

APPENDIX

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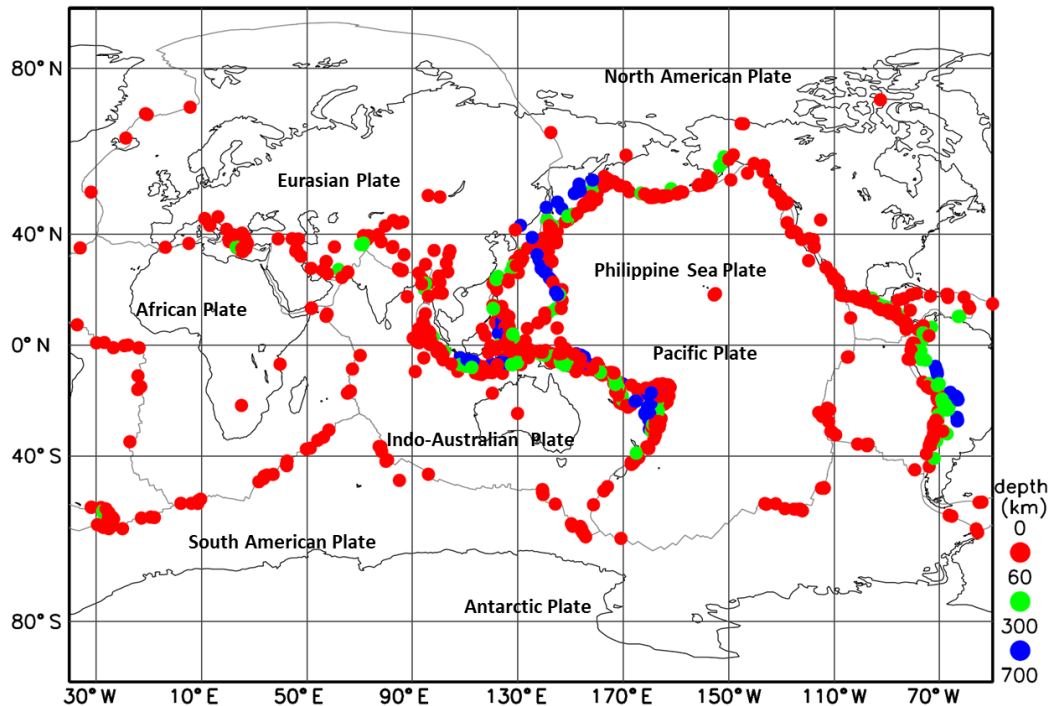
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1. Overview of Japan's National Land

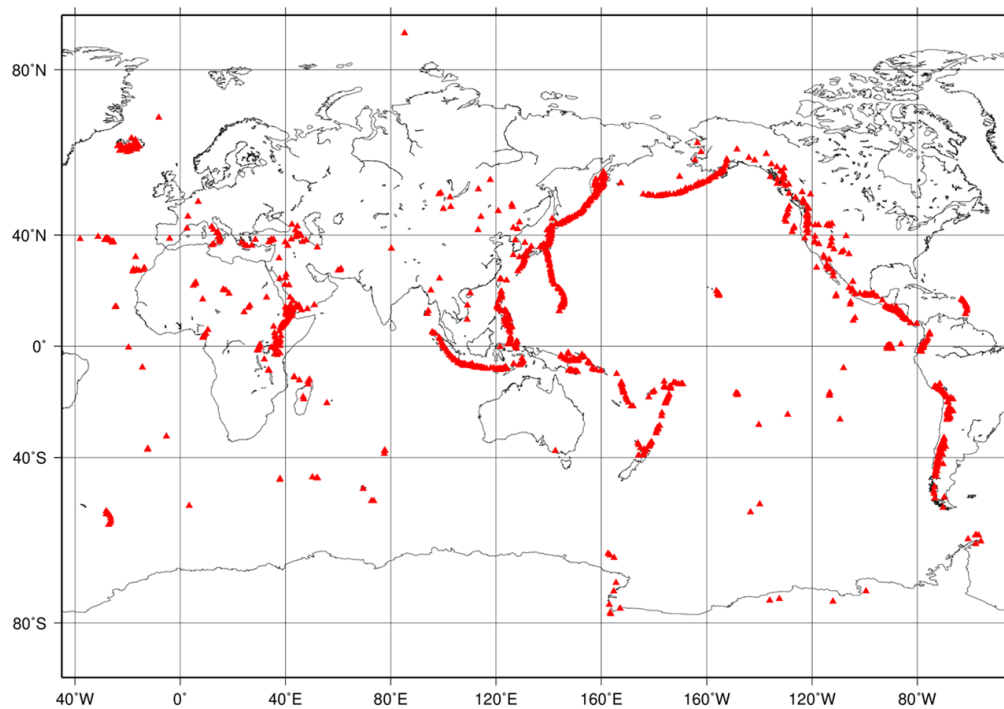
Fig. A-1 Worldwide Hypocenter Distribution (for Magnitude 6 and Higher Earthquakes) and Plate Boundaries



Note: 2012 - 2021

Source: Formulated by the Japan Meteorological Agency based on earthquake data from the U.S. Geological Survey (as of March 14, 2022)

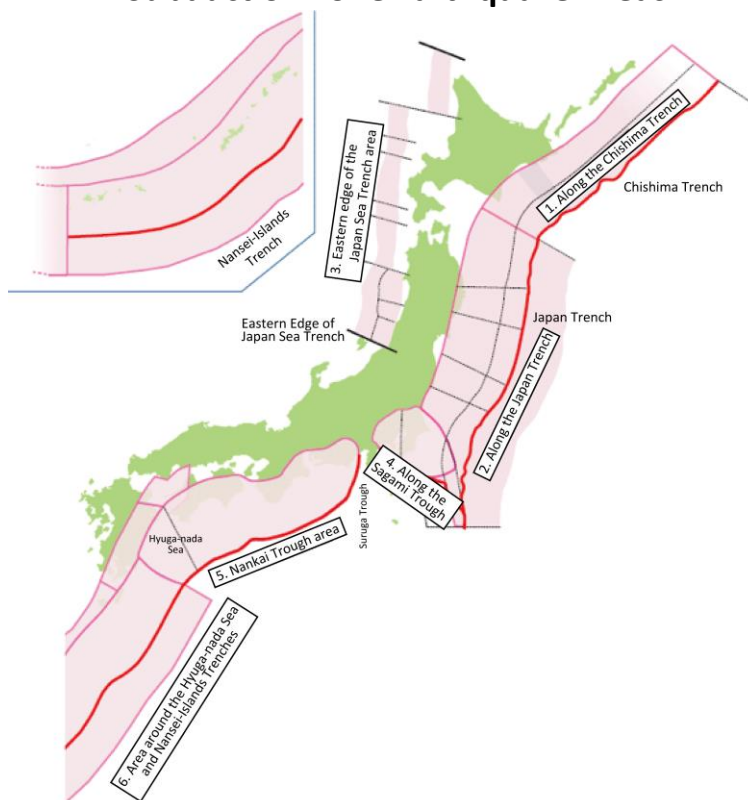
Fig. A-2 Distribution of Volcanoes Worldwide



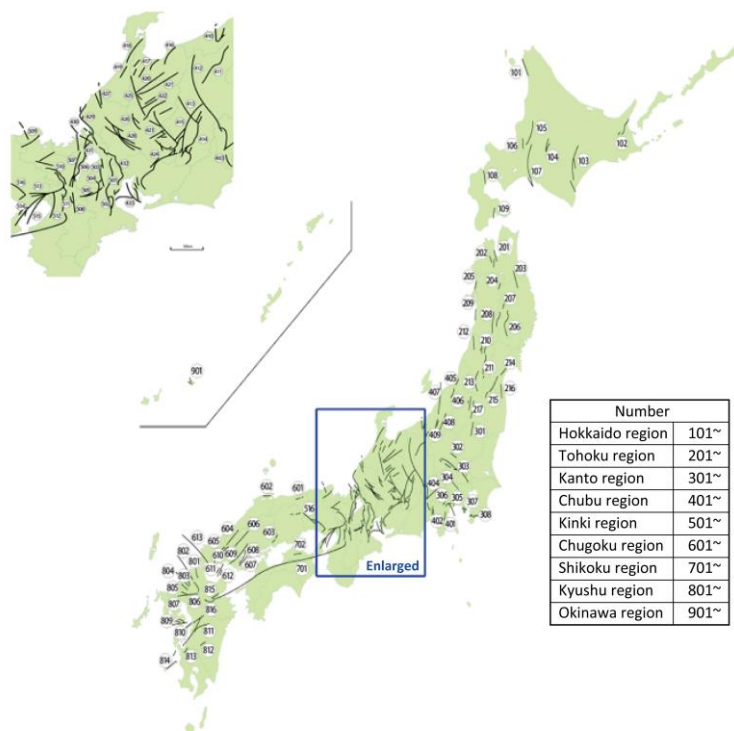
Source: Prepared by the Japan Meteorological Agency

