Kanuma City, Nikko City, Oyama City, Moka City, Otawara City, Yaita City, Nasushiobara City, Sakura City, Nasukarasuyama City, Shimotsuke City, Kaminokawa-machi, Motegi-machi, Ichikai-machi, Haga-machi, Mibu-machi, Nogi-machi, Shioya-machi, Takanezawa-machi, Nasu-machi, Nakagawa-machi
Gunma	12	Gunma Prefecture, Maebashi City, Takasaki City, Kiryu City, Isetabayashi City, Shibukawa City, Fujioka City, Shinto-mura, Shimonita-machi, Kanra-machi, Tamamura-machi, Chiyoda-machi
Saitama	19	Saitama Prefecture, Saitama City, Kawagoe City, Kumagaya City, Kawaguchi City, Gyoda City, Kazo City, Honjo City, Kasukabe City, Hanyu City, Konosu City, Toda City, Shiki City, Misato City, Miyoshi-machi, Yokoze-machi, Misato-machi, Kamikawa-machi, Kamisato-machi
Chiba	48	Chiba Prefecture, Chiba City, Choshi City, Funabashi City, Kisarazu City, Noda City, Mobara City, Narita City, Sakura City, Togane City, Asahi City, Narashino City, Kashiwa City, Katsuura City, Ichihara City, Nagareyama City, Yachiyo City, Abiko City, Kamogawa City, Kamagaya City, Kimitsu City, Futtsu City, Urayasu City, Yotsukaido City, Sodegaura City, Yachimata City, Shiroi City, Tomisato City, Minamiboso City, Sosa City, Katori City, Sanmu City, Shisui-machi, Sakae-machi, Kozaki-machi, Iako-machi, Yonosho-machi, Shibayama-machi, Yokoshibahikari-machi, Ichinomiya-machi, Mutsuzawa-machi, Chosei-mura, Shirako-machi, Nagara-machi, Chonan-machi, Otaki-machi, Onjyuku-machi, and Kyonan-machi
Tokyo	17	Tokyo, Minato-ku, Shinjuku-ku, Taito-ku, Ota-ku, Setagaya-ku, Nakano-ku, Arakawa-ku, Adachi-ku, Edogawa-ku, Hachioji-city, Mitaka-city, Chofu-city, Higashimurayama-city, Musashimurayama-city, Niijima-mura, Kozushima-mura
Kanagawa	8	Kanagawa Prefecture, Yokohama City, Kawasaki City, Yokosuka City, Hadano City, Atsugi City, Ebina City, Matsuda-machi
Niigata	24	Niigata Prefecture, Niigata City, Nagaoka City, Sanjo City, Kashiwazaki City, Shibata City, Kamo City, Tokamachi City, Murakami City, Tsubame City, Itoigawa City, Myoko City, Gosen City, Joetsu City, Agano City, Sado City, Uonuma City, Tainai City, Seiro-machi, Yahiko-mura, Aga-machi, Izumozaki-machi, Sekikawa-mura, Awashimaura-mura
Toyama	12	Toyama Prefecture, Toyama City, Uozu City, Himi City, Namerikawa City, Kurobe City, Tonami City, Nanto City, Imizu City, Kamiichi-machi, Nyuzen-machi, Asahi-machi
Ishikawa	19	Ishikawa Prefecture, Kanazawa City, Nanao City, Komatsu City, Wajima City, Suzu City, Hakui City, Kahoku City, Hakusan City, Nomi City, Nonoichi City, Kawakita machi, Tsubata-machi, Uchinada-machi, Shika-machi, Hodatsushimizu cho, Nakanoto-machi, Anamizu machi, Noto-machi
Fukui	15	Fukui Prefecture, Fukui City, Isuruga City, Obama City, Ono City, Sabae City, Echizen City, Sakai City, Ikeda-cho, Minamiechizen-cho, Echizen-cho, Mihama-cho, Takahama-cho, Oi-cho, Wakasa-cho
Yamanashi	21	Yamanashi Prefecture, Kofu City, Fujiyoshida City, Tsuru City, Yamanashi City, Otsuki City, Nirasaki City, Minami Alps City, Hokuto City, Fuefuki City, Koshu City, Ichikawamisato-cho, Hayakawa-cho, Minobu-cho, Fujikawa-cho, Doshi-mura, Nishikatsura-cho, Oshino-mura, Yamanakako-mura, Narusawa-mura, Fujikawaguchiko-machi
Nagano	46	Nagano Prefecture, Matsumoto City, Suzaka City, Komoro City, Ina City, Komagane City, Nakano City, Iiyama City, Chino City, Shiojiri City, Saku City, Chikuma City, Tomi City, Koumi machi, Kawakami-mura, Sakuho-machi, Karuizawa machi, Tatsuno-machi, Minowa machi, Iijima-machi, Minamininowa mura, Nakagawa mura, Miyada mura, Matsukawa machi, Takamori-machi, Anan cho, Hiraya-mura, Neba mura, Shimojo mura, Urugi mura, Tenryu mura, Yasuoka mura, Takagi mura, Toyooka mura, Oshika mura, Nagiso-machi, Kiso mura, Otaki mura, Okuwa mura, Kiso-machi, Omi mura, Chikuhoku mura, Takayama mura, Yamanouchi machi, Kijimadaira mura, Ogawa mura
Gifu	40	Gifu Prefecture, Gifu City, Ogaki City, Takayama City, Tajimi City, Seki City, Nakatsugawa City, Mino City, Mizunami City, Hashima City, Fna City, Minokamo City, Toki City, Kakamigahara City, Kani City, Yamagata City, Miruho City, Hida City, Motosu City, Gujo City, Gero City, Kaizu City, Kasamatsu-cho, Yoro-cho, Tarui-cho, Godo-cho, Wanouchi-cho, Ibigawa-cho, Ono-cho, Ikeda-cho, Kitagata-cho, Sakahogi-cho, Tomika-cho, Kawabe-cho, Hichiso-cho, Yaotsu-cho, Shirakawa-cho, Higashishirakawa-mura, Mitake-cho, Shirakawa-mura
Shizuoka	32	Shizuoka Prefecture, Shizuoka City, Hamamatsu City, Numazu City, Atami City, Mishima City, Fujinomiya City, Ito City, Shimada City, Fuji City, Iwata City, Yaizu City, Kakegawa City, Fujieda City, Gotemba City, Fukuroi City, Shimoda City, Susono City, Kosai City, Izu City, Omaezaki City, Kikugawa City, Izu no kuni City, Makinohara City, Higashi izu cho, Matsuzaki-cho, Nishi izu-cho, Kannami-cho, Shimizu-cho, Nagaizumi-cho, Oyama-cho Oyama-cho, Mori-machi
Aichi	54	Aichi Prefecture, Nagoya City, Toyohashi City, Okazaki City, Ichinomiya City, Seto City, Handa City, Kasugai City, Toyokawa City, Tsushima City, Hekinan City, Kariya City, Toyota City, Anjo City, Nishio City, Gamagori City, Inuyama City, Tokoname City, Konan City, Komaki City, Inazawa City, Shinshiro City, Iokai City, Obu City, Chita City, Chiryu City, Owari-asahi City, Takahama City, Iwakura City, Ioyoake City, Nisshin City, Tahara City Aisai City, Kiyosu City, Yatomi City, Miyoshi City, Ama City, Nagakute City, Iogo-cho, Toyoyama-cho, Oguchi-cho, Fuso-cho, Oharu-cho, Kanie-cho, Jobshima-mura, Agui-cho, Higashiura-cho, Minamichita-cho, Mihama-cho, Taketoyo-cho, Kota-cho, Shitara-cho, Toei-cho, Ioyone-mura
Mie	30	Mie Prefecture, Tsu City, Yokkaichi City, Ise City, Matsusaka City, Kuwana City, Suzuka City, Nabari City, Owase City, Kameyama City, Toba City, Kumano City, Inabe City, Shima City, Iga City, Kisosaki-cho, Toin cho, Komono-cho, Asahi-cho, Kawagoe-cho, Taki-cho, Meiwa-cho, Odai-cho, Tamaki-cho, Watarai-cho, Taiki-cho, Minamise-cho, Kihoku-cho, Mihama-cho, Kiho-cho
Shiga	20	Shiga Prefecture, Otsu City, Hikone City, Nagahama City, Omi hachiman City, Kusatsu City, Moriyama City, Ritto City, Koka City, Yasu City, Konan City, Takashima City, Higashiomi City, Maibara City, Hino-cho, Ryuoh cho, Aisho-cho, Toyosato cho, Kora cho, Taga cho
Kyoto	27	Kyoto Prefecture, Kyoto City, Fukuchiyama City, Maizuru City, Ayabe City, Uji City, Miyazu City, Kameoka City, Joyo City, Muko City, Nagaokakyo City, Yawata City, Kyotanabe City, Kyotango City, Nantan City, Kizugawa City, Oyamazaki cho, Kumiyama cho, Ide-cho, Ujitawara cho, Kasagi cho, Wazuka cho, Seika cho, Minamiyamashiro mura, Kyotamba cho, Ine-cho, Yosano cho
Osaka	41	Osaka Prefecture, Osaka City, Sakai City, Kishiwada City, Toyonaka City, Ikeda City, Suita City, Takatsuki City, Kaizuka City, Moriguchi City, Hirakata City, Ibaraki City, Yao City, Izumisano City, Tondabayashi City, Neyagawa City, Kawachinagano City, Matsubara City, Izumi City, Kashiwara City, Habikino City, Kadoma City, Settsu City, Takaishi City, Fujidera City, Higashi osaka City, Semnan City, Shijonawate City, Katano City, Osaka sayama City Hannan City, Shimamoto-cho, Toyono-cho, Nose-cho, Tadaoka-cho, Kumatori-cho, Tajiri-cho, Misaki-cho, Taishi-cho, Kanan-cho, Chihayaakasaka-mura
Hyogo	42	Hyogo Prefecture, Kobe City, Himeji City, Amagasaki City, Akashi City, Nishinomiya City, Sumoto City, Ashiya City, Itami City, Aioi City, Toyooka City, Kakogawa City, Ako City, Nishiwaki City, Takarazuka City, Miki City, Takasago City, Kawanishi City, Ono City, Sanda City, Kasai City, Tanba sasayama City, Yabu City, Tonba City, Minami awaji City, Asago City, Awaji City, Shiso City, Kato City, Tatsuno City, Inagawa cho, Taka cho, Inami cho, Harima cho, Ichikawa cho, Fukusaki cho, Kamikawa cho,Taishi cho, Kamigori cho,Sayo cho,Kami cho, Shinonsen-cho
Nara	40	Nara Prefecture, Nara City, Yamatotakada City, Yamato koriyama City, Tenri City, Kashihara City, Sakurai City, Gojo City, Gose City, Ikoma City, Kashiba City, Katsuragi City, Uda City, Yamazoe-mura, Heguri-cho, Sango-cho, Ikaruga-cho, Ando-cho, Kawanishi-cho, Miyake-cho, Tawaramoto-cho, Soni-mura, Mitsue-mura, Takatori-cho, Asuka-mura, Kanmaki-cho, Oji-cho, Koryo-cho, Kawai-cho, Yoshino-cho, Oyodo-cho, Shimoichi-cho, Kurotaki-mura, Tenkawa-mura, Nosegawa-mura, Totsukawa-mura, Shimokitayama-mura, Kamikitayama-mura, Kawakami-mura, Higashiyoshino-mura
Wakayama	31	Wakayama Prefecture, Wakayama City, Kainan City, Hashimoto City, Arida City, Gobo City, Tanabe City, Shingu City, Kinokawa City, Iwade City, Kimino cho, Katsuragi cho, Kudoyama cho, Koya cho, Yuasa cho, Hirogawa cho, Aridagawa cho, Mihama cho, Hidaka cho, Yura cho, Inami cho, Minabe cho, Hidakagawa cho, Shirahama cho, Kamitonda cho, Susami cho, Nachikatsuura cho, Taiji cho, Kozagawa cho Kitayama mura, Kushimoto cho
Tottori	20	Tottori Prefecture, Tottori City, Yonago City, Kurayoshi City, Sakaiminato City, Iwami cho, Wakasa cho, Chizu cho, Yazu cho, Misasa cho, Yurihama cho, Kotoura cho, Hokuei cho, Hiezu son, Daisen cho, Nanbu cho, Hoki cho, Nichinan cho, Hino cho, Kofu cho
Shimane	20	Shimane Prefecture, Matsue City, Hamada City, Izumo City, Masuda City, Oda City, Yasugi City, Gotsu City, Unnan City, Okuizumo-cho, Iinan-cho, Kawamoto-machi, Misato-cho, Oonan-cho, Tsuwano-cho, Yoshika-cho, Ama-cho, Nishinoshima-cho, Chibu-mura, Okinoshima cho
Okayama	21	Okayama Prefecture, Okayama City, Kurashiki City, Kasaoka City, Ibara City, Soja City, Takahashi City, Niimi City, Bizen City, Setouchi City, Akaiwa City, Maniwa City, Mimasaka City, Asakuchi City, Satosho-cho, Yakage-cho, Kagamino-cho, Shooh-cho, Nagi-cho, Kumenan-cho, Misaki-cho
Hiroshima	20	Hiroshima Prefecture, Hiroshima City, Kure City, Takehara City, Mihara City, Onomichi City, Fukuyama City, Miyoshi City, Otake City, Higashihiroshima City, Hatsukaichi City, Aki takata City, Etajima City, Fuchu-cho, Kumano-cho, Saka-cho, Akiota-cho, Kitahiroshima-cho, Sera-cho, Jinsekikogen-cho
Yamaguchi	12	Yamaguchi Prefecture, Shimonoseki City, Ube City, Yamaguchi City, Hagi City, Kudamatsu City, Nagato City, Yanai City, Shunan City, Kaminoseki-cho, Hirao-cho, Abu-cho
Tokushima	25	Tokushima Prefecture, Tokushima City, Naruto City, Komatsushima City, Anan City, Yoshinogawa City, Awa City, Mima City, Miyoshi City, Katsuura-cho, Kamikatsu-cho, Sanagochi-son, Ishii-cho, Kamiyama-cho, Naka-cho, Mugi-cho, Minami-cho, Kaiyo-cho, Matsushige-cho, Kitajima-cho, Aizumi-cho, Itano-cho, Kamiita-cho, Tsurugi-cho, Higashimiyoshi-cho
Kagawa	18	Kagawa Prefecture, Takamatsu City, Marugame City, Sakaide City, Zentsuji City, Kanonji City, Sanuki City, Higashikagawa City, Mitoyo City, Tonosho-cho, Shodoshima-cho, Miki-cho, Naoshima-cho, Utazu-cho, Ayagawa-cho, Kotohira-cho, Tadotsu-cho, Manno-cho
Ehime	21	Ehime Prefecture, Matsuyama City, Imabari City, Uwajima City, Yawatahama City, Niihama City, Saijo City, Ozu City, Iyo City, Shikoku chuo City, Seiyo City, Tohon City, Kamijima-cho, Kumakogen-cho, Masaki-cho, Tobe-cho, Uchiko-cho, Ikata-cho, Matsuno-cho, Kihoku-cho, Ainan cho
Kochi	32	Kochi Prefecture, Kochi City, Muroto City, Aki City, Tosa City, Susaki City, Sukumo City, Tosashimizu City, Shimanto City, Konan City, Kami City, Ioyo-cho, Nahari-cho, Iano-cho, Yasuda-cho, Kitagawa-mura, Umaji-mura, Geisei-mura, Motoyama-cho, Otoyo-cho, Okawa-mura, Ino-cho, Niyodogawa-cho, Nakatosa-cho, Sakawa-cho, Ochi-cho, Yusuhara-cho, Hidaka-mura, Tsuno-cho, Otsuki-cho, Mihara-mura, Kuroshio-cho
Fukuoka	20	Fukuoka Prefecture, Kitakyushu City, Fukuoka City, Omuta City, Nogata City, Tagawa City, Yanagawa City, Yame City, Kasuga City, Ukiha City, Miyawaka City, Asakura City, Miyama City, Nakagawa City, Ashiya-machi, Onga-cho, Kurate-machi, Hirokawa-machi, Fukuchi-machi, Kanda-machi
Saga	21	Saga Prefecture, Saga City, Karatsu City, Tosu City, Taku City, Imari City, Takeo City, Kashima City, Ogi City, Ureshino City, Kanzaki City, Yoshinogari-cho, Kiyama-cho, Kamimine-cho, Miyaki-cho, Genkai-cho, Arita-cho, Omachi-cho, Kohoku-machi, Shiroishi-cho, Tara-cho
Nagasaki	21	Nagasaki Prefecture, Nagasaki City, Sasebo City, Shimabara City, Isahaya City, Omura City, Hirado City, Matsuura City, Isushima City, Iki City, Goto City, Saikai City, Unzen City, Minamishimabara City, Nagayo-cho, Togitsu-cho, Higashisonogi-cho, Hasami-cho, Ojika-cho, Saza-cho, Shinkamigoto-cho
Kumamoto	45	Kumamoto Prefecture, Kumamoto City, Yatsushiro City, Hitoyoshi City, Arao City, Minamata City, Tamana City, Yamaga City, Kikuchi City, Udo City, Kamiamakusa City, Uki City, Aso City, Amakusa City, Koshi City, Misato-machi, Gyokuto-machi, Nankan-machi, Nagasu-machi, Nagomi-cho, Ozu-machi, Kikuyo-machi, Minamioguni-machi, Oguni-machi, Ubuyama-mura, Takamori-machi, Nishihara-mura, Minamiaso-mura, Mifune-machi, Kashima-machi, Mashiki-machi, Kosa-machi Yamato-macho, Hikawa-cho, Ashikita-machi, Tsunagi-machi, Nishiki-machi, Taragi-machi, Yunomae-machi, Mizukami-mura, Sagara-mura, Itsuki-mura, Yamae-mura, Asagiri-cho, Reihoku-machi
Oita	19	Oita Prefecture, Oita City, Beppu City, Nakatsu City, Hita City, Saiki City, Usuki City, Tsukumi City, Taketa City, Bungo takada City, Kitsuki City, Usa City, Bungo-ono City, Yufu City, Kunisaki City, Himeshima-mura, Hiji-machi, Kokonoe-machi, Kusu-machi
Miyazaki	27	Miyazaki Prefecture, Miyazaki City, Miyakonojo City, Nobeoka City, Nichinan City, Kobayashi City, Hyuga City, Kushima City, Saito City, Ebino City, Mimata-cho, Takaharuzu-cho, Kunitomi-cho, Aya-cho, Takanabe-cho, Shintomi-cho, Nishimera-son, Kijo-cho, Kawaminami-cho, Tsuno-cho, Kadogawa-cho, Morotsuka-son, Shiiba-son, Misato-cho, Takachiho-cho, Hinokage-cho, Gokase-cho
Kagoshima	44	Kagoshima Prefecture, Kagoshima City, Kanoya City, Makurazaki City, Akune City, Izumi City, Ibusuki City, Nishinoomote City, Tarumizu City, Satsumasendai City, Hioki City, Soo City, Kirishima City, Ichikikushikino City, Minamisatsuma City, Shibushi City, Amami City, Minamikyushu City, Isa City, Aira City, Minamiosumi-cho, Tokunoshima-cho, Satsuma-cho, Nagashima-cho, Yusui-cho, Osaki-cho, Higashikushira-cho, Kinko-cho, Minamiosumi-cho, Kimotsuki-cho, Nakatane-cho, Minamitane-cho, Yakushima-cho, Yamato-son, Uken-son, Setouchi-cho, Tatsugo-cho, Kikai-cho, Tokunoshima-cho, Amagi-cho, Isen-cho, Wadomari-cho, China-cho, Yoron-cho
Okinawa	14	Okinawa Prefecture, Naha City, Nago City, Itoman City, Okinawa City, Tomigusuku City, Miyakojima City, Ginoza-mura, Kin-cho, Kitanakagusuku-mura, Nakagusuku-son, Nishihara-cho, Yonabaru-cho, Aguni-son
Total	1,427	

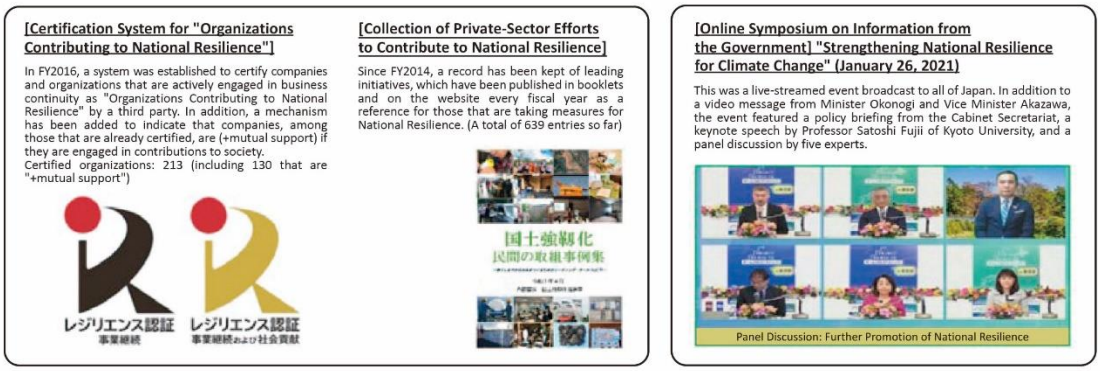
Source: National Resilience Promotion Office, Cabinet Secretariat Materials

5-4 Promotion of Private-sector Initiatives for National Resilience and Fostering Public Awareness

In order to promote the efforts of private companies that contribute to national resilience, the Government of Japan has been operating a system to certify companies that are actively engaged in business continuity as "Organizations Contributing to National Resilience" by a third party since FY 2016. In addition, in the event of a

large-scale natural disaster, it is important for not only individual companies to help themselves, but also for society as a whole to maximize the functioning of mutual support. Therefore, an initiative was started in 2018 to certify businesses (among the Organizations Contributing to National Resilience) that proactively contribute to society as "Organizations Contributing to National Resilience (+Mutual Support)." By the end of March 2021, a total of 213 organizations (of which 130 were certified as "+Mutual Support") have been certified. In addition, as for the leading efforts of the private sector for national resilience, a "Collection of Private Sector Efforts to Contribute to National Resilience" have been put together every year and are introduced on the website and social media to promote the spread of leading efforts.

In FY 2020, the National Resilience Workshop was held 4 times, twice in Tokyo and once each in Sendai and Fukuoka Cities, as an opportunity for citizens interested in disaster prevention and mitigation to expand their awareness, activities, and exchanges. In January 2021, in cooperation with the government's public relations office, an online symposium on "National Resilience in Response to Climate Change" was held, and the archives were distributed to raise public awareness of national resilience.



Source: National Resilience Promotion Office, Cabinet Secretariat Materials

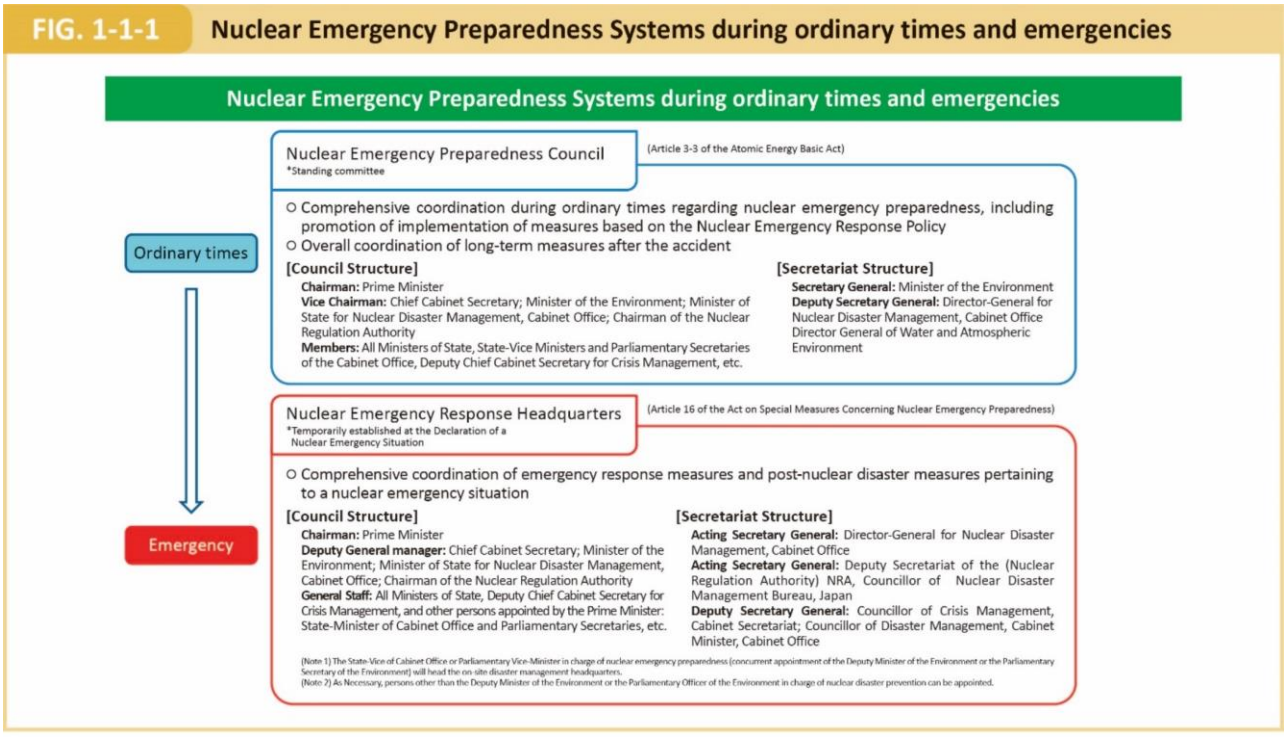
Chapter 2 Status of Measures Related to Nuclear Disasters

Section 1 Nuclear Emergency Preparedness Systems

1-1 Nuclear Emergency Preparedness Systems in Ordinary Times

It is necessary for the entire government to work on and promote measures for nuclear emergency preparedness in an integrated manner, since the damage that could occur in the event of a nuclear emergency is enormous and widespread. For this reason, the “Nuclear Emergency Preparedness Council” has been established in the Cabinet as a body to promote government-wide nuclear emergency preparedness measures during ordinary times. The main role of the Council is to approve regional emergency response plans, which are confirmed to be concrete and reasonable in light of the Nuclear Disaster Risk Management Measures, by the Local Nuclear Disaster Management Councils of each region with the participation of the Cabinet Office, other relevant ministries and agencies, and relevant local governments. The Nuclear Emergency Preparedness Council is chaired by the Prime Minister, vice-chaired by the Chief Cabinet Secretary, the Minister of the Environment, the Minister of State for Nuclear Emergency Preparedness, and the Chairman of the Nuclear Regulation Authority, and the members are all Ministers of State and the Deputy Chief Cabinet Secretary for Crisis Management (FIG. 1-1-1).

FIG. 1-1-1 Nuclear Emergency Preparedness Systems during ordinary times and emergencies



Source: Cabinet Office data

1-2 Nuclear Emergency Preparedness Systems in an Emergency

In the unlikely event that a nuclear emergency occurs due to the release of a large amount of radioactive materials, a "Nuclear Emergency Response Headquarters" will be established. The main role of the Headquarters is to understand the actual situation on the ground and the extent of damage, and to coordinate with relevant national and local government agencies in order to implement emergency response measures accurately and promptly in line with the situation. The Prime Minister is appointed as the head of the Headquarters, the Chief

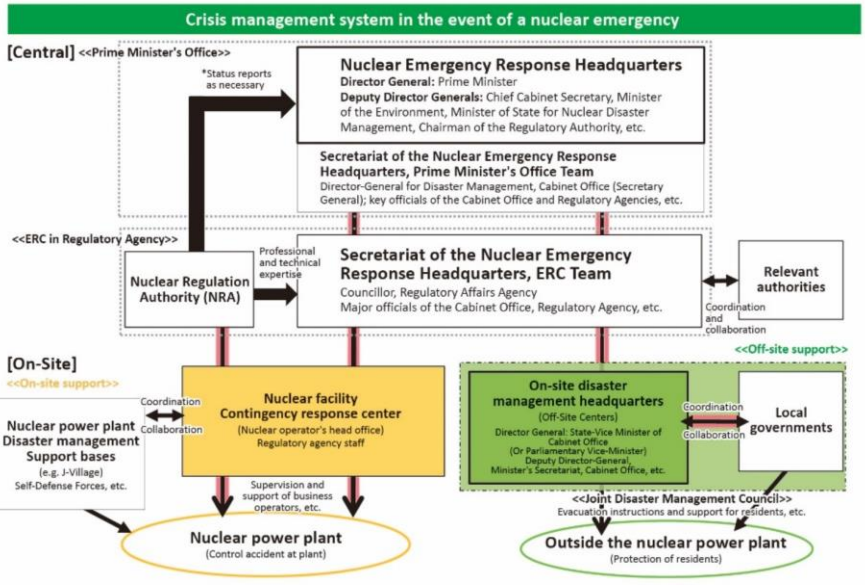
Cabinet Secretary, the Minister of the Environment, the Minister of State for Nuclear Emergency Preparedness, the Chairman of the Nuclear Regulation Authority, and others as deputy head of the Headquarters, and all Ministers of State and the Deputy Chief Cabinet Secretary for Crisis Management as members of the Headquarters (FIG. 1-1-1).

The Nuclear Regulation Authority of Japan (NRA) will be primarily responsible for making decisions on technical and specialized matters, while the relevant ministries and agencies will handle the procurement of equipment and materials necessary to deal with nuclear facilities and off-site response in general, based on the instructions of the head of the Headquarters (i.e. the Prime Minister). The secretariat of the Headquarters will be provided by the Director-General for Nuclear Disaster Management, Cabinet Office, which was established on October 14, 2014.

As for complex disasters, in July 2015, the Basic Disaster Management Plan was revised to establish a coordinated system that enables the “Extreme Disaster Management Headquarters,” which responds to natural disasters, and the “Nuclear Emergency Response Headquarters,” which responds to nuclear disasters, to collect information, make decisions, and provide instructions and coordination in an integrated manner for strengthening the system to respond complex disasters. (FIG. 1-2-1, FIG. 1-2-2).

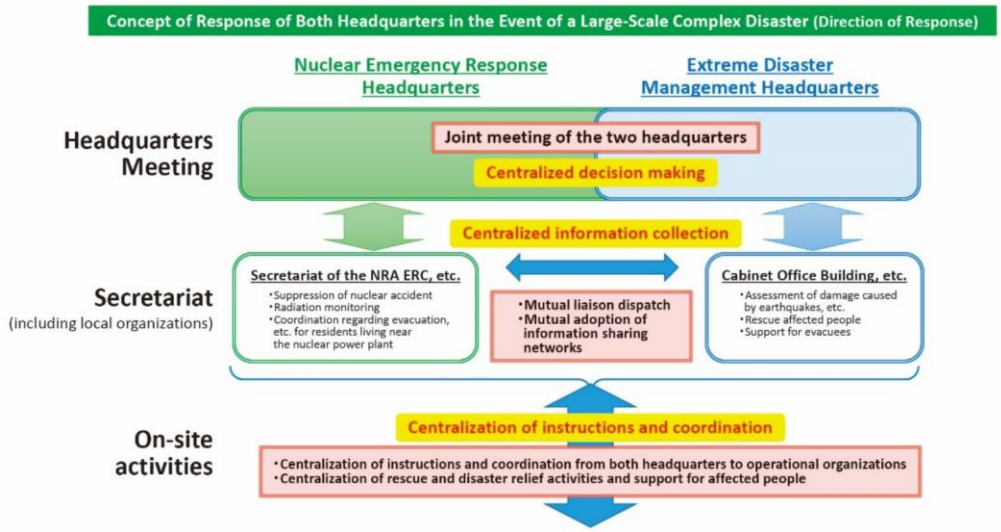
The “Comprehensive Nuclear Emergency Response Exercise for FY 2020,” which was scheduled to be held in early February, was postponed due to the state of emergency declaration due to COVID-19.

FIG. 1-2-1 **Crisis management system in the event of a nuclear emergency**



Source: Cabinet Office data

FIG. 1-2-2 **Concept of Response of Both Headquarters in the Event of a Large-Scale Complex Disaster** (Direction of Response)



Source: Cabinet Office data

Section 2 Nuclear Disaster Countermeasures from the Nuclear Regulation Authority

Based on the lessons learned from the accident at the Tokyo Electric Power Company's Fukushima Daiichi Nuclear Power Station, it is extremely important to continue efforts to ensure trust in the nuclear regulatory authority. In order to fulfill its mission of protecting people and the environment through reliable regulation of nuclear energy, the Nuclear Regulation Authority (NRA) has been working on various policy issues under the organizational principles of "independent decision-making," "effective action," "transparent and open organization," "ambition and sense of responsibility," and "immediate response to emergencies."

2-1 Measures for Nuclear Disaster Prevention

The Nuclear Regulation Authority (NRA) has been working to improve the Nuclear Disaster Risk Management Measures to ensure that the decision criteria used in disaster prevention planning are always the most appropriate, for example by actively incorporating the latest international knowledge. Based on the review of the Emergency Action Level (EAL), which determines whether or not a nuclear operator is in an emergency situation, approved at the FY 2019 75th meeting of the Nuclear Regulation Authority (NRA) on March 30, 2020, a "Meeting on Response to the Review of the Emergency Action Level" was held 3 times to exchange opinions with nuclear operators on the review of the EAL considering specific major accident response facilities and diversity expansion facilities. Based on the results of these meetings, the Nuclear Regulation Authority decided to revise the guidelines and related regulations at the 35th meeting of the Nuclear Regulation Authority in FY 2020 (October 28, 2020).

Work is being performed to promote the steady development of medical systems in the event of a nuclear disaster, including support for the promotion of the designation of Nuclear Emergency Core Hospitals.

2-2 Measures for Emergency Response

In FY 2020, the Nuclear Regulation Authority (NRA) presented an annual training plan to emergency response personnel to strengthen their emergency response capability, and also prepared an ability improvement sheet for each functional group, and used this improvement sheet for personnel evaluation, as in the previous year. This has strengthened the competence management system for each staff member.

In addition, drills were conducted in conjunction with the nuclear operators' disaster preparedness drill to improve emergency response capabilities, for example, by pursuing smoother information sharing between the Secretariat of the NRA's Emergency Response Center (ERC) and the rapid response centers at nuclear facilities of nuclear operators.

In addition, the evaluation results of the emergency drills for nuclear operators, which were conducted at each site of power plants and nuclear fuel facilities, were reported at the FY 2020 Nuclear Operators' Disaster Prevention Drill Report Debriefing Session. Besides, based on the training scenarios prepared in FY 2019, the Working Group for Developing Training Scenarios established under the Nuclear Operators' Disaster Prevention Drill Report Debriefing Session conducted training to improve the decision-making capability of commanders at eight nuclear operators and training to improve the response capability at eight nuclear operators. Based on the results of the training, a training scenario was developed based on the FY 2020 training implementation policy.

2-3 Measures for Emergency Monitoring

The Nuclear Regulation Authority (NRA) has established "Emergency Monitoring Centers" in all areas where nuclear facilities are located in order to conduct effective emergency monitoring based on the Nuclear Disaster Risk Management Measures. As for the emergency monitoring centers in each region, the necessary materials and equipment are being maintained to ensure that they can function reliably in the event of a nuclear disaster. Furthermore, the emergency monitoring system is being enhanced and strengthened by assigning radiation monitoring staff to the NRA regional offices.

The results of emergency radiation monitoring collected by the "Emergency Radiation Monitoring Information Sharing/ Announcement System" were to be published on the website of the Nuclear Regulation Authority (NRA) at the stage of notification based on Article 10, Paragraph 1 of the "Act on Special Measures Concerning Nuclear Emergency Preparedness." However, at the 10th Nuclear Regulation Authority (NRA) meeting held on May 29, 2019, the NRA decided to publish the estimated values from ordinary times in order to contribute to the smooth communication of information to the public in an emergency. A new "Radiation Monitoring Information Sharing/ Announcement System" was developed, and its operation started in March 2021.

2-4 Accidents/ Breakdowns

The "Act on the Regulation of Nuclear Source Material, Nuclear Fuel Material, and Reactors" obliges nuclear operators, and the "Act on the Regulation of concerning Prevention from Radiation Hazards due to Radioisotopes, etc." obliges licensed and registered users to report accidents and malfunctions to the Nuclear Regulation Authority (NRA). In FY 2020, 4 reports were received from nuclear operators under the "Act on the Regulation of Nuclear Source Material, Nuclear Fuel Material, and Reactors" and 3 reports were received from users with a license/notification under the "Act on the Regulation of concerning Prevention from Radiation Hazards due to Radioisotopes, etc."

Section 3 Enhancement and Reinforcement of Nuclear Emergency Preparedness System in Local

3-1 Formulation and Support of Local Disaster Management Plans and Evacuation Plans

In accordance with the Basic Act on Disaster Management, local governments shall prepare local disaster management plans (nuclear disaster risk management measures version) (hereinafter referred to as a "local disaster management plan") and define the basic measures to be taken by prefectures and municipalities in response to a nuclear disaster.

At present, based on the Basic Disaster Management Plan and the Nuclear Emergency Preparedness Guidelines, relevant local governments within a 30 km radius of a nuclear power plant have formulated local disaster management plans (FIG. 3-1-1). It is important for local disaster management plans to be concretized and enhanced, and the national government will actively support measures that are difficult for local governments to solve on their own, such as evacuation plans and measures for persons requiring special care.

FIG. 3-1-1 Formulation of Local Disaster Management Plans and Evacuation Plans (As of March 31, 2021)

	Municipalities	Local disaster management plans formulated	Evacuation plans formulated
Tomari Region	13	13	13
Higashidori Region	5	5	5
Onagawa Region	7	7	7
Fukushima Region	13	13	10
Kashiwazaki-Kariwa Region	9	9	9
Tokai Region	14	14	5
Hamaoka Region	11	11	9
Shiga Region	9	9	9
Fukui Area	23	23	23
Shimane Region	6	6	6
Ikata Region	8	8	8
Genkai Region	8	8	8
Sendai Region	9	9	9
Total of 13 regions	135	135	121

Note: *The Fukushima Region is home to Tokyo Electric Power Company's Fukushima Daiichi Nuclear Power Station, which is a specified nuclear facility, and it is necessary to take into account the fact that the area around the plant has been designated as an evacuation zone.

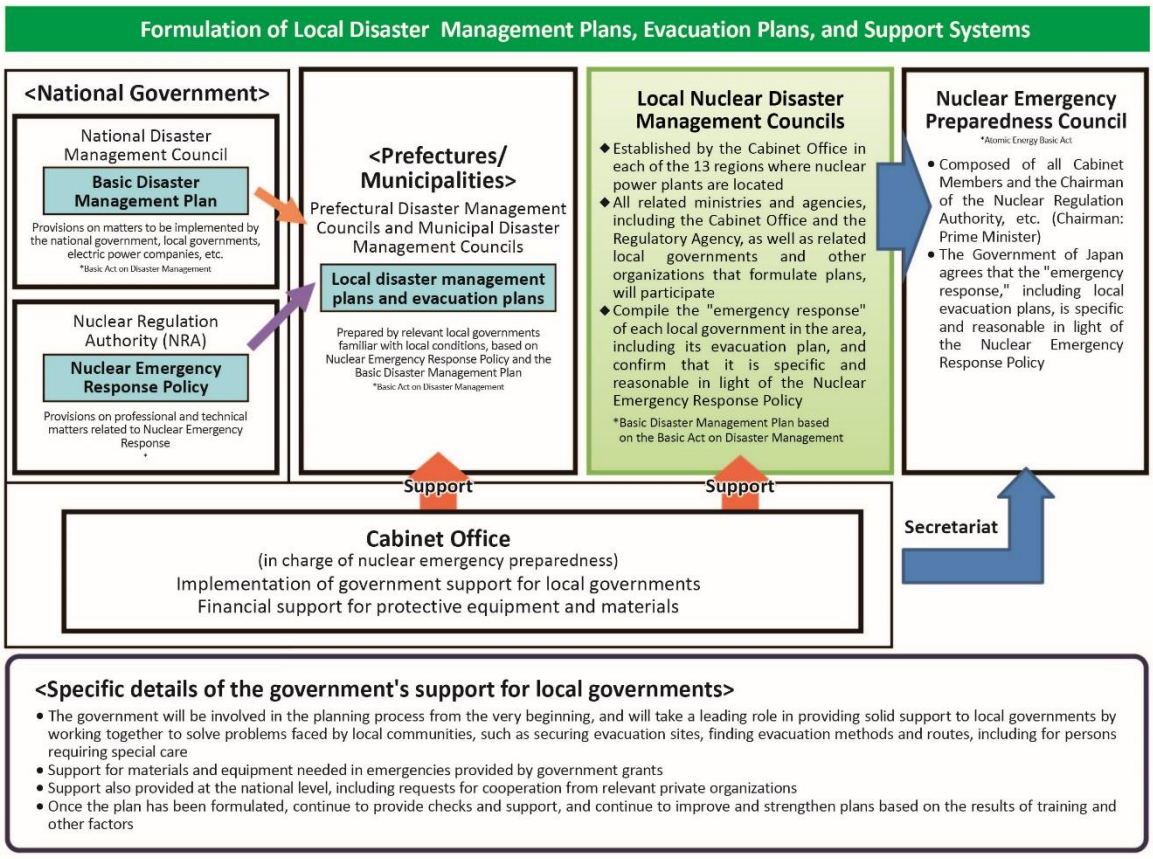
Source: Cabinet Office data

In March 2015, the Cabinet Office established "Local Nuclear Disaster Management Councils" (hereinafter referred to as the "Councils") as working teams to resolve issues in each region where nuclear power plants are located, in order to support the concretization and enhancement of local disaster management plans and evacuation plans prepared by prefectures and municipalities, based on the "Future Measures on the Completion of Local Disaster Management Plans" (decided by the Nuclear Emergency Preparedness Council in September 2013). Each local working group discusses support for the formulation of evacuation plans, wide-area coordination, and support for the national government's operational organization, and the national government and relevant

local governments work together to concretize and enhance local disaster management plans and evacuation plans (FIG. 3-1-2).

For areas where the local disaster management plan and evacuation plan have been concretized and enhanced, "emergency response" including evacuation plans are compiled, and the council confirms that they are specific and reasonable in light of the Nuclear Disaster Risk Management Measures. In addition, the Cabinet Office is to report the results of the confirmation at the Nuclear Emergency Preparedness Council for its approval. "The PDCA (Plan-Do-Check-Action) cycle has been introduced to continuously enhance and strengthen the local nuclear emergency preparedness system, with these steps: for regions with confirmed emergency response, 'Plan' by confirming their emergency response after supporting its concretization and enhancement; 'Do' by conducting training based on the emergency response confirmed by the Councils; 'Check' by submitting points of reflection from the training; and take 'Action' by making improvements to the regional emergency response based on these points of reflection.

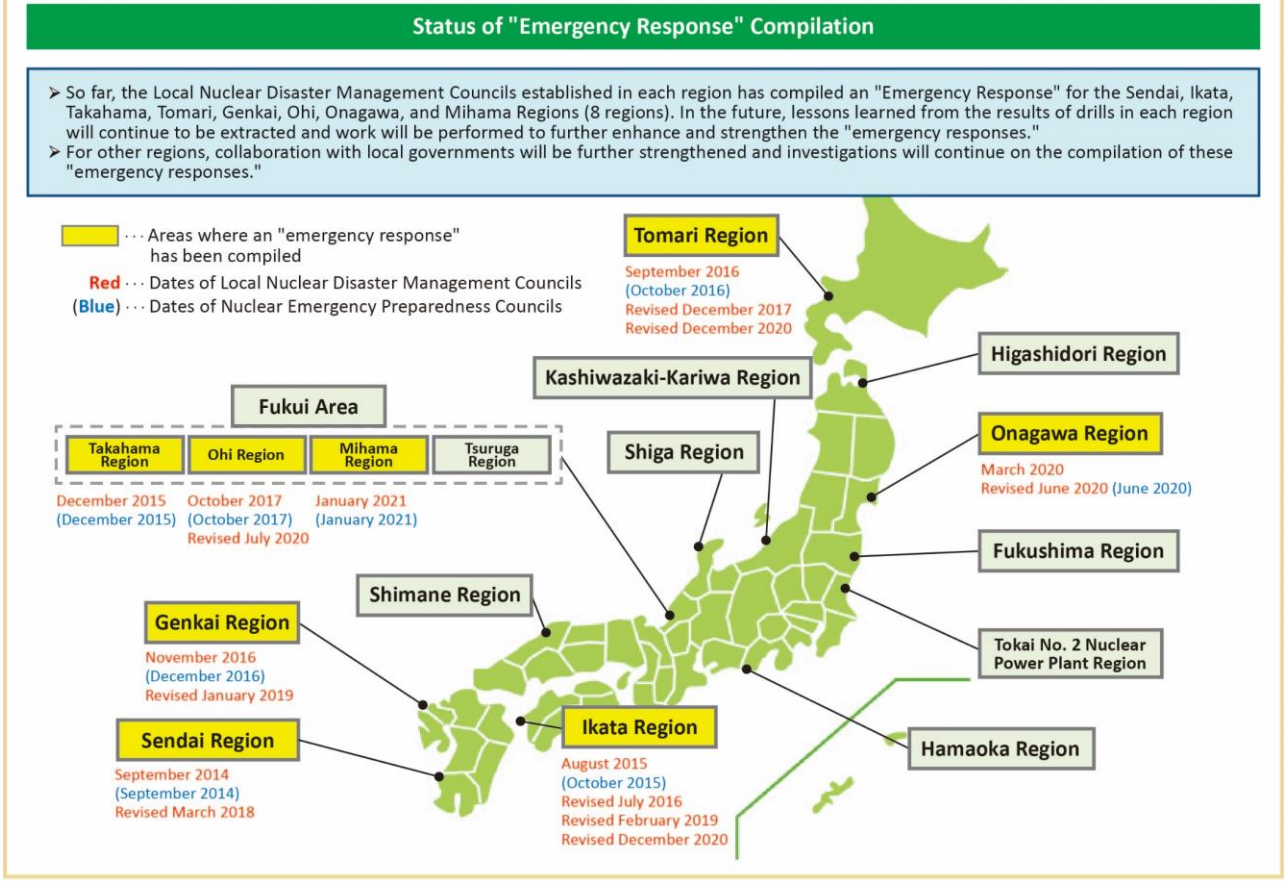
FIG. 3-1-2 Formulation of Local Disaster Management Plans, Evacuation Plans, and Support Systems



Source: Cabinet Office data

Regarding the emergency response of each region, the "Emergency Response in the Mihama Area" was compiled and confirmed at the 5th meeting of the Fukui Area Local Nuclear Disaster Management Council in FY 2020 (FIG. 3-1-3).

FIG. 3-1-3 Status of "Emergency Response" Compilation



Source: Cabinet Office data

Note that for the Fukui area, subcommittees will be set up in Tsuruga, Mihama, Ohi, and Takahama to discuss specific issues that need to be resolved in each region.

(1) Onagawa Area

For the Onagawa area, the "Emergency Response in the Onagawa Area" was confirmed at the Onagawa Local Nuclear Disaster Management Council (1st meeting) in March 2020. In addition, based on the basic concept of protective measures under the epidemic of infectious diseases based on the spread of COVID-19, the " Emergency Response in the Onagawa Area" was revised at the Onagawa Local Nuclear Disaster Management Council (2nd meeting) in June of the same year.

The contents confirmed at the Onagawa Local Nuclear Disaster Management Council (1st meeting) and revised at the 2nd were reported and approved at the Nuclear Emergency Preparedness Council in June 2020.

(Reference: https://www8.cao.go.jp/genshiryoku_bousai/kyougikai/02_onagawa.html)

(2) Mihama Area

In the Mihama area, the Mihama area subcommittee, which was established under the Fukui Local Nuclear Disaster Management Council, was held 9 times from December 2018 to December 2020 to discuss emergency

responses in the event of a nuclear disaster. Subsequently, the "Emergency Response in the Mihama Area" was compiled at the 5th meeting of the Fukui Local Nuclear Disaster Management Council held on January 5, 2021.

(Reference: https://www8.cao.go.jp/genshiryoku_bousai/kyougikai/02_fukui.html)

The following 4 points are important for the Emergency Response in the Mihama Area.

1. The PAZ (Precautionary Action Zone, within a 5-km radius of the power plant, or 848 people in 350 households) will be evacuated in the event of a facility site emergency or a total emergency. Secure evacuation sites outside the 30km radius.
2. The UPZ (Urgent Protective Action Planning Zone, within a 5 to 30-km radius of the power plant, or approximately 280,000 people in 110,000 households) will be evacuated indoors under a total emergency situation. As a result of emergency monitoring, areas with radiation levels above a certain level will be temporarily relocated. Secure evacuation sites for approximately 280,000 people in the UPZ.
3. An information liaison headquarters consisting of road administrators, police, meteorological observatory, user groups, and other groups will be set up at each prefectural national highway office to coordinate snow removal plans and public relations plans in the event of heavy snowfall.
4. In case of isolation of residents due to natural disasters in peninsular and mountainous areas, temporary relocation by sea or air will be carried out by utilizing fishing ports and suitable sites for a heliport. Until the evacuation system is in place, indoor evacuation will be conducted at indoor evacuation facilities including radiation protection facilities.

At the 5th meeting of the Fukui Local Nuclear Disaster Management Council, Fukui, Shiga, and Gifu Prefectures expressed their intention to enhance and strengthen their nuclear emergency preparedness measures in cooperation with related cities and towns, recognizing that "there is no end or perfection to nuclear emergency preparedness measures." The national government will continue to provide support through the Council, and the four ministries concerned with the operational organizations of the police, fire department, coast guard, and Self-Defense Forces expressed their intention to provide necessary support in case of unforeseen circumstances upon request from the relevant local governments. In addition, the Kansai Electric Power expressed that it will surely respond to what should be implemented as a business operator, such as securing welfare vehicles and providing personnel and equipment for inspections during evacuation and extraction. Based on the above, it was confirmed that the responses of Fukui Prefecture and other relevant local governments, as well as relevant government ministries and agencies, are concrete and reasonable in light of the Nuclear Disaster Risk Management Measures and other relevant guidelines.

In addition, at the 11th meeting of the Nuclear Emergency Preparedness Council held on January 8, 2021, the results of the confirmation at the 5th meeting of the Fukui Local Nuclear Disaster Management Council were reported and approved.

(3) Takahama and Ohi Areas

In December 2015 for the Takahama area, and in October 2017 for the Ohi area, the Fukui Local Nuclear Disaster Management Council confirmed the "Emergency Response in the Takahama Area" and "Emergency Response in

the Ohi Area," respectively, and the results were reported and approved by the Nuclear Emergency Preparedness Council in December 2015 and October 2017, respectively. Subsequently, in order to improve the effectiveness of the emergency response, a government-led Comprehensive Nuclear Emergency Response Exercise was conducted for Ohi Power Station and Takahama Power Station in August 2018. In July 2020, the Fukui Local Nuclear Disaster Management Council (4th meeting) revised the "Emergency Response in the Takahama Area" and the "Emergency Response in Ohi Area" in order to further specify and enhance the emergency responses based on the lessons learned from the drill in the "Report on the Outcome of the Comprehensive Nuclear Emergency Response Exercise" compiled in March 2019 and the basic concept of protective measures under the epidemic of infectious diseases based on the spread of COVID-19.

(Reference: https://www8.cao.go.jp/genshiryoku_bousai/kyougikai/02_fukui.html)

The main points of the revision of the "Emergency Response in the Takahama Area" and the "Emergency Response in the Ohi Area" are the following 4 points.

1. Clarification of the measures to be taken when both Oi Power Station and Takahama Power Station are affected.
2. Strengthening the coordination system for evacuation outside of prefectures.
3. Strengthening the system for securing evacuation routes in a wide area.
4. Specifying various protective measures in the event of an epidemic of infectious diseases.

Other revisions include the establishment of a coordinating place for centralized traffic control, easing of traffic congestion at inspection points during evacuation and extraction, and strengthening of measures for evacuation of those who require assistance evacuating.

At the 4th meeting of the Fukui Local Nuclear Disaster Management Council, Fukui, Shiga, and Gifu Prefectures expressed their efforts to secure means of transportation, measures to be taken in case peninsular and mountainous areas are isolated, and evacuation sites to be secured in case of an epidemic of infectious diseases such as COVID-19. The government announced that the relevant local and national governments will continue to work together through the Fukui Local Nuclear Disaster Management Council to implement drills and to further concretize and enhance the “Emergency Responses in the Takahama and Ohi Areas” based on the results of the drills. As a result, it was confirmed that the current revision is based on the lessons learned from the 2018 nuclear emergency response exercise and aims to further concretize and enhance the emergency response.

(4) Tomari and Iho Areas

Based on the basic concept of protective measures under the epidemic of infectious diseases based on the spread of COVID-19, the "Emergency Response in the Tomari Area" and the "Emergency Response in the Ikata Area" were revised at the Tomari Local Nuclear Disaster Management Council (3rd meeting) and the Ikata Local Nuclear Disaster Management Council (4th meeting) in December 2020, respectively.

(Reference: https://www8.cao.go.jp/genshiryoku_bousai/kyougikai/02_tomari.html)

(https://www8.cao.go.jp/genshiryoku_bousai/kyougikai/02_ikata.html)

3-2 Other Support and Efforts for Related Prefectures

(1) Stockpiling and Distribution of Stable Iodine Tablets

Stable iodine tablets, which are taken to prevent or reduce internal exposure of the thyroid gland to radioactive iodine (I), are stockpiled and distributed in advance by local governments with financial support from the government in the PAZ (Precautionary Action Zone) and the UPZ (Urgent Protective Action Planning Zone). The Cabinet Office has been stockpiling stable iodine tablets for residents outside the UPZ.

With regard to advanced distribution, considering the burden of receiving stable iodine tablets through emergency distribution, local governments are given support to operate the advanced distribution appropriately for the residents in the UPZ where advanced distribution is expected to facilitate evacuation. In FY 2020, in response to the outbreak of COVID-19, local governments were notified to promote remote type of response.

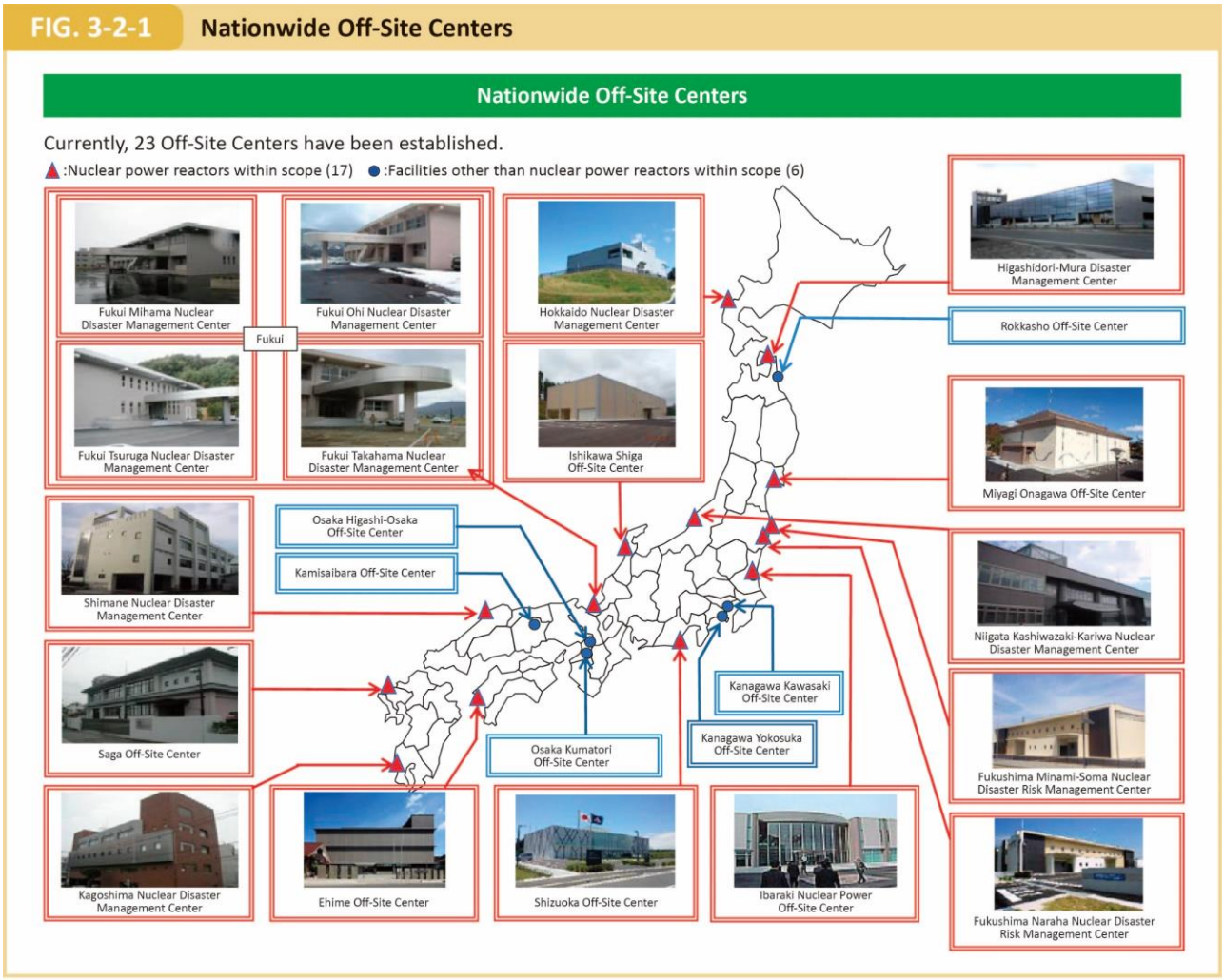
(2) Designation of an Off-Site Center

Under Article 12, paragraph 1 of the "Act on Special Measures Concerning Nuclear Emergency Preparedness," the Prime Minister is required to designate an emergency response center (off-site center) for each nuclear site (FIG. 3-2-1).

The requirement for off-site centers is set forth by a Cabinet Office Ordinance on Off-Site Centers Pursuant to the "Act on Special Measures Concerning Nuclear Emergency Preparedness." However, based on the lessons learned from the accident at the Tokyo Electric Power Company's Fukushima Daiichi Nuclear Power Station, the location of off-site centers for commercial power reactors was revised in September 2012 to be within a 5 to 30 km-radius (within the UPZ). Subsequently, in March 2017, the Nuclear Regulation Authority (NRA) revised the Guidelines for Nuclear Emergency Preparedness and set the scope of priority areas for nuclear emergency preparedness for nuclear fuel facilities. In August 2019, the requirements to be met by off-site centers for nuclear fuel facilities were revised to be basically the same as those for power generation reactor facilities.

As for the Onagawa area off-site center, the former Off-Site Center was damaged by the tsunami of the Great East Japan Earthquake, and the Fire Academy in Sendai City was used as a temporary Off-Site Center, but a new Off-Site Center was constructed in Onagawacho and designated in April 2020.

FIG. 3-2-1 Nationwide Off-Site Centers

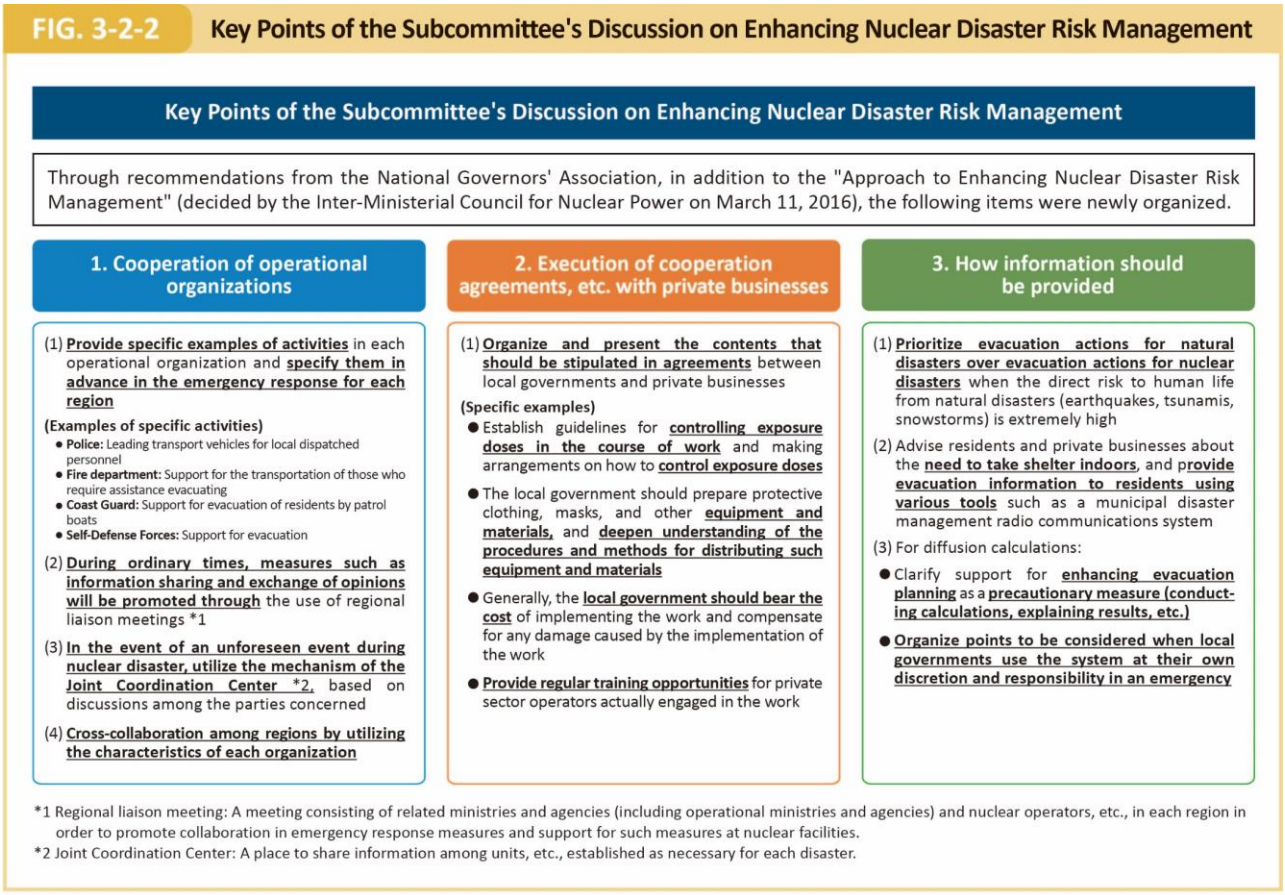


Source: Cabinet Office data

(3) Improving Nuclear Disaster Countermeasures

At the Inter-Ministerial Council for Nuclear Power held in March 2016, the "Stance on Enhancing Nuclear Emergency Response Measures" was compiled as a response to the request from the National Governors' Association in order to respond to the voices of local governments responsible for regional disaster prevention regarding nuclear energy policy. In April of the same year, a Committee of Relevant Ministries and Agencies on Nuclear Emergency Response Measures was held to discuss the enhancement of nuclear emergency preparedness in a unified manner, and it was decided to establish 3 subcommittees. There were 3 themes for them, the cooperation of operational organizations (Subcommittee 1), the cooperation of private companies (Subcommittee 2), and how to provide information including diffusion calculation (Subcommittee 3). In each subcommittee, related ministries and agencies collaborated and cooperated with each other, while listening to the opinions of local governments, to conduct specialized and practical studies, and the results were reported to the Inter-Ministerial Council for Nuclear Power held in July 2017 (FIG. 3-2-2).

FIG. 3-2-2 Key Points of the Subcommittee's Discussion on Enhancing Nuclear Disaster Risk Management



Source: Cabinet Office data

(4) Protective measures in the event of a nuclear disaster under the prevalence of infectious diseases based on the spread of COVID-19

With regard to protective measures in the event of a nuclear disaster under an epidemic of infectious diseases based on the spread of COVID-19, the highest priority must be given to protecting the lives and health of the public from both the risk of exposure of radiation and the risk of the spread of the virus. Therefore, on June 2, 2020, the Cabinet Office announced the "Basic Concept of Protective Measures in the Event of a Nuclear Disaster under an Epidemic of Infectious Diseases Based on the Spread of COVID-19". In the event of a nuclear disaster, it was decided that protective measures based on local emergency response and infection prevention measures based on the action plan, based on the "Act on Special Measures for Pandemic Influenza and New Infectious Diseases Preparedness and Response" will be used together to their extent possible in order to provide the best nuclear disaster risk management measures possible under the influence of an infectious disease. In addition, on November 2, 2020, the "Guidelines for Implementing Protective Measures in the Event of a Nuclear Disaster under an Epidemic of Infectious Diseases Based on the Spread of COVID-19" was issued to protect life and health in a rational manner, taking into consideration various risks, including the risk of COVID-19 aggravation among the elderly. Here are some of the points listed in these guidelines.

· At shelters and in evacuation vehicles, implement infection control measures such as keeping a distance, wearing masks, and thoroughly disinfecting hands and fingers.

· Make efforts to prevent infection by separating and isolating as much as possible high-risk contacts with those

infected, those with fever, coughs, etc., from other people.

· In the case of indoor evacuation, from the viewpoint of avoiding exposure to radioactive materials, ventilation should be avoided. However, from the viewpoint of countermeasures against infectious diseases, efforts should be made to ventilate the room for a few minutes every 30 minutes or so, while paying attention to the release of radioactive materials.

In addition, local governments were notified to take appropriate measures according to the situation at the site, and to consider and prepare for nuclear disaster countermeasures in accordance with the actual situation of each region.

(Reference: https://www8.cao.go.jp/genshiryoku_bousai/pdf/08_sonota_bougosochi.pdf)
(https://www8.cao.go.jp/genshiryoku_bousai/pdf/08_sonota_guidelines.pdf)

3-3 Practice and Training Related to Nuclear Emergency Preparedness System in Local

(1) Support for Nuclear Emergency Drills in Local Governments

Local governments are required to conduct nuclear emergency response exercise on a regular basis based on the "Basic Act on Disaster Management" and other relevant laws. In the exercises organized by the prefectures, normally, prefectural governors, local governments, and relevant national and regional organizations such as the police, fire department, coast guard, and Self-Defense Forces will participate. There are some operational trainings conducted for the evacuation of residents and inspections during evacuation and extraction (FIG. 3-3-1).

Each Local Nuclear Disaster Management Council provides necessary support for regions where the local disaster management plan and evacuation plan have been concretized and enhanced, such as planning and implementation of drills, dissemination of evaluation methods, and implementation of the PDCA cycle through drills, with the aim of verifying the concretization and enhancement of the local disaster management plan and evacuation plan.

In addition, in March 2018, the Cabinet Office formulated the "Guidance for Planning, Implementation and Evaluation of Nuclear Emergency Response Exercise," which provides basic guidelines for all aspects of drills, including planning, implementation and evaluation of drills led by prefectures, and revised the guidance in March 2019.

(Reference: https://www8.cao.go.jp/genshiryoku_bousai/kunren/kunren.html)

FIG. 3-3-1 Implementation of Nuclear Emergency Response Exercises by local governments in each region in FY2020

Region	Name of Drill	Date
Tomari	Hokkaido Prefecture Nuclear Emergency Response Exercise	2020/10/31
Higashidori	Aomori Prefecture Nuclear Emergency Response Exercise	2020/11/12
Onagawa	Miyagi Prefecture Nuclear Emergency Response Exercise	The drill was scheduled to be conducted as part of the Comprehensive Nuclear Emergency Response Exercise led by the national government, but was postponed due to the declaration of a state of emergency for COVID-19 (only some elements of the drill were conducted in the prefecture).
Fukushima	Fukushima Prefecture Nuclear Emergency Response Exercise	November 25 and 28, 2020
Kashiwazaki-Kariwa	Niigata Prefecture Nuclear Emergency Response Exercise	October 20 and 24, 2020
Shiga	(1) Ishikawa Prefecture Nuclear Emergency Response Exercise (2) Toyama Prefecture Nuclear Emergency Response Exercise	(1) November 22, 2020 (2) November 22, 2020
Fukui	(1) Fukui Prefecture Nuclear Emergency Response Exercise (2) Kyoto Prefecture Nuclear Emergency Response Exercise (3) Shiga Prefecture Nuclear Emergency Response Exercise (4) Gifu Prefecture Nuclear Emergency Response Exercise	(1) August 27, 2020 (2) November 29, 2020 (3) November 15, 19, and 20, 2020 (4) November 21, 2020
Hamaoka	Shizuoka Prefecture Nuclear Emergency Response Exercise	2021/2/4
Shimane	(1) Shimane Prefecture Nuclear Emergency Response Exercise (2) Tottori Prefecture Nuclear Emergency Response Exercise	(1) October 15, 28, and 31, 2020 (2) October 28, 30, and 31, 2020
Ikata	Ehime Prefecture Nuclear Emergency Response Exercise Yamaguchi Prefecture Nuclear Emergency Response Exercise	2020/10/22
Genkai	Saga Prefecture Nuclear Emergency Response Exercise Nagasaki Prefecture Nuclear Emergency Response Exercise Fukuoka Prefecture Nuclear Emergency Response Exercise	2020/11/7
Sendai	Kagoshima Prefecture Nuclear Emergency Response Exercise	Cancelled due to the declaration of a state of emergency for COVID-19

Source: Cabinet Office data

(2) Conduct Training for Employees of National and Local Governments, Operational Organizations, etc.

(Training program by the government)

The Cabinet Office conducted a training course for nuclear emergency response personnel and map exercises of on-site disaster management headquarters for those involved in disaster prevention work at the national and local governments, with the aim of helping them understand the concept of protective measures in the Nuclear Emergency Response Measures Guidelines and improve their ability to respond to a nuclear disaster.

In addition, a training course for core personnel was conducted for those who play a central role in disaster management to promote their understanding of the operation of the national headquarters in response to the progress of a nuclear disaster. In addition, a training course for practical personnel was conducted for those involved in disaster management in local governments to improve their ability to share the status of protective measures necessary for smooth evacuation of residents in the event of a nuclear disaster.

Furthermore, a basic training course on nuclear disaster prevention was conducted for those involved in disaster prevention operations in the national government, with the aim of providing them with the basic knowledge necessary for radiation protection.

1. Training for nuclear disaster response personnel

Training for personnel involved in disaster prevention operations of the national government and local governments, etc., who respond to a nuclear disaster is conducted for the purpose of acquiring basic knowledge about nuclear disaster risk management measures based on laws and regulations, guidelines for nuclear disaster

prevention, and lessons learned from the accident at the Tokyo Electric Power Company's Fukushima Daiichi Nuclear Power Station. In FY 2020, 39 sessions were held. The main contents of the training are as follows.

· Overview of laws and regulations related to nuclear emergency preparedness (classroom lecture).
· Basic concept of radiation protection based on the Nuclear Disaster Risk Management Emergency Response Measures Guidelines (classroom lecture).
· Lessons learned from the accident at the Tokyo Electric Power Company's Fukushima Daiichi Nuclear Power Station (classroom lecture), etc.

2. On-site nuclear disaster management headquarters map exercise

This exercise is implemented for the purpose of acquiring the ability to respond to emergencies, and to verify and improve local disaster management plans and evacuation plans formulated by local governments. In FY 2020, 13 sessions were held. The main contents of the training are as follows.

· Activities at the emergency response base facility (classroom lecture).
· Functional group exercises.
· Map exercises based on scenarios, etc.

3. Core human resources development training

In order to develop human resources who can play a central role in responding to a nuclear disaster, a training course for core human resources development is conducted for personnel who play a central role in disaster management in the national government and local governments, with the aim of acquiring necessary knowledge and improving their abilities. In FY 2020, 2 sessions were held for each of national and prefectural personnel. The main contents of the training are as follows.

· Emergencies in power reactors (classroom lecture).
· Nuclear emergencies and health effects (classroom lecture).
· Protective measures in nuclear emergencies (classroom lecture).
· Map exercises.

4. Practical human resource training

a. Response to Evacuation and Extraction Inspections

This training is for personnel in charge of implementation plan for the inspection at the time of evacuation and extraction and simple decontamination of local governments. And the purpose of this training is to develop personnel who will be in charge of preparing specific plans and manuals for the inspection at the time of evacuation and extraction, as well as personnel who will be in charge of the inspection sites. In FY 2020, 4 sessions were held. The main contents of the training are as follows.

Basic concept of inspection during evacuation and extraction (classroom lecture)

Exercises on planning and operation of evacuation and extraction inspections

b. Evacuation by bus, etc.

For local government officials in charge of bus evacuation plan, practical human resources training is conducted with the aim of developing human resources who can prepare specific plans and manuals for bus evacuation. In FY 2020, 4 sessions were held. The main contents of the training are as follows.

- · Business procedures and preparations for securing and arranging evacuation buses in advance for residents (classroom lecture).
- · Sharing of information on preparations for evacuation of residents by bus in each prefecture, identification of issues and consideration of improvements.

c. Sharing of the status of protective measures and other actions

The training is designed for local government officials who are in charge of compiling and sharing information on the "status of protective measures," with the aim of helping them understand how to understand the disaster situation and share information among related parties, which are necessary for the concrete implementation of protective measures in each situation. In FY 2020, 2 sessions were held. The main contents of the training are as follows.

- · Operation of compiling and sharing information necessary for "sharing the status of protective measures" (classroom lecture).
- · Organization of items to be confirmed in each situation, and examination of the confirmation method.

(Training programs by local governments)

Training courses for disaster prevention officials and basic training courses on nuclear disaster prevention were planned and implemented by prefectures on their own initiative, with support from the Cabinet Office as necessary.

1. Training for those involved in disaster prevention

The training program for disaster prevention workers was conducted for private business operators who will be involved in the protection of residents in the event of a nuclear disaster, with the aim of providing them with the basic knowledge necessary for radiation protection, the basic concept of protection of residents, and the flow of protection activities for residents.

2. Basic training on nuclear disaster prevention

Basic training on nuclear emergency preparedness was conducted for those involved in disaster prevention operations at local governments and other organizations that respond to nuclear disasters, with the aim of providing them with the basic knowledge necessary for radiation protection.

At a classroom for lecture
(Training for nuclear emergency response personnel)

At a classroom during map exercise
(map exercise at the nuclear disaster on-site disaster management headquarters)

At a classroom for lecture
(Core human resources development training)

At a classroom for lecture
(Practical human resources training)

3-4 Reinforcement of International Collaboration

International organizations such as the International Atomic Energy Agency (IAEA) and other countries have been making various efforts for off-site nuclear emergency preparedness, and it is necessary to incorporate their advanced knowledge in order to improve the level of nuclear emergency preparedness in Japan.

In order to achieve this goal, cooperation has been strengthened with the departments in charge of nuclear emergency preparedness in various countries, opinions are exchanged on a regular basis, and the sharing of international knowledge and experience on nuclear emergency preparedness is promoted by mutual invitation to drills and other events. In addition, surveys have been conducted on IAEA standards for off-site nuclear emergency preparedness and the systems and operations of major nuclear power user countries.

(1) Bilateral cooperation on Nuclear Emergency Preparedness System

1. Cooperation with the United States of America (USA)

Based on the framework of the Emergency Management Working Group (EMWG) established under the U.S.-Japan Bilateral Commission on Civil Nuclear Cooperation established in 2012, the U.S. Department of Energy (DOE), the Federal Emergency Management Agency (FEMA), the U.S. Nuclear Regulatory Commission (NRC), and other relevant U.S. agencies and Japan have been engaged in cooperation as to Nuclear Emergency Preparedness Systems through regular exchanges of views and drills. In FY 2020, 3 online technical opinion exchange meetings

were held on protective measures, training, and professional human resources development under infectious disease epidemics.

2. Cooperation with the French Republic (France)

Based on the "Memorandum of Understanding on Cooperation for Crisis Management in Case of Nuclear Accident" concluded in 2015 between the Parliamentary Vice-Minister of Cabinet Office and the Director General of the National Safety and Crisis Management Directorate of the French Ministry of the Interior, collaboration on nuclear emergency preparedness systems has been deepened through regular exchanges of opinions with relevant organizations in France, such as the French Ministry of the Interior, and mutual invitations for drills. In January 2020, based on the action plan of the "Cooperation Committee for Planning and Crisis Management in Case of Nuclear Accident," which was initiated in 2019, we visited various organizations related to nuclear emergency preparedness in France and exchanged opinions with them. After the spread of COVID-19, opinions were exchanged remotely on infection protection measures during a possible nuclear disaster response.

3. Invitation to observe training

In the Comprehensive Nuclear Emergency Response Exercise, the aforementioned U.S., France, and other foreign countries and international organizations are invited to observe the exercise. During this inspection, we stayed at the site throughout the entire period, including prior briefings and opinion exchange meetings, and introduced the nuclear emergency core hospitals, the evacuation of residents, and the declaration of a nuclear emergency situation. In the opinion exchange meetings, there has been a deepened mutual understanding on comprehensive nuclear emergency response exercises and emergency systems. Visitors from the U.S. and French embassies in Tokyo were accepted to the drill held in November 2020.

4. Other international cooperation

In addition to the above, information and opinions are exchanged, and inspection teams are accepted from overseas as needed. In FY 2020, opinions were exchanged remotely with the United Kingdom, Canada, Germany, Taiwan, Sweden, and other countries on changes in protective measures under infectious disease epidemics, nuclear emergency preparedness system, and other issues.

(2) Cooperation with international agencies and investigation of overseas trends

There has also been active engagement in cooperation and information exchange with the International Atomic Energy Agency (IAEA) and the Nuclear Energy Agency of the Organization for Economic Co-operation and Development (OECD/NEA). With regard to the IAEA, in order to cooperate in the preparation of standards for off-site nuclear disaster prevention and to collect information, we attend the regular Emergency Preparedness and Response Standards Committee (EPReSC). We also cooperate in various information exchange and human resources development activities. At meetings related to nuclear emergency preparedness, such as the Working Party on Nuclear Emergency Matters (WPNEM) held by the OECD/NEA, information is exchanged on the systems and operations related to nuclear emergency preparedness in major countries that use nuclear power.

In FY 2020, we made attendance by way of remote video conferencing. The participants exchanged opinions on nuclear emergency preparedness under COVID-19. The IAEA issued a questionnaire on nuclear emergencies under COVID-19, and the Cabinet Office cooperated with the Secretariat of the NRA in answering the questionnaire. At the WPNEM regular meeting, presentations were made by each country, and the Cabinet Office presented Japan's measures.

APPENDIX

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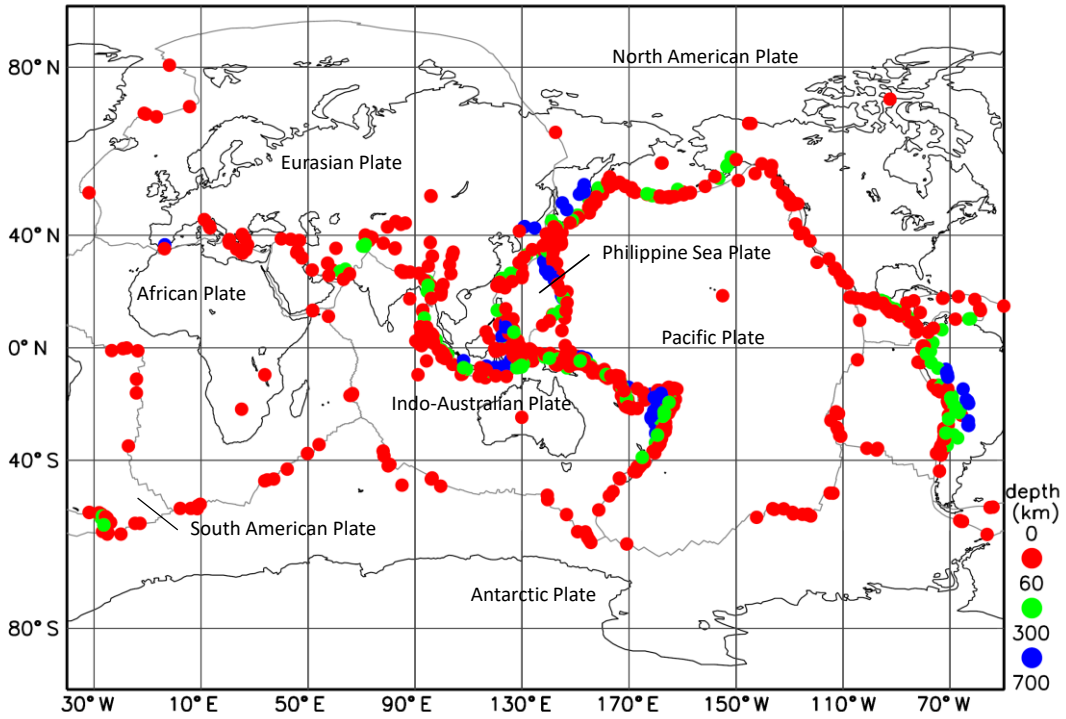
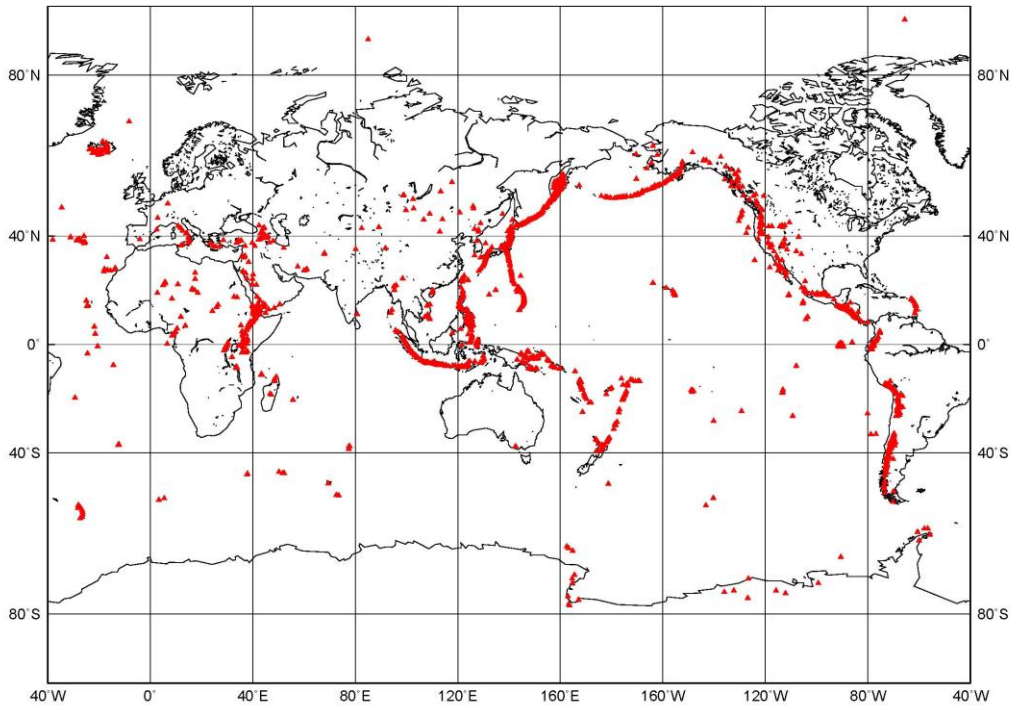
1. Overview of Japan's National Land

Fig. A-1 Worldwide Hypocenter Distribution (for Magnitude 6 and Higher Earthquakes) and Plate Boundaries



Note: 2011–2020
Source: Formulated by the Japan Meteorological Agency based on earthquake data from the U.S. Geological Survey

Fig. A-2 Distribution of Volcanoes Worldwide

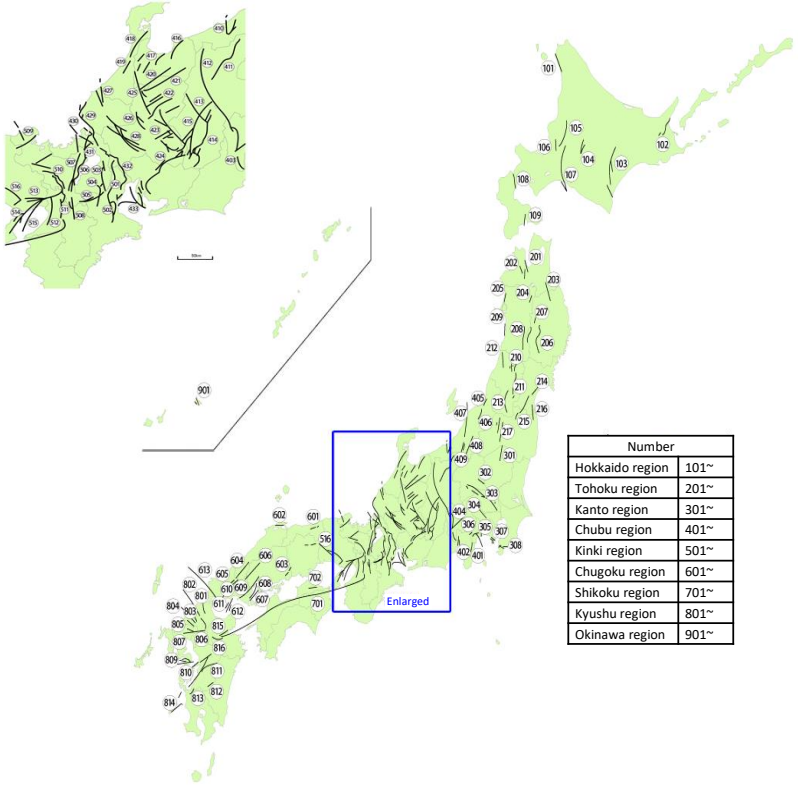


Note: Volcanoes are those which were active in the past 10,000 years.
Source: Prepared by the Japan Meteorological Agency based on volcanic data from the Global Volcanism Program of the Smithsonian National Museum of Natural History (USA).

Fig. A-3 **Subduction Zone Earthquake Areas and Major Active Faults in Japan**

Subduction Zone Earthquake Areas

Major Active Faults



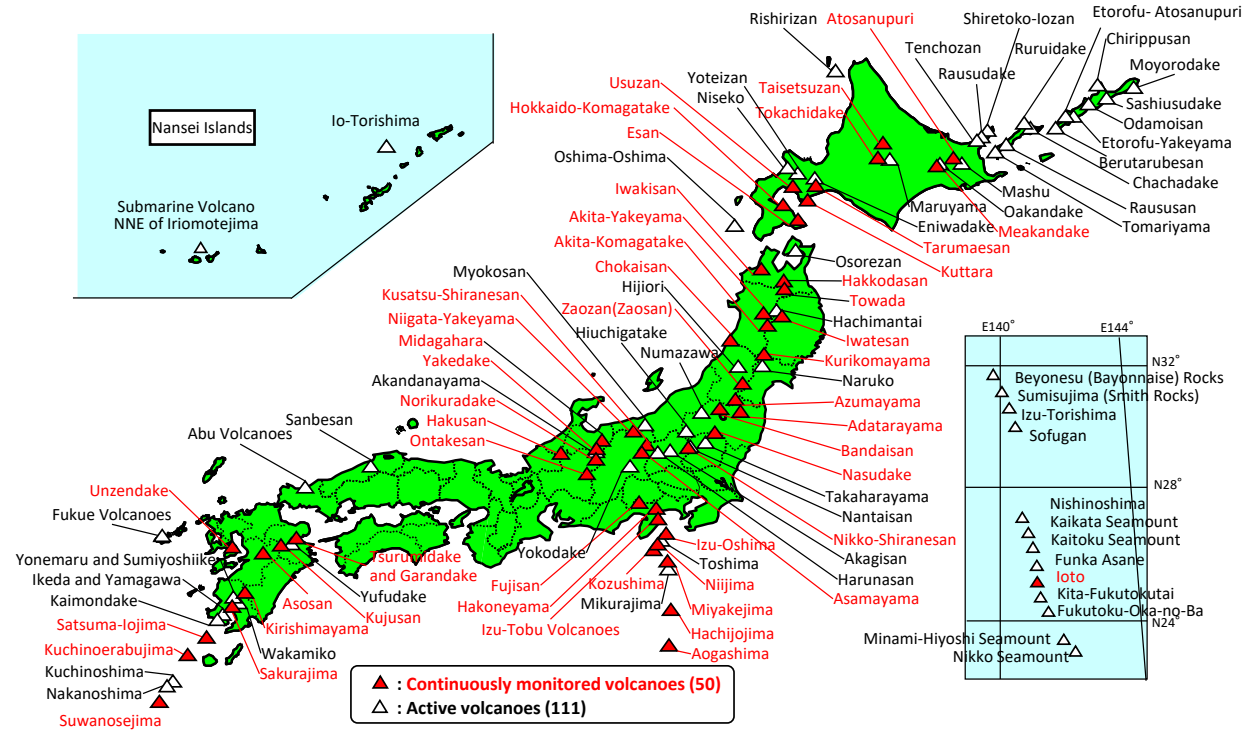
Number	
Hokkaido region	101~
Tohoku region	201~
Kanto region	301~
Chubu region	401~
Kinki region	501~
Chugoku region	601~
Shikoku region	701~
Kyushu region	801~
Okinawa region	901~

Source: Ministry of Education, Culture, Sports, Science and Technology

No.	Name of Fault	No.	Name of Fault
101	Sarobetsu fault zone	424	Byoubuyama Enasan fault zone & Sanageyama fault zone
102	Shibetsu fault zone	425	Shoukawa fault zone
103	Tokachi-heiya fault zone	426	Nagaragawa-joryu fault zone
104	Furano fault zone	427	Fukui-heiya-toen fault zone
105	Mashike-sanchi-toen fault zone · Numata-Sunagawa fault zone	428	Noubi fault zone
106	Toubetsu fault	429	Yanagase Sekigahara fault zone
107	Ishikari-teichi-toen fault zone	430	Nosaka Shufukuji fault zone
108	Kuromatsunai-teichi fault zone	431	Kohoku-sanchi fault zone
109	Hakodate-heiya-seien fault zone	432	Yoro-Kuwana-Yokkaichi
201	Aomori-wan-seigan fault zone	433	Isewan fault zone
202	Tsugaru-sanchi-seien fault zone	501	Suzuka-toen fault zone
203	Oritsume fault	502	Nunobiki-sanchi-toen fault zone
204	Hanawa-higashi fault zone	503	Suzuka-seien fault zone
205	Noshiro fault zone	504	Tongu fault
206	Kitakami-teichi-seien fault zone	505	Kizugawa fault zone
207	Shizukuishi-bonchi-seien - Mahiru-sanchi-toen fault zone	506	Biwako-seigan fault zone
208	Yokote-bonchi-toen fault zone	507	Mikata Hanaore fault zone
209	Kitayuri fault	508	Sourthern fault zone of Kyoto-bonchi-Nara-bonchi (Nara-bonchi-toen fault zone)
210	Shinjo-bonchi fault zone	509	Yamada fault zone
211	Yamagata-bonchi fault zone	510	Mitoke Kyoto Nishiyama fault zone
212	Shonai-heiya-toen fault zone	511	Ikoma fault zone
213	Nagai-bonchi-seien fault zone	512	Uemachi fault zone
214	Nagamachi-Rifu Line fault zone	513	Arima-Takatsuki fault zone
215	Fukushima-bonchi-seien fault zone	514	Rokko Awajishima fault zone
216	Futaba fault	515	Osaka-wan fault zone
217	Aizu-bonchi-seien-toen fault zone	516	Yamasaki fault zone
301	Sekiya fault	601	Shikano-Yoshioka fault
302	Okubo fault	602	Shinji (Kashima) fault
303	Fukaya Fault Zone and the Ayasegawa Fault (Kanto-heiya hokuseien fault zone and Motoarakawa fault zone)	603	Chojagahara-Yoshii fault
304	Tachikawa fault zone	604	Yasaka fault
305	Isehara fault	605	Jifuku fault
306	Shiozawa fault zone, Hirayama-Matsuda-kita fault zone and Kouzu-Matsuda fault zone (Kannawa Kouzu-Matsuda fault zone)	606	Tsutsuga fault
307	Miura-hanto fault group	607	Hiroshima-wan-Iwakuni-oki fault zone
308	Kamogawa-teichi fault zone	608	Akinada fault zone
401	Kitaizu fault zone	609	Iwakuni-Itsukaichi fault zone
402	Fujikawa-kako fault zone	610	Oharako fault
403	Minobu fault	611	Ogori fault
404	Sone-kyuryo fault zone	612	Suounada fault zone
405	Kushigata-sanmyaku fault zone	613	Kikugawa fault zone
406	Tsukioka fault zone	701	Chuo-kozosen fault zone (Kongo-sanchi-toen – Iyonada)
407	Nagaoka-heiya-seien fault zone	702	Nagao fault zone
408	Muikamachi fault zone	801	Fukuchiyama fault zone
409	Tokamachi fault zone	802	Nishiyama fault zone
410	Takada-heiya fault zone	803	Umi fault
411	Nagano-bonchi-seien fault zone (Shinanogawa fault zone)	804	Kego fault zone
412	Itoigawa-Shizuoka-kozosen fault zone	805	Hinata-toge-Okasagi-toge fault zone
413	Sakaitoge Kamiya fault zone	806	Minoh fault zone
414	Inadani fault zone	807	Saga-heiya-hokuen fault zone
415	Kiso-sanmyaku-seien fault zone	809	Unzen fault group
416	Uozu fault zone	810	Futagawa-Hinagu fault zone
417	Tonami-heiya fault zone · Kurehayama fault zone	811	Midorikawa fault zone
418	Ouchigata fault zone	812	Hitoyoshi-bonchi-nanen fault
419	Morimoto Togashi fault zone	813	Izumi fault zone
420	Ushikubi fault zone	814	Koshiki fault zone
421	Atotsugawa fault zone	815	Hijiu fault zone
422	Takayama Oppara fault zone	816	Haneyama－Kuenohirayama fault zone
423	Atera fault zone	901	Miyakojima fault zone

Source: Ministry of Education, Culture, Sports, Science and Technology

Fig. A-4 Distribution of Active Volcanoes in Japan



Source: Formulated by the Cabinet Office from the Japan Meteorological Agency website (As of March 2021)

2. Disasters in Japan

Fig. A-5 Major Earthquake Damage in Japan (Since the Meiji Period)

Disaster		Date	Number of Fatalities and Missing Persons
Nobi Earthquake	(M8.0)	October 28, 1891	7,273
Meiji Sanriku Earthquake and Tsunami	(M8.25)	June 15, 1896	Approx. 22,000
Great Kanto Earthquake	(M7.9)	September 1, 1923	Approx. 105,000
1927 Kita Tango Earthquake	(M7.3)	March 7, 1927	2,925
Showa Sanriku Earthquake Tsunami	(M8.1)	March 3, 1933	3,064
1943 Tottori Earthquake	(M7.2)	September 10, 1943	1,083
Tonankai Earthquake	(M7.9)	December 7, 1944	1,251
Mikawa Earthquake	(M6.8)	January 13, 1945	2,306
Nankai Earthquake	(M8.0)	December 21, 1946	1,443
Fukui Earthquake	(M7.1)	June 28, 1948	3,769
Tokachi-oki Earthquake	(M8.2)	March 4, 1952	33
1960 Chile Earthquake and Tsunami	(Mw9.5)	May 23, 1960	142
1964 Niigata Earthquake	(M7.5)	June 16, 1964	26
1968 Tokachi-oki Earthquake	(M7.9)	May 16, 1968	52
1974 Izu-hanto-oki Earthquake	(M6.9)	May 9, 1974	30
1978 Izu-Oshima-kinkai Earthquake	(M7.0)	January 14, 1978	25
1978 Miyagi-ken-oki Earthquake	(M7.4)	June 12, 1978	28
Nihon-kai-chubu Earthquake	(M7.7)	May 26, 1983	104
Nagano-ken-seibu Earthquake	(M6.8)	September 14, 1984	29
Hokkaido-nansei-oki Earthquake	(M7.8)	July 12, 1993	230
Great Hanshin-Awaji Earthquake	(M7.3)	January 17, 1995	6,437
Mid Niigata Prefecture Earthquake	(M6.8)	October 23, 2004	68
Iwate–Miyagi Nairiku Earthquake	(M7.2)	June 14, 2008	23
Great East Japan Earthquake	* (Mw9.0)	March 11, 2011	22,303
The 2016 Kumamoto Earthquake	(M6.5) (M7.3)	April 14, 2016 April 16	273
The 2018 Hokkaido Eastern Iburi Earthquake	(M6.7)	September 6, 2018	43

*Mw: Moment magnitude

Notes:

1. The earthquakes listed before World War II are those with more than 1,000 fatalities and missing persons, while the earthquakes listed after World War II are those with more than 20 fatalities and missing persons.
2. The number of fatalities and missing persons from the Great Kanto Earthquake are based on the revised Chronological Scientific Table (2006), which changed the number from approximately 142,000 to approximately 105,000.
3. The number of fatalities and missing persons from the Southern Hyogo Prefecture Earthquake (Great Hanshin-Awaji Earthquake) is the current figure as of May 19, 2006. The number of fatalities directly caused by structures collapsing, fire, and other factors caused by seismic shaking on the day of the earthquake, excluding so-called “related deaths,” is 5,515.
4. The number of fatalities (including disaster-related fatalities) and missing persons from the 2011 Tohoku Earthquake and Tsunami (Great East Japan Earthquake) is the current figure as of March 1, 2020.
5. The details given for the 2016 Kumamoto Earthquake is the current figure as of April 12, 2019 (including disaster-related fatalities).

Source: Chronological Scientific Tables, Fire and Disaster Management Agency materials, National Police Agency materials, Comprehensive List of Destructive Earthquakes in Japan, Extreme Disaster Management Headquarters materials, Major Disaster Management Headquarters materials

Fig. A-6 Major Natural Disasters in Japan Since 1945

Date	Disaster	Main Affected Areas	Number of Fatalities and Missing
January 13, 1945	Mikawa Earthquake (M6.8)	Southern Aichi	2,306
September 17-18, 1945	Typhoon Makurazaki	Western Japan (Especially in Hiroshima)	3,756
December 21, 1946	Nankai Earthquake (M8.0)	Various Places in West of Chubu	1,443
August 14, 1947	Mt. Asama Eruption	Around Mt. Asama	11
September 14-15, 1947	Typhoon Kathleen	North of Tokai	1,930
June 28, 1948	Fukui Earthquake (M7.1)	Around the Fukui Plains	3,769
September 15-17, 1948	Typhoon Ione	From Shikoku into Tohoku (Especially in Iwate)	838
September 2-4, 1950	Typhoon Jane	North of Shikoku (Especially in Osaka)	539
October 13-15, 1951	Typhoon RUTH (5115)	Nationwide (Especially in Yamaguchi)	943
March 4, 1952	Tokachi-oki Earthquake (M8.2)	Southern Hokkaido, Northern Tohoku	33
June 25-29, 1953	Heavy Rains	Kyushu, Shikoku, Chugoku (Especially Kitakyushu)	1,013
July 16-24, 1953	Torrential Rains	West of Tohoku (Especially in Wakayama)	1,124
May 8-12, 1954	Storm Disaster	Northern Japan, Kinki	670
September 25-27, 1954	Typhoon MARIE (5415)	Nationwide (Especially in Hokkaido and Shikoku)	1,761
July 25-28, 1957	Torrential Rains	Kyushu (Especially around Isahaya)	722
June 24, 1958	Mt. Aso Eruption	Around Mt. Aso	12
September 26-28, 1958	Typhoon IDA (5822)	East of Kinki (Especially in Shizuoka)	1,269
September 26-27, 1959	Typhoon VERA (5915)	Nationwide (Except for Kyushu, especially in Aichi)	5,098
May 23, 1960	Chile Earthquake Tsunami	Southern Coast of Hokkaido, Sanriku Coast, Shima Coast	142
January 1963	Heavy snowfall	Hokuriku, Sanin, Yamagata, Shiga, Gifu	231
June 16, 1964	Niigata Earthquake (M7.5)	Niigata, Akita, Yamagata	26
September 10-18, 1965	Typhoons SHIRLEY (6523), TRIX (6524), VIRGINIA (6525)	Nationwide (Especially in Tokushima, Hyogo, Fukui)	181
September 23-25, 1966	Typhoons HELEN (6624), IDA (6626)	Chubu, Kanto, Tohoku (Especially in Shizuoka, Yamanashi)	317
July to August 1967	Torrential Rains	West of Chubu, Southern Tohoku	256
May 16, 1968	Tokachi-oki Earthquake (M7.9)	Southern Hokkaido and Tohoku Area centering around Aomori	52
July 3-15, 1972	Typhoons PHYLLIS (7206), RITA (7207), TESS (7209) and Torrential Rains	Nationwide (Especially in Kitakyushu, Shimane, Hiroshima)	447
May 9, 1974	Izu-hanto-oki Earthquake (M6.9)	Southern Tip of Izu-hanto	30
September 8-14, 1976	Typhoon FRAN (7617) and Torrential Rains	Nationwide (Especially in Kagawa, Okayama)	171
January 1977	Snow Disasters	Tohoku, Northern Kinki, Hokuriku	101
August 7, 1977- October 1978	Mt. Usu Eruption	Hokkaido	3
January 14, 1978	Izu-Oshima-kinkai Earthquake (M7.0)	Izu-hanto	25
June 12, 1978	Miyagi-ken-oki Earthquake (M7.4)	Miyagi	28
October 17-20, 1979	Typhoon TIP (7920)	Nationwide (Especially Tokai, Kanto, Tohoku)	115
December 1980 - March 1981	Snow Disasters	Tohoku, Hokuriku	152
July to August 1982	Torrential Rains and Typhoon BESS (8210)	Nationwide (Especially in Nagasaki, Kumamoto, Mie)	439
May 26, 1983	Nihon-kai-chubu Earthquake (M7.7)	Akita, Aomori	104
July 20-29, 1983	Torrential Rains	East of Sanin (Especially in Shimane)	117
October 3, 1983	Miyake Is. Eruption	Around Miyake-jima Island	—
December 1983 - March 1984	Snow Disasters	Tohoku, Hokuriku (Especially in Niigata, Toyama)	131
September 14, 1984	Nagano-ken-seibu Earthquake (M6.8)	Western Nagano	29
November 15 - December 18, 1986	Izu-Oshima Eruption	Izu Oshima Island	—
November 17, 1990 – June 3, 1995	Mr. Unzen Eruption	Nagasaki	44
July 12, 1993	Hokkaido-nansei-oki Earthquake (M7.8)	Hokkaido	230
July 31 - August7, 1993	Torrential Rains	Nationwide	79
January 17, 1995	1995 Southern Hyogo Prefecture Earthquake (Great Hanshin-Awaji Earthquake) (M7.3)	Hyogo	6,437
March 31, 2000 - June 28, 2001	Mt. Usu Eruption	Hokkaido	—
June 25, 2001 - March 31, 2005	Miyake Is. Eruption and Niijima and Kozushima Is. Earthquake (M6.5)	Tokyo	1
October 20-21, 2004	Typhoon TOKAGE (0423)	Nationwide	98
October 23, 2004	Mid Niigata Prefecture Earthquake (M6.8)	Niigata	68
December 2005 - March 2006	Heavy Snowfall	Japan Sea Coast centering around Hokuriku Area	152
July 16, 2007	Niigataken Chuetsu-oki Earthquake (M6.8)	Niigata	15
June 14, 2008	Iwate-Miyagi Nairiku Earthquake (M7.2)	Tohoku (Especially in Miyagi, Iwate)	23
December 2010 - March 2011	Snow disaster	From Northern Japan through into West Japan on the Japan Sea Coast	131
March 11, 2011	2011 Tohoku Earthquake and Tsunami (Great East Japan Earthquake) (Mw9.0)	Eastern Japan (Especially in Miyagi, Iwate, Fukushima)	22,303
August 30 - September 5, 2011	Typhoon TALAS (1112)	Kinki, Shikoku	98

Date	Disaster	Main Affected Areas	Number of Fatalities and Missing
November 2011 - March 2012	Heavy Snow in 2011	From Northern Japan through into West Japan on the Japan Sea Coast	133
November 2012 - March 2013	Heavy Snow in 2012	From Northern Japan through into West Japan on the Japan Sea Coast	104
November 2013 - May 2014	Heavy Snow in 2013	From Northern Japan through into Kanto-Koshinetsu Area (Especially in Yamanashi)	95
August 20, 2014	Torrential Rains of August 2014 (Hiroshima Sediment Disaster)	Hiroshima	77
September 27, 2014	2014 Eruption of Mt. Ontake	Nagano, Gifu	63
April 14 and 16, 2014	The 2016 Kumamoto Earthquake (M7.3)	Kyushu Area (Especially in Kumamoto)	273
June 28 - July 8, 2018	The Heavy Rain Event of July 2018	Nationwide (Especially in Hiroshima, Okayama, Ehime)	271
September 6, 2018	The 2018 Hokkaido Eastern Iburi Earthquake (M6.7)	Hokkaido	43
October 10 – 13, 2019	Typhoon Hagibis in 2019 (T1919)	Kanto, Tohoku Area	108
July 3-31, 2020	The Heavy Rain Event of July 2020	Nationwide (Especially in Kyushu Area)	86

Notes:

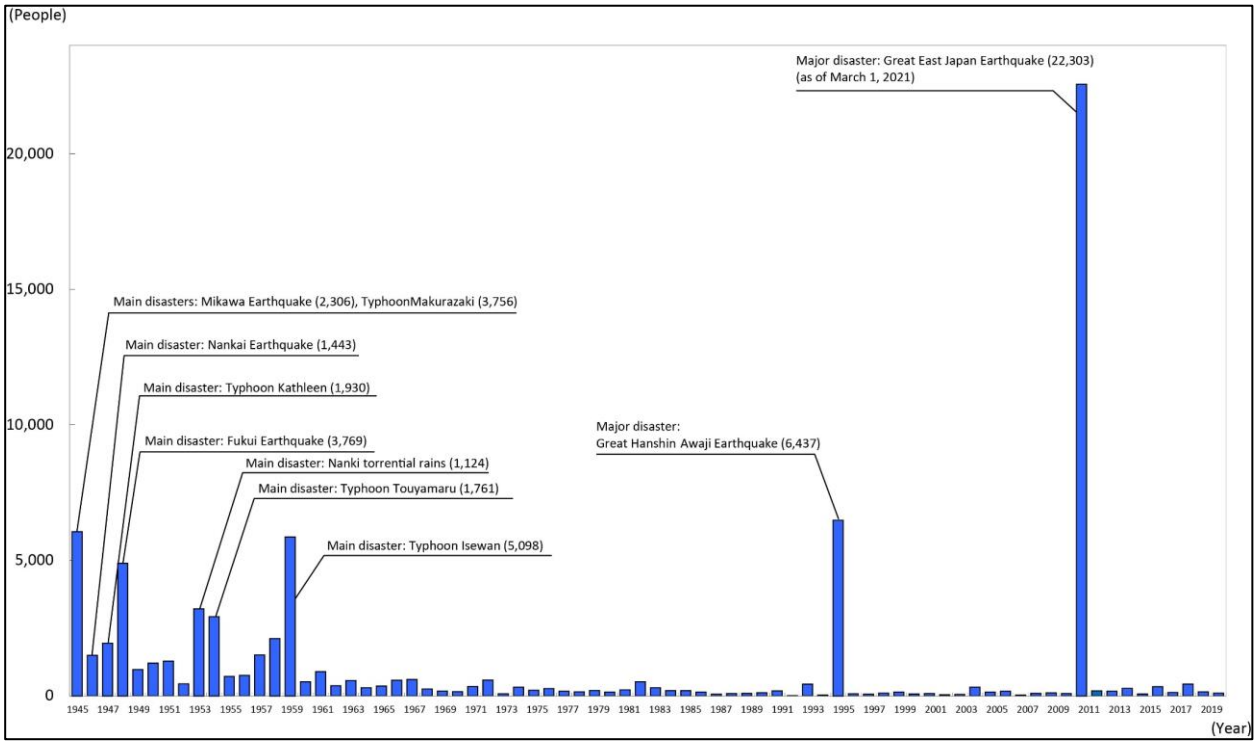
1. The disasters listed resulted in fatalities and missing persons as follows: 500 or more for storm and flood disasters, 100 or more for snow disasters, and 10 or more for earthquakes, tsunamis, and volcanic eruptions. It also includes disasters for which governmental Major Disaster Management Headquarters were established based on the Basic Act on Disaster Management.
2. The number of fatalities and missing persons from the Southern Hyogo Prefecture Earthquake (Great Hanshin-Awaji Earthquake) is the current figure as of May 19, 2006. The number of fatalities directly caused by structures collapsing, fire, and other factors caused by seismic shaking on the day of the earthquake, excluding so-called “related deaths,” is 5,515.
3. The numbers of fatalities from the Miyake Is. Eruption and Niijima and Kozushima Is. Earthquake are from the earthquake of July 1, 2000.
4. The number of fatalities (including disaster-related fatalities) and missing persons resulting from the 2011 Tohoku Earthquake and Tsunami (Great East Japan Earthquake) is the current figure as of March 1, 2020 (including disaster-related fatalities).
5. Disasters caused by Typhoon Hagibis in 2019 (T1919)

, which affected wide areas chiefly in eastern Japan are as of April 10, 2020

6. As of February 26, 2021

Source: Formulated by the Cabinet Office based on the meteorological almanac of Japan, Chronological Scientific Tables, National Police Agency materials, Fire and Disaster Management Agency materials, Extreme Disaster Management Headquarters materials, Major Disaster Management Headquarters materials, and Hyogo Prefecture materials

Fig. A-7 Number of Fatalities and Missing Persons Due to Natural Disasters



Year	People	Year	People	Year	People	Year	People	Year	People
1945	6,062	1962	381	1979	208	1996	84	2013	173
1946	1,504	1963	575	1980	148	1997	71	2014	283
1947	1,950	1964	307	1981	232	1998	109	2015	77
1948	4,897	1965	367	1982	524	1999	141	2016	344
1949	975	1966	578	1983	301	2000	78	2017	129
1950	1,210	1967	607	1984	199	2001	90	2018	444
1951	1,291	1968	259	1985	199	2002	48	2019	155
1952	449	1969	183	1986	148	2003	62	2020	107
1953	3,212	1970	163	1987	69	2004	327		
1954	2,926	1971	350	1988	93	2005	148		
1955	727	1972	587	1989	96	2006	177		
1956	765	1973	85	1990	123	2007	39		
1957	1,515	1974	324	1991	190	2008	101		
1958	2,120	1975	213	1992	19	2009	115		
1959	5,868	1976	273	1993	438	2010	89		
1960	528	1977	174	1994	39	2011	22,566		
1961	902	1978	153	1995	6,482	2012	190		

Note: Of the fatalities in 1995, the deaths from the Southern Hyogo Prefecture Earthquake (Great Hanshin-Awaji Earthquake) include 919 so-called "related deaths" (Hyogo Prefecture).
The fatalities and missing persons in 2020 are based on flash bulletins from the Cabinet Office.