Fig. A-3 Subduction Zone Earthquake Areas and Major Active Faults in Japan

Subduction Zone Earthquake Areas



Major Active Faults

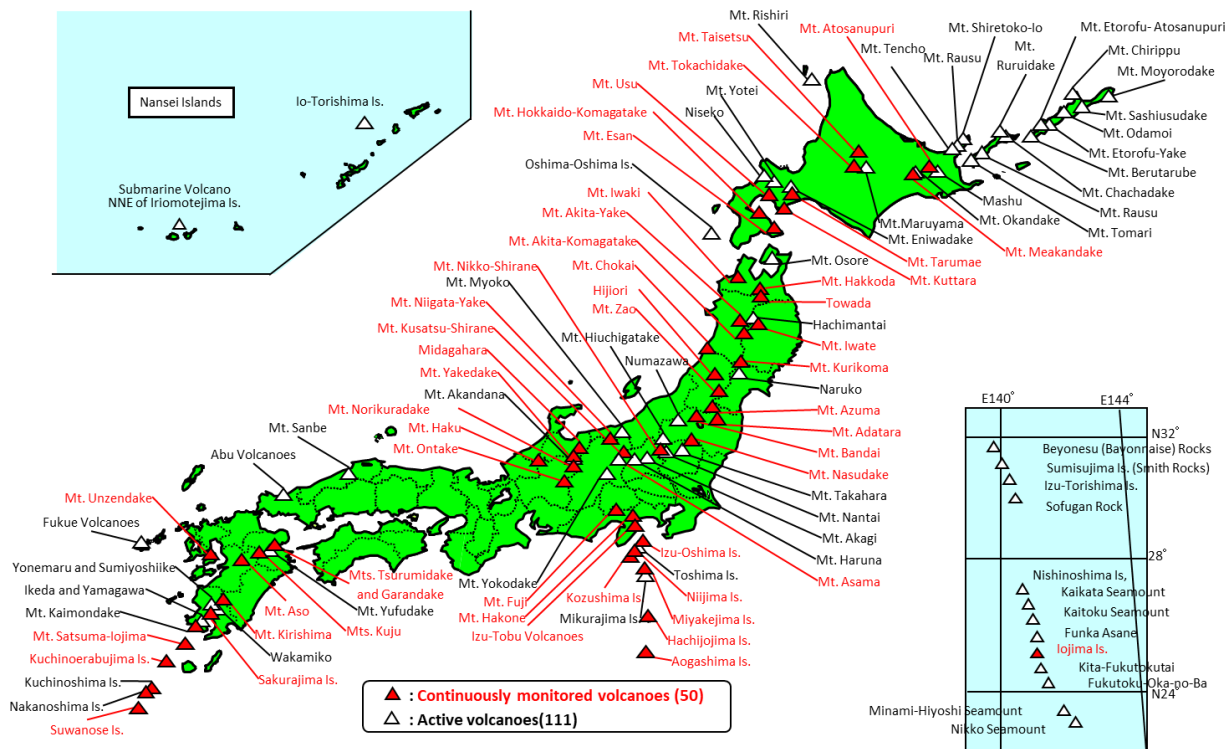


Source: Headquarters for Earthquake Research Promotion

No.	Name of Fault	No.	Name of Fault
101	Sarobetsu Fault Zone	424	Byoubuyama Enasan Fault Zones and Sanageyama Fault Zone
102	Shibetsu Fault Zone	425	Shogawa Fault Zone
103	Tokachi Plains Fault Zone	426	The Upper Stream of Nagara River Fault Zone
104	Furano Fault Zone	427	The Eastern Edge Fukui Plains Fault Zone
105	The Eastern Edge of Mashike Mountains Fault Zone, Numata-Sunagawa Fault Zone	428	Nobi Fault Zone
106	Toubetsu Fault	429	Yanagase Sekigahara Fault Zone
107	The Eastern Edge of Ishikari Lowlands Fault Zone	430	Nosaka Shufukuji Fault Zone
108	Kuromatsunai Lowlands Fault Zone	431	Kohoku Mountains Fault Zone
109	The Western Edge of Hakodate Plains Fault Zone	432	Yoro-Kuwana-Yokkaichi Fault Zone
201	The Western Edge of Aomori Bay Fault Zone	433	Isewan Fault Zone
202	The Western Edge of Tsugaru Mountains Fault Zone	501	The Eastern Edge of Suzuka Fault Zone
203	Oritsume Fault	502	The Eastern Edge of Nunobiki Mountains Fault Zone
204	Hanawa-higashi Fault Zone	503	The Western Edge of Suzuka Fault Zone
205	Noshiro Fault Zone	504	Tongu Fault
206	The Western Edge of Kitakami Lowlands Fault Zone	505	Kizugawa Fault Zone
207	The Western Edge of Shizukuishi Basin Fault Zone - The Eastern Edge of Mahiru Mountains Fault Zone	506	The Western Edge of Lake Biwa Fault Zone
208	The Eastern Edge of Yokote Basin Fault Zone	507	Mikata Hanaore Fault Zone
209	Kitayuri Fault	508	The Southern Part of Kyoto and Nara Basins Fault Zones (the Eastern Edge of Nara Basin Fault Zone)
210	Shinjo Basin Fault Zone	509	Yamada Fault Zone
211	Yamagata Basin Fault Zone	510	Mitoke Kyoto Nishiyama Fault Zone
212	The Eastern Edge of Shonai Plains Fault Zone	511	Ikoma Fault Zone
213	The Western Edge of Nagai Basin Fault Zone	512	Uemachi Fault Zone
214	Nagamachi-Rifu Line Fault Zone	513	Arima-Takatsuki Fault Zone
215	The Western Edge of Fukushima Basin Fault Zone	514	Rokko Awajishima Fault Zone
216	Futaba fault	515	Osaka Bay Fault Zone
217	The Western and Eastern Edges of Aizu Basin Fault Zones	516	Yamasaki Fault Zone
301	Sekiya Fault	601	Shikano-Yoshioka Fault
302	Okubo Fault	602	Shinji (Kashima) Fault
303	Fukaya Fault Zone and Ayasegawa Fault Zone (the North-Western Edge of Kanto Plains 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 Kozu-Matsuda Fault Zone)	606	Tsutsuga Fault
307	Miura Peninsula Fault Group	607	Hiroshima Bay - off Iwakuni Fault Zones
308	Kamogawa Lowlands Fault Zone	608	Akinada Fault Zone
401	Kitaizu Fault Zone	609	Iwakuni-Itsukaichi Fault Zone
402	Fujikawa River Mouth Fault Zone	610	Lake Ohara Fault
403	Minobu Fault	611	Ogori Fault
404	Sone Hill Fault Zone	612	Suonada Fault Zone
405	Kushigata Mountain Chain Fault Zone	613	Kikugawa Fault Zone
406	Tsukioka Fault Zone	701	The Median Tectonic Line Fault Zone (the Eastern Edge of Kongo Mountains – Yufuin)
407	The Western Edge of Nagaoka Plains Fault Zone	702	Nagao Fault Zone
408	Muikamachi Fault Zone	801	Fukuchiyama Fault Zone
409	Tokamachi Fault Zone	802	Nishiyama Fault Zone
410	Takada Plains Fault Zone	803	Umi Fault
411	The Western Edge of Nagano Plains Fault Zone (Shinanogawa Fault Zone)	804	Kego Fault Zone
412	Itoigawa-Shizuoka Tectonic Line Fault Zone	805	Fault ZoneHinata – Okasagi Peaks Fault Zone
413	Sakaitoge Kamiya Fault Zone	806	Mino Fault Zone
414	Inadani Fault Zone	807	The Northern Edge of Saga Plains Fault Zone
415	The Western Edge of Kiso Mountain Chain Fault Zone	809	Unzen Fault Group
416	Uozu Fault Zone	810	FutagawaFault zone, Hinagu Fault Zone
417	Tonami Plains Fault Zone, Kurehayama Fault Zone	811	Midorikawa Fault Zone
418	Ochigata Fault Zone	812	The Southern Edge of Hitoyoshi Basin 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	Miyako Island Fault Zone

Source: Headquarters for Earthquake Research Promotion

Fig. A-4 Distribution of Active Volcanoes in Japan



Source: Formulated by the Cabinet Office from the Japan Meteorological Agency website (As of March 2022)