Source: Fatalities and missing persons for the year 1945 came only from major disasters (source: Chronological Scientific Table). Years 1946–1952 use the Japanese Meteorological Disasters Annual Report; years 1953–1962 use National Police Agency documents; years 1963 and after formulated by the Cabinet Office based on Fire and Disaster Management Agency materials.

Fig. A-8 Breakdown of the Number of Fatalities and Missing Persons Due to Natural Disasters

(Unit: persons)

Year	Storm/Flood	Earthquake/ Tsunami	Volcano	Snow	Other	Total
1993	183	234	1	9	11	438
1994	8	3	0	21	7	39
1995	19	6,437	4	14	8	6,482
1996	21	0	0	28	35	84
1997	51	0	0	16	4	71
1998	80	0	0	28	1	109
1999	109	0	0	29	3	141
2000	19	1	0	52	6	78
2001	27	2	0	59	2	90
2002	20	0	0	26	2	48
2003	48	2	0	12	0	62
2004	240	68	0	16	3	327
2005	43	1	0	98	6	148
2006	87	0	0	88	2	177
2007	14	16	0	5	4	39
2008	22	24	0	48	7	101
2009	76	1	0	35	3	115
2010	31	0	0	57	1	89
2011	136	22,303	0	125	2	22,566
2012	52	0	0	138	0	190
2013	75	0	0	92	6	173
2014	112	0	63	108	0	283
2015	22	0	0	49	0	77
2016	38	228	0	6	0	344
2017	60	0	0	68	1	129
2018	285	49	1	103	6	444
2019	123	0	0	32	0	155
2020	92	0	0	15	0	107

Notes: This table shows the number of fatalities and missing persons between Jan. 1 and Dec. 31.
Fatalities and missing persons in 2019 are based on flash bulletins from the Cabinet Office.
(The earthquake/tsunami disaster figures for 2011 include 22,288 fatalities (including disaster-related fatalities) and missing persons from the 2011 Tohoku Earthquake and Tsunami (Great East Japan Earthquake) (March 1, 2020).)

Source: Formulated by the Cabinet Office based on the Fire and Disaster Management Agency report "Status of Regional Disaster Management Administration"

Fig. A-9 Recent Major Natural Disasters (Since the Great Hanshin-Awaji Earthquake)

(Total: As of March 29, 2021)

Name of Disaster	Major Events	Human Casualties (persons)		Houses Damaged (houses)			Remarks
		Fatalities/ Missing Persons	Injured	Completely Destroyed	Half Destroyed	Above-floor Flooding	
The Great Hanshin-Awaji Earthquake (January 17, 1995)	Maximum seismic intensity of 7. Unprecedented major disaster in Western Japan. Became a turning point in DRR measures for national and local governments, with various DRR measures developed and strengthened.	6,437	43,792	104,906	144,274	—	・Establishment of Extreme Disaster Management Headquarters[*1] ・Establishment of Major Disaster Management Headquarters ・Site inspection by Prime Minister ・Dispatchment of government investigation team ・Invocation of Disaster Relief Act ・Invocation of Special Measures Act for Specified Disaster ・Designation as an extremely severe disaster
The Great East Japan Earthquake (March 11, 2011)	Maximum seismic intensity of 7. Tsunami caused extreme damage mainly along the coast of Eastern Japan, including Iwate, Miyagi, and Fukushima Prefectures.	22,303	6,242	122,005	283,156	1,489	・Establishment of Extreme Disaster Management Headquarters ・Establishment of On-site Extreme Disaster Management Headquarters ・Site inspection by Prime Minister ・Dispatchment of government investigation team ・Site inspection by Minister of State for Disaster Management ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Invocation of Special Measures Act for Specified Disaster ・Designation as an extremely severe disaster
2000 Eruption of Mt. Usu (March 31, 2000 - June 28, 2001)	The Japan Meteorological Agency announced emergency volcano information and residents evacuated before the eruption began, resulting in no human casualties.	—	—	119	355	—	・Establishment of Major Disaster Management Headquarters ・Establishment of On-site Major Disaster Management Headquarters ・Site inspection by Prime Minister ・Dispatchment of government investigation team ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Designation as an extremely severe disaster
2000 Miyake Is. Eruption and Niijima and Kozushima Is. Earthquake (June 25, 2000 - March 31, 2005)	A caldera was formed along with the summit eruption. Large amounts of volcanic gases were emitted over an extended period, and evacuation instructions were issued to all residents of the town of Miyake, which forced all residents to evacuate and live off the island.	1	15	15	20	—	・Establishment of Major Disaster Management Headquarters ・Site inspection by Prime Minister ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Designation as an extremely severe disaster
Typhoon TOKAGE (0423) (October 18-21, 2004)	Very large number of human casualties due to rising river levels, sediment disasters, and high waves nationally, but concentrated in the Kinki and Shikoku regions. The Maruyama River, Izushi River, and other Maruyama River system rivers overflowed their banks and flooded.	98	555	909	7,776	14,323	・Establishment of Major Disaster Management Headquarters ・Dispatchment of government investigation team ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Designation as an extremely severe disaster
2004 Mid Niigata Prefecture Earthquake (October 23, 2004)	Maximum seismic intensity of 7. Homes were destroyed, slope failure and other disasters caused many human casualties, communities were isolated, people were forced to evacuate, and there was massive damage to homes, lifelines, transportation, and agricultural land.	68	4,805	3,175	13,810	—	・Establishment of Major Disaster Management Headquarters ・Site inspection by Prime Minister ・Dispatchment of government investigation team ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Designation as an extremely severe disaster
Fukuoka-ken-Seihouoki Earthquake (March 20, 2005)	Maximum seismic intensity of Lower 6. Homes were destroyed on Genkai Island and elsewhere, and window glass fell from buildings in Fukuoka City.	1	1,204	144	353	—	・Site inspection by Prime Minister ・Dispatchment of government investigation team ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Invocation of Remote Islands Development Act
Typhoon NABI (0514) (September 4-8, 2005)	Record-breaking rains fell, mainly in the Kyushu region, and sediment disasters caused many human casualties.	29	177	1,217	3,896	3,551	・Dispatchment of government investigation team ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Designation as an extremely severe disaster
2006 Heavy Snows (December 2005 - March 2006)	Following 1963, the second-largest number of fatalities and missing persons since WW II (on par with 1981.)	152	2,145	18	28	12	・Invocation of Disaster Relief Act
2006 Torrential Rains Due to Seasonal Rain Front (June 10–July 29, 2006)	Many fatalities due to sediment disasters in Nagano and Kagoshima Prefectures.	33	64	313	1,457	1,971	・Dispatchment of government investigation team ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Designation as an extremely severe disaster
Typhoon SHANSHAN (0613) (September 15–20, 2006)	Damage due to strong winds from the Okinawa region to the Kyushu region, and a tornado in Nobeoka City, Miyazaki Prefecture.	10	446	121	518	251	・Dispatchment of government investigation team ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Designation as an extremely severe disaster
Tornado in Saroma Hokkaido Prefecture (November 7, 2006)	Highest number of fatalities on record attributed to a tornado.	9	31	7	7	—	・Dispatchment of government investigation team ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster

Name of Disaster	Major Events	Human Casualties (persons)		Houses Damaged (houses)			Remarks
		Fatalities/ Missing Persons	Injured	Completely Destroyed	Half Destroyed	Above-floor Flooding	
2007 Noto Hanto Earthquake (March 25, 2007)	Maximum seismic intensity of Upper 6. Disaster in mountainous regions with a high percentage of aging population and advancing depopulation.	1	356	686	1,740	—	・Site inspection by Prime Minister ・Dispatchment of government investigation team ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Designation as an extremely severe disaster
2007 Heavy Rains from Typhoon MAN-YI (0704) and Seasonal Rain Front (July 5-31, 2007)	The typhoon made landfall in Japan in July with the strongest intensity in 57 years from 1951 to 2007. Record rainfalls in various regions.	7	75	33	33	434	・Dispatchment of government investigation team ・Invocation of Disaster Relief Act ・Designation as an extremely severe disaster
2007 Niigataken Chuetsu-oki Earthquake (July 16, 2007)	Maximum seismic intensity of Upper 6. Many human causalities due to homes collapsing. Damage to homes, lifelines, transportation, and nuclear power plants.	15	2,346	1,331	5,710	—	・Site inspection by Prime Minister ・Dispatchment of government investigation team ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Invocation of Special Measures Act for Specified Disaster ・Designation as an extremely severe disaster
2008 Iwate-Miyagi Nairiku Earthquake (June 14, 2008)	Maximum seismic intensity of Upper 6. Many human causalities due to landslides and other sediment disasters. Many river channels became blocked (natural dams) in rivers in mountainous areas.	23	426	30	146	—	・Site inspection by Prime Minister ・Dispatchment of government investigation team ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Designation as an extremely severe disaster
Earthquake epicentered on Northern Coast of Iwate Prefecture (July 24, 2008)	Maximum seismic intensity of Lower 6. Earthquake with a deep hypocenter occurring inside a plate. Seismic intensity of Lower 5 and higher recorded in affected areas of inland Iwate and Miyagi Prefectures.	1	210	1	0	—	・Dispatchment of government investigation team
Heavy Rains from July 28 (July 28-29, 2008)	Localized heavy rains in the Hokuriku and Kinki regions. Human casualties along the Toga River in Kobe City.	6	13	6	16	585	・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Designation as an extremely severe disaster
Torrential Rains at the End of August 2008 (August 26-31, 2008)	Record heavy rains in various regions, especially extensive flood damage in Aichi Prefecture.	2	7	6	7	3,106	・Dispatchment of government investigation team ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster
July 2009 Torrential Rains in Chugoku and Northern Kyushu (July 19-26, 2009)	Record heavy rains in Yamaguchi and Fukuoka Prefectures due to seasonal rain front. Numerous fatalities from sediment disasters in Yamaguchi Prefecture and other prefectures.	36	59	52	102	2,139	・Site inspection by Prime Minister ・Dispatchment of government investigation team ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Designation as an extremely severe disaster
Typhoon ETAU (0909) (August 8-11, 2009)	Heavy rains from the Chugoku and Shikoku regions to the Tohoku region due to the effects of the typhoon. Human casualties and homes damaged due to flooding in Hyogo Prefecture.	27	23	183	1,130	974	・Site inspection by Prime Minister ・Dispatchment of government investigation team ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Designation as an extremely severe disaster
Earthquake epicentered in Suruga Bay (August 11, 2009)	Maximum seismic intensity of Lower 6. Tomei Expressway closed due to slope collapse.	1	319	0	6	—	
Typhoon MELOR (0918) (October 6-8, 2009)	Destructive storm and heavy rains over a wide area from the Okinawa region to Hokkaido Prefecture due to the effects of the typhoon. Winds and rains in Aichi Prefecture caused partial damage and flood damage to many homes.	5	139	9	86	571	・Designation as an extremely severe disaster
Tsunami from Earthquake epicentered in Central Chilean Coast (February 27-28, 2010)	An earthquake struck the central coast of Chile just after noon on Feb. 27. A tsunami was approaching Japan the next day on the 28th, and a major tsunami warning and tsunami warning were issued at 9:33 a.m. on the 28th. Extensive fishery damage to aquaculture facilities.	0	0	0	0	6	・Designation as an extremely severe disaster
2010 Heavy Rains Due to Seasonal Rain Front (June 11 - July 19, 2010)	The seasonal rain front stalled over the region from Kyushu to Honshu from mid-June, with intermittent bursts of activity. Southern Kyushu received more than twice its average annual rainfall. There were large-scale slope failure in Kagoshima Prefecture, and fatalities and missing persons mainly in Hiroshima and Gifu Prefectures.	22	21	43	91	1,844	・Site inspection by Prime Minister ・Site inspection by Minister of State for Disaster Management ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Designation as an extremely severe disaster
Heavy Rains in Amami Region of Kagoshima Prefecture (October 18-25, 2010)	The rain front stalled over the Amami region, with moist air flowing in from the south toward this rain front, creating unstable atmospheric conditions. The Amami region received intense rainfall of more than 120 mm per hour, with more than 800 mm of rainfall since the rains began.	3	2	10	443	116	・Site inspection by Minister of State for Disaster Management ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Designation as an extremely severe disaster
Heavy Snow in 2010 (November 2010 - March 2011)	Record snows fell from the end of the year to the beginning of the following year in some areas of the Japan Sea side of Western Japan. Fishing boats overturned and sank along with other damage in Tottori and Shimane Prefectures.	131	1,537	9	14	6	・Ministerial meeting ・Site inspection by Minister of State for Disaster Management ・Invocation of Disaster Relief Act

Name of Disaster	Major Events	Human Casualties (persons)		Houses Damaged (houses)			Remarks
		Fatalities/ Missing Persons	Injured	Completely Destroyed	Half Destroyed	Above-floor Flooding	
Mt. Kirishima (Shinmoedake) Eruption (January 26 - September 7, 2011)	Following a small eruption on January 19, a medium-sized eruption occurred at Shinmoedake on January 26 and the volcanic alert level was raised to 3 (Do not approach the volcano). Eruptions continued repeatedly thereafter until early September, with air waves and cinders breaking windows and causing other damage. In addition, falling ash from the eruptions was recorded over a wide area mainly to the southeast of the mountain, including Kirishima City, Kagoshima Prefecture, and Miyakonojo City, Miyazaki Prefecture.	0	52	0	0	—	・Ministerial meeting (twice) ・Site inspection by Minister of State for Disaster Management ・Designation as an area requiring the emergency development of evacuation facilities and an ash prevention area ・Invocation of Disaster Relief Act
Typhoon MA-ON (1106) (July 12-24, 2011)	The typhoon made landfall on the southern part of Tokushima Prefecture around 11:00 p.m. on July 19, maintaining its strong intensity, with maximum winds of 40m/s, and its large scale. Record heavy rains were recorded in Western Japan, with rainfall of more than 1,000 mm recorded in some parts of the Shikoku region since the rains began.	3	54	0	1	28	・Designation as an extremely severe disaster
July 2011 Niigata and Fukushima Torrential Rains (July 27-30, 2011)	Rain began falling in Niigata Prefecture and Aizu, Fukushima Prefecture, from around noon on the 27th. Intermittent intense rains of more than 80 mm per hour fell starting on the 28th. In Niigata and Fukushima Prefectures, record heavy rains exceeding the July 2004 Niigata and Fukushima Torrential Rains were recorded.	6	13	74	1,000	1,082	・Dispatchment of government investigation team (twice) ・Site inspection by Minister of State for Disaster Management ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Designation as an extremely severe disaster
Typhoon TALAS (1112) (August 30 - September 5, 2011)	Record rains were recorded across a wide area from Western Japan to Northern Japan. Especially on the Kii Peninsula, the highest amount of rainfall since the rains began at 5:00 p.m. on August 30 exceeded 1,800 mm, and many river channels became blocked.	98	113	380	3,159	5,500	・Establishment of Major Disaster Management Headquarters ・Site inspection by Prime Minister ・Dispatchment of government investigation team (twice) ・Site inspection by Minister of State for Disaster Management ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Designation as an extremely severe disaster (national)
Typhoon ROKE (1115) (September 15-22, 2011)	Strong winds and record rains were recorded across a wide area from Western Japan to Northern Japan. Total rainfall from 12:00 a.m., September 15 to 9:00 a.m., September 22 exceeded 1,000 mm in some parts of Kyushu and Shikoku, with many points recording rainfall of more than double the average rainfall for September.	20	425	34	1,524	2,270	・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Designation as an extremely severe disaster
Heavy Snow in 2011 (November 2011 - March 2012)	Record snows fell mainly on the Japan Sea side, with cumulative snowfall of more than 28% higher than the average for the past 5 years. In addition, in some regions the depth of the snowfall was more than double the average for the past 30 years.	133	1,990	13	12	3	・Ministerial meeting (twice) ・Site inspection by Minister of State for Disaster Management (twice) ・Invocation of Disaster Relief Act
Wind Gusts in May 2012 (May 6, 2012)	Lightning strikes, wind gusts, and hail were recorded from the Tokai region to the Tohoku region. From Joso City to Tsukuba City, Ibaraki Prefecture, a tornado formed that was estimated to be one of the strongest (F3) recorded in Japan. Multiple tornadoes were recorded in the region from Mooka City, Tochigi Prefecture, to Hitachi-Omiya City, Ibaraki Prefecture, including a destructive tornado of approx. 32 km, the second longest recorded since statistics have been kept.	3	61	103	234	—	・Dispatchment of government investigation team ・Site inspection by Minister of State for Disaster Management ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster
Typhoon GUCHOL (1204) (June 18-20, 2012)	Heavy rains fell across a wide area from the Okinawa region to the Tohoku region due to the typhoon and seasonal rain front. Following the track of the typhoon, strong winds, high waves, and a storm surge were recorded across a wide area from the Okinawa region to the Tohoku region.	1	85	1	3	49	・Designation as an extremely severe disaster
Heavy Rains from June 21 to July 7, 2012 (June 21 - July 7, 2012)	Due to the effects of the seasonal rain front and a low-pressure system in the Yellow Sea forming above the seasonal rain front, from June 21 to July 7, rains were recorded from Western to Eastern Japan, and Northern Japan, with heavy rains in parts of Kyushu and other locations.	2	7	36 (*2)	180 (*2)	1,131 (*2)	・Dispatchment of government investigation team ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Designation as an extremely severe disaster
July 2012 Northern Kyushu Torrential Rains (July 11-14, 2012)	From July 11 to 14, moist air from the south flowed in toward the seasonal rain front that was stalled near Honshu, and heavy rains were recorded across a wide area from Western to Eastern Japan. Extremely heavy rains fell intermittently with thunder especially in the northern region of Kyushu.	33	34	276 (*3)	2,306 (*3)	2,574 (*3)	・Site inspection by Prime Minister ・Dispatchment of government investigation team (twice) ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Designation as an extremely severe disaster
Heavy Snow from November2012 (November 2012 - March 2013)	Due to the cold, there was a long stretch of low-temperature days in Northern Japan, with a large amount of snow falling mainly on the Japan Sea side. This resulted in record snowfall recorded mainly on the Japan Sea side of Northern Japan, including snowfall with a depth of 566 cm recorded at Sukayu, Aomori Prefecture.	104	1,517	5	7	2	・Ministerial meeting held ・Dispatchment of government investigation team ・Invocation of Disaster Relief Act

Name of Disaster	Major Events	Human Casualties (persons)		Houses Damaged (houses)			Remarks
		Fatalities/ Missing Persons	Injured	Completely Destroyed	Half Destroyed	Above-floor Flooding	
Earthquake epicentered Near Awajishima Island (April 13, 2013)	Maximum seismic intensity of Lower 6.	0	34	8	97	—	・Designation as an extremely severe disaster
Heavy Rains in 2013 Seasonal Rain Front (Disaster due to torrential rains and destructive storms between June 8 and August 9, 2013)	・From June 8 to August 9, the seasonal rain front stalled from Kyushu to the vicinity of Honshu with intermittent bursts of activity. In addition, warm and very moist air surrounding a high-pressure ridge flowed in even after the rainy season ended. During this time, Typhoons LEEPI (1304) and SOULIK (1307) approached Japan, causing heavy rains in various regions.	17	50	73	222	1,845	・Site inspection by Prime Minister ・Dispatchment of government investigation team (seven times) ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Designation as an extremely severe disaster
Heavy Rains from August 23, 2013 (August 23-28, 2013)	Warm, moist air flowed in toward the rain front, creating extremely unstable atmospheric conditions and heavy rains mainly on the Japan Sea side of Eastern Japan, and Western Japan. On August 24, record heavy rains on par with the torrential rains of July 28 were recorded, especially in Shimane Prefecture. Some areas of Hokkaido Prefecture also received heavy rains.	2	4	9	53	243	・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Designation as an extremely severe disaster
Tornadoes on September 2 and 4, 2013 (September 2, 4, & 7, 2013)	・On September 2, F2 tornadoes were recorded in Saitama City, Koshigaya City, and Matsubushi Town, Saitama Prefecture, Noda City, Chiba Prefecture, and Bando City, Ibaraki Prefecture. ・On September 4, an F0 tornado was recorded in Sukumo City, Kochi Prefecture, an F0 tornado in Aki City, Kochi Prefecture, F1 tornadoes respectively from Kanuma City to Utsunomiya City, Tochigi Prefecture, and from Shioya Town, Shioya District to Yaita City, and F0 tornadoes from Ise City to Obata Town, Mie Prefecture. ・On September 7, F0 wind gusts were recorded in Komaki City, Hokkaido Prefecture.	0	67	13	38	0	・Dispatchment of government investigation team (twice) ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster
Heavy Rains from Typhoon MAN-YI (1318) (September 15-16, 2013)	On September 15, localized intense rains fell in Eastern Japan and Northern Japan. On the 16th, heavy rains fell across a wide area from Shikoku to Hokkaido. Record heavy rains fell especially in Fukui, Shiga, and Kyoto Prefectures. A total of ten F0–F1 tornadoes also occurred.	6	136	40	967	2,453	・Dispatchment of government investigation team (five times) ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Designation as an extremely severe disaster
Typhoons WIPHA (1326) & FRANCISCO (1327) (October 14-16, 2013) (October 24-26, 2013)	Heavy rains fell mainly on the Pacific Ocean side of Eastern Japan and Northern Japan. Driving rains of more than 100 mm per hour fell especially in Oshima-machi, Tokyo Prefecture, with record rainfall of 824 mm recorded in 24 hours.	45	140	65	63	2,011	・Site inspection by Prime Minister ・Dispatchment of government investigation team ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Designation as an extremely severe disaster
Heavy Snow from 2013 (November 2013 - March 2014)	・Record heavy snowfall was recorded across a wide area from Northern Japan to Kanto-Koshinetsu. ・Especially from February 14 to 16, record heavy snows fell, substantially surpassing past snowfall depths mainly in the Kanto-Koshinetsu region, including Kofu (Yamanashi Prefecture) with 114 cm, Chichibu (Saitama Prefecture) with 98 cm, and Maebashi (Gunma Prefecture) with 73 cm of snowfall.	95	1,770	28	40	3	・Establishment of Major Disaster Management Headquarters ・Establishment of On-site Major Disaster Management Headquarters ・Site inspection by Prime Minister ・Dispatchment of government investigation team (five times) ・Invocation of Disaster Relief Act
Typhoon NEOGURI (1408) (July 6-11, 2014)	・Record heavy rains were recorded on Okinawa Island. ・Due to the effects of the moist southerly wind surrounding the typhoon and the seasonal rain front, some regions even far from the typhoon received localized driving rains.	3	70	14	12	409	・Dispatchment of government investigation team (three times) ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Designation as a disaster of extreme severity ・Appeal to the public by the Minister of State for Disaster Management
Torrential Rains of August 2014							
Typhoons NAKRI (1412) & HALONG (1411) (July 30 - August 11, 2014)	<Typhoon NAKRI (1412)> ・From the night of the 5th, heavy rains were recorded in the Chugoku and Tohoku regions. Especially in Yamaguchi Prefecture, localized driving rains of more than 100 mm per hour were recorded in some places. <Typhoon HALONG (1411)> Heavy rains fell across a wide area from Western Japan to Northern Japan. Especially in Kochi Prefecture, total rainfall from the 7th to the 11th, when the heaviest rains fell, was more than 1,000 mm. Total rainfall from the Shikoku region to the Tokai region was more than 600 mm. Atmospheric conditions were extremely unstable, with extremely strong winds including tornadoes in Tochigi Prefecture and other areas.	5	93	22	374	1,529	・Dispatchment of government investigation team (twice) ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Designation as an extremely severe disaster

Name of Disaster	Major Events	Human Casualties (persons)		Houses Damaged (houses)			Remarks
		Fatalities/ Missing Persons	Injured	Completely Destroyed	Half Destroyed	Above-floor Flooding	
Heavy Rains from August 15, 2014 (August 15-26, 2014) *Excludes Hiroshima Sediment Disaster on August 20	・Extremely intense localized rains with thunder. The amount of rainfall that fell during the 2 days of the 16th and 17th set new records in places such as Fukuchiyama City, Kyoto Prefecture, and Takayama City, Gifu Prefecture, with heavy rains mainly in the Kinki, Hokuriku, and Tokai regions.	8	7	38	332	2,240	・Dispatchment of government investigation team (twice) ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Designation as an extremely severe disaster
Hiroshima Sediment Disaster on August 20, 2014 (Disaster in Hiroshima Prefecture due to heavy rains from August 19, 2014)	・ Warm, moist air flowed in toward the rain front, and extremely unstable atmospheric conditions were recorded mainly in the Chugoku region and northern Kyushu region. ・At 3:30 a.m. on the 20th, driving rains of approx. 120 mm per hour were recorded in Hiroshima Prefecture, and heavy rains, including a new record set for the highest recorded rainfall in a 24-hour period, were recorded.	77	68	179	217	1,086	・Establishment of Major Disaster Management Headquarters ・Establishment of On-site Major Disaster Management Headquarters ・Site inspection by Prime Minister ・Dispatchment of government investigation team (three times) ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Designation as an extremely severe disaster
2014 Eruption of Mt. Ontake (September 27, 2014)	・Volcanic tremors started at 11:41 a.m. on September 27, with an eruption on the same day around 11:52 a.m. ・Volcanic smoke descended the southern slope and was recorded for more than 3 km. Therefore, a level 3 volcano warning (Do not approach the volcano) was issued. ・Entry within 4 km of the crater was restricted. ・Many mountain climbers suffered casualties due to this eruption.	63	69	0	0	0	・Establishment of Major Disaster Management Headquarters ・Establishment of On-site Major Disaster Management Headquarters ・Dispatchment of government investigation team (twice) ・Invocation of Disaster Relief Act
Earthquake with a Seismic Source in Northern Nagano Prefecture (November 22, 2014)	Maximum seismic intensity of Lower 6.	0	46	81	133	—	・Site inspection by Prime Minister ・Dispatchment of government investigation team (twice) ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Designation as an extremely severe disaster
Heavy Snow in 2014 (November 2014 - March 2015)	Due to the effects of a strong winter air-pressure pattern as well as a low-pressure system and cold air, heavy snows fell on the mountainous areas of the Japan Sea side from Northern Japan to Eastern Japan.	83	1,029	9	12	5	・Ministerial meeting ・Dispatchment of government investigation team ・Invocation of Disaster Relief Act ・Appeal to the public by the Minister of State for Disaster Management (four times)
Kuchinoerabu-jima Eruption [Volcanic Alert Level 5] (May 29, 2015)	・An explosive eruption occurred at Shindake at 9:59 am on May 29. This eruption triggered a volcanic cloud of black-gray smoke that rose 9,000m above the crater rim and a pyroclastic flow that reached the northwestern coast (Mukaehama district). ・At 10:07 am, the JMA raised the Volcanic Alert Level from 3 to 5 (evacuate). ・The municipal ferry, Ferry-Taiyo, and other vessels were used to evacuate all those on the island at the time of the eruption to Yakushima (all individuals were confirmed to be safe)	0	1	To be confirmed			・Installation of government on-site communications office (Yakushima Town, Kagoshima) ・Site inspection by Prime Minister ・Dispatchment of government investigation team ・Invocation of Disaster Relief Act
Eruption of Mt. Hakone [Volcanic Alert Level 3] (June 30, 2015)	・A very small amount of volcanic ash was observed inside the crater, which was thought to have been the result of a very small eruption, so the JMA raised the volcanic alert level from 2 to 3 (Do not approach the volcano) at 12:30 on June 30 ・At the same time, Hakone-machi imposed a ban on entering the area within around 1km of the crater and issued an evacuation instruction for parts of the Ubako, Kamiyuba, Shimoyuba, and Hakone Sounkyo Bessochi areas, as well as evacuating residents, etc. from those areas	0	0	0	0	0	・Deployment of a Cabinet Office advance information-gathering team
Typhoon NANGKA (1511) (July 16-18, 2015)	The typhoon and warm, moist air heading toward the typhoon caused increased rainfall, primarily over West and East Japan. The Kinki region in particular saw the highest rainfall in 24 hours since records began, with heavy rain in excess of the usual rainfall for the entire month of July in an ordinary year. This caused river flooding, damage to public civil engineering works, and suspension of transport services, mainly in West Japan.	2	57	5	10	85	・Appeal to the public by the Minister of State for Disaster Management

Name of Disaster	Major Events	Human Casualties (persons)		Houses Damaged (houses)			Remarks
		Fatalities/ Missing Persons	Injured	Completely Destroyed	Half Destroyed	Above-floor Flooding	
Volcanic activity at Sakurajima [Volcanic Alert Level 4] (August 15, 2015)	・At around 07:00 on August 15, a series of volcanic earthquakes centered on the island occurred. Rapid crustal movement indicative of inflation of the volcanic edifice was also observed. ・At 10:15 that day, the JMA raised the volcanic alert level from 3 to 4 (Prepare to evacuate) (caution required in Arimura-cho and Furusato-cho, within 3km of the Showa crater and the Minamidake summit crater). ・At 16:50 that day, Kagoshima City issued evacuation advisories to the residents of the Arimura district of Arimura-cho, the Furusato district of Furusato-cho (areas within 3km of the crater), and the Shioyagamoto district of Kurokami-cho. ・At 18:10 that day, evacuation of all residents (77 people from 51 households) in the areas subject to evacuation was completed.	0	0	0	0	0	・Site inspection by Parliamentary Vice Minister ・Deployment of a Cabinet Office liaison team
Typhoon GONI (1515) (August 22-26, 2015)	・The typhoon that made landfall near Arao City in Kumamoto Prefecture after 06:00 on the 25th moved northward to northern Kyushu, maintaining its strong intensity, and reached the Sea of Japan during the daylight hours of the 25th. ・A maximum instantaneous wind speed of 71.0m was observed at 21:16 on the 23rd on Ishigaki Island, Okinawa Prefecture. In addition, the typhoon and warm, moist air flowing in from the south resulted in heavy rain over the Ryukyu Islands, West Japan, and the Tokai region, with more than 500mm of rain falling on Mie Prefecture in a single day on the 25th.	1	147	12	138	53	・Designation as an extremely severe disaster
Torrential Rain of September 2015 in the Kanto and Tohoku Regions [Including Typhoon ETAU (1518)] (September 9-11, 2015)	・After making landfall near Nishio City, Aichi Prefecture at around 09:30 on September 9, 2015 Typhoon ETAU (1518) moved on to the Sea of Japan and transformed into an extra-tropical cyclone at 15:00 that day. ・As a result of Typhoon ETAU (1518) and weather fronts, heavy rain fell over a wide area from western to northern Japan. In particular, between the 9th and the 11th, a southerly wind flowing into the extra-tropical cyclone into which Typhoon ETAU (1518) transformed and, subsequently, a southeasterly wind from the vicinity of Typhoon KILO (1517) supplied flows of moist air that triggered a succession of line-shaped precipitation systems, causing record-breaking rainfall in the Kanto and Tohoku regions and prompting the issue of emergency heavy rain warnings for Tochigi, Ibaraki, and Miyagi prefectures.	20	82	81	7,090	2,523	・Minister of State for Disaster Management issues a list of requests to relevant ministries and agencies ・Deployment of a Cabinet Office advance information-gathering team ・Dispatchment of government investigation team ・Ministerial meeting (twice) ・Site inspection by Prime Minister (once) ・Site inspection by Minister of State for Disaster Management (twice) ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Designation as an extremely severe disaster
Mt. Aso Eruption [Volcanic Alert Level 3] (September 14, 2015)	・At 09:43 on September 14, an eruption occurred at Mt. Naka-dake 1st Crater. At 09:50, the Japan Meteorological Agency (JMA) issued a preliminary eruption report (the first issuing since the report system was established in August 2015). ・At 10:10, the JMA raised the volcanic alert level from 2 to 3 (Do not approach the volcano) (caution required in the area within 2 km of the crater). ・At 11:00, the local government confirmed that all tourists in the restricted area (2 km from the crater) had been evacuated.	—	—	—	—	—	
Typhoon DUJUAN (1521) (September 27-28, 2015)	・Typhoon DUJUAN (1521) approached the Ishigaki and Yonaguni island areas with violent intensity during the day on the 28th. ・On Yonaguni Island, a maximum instantaneous wind speed of 81.1m was observed at 15:41 on the 28th, the highest figure since statistics began to be compiled. A severe gale buffeted Yaeyama and the surrounding area, while the Sakishima Islands saw stormy seas with high swells and the Okinawa Island area was also battered by rough seas.	0	0	5	23	0	・Dispatchment of government investigation team ・Invocation of Disaster Relief Act

Name of Disaster	Major Events	Human Casualties (persons)		Houses Damaged (houses)			Remarks
		Fatalities/ Missing Persons	Injured	Completely Destroyed	Half Destroyed	Above-floor Flooding	
Heavy Snowfall since November, 2015 (November, 2015 - March, 2016)	In January 2016, a rapidly developing low pressure system caused heavy snowfall over a wide area, even in the plains of the Kanto area. The pace of snowfall was faster than usual due to the strong winter pressure system, which caused damage even in areas that normally receive little snowfall. In Amami Oshima Island, Kagoshima Prefecture, the first snowfall in 115 years was observed since February 12, 1901.	27	631	—	3	—	
The 2016 Kumamoto Earthquake (April 14 and 16, 2016)	・At 09:26 p.m. on April 14, 2016 Maximum seismic intensity of 7 ・At 01:25 a.m. on April 16, 2016 Maximum seismic intensity of 7	273	2,809	8,667	34,719	0	・Establishment of Major Disaster Management Headquarters ・Establishment of On-site Major Disaster Management Headquarters ・Site inspection by Prime Minister (three times) ・Dispatchment of government investigation team ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Invocation of Special Measures Act for Specified Disaster ・Partial invocation of the Act on Reconstruction from Large-Scale Disasters ・Designation as an extremely severe disaster
Heavy Rains from Seasonal Rain Front Starting June 20, 2016 (June 20-25, 2016)	・Warm, moist air flowed in toward the seasonal rain front having stalled over Western to Eastern Japan and a low-pressure system above the seasonal rain front, creating extremely unstable atmospheric conditions. ・Rainfall from 00:00 on 19 onward exceeded 300 mm over a wide area of Kyushu, as well as Chugoku, Shikoku and part of the Izu Islands, while rain in some parts of Kumamoto, Oita and Miyazaki Prefectures exceeded 500 mm.	7	12	37	165	520	・Designation as an extremely severe disaster
Typhoon CHANTHU (1607) (August 16-18, 2016)	・Typhoon CHANTHU (1607) moved northward along the Pacific coast of the Kanto and Tohoku regions, making landfall near Cape Erimo at around 17:30 on August 17. It then continued up through Hokkaido and transformed into an extra-tropical cyclone near Sakhalin island at 03:00 on the 18th. ・The passage of the cold front of the extra-tropical cyclone that was formerly Typhoon CHANTHU (1607) caused localized driving rains in the Kanto region, with 83 mm per hour of rain recorded in Utsunomiya City, Tochigi Prefecture up to 03:14 on the 18th. ・The total rainfall between 00:00 on August 16 and 06:00 on August 18 exceeded 100 mm over an extensive area in the Kanto, Tohoku, and Hokkaido regions.	0	5	0	9	67	・Designation as an extremely severe disaster
Typhoons KOMPASU (1611) & MINDULLE (1609) (August 20-23, 2016)	・Typhoon KOMPASU (1611) formed as a tropical storm over the sea east of Japan at 09:00 on August 20 and approached the Tohoku region before making landfall near Kushiro City, Hokkaido after 23:00 on the 21st. It then continued up through Hokkaido and transformed into an extra-tropical cyclone over the Sea of Okhotsk at 03:00 on the 22nd. ・Typhoon MINDULLE (1609) made landfall near Tateyama City, Chiba Prefecture at around 12:30 on August 22 and continued up through the Kanto and Tohoku regions, making landfall once more on the central part of Hidaka District of Hokkaido Prefercture before 06:00 on the 23rd. It then continued up through Hokkaido before transforming into an extra-tropical cyclone over the Sea of Okhotsk at 12:00 on the 23rd. ・These typhoons and weather fronts caused heavy rain in eastern and northern Japan. Between 00:00 on August 20 and 24:00 on the 23rd, there was 448.5 mm of rainfall at Mt. Amagi in Izu City, Shizuoka Prefecture; 297.5 mm at Ome in Ome City, Tokyo; and 296.0 mm at Itokushibetsu in Shibetsu Town, Hokkaido. Hokkaido experienced particularly heavy rain, receiving double the average rainfall for August.	2	76	6	19	665	・Dispatchment of government investigation team ・Designation as an extremely severe disaster

Name of Disaster	Major Events	Human Casualties (persons)		Houses Damaged (houses)			Remarks
		Fatalities/ Missing Persons	Injured	Completely Destroyed	Half Destroyed	Above-floor Flooding	
Typhoon LIONROCK (1610) (August 26-31, 2016)	・Typhoon LIONROCK (1610) approached the Kanto region in the morning of August 30 and made landfall near Ofunato City, Iwate Prefecture around 17:30 on the 30th, accompanied by a storm area. It then accelerated on a peculiar course that saw it pass through the Tohoku region and enter the Sea of Japan, and it transformed into an extra-tropical cyclone on the 31st. ・This was the first time that a typhoon had made landfall on the Pacific coast of the Tohoku region since the Japan Meteorological Agency began recording statistics in 1951.	29	14	518	2,281	279	・Installation of government on-site communications office ・Appeal to the public by the Minister of State for Disaster Management ・Site inspection by Prime Minister (twice) ・Dispatchment of government investigation team (twice) ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Designation as an extremely severe disaster
Typhoon NAMTHEUN in 2016(1612) (September 1 - 5, 2016)	Typhoon NAMTHEUN in 2016 (1612) made landfall near Nagasaki City, Nagasaki Prefecture, just after 1:00 on September 5. At 9:00 on September 5, it weakened to tropical depression intensity near Tsushima.	—	1	—	—	—	
Typhoon MALOU in 2016 (1613) (September 6 - 8, 2016)	Typhoon MALOU in 2016 (1613), after moving from south to northeastward of Japan, turned into an extratropical cyclone off the coast of Hokkaido.	1	2	15	42	112	
Typhoon MALAKAS (1616) (September 16-20, 2016)	・With strong intensity, Typhoon MALAKAS (1616) made landfall on the Osumi Peninsula, Kagoshima Prefecture after 00:00 on September 20 and then headed northeast across the waters off the coast of Shikoku before making landfall once more near Tanabe City, Wakayama Prefecture around 13:30 the same day. After making landfall yet again after 17:00 that day near Tokoname City, Aichi Prefecture, it transformed into an extra-tropical cyclone at 21:00 the same day off the coast of the Tokai region.	1	47	8	65	509	・Designation as an extremely severe disaster
Typhoon CHABA in 2016 (1618) (September 30 - October 5, 2016)	・Typhoon CHABA in 2016 (1618) approached Kume Island on October 3 with violent typhoon intensity. Then it moved northward across the East China Sea and then northeastward across the Sea of Japan. And it became an extratropical cyclone off Sado Island at 21:00 on October 5. *At 19:02 on October 3, an emergency warning (for storms, waves, heavy rain, and storm surge) was issued for the Okinawa Island area. All warnings were cancelled at 05:42 on October 4.	—	14	—	1	—	・Appeal to the public by the Minister of State for Disaster Management (once)
2016 Earthquake centered in the central Tottori Prefecture (October 21, 2016)	Maximum seismic intensity of Lower 6	0	32	18	312	—	・Dispatchment of government investigation team ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Designation as an extremely severe disaster
Earthquake centered in the northern Ibaraki Prefecture (December 28, 2016)	Maximum seismic intensity of Lower 6	0	2	0	1	—	—
March 27, 2017Avalanche in Nasu, Tochigi Prefecture on (March 27, 2017)	An avalanche hit the Nasu Onsen Family Ski Resort, affecting high-school students were involved during a mountain climbing workshop.	8	40	—	—	—	—
Heavy rains from Seasonal Rain Front starting June 30, 2017and Typhoon NANMADOL (1703) (including Northern Kyushu Heavy Rain) (June 30 - July 10, 2017)	Localized intense rain caused by a seasonal rain front and Typhoon NANMADOL (1703) fell mainly in northern Kyushu. Especially from July 5 to 6, record heavy rain hit northern Kyushu due to warm and very moist air flowing in toward the rain front stalling in the vicinity of the Tsushima Straits.	44	39	338	1,101	223	・Ministerial meeting (three times) ・Site inspection by Prime Minister (once) ・Deployment of a Cabinet Office advance information gathering team ・Dispatchment of government investigation team (twice) ・Installation of government on-site communications office ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Designation as an extremely severe disaster
Heavy Rains from Seasonal Rain Front Starting July 22, 2017 (July 22 - 26, 2017)	Warm and moist air flowed in towards the rain front stalling over Tohoku and Hokuriku regions; stimulating it and causing heavy rain, concentrated in these regions, from July 22.	0	0	3	44	618	・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Designation as an extremely severe disaster

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Typhoon NORU in 2017 (1705) (August 4 - 9, 2017)	Typhoon NORU in 2017 (1705), which developed on July 21 around the sea near Minamitori Island, approached the Amami region. After that, it made landfall in northern Wakayama Prefecture and moved up through the Kinki region. It then moved northeastward across the Sea of Japan, and at 3:00 a.m. on August 9, it turned into an extratropical cyclone off Yamagata Prefecture. Due to the slow movement of the typhoon, heavy rains were recorded in the Amami region, western Japan, and eastern Japan. In addition to heavy rainfall, gusty winds were observed. The typhoon caused damage to a wide area.	2	51	5	6	47	・Designation as a disaster of extreme severity
Typhoon TALIM (1718) (September 13 - 18, 2017)	Typhoon TALIM (1718), heading north near Miyako Island from September 13 to 14, crossed the Satsuma Peninsula, Kagoshima Prefecture around 11:30 on 17th and made landfall on Tarumizu City, Kagoshima Prefercture around 12:00 the same day. It continued to move north along the Japanese islands with a storm area and transformed into an extra-tropical cyclone at 03:00 on 18th around Sado Island. The typhoon and active rain front caused driving rains from Western to Northern Japan.	5	73	5	615	1,553	・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Designation as an extremely severe disaster
Typhoon LAN (1721) (October 21 - 23, 2017)	Typhoon LAN (1721) moved northward over the sea south of Japan during October 21-22 and made landfall around Kakegawa City in Shizuoka Prefecture around 03:00 on the 23rd with its strong intensity and its very large scale. After crossing the Kanto region with a storm area. It transformed into an extra-tropical cyclone around the sea east of Japan at 09:00 on 23rd. This brought heavy rain over much of Western and Eastern Japan and the Tohoku region; due to well-developed rain clouds surrounding the typhoon and the rain front stalling near Honshu.	8	245	13	485	2,794	・Dispatchment of government investigation team ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Designation as an extremely severe disaster
Heavy Snow from 2017 (November 2017 - March 2018)	Due to the effects of a strong winter air-pressure pattern, heavy snowfalls were observed in some areas on the Japan Sea side. Especially large amounts of well-developed snow clouds flowed in from the Japan Sea side from early to mid-February. In Fukui, Fukui Prefecture, the daily maximum snow depth exceeded 140 cm for the first time in 37 years. The Hokuriku region observed heavy snowfalls overall, with some areas recording snow exceeding six times the average.	116	1,539	9	18	13	・Dispatchment of government investigation team ・Invocation of Disaster Relief Act
Eruption of Kusatsu-Shiranesan (January 23, 2018)	・An eruption occurred at 10:02 a.m., January 23. Volcanic rocks travelled farther than 1 km from the crater near Kagami-ike, Motoshiranesan. ・At 11:05 a.m., the volcanic alert level was raised from 1 to 2 (Do not approach the crater). ・At 11:50 a.m., the volcanic alert level was raised from 2 to 3 (Do not approach the volcano) (caution required within a 2 km radius from the crater near Kagami-ike).	1	11	0	0	0	—
Earthquake centered in the western Shimane Prefecture (April 9, 2018)	Maximum seismic intensity of Upper 5	0	9	16	58	0	・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster
Sediment Disaster in Nakatsu, Oita Prefecture (April 14, 2018)	A landslide in Yabakeimachi, Nakatsu City	6	0	4	0	0	—
Earthquake centered in the northern Osaka Prefecture (June 18, 2018)	Maximum seismic intensity of Lower 6	6	462	21	483	0	・Deployment of a Cabinet Office advance information gathering team ・Ministerial meeting (once) ・Site inspection by Prime Minister (once) ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster

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		Fatalities/ Missing Persons	Injured	Completely Destroyed	Half Destroyed	Above-floor Flooding	
The Heavy Rain Events of July 2018 (June 28 – July 8, 2018)	Due to the effects of the rain front and Typhoon PRAPIROON (1807), warm and highly humid air was continuously supplied into the vicinity of Japan, resulting in record rainfalls in western Japan and other areas. The rains caused some serious disasters, including river overflows, floods, and landslides, leaving more than 200 people dead or missing. The lifelines were also affected, with water and electricity outages occurring in various areas across Japan, while rail and road transportation was also disrupted.	271	449	6,783	11,342	6,982	・Establishment of Major Disaster Management Headquarters ・Ministerial meeting (once) ・Deployment of a Cabinet Office advance information gathering team ・Dispatchment of government investigation team ・Site inspection by Prime Minister (four times) ・Site inspection by Minister of State for Disaster Management (three times) ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Invocation of Special Measures Act for Specified Disaster ・Designation as an extremely severe disaster
Volcanic activity at Kuchinoerabu-jima [Volcanic Alert Level 4] (August 15, 2018)	From around August 8, many volcanic earthquakes and large amounts of volcanic gases were observed. From around midnight on August 15, an increasing number of volcanic earthquakes were observed at deeper spots. In the small hours of the same day, an earthquake with a maximum magnitude of 1.9 (preliminary) was observed. At 10:30 a.m., the volcanic alert level was raised to 4 (prepare to evacuate).	—	—	—	—	—	—
Typhoon JEBI (1821) (September 4 - 5, 2018)	With very strong intensity, Typhoon JEBI (1821) made landfall on the southern part of Tokushima Prefecture before noon on September 4. It then made landfall again around Kobe City, Hyogo Prefecture before 2 p.m. and continued up through the Kinki region while accelerating. At 9 a.m. on the 5th, it transformed into an extra-tropical cyclone off the coast of the Russian Primorsky Krai. During the approach and passage of the typhoon, very intense winds and rains hit western to northern Japan. The Shikoku and Kinki regions experienced particularly strong winds and rains, with some areas observing record high waves.	14	980	68	833	244	・Ministerial meeting (once) ・Dispatchment of government investigation team ・Designation as an extremely severe disaster
The 2018 Hokkaido Eastern Iburi Earthquake (September 6, 2018)	Maximum seismic intensity of 7 A major power outage occurred across the prefecture.	43	782	469	1,660	—	・Deployment of a Cabinet Office advance information gathering team ・Ministerial meeting (nine times) ・Installation of government on-site communications office ・Dispatchment of government investigation team ・Site inspection by Prime Minister (once) ・Site inspection by Minister of State for Disaster Management (once) ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Designation as an extremely severe disaster
Typhoon TRAMI (1824) (September 29 - October 1, 2018)	From September 28 to dawn on the 30th, Typhoon TRAMI (1824) approached the Okinawa region with very strong intensity. It made landfall near Tanabe City, Wakayama Prefecture around 8 p.m. on the 30th while rapidly accelerating. After crossing eastern and northern Japan, it transformed into an extra-tropical cyclone over the sea east of Japan at 9 a.m. on October 1.	4	231	62	404	326	・Designation as an extremely severe disaster ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster
Earthquake centered in the Kumamoto region of Kumamoto Prefecture (January 3, 2019)	Maximum seismic intensity of Lower 6	1	3	0	0	—	—
Earthquake centered in the Central-Eastern Iburi region of Hokkaido (February 21, 2019)	Maximum seismic intensity of Lower 6	0	6	0	0	—	—
Earthquake centered offshore of Yamagata Prefecture (June 18, 2019)	Maximum seismic intensity of Upper 6	0	43	0	28	—	・Ministerial meeting (two times) ・Dispatchment of government investigation team

Name of Disaster	Major Events	Human Casualties (persons)		Houses Damaged (houses)			Remarks
		Fatalities/ Missing Persons	Injured	Completely Destroyed	Half Destroyed	Above-floor Flooding	
Heavy Rain since Late June (June 28 -July 5, 2019)	Since late June, seasonal rain front was stalling in western and around eastern Japan and warm moist air flowing toward the front has increased its activity. The total precipitation from June 28 to July 8 reached 1,089.5 mm in Ebino, Ebino City of Miyazaki Prefecture, exceeded 500 mm in Kagoshima, Miyazaki, and Kumamoto Prefectures. Resulting in the record-breaking heavy rainfalls.	2	5	11	9	92	・Ministerial meeting (three times) ・Deployment of a Cabinet Office advance information gathering team ・Designation as an extremely severe disaster
Heavy rains from Seasonal Rain Front and 2019 Typhoon Danas (1905) (July 17 – 22, 2019)	Warm and humid air around Typhoon Danas (1905) and the North Pacific Subtropical High brought heavy localized rainfall in western Japan from 20 to 21. From the night of 19 to the afternoon of 20, Goto and Tsushima in Nagasaki Prefecture experienced the record-breaking heaviest rain in decades, and at 10:05 pm on 20, an emergency heavy rain warning was issued (all warnings were cancelled by 4:10 pm on the same day). In addition, developed rain clouds stalled over Saga and Fukuoka Prefectures on the early morning of 21, resulting in record-breaking heavy rain in some areas, exceeding the July average rainfall in 24 hours. Typhoon Danas transformed into an extra-tropical cyclone at 9:00 p.m. On 21.	1	6	0	1	216	・Ministerial meeting (once) ・Dispatchment of government investigation team ・Designation as an extremely severe disaster
Typhoon FRANCISCO in 2019 (1908) (August 5 – 7, 2019)	Typhoon FRANCISCO in 2019 (1908) made landfall near Miyazaki City at around 5:00 on the 6th, and continued to move northwestward and weakened to tropical depression intensity in the Sea of Japan at 9:00 on the 7th. In Nobeoka City, Miyazaki Prefecture, and Saiki City, Oita Prefecture, it rained heavily, about 110 to 120 millimeters per hour. The total rainfall from the 5th to the 7th 24:00 was 467 millimeters in Kigashira, Naga Town, Tokushima Prefecture. In addition, the Pacific side of Kyushu and Shikoku experienced heavy rainfall of around 300 mm.	1	5	1	0	1	
Typhoon KROSA in 2019 (1910) (August 12 – 16, 2019)	Typhoon KROSA in 2019 (1910) made landfall near Kure City in Hiroshima Prefecture around 3:00 p.m. on 15 and brought heavy rain with strong winds over the wide range of western and eastern Japan on the Pacific side, with total rainfall exceeding 800 mm in some places. Though it transformed into an extra-tropical cyclone in western Hokkaido at 9 p.m. on 16, it approached Hokkaido with its strength maintained, and very intense rainfalls with strong wind hit Hokkaido and other areas until the dawn of 17.	2	58	1	0	2	・Ministerial meeting (two times) ・Designation as an extremely severe disaster
Heavy Rain Event of August 2019 related to the rain front (August 26 – 29, 2019)	The front and humid air resulted in record-breaking heavy rainfall, with total rainfall exceeding 600 mm in northern Kyushu and other areas since August 26. In particular, as the threat of serious disasters significantly increased, with record-breaking heavy rainfalls of at least100 mm per hour recorded at dawn on August 28, an emergency heavy rain warning was issued for Saga, Fukuoka and Nagasaki prefectures at 5:50 a.m. on 28.	4	4	95	890	918	・Ministerial meeting (three times) ・Deployment of a Cabinet Office advance information gathering team ・Dispatchment of government investigation team ・Site inspection by Minister of State for Disaster Management ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Designation as an extremely severe disaster
Typhoon FAXAI in 2019 (T1915) (September 7 – 9, 2019)	From July 7 to 8, the typhoon moved northward from the ocean surrounding the Ogasawara Islands to the Izu Islands, passed near the Miura Peninsula before 3:00 a.m. on 9, and made powerful landfall near Chiba City before 5:00 a.m. As the typhoon approached and passed Japan, fierce wind and rain hit the Izu Islands, the southern Kanto region, and others. The storm was a record-breaking one, with many points having the highest maximum wind speeds and the highest maximum instantaneous wind speeds ever recorded in Japan. In particular, the maximum wind velocity of 35.9 m and the maximum instantaneous wind speed of 57.5 m were observed in Chiba City.	9	160	457	4,806	125	・Deployment of a Cabinet Office advance information gathering team ・Site inspection by Minister of State for Disaster Management (three times) ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Designation as an extremely severe disaster

Name of Disaster	Major Events	Human Casualties (persons)		Houses Damaged (houses)			Remarks
		Fatalities/ Missing Persons	Injured	Completely Destroyed	Half Destroyed	Above-floor Flooding	
Typhoon HAGIBIS in 2019 (T1919) (October 10 – 13, 2019)	Before 7 p.m. on 12, the large typhoon with strong power made landfall on the Izu Peninsula. It passed through the Kanto region and blew out to the east sea of the Tohoku region before dawn on 13. The typhoon caused record rainfall over a wide area in Shizuoka and Niigata Prefectures, as well as in the Kanto-Koshin and the Tohoku regions, due to the typhoon's developed rain clouds and moist air around it. Atmospheric conditions became extremely unstable as the typhoon approached, and gusts of wind, believed to be tornadoes, were reported in Ichihara City, Chiba Prefecture.	108	375	3,229	28,107	7,524	・Establishment of Major Disaster Management Headquarters ・Ministerial meeting (two times) ・Deployment of a Cabinet Office Investigation Team ・Dispatchment of government investigation team ・Site inspection by Prime Minister (two times) ・Site inspection by Minister of State for Disaster Management (six times) ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Specified disaster designation ・Designation as an extremely severe disaster ・Major disaster designation
The Heavy Rain Event of July 2020 (July 3 - 31, 2020)	Total precipitation from July 3 to 14 exceeded half of the normal annual precipitation at some points. The rainfall was heavy for a long period of time over a wide area of western and eastern Japan, mainly in the Kyushu region. Especially in the northern Kyushu region, the 48-hour rainfall was 1.4 times more than the previous record, and several locations set new records. As a result of this record-breaking rainfall, a special warning for heavy rain was issued in Kumamoto and Kagoshima Prefectures at 4:50 on the 4th, and Fukuoka, Saga and Nagasaki Prefectures at 16:30 on the 6th. It was also issued in Gifu Prefecture at 6:30 on the 8th, and at 6:43 on the same day in Nagano Prefecture.	86	80	1,620	4,509	1,652	・Establishment of Major Disaster Management Headquarters ・Ministerial meeting ・Deployment of a Cabinet Office Investigation Team ・Site inspection by Prime Minister ・Site inspection by Minister of State for Disaster Management (6 times) ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Specified disaster designation ・Designation as a disaster of extremely severity ・Major disaster designation
Typhoon HAISHEN in 2020 (T2010) (September 5 - 7, 2020)	Typhoon HAISHEN in 2020 (T2010) approached the Nansei Islands and Kyushu from September 5 to 7 with a large and very strong storm. It then made landfall on the Korean Peninsula and turned into an extratropical cyclone at 3:00 on September 8. The maximum wind speed was 44.2 m/s and the maximum wind gust speed was 59.4 m/s at Nomozaki, Nagasaki. Violent storm or storm winds were observed mainly in the Nansei Islands and Kyushu, exceeding the first value in the history of observation, making it a record-breaking storm.	6	110	7	40	31	・Ministerial meeting (twice) ・Appeal to the public by the Minister of State for Disaster Management (twice)
Typhoon CHAN-HOM in 2020 (2014) (October 7 - 12, 2020)	Typhoon CHAN-HOM in 2020 (2014) brought record-breaking rainfall to the southern Izu Islands, exceeding 700 millimeters in many places due to the effects of the stationary front and typhoon. A heavy rain emergency warning was announced at 17:00 on the 10th in Miyake Village and Mikurajima Village in Tokyo.	0	3	0	0	0	・Ministerial meeting ・Invocation of Disaster Relief Act
Heavy Snowfall since December 16 (December 16 - 18, 2020)	Due to a strong winter pressure system, it snowed intermittently from northern Japan to western Japan, mainly on the Sea of Japan side. Heavy snowfall occurred mainly in the mountainous areas of the Kanto, Hokuriku and Tohoku regions. In particular, Fujiwara, Minakami -machi, Tone-gun, Gunma Prefecture, experienced a record-breaking snowfall, with the maximum snowfall amounts per 48 and 72 hours, ranking the first in Japan (based on observations by Automated Meteorological Data Acquisition System).	6 (*5)	63 (*4)	0	0	0	・Ministerial meeting ・Invocation of Disaster Relief Act
Heavy Snowfall since January 7 (January 7 - 11, 2021)	A low pressure system developed rapidly from January 7 to 8 in the morning. It moved from the Sea of Japan through northern Japan to the waters near the Chishima Islands. After that, strong cold air flowed into the sky over Japan, and a strong winter-type pressure pattern continued through the 11th. These factors resulted in heavy snow and wind storms over a wide area from northern Japan to western Japan. In particular, Takada, Joetsu City, Niigata Prefecture, observed 103 cm of snowfall in 24 hours on the 9th, setting a new record for the most snowfall in the history of observation. Many locations experienced record-breaking snow and wind storms.	35 (*5)	382 (*4)	1	2	1	・Ministerial meetin ・Deployment of a Cabinet Office Investigation Team ・Invocation of Disaster Relief Act
Earthquake Centered off the Coast of Fukushima Prefecture in 2021 (February 13, 2021)	Maximum intensity of 6.0 earthquake	1	186	96	1,372	0	・Ministerial meeting （twice） ・Deployment of a Cabinet Office Investigation Team ・Site inspection by Minister of State for Disaster Management (six times) ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster