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
North Tango Earthquake	(M7.3)	March 7, 1927	2,925
Showa Sanriku Earthquake and Tsunami	(M8.1)	March 3, 1933	3,064
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
Earthquake Off the Coast of Tokachi	(M8.2)	March 4, 1952	33
Chile Earthquake and Tsunami in 1960	(Mw9.5)	May 23, 1960	142
Niigata Earthquake	(M7.5)	June 16, 1964	26
Earthquake Off the Coast of Tokachi in 1968	(M7.9)	May 16, 1968	52
Earthquake Off the Coast of Izu Peninsula in 1974	(M6.9)	May 9, 1974	30
Earthquake Inshore of Izu-Oshima Island in 1978	(M7.0)	January 14, 1978	25
Earthquake Off the Coast of Miyagi Prefecture in 1978	(M7.4)	June 12, 1978	28
The Center Part of the Japan Sea Earthquake in 1983	(M7.7)	May 26, 1983	104
The Western Part of Nagano Prefecture Earthquake in 1984	(M6.8)	September 14, 1984	29
Earthquake Off the Coast of the Southwestern Part of Hokkaido in 1993	(M7.8)	July 12, 1993	230
Great Hanshin-Awaji Earthquake in 1995	(M7.3)	January 17, 1995	6,437
Mid Niigata Prefecture Earthquake in 2004	(M6.8)	October 23, 2004	68
The Earthquake Inland of Iwate and Miyagi Prefectures in 2008	(M7.2)	June 14, 2008	23
Great East Japan Earthquake in 2011	* (Mw9.0)	March 11, 2011	22,312
Kumamoto Earthquake in 2016	(M6.5)	April 14, 2016	273
	(M7.3)	April 16	
The East Part of Hokkaido Iburi Earthquake in 2018	(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 8, 2022.
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 Prefecture	2,306
September 17-18, 1945	Typhoon Makurazaki	Western Japan (Especially in Hiroshima Prefecture)	3,756
December 21, 1946	Nankai Earthquake (M8.0)	Various places in and to Western Chubu region	1,443
August 14, 1947	Mt. Asama Eruption	Around Mt. Asama	11
September 14-15, 1947	Typhoon Kathleen	In and to Northern Tokai area	1,930
June 28, 1948	Fukui Earthquake (M7.1)	In and around the Fukui Plains	3,769
September 15-17, 1948	Typhoon Ione	From Shikoku into Tohoku regions (Especially in Iwate Prefecture)	838
September 2-4, 1950	Typhoon Jane	In and to Northern Shikoku region (Especially in Osaka Prefecture)	539
October 13-15, 1951	Typhoon RUTH (5115)	Nationwide (Especially in Yamaguchi Prefecture)	943
March 4, 1952	Earthquake Off the Coast of Tokachi (M8.2)	Southern Hokkaido and Northern Tohoku region	33
June 25-29, 1953	Heavy Rains	Kyushu, Shikoku and Chugoku regions (Especially in Kitakyushu)	1,013
July 16-24, 1953	Torrential Rains	In and to Western Tohoku region (Especially in Wakayama Prefecture)	1,124
May 8-12, 1954	Storm Disaster	Northern Japan, Kinki region	670
September 25-27, 1954	Typhoon MARIE (5415)	Nationwide (Especially in Hokkaido and Shikoku region)	1,761
July 25-28, 1957	Torrential Rains	Kyushu region (Especially around Isahaya area)	722
June 24, 1958	Mt. Aso Eruption	Around Mt. Aso	12
September 26-28, 1958	Typhoon IDA (5822)	In and to Eastern Kinki region (Especially in Shizuoka Prefecture)	1,269
September 26-27, 1959	Typhoon VERA (5915)	Nationwide (Except for Kyushu region, especially in Aichi Prefecture)	5,098
May 23, 1960	Chile Earthquake and Tsunami	Southern Coast of Hokkaido, Sanriku and Shima Coasts	142
January 1963	Heavy snowfall	Hokuriku and Sanin areas, and Yamagata, Shiga and Gifu Prefectures	231
June 16, 1964	Niigata Earthquake (M7.5)	Niigata, Akita and Yamagata Prefectures	26
September 10-18, 1965	Typhoons SHIRLEY (6523), TRIX (6524), VIRGINIA (6525)	Nationwide (Especially in Tokushima, Hyogo and Fukui Prefectures)	181
September 23-25, 1966	Typhoons HELEN (6624), IDA (6626)	Chubu, Kanto and Tohoku regions (Especially in Shizuoka and Yamanashi Prefectures)	317
July to August 1967	Torrential Rains	Western Chubu and Shouthern Tohoku regions	256
May 16, 1968	Earthquake Off the Coast of Tokachi (M7.9)	Shouthern Hokkaido and Tohoku region mainly in Aomori Prefecture	52
July 3-15, 1972	Typhoons PHYLLIS (7206), RITA (7207), TESS (7209) and Torrential Rains	Nationwide (Especially in Kitakyushu area, and Shimane and Hiroshima Prefectures)	447
May 9, 1974	Earthquake Off the Coast of Izu Peninsula (M6.9)	Southern Tip of Izu Peninsula	30
September 8-14, 1976	Typhoon FRAN (7617) and Torrential Rains	Nationwide (Especially in Kagawa and Okayama Prefectures)	171
January 1977	Snow Disasters	Tohoku and Northern Kinki regions and Hokuriku area	101
August 7, 1977- October 1978	Mt. Usu Eruption	Hokkaido	3
January 14, 1978	Earthquake Inshore of Izu-Oshima Island (M7.0)	Izu Peninsula	25
June 12, 1978	Earthquake Off the Coast of Miyagi Prefecture (M7.4)	Miyagi Prefecture	28
October 17-20, 1979	Typhoon TIP (7920)	Nationwide (Especially in Tokai area, and Kanto and Tohoku regions)	115
December 1980 - March 1981	Snow Disasters	Tohoku region and Hokuriku area	152
July to August 1982	Torrential Rains and Typhoon BESS (8210)	Nationwide (Especially in Nagasaki, Kumamoto and Mie Prefectures)	439
May 26, 1983	The Center Part of the Japan Sea Earthquake (M7.7)	Akita and Aomori Prefectures	104
July 20-29, 1983	Torrential Rains	In and to Eastern San-in area (Especially in Shimane Prefecture)	117
October 3, 1983	Miyake Is. Eruption	Around Miyake-jima Island	—
December 1983 - March 1984	Snow Disasters	Tohoku region and Hokuriku area (Especially in Niigata and Toyama Prefectures)	131
September 14, 1984	The Western Part of Nagano Prefecture Earthquake (M6.8)	Western Nagano Prefecture	29
November 15 - December 18, 1986	Izu-Oshima Eruption	Izu-Oshima Island	—
November 17, 1990 – June 3, 1995	Mt. Unzen Eruption	Nagasaki Prefecture	44
July 12, 1993	Earthquake Off the Coast of the Southwestern Part of Hokkaido (M7.8)	Hokkaido	230

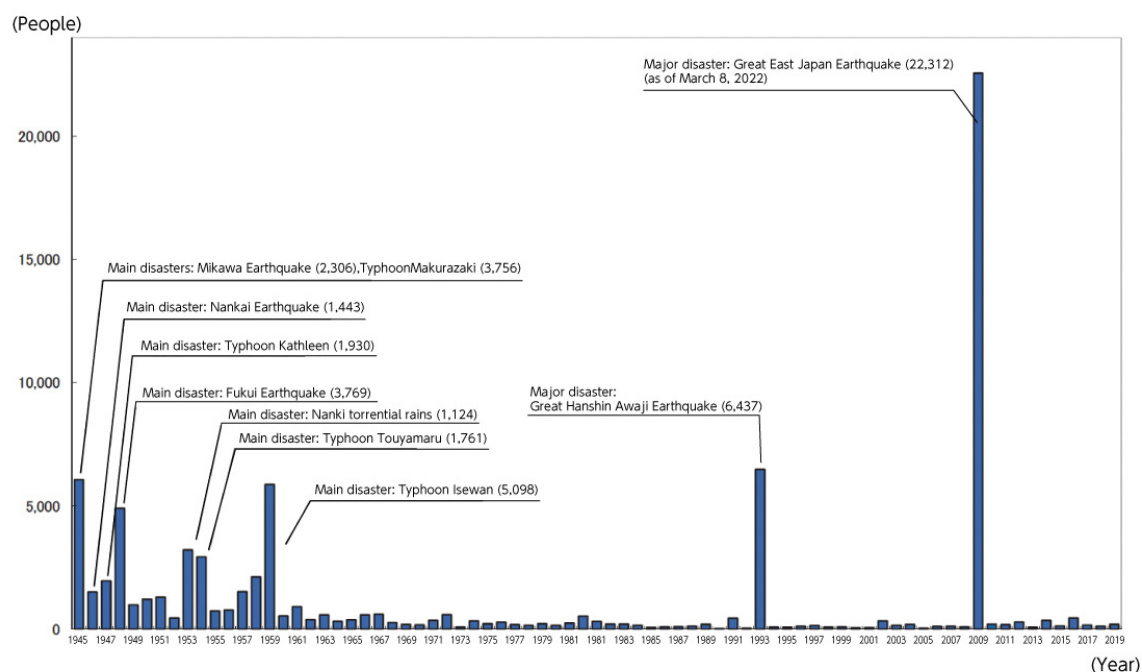
Date	Disaster	Main Affected Areas	Number of Fatalities and Missing
July 31 - August 7, 1993	Torrential Rains	Nationwide	79
January 17, 1995	1995 Southern Hyogo Prefecture Earthquake (Great Hanshin-Awaji Earthquake) (M7.3)	Hyogo Prefecture	6,437
March 31, 2000 - June 28, 2001	Mt. Usu Eruption	Hokkaido	—
June 25, 2001 - March 31, 2005	Miyake Is. Eruption and Niiijima 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 Prefecture	68
December 2005 - March 2006	Heavy Snowfall	The Coast of the Japan Sea mainly in Hokuriku area	152
July 16, 2007	Earthquake Off the Coast of Chuetsu in Niigata Prefecture (M6.8)	Niigata Prefecture	15
June 14, 2008	Earthquake Inland of Iwate and Miyagi Prefectures (M7.2)	Tohoku region (Especially in Miyagi and Iwate Prefectures)	23
December 2010 - March 2011	Snow disaster	From Northern to Western 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 and Fukushima Prefectures)	22,312
August 30 - September 5, 2011	Typhoon TALAS (1112)	Kinki and Shikoku regions	98
November 2011 - March 2012	Heavy Snow in 2011	From Northern to Western Japan on the Japan Sea Coast	133
November 2012 - March 2013	Heavy Snow in 2012	From Northern to Western Japan on the Japan Sea Coast	104
November 2013 - May 2014	Heavy Snow in 2013	From Northern Japan to Kanto-Koshinetsu area (Especially in Yamanashi Prefecture)	95
August 20, 2014	Torrential Rains of August 2014 (Sediment Disaster in Hiroshima Prefecture)	Hiroshima Prefecture	77
September 27, 2014	2014 Eruption of Mt. Ontake	Nagano and Gifu Prefectures	63
April 14 and 16, 2016	Kumamoto Earthquake in 2016 (M7.3)	Kyushu area (Especially in Kumamoto Prefecture)	273
June 28 - July 8, 2018	The Heavy Rain Event of July 2018	Nationwide (Especially in Hiroshima, Okayama and Ehime Prefectures)	271
September 6, 2018	The East Part of Hokkaido Iburi Earthquake in 2018 (M6.7)	Hokkaido	43
October 10 - 13, 2019	Typhoon Hagibis in 2019 (T1919)	Kanto and Tohoku regions	108
July 3-31, 2020	The Heavy Rain Event of July 2020	Nationwide (Especially in Kyushu region)	88
July 1 - July 14, 2021	The Heavy Rain from July 1 of 2021	Nationwide (Especially in Shizuoka Prefecture)	29
August 7 - August 23, 2021	The Heavy Rain in August of 2021	Nationwide (Especially in Nagano, Hiroshima and Nagasaki Prefectures)	13

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 Niiijima 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, 2022 (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 November 26, 2021
7. Damage from the Heavy Rain from July 1 of 2021 is as of March 25, 2022.
8. Damage from the Heavy Rain in August of 2021 is as of March 25, 2022.

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	119
1953	3,212	1970	163	1987	69	2004	327	2021	186
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	22,575		
1961	902	1978	153	1995	6,482	2012	190		

Note: Of the fatalities in 1995, the deaths from the Southern Hyogo Earthquake (Great Hanshin-Awaji Earthquake) include 919 so-called "related deaths" (Hyogo Prefecture).

The fatalities and missing persons in 2021 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 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	22,312	0	125	2	22,575
2012	52	0	0	138	0	190
2013	75	0	0	92	6	173
2014	112	0	63	108	0	283
2015	28	0	0	49	0	77
2016	45	267	0	32	0	344
2017	60	0	0	68	1	129
2018	285	49	1	103	6	444
2019	123	0	0	32	0	155
2020	89	0	0	30	0	119
2021	41	0	0	145	0	186

Notes: This table shows the number of fatalities and missing persons between Jan. 1 and Dec. 31.

Fatalities and missing persons in 2021 are based on flash bulletins from the Cabinet Office.

The earthquake/tsunami disaster figures for 2011 include 22,312 fatalities (including disaster-related fatalities) and missing persons from the 2011 Tohoku Earthquake and Tsunami (Great East Japan Earthquake) (March 8, 2022).

Source: Formulated by Cabinet Office based on 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 April 19, 2022)

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	—	<ul style="list-style-type: none"> Establishment of Extreme Disaster Management Headquarters¹⁾ 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.	22,312	6,242	122,006	283,160	1,490	<ul style="list-style-type: none"> 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 Disaster Victims 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	—	<ul style="list-style-type: none"> 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 Disaster Victims Designation as an extremely severe disaster
2000 Miyake Is. Eruption and Niiijima 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	—	<ul style="list-style-type: none"> 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 Disaster Victims 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	<ul style="list-style-type: none"> 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 Disaster Victims 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	—	<ul style="list-style-type: none"> 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 Disaster Victims Designation as an extremely severe disaster
Fukuoka-ken-Seihouki 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	—	<ul style="list-style-type: none"> Site inspection by Prime Minister Dispatchment of government investigation team Invocation of Disaster Relief Act Invocation of Act on Support for Reconstructing Livelihoods of Disaster Victims 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	<ul style="list-style-type: none"> Dispatchment of government investigation team Invocation of Disaster Relief Act Invocation of Act on Support for Reconstructing Livelihoods of Disaster Victims 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Dispatchment of government investigation team Invocation of Disaster Relief Act Invocation of Act on Support for Reconstructing Livelihoods of Disaster Victims 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	<ul style="list-style-type: none"> Dispatchment of government investigation team Invocation of Disaster Relief Act Invocation of Act on Support for Reconstructing Livelihoods of Disaster Victims 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	—	<ul style="list-style-type: none"> Dispatchment of government investigation team Invocation of Disaster Relief Act Invocation of Act on Support for Reconstructing Livelihoods of Disaster Victims