*1 Established by a Ministerial meeting decision, and therefore not based on the Basic Act on Disaster Management.
*2 The number of damaged houses in the July 2012 Northern Kyushu Torrential Rains contains some duplications.
*3 The number of damaged houses due to heavy rains from June 21 to July 7, 2012 contains some duplications.
*4 The total of those caused by stranded vehicles and those caused by accidents during snow removal.
*5 Due to accidents during snow removal.
Source: Cabinet Office, Fire and Disaster Management Agency Materials, Major Disaster Management Headquarters materials

Fig. A-10 Establishment of Extreme Disaster Management Headquarters and Major Disaster Management Headquarters

As of March 1, 2021

	Name of Headquarters	Period of Establishment	Manager of Headquarters
1	Heavy Snowfall Major Disaster Management Headquarters	Jan. 29 - May 31, 1963	Minister of State
2	Niigata Earthquake Major Disaster Management Headquarters	Jun. 16 - Oct. 31, 1964	Minister of State
3	Typhoons SHIRLEY (6523), TRIX (6524), and VIRGINIA (6525) Major Disaster Management Headquarters	Sep. 17 - Dec. 17, 1965	Minister of State
4	Typhoons HELEN (6624) and IDA (6626) Major Disaster Management Headquarters	Sep. 26 - Dec. 27, 1966	Minister of State
5	1967 July and August Torrential Rains Major Disaster Management Headquarters	Jul. 9 - Dec. 26, 1967	Minister of State
6	1968 Tokachi-oki Earthquake Major Disaster Management Headquarters	May 16, 1968 - May 2, 1969	Minister of State
7	July 1972 Torrential Rains Major Disaster Management Headquarters	Jul. 8 - Dec. 19, 1972	Minister of State
8	Typhoon FRAN (7617) Major Disaster Management Headquarters	Sep. 13 - Dec. 10, 1976	Director General of National Land Agency (NLA)
9	1977 Mt. Usu Eruption Major Disaster Management Headquarters	Aug. 11, 1977 - Dec. 4, 1979	Director General of NLA
10	1978 Izu-Oshima-kinkai Earthquake Major Disaster Management Headquarters	Jan. 15 - Aug. 4, 1978	Director General of NLA
11	1978 Miyagi-ken-oki Earthquake Major Disaster Management Headquarters	Jun. 13 - Nov. 28, 1978	Director General of NLA
12	Typhoon TIP (7920) Major Disaster Management Headquarters	Oct. 20 - Dec. 4, 1979	Director General of NLA
13	July and August 1982 Torrential Rains Major Disaster Management Headquarters	Jul. 24 - Dec. 24, 1982	Director General of NLA
14	1983 Nihon-kai-chubu Earthquake Major Disaster Management Headquarters	May 26 - Dec. 23, 1983	Director General of NLA
15	July 1983 Torrential Rains Major Disaster Management Headquarters	Jul. 23 - Dec. 23, 1983	Director General of NLA
16	1983 Miyake Island Eruption Major Disaster Management Headquarters	Oct. 4, 1983 - Jun. 5, 1984	Director General of NLA
17	1984 Nagano-ken-seibu Earthquake Major Disaster Management Headquarters	Sep. 16, 1984 - Feb. 19, 1985	Director General of NLA
18	1991 Mt. Unzen Eruption Major Disaster Management Headquarters	Jun. 4, 1991 - Jun. 4, 1996	Director General of NLA
19	1993 Hokkaido-nansei-oki Earthquake Major Disaster Management Headquarters	Jul. 13, 1993 - Mar. 31, 1996	Director General of NLA
20	August 1993 Torrential Rains Major Disaster Management Headquarters	Aug. 9, 1993 - Mar. 15, 1994	Director General of NLA
21	1995 Great Hanshin-Awaji Earthquake Major Disaster Management Headquarters	Jan. 17, 1995 - Apr. 21, 2002	Director General of NLA ↓ Minister of Great Hanshin-Awaji Earthquake Measures ↓ Director General of NLA ↓ Minister of State for Disaster Management
	Great Hanshin-Awaji Earthquake Extreme Disaster Management Headquarters*1	Jan. 19 - Apr. 28, 1995	Prime Minister
22	1997 Diamond Grace Oil Spill Major Disaster Management Headquarters	Jul. 2-11, 1997	Minister of Transport
23	2000 Mt. Usu Eruption Major Disaster Management Headquarters	Mar. 31, 2000 - Jun. 28, 2001 *2	Director General of NLA ↓ Minister of State for Disaster Management
24	2000 Miyake Island Eruption and Niijima and Kozushima Island Earthquake Emergency Management Headquarters	Aug. 29, 2000 - May 15, 2002	Director General of NLA ↓ Minister of State for Disaster Management
	2000 Miyake Island Eruption Major Disaster Management Headquarters*3	May 16, 2002 - Mar. 31, 2005	
25	Typhoon TOKAGE (0423) Major Disaster Management Headquarters	Oct. 21, 2004 - Mar. 31, 2007	Minister of State for Disaster Management
26	2004 Mid Niigata Prefecture Earthquake Major Disaster Management Headquarters	Oct. 24, 2004 - Mar. 31, 2008	Minister of State for Disaster Management
27	2011 Great East Japan Earthquake Extreme Disaster Management Headquarters	Mar. 11, 2011 -	Prime Minister
28	Typhoon TALAS (1112) Major Disaster Management Headquarters	Sep. 4, 2011 - Dec. 26, 2014	Minister of State for Disaster Management
29	2014 Torrential Rains Major Disaster Management Headquarters	Feb. 18 - May 30, 2014	Minister of State for Disaster Management
30	August 2014 Torrential Rains Major Disaster Management Headquarters	Aug. 22, 2014 - Jan. 9, 2015	Minister of State for Disaster Management
31	2014 Mt. Ontake Eruption Major Disaster Management Headquarters	Sep. 28, 2014 - Nov. 9, 2015	Minister of State for Disaster Management
32	2016 Emergency Response Headquarters for the Earthquake Centered in the Kumamoto Region of Kumamoto Prefecture	Apr. 14, 2016 - Nov. 30, 2018	Minister of State for Disaster Management
33	Emergency Response Headquarters for the Heavy Rain in July 2018	Jul. 8 - Nov. 30, 2018	Minister of State for Disaster Management
34	Typhoon Hagibis in 2019 (T1919) Major Disaster Management Headquarters	Oct. 13, 2019 – Mar. 31, 2020	Minister of State for Disaster Management
35	Major Disaster Management Headquarters for the Heavy Rain Event of July 2020	Jul. 5 - Dec. 25, 2020	Minister of State for Disaster Management

Notes: The above are Extreme Disaster Management Headquarters and Major Disaster Management Headquarters based on the Basic Act on Disaster Management (Act No. 223 of 1961).

*1 Established within the Cabinet Office based on a Ministerial meeting resolution, not based on the Basic Act on Disaster Management.

*2 Based on reports that the eruption had subsided. Upon dissolution of the Headquarters, the Mt. Usu Eruption Disaster Restoration and Recovery Measures Council was established.

*3 The names of Niijima Island and Kozushima Island were changed with the conclusion of response measures.

Source: Cabinet Office

Fig. A-11 Dispatchment of Government Investigation Teams (Since the Great Hanshin-Awaji Earthquake)

As of March 1, 2021

Year	Name of Disaster	Deployment Dates	Prefecture Surveyed	Team Leader
1995	1995 Hyogo-ken-Nanbu Earthquake (Great Hanshin-Awaji Earthquake)	Jan. 17-18	Hyogo	Director General of National Land Agency (NLA)
1997	July 1997 Torrential Rains from Seasonal Rain Front	Jul. 11-12	Kagoshima, Kumamoto	Director General of NLA
1998	End of August 1998 Torrential Rains	Aug. 28	Tochigi, Fukushima	Parliamentary Vice-Minister of National Land
1999	Heavy Rains Starting June 23, 1999	Jun. 30 - Jul. 1	Hiroshima	Director General of NLA
	Heavy Rains from Typhoon BART (9918) and Rain Front	Sep. 25	Kumamoto	Director General of NLA
2000	2000 Eruption of Mt. Usu	Mar. 31 - Apr. 1	Hokkaido	Director General of NLA
	2000 Tottori-seibu Earthquake	Oct. 7	Tottori	Director General of NLA
2001	2001 Geiyo Earthquake	Mar. 29	Hiroshima, Ehime	Parliamentary Vice-Minister of Cabinet Office
2003	July Seasonal Rain Front Torrential Rains	Jul. 22	Kumamoto, Kagoshima	Minister of State for Disaster Management
	Northern Miyagi Earthquake	Jul. 27	Miyagi	Minister of State for Disaster Management
	2003Tokachi-oki Earthquake	Sep. 26-27	Hokkaido	State-Minister of the Cabinet Office
2004	July 2004 Niigata and Fukushima Torrential Rains	Jul. 14	Niigata	Minister of State for Disaster Management
		Jul. 15	Fukushima	State-Minister of the Cabinet Office
	July 2004 Fukui Torrential Rains	Jul. 20	Fukui	State-Minister of the Cabinet Office
	Typhoon MEARI (0421)	Oct. 1	Mie	Minister of State for Disaster Management
	Typhoon MA-ON (0422)	Oct. 14	Shizuoka	State Minister of the Cabinet Office
	Typhoon TOKAGE (0423)	Oct. 22	Hyogo, Kyoto	Minister of State for Disaster Management
		Oct. 22	Kagawa, Okayama	State-Minister of the Cabinet Office
	2004 Mid Niigata Prefecture Earthquake	Oct. 24	Niigata	Minister of State for Disaster Management
2005	Fukuoka-ken-Seihou-oki Earthquake	Mar. 20-21	Fukuoka	State-Minister of the Cabinet Office
	Miyagi-ken-oki Earthquake	Aug. 16-17	Miyagi	Parliamentary Vice-Minister of Cabinet Office
	Typhoon NABI (0514)	Sep. 9	Miyazaki	Minister of State for Disaster Management
2006	Heavy Rains from Seasonal Rain Front Starting July 4	Jul. 21	Nagano	Minister of State for Disaster Management
		Jul. 25	Kagoshima	State-Minister of the Cabinet Office
	Typhoon SHANSHAN (0613)	Sep. 19	Miyazaki	Minister of State for Disaster Management
	Tornado in Saroma, Hokkaido	Nov. 7-8	Hokkaido	Minister of State for Disaster Management
2007	2007 Noto-hanto Earthquake	Mar. 25-26	Ishikawa	Minister of State for Disaster Management
	Heavy Rains from Typhoon MAN-YI (0704) and Seasonal Rain Front	Jul. 13	Kumamoto	State-Minister of the Cabinet Office
	2007 Niigataken Chuetsu-oki Earthquake	Jul. 16	Niigata	Minister of State for Disaster Management
2008	2008 Iwate-Miyagi Nairiku Earthquake	Jun. 14-15	Iwate, Miyagi	Minister of State for Disaster Management
	Earthquake Epicentered Along Northern Coast of Iwate Prefecture	Jul. 24	Iwate, Aomori	Minister of State for Disaster Management
	End of August 2008 Torrential Rains	Aug. 29	Aichi	Minister of State for Disaster Management
2009	July 2009 Torrential Rains in Chubu and Northern Kyushu	Jul. 22	Yamaguchi	Minister of State for Disaster Management
		Jul. 27	Fukuoka	Minister of State for Disaster Management
	Typhoon ETAU (0909)	Aug. 11	Hyogo, Okayama	Minister of State for Disaster Management
2011	2011 Tohoku Earthquake and Tsunami (Great East Japan Earthquake)	Mar. 11	Miyagi	State-Minister of the Cabinet Office
		Mar. 12	Iwate	State-Minister of the Cabinet Office
		Mar. 12	Fukushima	Parliamentary Vice-Minister of Finance
	July 2011 Niigata and Fukushima Torrential Rains	Jul. 31	Niigata, Fukushima	Minister of State for Disaster Management
		Aug. 2	Fukushima	State-Minister of the Cabinet Office
	Typhoon TALAS (1112)	Sep. 4-7	Wakayama, Nara, Mie	Parliamentary Vice-Minister of Cabinet Office
		Sep. 6	Nara	Minister of Land, Infrastructure, Transport and Tourism
2012	May 2012 Gust	May 7	Ibaraki, Tochigi	State-Minister of the Cabinet Office
	July 2012 Torrential Rains in Northern Kyushu	Jul. 13-14	Kumamoto, Oita	Minister of State for Disaster Management
		Jul. 21-22	Fukuoka, Oita, Kagoshima	Minister of State for Disaster Management

Year	Name of Disaster	Deployment Dates	Prefecture Surveyed	Team Leader
2013	Heavy Snow in2012	Mar. 4-5	Hokkaido	Parliamentary Vice-Minister of Cabinet Office, Special Advisor to the Prime Minister
	Heavy Rains with Seasonal Rain Front	Jul. 29-30	Shimane, Yamaguchi	State-Minister of the Cabinet Office
		Aug. 3	Yamagata, Fukushima	Parliamentary Vice-Minister of Cabinet Office
		Aug. 3	Niigata	Parliamentary Vice-Minister of Agriculture, Forestry and Fisheries
		Aug. 3	Iwate, Miyagi	Parliamentary Vice-Minister of Land, Infrastructure, Transport and Tourism
		Aug. 9	Shimane, Yamaguchi	Minister of State for Disaster Management
		Aug. 13	Akita	State-Minister of the Cabinet Office
		Aug. 13	Iwate, Akita	Parliamentary Vice-Minister of Cabinet Office
	Tornadoes on September 2 and 4	Sep. 3	Saitama	Parliamentary Vice-Minister of Cabinet Office
		Sep. 4	Chiba	Parliamentary Vice-Minister of Cabinet Office
	Heavy Rains from Typhoon MAN-YI (1318)	Sep. 17	Saitama	Parliamentary Vice-Minister of Cabinet Office
		Sep. 18	Kyoto	Acting Minister of State for Disaster Management
		Sep. 18	Shiga, Fukui	State-Minister of the Cabinet Office
		Sep. 19	Mie	Parliamentary Vice-Minister of Cabinet Office
		Sep. 19-20	Aomori, Iwate, Akita	Special Advisor to the Prime Minister
	Typhoon WIPHA (1326)	Oct. 19	Oshimacho (Tokyo)	Minister of State for Disaster Management
2014	Heavy Snow in 2013	Feb. 6	Akita	State-Minister of the Cabinet Office
		Feb. 17	Yamanashi	Parliamentary Vice-Minister of Cabinet Office
		Mar. 7	Tokyo, Yamanashi	State-Minister of the Cabinet Office, State-Minister of the Environment
		Mar. 10	Saitama	State-Minister of the Cabinet Office
		Mar. 15	Nagano, Gunma	State-Minister of the Cabinet Office
	Typhoon NEOGURI (1408) and Seasonal Rain Front	Jul. 11	Nagano	Parliamentary Vice-Minister of Cabinet Office
		Jul. 12	Yamagata	Parliamentary Vice-Minister of Cabinet Office
		Jul. 14-15	Okinawa	Parliamentary Vice-Minister of Cabinet Office
	Typhoons NAKRI (1412) & HALONG (1411)	Aug. 11-13	Tokushima, Kochi	State-Minister of the Cabinet Office
		Aug. 11	Tochigi	Parliamentary Vice-Minister of Cabinet Office
	Heavy Rains Starting August 15	Aug. 18-19	Hyogo, Kyoto	State-Minister of the Cabinet Office
		Aug. 19	Gifu	Parliamentary Vice-Minister of Cabinet Office
	Heavy Rains in Hiroshima Prefecture Starting August 19	Aug. 20-21	Hiroshima	Minister of State for Disaster Management
		Sep. 6	Hiroshima	Minister of State for Disaster Management
		Sep. 17	Hiroshima	Parliamentary Vice-Minister of Cabinet Office
	Mt. Ontake Eruption	Sep. 28	Nagano	State-Minister of the Cabinet Office
		Oct. 11	Nagano	Minister of State for Disaster Management
	Earthquake Epicentered in Northern Nagano Prefecture	Nov. 23	Nagano	Parliamentary Vice-Minister of Cabinet Office
		Dec. 2	Nagano	Minister of State for Disaster Management
	Heavy Snow in 2014	Dec. 9	Tokushima	Minister of State for Disaster Management
2015	Eruption of Kuchinoerabu-jima	May 29-30	Kagoshima	State-Minister of the Cabinet Office
	Torrential Rain of September 2015 in the Kanto and Tohoku Regions	Sep. 11	Ibaraki, Tochigi	State-Minister of the Cabinet Office
	Typhoon DUJUAN (1521)	Sep. 30-Oct. 1	Okinawa	Parliamentary Vice-Minister of Cabinet Office
2016	The 2016 Kumamoto Earthquake	Apr. 15	Kumamoto	State-Minister of the Cabinet Office
	Typhoons KOMPASU (1611) & MINDULLE (1609)	Aug. 28-29	Hokkaido	Parliamentary Vice-Minister of Cabinet Office
	Typhoon LIONROCK (1610)	Aug. 31-Sep. 1	Iwate	Parliamentary Vice-Minister of Cabinet Office
		Sep. 5	Hokkaido	Minister of State for Disaster Management
	Earthquake centered in the central Tottori Prefecture	Oct. 29	Tottori	State-Minister of the Cabinet Office
2017	Heavy Rains from Seasonal Rain Front Starting June 30, 2017 and Typhoon NANMADOL (1703)	Jul. 7	Fukuoka	State-Minister of the Cabinet Office
		Jul. 9	Oita, Fukuoka	Minister of State for Disaster Management
	Typhoon LAN (1721)	Oct. 27	Osaka, Wakayama	Minister of State for Disaster Management
2018	Heavy Snow in 2017	Feb. 24	Fukui	Minister of State for Disaster Management
	The Heavy Rain Event of July 2018	Jul. 9	Okayama, Hiroshima	Minister of State for Disaster Management
	Typhoon JEBI (1821)	Sep. 11	Hyogo Osaka	Minister of State for Disaster Management
	The 2018 Hokkaido Eastern Iburi Earthquake	Sep. 19	Hokkaido	Minister of State for Disaster Management

2019	Earthquake centered offshore of Yamagata Prefecture	Jul. 1	Niigata, Yamagata	Minister of State for Disaster Management
	Heavy Rains from Seasonal Rain Front and Typhoon Danas (1905)	Jul. 24 - 25	Nagasaki, Kagoshima	Minister of State for Disaster Management
	Heavy rainfall associated with the Baiu front in August 2019	Aug. 31	Saga	Minister of State for Disaster Management
	Typhoon Hagibis in 2019 (T1919)	Oct. 14	Fukushima	Minister of State for Disaster Management

Source: Cabinet Office

Fig. A-12 Application of the Disaster Relief Act (Since the Great Hanshin-Awaji Earthquake)

As of March 4, 2021

Year	Name of Disaster	Date of Invocation	Prefecture	No. of Municipalities to which the Act was applied
1995	1995 Hyogo-ken-Nanbu Earthquake (Great Hanshin-Awaji Earthquake)	Jan. 17	Hyogo	20
			Osaka	5
	Niigata-ken-Hokubu Earthquake	Apr. 1	Niigata	1
	Heavy Rain Starting on July 3	Jul. 5	Ehime	1
	July 1995 Seasonal Rain Front Torrential Rains	Jul. 11	Niigata	2
		Jul. 11, Jul. 12	Nagano	2
	Heavy Rain Starting on August 10	Aug. 10	Niigata	1
1996	Typhoon VIOLET (9617)	Sep. 22	Saitama	1
		Sep. 22	Chiba	2
1997	July 1997 Seasonal Rain Front Torrential Rains	Jul. 10	Kagoshima	1
	Typhoon OLIWA (9719)	Sep. 16	Oita	1
			Miyazaki	4
			Kagoshima	1
1998	Early August 1998 Torrential Rains	Aug. 4	Niigata	3
	End of August 1998 Torrential Rains	Aug. 27	Fukushima	3
		Aug. 28	Ibaraki	1
		Aug. 27, Aug. 30	Tochigi	4
		Aug. 28	Saitama	1
		Aug. 3	Shizuoka	1
	Typhoon STELLA (9805)	Sep. 16	Saitama	1
	Typhoon VICKI (9807)	Sep. 22	Fukui	1
			Hyogo	1
			Nara	1
	Heavy Rains of September 23–25, 1998	Sep. 25	Kochi	6
	Typhoon ZEB (9810)	Oct. 17	Okayama	4
1999	Heavy Rains Starting June 23, 1999	Jun. 29	Hiroshima	2
			Fukuoka	1
	Torrential Rains in Tsushima Region on August 27–28, 1999	Aug. 27	Nagasaki	1
	Heavy Rains from Typhoon BART (9918) and Rain Front	Sep. 24	Yamaguchi	9
			Fukuoka	1
			Kumamoto	9
	Tokaimura Criticality Accident	Sep. 3	Ibaraki	2
	Heavy Rains Starting October 27, 1999	Oct. 28	Aomori	1
			Iwate	1
2000	2000 Eruption of Mt. Usu	Mar. 29	Hokkaido	3
	2000 Miyake Is. Eruption	Jun. 26	Tokyo	1
	2000 Niijima and Kozushima Is. Earthquake	Jul. 1, Jul. 15	Tokyo	2
	Typhoon KIROGI (0003)	Jul. 8	Saitama	1
	Heavy Rains from 2000 Autumn Rain Front and Typhoon SAOMAI (0014)	Sep. 11	Aichi	21
			Gifu	1
	2000 Tottori-ken-Seibu Earthquake	Oct. 6	Tottori	6
			Shimane	2
2001	2001 Geiyo Earthquake	Mar. 24	Hiroshima	13
			Ehime	1
	Heavy Rains of September 6, 2001	Sep. 6	Kochi	2
	Typhoon NARI (0116)	Sep. 8, Sep. 11	Okinawa	2
2002	Typhoon CHATAAN (026)	Jul. 10	Iwate	1
		Jul. 11	Gifu	1
2003	July Seasonal Rain Front Torrential Rains	Jul. 19	Fukuoka	5
		Jul. 20	Kumamoto	1
	Northern Miyagi Earthquake	Jul. 26	Miyagi	5
	Typhoon ETAU (0310)	Aug. 9	Hokkaido	3
2004	July 2004 Niigata and Fukushima Torrential Rains	Jul. 13	Niigata	7
	July 2004 Fukui Torrential Rains	Jul. 18	Fukui	5
	Typhoon NAMTHEUN (0410), Typhoon MALOU (0411), and Related Heavy Rains	Jul. 31	Tokushima	2

Year	Name of Disaster	Date of Invocation	Prefecture	No. of Municipalities to which the Act was applied
2004	Typhoon MEGI (0415) and Heavy Rains from Rain Front	Aug. 17	Ehime	1
			Kochi	1
	Typhoon CHABA (0416)	Aug. 30	Okayama	9
			Kagawa	13
			Ehime	1
			Miyazaki	2
	Typhoon SONGDA (0418)	Sep. 7	Hiroshima	2
	Typhoon MEARI (0421)	Sep. 29	Mie	5
			Ehime	4
			Hyogo	2
	Typhoon MA-ON (0422)	Oct. 9	Shizuoka	1
	Typhoon TOKAGE (0423)	Oct. 2	Miyazaki	1
			Tokushima	4
			Kagawa	9
			Hyogo	18
			Gifu	1
			Kyoto	7
	2004 Mid Niigata Prefecture Earthquake	Oct. 23	Niigata	54
2005	2005 Fukuoka-ken-Seihou-oki Earthquake	Mar. 20	Fukuoka	1
	Typhoon NABI (0514)	Sep. 4	Tokyo	2
		Sep. 6	Yamaguchi	2
			Kochi	1
			Miyazaki	13
		Sep. 4	Kagoshima	1
	2006 Heavy Snowfall	Jan. 6, Jan. 8, Jan. 11, Jan. 13	Niigata	11
		Jan. 7, Jan. 12	Nagano	8
2006	June 2006 Extended Rain Landslide Disaster	Jun. 15	Okinawa	2
	Heavy Rains from Seasonal Rain Front Starting July 4	Jul. 19	Nagano	3
		Jul. 22	Kagoshima	6
			Miyazaki	1
	Typhoon SHANSHAN (0613)	Sep. 17	Miyazaki	1
	Tornado in Saroma, Hokkaido	Nov. 7	Hokkaido	1
2007	2007 Noto-hanto Earthquake	Mar. 25	Ishikawa	7
	Heavy Rains from Typhoon MAN-YI (0704) and Seasonal Rain Front	Jul. 6	Kumamoto	1
	2007 Niigataken Chuetsu-oki Earthquake	Jul. 16	Niigata	10
	Typhoon USAGI (0705)	Aug. 2	Miyazaki	1
	2007 Heavy Rains from Typhoon NARI (0711) and Rain Front	Sep. 17	Akita	2
2008	Low-Pressure System from February 23 to 24	Feb. 24	Toyama	1
	2008 Iwate-Miyagi Nairiku Earthquake	Jun. 14	Iwate	5
			Miyagi	2
	Heavy Rains Starting July 28	Jul. 28	Toyama	1
			Ishikawa	1
	End of August 2008 Torrential Rains	Aug. 28	Aichi	2
2009	July 2009 Torrential Rains in Chubu and Northern Kyushu	Jul. 21	Yamaguchi	2
		Jul. 24	Fukuoka	1
	Typhoon ETAU (0909)	Aug. 9	Hyogo	3
			Okayama	1
2010	2010 Heavy Rains from Seasonal Rain Front	Jul. 14	Hiroshima	2
		Jul. 15	Yamaguchi	1
		Jul. 16	Hiroshima	1
	Heavy Rains in Amami Region, Kagoshima Prefecture	Oct. 20	Kagoshima	3
2011	Heavy Snow Starting November 2010	Jan. 27	Niigata	4
		Jan. 30	Niigata	2
		Jan. 31	Niigata	3
	Mt. Kirishima (Shinmoedake) Eruption	Jan. 30	Miyazaki	1
		Feb. 10	Miyazaki	1

Year	Name of Disaster	Date of Invocation	Prefecture	No. of Municipalities to which the Act was applied
2011	2011 Great East Japan Earthquake	Mar. 11	Aomori	2
			Iwate	34
			Miyagi	35
			Fukushima	59
			Ibaraki	37
			Tochigi	15
			Chiba	8
			Tokyo	47
	July 2011 Niigata and Fukushima Torrential Rains	Jul. 29	Niigata	15
			Fukushima	9
	Typhoon TALAS (1112)	Sep. 2	Mie	3
			Nara	10
			Wakayama	5
			Okayama	1
		Sep. 3	Tottori	2
	Typhoon ROKE (1115)	Sep. 21	Aomori	1
			Fukushima	1
2012	Heavy Winter Snowfall	Jan. 14	Niigata	2
		Jan. 28	Niigata	4
		Jan.31	Niigata	1
		Feb. 1	Aomori	2
			Nagano	5
		Feb. 3	Niigata	4
		Feb. 4	Niigata	1
	May 2012 Gust	May 6	Ibaraki	4
			Tochigi	3
	Heavy Rains Starting July 3	Jul. 3	Fukuoka	1
			Oita	2
	Heavy Rains from Seasonal Rain Front Starting July 11	Jul. 12	Kumamoto	5
			Oita	1
		Jul. 13	Fukuoka	7
	Heavy Rains Starting August 13	Aug. 14	Kyoto	1
	Typhoon SANBA (1216)	Sep. 15	Kagoshima	1
	November 27 Destructive Snow Storm	Nov. 27	Hokkaido	7
2013	Heavy Winter Snowfall	Feb. 22	Niigata	8
		Feb. 25	Niigata	1
		Feb. 26	Yamagata	1
		Feb. 28	Yamagata	1
	Snow Melt Landslide	May 1	Yamagata	1
	Heavy Rains Starting July 22	Jul. 22	Yamagata	4
	Heavy Rains Starting July 28	Jul. 28	Yamaguchi	3
			Shimane	1
	Heavy Rains Starting August 9	Aug. 9	Akita	3
			Iwate	1
	Heavy Rains Starting August 23	Aug. 23	Shimane	1
	September 2 Gust	Sep. 2	Saitama	2
	Typhoon MAN-YI (1318)	Sep. 16	Saitama	1
			Kyoto	2
	Typhoon DANAS (1324)	Oct. 7	Kagoshima	1
	Typhoon WIPHA (1326)	Oct. 16	Tokyo	1
			Chiba	1

Year	Name of Disaster	Date of Invocation	Prefecture	No. of Municipalities to which the Act was applied
2014	Heavy Winter Snowfall	Feb. 15	Nagano	4
			Gunma	1
			Yamanashi	16
		Feb. 17	Gunma	7
			Saitama	7
		Feb. 18	Gunma	1
			Yamanashi	3
		Feb. 21	Yamanashi	2
	Heavy Rains from Typhoon NEOGURI (1408)	Jul. 9	Nagano	1
			Yamagata	1
	Typhoon NAKRI (1412)	Aug. 3	Kochi	1
	Typhoon HALONG (1411)	Aug. 9	Kochi	3
			Tokushima	1
	Heavy Rains Starting August 15, 2014	Aug. 17	Kyoto	1
			Hyogo	1
	Heavy Rains Starting August 19, 2014	Aug. 20	Hiroshima	1
	Damage Related to Mt. Ontake Eruption	Sep. 27	Nagano	2
	Nagano Prefecture Kamishiro Fault Earthquake	Nov. 22	Nagano	3
	Heavy Snow Starting December 5	Dec. 8	Tokushima	3
2015	Eruption of Kuchinoerabu-jima	May 29	Kagoshima	1
	Torrential Rain of September 2015 in the Kanto and Tohoku Regions	Sep. 9	Ibaraki	10
			Tochigi	8
		Sep. 10	Miyagi	8
	Typhoon DUJUAN (1521)	Sep. 28	Okinawa	1
2016	2016 Kumamoto Earthquake	Apr. 14	Kumamoto	45
	Typhoon LIONROCK (1610)	Aug. 30	Hokkaido	20
			Iwate	12
	2016 Earthquake centered in the central Tottori Prefecture	Oct. 21	Tottori	4
	2016 Conflagration in Itoigawa City, Niigata Prefecture	Dec. 22	Niigata	1
2017	July 2017 Northern Kyushu Heavy Rain	Jul. 5	Fukuoka	3
		Jul. 5	Oita	2
	Heavy Rain Starting on July 22, 2017	Jul. 22	Akita	1
	Typhoon TALIM (1718)	Sep. 17	Oita	2
	Typhoon LAN (1721)	Oct. 22	Mie	2
		Oct. 22	Kyoto	1
		Oct. 21	Wakayama	1
2018	Heavy Snow Starting February 4, 2018	Feb. 6	Fukui	8
		Feb. 13	Fukui	1
	Heavy Snowfall in FY2017	Feb. 14	Niigata	5
	2018 Earthquake centered in the northern Osaka Prefecture	Jun. 18	Osaka	13
	The Heavy Rain Event of July 2018	Jul. 5	Kyoto	9
			Hyogo	6
			Okayama	19
			Hiroshima	15
			Ehime	7
			Fukuoka	2
		Jul. 6	Gifu	17
			Hyogo	5
			Tottori	10
			Shimane	2
			Okayama	2
			Yamaguchi	1
			Kochi	3
		Jul. 7	Hyogo	4
			Kochi	1
		Jul. 8	Gifu	4
			Kochi	3
	Heavy Rain Starting on August 30, 2018	Aug. 31	Yamagata	7
	The 2018 Hokkaido Eastern Iburi Earthquake	Sep. 6	Hokkaido	179

Year	Name of Disaster	Date of Invocation	Prefecture	No. of Municipalities to which the Act was applied
2019	Heavy rainfall associated with Seasonal Rain Front in August 2019	Aug. 28	Saga	20
	Disasters caused by Typhoon Faxai in 2019 (T1915)	Sep. 8	Tokyo	1
	Electrical blackout due to the influence of Typhoon Faxai in 2019 (T1915)	Sep. 9	Chiba	41
	Disasters caused by Typhoon HAGIBIS in 2019 (T1919)	Oct. 12	Iwate	14
			Miyagi	34
			Sendai City	1
			Fukushima	55
			Ibaraki	30
			Tochigi	21
			Gunma	30
			Saitama	48
			Tokyo	28
			Kanagawa	17
			Kawasaki City	1
			Sagamihara City	1
			Niigata	3
			Yamanashi	20
			Nagano	43
			Shizuoka	2
		—	(Tokyo)	Aforementioned (1)
			(Chiba)	Aforementioned (41)
2020	The Heavy Rain Event of July 2020	Jul. 4	Kumamoto	16
			Kagoshima	11
		Jul. 6	Fukuoka	4
			Saga	1
			Kumamoto	10
			Oita	4
		Jul. 8	Nagano	14
			Gifu	6
		Jul. 13	Shimane	1
		Jul. 28	Yamagata	31
	Disasters Associated with Typhoon Chan-Hom in 2020	Oct. 10	Tokyo	2
	Disaster Caused by Heavy Snowfall since December 16, 2020	Dec. 17	Niigata	2
	Disaster Caused by Heavy Snowfall since January 7, 2021	Jan. 7	Akita	7
		Jan. 9	Toyama	4
			Fukui	3
		Jan. 10	Niigata	6
			Fukui	2
	Disaster Caused by Earthquake Centered off the Coast of Fukushima Prefecture in 2021	Feb. 13	Fukushima	17
	Large-Scale Fire in Ashikaga City, Tochigi Prefecture in 2021	Feb. 23	Tochigi	1
	Landslide in Itoigawa City, Niigata Prefecture, 2021	Mar. 4	Niigata	1

Source: Cabinet Office

Fig. A-13 Designations of Extremely Severe Disasters in the Past Five Years

Title of Legislation	Disaster Name	Main Affected Areas	Main Applicable Measures								Other Applicable Measures
			Art. 3, 4	Art. 5	Art. 6	Art. 7	Art. 12	Art. 16	Art. 17	Art. 19	Art. 24	
Cabinet Order on the Extremely Severe Disaster Designation and Identification of Essential Response Measures for Torrential Rains and Rainstorms from June 2 to July 26, 2015	Seasonal Rain Front/Typhoon CHAN-HOM (1509)/ Typhoon ANGKA (1511)/ Typhoon HALOLA (1512)	Kumamoto Pref.	●	○							○ *1	
Cabinet Order on the Extremely Severe Disaster Designation and Identification of Essential Response Measures for the Districts of Odai Town, Taki-gun and Kihoku Town, Kitamuro-gun, Mie Prefecture Due to Rainstorms on August 24 and 26, 2015	Typhoon GONI (1515)	Mie Pref.		●							●	
Cabinet Order on the Extremely Severe Disaster Designation and Identification of Essential Response Measures for Rainstorms and Torrential Rains from September 7 to 11, 2015	Typhoon ETAU (1518), etc.	Miyagi, Fukushima, Ibaraki, and Tochigi Pref.	●	○	○		●				○ *1	
Cabinet Order on the Extremely Severe Disaster Designation and Identification of Essential Response Measures for Specified Regions in 2015	2015 Regional Disasters	—	●	●							●	
Cabinet Order on the Extremely Severe Disaster Designation and Identification of Essential Response Measures for the 2016 Kumamoto Earthquake	The 2016 Kumamoto Earthquake	Kumamoto Pref., etc.	○	○	○		○	○	○	○	○	○
Cabinet Order on the Extremely Severe Disaster Designation and Identification of Essential Response Measures for Torrential Rains from June 6 to July 15, 2016	Seasonal Rain Front	Kumamoto and Miyazaki Pref.	●	○							○ *1	
Cabinet Order on the Extremely Severe Disaster Designation and Identification of Essential Response Measures for Rainstorms and Torrential Rains from August 16 to September 1, 2016	Typhoon CHANTHU (1607)/ Typhoon MINDULLE (1609)/ Typhoon LIONROCK (1610)/ Typhoon KOMPASU (1611), etc.	Hokkaido and Iwate Pref.	○	○	○	○ *2	●	○	○	○	○	
Cabinet Order on the Extremely Severe Disaster Designation and Identification of Essential Response Measures for Rainstorms and Torrential Rains from September 17 to 21, 2016	Typhoon MALAKAS (1616)	Miyazaki and Kagoshima Pref.	●	○	○						○ *1	
Cabinet Order on the Extremely Severe Disaster Designation and Identification of Essential Response Measures for Specified Regions in 2016	2016 Regional Disasters	—	●	●							●	
Cabinet Order on the Extremely Severe Disaster Designation and Identification of Essential Response Measures for Torrential Rains and Rainstorms on June 7 - July 27, 2017	Seasonal Rain Front (Northern Kyushu Heavy Rain, etc.)/ Typhoon NANMADOL (1703)	Fukuoka and Oita Pref.	●	○	○		●				○ *1	
Cabinet Order on the Extremely Severe Disaster Designation and Identification of Essential Response Measures for Rainstorms and Torrential Rains on September 15 - 19, 2017	Typhoon TALIM (1718)	Kyoto, Ehime, and Oita Pref.	●	○							○ * 1	
Cabinet Order on the Extremely Severe Disaster Designation and Identification of Essential Response Measures for Rainstorms on October 21 - 23, 2017	Typhoon LAN (1721)	Niigata and Mie Pref., Kinki region	●	○	○						○ * 1	○
Cabinet Order on the Extremely Severe Disaster Designation and Identification of Essential Response Measures for Specified Regions in 2017	2017 Regional Disasters	—	●	●							●	
Cabinet Order on the Extremely Severe Disaster Designation and Identification of Essential Response Measures for Torrential Rains and Rainstorms from May 20 to July 10, 2018	Seasonal Rain Front (The Heavy Rain Event of July 2018, etc.)/ Typhoon MALIKSI (1805)/ Typhoon GAEMI (1806)/ Typhoon PRAPIROON (1807)/ Typhoon MARIA (1808)	Okayama, Hiroshima and Ehime Pref.	○	○	○		○	○	○	○	○	○

Title of Legislation	Disaster Name	Main Disaster-Affected Regions	Main Applicable Measures								Other Applicable Measures
			Art. 3, 4	Art. 5	Art. 6	Art. 7	Art. 12	Art. 16	Art. 17	Art. 19	Art. 24	
Cabinet Order on the Extremely Severe Disaster Designation and Identification of Essential Response Measures for the Districts of Awashimaura Village, Iwafune-gun, Niigata Prefecture Due to Rainstorms and Torrential Rains from August 20 to September 5, 2018	Typhoons SOULIK (1819), CIMARON (1820), and JEBI (1821)	Wakayama, Nara, Osaka, Nagano and Niigata Pref.	●	●	●						●	●
Cabinet Order on the Extremely Severe Disaster Designation and Identification of Essential Response Measures for the 2018 Hokkaido Eastern Iburi Earthquake	The 2018 Hokkaido Eastern Iburi Earthquake	Hokkaido	○	○	○		●	○	○	○	○	○
Cabinet Order on the Extremely Severe Disaster Designation and Identification of Essential Response Measures for Rainstorms from September 28 to October 1, 2018	Typhoon TRAMI (1824)	Tottori, Miyazaki and Kagoshima Pref.	●	○	○						○ *1	
Cabinet Order on the Extremely Severe Disaster Designation and Identification of Essential Response Measures for Specified Regions in 2018	2018 Regional Disasters	—	●	●	●						●	●
Cabinet Order on the Extremely Severe Disaster Designation and Identification of Essential Response Measures for Torrential Rains and Rainstorms from June 6 to July 24, 2019	Seasonal Rain Front/ Typhoon SEPAT (1903) and DANAS (1905)	Kagoshima and Kumamoto Pref.		○							○	
Cabinet Order on the Extremely Severe Disaster Designation and Identification of Essential Response Measures for due to Rainstorms and Torrential Rains from August 13 to September 24, 2018	Heavy Rains from Rain Front and Typhoons KROSA (1910), LINGLING (1913), FAXAI (1915), and TAPAH (1917)	Saga and Chiba Pref.	●	○	○		●				○ *1	
Cabinet Order on the Extremely Severe Disaster Designation and Identification of Essential Response Measures for due to Rainstorms and Torrential Rains from October 11 to 26, 2019	Typhoons HAGIBIS (1919), NEOGURI (1920) and BUALOI (1921)	Iwate, Miyagi, Fukushima, Ibaraki, Tochigi, Gunma, Saitama, Chiba, Tokyo, Kanagawa, Niigata, Yamanashi, Nagano and Shizuoka Pref.	○	○	○		○	○	○	○	○	○
Cabinet Order on the Extremely Severe Disaster Designation and Identification of Essential Response Measures for Specified Regions in 2019	2019 Regional Disasters	—	●	●							●	
Cabinet Order on disaster of extreme severity due to torrential rain during the period from May 15 to July 31, 2020 and the designation of measures to be applied to this.	Rainy season front (the Heavy Rain Event of July 2020, etc.)	Yamagata, Nagano, Gifu, Shimane, Fukuoka, Saga, Kumamoto, Oita, Kagoshima Pref.	○	○	○		○	○	○	○	○	○
Cabinet Order on disaster of extreme severity pertaining to specified areas in 2020 and the designation of measures to be applied to this.	2020 Regional Disasters		●	●							●	

*1 Public works facilities were considered as regional disaster
*2 Limited to portions concerning item 3
[Legend]
○: Indicates a national disaster (Region is not specified, the disaster itself is specified).
●: Indicates a regional disaster (Disaster is specified at the municipal level.).
The applicable measures are the measures listed below prescribed in the Act on Special Financial Support to Deal with Extremely Severe Disasters.

[Main applicable measures]
Art. 3, 4: Special financial support for disaster recovery projects for public works facilities
Art. 5: Special measures on subsidies for disaster recovery projects for agricultural land
Art. 6: Special cases of subsidies for disaster recovery projects for agricultural, forestry, and fisheries shared-used facilities
Art. 7 (iii): Special financial support for disaster recovery projects for plant and animal aquaculture facilities
Art. 12: Special provision concerning disaster-related credit guarantees under the Small and Medium-sized Enterprise Credit Insurance Act
Art 16: Subsidies for disaster recovery projects for public social and educational facilities
Art. 17: Subsidies for disaster recovery projects for private school facilities
Art. 19: Special cases of cost coverage for projects implemented by municipalities to prevent infectious diseases
Art. 24: Inclusion of funds for the redemption of principal and interest related to small disaster bonds in the standard budget request

[Other applicable measures]
Art. 8: Application of interim measures related to financing for agricultural, forestry, and fishery operators who are victims of natural disasters
Art. 9: Subsidies for projects to remove deposited earth and sand conducted by forestry associations
Art. 10: Subsidies for projects to remove floodwater conducted by land improvement districts
Art. 11: Subsidies for construction expenses for shared-use small fishing boats
Art. 11-2: Subsidies for disaster recovery projects for forests
Art. 14: Subsidies for disaster reconstruction projects for facilities including business cooperatives
Art. 20: Special cases of government loans based on the Act for the Welfare of Fatherless Families, motherless families and Widows
Art. 22: Special cases of subsidies for public housing construction projects for victims
Art. 25: Special cases of paying job seeker benefits based on the Employment Insurance Act

Source: Cabinet Office

Fig. A-14 Response of Government Ministries and Agencies to Major Disasters Since 2020

14-1 The Heavy Rain Event of July 2020

(1) Situation of the Disaster

From July 3rd to 8th, the rainy season front extended from Center China into eastern Japan via Kyusyu and remained almost stagnant. It was so active and caused heavy rainfall in western and eastern Japan. Especially in Kyushu, they had record-breaking rainfall from the 4th to the 7th. In addition, heavy rains fell intermittently around Gifu Prefecture from the 6th, which caused record-breaking rainfall from the 7th and 8th. The Japan Meteorological Agency issued a heavy rain emergency warning for seven prefectures: Kumamoto, Kagoshima, Fukuoka, Saga, Nagasaki, Gifu and Nagano and called out extreme alert. After that, the front remained stagnant near the main island of Japan and rainfall became more frequent over a wide area from western Japan to the Tohoku region. Particularly, heavy rainfall occurred mainly in the Chugoku region from the 13th to the 14th, and in the Tohoku region from the 26th to the 29th.

Total precipitation from July 3 to July 31 exceeded 2,000 millimeters at most in Nagano and Kochi prefectures. The rainfall amounts per 24 hours, 48 hours and 72 hours exceeded the highest value in recorded history at many locations in southern Kyushu, northern Kyushu, Tokai, and Tohoku regions.

This torrential rain caused a series of flooding in large rivers such as the Kuma River, Chikugo River, Hida River, Gono River, and Mogami River, which eventually led to Sediment Disaster (Landslide Disaster) and flooding at lowlands. As of February 26, 2021, 86 people were dead or missing, 80 people were seriously injured, and 1,620 houses were completely destroyed, 4,509 were half destroyed, 3,594 were partially destroyed, and 1,652 were flooded above floor level. In addition, lifelines were severely damaged, with electrical blackout and suspension of water supply occurring one after another, especially in the Kyushu region. In Kumamoto Prefecture, there was a power outage of approximately 8,800 households (maximum) and a water outage of approximately 27,000 households (maximum).

(2) Response by Government Ministries and Agencies

Since July 4, immediately after the disaster, then Prime Minister Abe gave the national government instructions to provide accurate information on evacuation and conditions as to heavy rain and rivers as needed and to take all possible precautionary measures to support evacuation so that residents living in areas that were expected to be flooded could evacuate by collaborating with local governments. After that, the ministerial meeting was held. Then Prime Minister Abe mentioned that the government would work closely with local governments and make every measurement to implement emergency measures. On the same day, the Minister of State for Disaster Management, Takeda, made a field trip to Kumamoto Prefecture* to directly confirm the damage. Also, the Cabinet Office Research Team was dispatched to Kumamoto and Kagoshima Prefectures. On July 5, 2020, the "Major Disaster Management Headquarters of the Heavy Rain Event of July 2020" was established (in total, 12 meetings of the Meeting for the Major Disaster Management Headquarters were held). In order to quickly assist the affected people in rebuilding their lives and livelihoods, a "Team to Support the Daily Lives and Livelihood Restoration of Affected People" was established, consisting of officials at the level of vice-ministers from each government ministry. On the 13th, then Prime Minister Abe and Minister of State for Disaster Management, Takeda made a field trip to Kumamoto Prefecture. On the 14th, the Heavy Rain Event of July 2020 was designated as a specified disaster. The government made a concerted measurement to promote disaster response measures by taking special measures to protect the rights of the affected people.

* In addition, Minister of State for Disaster Management, Takeda made a field trip to Kumamoto Prefecture on July 5, Fukuoka Prefecture on July 7, Kumamoto Prefecture on July 8, Kagoshima Prefecture on July 9, and Gifu Prefecture on July 23; Minister of State for Disaster Management, Takeda and Parliamentary Secretary of Cabinet Office, Imai made a field trip to Fukuoka Prefecture on July 15, Fukuoka Prefecture and Oita Prefecture on July 16; and Minister of State for Disaster Management Okonogi made a field trip to Kumamoto Prefecture on September 26.

The police, fire department, Self-Defense Forces, and the Ministry of Land, Infrastructure, Transport and Tourism dispatched their units across the country to the affected areas immediately after the disaster to carry out rescue and relief activities, secondary disaster prevention activities, and livelihood support. The total number of Police Disaster Response Units, Emergency Fire Response Teams, Self-Defense Forces, and the Technical Emergency Control Force (TEC-FORCE) was approximately 2,900, 400, 350,000, and 10,000, respectively.

In addition, comprehensive support for disaster management through advice to the heads of disaster-affected municipalities, and support for disaster response operations which were conducted by disaster-affected municipalities were conducted (logistical support) based on the "staff allocation system to support local governments in affected areas" (a total of approximately 460 people from 10 prefectures and cities were dispatched to the 8 affected municipalities as General Adviser Team, and a total of approximately 5,900 people from 11 prefectures and cities were dispatched to the 8 affected municipalities as logistical support.).

At the 7th Meeting for the Major Disaster Management Headquarters held on July 13, then Prime Minister Abe instructed us to put together Restoration of Lives and Livelihoods of the Affected. In response, the government put together measures to rebuild homes according to the needs of the affected people, support small and medium-sized businesses, agriculture, forestry and fisheries, disaster recovery and smooth disposal of disaster waste. At the same time, the Cabinet decided to use reserve funds of about 2.21 billion yen on July 14 and 101.7 billion yen on July 31 so that the affected municipalities could deal with the problem without worrying about their financial resources. On July 31, the Cabinet decided to designate the Heavy Rain Event of July 2020 as an emergency disaster under the Act on Reconstruction from Large-Scale Disasters. Therefore, prefectures and municipalities damaged by this disaster may request the national or prefectural government to act on their behalf for construction work related to disaster recovery projects. In this case, based on local conditions, the national and prefectural governments can now act on behalf of municipalities to the extent that it does not interfere with the execution of such administrative tasks as considering construction implementation systems for smooth and speedy recovery.

As a result of this torrential rain disaster, the Disaster Relief Act was applied to 98 municipalities in 9 prefectures, and the Act on Support for Reconstructing Livelihoods of the Affected due to Disaster was applied to 54 municipalities in 6 prefectures.

[Invocation of the Disaster Relief Act]

[Yamagata Prefecture]	Yamagata City, Yonezawa City, Tsuruoka City, Sakata City, Shinjo City, Sagae City, Kaminoyama City, Murayama City, Nagai City, Tendo City, Higashine City, Obanazawa City, Nanyo City, Yamanobe-machi in Higashimurayama-gun, Nakayama-machi in Higashimurayama-gun, Kahoku-cho in Nishimurayama-gun, Nishikawa-machi in Nishimurayama-gun, Asahi-machi in Nishimurayama-gun, Oe-machi in Nishimurayama-gun, Oishida-machi in Kitamurayama-gun, Mogami-gun in Mogami-gun, Funagata-machi in Mogami-gun, Okura-mura in Mogami-gun, Tozawa-mura in Mogami-gun, Takahata-machi in Higashi oki tama-gun, Kawanishi-machi Town in Higashi oki tama-gun, Oguni-machi in Nishi oki tama-gun, Shirataka-machi in Nishi oki tama-gun, Iide-machi in Nishi oki tama gun, Mikawa-machi in Higashitagawa-gun, Shonai-machi in Higashitagawa-gun (Date of invocation: July 28)
[Nagano Prefecture]	Matsumoto City, Iida City, Ina City, Azumino City, Miyada-mura in Kamiina-gun, Anan-cho in Shimoina-gun, Achi-mura in Shimoina-gun, Shimojo-mura in Shimoina-gun, Urugi-mura in Shimoina-gun, Agematsu-machi in Kiso-gun, Nagiso-machi in Kiso-gun, Otaki-mura in Kiso-gun, Okuwa-mura in Kiso-gun, Kiso-machi in Kiso-gun (Date of invocation: July 8)
[Gifu Prefecture]	Takayama City, Nakatsugawa City, Ena City, Hida City, Gujyou City, Gero City (Date of invocation: July 8)
[Shimane Prefecture]	Goutsu City (Date of invocation: July 13)
[Fukuoka Prefecture]	Omuta City, Yame City, Miyama City, Kurume City (Date of invocation: July 6)
[Saga Prefecture]	Kashima City (Date of invocation: July 6)
[Kumamoto Prefecture]	Yatsushiro City, Hitoyoshi City, Minamata City, Kamiamakusa City, Amakusa City, Ashikita-machi in Ashikita-gun, Tsunagi-machi in Ashikita-gun, Nishiki-machi in Kuma-gun, Taragi-machi in Kuma-gun, Yunomae-machi in Kuma-gun, Mizukami in Kuma-gun, Sagara-mura in Kuma-gun, Itsuki-mura in Kuma-gun, Yamae-mura in Kuma-gun, Kuma-mura in Kuma-gun, Asagiri-cho in Kuma-gun (Date of invocation: July 4) Arao City, Tamana City, Yamaga City, Kikuchi City, Gyokutou-machi in Tamana-gun, Nankan-machi in Tamana-gun, Nagasu-machi in Tamana-gun, Nagomi-machi in Tamana-gun, Minamioguni-machi in Aso-gun, Oguni-machi in Aso-gun (Date of invocation: July 6)
[Oita Prefecture]	Hita City, Yufu City, Kokonoe-machi in Kusu-gun, Kusu-machi in Kusu-gun (Date of invocation: July 6)
[Kagoshima Prefecture]	Akune City, Izumi City, Isa City, Nagashima-cho in Izumi-gun, Kanoya City, Soo City, Shibushi City, Tarumizu City, Satsumasendai City, Ichikikushikino City, Osaki-cho in Soo-gun (Date of invocation: July 4)

[Invocation of the Act on Support for Reconstructing Livelihoods of the Affected due to Disaster]

[Kumamoto Prefecture]	All areas of the prefecture (Date of occurrence: July 4)
[Fukuoka Prefecture]	Omuta City (Date of occurrence: July 6)
[Oita Prefecture]	Kokonoe-machi, Hita City, Yufu City, Kusu-machi in Kusu-gun (Date of occurrence: July

6)
[Shimane Prefecture] Goutsu City (Date of occurrence: July 13)
[Gifu Prefecture] Gero City (Date of occurrence: July 8)
[Kagoshima Prefecture] Kanoya City, Tarumizu City (Date of occurrence: July 4)

The status of the designation of this disaster as Disaster of Extreme Severity is as follows.
Disaster caused by torrential rain between May 15 and July 31, 2020.
Announcement of expected designation: July 10, 13, 17. Cabinet decision: August 25 Proclamation and enforcement August 28.