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	—	<ul style="list-style-type: none"> • Site inspection by Prime Minister • Dispatchment of government investigation team • Invocation of Disaster Relief Act • Invocation of Act on Support for Reconstructing Livelihoods of Disaster Victims • 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	<ul style="list-style-type: none"> • Dispatchment of government investigation team • Invocation of Disaster Relief Act • Designation as an extremely severe disaster
2007 Earthquake Off the Coast of Chuetsu in Niigata Prefecture (July 16, 2007)	Maximum seismic intensity of Upper 6. Many human casualties due to homes collapsing. Damage to homes, lifelines, transportation, and nuclear power plants.	15	2,346	1,331	5,710	—	<ul style="list-style-type: none"> • Site inspection by Prime Minister • Dispatchment of government investigation team • Invocation of Disaster Relief Act • Invocation of Act on Support for Reconstructing Livelihoods of Disaster Victims • 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 casualties due to landslides and other sediment disasters. Many river channels became blocked (natural dams) in rivers in mountainous areas.	23	426	30	146	—	<ul style="list-style-type: none"> • Site inspection by Prime Minister • Dispatchment of government investigation team • Invocation of Disaster Relief Act • Invocation of Act on Support for Reconstructing Livelihoods of Disaster Victims • 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	—	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Invocation of Disaster Relief Act • Invocation of Act on Support for Reconstructing Livelihoods of Disaster Victims • 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	<ul style="list-style-type: none"> • Dispatchment of government investigation team • Invocation of Disaster Relief Act • Invocation of Act on Support for Reconstructing Livelihoods of Disaster Victims
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	<ul style="list-style-type: none"> • Site inspection by Prime Minister • Dispatchment of government investigation team • Invocation of Disaster Relief Act • Invocation of Act on Support for Reconstructing Livelihoods of Disaster Victims • 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	<ul style="list-style-type: none"> • Site inspection by Prime Minister • Dispatchment of government investigation team • Invocation of Disaster Relief Act • Invocation of Act on Support for Reconstructing Livelihoods of Disaster Victims • 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 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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 regions from mid-June, with intermittent bursts of activity. The southern part of Kyushu region 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	<ul style="list-style-type: none"> • 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 Disaster Victims • 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 hazardous rain of more than 120 mm per hour, with more than 800 mm of rainfall since the rains began.	3	2	10	443	116	<ul style="list-style-type: none"> • Site inspection by Minister of State for Disaster Management • Invocation of Disaster Relief Act • Invocation of Act on Support for Reconstructing Livelihoods of Disaster Victims • 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	<ul style="list-style-type: none"> • 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	
The Kirishima Volcanic Group (Mt. Shinmoedake) Eruption (January 26 - September 7, 2011)	Following a small eruption on January 19, a medium-sized eruption occurred at Mt. 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	—	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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 hazardous 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	<ul style="list-style-type: none"> 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 Disaster Victims 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	<ul style="list-style-type: none"> 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 Disaster Victims 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 regions, with many points recording rainfall of more than double the average rainfall for September.	20	425	34	1,524	2,270	<ul style="list-style-type: none"> Invocation of Disaster Relief Act Invocation of Act on Support for Reconstructing Livelihoods of Disaster Victims 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	<ul style="list-style-type: none"> 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	—	<ul style="list-style-type: none"> 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 Disaster Victims
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	<ul style="list-style-type: none"> 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 region and other locations.	2	7	36 (*2)	180 (*2)	1,131 (*2)	<ul style="list-style-type: none"> Dispatchment of government investigation team Invocation of Disaster Relief Act Invocation of Act on Support for Reconstructing Livelihoods of Disaster Victims 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 Island, and heavy rains were recorded across a wide area from Western to Eastern Japan. Very violent rain fell intermittently with thunder especially in the northern part of Kyushu region.	33	34	276 (*3)	2,306 (*3)	2,574 (*3)	<ul style="list-style-type: none"> 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 Disaster Victims Designation as an extremely severe disaster
Heavy Snow from November 2012 (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	<ul style="list-style-type: none"> 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 region to the vicinity of Honshu Island 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 Disaster Victims • 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 also received heavy rains.	2	4	9	53	243	• Invocation of Disaster Relief Act • Invocation of Act on Support for Reconstructing Livelihoods of Disaster Victims • 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, and from Shioya Town, Shioya County to Yaita City, Tochigi Prefecture, 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 Disaster Victims
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 region 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 Disaster Victims • 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. Hazardous rain of more than 100 mm per hour fell especially in Oshima Town, Tokyo, 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 Disaster Victims • 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 area. • Especially from February 14 to 16, record heavy snows fell, substantially surpassing past snowfall depths mainly in the Kanto-Koshinetsu region, including Kofu City (Yamanashi Prefecture) with 114 cm, Chichibu City (Saitama Prefecture) with 98 cm, and Maebashi City (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 hazardous 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 Disaster Victims • 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 hazardous 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 Disaster Victims • 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	• The localized and very violent rains with thunder occurred. 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	<ul style="list-style-type: none"> Dispatchment of government investigation team (twice) Invocation of Disaster Relief Act Invocation of Act on Support for Reconstructing Livelihoods of Disaster Victims 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)	<ul style="list-style-type: none"> Warm, moist air flowed in toward the rain front, and extremely unstable atmospheric conditions were recorded mainly in the Chugoku region and the northern Kyushu region. At 3:30 a.m. on the 20th, hazardous 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	<ul style="list-style-type: none"> 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 Disaster Victims Designation as an extremely severe disaster
2014 Eruption of Mt. Ontake (September 27, 2014)	<ul style="list-style-type: none"> Volcanic tremors started at 11:41 a.m. on September 27, with an eruption on the same day around 11:52 a.m. Plumes 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	<ul style="list-style-type: none"> 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	—	<ul style="list-style-type: none"> 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 Disaster Victims 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	<ul style="list-style-type: none"> 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 Island Eruption [Volcanic Alert Level 5] (May 29, 2015)	<ul style="list-style-type: none"> An explosive eruption occurred at Shindake at 9:59 am on May 29. This eruption triggered plumes of black-gray smoke that rose 9,000m above the crater rim and a pyroclastic flow that reached the northwestern coast (Mukaejima 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 Island (all individuals were confirmed to be safe) 	0	1	To be confirmed			<ul style="list-style-type: none"> 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)	<ul style="list-style-type: none"> 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 Town 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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 Island [Volcanic Alert Level 4] (August 15, 2015)	<ul style="list-style-type: none"> 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 Town and Furusato Town, 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 Town, the Furusato district of Furusato Town (areas within 3km of the crater), and the Shiroyagamoto district of Kurokami Town. 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	<ul style="list-style-type: none"> Site inspection by Parliamentary Vice Minister Deployment of a Cabinet Office liaison team
Typhoon GONI (1515) (August 22-26, 2015)	<ul style="list-style-type: none"> The typhoon that made landfall near Arai City in Kumamoto Prefecture after 06:00 on the 25th moved northward to the northern Kyushu region, maintaining its strong intensity, and reached the Japan Sea 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	<ul style="list-style-type: none"> 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)	<ul style="list-style-type: none"> After making landfall near Nishio City, Aichi Prefecture at around 09:30 on September 9, 2015 Typhoon ETAU (1518) moved on to the Japan Sea 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 KIL0 (1517) supplied flows of moist air that triggered a succession of stationary linear mesoscale convective 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	<ul style="list-style-type: none"> 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 Disaster Victims Designation as an extremely severe disaster
Mt. Aso Eruption [Volcanic Alert Level 3] (September 14, 2015)	<ul style="list-style-type: none"> At 09:43 on September 14, an eruption occurred at Mt. Nakadake 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)	<ul style="list-style-type: none"> 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 Islands, 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	<ul style="list-style-type: none"> 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 Kantoregion. 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)	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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 Disaster Victims 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)	<ul style="list-style-type: none"> 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 region, as well as Chugoku and Shikoku regions 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	<ul style="list-style-type: none"> Designation as an extremely severe disaster
Typhoon CHANTHU (1607) (August 16-18, 2016)	<ul style="list-style-type: none"> 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 hazardous 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	<ul style="list-style-type: none"> Designation as an extremely severe disaster
Typhoons KOMPASU (1611) & MINDULLE (1609) (August 20-23, 2016)	<ul style="list-style-type: none"> 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 Okhotsk Sea 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 before 06:00 on the 23rd. It then continued up through Hokkaido before transforming into an extra-tropical cyclone over the Okhotsk Sea 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	<ul style="list-style-type: none"> Dispatchment of government investigation team Designation as an extremely severe disaster

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		Fatalities/ Missing Persons	Injured	Completely Destroyed	Half Destroyed	Above- floor Flooding	
Typhoon LIONROCK (1610) (August 26-31, 2016)	<ul style="list-style-type: none"> 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 Japan Sea, 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	<ul style="list-style-type: none"> 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 Disaster Victims 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 off Tsushima Island.	—	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)	<ul style="list-style-type: none"> 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 region 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	<ul style="list-style-type: none"> Designation as an extremely severe disaster
Typhoon CHABA in 2016 (1618) (September 30 - October 5, 2016)	<ul style="list-style-type: none"> 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 Japan Sea. 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	—	<ul style="list-style-type: none"> 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	—	<ul style="list-style-type: none"> Dispatchment of government investigation team Invocation of Disaster Relief Act Invocation of Act on Support for Reconstructing Livelihoods of Disaster Victims 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 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 the northern Kyushu region. Especially from July 5 to 6, record heavy rain hit the northern Kyushu region 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	<ul style="list-style-type: none"> Ministerial meeting (three times) Site inspection by Prime Minister 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 Disaster Victims Designation as an extremely severe disaster Appeal to the public by the Minister of State for Disaster Management
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	<ul style="list-style-type: none"> Invocation of Disaster Relief Act Invocation of Act on Support for Reconstructing Livelihoods of Disaster Victims Designation as an extremely severe disaster

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		Fatalities/ Missing Persons	Injured	Completely Destroyed	Half Destroyed	Above- floor Flooding	
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 Japan Sea, 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 17 th and made landfall on Tarumizu City, Kagoshima Prefecture 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 18 th around Sado Island. The typhoon and active rain front caused hazardous 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 Disaster Victims • Designation as an extremely severe disaster
Typhoon LAN (1721) (October 21 - 23, 2017)	Typhoon LAN (1721) moved northward over the south of Japan during October 21-22 and made landfall around Omaezaki City in Shizuoka Prefecture around 3 a.m. on 23 rd with its very large scale and strong intensity. Afterward, it headed northeast with its large storm zone and transformed into an extra-tropical cyclone around the sea east of Hokkaido at 3 p.m. on 23 rd . This brought about heavy rain over the wide area in Western and Eastern Japan and 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 Disaster Victims • 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 Mt. Kusatsu-Shirane (January 23, 2018)	<ul style="list-style-type: none"> • An eruption occurred at 10:02 a.m., January 23. Volcanic rocks travelled farther than 1 km from the crater near Pond Kagami, Mt. Motoshirane. • 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 Pond Kagami). 	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 Disaster Victims
Sediment Disaster in Nakatsu City, 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	<ul style="list-style-type: none"> • Deployment of a Cabinet Office advance information gathering team • Ministerial meeting (once) • Site inspection by Prime Minister • Invocation of Disaster Relief Act • Invocation of Act on Support for Reconstructing Livelihoods of Disaster Victims

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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 such as the suspension of water supply and telephone service in various areas across Japan, while rail and road transportation was also disrupted.	271	449	6,783	11,342	6,982	<ul style="list-style-type: none"> 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 Disaster Victims Invocation of Special Measures Act for Specified Disaster Designation as an extremely severe disaster
Volcanic activity at Kuchinoerabu-jima Island [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 at Tatar Strait. During the approach and passage of the typhoon, very intense winds and very violent 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	<ul style="list-style-type: none"> 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	—	<ul style="list-style-type: none"> 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 Invocation of Disaster Relief Act Invocation of Act on Support for Reconstructing Livelihoods of Disaster Victims Designation as an extremely severe disaster
Typhoon TRAMI (1824) (September 29 - October 1, 2018)	From September 29 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 noon on October 1.	4	231	62	404	326	<ul style="list-style-type: none"> Designation as an extremely severe disaster Invocation of Act on Support for Reconstructing Livelihoods of Disaster Victims
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	—	<ul style="list-style-type: none"> Ministerial meeting (two times) Dispatchment of government investigation team

Name of Disaster	Major Events	Human Casualties (persons)		Houses Damaged (houses)			Remarks
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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, Miyazaki Prefecture, exceeded 500 mm in Kagoshima, Miyazaki, and Kumamoto Prefectures. Resulting in the record-breaking heavy rainfalls.	2	5	11	9	92	<ul style="list-style-type: none"> 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 High brought localized hazardous rain 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 a.m. on 20, an emergency heavy rain warning was issued (all warnings were cancelled by 4:10 p.m. 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	<ul style="list-style-type: none"> 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 Japan Sea at 9:00 on the 7th. In Nobeoka City, Miyazaki Prefecture, and Saiki City, Oita Prefecture, it brought about hazardous rains of about 110 to 120 millimeters per hour. The total rainfall from the 5th to the 7th 12:00 a.m. was 467 millimeters in Kigashira, Naga Town, Tokushima Prefecture. In addition, the Pacific side of Kyushu and Shikoku regions 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 very violent 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 extratropical cyclone in western Hokkaido at 9 p.m. on 16, it approached Hokkaido with its strength maintained, and very violent rains with strong wind hit Hokkaido and other areas until the dawn of 17.	2	58	1	0	2	<ul style="list-style-type: none"> 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 the northern Kyushu region and other areas since August 26. In particular, as the threat of serious disasters significantly increased, with record-breaking heavy rainfalls of at least 100 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	<ul style="list-style-type: none"> 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 Disaster Victims 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, hazardous 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	<ul style="list-style-type: none"> 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 Disaster Victims 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.	108	375	3,229	28,107	7,524	<ul style="list-style-type: none"> Establishment of Major Disaster Management Headquarters Ministerial meeting (twice) Deployment of a Cabinet Office Survey Team Dispatchment of government investigation team Site inspection by Prime Minister (twice) 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 Disaster Victims 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 4:30 p.m. 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.	88	82	1,627	4,535	1,741	<ul style="list-style-type: none"> Establishment of Major Disaster Management Headquarters Ministerial meeting Establishment of National On-site Disaster Management Office Deployment of a Cabinet Office Survey Team Site inspection by Prime Minister 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 Disaster Victims Specified disaster designation Extreme disaster designation Disaster of extreme severity designation
Typhoon HAISHEN in 2020 (T2010) (September 5 - 7, 2020)	Typhoon HAISHEN in 2020 (T2010) approached the Nansei Islands and Kyushu region 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 Prefecture. Violent storm or storm winds were observed mainly in the Nansei Islands and Kyushu region, exceeding the first value in the history of observation, making it a record-breaking storm.	6	110	7	40	31	<ul style="list-style-type: none"> 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 5 p.m. on the 10th in Miyake Village and Mikurajima Village in Tokyo.	0	3	0	0	0	<ul style="list-style-type: none"> 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 Japan Sea side. Heavy snowfall occurred mainly in the mountainous areas of the Kanto, Hokuriku and Tohoku regions. In particular, Fujiwara, Minakami Town, Tone County, 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	<ul style="list-style-type: none"> 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 Japan Sea 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	2	<ul style="list-style-type: none"> Ministerial meeting Deployment of a Cabinet Office Survey Team Site inspection by Minister of State for Disaster Management Invocation of Disaster Relief Act
Earthquake Centered off the Coast of Fukushima Prefecture in 2021 (February 13, 2021)	Maximum intensity of 6.0 earthquake	2	184	144	3,065	0	<ul style="list-style-type: none"> Ministerial meeting (twice) Deployment of a Cabinet Office Survey 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 Disaster Victims
Heavy Rain from July 1 of 2021 (July 1 - July 14, 2021)	The seasonal rain front stalled over West and East Japan from the end of June to early July, resulting in wide-area heavy rains from West Japan to the Tohoku region. From July 2 to 3, 72-hour-precipitation was the highest on record at several sites in Shizuoka Prefecture. In Atami City, Shizuoka Prefecture, a large debris flow caused numerous human damages. On 10, a heavy rain emergency warning was issued for Kagoshima, Miyazaki and Kumamoto Prefectures, and on 12, Aomori, Mie, Shimane and Tottori Prefectures experienced the highest one-hour	29	12	59	119	499	<ul style="list-style-type: none"> Establishment of Major Disaster Management Headquarters Establishment of Authorized Disaster Management Headquarters Ministerial Meetings (twice) Dispatch of Cabinet Office Survey Team Prime Minister's site visit Minister of State for Disaster Management, Japan on-site inspection (2 times) Application of Disaster Relief Act Application of Act on Support for Reconstructing Livelihoods of Disaster Victims

	precipitation on record.						• Designated as Disaster of Extreme Severity
Heavy Rain in August of 2021 (August 7 - August 23, 2021)	From August 11, warm and humid air flowed toward a front that had been stalled near Japan, causing prolonged heavy rains over a wide area from West to East Japan as the front became more active. Slope failure in Unzen City, Nagasaki Prefecture and debris flow in Okaya City, Nagano Prefecture brought about human suffering. A heavy rain emergency warning was issued for Hiroshima Prefecture on 13, and Nagasaki, Saga, Fukuoka and Hiroshima Prefectures on 14. The Rokkaku River in Saga Prefecture flooded again, following its flooding in August 2019.	13	17	45	1,234	796	<ul style="list-style-type: none"> • Establishment of Authorized Disaster Management Headquarters • Ministerial Meetings (twice) • Dispatch of Cabinet Office Survey Team • Minister of State for Disaster Management, Japan on-site inspection (2 times) • Application of Disaster Relief Act • Application of Act on Support for Reconstructing Livelihoods of Disaster Victims • Designated as Disaster of Extreme Severity
Earthquake Centered Off the North-West of Chiba Region (October 7, 2021)	Maximum seismic intensity 5+ Suspension of train services in the Tokyo metropolitan area caused people not to be able to return home.	0	50	0	0	0	-
Earthquake Centered off the Coast of Fukushima Prefecture (March 16, 2022)	Maximum seismic intensity 6+	3	245	111	1,285	0	<ul style="list-style-type: none"> • Dispatch of Cabinet Office Survey Team • Minister of State for Disaster Management, Japan on-site inspection • Application of Disaster Relief Act • Application of Act on Support for Reconstructing Livelihoods of Disaster Victims • Designated as Disaster of Extreme Severity

*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, Major Disaster Management Headquarters and Authorized 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 Earthquake Off the Coast of Tokachi 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 Off Izu-Oshima Island Earthquake Major Disaster Management Headquarters	Jan. 15 - Aug. 4, 1978	Director General of NLA
11	1978 Earthquake Off the Coast of Miyagi Prefecture 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 Central Japan Sea 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 Western Nagano Prefecture 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 Earthquake Off the Coast of Sounthren Hokkaido 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
	<u>Great Hanshin-Awaji Earthquake Extreme Disaster Management Headquarters*1</u>	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 Niihima and Kozushima Islands Earthquake Emergency Management Headquarters	Aug. 29, 2000 - May 15, 2002	Director General of NLA ↓
	<u>2000 Miyake Island Eruption Major Disaster Management Headquarters*3</u>	May 16, 2002 - Mar. 31, 2005	Minister of State for Disaster Management
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
36	Authorized Disaster Management Headquarters for Heavy Rain from July 1 of 2021	July 3, - July 5, 2021	Minister of State for Disaster Management
	Extreme Disaster Management Headquarters for Heavy Rain from July 1 of 2021	July 5 - November 30, 2021	Prime Minister
37	Authorized Disaster Management Headquarters for Heavy Rain in August of 2021	August 13 - November 30, 2021	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 Southern Hyogo 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 Western Tottori Prefecture 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 Prefecture Earthquake	Jul. 27	Miyagi	Minister of State for Disaster Management
	2003 Earthquake Off the Coast of Tokachi	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	Earthquake Off the Coast to the West of Fukuoka Prefecture	Mar. 20-21	Fukuoka	State-Minister of the Cabinet Office
	Earthquake Off the Coast of Miyagi Prefecture	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 Town, Hokkaido	Nov. 7-8	Hokkaido	Minister of State for Disaster Management
2007	2007 Noto Peninsula 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 Earthquake Off the Coast of Chuetsu in Niigata Prefecture	Jul. 16	Niigata	Minister of State for Disaster Management
2008	2008 Earthquake Inland of Iwate and Miyagi Prefectures	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 Chugoku 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 in 2012	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 Island	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 Seasonal Rain 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 April 1, 2022