Area	Applicable Measures
Nationwide	Special Financial Support for Project to Recover Public Civil Engineering Works Damaged by Disaster Special Measures for Subsidies for Project to Recover Lands for Agriculture Damaged by Disaster Special Provisions of Subsidies for Project to Recover Joint Use Facilities for Agriculture, Forestry and Fisheries Damaged by Disaster Special Provisions for Disaster-Related Guarantees by Small and Medium-sized Enterprise Credit Insurance Act Subsidies for Project to Recover Public Social Education Facilities Damaged by Disaster Subsidies for Project to Recover Private School Facilities Damaged by Disaster Special Provisions for Burden of Infectious Disease Prevention Projects Implemented by Municipalities Special Provisions for Loan by the Act on Welfare of Mothers with Dependents, Fathers with Dependents, and Widows Special Provisions of Subsidies for Project of Construction of Public Housing for the Affected Including Principal and Interest Redemption Money related to Small Disaster Bond into Baseline Financial Needs Special Provisions of Job Seeker's Benefits by Employment Insurance Act

14-2 Typhoon Haishen in 2020 (T2010)

(1) Situation of the Disaster

Typhoon Haishen in 2020 (T2010), which was upgraded to tropical storm intensity on the night of September 1 near the Ogasawara Islands, passed through the area with high seawater temperature and developed into a very strong typhoon at 3:00 on September 4. It approached the Nansei Islands and Kyushu with a large and very strong typhoon intensity from the 5th to the 7th, then landed on the Korean Peninsula and changed to an extratropical cyclone in the northeastern part of China at 3:00 on the 8th. The maximum wind speed was 44.2 m/s, and the maximum wind gust speed was 59.4 m/s at Nomozaki in Nagasaki Prefecture. Violent storm or storm winds were observed mainly in the Nansei Islands and Kyushu, exceeding the previous maximum value, which became a record-breaking wind storm. In addition, 11.4-meters high waves were observed off the coast of Hyuga, Miyazaki Prefecture, and 10.4-meters high waves were observed on Yakushima Island, Kagoshima Prefecture, resulting in a fierce storm in the Nansei Islands and Kyushu. The total precipitation from the 4th to the 7th was 599 millimeters in Mikado, Misato-cho in Higashi-usuki-gun, Miyazaki Prefecture. Four locations in Miyazaki Prefecture had 24-hour rainfall exceeding 400 millimeters, while the Pacific side of western Japan and eastern Japan, even far from the center of the typhoon, had heavy rain exceeding 200 millimeters in 24 hours.

The typhoon left 4 people dead or missing in Sediment Disaster (Landslide Disaster) in Shiiba-son, Miyazaki Prefecture, and one person dead in Saga and Kagoshima Prefectures, respectively. 110 people were injured, mainly in the Kyushu region. In addition, 7 houses were completely destroyed, 40 were half destroyed, 1,637 were partially destroyed, 31 were flooded above floor level, and 236 were flooded below floor level, mainly in Kagoshima and other parts of Kyushu (*the figures are as of February 26, 2021.).

(2) Response by Each Government Ministry and Agency

On September 3, prior to the approach of heavy rain or typhoons, an Inter-Agency Disaster Alert Meetings was held under the leadership of Minister of State for Disaster Management Takeda to ensure a precautionary

approach to heavy rain and other disasters. At 3:30 p.m. on September 4, the first ministerial meeting was held. Prime Minister Abe instructed related ministries and agencies (1) to ensure that the Minister of State for Disaster Management and other ministers disseminate information to the public in a prompt and easy-to-understand manner, (2) to take proactive measures in close collaboration with local governments and related organizations, and (3) to secure a sufficient number of shelters in each region and to establish the necessary arrangements, taking into consideration measures against the COVID-19 countermeasures. Additionally, the following requests were made for to the public to take actions for save their own lives vigilantly: (1) to prepare in advance for the possibility of record-breaking heavy rain, windstorms, high waves, and storm surge by stockpiling supplies and confirming evacuation routes, (2) to refrain from going out unless it is essential /urgent and to evacuate as soon as possible based on evacuation information from local governments. Furthermore, as a typhoon of emergency warning level was expected to approach the area, Minister of State for Disaster Management Takeda issued a call for the early evacuation of the people at 04:15 p.m. on the same day.

On the 5th, the Disaster Management Bureau of the Cabinet Office, the Fire and Disaster Management Agency of the Ministry of Internal Affairs and Communications, the Ministry of Health, Labour and Welfare, the Ministry of Land, Infrastructure, Transport and Tourism, and the Japan Meteorological Agency jointly issued a notice concerned on the urgent need to evacuate due to Typhoon Haishen in 2020 (T2010).Minister Takeda requested the relevant governors and deputy governors to urge the mayors of municipalities to prepare for evacuation of residents early. Furthermore, on the 6th, Minister of State for Disaster Management Takeda called on the public for the 2nd time to evacuate as soon as possible. On the same day, the 2nd ministerial meeting was held, and on the following day, the 7th, Inter-Agency Disaster Management Meetings was held to confirm the alert posture and local damage information.

14-3 Heavy Snowfall since January 7

(1) Situation of the Disaster

From January 7 to the morning of January 8, a low pressured system rapidly developed and advanced from the Sea of Japan through northern Japan to the sea near the Kuril Islands. After that, strong cold air flowed into the sky over Japan, and a strong winter-type pressure pattern continued through the 11th. These factors resulted in heavy snow and windstorms over a wide area from northern Japan to western Japan.

From the 7th to the 11th, strong snow fell intermittently mainly on the Sea of Japan side from northern to western Japan, and some places such as Kyushu, which usually has little snow, received snowfall. The amount of snowfall during the period from July 7 to 11 was 213 centimeters in Takada, Joetsu City, Niigata Prefecture, 192 centimeters in Shirakawa, Shirakawa Village, Ono-gun, Gifu Prefecture, and 158 centimeters in Ono, Ono City, Fukui Prefecture. As snow clouds continued to move in from the 7th to the 9th, mainly in the Hokuriku region, a remarkable amount of snowfall exceeding 20 cm in three hours was observed. In Takada, Joetsu City, Niigata Prefecture, 103 centimeters of snowfall was observed for 24 hours on the 9th, setting a new record for the most snowfall in the history of observation.

In addition, from the 7th to the 8th, very strong winds blew over a wide area mainly on the Japan Sea side of northern and eastern Japan. In Yamori, Happo Town, Yamamoto-gun, Akita Prefecture, the maximum wind speed of 28.1 meters and the maximum instantaneous wind speed of 42.4 meters were observed on the 7th, both of which were the first records in the history of observation.

With heavy snowfall in mid-December and New Year's holidays, much of the snow remained on the Sea of Japan side of northern and eastern Japan. The heavy snowfall since January 7 resulted in even more snowfall, causing many vehicles to be stranded in Fukui and Niigata prefectures and traffic disruptions such as road closures, railroad cancellations, and aircraft and ship cancellations throughout northern and western Japan. In addition, 35 people died and 375 were seriously injured due to accidents during snow removal work, and 7 people were slightly injured due to vehicles being stranded. As for damage to houses, 1 house was completely destroyed, 2 houses were half destroyed, and 297 houses were partially destroyed (*figures as of February 26, 2021).

(2) Response by Each Government Ministry and Agency

On January 6, Inter-Agency Disaster Management Meeting was held with the attendance of Minister of State for Disaster Management Okonogi to ensure the government's alert system. A ministerial meeting was held on August 8, and a Cabinet Office Research Team was dispatched to Fukui Prefecture on October 10. The police, the Self-Defense Forces, the Ministry of Land, Infrastructure, Transport and Tourism, NEXCO Central Japan, and other organizations worked together to remove snow, guide vehicles, and distribute food and other supplies to stranded vehicles on the Hokuriku Expressway and Tokai-Hokuriku Expressway. Drivers and others in the vehicles to stay were also transported to the hotel if they wished. The Self-Defense Force also carried out activities such as removing snow outside elderly facilities at the request of the governors of Akita and Niigata prefectures. On the

14th, the Minister of State for Disaster Management, Okonogi made an on-site inspection of Niigata and Toyama prefectures. On the following day, the 15th, the first Inter-Agency Disaster Management Meetings was held to share the results of the on-site inspection. On the 18th, the Fire and Disaster Management Agency and the Disaster Management Bureau of the Cabinet Office jointly issued an administrative notice to alert the public to prevent accidents, including the implementation of snow removal work by multiple people. On April 22, the second Inter-Agency Disaster Management Meeting was held. The "Countermeasures for Heavy Snow Damage in December 2020 to January 2021" was compiled, which includes support for snow removal and clearance projects by local governments, and support for agriculture, forestry, fisheries, and small and medium-sized businesses in the event of snow damage.

In addition, the Disaster Relief Act was applied to 22 municipalities in 4 prefectures due to the disaster caused by this heavy snowfall and other factors.

[Invocation of the Disaster Relief Act]

[Akita Prefecture]	Yokote City, Yuzawa City, Daisen City, Senboku City, Misato-cho in Senboku-gun, Ugo-machi in Ogachi-gun, Higashinaruse-mura in Ogachi-gun (Date of invocation: January 7)
[Niigata Prefecture]	Nagaoka City, Kashiwazaki City, Tokamachi City, Itoigawa City, Myoko City, Joetsu City (Date of invocation: January 10)
[Toyama Prefecture]	Tonami City, Oyabe City, Nanto City, Himi City (Date of invocation: January 9)
[Fukui Prefecture]	Fukui City, Awara City, Sakai City (Date of invocation: January 9)
	Ono City, Katsuyama City (Date of invocation: January 10)

14-4 Earthquake Centered Off the Coast of Fukushima Prefecture in 2021 [Seismic Intensity of 6+]

(1) Situation of the Disaster

At around 11:07 p.m. on February 13, 2021, an earthquake of magnitude 7.3, whose epicenter was off the coast of Fukushima Prefecture, occurred. A seismic intensity of 6.0 was observed on the large scale in Zao Town in Miyagi Prefecture, and Soma City, Kunimi Town, and Shinchi Town in Fukushima Prefecture respectively. The earthquake caused one person death, seriously injured 16, and slightly injured 170, and completely destroyed 32 houses, half destroyed 259 houses, and partially destroyed 8,846 houses (*figures as of March 12, 2021). In addition to damage to lifelines such as electrical blackout and suspension of water supply, there was also damage to the transportation infrastructure, including road closures and railroad cancellations.

(2) Response by Each Government Ministry and Agency

After the earthquake on February 13, the government immediately convened an emergency meeting team at the Crisis Management Center of the Prime Minister's Office to collect information on the damage under the direction of Prime Minister Suga, and dispatched a Cabinet Office Research Team to Fukushima Prefecture by the Self-Defense Force’s helicopter. On the morning of the 14th, the first ministerial meeting was held to assess the damage situation and to share and confirm the government's response. The Self-Defense Force also carried out water supply support for two towns and villeages in the prefecture at the request of the governor of Fukushima Prefecture in the some day. On the 16th, Minister of State for Disaster Management, Okonogi made an on-site inspection of Fukushima Prefecture.

At Ministerial Round Table on March 19, Prime Minister Suga instructed that the relevant ministers, led by Minister of State for Disaster Management Okonogi, should work together to assess the damage as soon as possible and quickly compile support measures. In light of this, the second ministerial meeting was held on March 26, and the "Set of Support Measures for the

Earthquake Centered Off the Coast of Fukushima Prefecture in

2021" was issued in order to make every effort to restore the affected areas to normalcy, rebuild people's lives, and restore livelihoods as soon as possible.

As a result of the earthquake, the Disaster Relief Act was applied to 17 cities and towns in Fukushima Prefecture, and the Act on Support for Reconstructing Livelihoods of the Affected due to Disaster was applied to 3 cities and towns in Fukushima Prefecture.

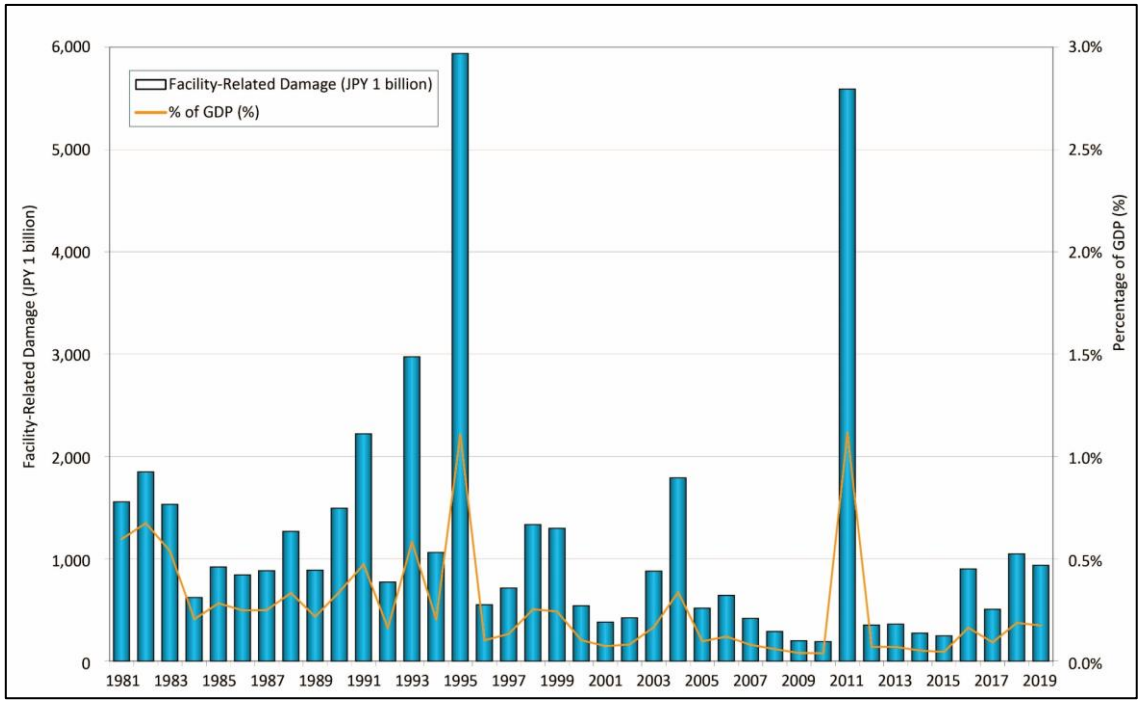
[Invocation of the Disaster Relief Act]

[Fukushima Prefecture]	Fukushima City, Koriyama City, Shirakawa City, Sukagawa City, Soma City, Minamisoma City, Date City, Motomiya City, Kori-machi in Date-gun, Kunimi-machi in Date-gun, Kagamiishi-machi in Iwase-gun, Aizu Misato-machi in Onuma-gun, Hirono-machi in Futaba-gun, Naraha-machi in Futaba-gun, Tomioka-machi in Futaba-gun, Namie-machi

in Futaba-gun, Shinchi-machi in Soma-gun (Date of invocation: February 13)

[Invocation of the Act on Support for Reconstructing Livelihoods of the Affected due to Disaster]
[Fukushima Prefecture] Fukushima City, Kori-machi, Shinchi-machi (Date of occurrence: February 13)

Fig. A-15 Trends in Facility Damage and the Amount and as a Percentage of Gross Domestic Product (GDP)



Note: Gross domestic product (GDP) figures up to 1993 are based on the 2000 standard (SNA 1993), while those for 1994 onward are based on the 2011 standard (SNA 2008)
Source: Formulated by the Cabinet Office based on materials from various ministries and agencies

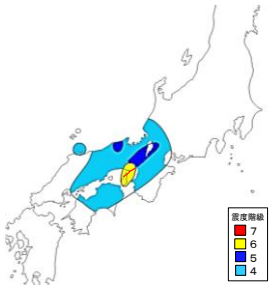
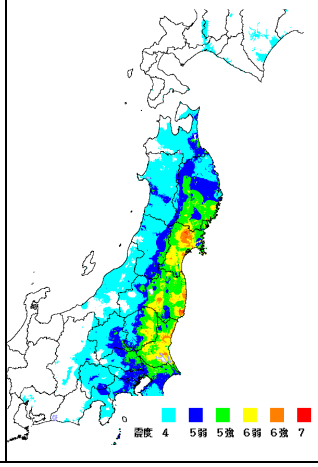
Fig. A-16 Facility Damage Due to Disasters in 2019, by Hazard

(Unit: JPY 1 million)

Facility type	Typhoon	Torrential rain	Earthquake	Heavy snowfall	Other	Total	Notes
Public works	413,222	39,052	449	0	11,788	464,510	Rivers, forestry conservation facilities, ports, etc.
Agriculture, forest, and fisheries industry	304,951	36,679	177	0	3,373	345,180	Farmland, agricultural facilities, forestry roads, fishing facilities, etc.
Educational facilities	11,188	2,825	431	13	138	14,595	School facilities, cultural properties, etc.
Public welfare facilities	76,780	1,611	39	0	46	78,476	Social welfare facilities, waterworks facilities, etc.
Other facilities	30,746	1,346	0	0	1	32,093	Nature parks, telegraph/telephone, urban facilities, etc.
Total	836,887	81,515	1,095	13	15,345	934,855	

Note: Totals may not agree due to rounding.
Source: Formulated by the Cabinet Office based on materials from various ministries and agencies

Fig. A-17 Comparison of the Great Hanshin-Awaji Earthquake, the Great East Japan Earthquake, and the Sumatra Earthquake

	Great Hanshin-Awaji Earthquake (Japan)	Great East Japan Earthquake (Japan)	Sumatra Earthquake (Indonesia)
Date & time	5:46 a.m., Jan. 17, 1995	2:46 p.m., March 11, 2011	9:58 a.m., Dec. 26, 2004
Magnitude	M7.3	*Mw9.0	*Mw9.1
Earthquake type	Inland	Oceanic trench	Oceanic trench
Affected area	City center	Mainly agricultural, forestry, and fishery regions	Mainly agricultural, forestry, and fishery regions
No. of prefectures with seismic intensity of Lower 6 or higher	1 (Hyogo)	8 (Miyagi, Fukushima, Ibaraki, Tochigi, Iwate, Gunma, Saitama, Chiba)	—
Tsunami	Reports of tsunami measuring tens of centimeters, no damage	Large tsunami observed in various regions (max. wave height of more than 9.3 m in Soma, more than 8.5 m in Miyako, more than 8.0 m in Ofunato)	Large tsunami observed in Indonesia as well as other countries with coastline along the Indian Ocean
Damage characteristics	Structures destroyed, large fires erupted mainly in Nagata-ku	Large tsunami caused massive damage in coastal areas, destruction across many districts	Large tsunami caused damage to countries with coastline along the Indian Ocean, with Indonesia suffering particularly massive damage
Fatalities Missing persons	Fatalities: 6,437 Missing persons: 3 (May 19, 2006)	Fatalities: 19,747 Missing persons: 2,556 (as of March 1, 2021)	Fatalities: 126,732 Missing persons: 93,662 (as of March 30, 2005)
Homes damaged (totally destroyed)	104,906	122,005 (as of March 1, 2021)	Unknown*
Invocation of the Disaster Relief Act	25 municipalities (2 prefectures)	241 municipalities (10 prefectures) *Including 4 municipalities (2 prefectures) that invoked the Act for an earthquake centered in northern Nagano prefecture in2011	—
Seismic intensity distribution map (showing seismic intensity of 4 and above)			—

* Mw: Moment magnitude

Note: The seismic intensity levels were revised in 1996 to newly add Lower 5, Upper 5, Lower 6, and Upper 6.

Source: Formulated by the Cabinet Office from Cabinet Office materials, Fire and Disaster Management Agency materials, and UNOCHA materials.

Fig. A-18 Damage Estimate for the Great East Japan Earthquake

June 24, 2011

Category	Damage (Approx. Value)
Structures (Homes/housing sites, stores/offices, factories, machines, etc.)	JPY 10.4 trillion
Lifeline facilities (Water, gas, electricity, communications/broadcasting facilities)	JPY 1.3 trillion
Infrastructure facilities (Rivers, roads, ports, sewers, airports, etc.)	JPY 2.2 trillion
Agriculture, forest, and fisheries-related facilities (Farmland/agricultural facilities, forests and fields, fisheries-related facilities, etc.)	JPY 1.9 trillion
Other (Educational facilities, healthcare/social welfare facilities, waste treatment facilities, other public facilities)	JPY 1.1 trillion
Total	JPY 16.9 trillion

Note: This information has been compiled by Disaster Management Bureau of the Cabinet Office based on information provided by individual prefectures and relevant ministries and agencies regarding damage to property (including buildings, lifeline facilities, and infrastructure facilities). Information is subject to change as the details become clear.

Source: Cabinet Office

Fig. A-19 Main Volcanic Eruptions and Volcanic Disasters in Japan

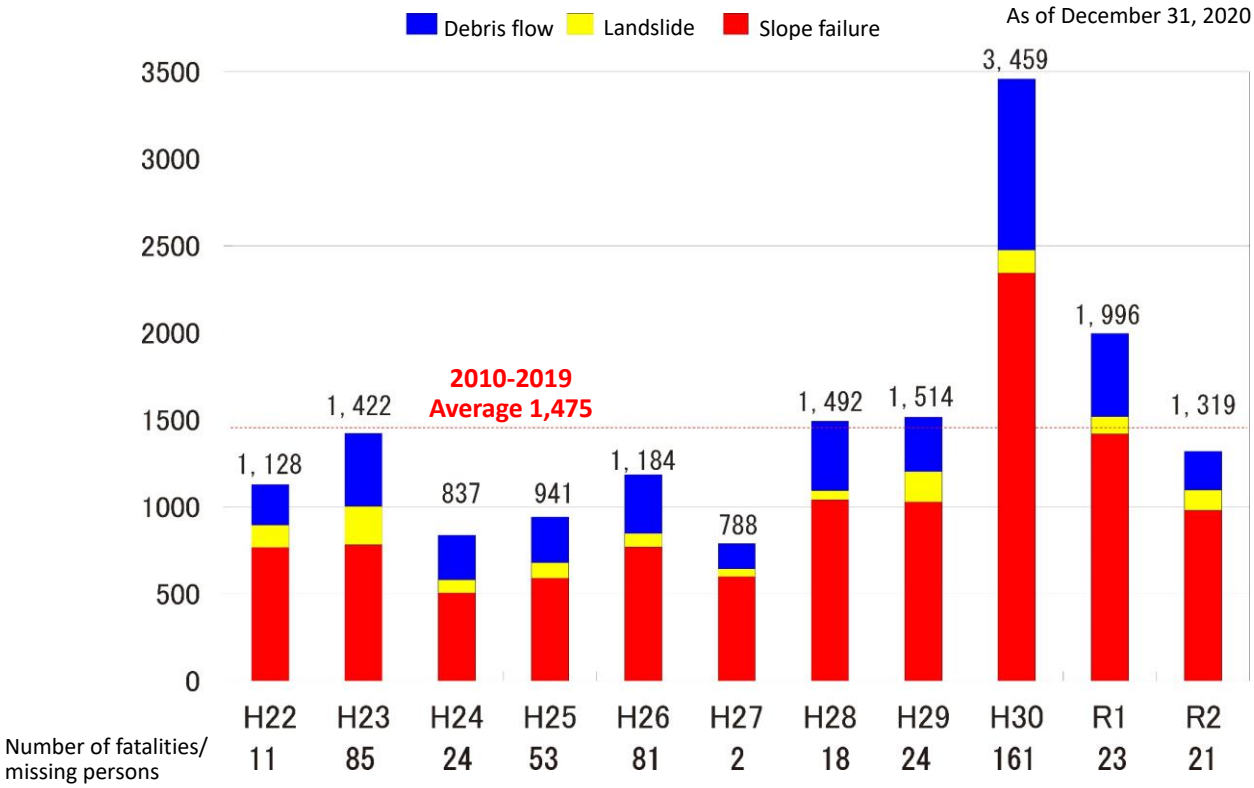
Year of Eruption	Name of Volcano	No. of Victims	Eruption and Damage Characteristics
1640	Hokkaido-Komagatake*	At least 700	Sector collapse, debris flow, tsunami, large amount of falling ash, pyroclastic flow
1663	Usuzan*	5	Nearby homes disappeared or were buried
1664	Unzendake	At least 30	Lava flow, flood of water from crater
1667	Tarumaesan*		Pyroclastic flow, large amount of falling ash/pumice
1694	Hokkaido-Komagatake		Eruption with earthquake/volcanic thunder, falling pumice stone, pyroclastic flow
1707	Fujisan *		"Great Hoei eruption," large amount of falling ash, landslide disaster after eruption
1721	Asamayama	15	Cinders
1739	Tarumaesan *		Pyroclastic flow, large amount of falling ash/pumice
1741	Oshima-Oshima	1,467	Sector collapse, large tsunami occurred due to debris avalanche
1769	Usuzan		Large amount of falling ash/pumice, pyroclastic flow
1777	Izu-Oshima		"Great Anei eruption," lava flow, scoria fall
1779	Sakurajima*	At least 150	"Great Anei eruption," cinders, lava flow
1781	Sakurajima	15	Eruption on an island off of Komen, tsunami
1783	Asamayama	1,151	"Great Tenmei eruption," pyroclastic flow, lava flow, flooding of Agatsuma River and Tone River
1785	Aogashima	130–140	Cinders, mud, more than one-third of islanders became victims. Uninhabited island for more than 50 years thereafter
1792	Unzendake	15,000	"Shimabara taihen, Higo meiwaku," tsunami on opposing shore due to collapse of Mt. Mayuyama
1822	Usuzan	50–103	Pyroclastic flow, former Abuta village totally destroyed
1853	Usuzan		Large amount of volcanic ash/pumice, formation of lava dome, pyroclastic flow
1856	Hokkaido-Komagatake	21–29	Falling pumice, pyroclastic flow
1888	Bandaisan*	461–477	5 towns and 11 villages buried in debris avalanche, debris flow (volcanic mud flow)
1900	Adatarayama	72	Cinders, sulfur mine at crater totally destroyed
1902	Izu-Torishima	125	All islanders became victims
1914	Sakurajima*	58	"Great Taisho eruption," volcanic thunder, lava flow, earthquake, air wave, villages buried, large amount of falling ash
1926	Tokachidake	144	Larger mudflow, towns of Kamifurano and Biei buried
1929	Hokkaido-Komagatake	2	Large amount of falling ash/pumice, pyroclastic flow, volcanic gas damage
1940	Miyakejima	11	Large amount of volcanic ash/volcanic bombs, lava flow
1952	Beyonesu (Bayonnaise) Rocks (Myojin-sho)	31	Pyroclastic surge
1943–45	Usuzan	1	Large amount of volcanic ash, cinders, formation of Showa-shinzan (new mountain)
1958	Asosan	12	Cinders
1991	Unzendake	43	Pyroclastic flow, debris flow
2014	Ontakesan	63	Cinders

*Indicates eruptions with apparent volume of ejecta of more than 1 km^3

Note: Lists "Eruption disasters with 10 or more fatalities and/or missing persons" and "Large eruptions with an apparent volume of ejecta of 0.1 km^3 or more"

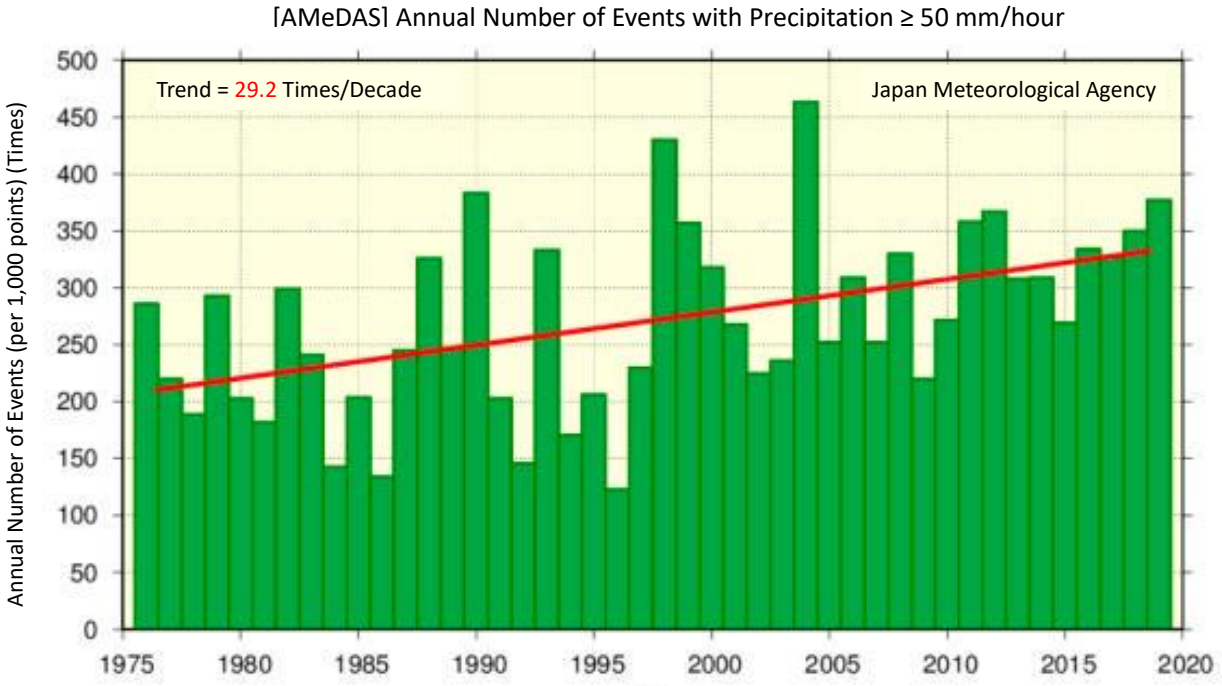
Source: Formulated by the Cabinet Office based on the National Catalogue of the Active Volcanoes in Japan (4th Edition) (edited by the Japan Meteorological Agency, 2013).

Fig. A-20 Number of Sediment Disasters



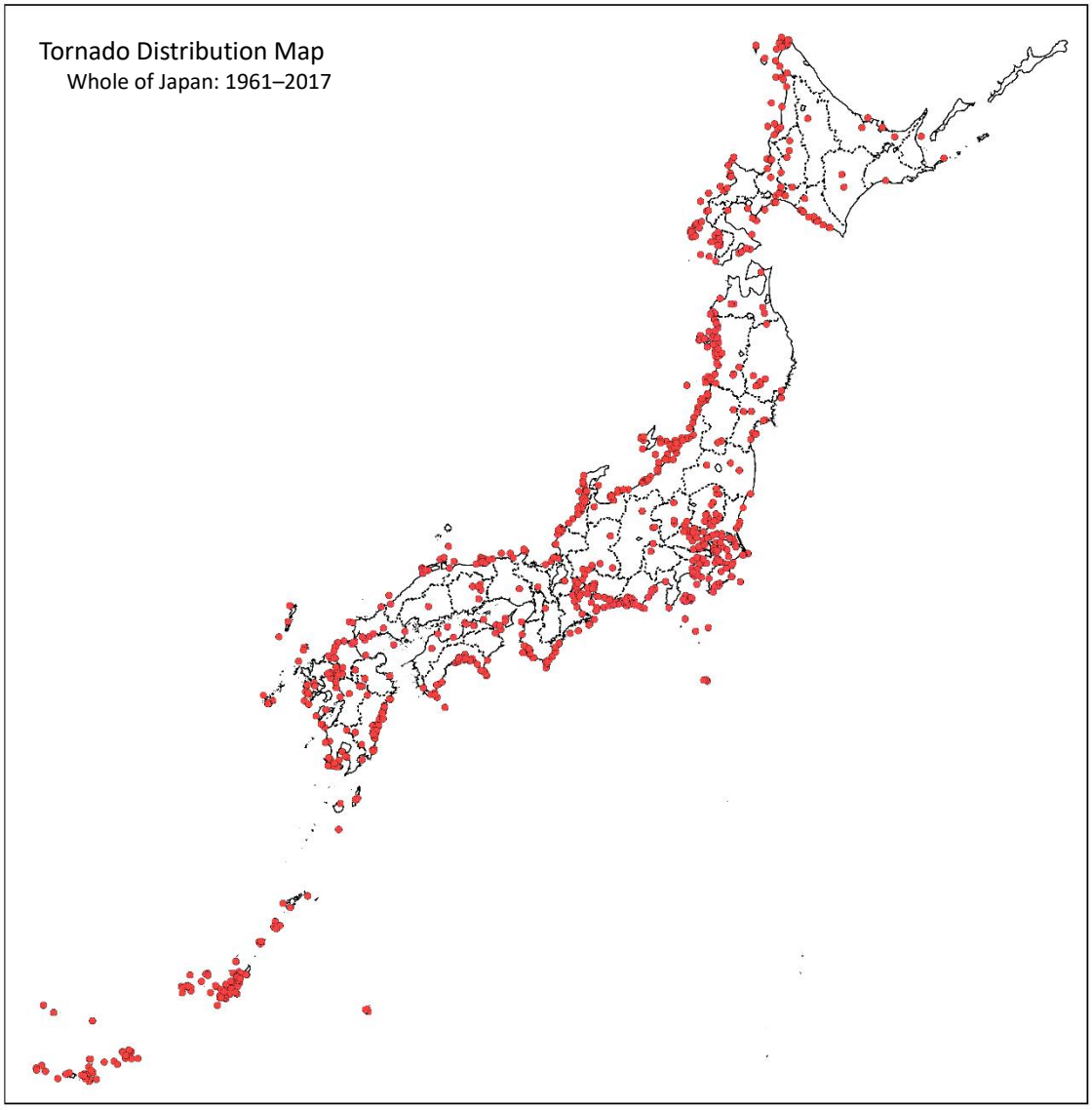
Source: Ministry of Land, Infrastructure, Transport and Tourism

Fig. A-21 Increase in the frequency of short-duration downpours



Source: Japan Meteorological Agency (website)

Fig. A-22 Number of Tornados



Source: Japan Meteorological Agency.

Fig. A-23 Major Natural Disasters in the World Since 1900

Year	Disaster Type	GLIDE number	Country (Areas)	Fatalities/Missing Persons (approx.)
1900	Hurricane Galveston		Texas, USA	6,000
1902	Volcanic Eruption		Martinique (West Indies, Mt. Pelée)	29,000
1902	Volcanic Eruption		Santa Maria Volcano, Guatemala	6,000
1905	Earthquake		Northern India	20,000
1906	Earthquake (Chiayi earthquake)		Taiwan	6,000
1906	Earthquake/Fire		San Francisco, USA	1,500
1906	Earthquake		Chile	20,000
1906	Typhoon		Hong Kong	10,000
1907	Earthquake		Tianshan, China	12,000
1907	Earthquake		Uzbekistan (former Soviet Union)	12,000
1908	Earthquake (Messina earthquake)		Sicily, Italy	75,000
1911	Flood		China	100,000
1911	Volcanic Eruption		Taal Volcano, Philippines	1,300
1912	Typhoon		Wenzhou, China	50,000
1915	Earthquake		Central Italy	30,000
1916	Landslide		Italy, Austria	10,000
1917	Earthquake		Bali, Indonesia	15,000
1918	Earthquake		Guangdong, China	10,000
1919	Volcanic Eruption		Kelut Volcano, Indonesia	5,200
1920	Earthquake/Landslide (Haiyuan earthquake)		Gansu, China	180,000
1922	Typhoon		Shantou, China	100,000
1923	Earthquake/Fire (Great Kanto earthquake)		Southeast Kanto region, Japan	143,000
1927	Earthquake (Kitatango earthquake)		Northern Kyoto, Japan	2,930
1927	Earthquake		Nanchang, China	200,000
1928	Hurricane/Flood		Florida, USA	2,000
1930	Volcanic Eruption		Merapi volcano, Indonesia	1,400
1931	Flood		Coastal areas of the Yangtze River and other rivers in China	3,700,000
1932	Earthquake (Gansu earthquake)		Gansu, China	70,000
1933	Flood		Henan, China	18,000
1933	Tsunami (Showa Sanriku Tsunami)		Sanriku, Japan	3,000
1933	Earthquake		China	10,000
1935	Flood		China	142,000
1935	Earthquake (Quetta Earthquake)		Baltistan, Pakistan	60,000
1939	Earthquake/Tsunami		Chile	30,000
1939	Flood		Hunan, China	500,000
1939	Earthquake		Eastern Turkey	32,962
1942	Cyclone		Bangladesh	61,000
1942	Cyclone		Orissa, India	40,000
1943	Earthquake		Tottori, Japan	1,083
1944	Earthquake (Showa Tonankai Earthquake)		Tonankai, Japan	1,200
1944	Earthquake		Midwestern Argentina	10,000
1945	Earthquake (Mikawa Earthquake)		Aichi, Japan	2,300
1945	Typhoon (Typhoon Makurazaki)		Western Japan	3,700
1946	Earthquake/Tsunami (Showa Nankai Earthquake)		Nankai, Japan	1,400
1947	Typhoon (Typhoon Kathleen)		North of Tohoku, Japan	1,900
1948	Earthquake (Fukui Earthquake)		Fukui, Japan	3,900
1948	Earthquake (Ashgabat Earthquake)		Turkmenistan (former Soviet Union)	110,000
1949	Earthquake/Landslide		Tajikistan (former Soviet Union)	12,000
1949	Flood		China	57,000
1949	Flood		Guatemala	40,000
1951	Volcanic Eruption		Mt. Lamington, Papua New Guinea	2,900
1953	Flood		Coastal areas of the North Sea	1,800
1953	Flood		Kyushu, Japan	1,000
1953	Flood		Honshu, Japan	1,100
1954	Flood		China	40,000
1954	Typhoon (Typhoon MARIE (5415))		Japan	1,700
1959	Flood		China	2,000,000
1959	Typhoon (Typhoon VERA (5915))		Japan	5,100
1960	Flood		Bangladesh	10,000
1960	Earthquake		Southwestern Morocco	12,000
1960	Earthquake/Tsunami		Chile	6,000

Year	Disaster Type	GLIDE number	Country (Areas)	Fatalities/Missing Persons (approx.)
1961	Cyclone		Bangladesh	11,000
1962	Earthquake		Northwestern Iran	12,000
1963	Cyclone		Bangladesh	22,000
1965	Cyclone		Bangladesh	36,000
1965	Cyclone		Southern Pakistan	10,000
1968	Earthquake		Northwestern Iran	12,000
1970	Earthquake		Yunnan, China	10,000
1970	Earthquake/Landslide		Northern Peru	70,000
1970	Cyclone Bhola		Bangladesh	300,000
1971	Cyclone		Orissa, India	10,000
1972	Earthquake (Managua earthquake)		Nicaragua	10,000
1974	Earthquake		Yunnan and Sichuan, China	20,000
1974	Flood		Bangladesh	28,700
1975	Earthquake		Liaoning, China	10,000
1976	Earthquake (Guatemala earthquake)		Guatemala	24,000
1976	Earthquake (Tangshan earthquake)		Tianjin, China	242,000
1977	Cyclone		Andhra Pradesh, India	20,000
1978	Earthquake		Northeastern Iran	25,000
1982	Volcanic Eruption		El Chichon Volcano, Mexico	17,000
1985	Cyclone		Bangladesh	10,000
1985	Earthquake		Mexico City, Mexico	10,000
1985	Volcanic Eruption		Nevado del Ruiz Volcano, Colombia	22,000
1986	Toxic gas		Lake Nyos, Western Cameroon	1,700
1986	Earthquake		San Salvador, El Salvador	1,000
1987	Earthquake		Northwestern Ecuador	5,000
1987	Flood		Bangladesh	1,000
1988	Earthquake		India, Nepal	1,000
1988	Flood		Bangladesh	2,000
1988	Earthquake (Spitak Earthquake)		Armenia (former Soviet Union)	25,000
1988	Earthquake		Yunnan, China	1,000
1989	Flood		India	1,000
1989	Flood/Landslide		Sichuan, China	2,000
1990	Earthquake (Manjil Earthquake)		Northern Iran	41,000
1990	Earthquake		Philippines	2,000
1991	Cyclone/Storm Surge		Chittagong, Bangladesh	137,000
1991	Flood		Jiangsu, China	1,900
1991	Typhoon THELMA (9125)		Philippines	6,000
1992	Flood		Pakistan	1,300
1992	Earthquake/Tsunami		Indonesia	2,100
1993	Flood		Nepal	1,800
1993	Earthquake (Maharashtra Earthquake)		India	9,800
1993	Flood		India	1,200
1994	Torrential Rain, Flood		India	2,000
1994	Typhoon, Flood		Six Southern Provinces of China	1,000
1994	Tropical Storm		Haiti	1,100
1995	Earthquake (Great Hanshin-Awaji Earthquake)		Japan	6,300
1995	Earthquake		Russia	1,800
1995	Flood		China	1,200
1996	Flood/Typhoon		Seven southern and five northern and northwestern provinces of China	2,800
1996	Typhoon/Flood		Viet Nam	1,000
1997	Earthquake	EQ-1997-000095-IRN	Eastern Iran	1,600
1997	Flood	FL-1997-000260-IND	India	1,400
1997	Flood	FL-1997-000265-SOM	Southern Somalia	2,000
1997	Typhoon LINDA (9726)	TC-1997-000007-VNM	Southern Viet Nam	3,700
1998	Earthquake	EQ-1998-000026-AFG	Northern Afghanistan	2,300
1998	Earthquake	EQ-1998-000152-AFG	Northern Afghanistan	4,700
1998	Flood/Landslide	FL-1998-000392-IND	Assam state, India	3,000
1998	Cyclone		India	2,900
1998	Flood	FL-1998-000203-BGD	Bangladesh	1,000
1998	Flood	FL-1998-000165-CHN	Coastal areas of the Yangtze River and other rivers in China	3,700
1998	Tsunami (Aitape Tsunami)	TS-1998-000220-PNG	Papua New Guinea	2,600
1998	Hurricane Mitch	TC-1998-000012-HND	Honduras, Nicaragua	17,000

Year	Disaster Type	GLIDE number	Country (Areas)	Fatalities/Missing Persons (approx.)
1999	Earthquake (Quindio Earthquake)	EQ-1999-000007-COL	Mid-western Colombia	1,200
1999	Earthquake (Izmit Earthquake)	EQ-1999-000008-TUR	Western Turkey	15,500
1999	Earthquake (Chi-Chi earthquake)	EQ-1999-000321-TWN	Taiwan	2,300
1999	Cyclone	ST-1999-000425-IND	India	9,500
2000	Flood		Venezuela	30,000
2001	Earthquake (Gujarat earthquake)	EQ-2001-000033-IND	India	20,000
2001	Earthquake	EQ-2001-000013-SLV	El Salvador	1,200
2003	Earthquake	EQ-2003-000074-DZA	Northern Algeria	2,300
2003	Earthquake (Bam earthquake)	EQ-2003-000630-IRN	Iran	26,800
2004	Flood	FL-2004-000028-HTI	Haiti	2,700
2004	Hurricane	TC-2004-000089-JAM	USA, Jamaica, Puerto Rico, Haiti	3,000
2004	Earthquake, Tsunami (2004 Indian Ocean Earthquake and Tsunami)	TS-2004-000147-LKA TS-2004-000147-IDN TS-2004-000147-MDV TS-2004-000147-IND TS-2004-000147-THA TS-2004-000147-MYS TS-2004-000147-MMR TS-2004-000147-SOM TS-2004-000147-BGD	Sri Lanka, Indonesia, Maldives, India, Thailand, Malaysia, Myanmar, Seychelles, Somalia, Tanzania, Bangladesh, Kenya	Over 226,000
2005	Flood/Landslide	FL-2005-000125-IND	India	1,200
2005	Hurricane Katrina	TC-2005-000144-USA	USA	1,800
2005	Rainstorm	ST-2005-000162-IND ST-2005-000162-BGD	India, Bangladesh	1,300
2005	Hurricane Stan/Flood	TC-2005-000171-GTM FL-2005-000171-SLV	Guatemala, El Salvador, Mexico	1,500
2005	Earthquake (Pakistan earthquake)	EQ-2005-000174-PAK EQ-2005-000174-IND	Pakistan and northern India	75,000
2006	Landslide	LS-2006-000024-PHL	Philippines	1,100
2006	Earthquake/Volcanic Eruption	VO-2006-000048-IDN	Merapi volcano, Indonesia	5,800
2006	Typhoon XANGSANE (0615)	TC-2006-000144-PHL	Luzon, Philippines	1,400
2007	Heavy Rain, Flood	FL-2007-000096-IND	India	1,100
2007	Cyclone Sidr	TC-2007-000208-BGD	Bangladesh	4,200
2008	Earthquake (Great Sichuan Earthquake)	EQ-2008-000062-CHN	China	87,500
2008	Cyclone Nargis	TC-2008-000057-MMR	Myanmar	138,400
2008	Flood	FL-2008-000089-IND	North-eastern India	1,100
2009	Earthquake (2009 Sumatra Earthquake)	EQ-2009-000273-IDN	Indonesia	1,200
2009	Flood	FL-2009-000217-IND	Southern India	1,200
2010	Earthquake (Haiti Earthquake)	EQ-2010-000009-HTI	Haiti	222,600
2010	Earthquake (Yushu Earthquake)	EQ-2010-000073-CHN	Qinghai, China	3,000
2010	Flood	FL-2010-000141-PA	North-western Pakistan	2,000
2010	Torrential Rain, Debris Flow	LS-2010-000156-CHN	Yangtze River Basin, China	1,800
2011	Earthquake, Tsunami (Great East Japan Earthquake)	EQ-2011-000028-JPN	Tohoku and Kanto regions, Japan	19,000
2011	Typhoon WASHI (1121)	TC-2011-000189-PH	Mindanao, Philippines	1,400
2012	Typhoon BOPHA (1224)	TC-2012-000197-PHL	Mindanao, Philippines	1,900
2013	Flood	FL-2013-000070-IND	Northern India	1,500
2013	Typhoon HAIYAN (1330)	TC-2013-000139-PHL	Leyte, Philippines	6,200
2015	Earthquake (Nepal Earthquake)	EQ-2015-000048-NPL	Nepal	9,000
2018	Earthquake, Tsunami	EQ-2018-000156-IDN	Sulawesi, Indonesia	3,400
2019	Flood	FL-2019-000084-IND	India	1,900
2020	Flood	FL-2020-000164-IND	India	1,922

Source: Formulated by the Cabinet Office based on the OFDA/CRED International Disaster Database (EM-DAT) (www.emdat.be), Université Catholique de Louvain, Brussels (Belgium), and Chronological Scientific Tables

Note) GLIDE number (GLobal unique disaster IDEntifier number) was proposed by the Asian Disaster Reduction Center (ADRC) in 2001 to share disaster information between different databases by allocating a common and unique disaster number to each of various disasters in the world, and operated jointly by the Office for the Coordination of Humanitarian Affairs (OCHA, ReliefWeb) for use of numerous disaster-related organizations. The number does not cover all kinds of disasters because it is allocated for a disaster when the relevant organization decides to allocate as required according to respective criteria. If the use of GLIDE is more common in disaster-related organizations in the future, more information on disasters can be shared.

Fig. A-24 Top 10 Largest Earthquakes Since 1900

(As of March 9, 2021)

Ranking	Date (Japan Time)	Location	Magnitude (Mw)
1	May 23, 1960	Chile	9.5
2	March 28, 1964	Gulf of Alaska	9.2
3	December 26, 2004	Off the West Coast of Northern Sumatra, Indonesia	9.1
4	March 11, 2011	Off the Sanriku Coast, Japan (The 2011 off the Pacific coast of Tohoku Earthquake)	9.0
	November 5, 1952	Kamchatka Peninsula	9.0
6	February 27, 2010	Offshore Maule, Chile	8.8
	February 1, 1906	Offshore Ecuador	8.8
8	February 4, 1965	Aleutian Islands, Alaska	8.7
9	August 16, 1950	Tibet, Assam	8.6
	April 11, 2012	Off the West Coast of Northern Sumatra, Indonesia	8.6
	March 29, 2005	Northern Sumatra, Indonesia	8.6
	March 10, 1957	Aleutian Islands, Alaska	8.6
	April 1, 1946	Aleutian Islands, Alaska	8.6

*Mw: Moment magnitude

*The magnitude (Mw) of the 2011 off the Pacific coast of Tohoku Earthquake is based on materials from JMA.

Source: US Geological Survey

Fig. A-25 Major Natural Disasters Since 2020

Date	Country	Disaster Type	Fatalities	Affected People	Direct Damages (USD 1,000)
Jan. - Dec., 2020	Madagascar	Drought	0	725,620	0
Jan. - Dec., 2020	Brazil	Drought	0	0	3,000,000
Jan. - Dec., 2020	United States of America (the)	Drought	45	0	4,500,000
Jan. 01 - Jan. 24, 2020	Madagascar	Flood	40	106,846	0
Jan. 04 - Jan. 24, 2020	Israel	Flood	7	0	580,000
Jan. 07 - Jan. 07, 2020	Puerto Rico	Earthquake	4	5,078	800,000
Jan. 09 - Jan. 22, 2020	Iran (Islamic Republic of)	Flood	4	196,152	808,000
Jan. 10 - Jan. 12, 2020	United States of America (the)	Storm	10	0	1,200,000
Jan. 11 - Jan. 13, 2020	Pakistan	Storm	107	1,000,104	0
Jan. 12 - Jan. 22, 2020	Philippines (Republic of the)	Volcanic activity	1	736,802	66,000
Jan. 17 - Jan. 27, 2020	Brazil	Flood	61	11,012	300,000
Jan. 19 - Jan. 21, 2020	Australia	Storm	0	0	1,500,000
Jan. 19 - Jan. 21, 2020	Spain	Storm	17	2,000	315,000
Feb. 04 - Feb. 11, 2020	Australia	Flood	1	0	1,200,000
Feb. 10 - Feb. 17, 2020	United States of America (the)	Flood	0	3,000	175,000
Feb. 13 - Feb. 26, 2020	Indonesia	Flood	6	115,000	10,000
Feb. 24 - Apr. 30, 2020	Iran (Islamic Republic of)	Flood	21	22	1,500,000
Feb. 26 - Feb. 28, 2020	Indonesia	Flood	10	112,000	0
Mar. 02 - Mar. 05, 2020	United States of America (the)	Storm	25	12,300	2,500,000
Mar. 18 - Mar. 21, 2020	Iraq	Flood	8	1,500	100,000
Mar. 20 - Mar. 26, 2020	Zambia	Flood	0	700,000	0
Mar. 22 - Mar. 22, 2020	Croatia	Earthquake	1	78,942	6,800,000
Mar. 27 - Mar. 28, 2020	United States of America (the)	Storm	0	0	2,900,000

Date	Country	Disaster Type	Fatalities	Affected People	Direct Damages (USD 1,000)
Apr. 06 - Apr. 09, 2020	Tonga	Tropical cyclone	0	1,289	111,000
Apr. 06 - Apr. 09, 2020	United States of America (the)	Storm	0	0	2,900,000
Apr. 08 - Apr. 09, 2020	Fiji	Tropical cyclone	1	180,000	13,000
Apr. 10 - Apr. 14, 2020	United States of America (the)	Storm	38	200	3,500,000
Apr. 15 - Apr. 30, 2020	Yemen	Flood	10	150,030	10,000
Apr. 18 - Jun. 01, 2020	Kenya	Flood	285	810,655	10,000
Apr. 20 - Apr. 26, 2020	Djibouti	Flood	8	110,000	0
Apr. 20 - May. 08, 2020	Ethiopia	Flood	12	219,000	0
Apr. 20 - Apr. 28, 2020	Somalia	Flood	26	1,000,020	0
Apr. 21 - Apr. 24, 2020	United States of America (the)	Storm	3	31	1,400,000
Apr. 26 - Apr. 30, 2020	Canada	Flood	1	12,936	1,300,000
Apr. 30 - May 05, 2020	Indonesia	Flood	2	110,000	0
May 01 - May 31, 2020	China	Storm	20	600,000	1,100,000
May 02 - May 02, 2020	Puerto Rico	Earthquake	0	150	150,000
May 02 - May 03, 2020	United States of America (the)	Storm	2	0	850,000
May 08 - May 08, 2020	Uganda	Flood	3	100,000	0
May 15 - May 17, 2020	Philippines (Republic of the)	Tropical cyclone	5	578,740	31,100
May 17 - May 20, 2020	United States of America (the)	Flood	1	10,000	2,100,000
May 20 - May 20, 2020	Bangladesh	Tropical cyclone	26	2,600,000	1,500,000
May 20 - May 20, 2020	India	Tropical cyclone	90	18,000,000	13,500,000
May 20 - May 23, 2020	United States of America (the)	Storm	2	0	1,600,000
May 21 - Jul. 30, 2020	China	Flood	280	4,200,000	17,000,000
May 27 - Jun. 02, 2020	India	Landslide	21	155,850	0
May 27, 2020	United States of America (the)	Storm	0	0	1,400,000
May 30 - May 31, 2020	Guatemala	Tropical cyclone	2	306,886	0
May 31 - May 31, 2020	El Salvador	Tropical cyclone	32	149,840	220,000
Jun. 03 - Jun. 03, 2020	India	Tropical cyclone	6	7,500	820,000
Jun. 07 - Jun. 07, 2020	United States of America (the)	Tropical cyclone	1	0	325,000
Jun. 13 - Jun. 14, 2020	Canada	Storm	0	60,000	1,200,000
Jun. 15 - Sep. 30, 2020	Bangladesh	Flood	257	5,448,271	500,000
Jun. 15 - Jul. 20, 2020	Somalia	Flood	6	191,000	0
Jun. 24 - Oct. 31, 2020	Nigeria	Flood	155	193,425	100,000
Jun. 29 - Jul. 10, 2020	Japan	Flood	82	250,114	5,800,000
Jun. 30 - Jul. 01, 2020	Brazil	Storm	12	1,119	100,000
Jun. 30 - Jul. 05, 2020	China	Flood	22	10,000,000	0
Jun. 01 - Aug. 16, 2020	India	Flood	1922	1,300,000	7,500,000
Jun. 01 - Sep. 01, 2020	Nepal	Flood	448	117,677	100,000
Jun. 01 - Sep. 09, 2020	Sudan (Republic of the)	Flood	155	875,013	250,000
Jun. 01 - Aug. 01, 2020	United Kingdom of Great Britain and Northern Ireland (the)	Extreme temperature	2556	0	0
Jul. 01 - Jul. 02, 2020	Myanmar	Landslide	172	1,142	0
Jul. 01 - Sep. 10, 2020	Niger (Republic of)	Flood	73	632,608	10,000
Jul. 03 - Jul. 31, 2020	Indonesia	Flood	105	14,534	10,000
Jul. 06 - Jul. 06, 2020	Ukraine	Wildfire	5	300	162,000
Jul. 25 - Jul. 26, 2020	Mexico	Storm	5	0	135,000

Date	Country	Disaster Type	Fatalities	Affected People	Direct Damages (USD 1,000)
Jul. 25 - Jul. 25, 2020	United States of America (the)	Storm	0	0	1,100,000
Jul. 30 - Aug. 16, 2020	France	Extreme temperature	1924	0	0
Jul. 31 - Aug. 02, 2020	Dominican Republic (the)	Storm	2	5,500	165,000
Jul. 31 - Aug. 02, 2020	United States of America (the)	Storm	16	0	4,800,000
Jul. 01 - Dec. 01, 2020	South Sudan	Flood	0	1,042,000	0
Aug. 01 - Aug. 12, 2020	Korea (Republic of)	Flood	42	6,000	420,000
Aug. 01 - Sep. 01, 2020	Pakistan	Flood	410	1,550,170	1,500,000
Aug. 05 - Aug. 08, 2020	Belgium	Extreme temperature	1460	0	0
Aug. 05 - Aug. 16, 2020	Netherlands (Kingdom of the)	Extreme temperature	400	0	0
Aug. 08 - Aug. 12, 2020	United States of America (the)	Storm	4	0	6,800,000
Aug. 10 - Aug. 11, 2020	China	Storm	0	12,235	161,000
Aug. 16 - Oct. 01, 2020	United States of America (the)	Wildfire	32	0	11,000,000
Aug. 22 - Aug. 23, 2020	Turkey	Flood	16	0	250,000
Aug. 25 - Aug. 04, 2020	Afghanistan	Flood	212	20,445	0
Aug. 27 - Aug. 28, 2020	United States of America (the)	Storm	33	6,500	13,000,000
Aug. 01 - Aug. 01, 2020	China	Flood	92	0	4,800,000
Sep. 01 - Oct. 15, 2020	Syrian Arab Republic	Wildfire	3	140,079	0
Sep. 06 - Sep. 08, 2020	Korea (Republic of)	Storm	2	0	1,200,000
Sep. 11 - Sep. 18, 2020	United States of America (the)	Storm	8	0	6,300,000
Sep. 18 - Sep. 21, 2020	Viet Nam	Storm	6	125,000	33,000
Sep. 01 - Nov. 01, 2020	Lesotho	Drought	0	766,000	0
Oct. 01 - Oct. 24, 2020	Cambodia	Storm	38	759,360	100,000
Oct. 01 - Oct. 26, 2020	India	Flood	152	150,000	4,000,000
Oct. 01 - Oct. 31, 2020	Mozambique	Flood	22	145,000	0
Oct. 02 - Oct. 04, 2020	France	Storm	26	600	1,000,000
Oct. 02 - Oct. 06, 2020	Mexico	Tropical cyclone	6	3,500	100,000
Oct. 06 - Nov. 03, 2020	Viet Nam	Tropical cyclone	243	1,500,000	850,000
Oct. 07 - Oct. 11, 2020	Mexico	Tropical cyclone	0	0	100,000
Oct. 07 - Oct. 11, 2020	United States of America (the)	Tropical cyclone	4	9,400	2,900,000
Oct. 09 - Oct. 31, 2020	Thailand	Tropical cyclone	6	274,923	0
Oct. 24 - Oct. 30, 2020	United States of America (the)	Tropical cyclone	6	0	3,500,000
Oct. 28 - Oct. 28, 2020	Philippines (Republic of the)	Tropical cyclone	31	888,415	87,100
Oct. 29 - Oct. 29, 2021	Viet Nam	Tropical cyclone	41	450,000	540,000
Oct. 30 - Oct. 30, 2022	Turkey	Earthquake	115	6,034	450,000
Oct. 31 - Nov. 01, 2020	Philippines (Republic of the)	Tropical cyclone	31	3,356,394	503,294
Oct. 31- Oct. 31, 2020	Australia	Storm	0	0	1,200,000
Oct. 01 - Dec. 01, 2020	Mozambique	Drought	0	2,700,000	0
Nov. 03 - Nov. 04, 2020	Guatemala	Tropical cyclone	160	2,415,888	386,000
Nov. 03 - Nov. 04, 2020	Nicaragua	Tropical cyclone	2	30,000	178,000
Nov. 03 - Nov. 04, 2020	Honduras	Tropical cyclone	110	4,566,584	5,000,000
Nov. 08 - Nov. 12, 2020	United States of America (the)	Tropical cyclone	12	0	1,500,000
Nov. 10 - Nov. 10, 2020	United States of	Storm	11	0	350,000

Date	Country	Disaster Type	Fatalities	Affected People	Direct Damages (USD 1,000)
	America (the)				
Nov. 11 - Nov. 12, 2020	Philippines (Republic of the)	Tropical cyclone	111	4,945,461	421,000
Nov. 14 - Nov. 17, 2020	Colombia	Tropical cyclone	23	228,000	100,000
Nov. 17 - Nov. 17, 2020	Guatemala	Tropical cyclone	2	131,298	0
Nov. 17 - Nov. 18, 2020	Honduras	Tropical cyclone	14	578,000	0
Nov. 17 - Nov. 18, 2020	Nicaragua	Tropical cyclone	18	900,000	741,000
Nov. 22 - Nov. 13, 2020	Somalia	Tropical cyclone	9	120,000	0
Nov. 25 - Nov. 26, 2020	India	Tropical cyclone	14	0	600,000
Nov. 25 - Dec. 14, 2020	Thailand	Flood	29	691,659	50,000
Dec. 02 - Dec. 10, 2020	Indonesia	Flood	5	110,000	0
Dec. 02 - Dec. 05, 2020	Sri Lanka	Flood	3	111,665	0
Dec. 16 - Dec. 21, 2020	Thailand	Flood	1	139,000	0
Dec. 16 - Dec. 18, 2020	Japan	Storm	0	0	200,000
Dec. 29 - Dec. 29, 2020	Croatia	Earthquake	8	140,036	1,200,000
Dec. 30 - Dec. 30, 2020	Norway	Landslide	10	1,010	130,000
2020 - Jun. 01, 2020	Burkina Faso	Drought	0	2,900,000	0
2020 - Dec. 01, 2020	Mali	Drought	0	6,800,000	0
2020 - Dec. 23, 2020	Niger (Republic of)	Drought	0	3,700,000	0

Source: Formulated by the Cabinet Office based on materials from EM-DAT: The International Disaster Database (Centre for Research on the Epidemiology of Disasters (CRED), Université Catholique de Louvain).