Year	Name of Disaster	Date of Invocation	Prefecture	No. of Municipalities to which the Act was applied
1995	1995 Southern Hyogo Earthquake (Great Hanshin-Awaji Earthquake)	Jan. 17	Hyogo	20
			Osaka	5
	Northern Niigata Prefecture 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
1996	Typhoon VIOLET (9617)	Aug. 10	Niigata	1
		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. 30	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 Niihima and Kozushima Isls. 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 Western Tottori Prefecture 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
2002	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 Prefecture 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 Earthquake Off the Coast of Western Fukuoka Prefecture	Mar. 20	Fukuoka	1
	Typhoon NABI (0514)	Sep. 4	Tokyo	2
		Sep. 6	Yamaguchi	2
			Kochi	1
			Miyazaki	13
		Sep. 4	Kagoshima	1
2006	2006 Heavy Snowfall	Jan. 6, Jan. 8, Jan. 11, Jan. 13	Niigata	11
		Jan. 7, Jan. 12	Nagano	8
	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 Peninsula Earthquake	Mar. 25	Ishikawa	7
	Heavy Rains from Typhoon MAN-YI (0704) and Seasonal Rain Front	Jul. 6	Kumamoto	1
	2007 Earthquake Off the Coast of Chuetsu in Niigata Prefecture	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 Earthquake Inland of Iwate and Miyagi Prefectures	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 Regions	Jul. 21	Yamaguchi	2
		Jul. 24	Fukuoka	1
	Typhoon ETAU (0909)	Aug. 9	Hyogo	3
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

Year	Name of Disaster	Date of Invocation	Prefecture	No. of Municipalities to which the Act was applied
2011	The Kirishima Volcanic Group (Mt. Shinmoedake) Eruption	Jan. 30	Miyazaki	1
		Feb. 10	Miyazaki	1
	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
	Typhoon ROKE (1115)	Sep. 3	Tottori	2
		Sep. 21	Aomori	1
			Fukushima	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 Snowstorm	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, 2013	Jul. 22	Yamagata	4
	Heavy Rains Starting July 28, 2013	Jul. 28	Yamaguchi	3
			Shimane	1
	Heavy Rains Starting August 9, 2013	Aug. 9	Akita	3
			Iwate	1
	Heavy Rains Starting August 23, 2013	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
2015	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
	Eruption of Kuchinoerabujima Island	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 Large-Scale Fire 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
			Kyoto	9
			Hyogo	6
			Okayama	19
			Hiroshima	15
			Ehime	7
		Jul. 5	Fukuoka	2
			Gifu	17
			Hyogo	5
			Tottori	10
			Shimane	2
			Okayama	2
			Yamaguchi	1
			Kochi	3
		Jul. 6	Hyogo	4
			Kochi	1
		Jul. 7	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 3, 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
2021	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
	Large-Scale Fire in Matsue City, Shimane Prefecture	4.1	Shimane	1
	Disaster due to Heavy Rain from July 1, 2021	7.3	Shizuoka	1
		7.7	Tottori	1
			Shimane	2
		7.10	Kagoshima	5
		7.12	Shimane	2
	Heavy rain disaster caused by an extratropical cyclone that changed from Typhoon Lupit (T2109)	8.10	Aomori	3
	Disaster due to Heavy Rain from August 11, 2021	8.12	Shimane	1
			Hiroshima	4
			Fukuoka	3
			Saga	3
			Nagasaki	2
			Nagano	1
	Debris flow in Chino City, Nagano Prefecture in 2021	9.5	Nagano	1

2022	Earthquake centered off the coast of Fukushima Prefecture in 2022	3.16	Miyagi	34
			Fukushima	59
			Sendai	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 County and Kihoku Town, Kitamuro County, 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 County, 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	-	●	●							●		
Cabinet Order on the designation of the Disaster of Extreme Severity and the measures to be applied to the disaster caused by heavy rain during the period from May 7 to July 14, 2021	Seasonal Rain Front	Tottori, Shimane and Kagoshima Pref.	●	○							○*1		
Cabinet Order on the designation of Disaster of Extreme Severity and measures to be applied to disasters caused by rainstorms and heavy rain during the period from August 7 to August 23, 2021	Heavy rain caused by the front, Typhoon Lupit (T2109) and Typhoon Mirinae (T2110)	Aomori, Nagano, Shimane, Hiroshima, Fukuoka, Saga and Nagasaki Pref.	●	○			●				○*1	○	
Cabinet Order on the designation of Disaster of Extreme Severity and measures to be applied for specified areas in 2021, etc.	Disaster of Extreme Severity in certain areas in 2021	-	●	●							●		

*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

[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

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

Source: Cabinet Office

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

14-1 The Heavy Rain from July 1 of 2021

(1) Situation of the Disaster

From the end of June to the beginning of July 2021, a seasonal rain front remained stagnant over western and eastern Japan, and warm and humid air flowed toward the front in succession, resulting in unstable atmospheric conditions. This caused heavy rains over a wide area from western Japan to the Tohoku region. From July 2 to 3, heavy rains occurred with the highest 72-hour precipitation on record at several locations in Shizuoka Prefecture. In addition, after July 4, the seasonal rain front gradually moved northward, and a stationary linear mesoscale convective system developed on the Japan Sea side of the Chugoku region, resulting in heavy rains mainly in Hiroshima Prefecture. From the night of the 9th to the 10th, hazardous rains with thunder and very violent rains fell intermittently mainly in southern Kyushu, and the total rainfall from the 9th to the 10th exceeded 500 mm in Satsuma Town and Isa City, Kagoshima Prefecture, reaching a record-setting level. The Japan Meteorological Agency issued a heavy rain emergency warning for Kagoshima, Miyazaki and Kumamoto Prefectures on the 10th. Subsequently, heavy rains were widespread throughout Japan on the 12th with the highest one-hour precipitation on record in Aomori, Mie, Shimane and Tottori Prefectures.

This heavy rain caused many rivers to overflow or erode their banks, resulting in damage to 59 rivers in 29 river systems administered by the government or prefectural governments, as well as sediment disaster (landslide disaster) in 267 locations in 9 prefectures. This series of disasters caused 29 deaths and missing persons (including one disaster-related death), 12 injuries with 59 residences totally destroyed, 119 half-destroyed, 321 partially damaged, and 2,945 houses flooded above or below floor level. Of these, 27 people (including one disaster-related death) were killed and one person is missing in the Izusan district of Atami City, Shizuoka Prefecture, as a result of a large-scale debris flow disaster. In addition, 98 residences were damaged (* figures as of March 25, 2022).

(2) Response by Government Ministries and Agencies

The government held Inter-Agency Disaster Alert Meetings on July 1 since heavy rains were expected over a wide area throughout Japan. During this meeting, then Minister of State for Disaster Management, Tanahashi asked the relevant ministries and agencies to take action, such as alerting local governments and others and providing advice on evacuation decisions. He also requested local governments to place the highest priority on human life, to issue evacuation orders, etc. without fear of going for nothing and to take appropriate actions in consideration of the COVID-19 pandemic, and asked the public to ensure their safety as soon as possible.

On March 3, a Cabinet Office Survey Team was dispatched to the Shizuoka Prefecture Government Office and Atami City in response to the debris flow disaster that occurred in Atami City, Shizuoka Prefecture, which built a system to collect local information, report to the government and support the affected municipalities in their emergency response measures.

At 5:00 p.m. on the same day, a Ministerial Meeting was held, at which then Prime Minister Suga instructed to proceed with a flexible and thorough response as they paid attention to secondary disasters and to promptly provide necessary support to shelters and other facilities. In response, the "Authorized Disaster Management Headquarters for Heavy Rain from July 1 of 2021" was established on the same day (the headquarters meeting was held twice in total).

The police, the fire department, the Self-Defense Forces, the Japan Coast Guard and the Ministry of Land, Infrastructure, Transport and Tourism (MLIT) 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, the Self-Defense Forces and the Technical Emergency Control Force (TEC-FORCE) of the MLIT was 4,152, 7,961, approximately 23,000 and 1,300, respectively.

On July 5, the Authorized Disaster Management Headquarters was renamed as the "Major Disaster Management Headquarters of Heavy Rain from July 1 of 2021" and its structure was strengthened (the headquarters held three meetings in total). The reason for this was that the debris flow disaster in Atami City had resulted in a large number of people being searched and rescued and that the heavy rains up to that point had made it necessary to maintain a high level of alertness. In addition, on July 6, a "Team to Support for Reconstructing Livelihoods of Disaster Victims" was established, consisting of officials at the vice-

ministerial level from various ministries and agencies to provide prompt and strong livelihood support. Then Prime Minister Suga (Shizuoka Prefecture, on July 12), then Minister of State for Disaster Management, Tanahashi (Shizuoka Prefecture, on July 6) and others* visited the affected areas to directly assess the damage, identify the needs in the affected areas and provide government support as a whole to the affected people.

At the third meeting of the Major Disaster Management

Headquarters on 30 July, the "Set of Support Measures for the Heavy Rain from July 1 of 2021" compiled by the "Team to Support for Reconstructing Livelihoods of Disaster Victims" was reported, and the expected designation as a disaster of extreme severity for the series of disasters was announced, indicating that the government will do its best to support recovery and reconstruction in the affected areas.

*Then State Minister of Cabinet Office, Japan, Akazawa

July 20: Shimane Prefecture, July 21: Tottori Prefecture, July 28: Kagoshima Prefecture

Minister of State for Disaster Management, Ninoyu

November 22: Shizuoka Prefecture

As a result of this heavy rain disaster, the Disaster Relief Act was applied to 11 municipalities in 4 prefectures, and the Act on Support for Reconstructing Livelihoods of Disaster Victims was applied to 1 municipality in 1 prefecture.