1) Turkey Earthquake (EQ-2020-000215-TUR)

Turkey, like Japan, is an earthquake-prone country, and moderate-sized earthquakes occurred frequently in 2020. At 2:51 p.m. local time on October 30, a magnitude 6.6 earthquake (magnitude 7.0 according to the U.S. Geological Survey (USGS)), whose epicenter was the Aegean Sea between Turkey and Greece, occurred. As a result, damage was confirmed mainly in Izmir province, which is located in western Turkey.

According to an announcement by the Disaster and Emergency Management Authority (AFAD) of the Ministry of Interior of Turkeyon November 6, 114 people were killed and 1,035 were injured due to the earthquake. According to EM-DAT, the earthquake caused economic damage of US$450 million.
https://reliefweb.int/report/turkey/afad-press-bulletin-izmir-turkey-earthquake-report-6-november-2020

2) Vietnam Rainstorms and Floods
(FL-2020-000211-VNM, TC-2020-000234-VNM, TC-2020-000235-VNM)

Vietnam was hit by frequent tropical cyclones and typhoons (including Linfa, Molave, Vamco) from early October to November, which caused heavy rains over a long time period. Severe flooding occurred mainly along rivers in central part of Vietnam, and landslide damage occurred in mountainous areas.

According to EM-DAT, from October 6 to November 3, the number of deaths was 243, the number of the affected was 1.5 million, and the economic damage amounted to US$850 million.

On October 15, in response to a request from the Vietnamese government, the Japanese government decided to provide emergency relief supplies (plastic sheets and water purifiers) through the Japan International Cooperation Agency (JICA) in response to typhoon damage in Vietnam.
https://www.jica.go.jp/information/jdrt/2020/201015.html

3) Central American Countries Hurricanes Eta and Iota

The tropical cyclone (Hurricane Eta), which occurred in the Caribbean on October 31, developed at a furious pace. On November 3, it became a Category 4 hurricane, the second strongest of the five levels of hurricane force, and made landfall in Central American countries. Torrential rain caused extensive flooding and landslides in Honduras (TC-2020-000220-HND), Nicaragua (TC-2020-000218-NIC), Guatemala (TC-2020-000222-GTM) and other countries, resulting in serious damage. In addition, about two weeks later, Hurricane Iota, which temporarily developed into a Category 5 hurricane, struck these countries, forcing many people to evacuate during the spread of COVID-19.

According to the International Federation of Red Cross and Red Crescent Societies (IFRC), both cyclones killed 99 people, left 11 missing and evacuated more than 1 million people in Honduras (as of December 3). In

Guatemala, 60 people died, 100 were missing and more than 310,000 people were evacuated (as of December 6), and in Nicaragua 21 people were killed, and more than 160,000 people were evacuated (as of 7 December).

In addition to the Provision of Emergency Relief Goods through JICA, on December 18, the Government of Japan decided to provide emergency grant aid of $8.8 million (968 million yen) to three Central American countries (Guatemala, Honduras, and Nicaragua) to assist the people affected by Hurricanes Eta and Iota.

Through the United Nations World Food Programme (WFP), the United Nations Children's Fund (UNICEF), the International Organization for Migration (IOM), and the International Federation of Red Cross and Red Crescent Societies (IFRC), food, housing repair materials, and non-food aid supplies were provided. Also, support was provided in the areas of water and sanitation, and coordination and management within shelters were secured.

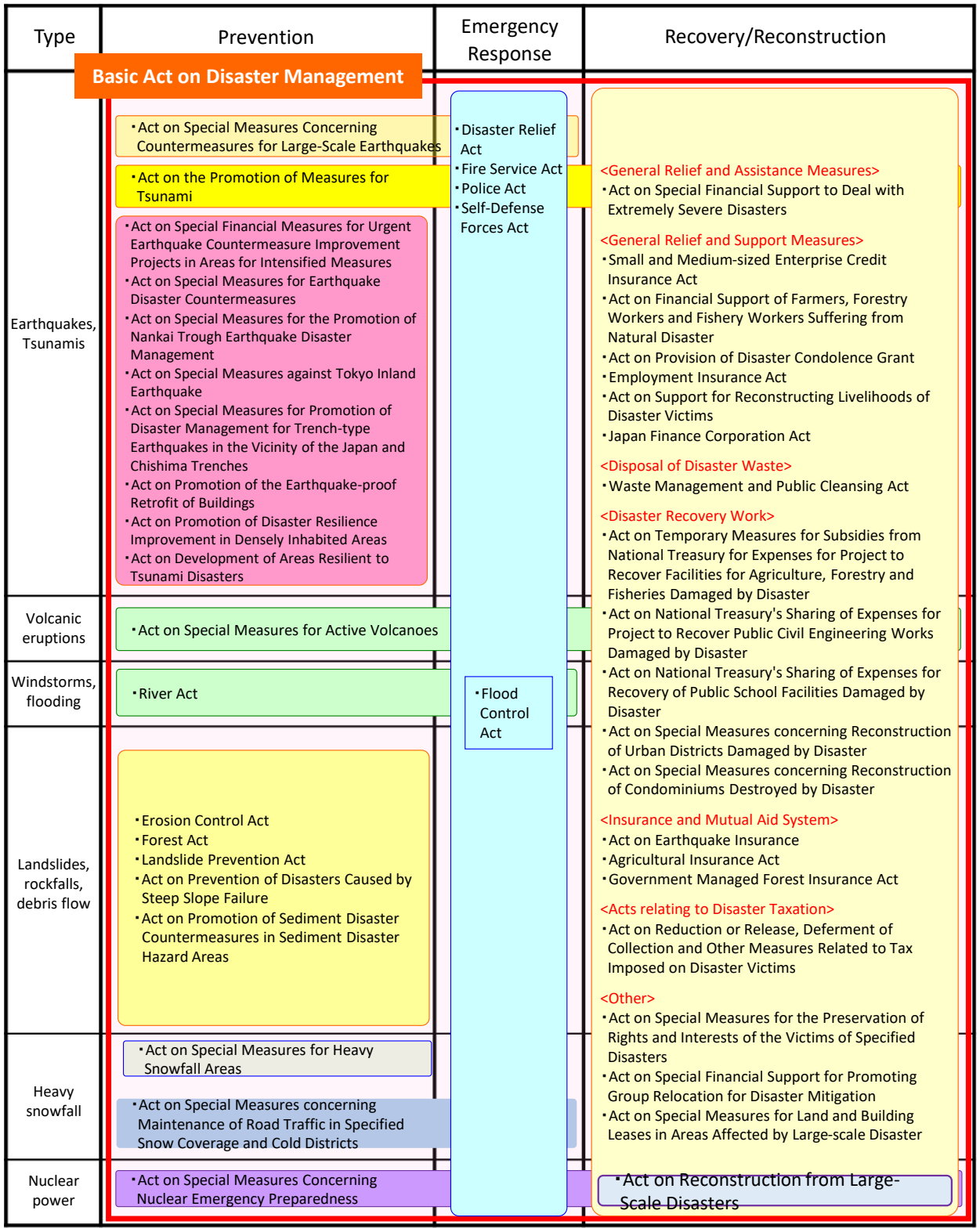
https://go.ifrc.org/emergencies/4889#current-situation
https://www.mofa.go.jp/mofaj/press/release/press24_000073.html

3. Laws and Systems

Fig. A-26 Evolution of Disaster Management Laws and Systems Since 1945

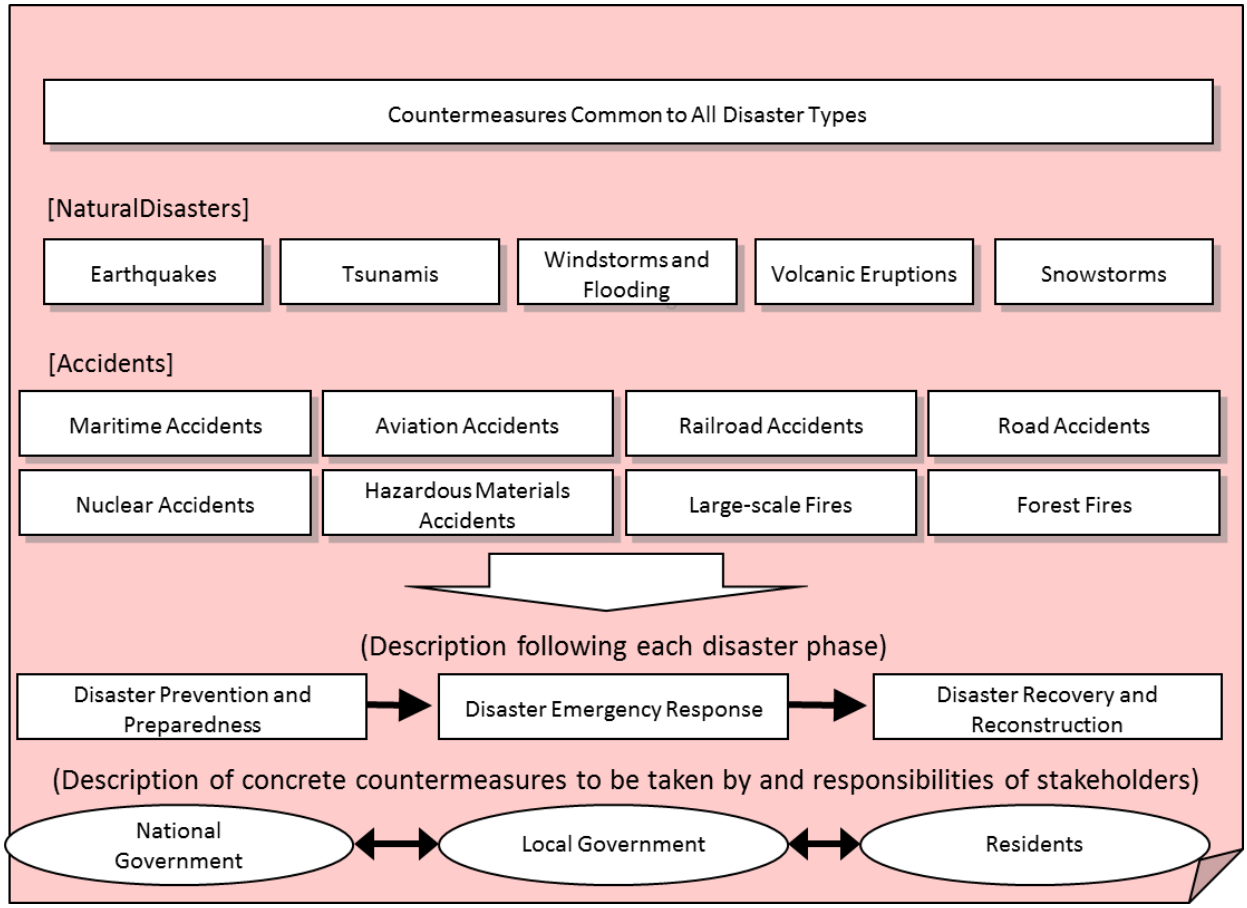
Source: Cabinet Office

Fig. A-27 Major Disaster Management Laws by Type of Disaster



Source: Cabinet Office

Fig. A-28 Structure of the Basic Disaster Management Plan



Source: Cabinet Office

Fig. A-29 Revisions to the Basic Disaster Management Plan

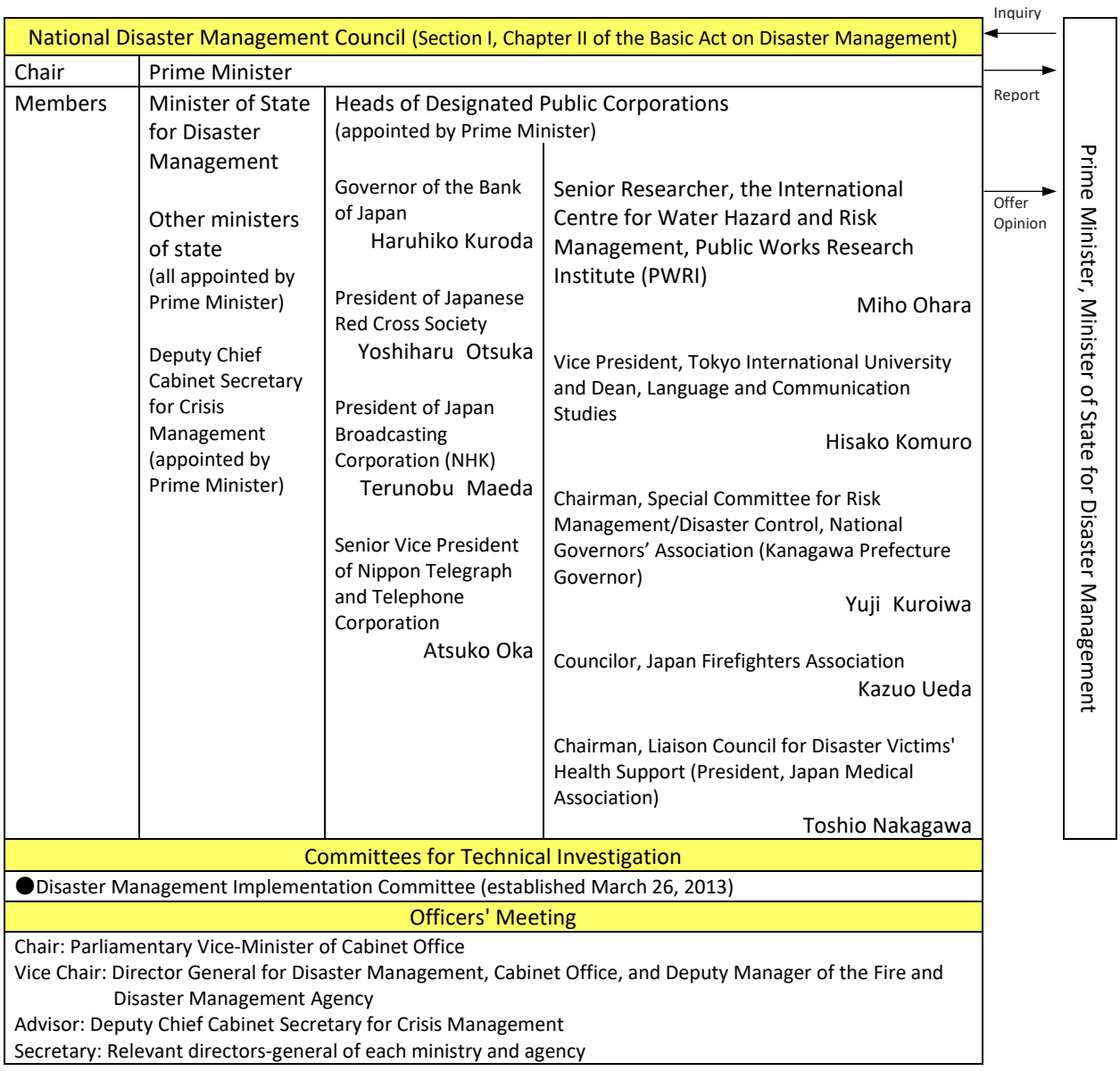
Revision Date	Outline of Revision	Background
June 1963	- The Basic Disaster Management Plan formulated based on the Basic Act on Disaster Management - Stipulations regarding various measures to prevent natural disasters, mitigate damage, and promote disaster reconstruction	Sep. 26, 1959: Typhoon VERA (5915) Nov. 15, 1961: Enactment of the Basic Act on Disaster Management
May 1971	Partial revision - Enhancement of earthquake countermeasures (facilities for earthquake prediction, preparation of fire fighting helicopters) - Renewed positioning of countermeasures to tackle hazardous materials, petrochemical complexes, and wildfires	Sep. 6, 1967 Recommendation concerning Disaster Prevention Measures (recommending revisions in response to a modern socioeconomy)
July 1995	Complete revision - Structured this version by disaster type, and included stipulations in the following order: prevention, emergency response, recovery/reconstruction - Clearly defined the stakeholders, such as national governments, public agencies, local governments, and businesses, and specified countermeasures - Stipulated that changes in social structure such as the aging of society should be taken into account	Jan. 17, 1995: Southern Hyogo Prefecture Earthquake (Great Hanshin-Awaji Earthquake)
June 1997	Partial revision - Addition of section on countermeasures to address disasters caused by accidents (structural improvements such as the establishment of an emergency countermeasures headquarters) - Addition of a section on snowstorm countermeasures	Jan. 2, 1997: Nakhodka Oil Spill Accident
May 2000	Partial revision - Revision of the section on countermeasures to tackle nuclear power disasters, following the enactment of the Act on Special Measures Concerning Nuclear Emergency Preparedness	Sep. 30, 1999: Criticality accident at uranium fabrication plant in Tokai-mura, Ibaraki prefecture
December 2000	Partial revision - Revisions resulting from the national government reformation	National government reformation
April 2002	Partial revision - Enhancement of descriptions relating to information transmission to residents and evacuation measures regarding countermeasures against flooding, sediment disasters, and storm surges - New positioning of nuclear power disasters related to nuclear vessels	Jun. 29, 1999: Torrential rain disaster in Hiroshima Prefecture Sep. 24, 1999: Storm surge disaster in Kumamoto Prefecture
March 2004	Partial revision - Revisions based on the creation of the Basic Plan for the Promotion of Tonankai and Nankai Earthquake Countermeasures (seismic retrofitting of public buildings, etc.) - Revisions based on the development of policies such as the development of an earthquake early warning system	Mar. 31, 2004: Creation of a Basic Plan for the Promotion of Tohnankai and Nankai Earthquake Countermeasures
July 2005	Partial revision - Revisions based on developments in policy, such as the promotion of a nationwide movement to practice disaster preparedness, the promotion of corporate disaster risk reduction efforts, the formulation and implementation of an earthquake DRR strategy, tsunami DRR measures such as the development of tsunami evacuation buildings, information transmission during torrential rains, evacuation support for the elderly, etc.	July 28, 2004: Creation of an Earthquake Disaster Risk Reduction Strategy Dec. 26, 2004: Indian Ocean Tsunami (Sumatra/Andaman Earthquake)
March 2007	Partial revision - Revisions resulting from the transition from Defense Agency to Ministry of Defense	Transition from Defense Agency to Ministry of Defense
February 2008	Partial revision - Implementation of follow-up actions on key issues regarding the Basic Disaster Management Plan, development of strategic national movements, establishment of conditions for the promotion of corporate disaster risk reduction, full-scale introduction of earthquake early warning system, strengthening of nuclear power disaster countermeasures in light of lessons learned from the Niigataken Chuetsu-oki Earthquake	July 16, 2007: The Niigataken Chuetsu-oki Earthquake
December 2011	Partial revision - Radical strengthening of earthquake/tsunami countermeasures in light of the Great East Japan Earthquake (addition of tsunami disaster countermeasure section)	Mar. 11, 2011 Tohoku Earthquake and Tsunami (The Great East Japan Earthquake)
September 2012	Partial revision - Strengthening of countermeasures against large-scale regional disasters in light of revisions to the Basic Act on Disaster Management (First Revision), and the final report of the National Disaster Management Council's Committee for Policy Planning on Disaster Management (each section) - Strengthening of nuclear power disaster countermeasures in light of the enactment of the Act for Establishment of the Nuclear Regulation Authority (nuclear power disaster countermeasures section)	Mar. 11, 2011 The Great East Japan Earthquake Jun. 27, 2012 Partial Amendment of the Basic Act on Disaster Management Sep. 19, 2012 Inauguration of the Nuclear Regulatory Authority
January 2014	Partial revision - Strengthening of countermeasures against large-scale disasters in light of revisions to the Basic Act on Disaster Management (Second Revision) and the enactment of the Act on Reconstruction from Large-Scale Disasters (each section) - Strengthening of nuclear disaster countermeasures in light of investigations by the Nuclear Regulation Authority	Mar. 11, 2011 The Great East Japan Earthquake Jun. 21, 2013 Partial Amendment of the Basic Act on Disaster Management, enactment of the Act on Reconstruction from Large-Scale Disasters

Revision Date	Outline of Revision	Background
November 2014	Partial revision - Strengthening of countermeasures against abandoned and stranded vehicles following revision of the Basic Act on Disaster Management - Addition of descriptions in light of lessons learned from heavy snowfall of February 2014, such as the diversification of information transmission methods such as warnings of heavy snow	Feb. 2014: Heavy snowfall Nov. 21, 2014: Partial Amendment of the Basic Act on Disaster Management
March 2015	Partial revision - Improvement and strengthening of nuclear emergency preparedness systems e.g., through the establishment of local nuclear disaster management committees and national support for the enhancement of local plans for disaster risk reduction/evacuation plans (nuclear disaster countermeasures section)	Mar. 5, 2015: Cabinet Secretariat Three-Year Revision and Investigation Team "Improvement and Strengthening of the Nuclear Emergency Preparedness System (Second Report)"
July 2015	Partial revision -Revisions resulting from the strengthening of measures in light of lessons learned from the Hiroshima Sediment Disaster and the Mt. Ontake Eruption (each section)	Jan. 18, 2015: Partial Amendment of the Act on the Promotion of Sediment Disaster Countermeasures in Sediment Disaster Hazard Areas Mar. 26, 2015: Working Group for the Promotion of Volcano Disaster Prevention report Jun. 4, 2015: Working Group for Studying Comprehensive Countermeasures against Sediment Disasters report
February 2016	Partial revision -Revisions resulting from the strengthening of measures in light of the revision of laws, including the Act on Special Measures for Active Volcanoes, the Flood Control Act, the Sewerage Act, the Waste Management and Public Cleansing Act, and the Basic Act on Disaster Management (each section)	Dec. 10, 2015: Partial Amendment of the Act on Special Measures for Active Volcanoes
May 2016	Partial revision -Revisions resulting from the strengthening of measures in light of lessons learned from the Torrential Rain of September 2015 in the Kanto and Tohoku Regions (each section)	Mar. 31, 2016: Working Group on Study on Evacuation and Emergency Response Measures for Flood Disasters report
April 2017	Partial revision -Revisions resulting from the strengthening of measures in light of lessons learned from the 2016 Kumamoto Earthquake and Typhoon LIONROCK (1610) disaster (each section)	Dec. 20, 2016: Report of the Working Group for Studying Emergency Response and Livelihood Support Measures in Light of the 2016 Kumamoto Earthquake Dec. 26, 2016: Report of the Study Group on Guidelines for Producing a Handbook on Decision and Dissemination for Evacuation Recommendations
June 2018	Partial revision -Revisions resulting from the strengthening of measures in light of the revision of laws, including the Disaster Relief Act, the Road Act, and the Flood Control Act, etc. (each section) - Revisions resulting from the strengthening of measures in light of lessons learned from the 2017 July Northern Kyushu Heavy Rain and the heavy snow from January to February 2018 (each section)	Dec. 8, 2017: Report of the Study Group on Evacuation from the 2017 July Northern Kyushu Heavy Rain May 16, 2018: Interim Report on Measures to Secure Road Traffic in Heavy Snow June 15, 2018: Partial Amendment of the Disaster Relief Act
May 2019	Partial revision -Amendments to evacuation measures from flood and sediment disasters in light of the heavy rain event of July 2018 (each section)	Dec.26, 2018: Amendments to evacuation measures from flood and sediment disasters in light of the heavy rain event of July 2018 (report) Mar. 29, 2019 Revision of the guidelines on evacuation recommendations
May 2020	Partial Amendment ・Verification of the Typhoon Faxai in 2019 (T1915) and the Typhoon Hagibis in 2019 (T1919), and amendments to strengthen countermeasures based on COVID-19 countermeasures (each part).	March 31, 2020: Verification of the series of disasters including Typhoon Faxai in 2019 (T1915) and Typhoon Hagibis in 2019 (T1919). Report (final summary)

Source: Cabinet Office

4. Organizations

Fig. A-30 Organization of the National Disaster Management Council



[Role]

- ○ Formulate a Basic Disaster Management Plan and Earthquake Disaster Management Plan and promote their implementation
- ○ Discuss important issues related to disaster management in response to inquiries from the Prime Minister or the Minister of State for Disaster Management (e.g. basic approaches to disaster management, comprehensive coordination of disaster management policies, and the declaration of states of emergency)
- ○ Offer opinions on important issues related to disaster management to the Prime Minister or the Minister of State for Disaster Management

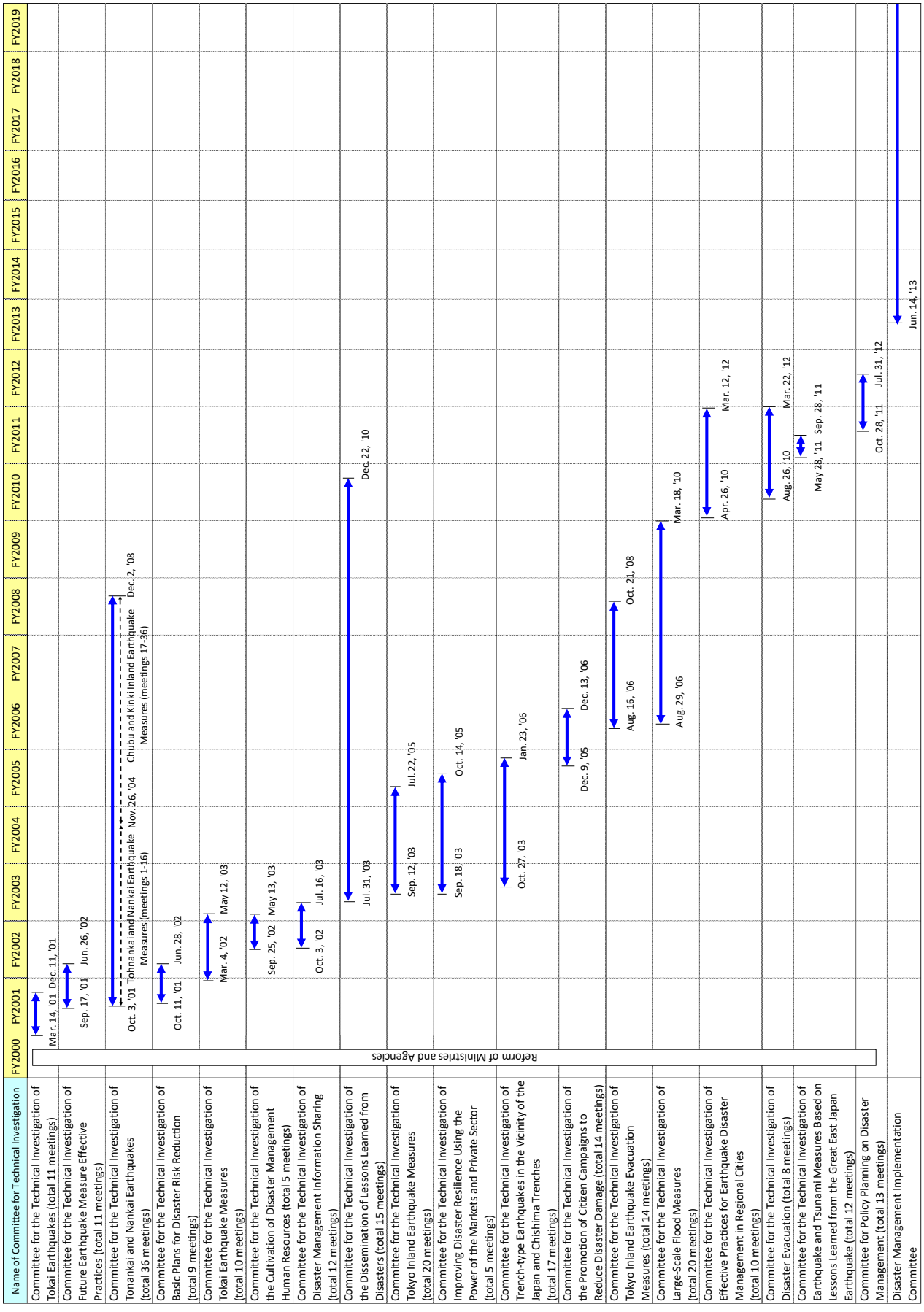
Source: Cabinet Office

Fig. A-31 Recent Meetings of the National Disaster Management Council (Since 2011)

FY2011	
Apr. 27, 2011	• Great East Japan Earthquake: Characteristics and Challenges • Conventional earthquake and tsunami policies
Oct. 11, 2011	• Report of the Committee for the Technical Investigation of Earthquake and Tsunami Measures Based on Lessons Learned from the Great East Japan Earthquake • Government ministry and agency efforts related to future DRR efforts • Establishment of the Committee for Policy Planning on Disaster Management
Dec. 27, 2011	• Revisions to the Basic Disaster Management Plan • Revisions to the National Disaster Management Council Operation Guidelines • Report of the Committee for the Technical Investigation of the Dissemination of Lessons Learned from Disasters • Status of the investigations by the Committee for Policy Planning on Disaster Management
Mar. 29, 2012	• Interim Report of the Committee for Policy Planning on Disaster Management • Current efforts aimed at bolstering and reinforcing DRR measures • FY2012 Comprehensive Disaster Management Drill Framework
FY2012	
Sep. 6, 2012	• Revisions to the Basic Disaster Management Plan • Framework for Large-Scale Flood Measures in the Capital Region • New Promotion of Earthquake Research • Final Report of the Committee for Policy Planning on Disaster Management • Report of the Committee for the Technical Investigation of Best Practices for Earthquake Disaster Management in Regional Cities • Report of the Committee for the Technical Investigation of Disaster Evacuation • Report on Tsunami Heights and Inundation Areas Resulting from Nankai Trough Megaquake (Secondary Report) and Damage Estimates (Primary Report)
Mar. 26, 2013	• Review of the legal systems for disaster management; status of investigations into Nankai Trough Megaquake Measures and Tokyo Inland Earthquake Measures • Establishment of the Disaster Management Implementation Committee • FY2013 Comprehensive Disaster Management Drill Framework
FY2013	
Jan. 17, 2014	• Designation of Areas for the Promotion of Nankai Trough Earthquake DRR Measures and Areas for the Special Reinforcement of Nankai Trough Earthquake Tsunami Evacuation Measures • Designation of Tokyo Inland Earthquake Emergency Management Zones • Revisions to the Basic Disaster Management Plan • Final Report of the Working Group to Investigate Tokyo Inland Earthquake Measures and a National Government Business Continuity Plan Proposal
Mar. 28, 2014	• Act on Special Measures for the Promotion of Nankai Trough Earthquake Disaster Management • Act on Special Measures against Tokyo Inland Earthquake • Framework for Large-Scale Earthquake Disaster Management and Reduction • FY2014 Comprehensive Disaster Management Drill Framework
FY2014	
Nov. 28, 2014	• Revisions to the Basic Disaster Management Plan
Mar. 31, 2015	• Revisions to the Basic Disaster Management Plan • FY2015 Comprehensive Disaster Management Drill Framework • Earthquake Disaster Risk Reduction Strategy for a Tokyo Inland Earthquake
FY2015	
Jul. 7, 2015	• Revisions to the Basic Disaster Management Plan
Feb. 16, 2016	• Basic Guidelines on the Comprehensive Promotion of Measures for Active Volcanoes • Designation of volcanic eruption hazard areas • Revisions to the Basic Disaster Management Plan
FY2016	
May 31, 2016	• FY2016 Comprehensive Disaster Management Drill Framework • Revisions to the Basic Disaster Management Plan
FY2017	
Apr. 11, 2017	• Revisions to the Basic Disaster Management Plan • FY2017 Comprehensive Disaster Management Drill Framework
FY2018	
Jun. 29, 2018	• Revisions to the Basic Disaster Management Plan • Partial amendment of the Disaster Relief Act
FY2019	
May 31, 2019	• Revisions to the Basic Disaster Management Plan • Revisions to the Basic Plan for the Promotion of Nankai Trough Earthquake Disaster Risk Reduction Countermeasures • FY2019 Comprehensive Disaster Management Drill Framework • Promotion of Earthquake Research (third period)
FY2020	
May 29, 2020	• Amendment of Basic Disaster Management Plan • Outline of the Comprehensive Disaster Management Drill Framework of 2020

Source: Cabinet Office

Fig. A-32 **Status of the Establishment of National Disaster Management Council Committees for Technical Investigation**



Source: Cabinet Office

5. Budget

Fig. A-33 Disaster Risk Management Budgets by Year

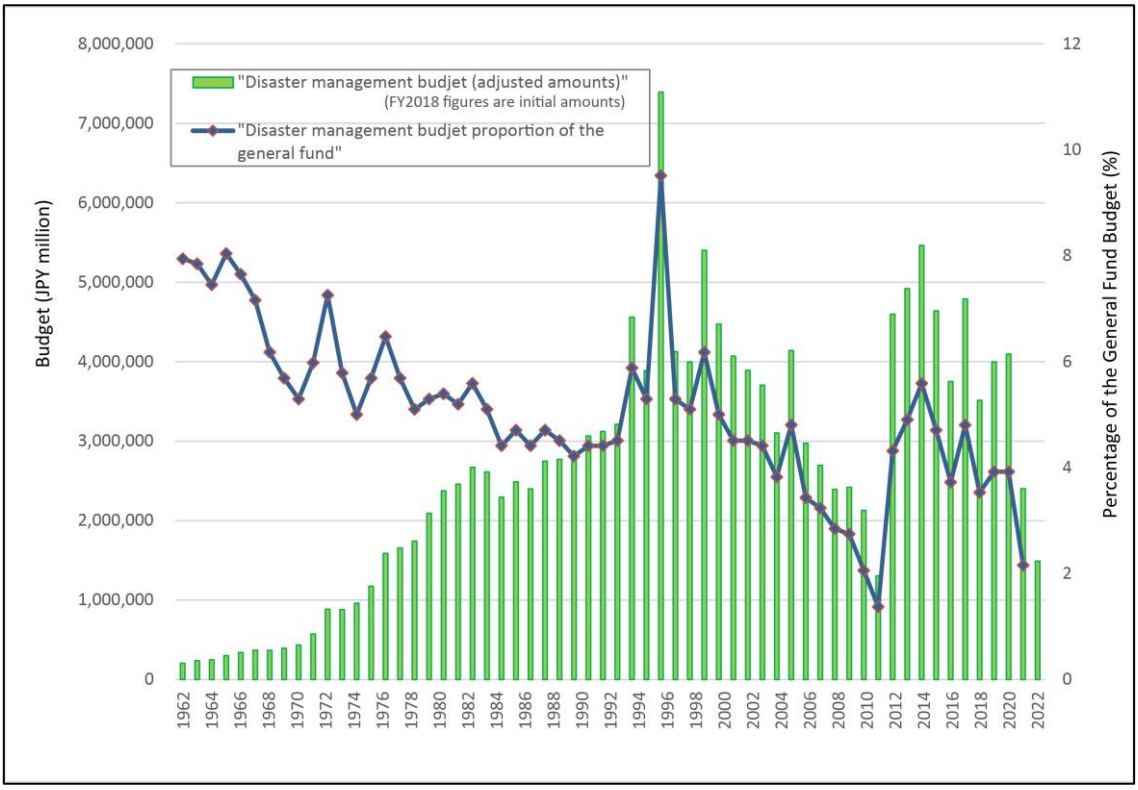
Fiscal Year	Science and Technology Research		Disaster Prevention		Land Conservation		Disaster Reconstruction		Total
	(JPY million)	Share (%)	(JPY million)	Share (%)	(JPY million)	Share (%)	(JPY million)	Share (%)	(JPY million)
1962	751	0.4	8,864	4.3	97,929	47.1	100,642	48.3	208,006
1963	1,021	0.4	8,906	3.7	116,131	47.7	117,473	48.2	243,522
1964	1,776	0.7	13,724	5.4	122,409	48.3	115,393	45.6	253,302
1965	1,605	0.5	17,143	5.6	147,858	48.3	139,424	45.6	306,030
1966	1,773	0.5	20,436	5.9	170,650	49.0	155,715	44.7	348,574
1967	2,115	0.6	23,152	6.1	197,833	52.3	154,855	41.0	377,955
1968	2,730	0.7	25,514	6.8	207,600	55.4	138,815	37.1	374,659
1969	2,747	0.7	30,177	7.5	236,209	59.0	131,270	32.8	400,403
1970	2,756	0.6	36,027	8.2	269,159	60.9	133,998	30.3	441,940
1971	3,078	0.5	50,464	8.6	352,686	60.3	178,209	30.5	584,437
1972	3,700	0.4	93,425	10.3	488,818	54.1	316,895	35.1	902,838
1973	6,287	0.7	111,321	12.4	493,580	54.9	287,082	32.0	898,270
1974	14,569	1.5	118,596	12.1	505,208	51.5	342,556	34.9	980,929
1975	17,795	1.5	159,595	13.3	615,457	51.3	405,771	33.9	1,198,618
1976	21,143	1.3	186,297	11.5	711,159	43.9	700,688	43.3	1,619,287
1977	22,836	1.4	234,409	13.9	904,302	53.6	525,886	31.2	1,687,433
1978	29,642	1.7	307,170	17.3	1,093,847	61.6	345,603	19.5	1,776,262
1979	35,145	1.6	435,963	20.4	1,229,401	57.6	432,759	20.3	2,133,268
1980	29,929	1.2	456,575	18.9	1,229,615	50.8	705,168	29.1	2,421,287
1981	29,621	1.2	474,926	18.9	1,240,788	49.5	761,950	30.4	2,507,285
1982	28,945	1.1	469,443	17.2	1,261,326	46.3	963,984	35.4	2,723,698
1983	29,825	1.1	489,918	18.4	1,268,712	47.6	875,851	32.9	2,664,306
1984	28,215	1.2	485,219	20.7	1,350,592	57.7	475,878	20.3	2,339,904
1985	27,680	1.1	512,837	20.2	1,355,917	53.5	640,225	25.2	2,536,659
1986	28,646	1.2	482,889	19.7	1,354,397	55.3	581,462	23.8	2,447,394
1987	38,296	1.4	612,505	21.9	1,603,599	57.2	548,337	19.6	2,802,737
1988	31,051	1.1	587,073	20.8	1,550,132	54.9	657,681	23.3	2,825,937
1989	34,542	1.2	588,354	20.7	1,638,104	57.5	587,819	20.6	2,848,819
1990	35,382	1.1	625,239	20.0	1,669,336	53.4	796,231	25.5	3,126,188
1991	35,791	1.1	628,596	19.8	1,729,332	54.3	788,603	24.8	3,182,322
1992	36,302	1.1	745,405	22.8	2,017,898	61.6	475,411	14.5	3,275,015
1993	43,152	0.9	866,170	18.6	2,462,800	52.9	1,280,569	27.5	4,652,691
1994	40,460	1.0	747,223	18.9	1,945,295	49.1	1,230,072	31.0	3,963,050
1995	105,845	1.4	1,208,134	16.0	2,529,386	33.5	3,696,010	49.0	7,539,375
1996	52,385	1.2	1,029,658	24.5	2,156,714	51.3	968,182	23.0	4,206,938
1997	49,128	1.2	1,147,102	28.2	2,014,695	49.4	864,370	21.2	4,075,295
1998	62,435	1.1	1,228,539	22.3	2,905,921	52.8	1,310,515	23.8	5,507,411
1999	78,134	1.7	1,142,199	25.0	2,400,534	52.6	941,886	20.6	4,562,752
2000	73,502	1.8	1,011,535	24.4	2,376,083	57.3	689,225	16.6	4,150,346
2001	49,310	1.2	1,060,445	26.7	2,238,816	56.4	618,427	15.6	3,966,998
2002	48,164	1.3	1,202,984	31.9	1,981,686	52.5	543,949	14.4	3,776,783
2003	35,133	1.1	814,101	25.7	1,625,670	51.4	689,255	21.8	3,164,159
2004	30,478	0.7	815,059	19.3	1,753,418	41.5	1,622,112	38.4	4,221,067
2005	11,097	0.4	866,290	28.6	1,426,745	47.0	728,606	24.0	3,032,738
2006	11,627	0.4	689,505	25.1	1,439,129	52.3	610,302	22.2	2,750,563

Fiscal Year	Science and Technology Research		Disaster Prevention		Land Conservation		Disaster Reconstruction		Total
	(JPY million)	Share (%)	(JPY million)	Share (%)	(JPY million)	Share (%)	(JPY million)	Share (%)	(JPY million)
2007	9,687	0.4	706,853	29.0	1,332,222	54.6	391,637	16.0	2,440,399
2008	8,921	0.4	819,359	33.2	1,275,135	51.7	363,471	14.7	2,466,886
2009	8,761	0.4	498,397	23.0	1,383,254	63.7	279,789	12.9	2,170,201
2010	7,695	0.6	224,841	16.9	813,359	61.1	285,038	21.4	1,330,933
2011	28,072	0.6	376,169	8.0	743,936	15.9	3,536,475	75.5	4,684,652
2012	29,422	0.6	561,021	12.0	790,422	17.0	3,129,561	67.2	4,656,656
2013	15,339	0.3	788,576	14.1	879,932	15.8	3,883,911	69.6	5,578,036
2014	16,688	0.4	639,966	13.9	836,580	18.2	3,101,555	67.5	4,594,789
2015	14,961	0.4	713,477	18.6	155,475	4.1	2,954,355	77.0	3,838,268
2016	14,023	0.3	696,399	14.3	318,320	6.5	3,855,516	78.9	4,884,258
2017	10,123	0.3	790,361	22.1	267,629	7.5	2,515,384	70.2	3,583,497
2018	22,781	0.8	737,429	16.3	482,711	4.0	2,834,284	78.8	4,077,205
2019	14,390	0.3	814,471	19.5	512,324	12.3	2,839,061	67.9	4,180,246
2020	15,726	0.4	1,037,401	27.2	437,134	7.5	2,320,286	60.9	3,810,547
2021	7,368	0.5	506,281	33.3	121,306	7.5	885,747	58.2	1,520,702

Notes:

1. These are adjusted budget (national expenditures) amounts. However, the FY2021 figures are preliminary figures reflecting the initial budget.
2. The reduced amount allocated to science and technology research in FY2007 is largely due to the structural conversion of national lab and research institutions into independent administrative agencies (the budgets of independent administrative agencies are not included in this table).
3. The amount allocated to disaster prevention in FY2009 is reduced because a portion of the revenue sources set aside for road construction were converted to general fund sources making it impossible to allocate certain portions to the disaster management budget.
4. The reduced amount allocated to disaster prevention and land conservation in FY2010 is due to the fact that, following the creation of the General Grant for Social Capital Development, some disaster prevention policies and many subsidy programs in land conservation were established using those grants.

Source: Formulated by the Cabinet Office based on materials from various ministries and agencies



Source: Formulated by the Cabinet Office based on materials from various ministries and agencies

Fig. A-34 Earthquake Emergency Development Project Plans

(As of the end of FY2019; Unit: JPY million)

Category	FY1980 - FY2019		
	Planned Amount (a)	Implemented Amount (b)	Rate of Progress (b)/(a)
1 Evacuation sites	177,539	176,549	99.4%
2 Evacuation roads	93,983	88,246	93.9%
3 Firefighting facilities	141,238	131,794	93.3%
4 Emergency transport routes	951,600	940,067	98.8%
4-1 Emergency transport routes	840,671	832,787	99.1%
4-2 Emergency transport ports	59,631	58,299	97.8%
4-3 Emergency transport fishing ports	51,298	48,981	95.5%
5 Telecommunications facilities	17,514	16,545	94.5%
6 Public medical institutions	54,012	54,012	100.0%
7 Social welfare facilities	55,586	55,586	100.0%
8 Public elementary and junior high schools	440,770	428,721	97.3%
9 Tsunami countermeasures	272,080	229,010	84.2%
9-1 River management facilities	104,233	72,776	69.8%
9-2 Coastal preservation facilities	167,847	156,234	93.1%
10 Landslide prevention	541,392	534,770	98.8%
10-1 Erosion control facilities	103,265	102,391	99.2%
10-2 Security facilities	171,243	168,409	98.3%
10-3 Landslide facilities	84,622	83,971	99.2%
10-4 Steep slope facilities	160,632	160,272	99.8%
10-5 Ponds	21,630	19,727	91.2%
Total	2,745,714	2,655,300	96.7%

Notes:

1. The content of Earthquake Emergency Development Project Plans (FY1980-2019) is as of the end of FY2018.
2. Project expenses include expenses for projects that may not be solely designed for earthquake disaster management, but that, while having other policy objectives, also are intended to have an overall effect on earthquake disaster management. Project expenses are not comprised solely of expenses used entirely for disaster management.

Source: Cabinet Office

Based on lessons learned from the Great Hanshin-Awaji Earthquake, the Act on Special Measures for Earthquake Disaster Countermeasures was enacted in July 1995 to protect citizens' lives, heath, and assets from earthquake-related damage. This law allows prefectural governors to create a Five-Year Plan for Emergency Earthquake Disaster Management Projects for communities where there are concerns about the occurrence of a severe earthquake disaster and a portion of the projects to be implemented based on this plan are eligible for an increased rate of financial support from the national government.
Thus far, these plans have been created by the prefectural governors over fifth terms, and earthquake disaster projects have begun to be implemented.
These plans are five-year plans created for 29 facilities that need to be urgently developed from the perspective of achieving earthquake disaster reduction. When a prefecture wants to create a plan, hearings are held to listen to the opinions of the municipalities

(All prefectures, As of the end of 2019. Unit: JPY 1,000,000)

Category	First Five-Year Plan (FY 1996-2000)			Second Five-Year Plan (FY 2001-2005)				Third Five-Year Plan (FY 2006-2010)				Fourth Five-Year Plan (FY 2011-2015)				Fifth Five-Year Plan (FY 2016-2020)			
	Planned Amt.	Actual Amt.	% Complete	Project Scope (Unit)	Planned Amt.	Actual Amt.	% Complete	Project Scope (Unit)	Planned Amt.	Actual Amt.	% Complete	Project Scope (Unit)	Planned Amt.	Actual Amt.	% Complete	Project Scope (Unit)	Planned Amt.	Actual Amt.	% Complete
	(a)	(b)	(b)/(a)	(c)	(d)	(e)	(e)/(d)	(f)	(g)	(h)	(h)/(g)	(i)	(j)	(k)	(k)/(j)				
1. Evacuation sites	1,462,542	959,276	65.6%	3,168 ha	931,413	543,233	58.3%	2,515 ha	488,257	400,283	82.0%	1,456 ha	305,490	257,218	84.2%	1,058 ha	280,021	185,466	66.2%
2. Evacuation routes	1,481,509	1,105,639	74.6%	2,601 km	1,188,051	900,446	75.8%	1,405 km	952,865	625,957	65.7%	897 km	1,336,465	781,628	58.5%	604 km	832,795	547,838	65.8%
3. Firefighting facilities	917,213	697,067	76.0%	28,153 sites	540,784	297,301	55.0%	21,039 sites	448,460	246,745	55.0%	20,052 sites	677,209	472,644	69.8%	18,436 sites	433,337	262,919	60.7%
4. Roads for firefighting activities	168,387	128,163	76.1%	161 km	119,329	92,958	77.9%	102 km	46,719	49,136	105.2%	56 km	23,506	19,998	85.1%	29 km	24,545	16,182	65.9%
5. Emergency transport roads, etc.	6,067,258	5,719,897	94.3%		5,267,908	4,242,139	80.5%		3,813,169	3,291,461	86.3%		2,773,563	2,443,339	88.1%		2,739,969	2,190,037	79.9%
5-1. Emergency transport roads	5,555,626	5,355,365	96.4%	3,920 km	4,998,577	4,067,023	81.4%	2,552 km	3,557,657	3,106,165	87.3%	2,191 km	2,584,039	2,279,595	88.2%	2,188 km	2,622,498	2,116,329	80.7%
5-2. Emergency transport/traffic control facilities	23,900	21,017	87.9%	3,448 facilities	16,855	8,473	50.3%	2,439 facilities	9,242	6,844	74.0%	4,837 sites	15,464	12,214	79.0%	6,458 sites	21,847	11,825	54.1%
5-3. Emergency transport heliports	6,327	2,094	33.1%	1 site	550	387	70.4%	0 sites	0	0		2 sites	117	78	66.7%	0 sites	0	0	—
5-4. Emergency transport port facilities	359,671	237,940	66.2%	113 sites	181,503	119,869	66.0%	100 sites	198,676	136,895	68.9%	77 sites	153,101	133,801	87.4%	46 sites	75,612	45,943	60.8%
5-5. Emergency transport fishing port facilities	121,734	103,481	85.0%	73 sites	70,423	46,387	65.9%	43 sites	47,594	41,558	87.3%	26 sites	20,843	17,652	84.7%	24 sites	20,012	15,940	79.7%
6. Multipurpose underground utility conduits	261,385	275,928	105.6%	844 km	394,948	257,890	65.3%	591 km	259,420	175,571	67.7%	471 km	255,017	208,175	81.6%	485 km	271,956	207,490	76.3%
7. Medical institutions	784,899	526,548	67.1%	115 facilities	391,016	277,721	71.0%	93 facilities	239,424	150,877	63.0%	219 facilities	689,917	506,681	73.4%	73 facilities	245,659	204,786	83.4%
8. Social welfare facilities	482,317	219,490	45.5%	857 facilities	280,028	176,408	63.0%	521 facilities	114,756	56,400	49.1%	681 facilities	126,275	98,772	78.2%	253 facilities	44,143	27,183	61.6%
8-2. Public kindergartens	-	-	-	-	-	-	-	995 schools	35,198	7,074	20.1%	1,159 schools	54,480	27,203	49.9%	266 schools	24,566	9,986	40.6%
9. Public elementary and jr. high schools	1,359,672	765,344	56.3%	5,840 schools	1,078,849	594,777	55.1%	16,256 schools	3,077,544	1,399,624	45.5%	13,612 schools	2,322,751	1,631,920	70.3%	1,189 schools	378,048	249,247	65.9%
10. Public special education schools	84,577	29,685	35.1%	114 schools	32,094	12,070	37.6%	264 schools	56,834	23,262	40.9%	199 schools	43,173	29,955	69.4%	5 schools	7,363	5,426	73.7%
11. Public buildings	24,169	5,267	21.8%	29 facilities	2,662	1,199	45.0%	670 facilities	62,975	24,429	38.8%	1,737 facilities	369,417	209,134	56.6%	741 facilities	263,694	174,160	66.0%
12. Coast and river facilities	235,686	187,310	79.5%	334 sites	272,744	225,598	82.7%	491 sites	237,787	182,911	76.9%	687 sites	345,184	302,195	87.5%	804 sites	644,901	459,082	71.2%
12-1. Coastal preservation facilities	140,865	109,501	77.7%	215 sites	196,496	146,699	74.7%	423 sites	187,407	146,044	77.9%	525 sites	229,583	184,601	80.4%	573 sites	351,926	259,604	73.8%
12-2. River management facilities	94,821	77,809	82.1%	119 sites	76,248	78,899	103.5%	68 sites	50,380	36,867	73.2%	162 sites	115,601	117,594	101.7%	231 sites	292,975	199,478	68.1%
13. Erosion control facilities, etc.	1,729,574	1,702,042	98.4%	14,332 sites	1,622,048	1,339,438	82.6%	10,504 sites	1,069,686	976,742	91.3%	9,327 sites	845,288	786,324	93.0%	9,119 sites	932,724	755,899	81.0%
13-1. Erosion control facilities	268,151	247,050	92.1%	2,278 sites	436,635	409,636	93.8%	2,033 sites	354,972	325,910	91.8%	2,063 sites	303,286	257,665	85.0%	1,854 sites	286,099	238,776	83.5%
13-2. Security facilities	409,216	469,126	114.6%	5,583 sites	330,719	263,907	79.8%	3,673 sites	210,861	202,299	95.9%	2,683 sites	146,012	173,261	118.7%	2,758 sites	173,770	141,442	81.4%
13-3. Landslide prevention facilities	359,433	356,531	99.2%	1,651 sites	275,558	219,200	79.5%	1,151 sites	158,479	160,883	101.5%	849 sites	119,025	109,130	91.7%	717 sites	96,257	78,740	81.8%
13-4. Steep slope failure prevention facilities	522,261	497,690	95.3%	3,568 sites	446,098	356,530	79.9%	2,500 sites	244,461	220,779	90.3%	2,629 sites	193,935	185,729	95.8%	1,915 sites	198,357	181,151	91.3%
13-5. Reservoirs	170,513	131,645	77.2%	1,252 sites	133,038	90,165	67.8%	1,147 sites	100,913	66,870	66.3%	1,103 sites	83,029	60,539	72.9%	1,875 sites	178,241	118,252	66.3%
14. Community DRR base facilities	162,319	102,857	63.4%	121 sites	81,642	40,342	49.4%	78 sites	60,905	34,277	56.3%	161 sites	90,683	68,591	75.6%	124 sites	104,798	69,988	66.8%
15. Disaster management radio communications system	224,276	126,236	56.3%	1,702 sites	126,944	38,693	30.5%	5,844 sites	239,525	78,112	32.6%	8,777 sites	190,612	105,334	55.3%	9,078 sites	171,079	92,551	54.1%
16. Potable water facilities/power generation systems	221,622	126,320	57.0%	444 sites	89,822	55,599	61.9%	405 sites	142,958	72,142	50.5%	517 sites	121,728	93,437	76.8%	453 sites	123,459	85,628	69.4%
17. Storage warehouses	17,763	8,028	45.2%	437 sites	10,338	5,292	51.2%	296 sites	4,081	838	20.5%	650 sites	7,053	3,968	56.3%	454 sites	11,037	6,212	56.3%
18. Response and relief systems	3,595	659	18.3%	610 groups	1,133	687	60.6%	515 groups	314	262	83.4%	304 groups	891	161	18.0%	29 groups	150	40	26.7%
19. Downtown areas with high density dilapidated housing	2,814,605	1,431,714	50.9%	6,960 ha	1,725,532	916,981	53.1%	7,839 ha	846,197	563,811	66.6%	12,156 ha	501,836	340,080	67.8%	12,685 ha	438,272	200,769	45.8%
	18,503,368	14,117,470	76.3%		14,157,285	10,018,773	70.8%		12,197,074	8,359,916	68.5%		11,080,537	8,386,758	75.7%		7,972,515	5,750,889	72.1%

Notes:

1. The content of the Fifth Five-Year Plan (FY2016-2020) is current as of the end of FY 2019.

2. The expenses for each project are not limited to projects aimed at achieving earthquake DRR; they include expenses for projects that have other policy purposes, such as those related to urban infrastructure development, but that also are effective in termsof earthquake DRR.

3. Public special education schools include schools known as schools for the blind, schools for the deaf, and schools for the physically or mentally/physically handicapped prior to FY 2006.

Source: Cabinet Office materials.

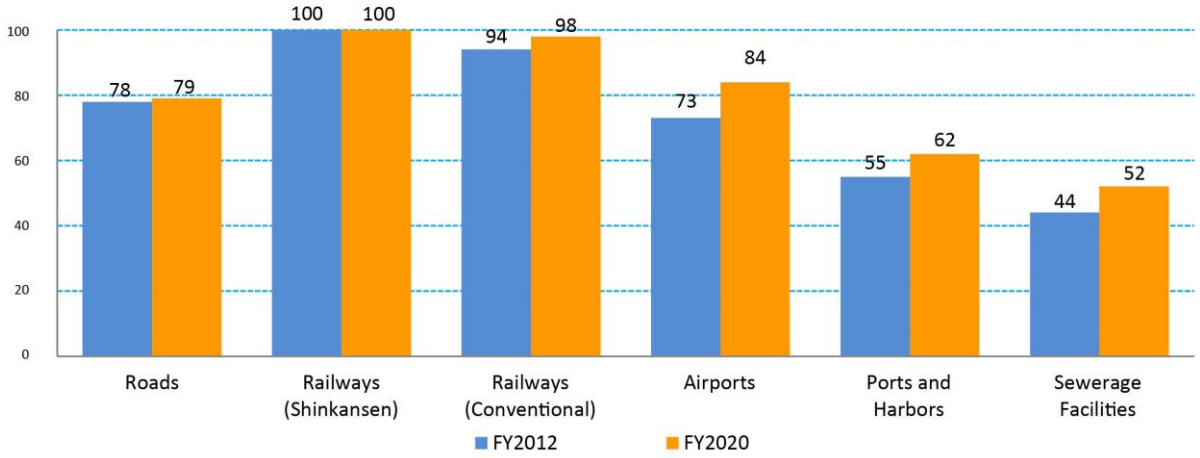
6. Disaster Management Facilities and Equipment

Fig. A-36 Number of Red Cross Hospitals, Emergency Medical Centers, and Disaster Base Hospitals

Prefectures	Red Cross Hospital	Emergency Medical Center	Disaster Base Hospital	Prefectures	Red Cross Hospital	Emergency Medical Center	Disaster Base Hospital
Hokkaido	10	12	34	Shiga	3	4	10
Aomori	1	3	10	Kyoto	3	6	13
Iwate	1	3	11	Osaka	2	16	20
Miyagi	2	6	16	Hyogo	3	10	18
Akita	2	1	14	Nara	0	3	7
Yamagata	0	3	7	Wakayama	1	3	10
Fukushima	1	4	8	Tottori	1	2	4
Ibaraki	2	6	14	Shimane	2	4	10
Tochigi	3	5	11	Okayama	2	5	11
Gunma	2	4	18	Hiroshima	3	7	19
Saitama	3	9	22	Yamaguchi	2	5	13
Chiba	1	14	26	Tokushima	1	3	11
Tokyo	4	26	86	Kagawa	1	3	10
Kanagawa	6	21	33	Ehime	1	3	8
Niigata	1	6	14	Kochi	1	3	12
Toyama	1	2	8	Fukuoka	3	10	31
Ishikawa	1	2	10	Saga	1	4	8
Fukui	1	2	9	Nagasaki	2	3	13
Yamanashi	1	1	9	Kumamoto	2	3	15
Nagano	6	7	13	Oita	1	4	14
Gifu	2	6	12	Miyazaki	0	3	12
Shizuoka	5	11	23	Kagoshima	1	3	14
Aichi	2	23	35	Okinawa	1	3	13
Mie	1	4	17	Total	96	291	756

Source: Red Cross Hospital information was formulated by the Cabinet Office based on the website of the Japanese Red Cross Society (as of March 2021).
Information on emergency medical centers and disaster base hospitals was formulated by the Cabinet Office based on materials from the Emergency Medical Information System (EMIS) (as of March 2021).

Fig. A-37 Seismic Reinforcement of Public Infrastructure



Notes

Roads: The rate of bridges not in danger of being damaged related to all bridges along emergency transport roads (important roads that have to be secured for evacuation and rescue as well as ensuring the passage of emergency vehicles immediately after the earthquake, including national expressways, national highways and the arterial roads that connect them.) (As of the end of FY2019)

Railway (Shinkansen): Elevated bridges. (Left: As of end of FY2013. Right: As of end of FY2019.)

Railway (Conventional): Elevated bridges of major railway lines in regions where a seismic intensity of 6 Upper or greater would be expected to occur in the case of a Tokyo Inland Earthquake or Nankai Trough Earthquake. (Left: As of end of FY2013. Right: As of end of FY2019.)

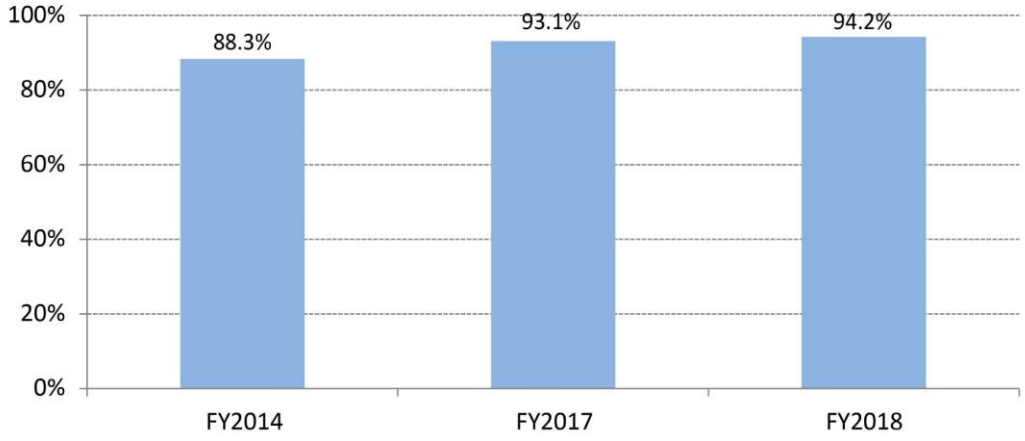
Airports: Percentage of population in a 100 km area around an airport that could be used for emergency transport.

Ports and Harbors: Seismically reinforced piers (number completed as a proportion of those detailed in plans for seismic retrofit of piers to facilitate the transportation of emergency supplies (those classed as major ports or higher)). (Left: As of end of FY2013. Right: As of end of FY2019.)

Sewerage Facilities: Important main lines (pipes that can accommodate drainage from river basin lines, DRR bases, and evacuation sites, main pipes connected to pump stations and disposal stations, pipes buried beneath emergency transport roads and railroad tracks. (Left: As of end of FY2013. Right: As of end of FY2019.)

Source: Formulated by the Cabinet Office using materials from the Ministry of Land, Infrastructure, Transport and Tourism (MLIT)

Fig. A-38 Trends in the Seismic Reinforcement Rate of Public Facilities That Serve as Disaster Management Bases

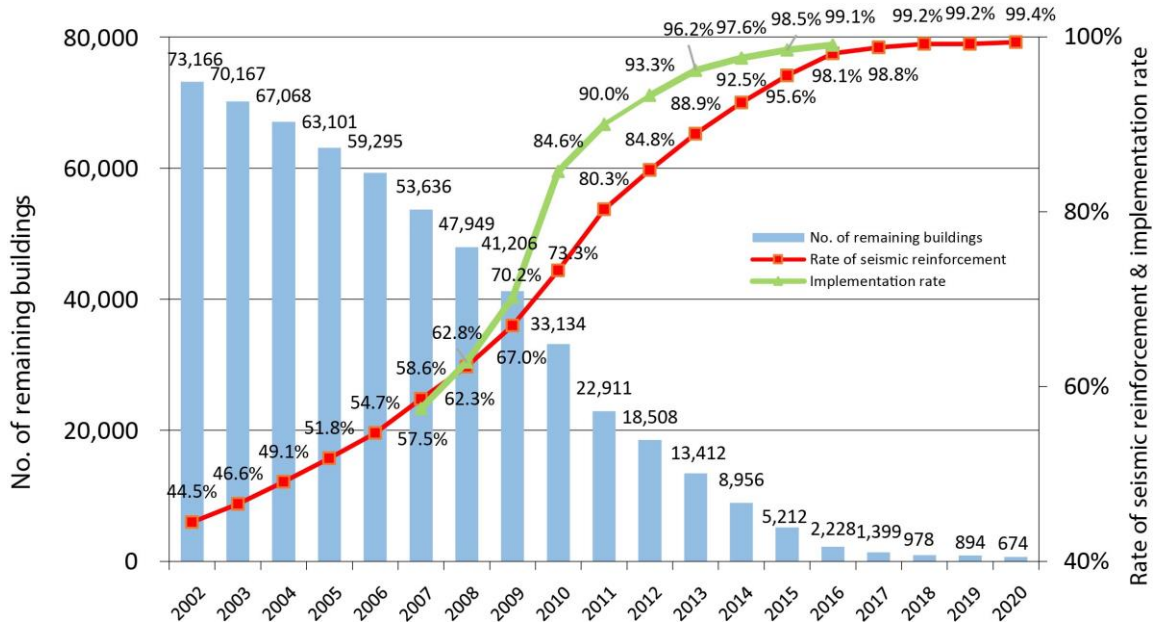


Note) Of all the public facilities owned or managed by local governments (buildings for public or public-private use: non-wooden structures built two stories or taller or buildings with a floor area of 200 m^2 or more), the facilities that could serve as disaster management bases for implementing disaster response measures are identified, consolidated and analyzed based on the criteria below.

<Classification criteria of public facilities that serve as disaster management bases>	
(1) Social welfare facilities	All facilities
(2) Education facilities (classrooms, gymnasiums)	Facilities designated as designated emergency evacuation site or designated shelter, etc.
(3) Government buildings	Facilities that will be used for the implementation of disaster response measures
(4) Prefectural civic halls, civic centers	Facilities designated as designated emergency evacuation site or designated shelter, etc.
(5) Gymnasiums	Facilities designated as designated emergency evacuation site or designated shelter, etc.
(6) Health care facilities	Facilities positioned in local plans for disaster risk reduction as medical care facilities
(7) Police headquarters and police stations	All facilities

Source: "Results of the Survey on the Seismic Reinforcement Rate of Public Facilities That Serve as Disaster Management Bases," Ministry of Internal Affairs and Communications (July 2020)

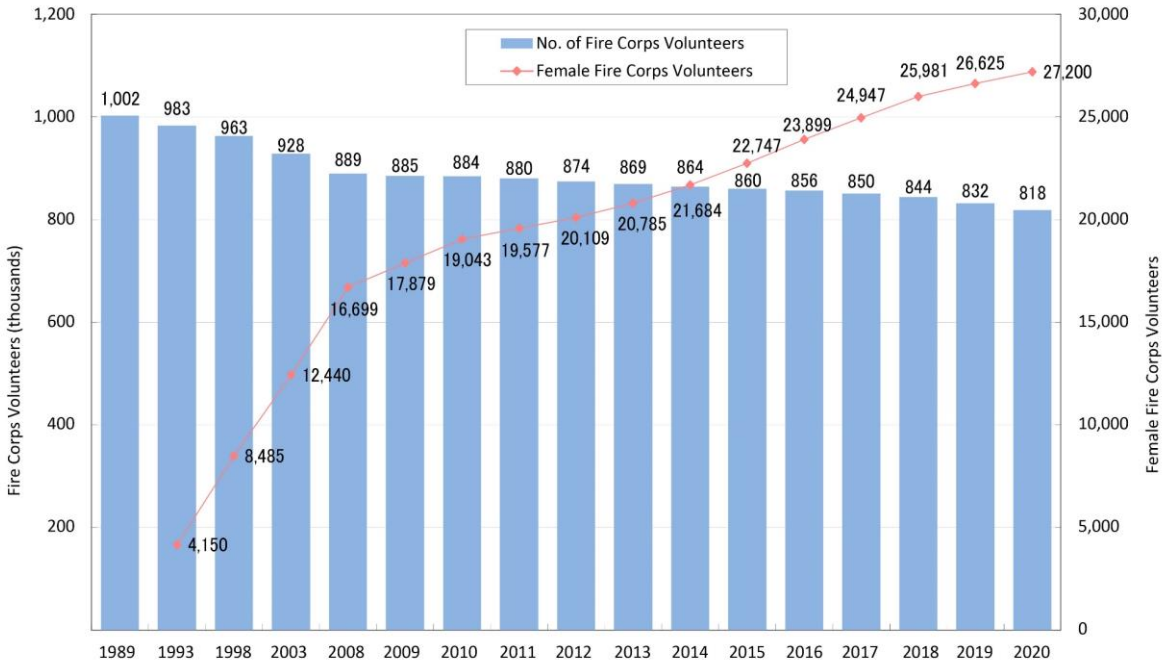
Fig. A-39 Seismic Reinforcement of Public Elementary and Junior High Schools



Source: "Results of a Follow-up Investigation on the Progress of the Seismic Retrofitting of Public School Facilities," Ministry of Education, Culture, Sports, Science and Technology (MEXT) (August 2020)

7. Trends in Numbers of Workers in Disaster Management

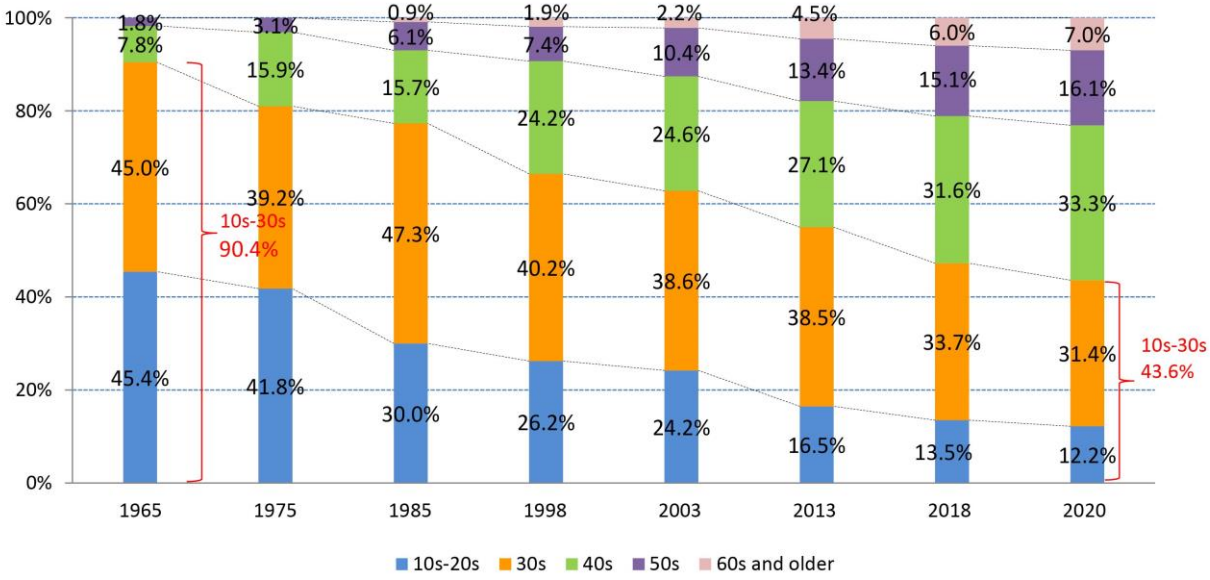
Fig. A-40 Numbers of Fire Corps Volunteers



Note: As a result of the Great East Japan Earthquake, the figure for 2012 for Onagawa-cho, Meshika-gun, Miyagi prefecture is the figure from 2010 (as of April 1, 2010)

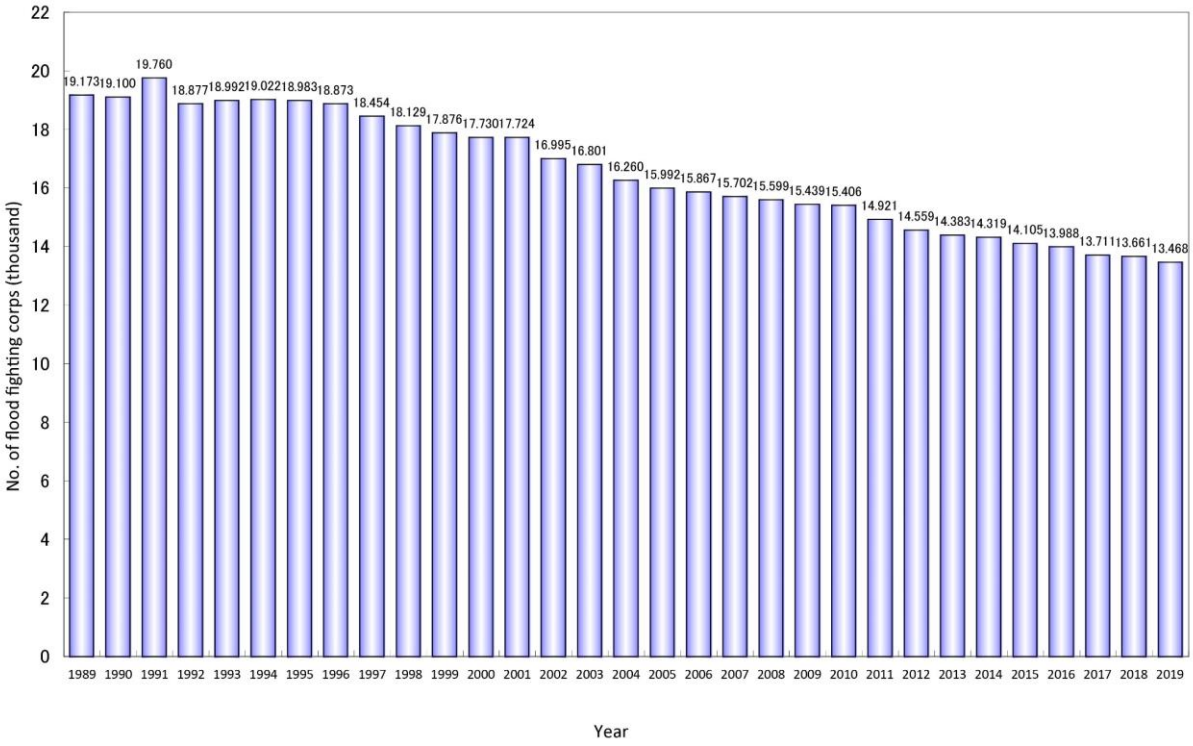
Source: Formulated by the Cabinet Office based on the Survey on the Current Status of Fire and Earthquake Disaster Management Measures of the Fire and Disaster Management Agency

Fig. A-41 Age Composition Ratios among Fire Corps Volunteers



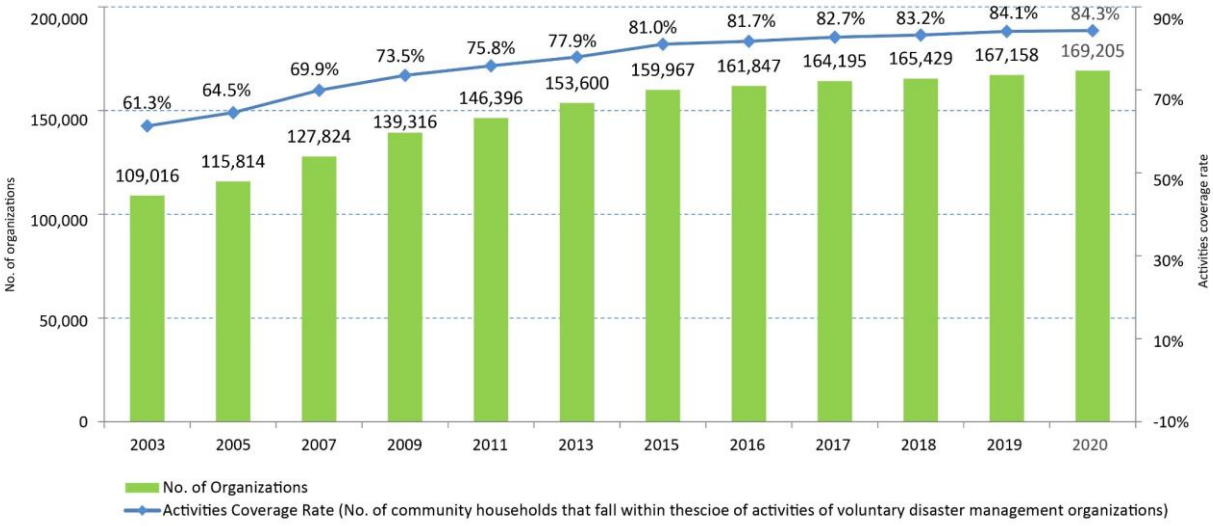
Source: Formulated by the Cabinet Office based on the Survey on the Current Status of Fire and Earthquake Disaster Management Measures of the Fire and Disaster Management Agency

Fig. A-42 Numbers of Flood Fighting Corps Personnel



Note) Number of full-time flood fighting corps personnel
Source: Ministry of Land, Infrastructure, Transport and Tourism (MLIT)

Fig. A-43 Numbers of Voluntary Disaster Management Organizations



Source: Formulated by the Cabinet Office based on the Survey on the Current Status of Fire and Earthquake Disaster Management Measures of the Fire and Disaster Management Agency. Figures as of April 1 each year.

Fig. A-44 Female Representation in Local Disaster Management Councils (by Prefecture, 2020)

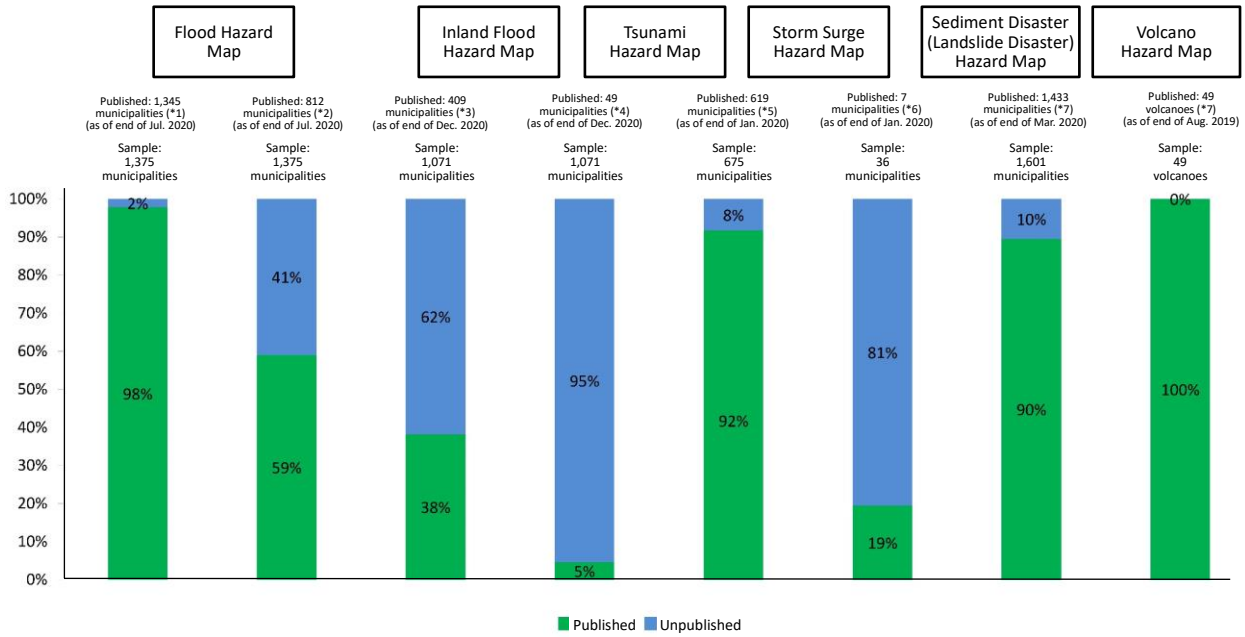
	Prefectural Disaster Management Council			Municipal Disaster Management Council		
	Total Members	Of which, Female Members	Proportion of Women (%)	Total Members	Of which, Female Members	Proportion of Women (%)
Hokkaido	67	4	6.0	3,845	129	3.4
Aomori	60	11	18.3	730	40	5.5
Iwate	76	15	19.7	1,093	98	9.0
Miyagi	58	9	15.5	823	60	7.3
Akita	61	4	6.6	717	71	9.9
Yamagata	62	8	12.9	1,044	65	6.2
Fukushima	54	9	16.7	1,099	52	4.7
Ibaraki	52	7	13.5	1,244	103	8.3
Tochigi	56	11	19.6	637	61	9.6
Gunma	48	6	12.5	991	90	9.1
Saitama	73	8	11.0	2,035	262	12.9
Chiba	53	9	17.0	1,534	180	11.7
Tokyo	74	9	12.2	2,124	243	11.4
Kanagawa	57	12	21.1	984	122	12.4
Niigata	76	14	18.4	887	54	6.1
Toyama	68	11	16.2	519	34	6.6
Ishikawa	70	7	10.0	459	26	5.7
Fukui	56	3	5.4	456	42	9.2
Yamanashi	64	6	9.4	604	53	8.8
Nagano	78	15	19.2	2,019	139	6.9
Gifu	61	12	19.7	937	79	8.4
Shizuoka	58	4	6.9	1,056	90	8.5
Aichi	69	5	7.2	1,476	153	10.4
Mie	60	5	8.3	876	87	9.9
Shiga	60	14	23.3	510	53	10.4
Kyoto	66	15	22.7	750	64	8.5
Osaka	59	7	11.9	1,358	144	10.6
Hyogo	56	8	14.3	1,294	136	10.5
Nara	61	8	13.1	849	78	9.2
Wakayama	55	8	14.5	603	43	7.1
Tottori	67	27	40.3	386	54	14.0
Shimane	72	29	40.3	591	50	8.5
Okayama	58	8	13.8	499	91	18.2
Hiroshima	59	3	5.1	800	58	7.3
Yamaguchi	60	7	11.7	622	70	11.3
Tokushima	81	38	46.9	558	50	9.0
Kagawa	60	8	13.3	425	52	12.2
Ehime	61	5	8.2	478	34	7.1
Kochi	60	6	10.0	793	84	10.6
Fukuoka	61	4	6.6	1,297	213	16.4
Saga	70	20	28.6	364	49	13.5
Nagasaki	68	14	20.6	690	47	6.8
Kumamoto	57	7	12.3	1,708	124	7.3
Oita	58	5	8.6	518	45	8.7
Miyazaki	55	9	16.4	689	48	7.0
Kagoshima	63	10	15.9	1,134	58	5.1
Okinawa	54	7	13.0	601	43	7.2
Total	2,932	471	16.1	45,706	4,021	8.8

Notes)

1. Formulated by the Cabinet Office from its material titled the “Implementation Status of Measures for Promoting the Formation of a Gender-equal Society or Policy Considerations for Gender in Local Government” (FY2020)
2. Figures for April 1, in principle.

8. Various Policies and Measures

Fig. A-45 Hazard Map Development



Source: Formulated by the Cabinet Office based on materials of the Ministry of Land, Infrastructure, Transport and Tourism (volcano hazard maps are materials owned by the Cabinet Office)

*1 Municipalities (including special wards) with designated flood and inundation hazard areas based on Article 14 of the Flood Control Act, which have published a hazard map pursuant to Article 15, paragraph (3) of the Flood Control Act

*2 Municipalities (including special wards) that have published a hazard map covering the estimated maximum precipitation

*3 Municipalities with sewerage systems that have implemented flood prevention measures and have published internal water hazards maps corresponding to the maximum rainfall on record.

*4 Municipalities with sewerage systems that have implemented flood prevention measures and have published internal water hazards maps corresponding to the maximum rainfall on assumption.

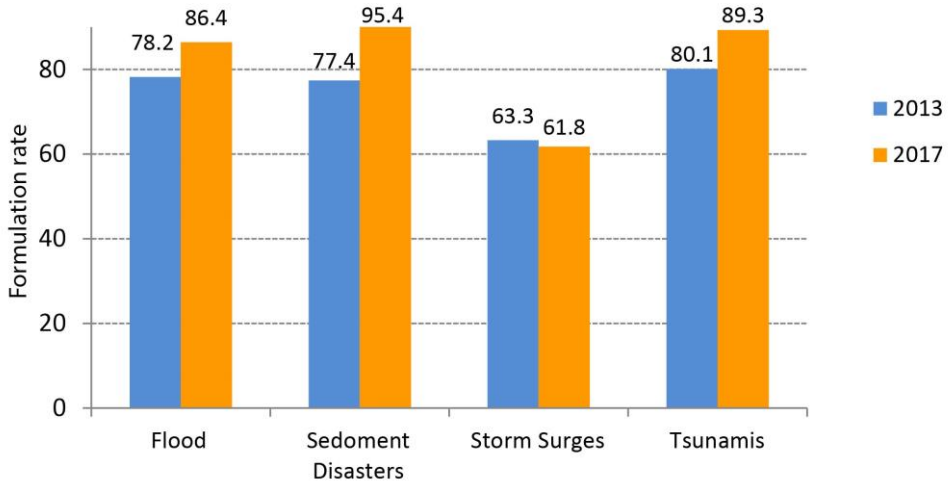
*5 Municipalities located in coastal areas or the tsunami hazard areas under Article 8 of the Act on Regional Development for Tsunami Disaster Prevention, which have already published a tsunami hazard map.

*6 Municipalities which were designated as storm surge and inundation hazard areas under Article 14-3 of the Flood Control Act and have already published a hazard map pursuant to Article 15, paragraph (3) of the Flood Control Act are tallied.

*7 Municipalities (including special wards) designated as sediment disaster hazard areas that have already published a hazard map pursuant to Article 8, paragraph (3) of the Act on Sediment Disaster Countermeasures for Sediment Disaster Prone Areas.

*8 Volcanoes for which Volcanic Disaster Management Councils were established in accordance with Article 4 of the Act on Special Measures for Active Volcanoes, and of which a volcano hazard map has already been published (one of the tasks of a Volcanic Disaster Management Council).

Fig. A-46 Formulation of Official Announcement Criteria for Evacuation Recommendations in Municipalities



Note) The disasters anticipated vary from one municipality to another, so the formulation rate is calculated using different denominators, according to the type of disaster.

Source: Formulated by the Cabinet Office based on the "Results of a Survey into the Formulation Status of Specific Official Announcement Criteria for Evacuation Recommendations" from the Fire and Disaster Management Agency

Fig. A-47 Communication Method of Evacuation Instructions in Municipalities

Year	Disaster management radio communications system		Communication facilities of agricultural/ fishery cooperatives (including wired systems)	Patrols by loudspeaker vans	Siren	Bell ringing	News media	Through voluntary disaster management organizations	email	Other
	Individual Home Receivers System	Simultaneous Broadcasting System								
2003	1,748 54%	2,126 66%	591 18%	2,942 92%	2,537 79%	698 22%	675 21%	1,065 33%	- -	1,106 34%
2004	1,731 55%	2,095 67%	559 18%	2,864 92%	2,463 79%	659 21%	663 21%	1,064 34%	- -	1,106 35%
2005	1,365 56%	1,670 69%	449 19%	2,254 93%	1,927 80%	525 22%	642 27%	942 39%	- -	925 38%
2006	1,118 61%	1,349 73%	362 20%	1,739 94%	1,487 81%	414 22%	666 36%	887 48%	- -	781 42%
2007	1,125 62%	1,350 74%	343 19%	1,722 94%	1,462 80%	383 21%	718 39%	939 51%	- -	800 44%
2008	1,117 62%	1,348 74%	323 18%	1,713 95%	1,455 80%	358 20%	750 41%	987 55%	- -	829 46%
2009	1,118 62%	1,361 76%	311 17%	1,702 95%	1,440 80%	345 19%	782 43%	1,015 56%	- -	830 46%
2010	1,096 63%	1,333 76%	289 17%	1,647 94%	1,383 79%	324 19%	811 46%	1,033 59%	- -	830 47%
2011	1,006 62%	1,240 77%	248 15%	1,530 95%	1,271 79%	270 17%	787 49%	1,002 62%	- -	806 50%
2012	1,086 62%	1,340 77%	245 14%	1,644 94%	1,357 78%	285 16%	848 49%	1,129 65%	- -	955 55%
2013	1,097 63%	1,377 79%	219 13%	1,648 95%	1,347 77%	276 16%	878 50%	1,154 66%	- -	998 57%
2014	1,112 64%	1,398 80%	206 12%	1,651 95%	1,334 77%	256 15%	925 50%	1,169 67%	- -	1,049 60%
2015	1,128 65%	1,412 81%	192 11%	1,659 95%	1,317 76%	238 14%	975 56%	1,193 69%	- -	1,093 63%
2016	1,145 66%	1,426 82%	178 10%	1,654 95%	1,282 74%	219 13%	993 57%	1,204 69%	- -	1,078 62%
2017	1,157 66%	1,443 83%	169 10%	1,651 95%	1,277 73%	208 12%	1,028 59%	1,212 70%	- -	1,081 62%
2018	1,170 67%	1,450 83%	155 9%	1,651 95%	1,256 72%	195 11%	1,046 60%	1,203 69%	883 51%	972 56%
2019	1,181 68%	1,466 84%	149 9%	1,658 95%	1,255 72%	182 10%	1,070 61%	1,211 70%	1,070 61%	990 57%
2020	1,192 68%	1,469 84%	141 8%	1,653 95%	1,250 72%	170 10%	1,098 63%	1,233 71%	1,207 69%	1,036 60%

Source: Formulated by the Cabinet Office based on the Fire and Disaster Management Agency report “Status of Regional Disaster Management Administration”

Fig. A-48 Performance of Assistance based on Mutual Support Agreements between Prefectures andContract Status of Support Agreements with Private-Sector Institutions

Year	Support Based on Mutual Support Agreements Between Prefectures		Support Agreements with Private-Sector Institutions													
			Broadcasting Agreements (agmts.)		Reporting Agreements		Emergency Relief Agreements		Transportation Agreements		Disaster Recovery Agreements		Resources Agreements		Other	
	Total no.	No. of orgs.	Total no. of concluded agmts.	No. of orgs.	Total no. of concluded agmts.	No. of orgs.	Total no. of concluded agmts.	No. of orgs.	Total no. of concluded agmts.	No. of orgs.	Total no. of concluded agmts.	No. of orgs.	Total no. of concluded agmts.	No. of orgs.	Total no. of concluded agmts.	No. of orgs.
2003	23	6	288	47	347	31	191	37	148	39	400	37	711	34	124	19
2004	4	2	288	47	359	33	218	39	165	41	474	39	828	36	134	23
2005	13	8	304	47	362	32	221	43	178	42	504	40	873	40	182	31
2006	5	2	301	46	370	33	241	44	201	40	587	43	992	42	212	37
2007	0	0	304	46	337	34	272	43	211	41	778	43	1,196	44	317	36
2008	12	1	306	46	400	36	316	45	239	43	818	45	1,294	46	461	39
2009	5	1	314	46	399	36	339	44	247	43	857	45	1,364	46	546	41
2010	24	5	329	47	393	36	420	45	254	43	1,590	46	1,431	45	676	42
2011	18	4	318	44	373	33	472	43	235	41	1,568	43	1,357	44	676	39
2012	25	6	334	47	395	36	495	46	291	44	1,825	46	1,461	47	931	46
2013	29	8	360	47	419	38	575	47	317	46	1,913	47	1,558	47	1,178	46
2014	28	6	351	47	445	40	703	47	374	46	2,360	47	1,672	47	1,299	46
2015	24	6	343	47	454	39	893	47	382	46	2,397	47	1,694	47	1,515	46
2016	19	5	352	47	461	40	970	47	438	46	2,626	47	1,795	47	1,751	47
2017	16	5	351	47	438	40	1,065	47	477	47	2,648	47	1,754	47	1,898	47
2018	10	5	349	47	457	41	1,272	47	514	47	3,392	47	1,850	47	2,384	47
2019	14	5	364	47	467	41	1,415	47	561	47	3,461	47	1,998	47	2,893	47
2020	24	7	383	47	476	41	1,576	47	627	47	3,531	47	2,028	47	3,147	47

Source: Formulated by the Cabinet Office based on the Fire and Disaster Management Agency report “Status of Regional Disaster Management Administration”

Fig. A-49 Contract Status of Mutual Support Agreements in Municipalities

Year	No. of Municipalities	No. of mutual support agreements concluded between municipalities in the same prefecture	No. of municipalities that have concluded mutual support agreements with other municipalities
2003	3,213	1,459	2,363 74%
2004	3,123	1,527	2,306 74%
2005	2,418	1,502	1,771 73%
2006	1,843	1,408	1,457 79%
2007	1,827	1,512	1,471 81%
2008	1,811	1,625	1,656 91%
2009	1,800	1,725	1,646 91%
2010	1,750	1,778	1,571 90%
2011	1,619	1,738	1,476 91%
2012	1,742	2,254	1,645 94%
2013	1,742	2,920	1,650 95%
2014	1,742	3,419	1,697 97%
2015	1,741	3,642	1,705 98%
2016	1,741	4,013	1,699 98%
2017	1,741	4,280	1,698 98%
2018	1,741	—	1,701 98%
2019	1,741	—	1,708 98%
2020	1,741	—	1,708 98%

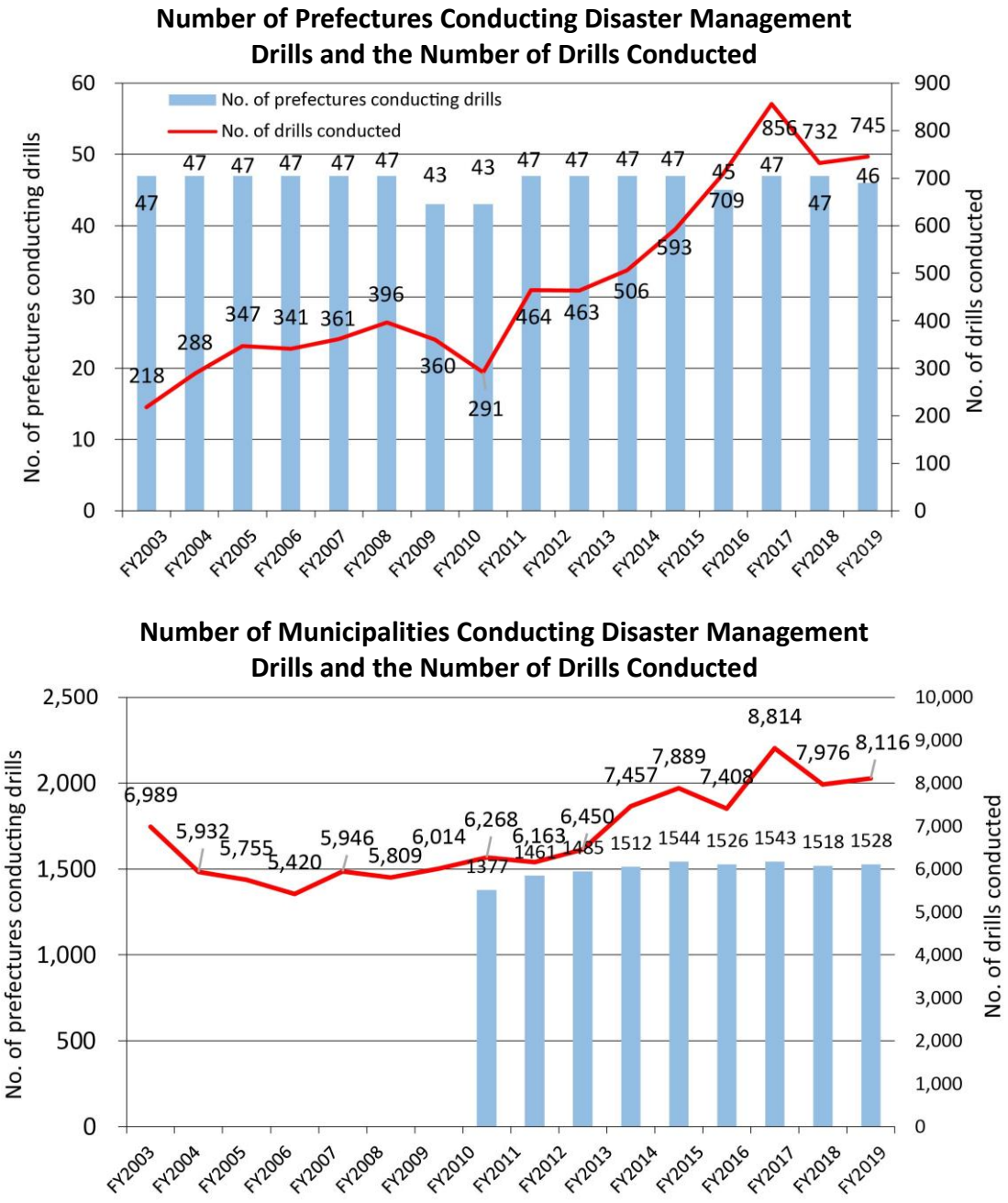
Source: Formulated by the Cabinet Office based on the Fire and Disaster Management Agency report “Status of Regional Disaster Management Administration”

Fig. A-50 Municipalities' Support Agreements with Private-Sector Institutions

Year	Broadcast Agreements		Reporting Agreements		Emergency Relief Agreements		Transportation Agreement		Disaster Recovery Agreements		Resources Agreements		Other	
	No. of orgs.	No. of support instances	No. of orgs.	No. of support instances	No. of orgs.	No. of support instances	No. of orgs.	No. of support instances	No. of orgs.	No. of support instances	No. of orgs.	No. of support instances	No. of orgs.	No. of support instances
2003	150	10	22	2	726	4	253	2	392	21	562	7	334	6
2004	171	20	20	2	713	4	260	2	445	18	589	5	361	5
2005	191	50	27	2	647	6	271	15	445	39	583	17	376	9
2006	225	38	18	2	574	10	267	3	451	24	619	8	401	2
2007	275	35	24		596	7	292	2	662	23	794	6	484	9
2008	315	62	33		619	2	319	5	813	35	936	17	510	5
2009	362	48	33		658	3	355	2	979	35	1,060	33	559	11
2010	378	35	35		683	6	376	3	1,052	42	1,125	22	580	8
2011	376	107	36	2	645	17	386	109	1,066	548	1,118	226	579	57
2012	437	59	41	3	719	19	462	48	1,242	167	1,309	123	684	54
2013	495	81	58		778	3	519	9	1,318	42	1,412	20	743	6
2014	554	59	66		827	2	602	3	1,360	131	1,466	40	800	17
2015	609	50	83	1	869	34	719	3	1,408	62	1,500	31	809	15
2016	636	48	101	1	921	43	811	6	1,451	41	1,526	44	810	25
2017	676	108	116	1	948	2	870	14	1,454	49	1,543	40	821	11
2018	708	140	117		981	31	925	10	1,478	213	1,561	56	826	276
2019	731	100	135	1	1,007	54	958	20	1,492	1,020	1,577	107	837	37
2020	783	114	173	2	1,039	72	1,009	30	1,520	598	1,586	99	863	52

Source: Formulated by the Cabinet Office based on the Fire and Disaster Management Agency report "Status of Regional Disaster Management Administration"

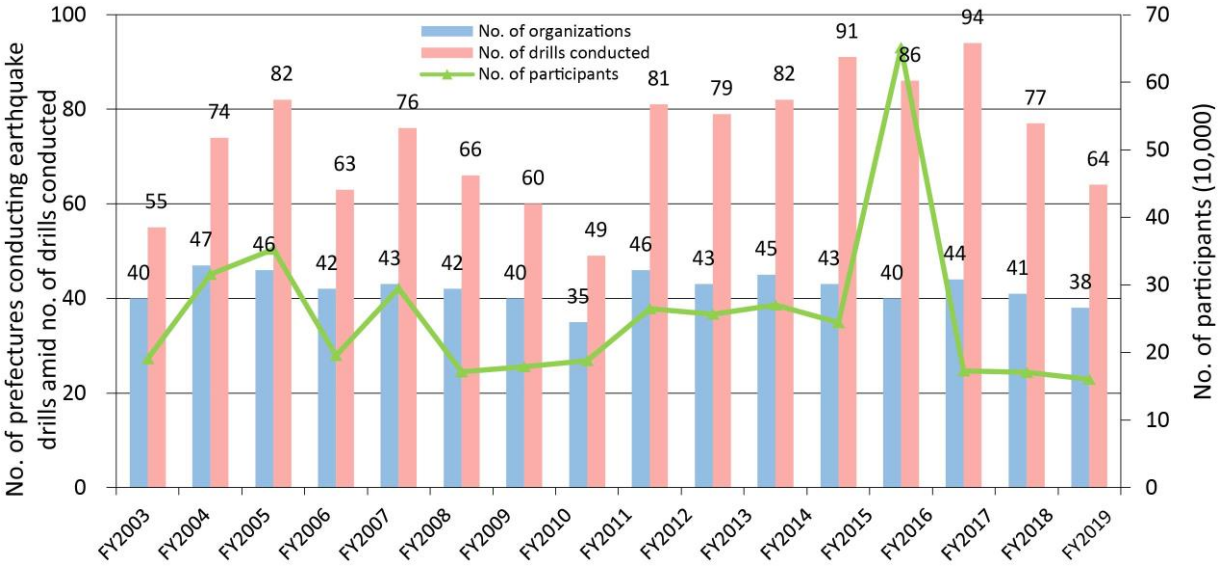
Fig. A-51 **Disaster Management Drill Implementation**



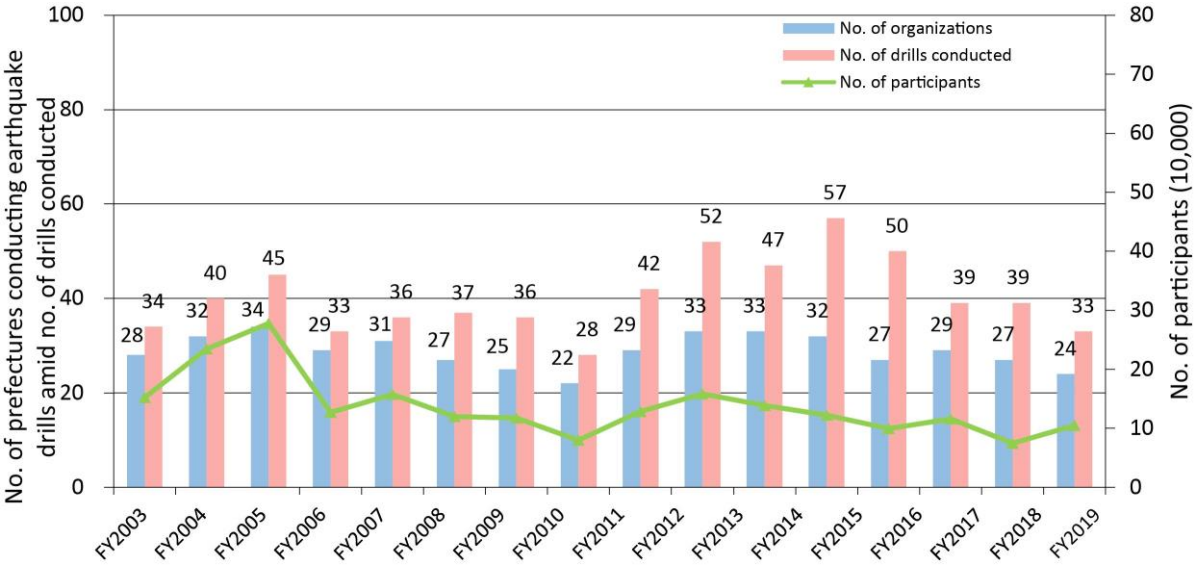
Source: Formulated by the Cabinet Office based on the Fire and Disaster Management Agency report “Status of Regional Disaster Management Administration”

Fig. A-52 **Earthquake Disaster Management Drill Implementation**

Number of Prefectures Conducting Earthquake Disaster Management Drills, Number of Drills Conducted, and the Number of Participants (Comprehensive Drills)



Number of Prefectures Conducting Earthquake Disaster Management Drills, Number of Drills Conducted, and the Number of Participants (Including Region-Wide Drills)



Source: Formulated by the Cabinet Office based on the Fire and Disaster Management Agency report “Status of Regional Disaster Management Administration”

Fig. A-53 Implementation of Tsunami Countermeasures

(Unit: Extended Distance = km)

Year	No. of govts.	Coastlines		Designated as hazardous tsunami inundation areas	Measures incorporated into local disaster risk reduction plan	Evacuation Routes		Evacuation Sites		Tsunami Breakwaters	
		Present	Absent			No. of routes	No. of govts.	No. of facilities	No. of govts.	Extended distance (km)	No. of govts.
2003	3,213	1,014	2,199	401	812	1,700	108	5,355	311	1,631	204
2004	3,123	984	2,139	420	799	1,817	104	5,609	306	1,535	204
2005	2,418	806	1,612	374	465	2,099	111	6,442	316	1,472	180
2006	1,843	666	1,177	367	299	3,066	107	6,830	286	1,233	149
2007	1,827	667	1,160	374	384	2,297	108	7,307	292	1,231	143
2008	1,811	659	1,152	417	393	2,593	118	7,647	297	1,105	133
2009	1,800	655	1,145	424	353	2,674	118	7,919	307	1,042	125
2010	1,750	648	1,102	439	385	2,757	118	8,396	304	1,025	123
2011	1,619	609	1,010	425	357	2,448	106	7,448	276	787	93
2012	1,742	646	1,096	492	379	4,058	130	12,110	323	886	107
2013	1,742	646	1,096	539	383	5,054	139	16,238	361	905	104
2014	1,742	646	1,096	576	403	5,591	155	19,405	380	848	96
2015	1,741	646	1,095	603	431	6,176	166	22,589	410	841	97
2016	1,741	646	1,095	612	444	6,086	174	23,263	418	913	93
2017	1,741	645	1,096	623	483	9,414	179	23,481	425	959	98
2018	1,741	645	1,096	626	500	10,058	184	23,285	414	967	101
2019	1,741	645	1,096	628	525	10,279	187	24,331	432	1,023	101
2020	1,741	645	1,096	630	538	10,683	187	26,040	432	1,004	101

Source: Formulated by the Cabinet Office based on the Fire and Disaster Management Agency report “Status of Regional Disaster Management Administration”

9. Japan's International Cooperation

Fig. A-54 List of Cooperation Projects Conducted by Ministries and Agencies

Ministry/ Agency	Project	Partner/ Target Country (Target Institution)	Description	Budget for FY2020 (in JPY million; if applicable)	Department Responsible
Cabinet Office (CAO)	Partnership between the Cabinet Office and FEMA	US	Based on the Memorandum of Cooperation between the Cabinet Office and FEMA signed in December 2014 and revised in December 2019, Japan-U.S. Video Conference on Cooperation in Disaster Risk Reduction was held in December 2020.	—	Disaster Preparedness, Public Relations and International Cooperation Division, Disaster Management Bureau, CAO
	Japan-U.S. Emergency Management Working Group	US	Partnerships in the field of Nuclear Emergency Preparedness Systems were deepened through regular exchanges of information and opinions since 2013, and reciprocal invitations to exercises, which took place within the framework of the Emergency Management Working Group (EMWG) under the U.S.-Japan Bilateral Commission on Civil Nuclear Cooperation established in 2012. In FY 2020, online technical exchange meetings as regards protective actions under infectious disease epidemic, drills and professional development were held 3 times.	—	Director General for Nuclear Disaster Management, CAO
	Cooperation between the Cabinet Office of Japan and the Ministry of the Interior of France on emergency management related to nuclear accidents	France	Opinions are exchanged with relevant bodies in the country and reciprocal invitations to exercises were issued within the framework of the memorandum of cooperation on nuclear emergency preparedness signed in May 2015. The Cabinet Office also held a meeting of the "Committee for Cooperation in the Field of Emergency Situation and Management in the Event of a Nuclear Accident." In 2020, the on-line opinion exchanges were held for infection protection measures during nuclear disaster response.	—	Director General for Nuclear Disaster Management, CAO
	Hosting observers of a comprehensive nuclear emergency response exercise	Countries concerned and regions and international organizations	With the objective of sharing information and exchanging views concerning nuclear emergency preparedness in each country, opinion exchanges are held by inviting countries, regions, and international organizations with cooperative relationships outside Japan to Comprehensive Nuclear Emergency Response Exercise (the implementation of the Comprehensive Nuclear Emergency Response Exercise in 2020 was postponed based on the situation of COVID-19.	—	Director General for Nuclear Disaster Management, CAO/ International Affairs Office, Policy Planning and Coordination Division, Secretary-General's Secretariat, the Secretariat of the Nuclear Regulation Authority
Ministry of Internal Affairs and Communications (MIC)	Technical Survey on the Introduction and Dissemination of Digital Terrestrial Television Broadcasting Systems in Latin America	Ecuador, Chile, and Peru	Researches, technical supports and demonstration tests were conducted for Emergency Warning Broadcast System (EWBS), which is a disaster prevention system using digital terrestrial television broadcasting, to be disseminated. Encouragement to introduce the technology was also provided.	25	International Cooperation Division, Global Strategy Bureau, MIC
Fire and Disaster Management Agency (FDMA)	International Forum on Fire and Disaster Management	Mainly Asian countries	The International Forum on Fire and Disaster Management has been held since 2007 to enable the countries of Asia, first and foremost, to enhance their firefighting and disaster management capacity, and to introduce Japan's firefighting technologies and systems.	3	(Counselor of) Civil Protection and Disaster Management Department, FDMA
	Japan-Republic of Korea Firefighting Administration Seminar	Republic of Korea	During the Year of Japan-Republic of Korea National Exchange, which was held to coincide with the joint hosting of the 2002 FIFA World Cup by Japan and the Republic of Korea, a Japan-Republic of Korea Firefighting Administration Seminar was held in both countries to promote Japanese-Republic of Korean exchange, partnership, and cooperation, through the sharing of information and the exchange of ideas regarding firefighting and disaster management in both countries.	1	(Counselor of) Civil Protection and Disaster Management Department, FDMA
	Cooperation in the fire control field between the Fire and Disaster Management Agency and the Ministry of Public Security of Vietnam	Vietnam	Based on the Memorandum of Cooperation in the fire control field signed in October 2018, the Fire and Disaster Management Agency will exchange opinions with relevant Vietnamese agencies and provide them with support in improving fire control and safety, including the standardization of fire control equipment and the establishment of a certification system.	—	Fire Prevention Division, FDMA
Ministry of Foreign Affairs (MOFA)	Operation of IAEA RANET Capacity Building Centre (CBC)	IAEA member countries (IAEA)	The IAEA RANET Capacity Building Centre (CBC), where IAEA staff are permanently stationed, was designated in Fukushima Prefecture in May 2013, based on the "Practical Arrangements Between the Ministry of Foreign Affairs of Japan and the International Atomic Energy Agency on Cooperation in the Area of Emergency Preparedness and Response" signed between MOFA and the IAEA in December 2012. Materials and equipment stored for emergence response in the CBC are used in an emergency involving radiation. In addition, the CBC serves as the venue for training courses for officials from foreign and Japanese governments and local government officials held several times a year.	28.1	International Nuclear Energy Cooperation Division, Disarmament, Non-proliferation and Science Department, MOFA

Ministry/ Agency	Project	Partner/ Target Country (Target Institution)	Description	Budget for FY2020 (in JPY million; if applicable)	Department Responsible
Ministry of Foreign Affairs (MOFA)	Japan-Turkey Disaster Management Cooperation	Turkey	Based on the Japan-Turkey Summit Meeting in 2017 and 2018, a Memorandum of Understanding (MOU) on Disaster Prevention and Cooperation was signed in December 2018. Various trainings and sharing of know-how in the field of disaster prevention were held. In addition, the two countries have been exchanging opinions and confirming the progress in the annual consultation.	—	First Middle East Division, Middle Eastern and African Affairs Bureau, MOFA
	Science and Technology Research Partnership for Sustainable Development (SATREPS)	128 countries among the objects of ODA (Public offering in 2021)	This program is jointly implemented by MOFA, the Japan International Cooperation Agency (JICA), MEXT, the Japan Science and Technology Agency (JST), and the Japan Agency for Medical Research and Development (AMED). Research institutions in Japan and developing countries cooperate with one another to conduct joint international research on solutions to global issues, tapping into the power of Japanese leading science and technology and the Official Development Assistance (ODA). Disaster prevention is one of the research fields under this program; by FY2020, 28 projects were carried out in 20 countries.	(MOFA) Included in JICA Management Expenses Grant (MEXT) Included in JST Management Expenses Grant	Development Administration Division, International Cooperation Bureau, MOFA International Science and Technology Affairs Division, Science and Technology Policy Bureau, MEXT
	Cooperation in Disaster Prevention and Support for Disaster Recovery through Collaboration with Japanese International Cooperation NGOs	Countries affected by natural disasters	(1) Cooperation for disaster prevention in developing countries through the Grant Aid for Japanese NGO's Projects (N-NGO), and emergency humanitarian aid and disaster recovery support through the Japan Platform (JPF) (Note 1), (2) Establishment of an international disaster prevention network and emergency humanitarian assistance in the Asia-Pacific region through Asia Pacific Alliance (A-PAD) (Note 2). (Note 1) A framework in which Japanese NGOs, the business community, and the government work together to provide emergency humanitarian assistance in the event of a large-scale natural disaster or conflict in Japan or abroad. (Note 2) A framework that aims to build an international disaster prevention network for the purpose to promote collaboration among NGOs, the business community, and governments of A-PAD member countries in the region, in response to large-scale natural disasters and disaster prevention measures in the Asia Pacific region, under the leadership of Japanese NGOs.	（1）The number of grant aid （2）Voluntary contributions to A-PAD 94.6	Non-Governmental Organizations Cooperation Division, International Cooperation Bureau, MOFA
	Provision of Emergency Relief Goods	Countries affected by natural disasters	In the event of a large-scale disaster overseas, MOFA decides providing emergency relief goods to support the immediate needs of affected people, upon request of the government of the affected country through Japan International Cooperation Agency (JICA). In 2020, assistance was provided to 10 countries (10 cases in total), including the provision of tents, plastic containers, and other supplies to people affected by the cyclone that struck Fiji in April. * As of the end of February 2021.	Included in JICA Management Expenses Grant	Humanitarian Assistance and Emergency Relief Division International Cooperation Bureau, MOFA
	Deployment of Japan Disaster Relief (JDR) teams	Countries affected by natural disasters	In 2019, seven teams were dispatched to five countries in total, including the Japan Disaster Relief (JDR) teams and the Infection Control Team (ICT) (the first and second teams). In 2020, a team of experts from the Japan Disaster Relief Team was dispatched to the oil spill incident on the coast of Mauritius, and a total of three teams were dispatched: the first, second and third teams. (*) As of the end of February 2021.	Included in JICA Management Expenses Grant	Humanitarian Assistance and Emergency Relief Division International Cooperation Bureau, MOFA
Ministry of Education, Culture, Sports, Science and Technology (MEXT)	Promotion of "Sentinel Asia" Project to Share Information on Natural Disasters Between Asia - Pacific Countries	28 countries and regions of the Asia Pacific Region/ 17 international organizations	This project is led and implemented by Japan to contribute to disaster management efforts in the Asia-Pacific Region. It uses satellites to share information relating to natural disasters. Participants consist of 28 countries and regions, 95 institutions, and 17 international organizations (As of February 2021).	Included in JAXA Management Expenses Grant	Office for Space Utilization Promotion, Space Development and Utilization Division, Research and Development Bureau, MEXT
	Science and Technology Research Partnership for Sustainable Development (SATREPS)	128 countries among the objects of ODA (Public offering in 2021)	This program is jointly implemented by MOFA, the Japan International Cooperation Agency (JICA), MEXT, the Japan Science and Technology Agency (JST), and the Japan Agency for Medical Research and Development (AMED). Research institutions in Japan and developing countries cooperate with one another to conduct joint international research on solutions to global issues, tapping into the power of Japanese leading science and technology and the Official Development Assistance (ODA). Disaster prevention is one of the research fields under this program; by FY2020, 28 projects were carried out in 20 countries.	(MOFA) Included in JICA Management Expenses Grant (MEXT) Included in JST Management Expenses Grant	Development Administration Division, International Cooperation Bureau, MOFA International Science and Technology Affairs Division, Science and Technology Policy Bureau, MEXT
Ministry of Agriculture, Forestry and Fisheries (MAFF)	Enhancing community resilience to climate change in mountain watersheds	Philippines and Peru (The Food and Agriculture Organization of the United Nations)	To strengthen community resilience in mountain watersheds by forest management and conservation, the project supports research and analysis of disaster risk assessment and issues, capacity building through development of educational materials and training, collection of good practices such as demonstration of risk mitigation measures and holding of workshops.	52	International Forestry Cooperation Office, Forestry Agency

Ministry/ Agency	Project	Partner/ Target Country (Target Institution)	Description	Budget for FY2020 (in JPY million; if applicable)	Department Responsible
Ministry of Agriculture, Forestry and Fisheries (MAFF)	Development of technologies to enhance the functions of forests for disaster prevention and mitigation in developing countries	Vietnam, Myanmar and Indonesia	Promoting the global expansion of Japanese private companies for contributing to disaster prevention and mitigation in developing countries through providing information on disaster occurrence and current measures of forest-based disaster prevention and mitigation in developing countries, and development of methods to enhance functions of forests in disaster risk reductions by using remote sensing technologies.	57	International Forestry Cooperation Office, Forestry Agency
Ministry of Land, Infrastructure Transport and Tourism (MLIT)	Disaster Management Collaboration Dialogues	Vietnam, Myanmar, Indonesia, Turkey,	Since 2013, workshops have been held to match Japanese technologies for DRR/DRM with disaster management issues of other countries.	40	River Planning Division, Water and Disaster Management Bureau, MLIT /Overseas Projects Division, Policy Bureau, MLIT
	International Cooperation through UN Committee of Experts on Global Geospatial Information Management (UNCE-GGIM)	All relevant countries	Promoting the use of technologies in the field of geospatial information to share disaster and disaster risk information as co-chairs of Working Group of Disasters (WG-Disasters) at the UN Committee of Experts on Global Geospatial Information Management (UNCE-GGIM).	—	International Policy and Project Division, Planning Department, Geospatial Information Authority of Japan, MLIT
	Collaboration with the Land Information New Zealand (LINZ)	New Zealand (LINZ: Land Information New Zealand)	The cooperation document was exchanged on November 10, 2020 under the Japan-New Zealand Agreement on Cooperation in Science and Technology in order to strengthen cooperation in surveying technology between the two countries where there is a large crustal movement. In the future, the technologies of both countries will be utilized to support disaster prevention and mitigation, and measurements will be made to improve surveying technology, which is indispensable for understanding crustal movement and providing accurate location information.	—	International Policy and Project Division, Planning Department, Geospatial Information Authority of Japan, MLIT
	US-Japan Natural Resources Panel on Earthquake Research (UJNR)	US	With a view to contributing to the establishment of earthquake disaster reduction technologies, researchers from public seismic research institutions in Japan and the U.S. met to present the latest research outcomes and exchange opinions. The event was held in Kumamoto Prefecture in 2022 (the event will be held every two years in Japan and the U.S. alternately).	—	Research Management Division, Geography and Crustal Dynamics Research Center, Geospatial Information Authority of Japan, MLIT
	Raising Awareness of World Tsunami Awareness Day (Hamaguchi Award)	All relevant countries	Taking advantage of the opportunity presented by the establishment of World Tsunami Awareness Day, Japan founded the Hamaguchi Award (presented by the Minister of Land, Infrastructure and Transport and Tourism) in FY2016 for individuals and/or organizations within Japan or overseas that have made significant contributions in the field of technologies for coastal disaster risk reduction, especially tsunami preparedness. At the award ceremony held on November 4, 2020, 2 people and 1 organization were awarded: IMAMURA Fumihiko, Director and Professor of The International Research Institute of Disaster Science (IRIDeS), Tohoku University, Costas Synolakis, Professor at University of Southern California (USA) and Museum Tsunami Aceh (Indonesia).	—	Port and Airport Research Institute, National Institute of Maritime, Port and Aviation Technology
	International Centre for Water Hazard and Risk Management (ICHARM)	UNESCO, etc.	As a UNESCO Category 2 Center, Water Hazard and Risk Management (ICHARM) actively undertook research, training, and information networking activities aimed at mitigating damage due to water hazards worldwide. Specifically, it developed the Rainfall-Runoff-Inundation model (WEB-RRI model), and put them into practice in the field; conducted research and development on risk management; and offered master's and doctoral courses in disaster mitigation studies. In addition, it undertook technical assistance and international support initiatives funded by organizations including UNESCO and the World Bank.	—	Public Works Research Institute
Japan Metrological Agency (JMA)	International Cooperation through WMO	WMO member countries	The Japan Meteorological Agency (JMA) plays a central role in a number of international center operations as the keystone of WMO's weather information service in Asia. Also, many staff members of the Japan Meteorological Agency contribute to the activities of the WMO as experts.	—	Office of Disaster Mitigation, Planning Division, Administration Department, JMA
	International Cooperation through UNESCO	UNESCO member countries, etc.	Under the framework of the UNESCO Intergovernmental Oceanographic Commission (IOC), the JMA collects, analyzes, and provides data on oceans and maritime meteorology for the northeast Asian region. It also provides information on tsunamis caused by earthquakes that occur in the northwest Pacific region.	—	Office of Disaster Mitigation, Planning Division, Administration Department, JMA
	International Cooperation through International Civil Aviation Organization (ICAO)	ICAO member countries	The JMA participates in meetings organized by the ICAO, as well as investigations into adopting and improving standard international criteria for aviation weather services. It has also been appointed by the ICAO to operate international centers, thus contributing to the safe operation of global aircraft.	—	Office of Disaster Mitigation, Planning Division, Administration Department, JMA

Ministry/ Agency	Project	Partner/ Target Country (Target Institution)	Description	Budget for FY2020 (in JPY million; if applicable)	Department Responsible
Japan Metrological Agency (JMA)	Collaboration on International Research Plans	All relevant countries	The JMA promotes various international research projects in cooperation with other countries. On climate change, it has been involved in writing evaluation reports on the activities of the Intergovernmental Panel on Climate Change (IPCC) since the panel was established in 1988.	—	Office of Disaster Mitigation, Planning Division, Administration Department, JMA
	Human Resource Development Aid and Technological Cooperation to Developing Countries	All relevant countries	Together with the Japan International Cooperation Agency (JICA), the JMA conducts training for developing countries to improve their meteorological services. Also, in response to requests from developing countries, the JMA dispatches expert staff and accepts trainees from national meteorological institutions.	—	Office of Disaster Mitigation, Planning Division, Administration Department, JMA
Japan Coast Guard (JCG)	Participation in the projects of the Northwest Pacific Action Plan (NOWPAP) Marine Environmental Emergency Preparedness and Response Regional Activity Centre (MERRAC)	Republic of Korea, China, Russia	The JCG participates in the projects of the NOWPAP MERRAC, which is a center responsible for preparing for and responding to marine environmental emergencies. As well as undertaking a marine environmental conservation initiative focused on the Sea of Japan and the Yellow Sea, etc. in partnership with neighboring countries, the JCG takes part in joint oil spill cleanup drills organized by relevant organizations and attends meetings held each year. Through these activities, it promotes international cooperation by striving to build systems that will enable relevant countries to work together in the event of an accident.	0.4	Protection of Marine Environment Division, Guard & Rescue Department, JCG
Ministry of Defense (MOD)	Japan-U.S.-Australia Joint Training at Cope North 20	US, Australia	A joint training among Japan, the U.S., and Australia. Japan conducted the drills related to humanitarian aid and disaster relief activities.	—	Training Division, Bureau of Defense Policy, MOD

Source: Formulated by the Cabinet Office based on materials from various ministries and agencies.

Fig. A-55 Technical Cooperation Projects in Disaster Risk Reduction (FY2020)

Country	Cooperation Period	Project Name	Description
Philippines	2017-2021	Development of an Extreme Weather Observation and Information Sharing System (SATREPS)	This includes establishing a lightning, weather and 3D cloud structure monitoring system, developing technologies for short-term weather forecasts of extreme weather and the intensity of cyclones in Metropolitan Manila using an extrapolation method and developing software to distribute information to disaster management organizations.
Philippines	2018-2022	Project for Developing a Flood Control Master Plan for Davao	This project aims to support the preparation of a comprehensive flood control master plan for three river basins (Davao river, Matina river, Talomo river) in Davao city and carry out feasibility studies on priority plans.
Philippines	2020-2023	Project for Strengthening Capacity on High-quality Weather Observation, Forecasting and Warning	Strengthening the ability to provide high quality observations, forecasts, warnings and information by improving maintenance and management capabilities of ground-based weather observation systems and development of quantitative precipitation estimation and precipitation guidance for the purpose of contributing to the widespread use of this information at the national and local levels to mitigate weather-related disasters.
Thailand	2018-2022	The project on regional resilience enhancement through establishment of Area-BCM at industry complexes in Thailand	This project aims to establish a method to introduce and use Area-BCM in clusters in Thailand through the development of a method to analyze and assess flood risks, development of a method for business impact analysis concerning natural disasters, establishment of systems to manage Area-BCM in specific clusters, and development of training programs for the domestic and international introduction of Area-BCM.
Vietnam	2018-2021	The project for strengthening capacity in weather forecasting and flood early warning system	This project aims to provide disaster management institutions and residents with more accurate meteorological information in a prompt manner by improving maintenance, inspection, and calibration skills for meteorological observation equipment, improving abilities to analyze data obtained from two weather radars introduced under the Grand Aid program and quality control skills, improving monitoring and forecasting skills concerning heavy rains and typhoons, and improving communication skills.
Myanmar	2015-2020	Project for Development of a Comprehensive Disaster Resilience System and Collaboration Platform in Myanmar (SATREPS)	Yangon Technological University, which falls under the jurisdiction of Myanmar's Ministry of Education, is planning to develop and build a scenario analysis system that forecasts changes in disaster vulnerability as needed, and an integrated disaster response system based on this to enhance disaster resilience. In addition, it is planning to establish an industry-academia-government collaborative platform to disseminate these systems in governmental organizations and industry. Japan will provide support for R&D of these systems, human resource development required for this R&D, and the establishment of a platform, thereby helping to enhance disaster resilience in Myanmar.
Central America	2015-2020	Project on Capacity Development for Disaster Risk Management in Central America, Phase 2	The Project on Capacity Development for Disaster Risk Management in Central America was conducted to build disaster-resilient societies by improving the disaster risk reduction capabilities of six countries in Central America (El Salvador, Honduras, Guatemala, Nicaragua, Costa Rica, and Panama), which face similar risks in terms of natural disasters, including earthquakes, floods, and volcanic disasters. Based on the results of that project, Phase 2 supports the strengthening of capacity among administrative organizations with a view to nationwide rollout, and the strengthening of frameworks for sustained efforts to popularize systematic community disaster preparedness, as well as supporting the construction of frameworks for sharing each country's experiences with others in Central America, with the aim of developing disaster risk management capacity throughout the region.
Myanmar	2019-2022	Project for Enhancing Capacity of Weather Observation and Forecasting in Myanmar	This program aims to improve the Myanmar Department of Meteorology and Hydrology's capacity for the maintenance of meteorological observation equipment and weather data analysis and processing skills. By ensuring more effective forecasting, Myanmar aims to reduce damage from disasters. This program is intended to create a synergy effect with support related to meteorological observation equipment, such as the introduction of three weather radars under the Grand Aid program.
Turkmenistan	2017-2020	Project for Improvement of the Earthquake Monitoring System in and around the Ashgabat City	The purpose of this project is to improve the capacity of the nation in earthquake observation and earthquake hazard assessment of earthquake risk using earthquake observation data and the result of earthquake hazard assessment and formulate earthquake disaster management plans by developing an earthquake observation and strong motion observation system to establish a system for early decision-making on seismic intensity, epicenter and earthquake size and prediction of seismic intensity in pilot districts of the Ashgabat Area.
Armenia	2019-2022	The Project for the Improvement of Crisis Communication and Public Awareness for Disaster Risk Reduction	This program aims to improve the crisis communication capabilities of the Ministry of Emergency Situations (Armenia) and domestic media by developing crisis communication guidelines, conducting drills based on the guidelines, developing training materials and plans, and conducting training, with a view to ensuring accurate and timely emergency communication.
Bangladesh	2015-2021	Building Safety Promotion Project for Disaster Risk Reduction (BSPP)	Primarily targeting staff at the Public Works Department under the Ministry of Housing and Public Works, this project seeks to increase the safety of buildings in Bangladesh and reduce the risk of disaster in urban areas by supporting efforts to strengthen human resource development systems aimed at increasing building safety and making use of manuals to enhance the capability of the staff for evaluating seismic capacity, undertaking seismic design and supervising construction at the end of the project.
Bangladesh	2016-2022	Technical Development to Upgrade Structural Integrity of Buildings in Densely Populated Urban Areas and its Strategic Implementation towards Resilient Cities (SATREPS)	Focusing on buildings in Dhaka that are primarily built from reinforced concrete, this project involves research into diagnostic techniques and reinforcement methods suitable to local components and structural styles, and the presentation of recommendations for strategies for applying them. Through this, it aims to increase the structural resilience of buildings, and encourage technology development and its effective implementation, thereby contributing to reducing the structural vulnerability of buildings in Bangladesh, and increasing safety against urban earthquakes.
Bangladesh	2020-2024	Project for Planning Capacity Enhancement and Establishment of a Technology Adaptation Cycle on Comprehensive Nodi (River) Management	In the target rivers (large rivers such as the Jamuna River and small and medium rivers including the Matamuhuri River), a knowledge tool is being developed for the installation and maintenance of structures according to characteristics each river in Bangladesh. In addition, by acquiring knowledge and know-how through the knowledge tool, and by introducing methods for formulating comprehensive river development and management plans, systematic control and planning management methods for diverse rivers are to be established.

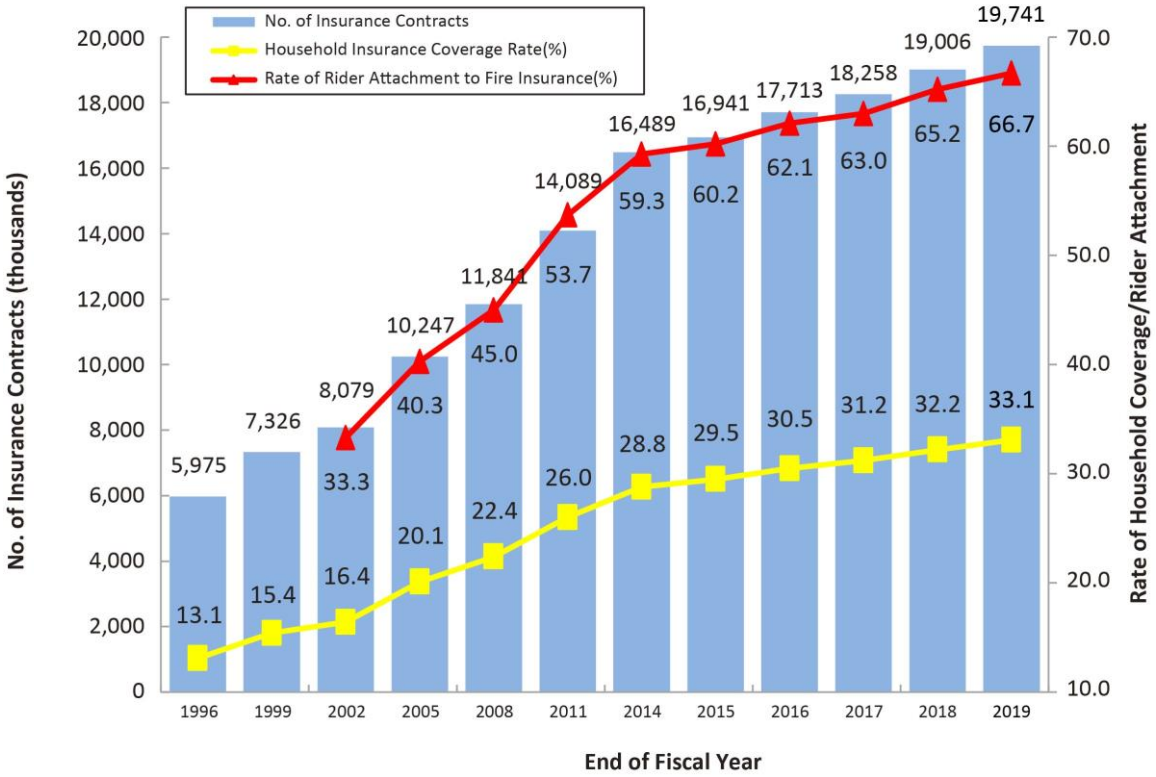
Country	Cooperation Period	Project Name	Description
Bangladesh	2020-2024 (plans)	Project for Strengthening Abilities to Formulate and Conduct Local Disaster Plans	The project provides support to formulate local disaster management plans for weather-related disasters in two Upazilas of Cox's Bazar, Shunamganj and Kurigram Districts as pilot activity sites and obtains budget for the implementation of the planned projects, and develops local management plans throughout the country to strengthen the implemented system.
Nepal	2016-2021	The project for Integrated Research on Great Earthquakes and Disaster Mitigation in Nepal Himalaya (SATREPS)	The goal of this project is to strengthen remote monitoring systems and develop human resources in the earthquake field by estimating future earthquakes that could occur in the Himalayan seismic gap, thoroughly examining the ground properties of the Kathmandu basin, and enhancing the seismographic network.
Pakistan	2016-2021	Project for Capacity Development of Disaster Management	Via the National Institute of Disaster Management (NIDM), an NDMA training institution established in 2007 to develop capacity at the National Disaster Management Authority (NDMA), this project will support efforts to strengthen human resource development implementation systems in the field of disaster management and contribute to increasing the knowledge concerning disaster management held by personnel belonging to the country's disaster management administration bodies.
Sri Lanka	2018-2021	Project for capacity strengthening regarding non-structural measures for landslide risk reduction	This program aims to improve Sri Lanka's capabilities concerning intangible measures by establishing an early sediment disaster alert system using risk assessment, and introducing the concept of land use planning.
Sri Lanka	2020-2024 (plans)	Project to Promote the Mainstreaming Disaster Risk Reduction through the Development of Local Disaster Management Plans Based on Watershed Strategies	The project will support the development of a system to promote the mainstreaming of disaster risk management (DRM) in Sri Lanka through the development of local disaster management plans and improvement of items on the introduction of a disaster risk management perspective in the applications for the projects of the central government agencies in the Kelani River Basin, including Colombo City, a major city in Sri Lanka, as a pilot area.
Sri Lanka	2018-2022	Project for Storm Water Drainage Plan in selected areas in Colombo Metropolitan Region	This project aims to plan urban drainage and inland flood control measures in Colombo and its surrounding areas, while also selecting priority programs and conducting investigations.
Fiji	2020-2024	Project to Promote Mainstreaming of Disaster Risk Reduction	The project aims to strengthen the capacities of the National Disaster Management. Office (NDMO) to implement and facilitate disaster risk management activities through the improvement of hazard evaluation abilities, the formulation and dissemination of the local disaster management, and the development of a system to implement and facilitate disaster management projects of the central government in Fiji, which is highly susceptible to natural disasters.
Vanuatu	2018-2021	Project for Enhancing the Capacity of Issuing Earthquake, Tsunami and Storm Surge Information	This project aims to develop a system for the timely and accurate communication of earthquake, tsunami, and storm surge information from the Vanuatu Meteorology and Geohazards Department and the National Disaster Management Office (NDMO) to relevant institutions and residents, by strengthening earthquake and tide monitoring networks (including the observation networks developed under the Grand Aid program), improving data analysis capabilities, and enhancing disaster information communication and alert issuing capabilities.
Mexico	2016-2022	Hazard Assessment of Large Earthquakes and Tsunamis in the Mexican Pacific Coast for Disaster Mitigation (SATREPS)	In collaboration with a Mexican research institute, this project involves installing measuring instruments on the earth's surface and sea floor in the coastal region of Guerrero state in southern Mexico, and gathering and analyzing earthquake data. This will be used to develop scenarios for major earthquake and tsunami disasters that could occur in future and to prepare a hazard map and evacuation signs. In addition, the project will develop and disseminate a disaster mitigation education program that takes local sociocultural attributes into account.
Honduras	2018-2022	Project for Control and Mitigation of Landslide in Tegucigalpa Metropolitan Area	This project aims to improve landslide management capabilities by strengthening the following skills: (1) detailed investigation and analysis to understand landslide phenomenon; (2) design, construction, construction management, and maintenance skills concerning small and medium-scale landslide control measure; (3) formulation of landslide hazard maps and risk maps; and (4) land use regulation related to landslide disasters.
Chile	2018-2021	Institutional Strengthening of ONEMI for Capacity Development in Disaster Risk Reduction Project	Under the Sendai Framework for Disaster Risk Reduction, this project aims to contribute to disaster prevention measures taken by ONEMI (Chile's national disaster control institution) by improving capabilities required for the promotion of disaster prevention and reduction measures, development of a disaster knowledge management system, and formulation of regional disaster management plans and developing disaster-prevention human resources.
Colombia	2015-2021	Project for Application of State of the Art Technologies to Strengthen Research and Response to Seismic, Volcanic and Tsunami Events, and Enhance Risk Management (SATREPS)	Colombia experiences frequent disasters due to earthquakes, tsunami, and volcanic eruptions. This project involves promoting partnerships between research institutes and relevant disaster management organizations, along with research and practical activities aimed at strengthening measures to mitigate the damage due to disaster through capacity building in such areas as earthquake, tsunami, and volcanic activity monitoring, modeling, damage forecasting, and the transmission of information. In addition, it will contribute to advances in disaster research in South America through collaboration with neighboring countries.
Ecuador	2017-2021	Project for Safe and Resilient Cities for Earthquake and Tsunami Disaster	Initiatives for developing "disaster resilient cities" will be deployed nationwide to mitigate damage caused by earthquakes and tsunamis by formulating tsunami evacuation plans, updating the disaster management agenda and strengthening the operational structure of building system in three pilot cities (Atacames, Portoviejo and Salinas).
Mauritius	2019-2022	Project for Enhancing Meteorological Observation, Weather Forecasting and Warning Capabilities	This project aims to ensure the timely provision of accurate meteorological information to Mauritian disaster management institutions and residents through technological cooperation aimed at improving the Mauritius Meteorological Services' forecasting and alert issuing capabilities, while also utilizing weather radars introduced under the Grand Aid program.
Philippines	2019-2024	Disaster Risk Reduction and Management Capacity Enhancement Project Phase 2	This project supports the planning, implementation and monitoring of disaster prevention measures to reduce human and economic damages caused by natural disasters with technical support of the national disaster management system in the regional and local governments (provinces, cities and towns).
Bhutan	2019-2022 (plans)	Project on Strengthening Weather Observation, Forecasting and Flood Warning Capacities for Disaster Preparedness and Responses in the Thimphu and Paro River Basins	This project will enhance the capacities of the National Centre for Hydrology and Meteorology (NCHM) for weather observation and forecasting, and flood risk assessment, forecasting and warning in the Thimphu and the Paro River basins as well as strengthen the capacities of the Department of Disaster Management (DDM) and the provinces and cities in the basins for preparedness of and respond to flood disasters.

Country	Cooperation Period	Project Name	Description
Nepal	2020-2024	Project for Planning Capacity Enhancement to make the Kathmandu Valley resiliente	This project contributes to strengthening the maximum resilience of the Kathmandu Valley and promote pre-investment in disaster management, focusing on strengthening the administrative capacity of the National Disaster Reduction and Mitigation Agency (NDRRMA), which is Nepal's central disaster management agency, for disaster risk reduction (DRR), development of a mechanism for implementing DRR projects in the Kathmandu Basin, and supporting local governments in mainstreaming disaster reduction.

Source: Japan International Cooperation Agency (JICA)

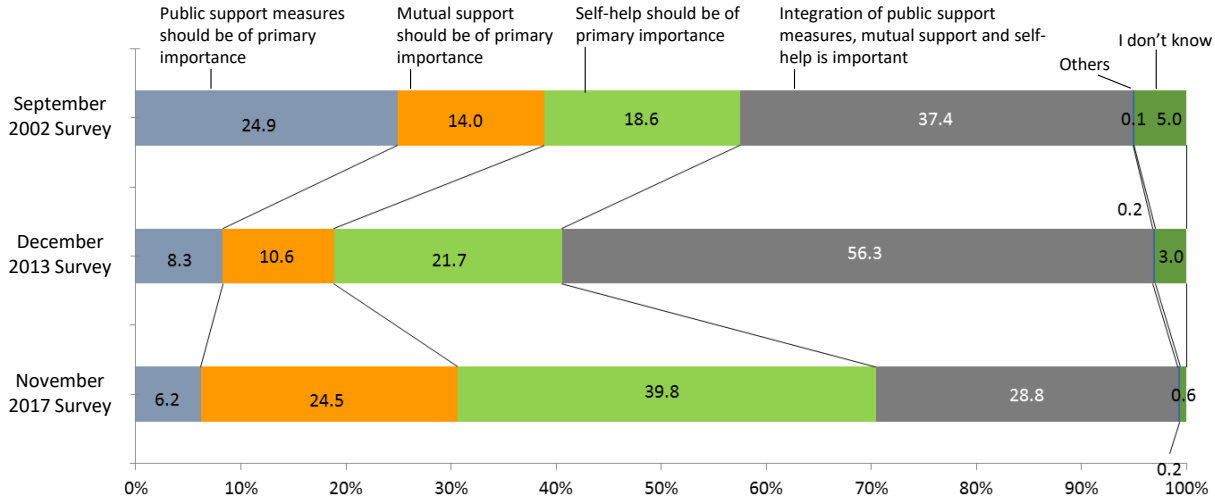
10. Others

Fig. A-56 Number of Earthquake Insurance Contracts



Source: Formulated by the Cabinet Office based on materials from the General Insurance Rating Organization of Japan

Fig. A-57 Awareness of Self-Help, Mutual Support, and Public Support Measures



Source: Formulated by Cabinet Office on basis of "Public Opinion Poll regarding Disaster Risk Reduction" conducted by the Public Relations Office, Cabinet Office

Fig. A-58 Tables Explaining the Japan Meteorological Agency Seismic Intensity Scale

Notes:

(1) As a rule, seismic intensities announced by JMA are values observed using seismic intensity meters installed on the ground or on the first floor of low-rise buildings. This document describes the phenomena and damage that may be observed for individual seismic intensity levels. Seismic intensities are not determined from the observed phenomena described here.

(2) Seismic ground motion is significantly influenced by underground conditions and topography. Seismic intensity is the value observed at a site where a seismic intensity meter is installed, and may vary even within the same city. In addition, the amplitude of seismic motion generally differs by floor and location within the same building, as shaking on upper floors of middle-to-high-rise buildings may be considerably amplified.

(3) Sites with the same level of seismic intensity will not necessarily suffer the same degree of damage, as the effect of tremors depends on the nature of the seismic motion (such as amplitude, period and duration), the type of construction and underground conditions.

(4) This document describes typical phenomena that may be seen at individual seismic intensity levels. In some cases, the level of damage may be greater or less than specified. Not all phenomena described for each intensity level may necessarily occur.

(5) The information outlined here is made by experiences of recent earthquake disasters and regularly checked at intervals of about five years. This information will be updated in line with actual phenomena observed in new cases or improvements in the earthquake resistance of buildings and structures.

(6) In the case that the extent of damage cannot be shown in round numbers, the following adverbs and adjectives have been used as a tentative guide.

Term	Definition
Rarely A few/little Majority Almost all	Extremely limited. Hardly ever. Number/extent is extremely small. Just a little bit. Half or more. Less than “almost all.” Not all but close to all.
There are (also), there may be	Used to express something that typically starts to appear at this seismic intensity level, where the quantity is not great, but it is hard to quantify the number/extent.
Increases	It is difficult to specify the quantity, but it is more than would be the case for a lower level of intensity.
Increases further	Same meaning as “increases” above. Used in relation to lower levels of intensity, just like “increases” above.

* The JMA sometimes publishes earthquake intensities obtained from questionnaire surveys, but these are expressed as “corresponding to seismic intensity xx” and are distinguished from seismic intensity levels observed by seismic intensity meters.

●Human perception and reaction, indoor situation, outdoor situation

Seismic intensity	Human perception and reaction	Indoor situation	Outdoor situation
0	Imperceptible to people, but recorded by seismometers.	—	—
1	Felt slightly by some people keeping quiet in buildings.	—	—
2	Felt by many people keeping quiet in buildings. Some people may be awoken.	Hanging objects such as lamps swing slightly.	—
3	Felt by most people in buildings. Felt by some people walking. Many people are awoken.	Dishes in cupboards may rattle.	Electric wires swing slightly.
4	Most people are startled. Felt by most people walking. Most people are awoken.	Hanging objects such as lamps swing significantly, and dishes in cupboards rattle. Unstable ornaments may fall.	Electric wires swing significantly. Those driving vehicles may notice the tremor.
5 Lower	Many people are frightened and feel the need to hold onto something stable.	Hanging objects such as lamps swing violently. Dishes in cupboards and items on bookshelves may fall. Many unstable ornaments fall. Unsecured furniture may move, and unstable furniture may topple over.	In some cases, windows may break and fall. People notice electricity poles moving. Roads may sustain damaged.
5 Upper	Many people find it hard to move; walking is difficult without holding onto something stable.	Dishes in cupboards and items on bookshelves are more likely to fall. TVs may fall from their stands, and unsecured furniture may topple over.	Windows may break and fall, unreinforced concrete-block walls may collapse, poorly installed vending machines may topple over, and automobiles may stop due to the difficulty of continued movement.
6 Lower	It is difficult to remain standing.	Many unsecured furniture moves and may topple over. Doors may become wedged shut.	Wall tiles and windows may sustain damage and fall.
6 Upper	It is impossible to remain standing or move without crawling. People may be thrown through the air.	Most unsecured furniture moves, and is more likely to topple over.	Wall tiles and windows are more likely to break and fall. Most unreinforced concrete-block walls collapse.
7		Most unsecured furniture moves and topples over, or may even be thrown through the air.	Wall tiles and windows are even more likely to break and fall. Reinforced concrete-block walls may collapse.

●Wooden houses

Seismic intensity	Wooden houses	
	High earthquake resistance	Low earthquake resistance
5 Lower	—	Slight cracks may form in walls.
5 Upper	—	Cracks may form in walls.
6 Lower	Slight cracks may form in walls.	Cracks are more likely to form in walls. Large cracks may form in walls. Tiles may fall, and buildings may lean or collapse.
6 Upper	Crazing or cracks may be seen in walls.	Large cracks are more likely to form in walls. Buildings are more likely to lean or collapse.
7	Cracks are more likely to form in walls. Buildings may lean in some cases.	Buildings are even more likely to lean or collapse.

Notes:

(1) Wooden houses are classified into two categories according to their earthquake resistance, which tends to be higher for newer foundations. Earthquake resistance tends to be low for structures built up to 1981, and high for those built since 1982. However, to maintain a certain range of earthquake resistance according to differences in structure and wall arrangement, resistance is not necessarily determined only by foundation age. The earthquake resistance of existing buildings can be ascertained through quakeproofing diagnosis.

(2) The walls in this table are assumed to be made of mud and/or mortar. Mortar in a wall with a weak base can easily break off and fall, even under conditions of low deformation.

(3) Damage to wooden houses depends on the period and duration of seismic waves. In some cases (such as the Iwate-Miyagi Nairiku Earthquake in 2008), few buildings sustain damage in relation to the level of seismic intensity observed.

●Reinforced-concrete buildings

Seismic intensity	Reinforced-concrete buildings	
	High earthquake resistance	Low earthquake resistance
5 Upper	—	Cracks may form in walls, crossbeams and pillars.
6 Lower	Cracks may form in walls, crossbeams and pillars.	Cracks are more likely to form in walls, crossbeams and pillars.
6 Upper	Cracks are more likely to form in walls, crossbeams and pillars.	Slippage and X-shaped cracks may be seen in walls, crossbeams and pillars. Pillars at ground level or intermediate floors may disintegrate, and buildings may collapse.
7	Cracks are even more likely to form in walls, crossbeams and pillars. Ground level or intermediate floors may sustain significant damage. Buildings may lean in some cases.	Slippage and X-shaped cracks are more likely to be seen in walls, crossbeams and pillars. Pillars at ground level or on intermediate floors crumble are more likely to disintegrate, and buildings are more likely to collapse.

Notes:

(1) Earthquake resistance tends to be higher for newer foundations. The value tends to be low for structures built up to 1981, and high for those built since 1982. However, to maintain a certain range of earthquake resistance according to differences in structure and 2D/3D arrangement of reinforced walls, resistance is not necessarily determined only by foundation age. The earthquake resistance of existing buildings can be ascertained through quakeproofing diagnosis.

(2) Slight cracks may form in reinforced-concrete buildings without their core structure being affected.

●Situation of ground and slopes, etc.

Seismic intensity	Situation of ground	Situation of slopes, etc.
5 Lower	Small cracks*1 may form and liquefaction*2 may occur.	Rock falls and landslips may occur.
5 Upper		
6 Lower	Cracks may form.	Landslips and landslides may occur.
6 Upper	Large cracks may form.	Landslips are more likely to occur; large landslides and massif collapses may be seen.*3
7		

Notes:

*1 A crack is the same phenomenon as a fissure, but the expression is used here to refer to a small fissure or opening in the ground.

*2 Liquefaction may be seen in areas with a high groundwater level and loose sand deposits. Damage observed as a result of liquefaction includes spouts of muddy water from the ground, outbreaks of subsidence in riverbanks and quays, elevation of sewage pipes and manholes, and leaning or destruction of building foundations.

*3 When large landslides and massif collapse occurs, dams may form depending on geographical features, and debris flow may occur due to the large quantities of sediment produced.

●Influence on utilities and infrastructure, etc.

Suspension of gas supply	In the event of shaking with a seismic intensity of about 5 Lower or more, gas meters with safety devices are tripped, stopping the supply of gas. In the event of stronger shaking, the gas may stop for entire local blocks.*
Suspension of water supply, electrical blackouts	Suspension of water supply and electrical blackouts may occur in regions experiencing shaking with a seismic intensity of about 5 Lower or more.*
Suspension of railroad services, regulation of highways, etc.	In the event of shaking with a seismic intensity of about 4 or more, services on railroads or highways may be stopped for safety confirmation. Speed control and traffic regulations are performed according the judgment of the relevant bodies. (Standards for safety confirmation differ by organization and area).
Disruption to lines of communication such as telephones	In the event of an earthquake, communication network congestion may occur due to increased calls related to safety confirmation and inquiries around regions experiencing strong shaking. To combat this, telecommunications providers offer Disaster Emergency Message Dial and Message Board services if a disaster such as an earthquake with a seismic intensity of about 6 Lower or greater occurs.
Suspension of elevator service	In the event of shaking with a seismic intensity of about 5 Lower or more, elevators with earthquake control devices will stop automatically for safety reasons. Resumption of service may be delayed until safety is confirmed.

*In the event of shaking with a seismic intensity of 6 Upper or more, gas, water, and electric supplies may stop over wide areas.

●Effect on large-scale structures

Shaking of skyscrapers from long-period ground motion*	Due to their longer characteristic period, skyscrapers react less to earthquakes than general reinforced-concrete buildings, which have a shorter characteristic period. However, they exhibit slow shaking over a long time in response to long-period ground motion. If motion is strong, poorly fixed office appliances may move significantly, and people may have to hold onto stable objects to maintain their position.
Sloshing of oil tanks	Sloshing of oil tanks occurs in response to long-period ground motion. As a result, oil outflows or fires may occur.
Damage or collapse of ceilings etc. at institutions covering large spaces	In institutions covering large spaces such as gymnasiums or indoor pools, ceilings may shake significantly and sustain damage or collapse, even in cases where ground motion is not severe enough to cause other structural damage.

*Occasionally, when a large earthquake occurs, long-period seismic waves reach locations far from the hypocenter; such waves may be amplified over plains depending on the characteristic period of the ground, thus extending their duration.

Source: Japan Meteorological Agency

Fig. A-59 Emergency Warning Issuance Criteria

■Criteria for Meteorological Emergency Warnings

<table>
<tr><th>Phenomenon</th><th colspan="2">Criteria</th></tr>
<tr><td>Heavy rain</td><td colspan="2">Heavy rainfall with a level of intensity observed only once every few decades is predicted in association with a typhoon or similar.
Or:
Heavy rainfall is predicted in association with a typhoon expected to have a level of intensity observed only once every few decades or an extratropical cyclone with comparable intensity.</td></tr>
<tr><td>Storm</td><td>A storm is predicted…</td><td rowspan="3">…in association with a typhoon expected to have a level of intensity observed only once every few decades or an extratropical cyclone with comparable intensity.</td></tr>
<tr><td>Storm surge</td><td>A storm surge is predicted…</td></tr>
<tr><td>High waves</td><td>High waves are predicted…</td></tr>
<tr><td>Snowstorm</td><td colspan="2">A snowstorm is predicted in association with an extratropical cyclone expected to have a level of intensity observed only once every few decades.</td></tr>
<tr><td>Heavy snow</td><td colspan="2">Heavy snowfall with a level of intensity observed only once every few decades is predicted.</td></tr>
</table>

■Emergency Warning Criteria for Tsunami, Volcanic eruptions, and Earthquake

Phenomenon	Criteria
Tsunami	Tsunami height is expected to be greater than 3 meters. (Major Tsunami Warnings are issued in the classification of Emergency Warnings.)
Volcanic eruption	Eruption or possibility of eruption that may cause serious damage in residential areas and non-residential areas nearer the crater. (Volcanic Warning (Level 4 and 5) and Volcanic Warning (residential areas)* are issued in the classification of Emergency Warnings.)
Earthquake	Seismic intensity of 6-lower or more is expected. (Earthquake Early Warnings incorporating prediction of tremors measuring 6-lower or more on JMA's seismic intensity scale are issued in the classification of Emergency Warnings.)

Source: Japan Meteorological Agency

Fig. A-60 Evacuation Information Using Five Warning Levels of Warning (Flood and Landslide Disasters)

Things to Know About Evacuation Information for Typhoons and Torrential Rain

Check During Emergency

Evacuation Information Points

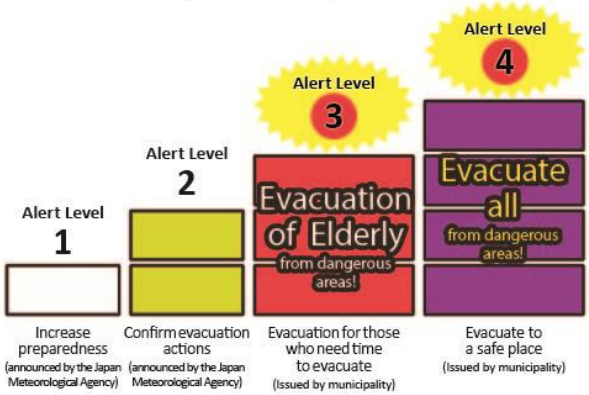
Be in the know!

Evacuation Information Issued by Municipalities (Alert Level)

"Evacuation" means to "evade" disasters.
People who are in a safe place do not need to go to a shelter.

Alert Level 3 = <Evacuation of Elderly from Dangerous Areas>,
Alert Level 4 = <Evacuation of All*1>.

*1 At Alert Level 4, "Evacuation of All," is a time when all people, not just the elderly, should evacuate from dangerous areas.



An Alert Level 4 = 〈evacuation recommendation〉 means to evacuate from dangerous areas

The Alert Levels are classified into five levels to inform residents of the actions they should take in preparation for floods and sediment disasters, and are issued by municipalities in conjunction with evacuation information.

Alert level 5 is where a disaster has already occurred.

- If you are still not able to evacuate when the alert level 5 is issued, please take the best action to save your life by moving to a slightly safer room in your house or to a safe building if there is one nearby.
- Information on the occurrence of a disaster at Alert Level 5 is issued when the municipality is aware of the occurrence of a disaster, to the extent possible, but may not be given in some circumstances.

It is dangerous to evacuate outdoors during torrential rain.
Please refrain from transfer by car as well.

Alert Level 4 includes evacuation recommendations and evacuation instructions (emergency)*2, but in any case, evacuate at Alert Level 4.

- The Alert Level 4 evacuation recommendation is issued in consideration of the time required for evacuation and the time of sunset, so it is necessary to evacuate dangerous areas at this time.

*2 The evacuation instruction (emergency) at Alert Level 4 is not always issued, but may be issued in case of an emergency or to encourage evacuations repeatedly depending on the situation in the area.

List of Acronyms

ACDR	Asian Conference on Disaster Reduction
ADRC	Asian Disaster Reduction Center
AMCDRR	Asia Ministerial Conference on Disaster Risk Reduction
APEC	Asia-Pacific Economic Cooperation
ASAP	as soon as possible
BCM	Business Continuity Management
BCP	Business Continuity Plan
DOE	Department of Energy
DRR	Disaster Risk Reduction
ECCS	emergency core cooling system
EMWG	Emergency Management Working Group
EPReSC	Emergency Preparedness and Response Standards Committee
ERC	Emergency Response Center
FEMA	Federal Emergency Management Agency
HA/DR	humanitarian assistance and disaster relief
IAEA	International Atomic Energy Agency
ICHARM	International Centre for Water Hazard and Risk Management
ICT	information and communication technology
IRP	International Recovery Platform
ISO	International Organization for Standardization
ISUT	Information Support Team
JANDR	Japan Academic Network for Disaster Reduction
JBP	Japan Bosai Platform
JICA	Japan International Cooperation Agency
JIS	Japanese Industrial Standards
JMA	Japan Meteorological Agency
JVOAD	Japan Voluntary Organizations Active in Disaster
MAFF	Ministry of Agriculture, Forestry and Fisheries
MEXT	Ministry of Education, Culture, Sports, Science and Technology
MHLW	Ministry of Health, Labour and Welfare
MIC	Ministry of Internal Affairs and Communications
MLIT	Ministry of Land, Infrastructure, Transport and Tourism
MOC	Memorandum of Cooperation
NIED	National Research Institute for Earth Science and Disaster Resilience
NPO	Non-Profit Organization
NRA	Nuclear Regulation Authority
NRC	Nuclear Regulatory Commission
OECD/NEA	Nuclear Energy Agency of the Organization for Economic Cooperation and Development
OEIWG	Open-Ended Intergovernmental Expert Working Group
PAZ	Precautionary Action Zone
SCJ	Science Council of Japan
SDF	Self-Defense Forces
SDGs	Sustainable Development Goals
SDMOF	Senior Disaster Management Officials Forum
SFDRR	Sendai Framework for Disaster Risk Reduction 2015-2030
SIP4D	Shared Information Platform for Disaster Management
SMEs	Small and Medium-sized Enterprises
SRSG	Special Representative of the UN Secretary-General
TEC-FORCE	Technical Emergency Control FORCE
TMG	Tokyo Metropolitan Government
UNISDR	United Nations Office for Disaster Risk Reduction
UPZ	Urgent Protective Action Planning Zone
VC	volunteer center

From May 20, 2021

Alert level 4

Please evacuate when an "Evacuation Instruction" is issued!

"Evacuation Recommendations" will no longer be used

Alert Level	New Evacuation Information	Previous System of Evacuation Information
5	Disaster occurrence / Disaster impending — Emergency Safety Measures *1	Disaster occurrence information (Issued once occurrence is confirmed)
	<Be sure to evacuate by Alert Level 4!>	
4	High risk of disaster — Evacuation Instruction *2	・Evacuation Instruction (emergency) ・Evacuation Recommendation
3	Risk of disaster — Evacuation of the Elderly, Etc. *3	Advisory to prepare for evacuation and start evacuating elderly and other persons requiring special care
2	Weather worsening — Heavy Rain, Flood, or Storm Surge Advisories (Japan Meteorological Agency)	Heavy Rain, Flood, or Storm Surge Advisories (Japan Meteorological Agency)
1	Risk of weather worsening — Probability of Warnings (Japan Meteorological Agency)	Probability of Warnings (Japan Meteorological Agency)

*1: Alert Level 5 is rarely issued due to a number of reasons, such as municipal authorities being unable to accurately grasp the severity of a disaster.
*2: Evacuation Recommendations will no longer be issued. Instead, Evacuation Instructions will be issued.
*3: An Alert Level 3 indicates that everyone living in the evacuating area should prepare to evacuate if the Alert Level is raised. People who may have difficulty evacuating quickly or who feel that they are already in danger should proceed to evacuate themselves.

Emergency Safety Measures (Alert Level 5) indicates a life-threatening situation in which you can no longer safely evacuate. Please evacuate before Alert Level 5 is issued.

Evacuation Recommendations will no longer be used. From now on, all residents should evacuate from affected areas when or before Evacuation Instruction (Alert Level 4) is issued.

Elderly people, those with disabilities, and others who may need more time to evacuate should evacuate from affected areas when Evacuation of the Elderly, Etc. (Alert Level 3) is issued.

Cabinet Office (in charge of disaster prevention), Fire and Disaster Management Agency

Evacuate to an evacuation site designated by your local authority

What to take with you: Masks Disinfectant solution Thermometer Slippers Etc.

Evacuate to a friend or relative's home in a safe area

Talk to them in advance about evacuating during a disaster.

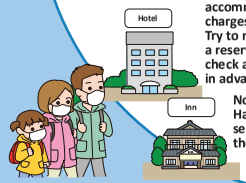
Note: Check the Hazard Map to see whether the area is safe.

Decide in advance how to act during a disaster

Evacuate to a hotel, inn, etc. in a safe area

Normal accommodation charges will apply. Try to make a reservation and/or check availability in advance.

Note: Check the Hazard Map to see whether the area is safe.



Shelter indoors

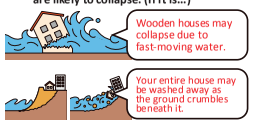
Check the Hazard Map to see whether you meet the "3 conditions" to shelter indoors.

Probable Maximum Inundation Depth

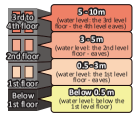
Note: Do not shelter indoors if there is risk of a landslide occurring. Evacuate immediately.

If you meet the "3 conditions," then it may be possible to shelter indoors even during a flood

❶ Your home is not located in an assumed flooding area where houses are likely to collapse. (If it is...)



❷ Your home is higher up than the flooding level



❸ You can hold out until the water recedes and have sufficient supplies of water/ food, etc. (If not...)

You may struggle to secure water, food, medicine, etc. or may be unable to use electricity, gas, water, and other utilities

Note: Since ❶ the assumed flooding area where houses are likely to collapse and ❸ the time until the water recedes (duration of the flooding) may not be shown on the Hazard Map, please contact your municipal authority.

Going outside during torrential rains is dangerous, even in a car. If you have no choice but to spend the night in your car, take great care to check your surroundings, etc., to make sure you are not caught in a flood.