[Invocation of the Disaster Relief Act]	
[Shizuoka Prefecture]	Atami City (Date of invocation: July 3)
[Tottori Prefecture]	Tottori City (Date of invocation: July 7)
[Shimane Prefecture]	Matsue City, Izumo City (Date of invocation: July 7), Yasugi City, Unnan City (Date of invocation: July 12)
[Kagoshima Prefecture]	Izumi City, Satsumasendai City, Isa City, Satsuma Town, Yusui Town (Date of invocation: July 10)
[Invocation of the Act on Support for Reconstructing Livelihoods of Disaster Victims]	
[Shizuoka Prefecture]	Atami City (Date of occurrence: July 3)

On August 31, the Cabinet meeting designated the disaster as Disaster of Extreme Severity, and also decided on a Cabinet order designating the applicable measures for the disaster.

The status of the designation of this disaster as Disaster of Extreme Severity is as follows.

Disasters caused by heavy rains from May 11 to July 14, 2021.

Estimated designation announcement: July 30, Cabinet decision: August 31, Promulgation and enforcement: September 3

Area	Applicable Measures
Nationwide	Special Measures for Subsidies for Project to Recover Lands for Agriculture Damaged by Disaster Including Principal and Interest Redemption Money related to Small Disaster Bond into Baseline Financial Needs
Unnan City and Iinan Town, Shimane Prefecture and Satsuma Town, Kagoshima Prefecture	Special Financial Support for Project to Recover Public Civil Engineering Works Damaged by Disaster Including Principal and Interest Redemption Money related to Small Disaster Bond into Baseline Financial Needs

14-2 Heavy Rain in August of 2021

(1) Situation of the Disaster

Since August 11, 2021, warm and moist air flowed toward a front stalled near Japan, which made it active, and as a result, heavy rain occurred over a wide area from western to eastern Japan. This heavy rain was kept on record, and in some locations, the total precipitation since August 11 exceeded 1,400 mm at most. On August 13, a stationary linear mesoscale convective system developed in the Chugoku region, bringing about the highest daily precipitation on record for August. As a result, the JMA issued a heavy rain emergency

warning for Hiroshima City, Hiroshima Prefecture. Then, on August 14, heavy rain occurred over a wide area from western to eastern Japan, especially in the northern Kyushu region, with hazardous and very violent rains due to the stationary linear mesoscale convective system. Ureshino City, Saga Prefecture, recorded 555.5 mm of 24-hour precipitation, the highest value on record. In response to this heavy rain, the JMA issued a heavy rain emergency warning for Nagasaki, Saga, Fukuoka and Hiroshima Prefectures. From the 16th to the 18th, rain fell over a wide area, mainly on the Pacific side of western and eastern Japan. From the 19th to the 22nd, hazardous and very violent rains continued to fall intermittently, mainly on the Pacific side of the Shikoku region. On the 22nd and onward, Typhoon Omais (T2112) and the low-pressure system derived from tropical cyclone caused heavy rain in some areas.

The heavy rains caused debris flow in Okaya City, Nagano Prefecture, and landslides in Unzen City, Nagasaki Prefecture. In addition, the Rokkaku River in Saga Prefecture flooded again following the "heavy rain associated with the front in August 2019." The heavy rain caused damage like flooding to 68 rivers administered by the national or prefectural governments. In addition, 414 landslides occurred in 32 prefectures. As a result of this series of disasters, there were 13 fatalities and 17 injured, 45 houses were completely destroyed, 1,234 half-destroyed, 300 partially damaged and 4,887 houses flooded above or below floor level (*figures as of March 25, 2022).

(2) Response by Each Government Ministry and Agency

On August 12, 2021, the government held an Inter-Agency Disaster Alert Meeting with the attendance of then Minister of State for Disaster Management of the Cabinet Office, Tanahashi. On August 13, immediately after the announcement of the heavy rain emergency warning in Hiroshima Prefecture, then Prime Minister Suga ordered the relevant ministries and agencies: (1) to provide the nation with timely and accurate information on evacuation, heavy rain, river conditions, etc.; (2) to work closely with local governments to ensure evacuation of residents in areas likely to be inundated and to take all possible measures in advance to provide evacuation support, etc.; and (3) in the event of damage, to quickly assess the extent of damage as well as to take all possible measures as a whole to respond to the disaster with the utmost priority on human life.

At 11:00 a.m. on August 13, the government held a Ministerial Meeting and, on the same day, established the "Authorized Disaster Management Headquarters for the Heavy Rainfall in August of 2021" (the headquarters meeting was held nine times in total). Under the policy of "human life first," the government decided to collect information, ensure a complete system for immediate response in the event of a disaster, and work closely with local governments and related organizations to respond with the utmost sense of urgency.

In addition, the police dispatched Inter-Prefectural Emergency Rescue Units near the Kyushu area to respond a disaster immediately whenever it occurs. The Fire Department, the Self-Defense Forces, the Japan Coast Guard, the Ministry of Land, Infrastructure, Transport and Tourism, etc., also dispatched units to establish a framework for rescue and relief activities, secondary disaster prevention activities, livelihood support, etc. On August 15, following the flooding of the Rokkaku River in Saga Prefecture, a Cabinet Office Survey Team was dispatched to the Saga Prefecture Government Office to gather local information.

Then Minister of State for Disaster Management, Tanahashi and other officials went to the affected areas (August 21: Saga and Nagasaki Prefectures) (*) to assess the extent of the damage directly.

* Then State Minister of the Cabinet Office Akazawa on August 24: Nagano Prefecture.

As a result of this heavy rain, the Disaster Relief Act was applied to 21 municipalities in 6 prefectures, and the Natural Disaster Victims Relief Act was applied to 11 cities and towns in 6 prefectures.

[Disaster Relief Act applied to]

[Nagano Prefecture] Okaya City, Suwa City, Tatsuno Town, Agematsu Town, Otaki Town, Kiso Town (Date of invocation: August 15)

[Shimane Prefecture] Gotsu City (applied on August 12), Kawamoto Town, Misato Town (Date of invocation: August 13)

[Hiroshima Prefecture] Hiroshima City, Miyoshi City, Akitakata City, Kitahiroshima Town (Date of invocation: August 12)

[Fukuoka Prefecture] Kurume City, Yame City, Miyama City (Date of invocation: August 12)

[Saga Prefecture] Takeo City, Ureshino City, Omachi Town (Date of invocation: August 12)

[Nagasaki Prefecture] Unzen City, Minamishimabara City (Date of invocation: August 12)

[Act on Support for Livelihood Recovery of Disaster Victims applied to]
 [Nagano Prefecture] Kiso Town (Date of occurrence: August 14)
 [Hiroshima Prefecture] Akitakata City (occurred on August 12)
 [Fukuoka Prefecture] Kurume City, Tagawa City (occurred on August 12)
 [Saga Prefecture] Takeo City, Omachi Town, Kanzaki City, Ureshino City (occurred on August 11)
 [Nagasaki Prefecture] Unzen City, Hasami Town (occurred on August 11)
 [Oita Prefecture] Kusu Town (occurred on August 14)

On September 28, a cabinet meeting designated the disaster as a "Disaster of Extreme Severity" and also decided on a cabinet order specifying the applicable measures for the disaster.

The status of the Disaster of Extreme Severity designation of this disaster is as follows.

Disasters caused by rainstorms and heavy rains during the period from August 7, 2021 to August 23, 2021

Announcement of prospective designation: August 31, cabinet decision: September 28, promulgation and enforcement: October 1

Disasters caused by rainstorms and heavy rains during the period from August 7, 2021 to August 23, 2021

Announcement of prospective designation: August 31, cabinet decision: September 28 and promulgation and enforcement: October 1

Applicable Areas	Applicable measures
Nationwide	Special Measures for Subsidies for Project to Recover Lands for Agriculture Damaged by Disaster Subsidies for projects to remove floodwater conducted by land improvement districts Including Principal and Interest Redemption Money related to Small Disaster Bond into Baseline Financial Needs
Nishinoshima Town and Okinoshima Town, Shimane Prefecture	Special Financial Support for Project to Recover Public Civil Engineering Works Damaged by Disaster Including Principal and Interest Redemption Money related to Small Disaster Bond into Baseline Financial Needs
Takeo City and Omachi Town, Saga Prefecture	Special Provisions for Disaster-Related Guarantees by Small and Medium-sized Enterprise Credit Insurance Act

14-3 Earthquake with an Epicenter in the Northwest Part of Chiba Prefecture [Seismic Intensity 5+]

(1) Situation of the Disaster

At 10:41 p.m. on October 7, 2021, an earthquake of magnitude 5.9 occurred with its epicenter in northwestern Chiba Prefecture. A seismic intensity of 5+ was observed in Kawaguchi City, Miyashiro Town, Saitama Prefecture, and Adachi Ward, Tokyo. The seismic intensity ranged from 5- down to 1 throughout the Tohoku and Kinki regions. The earthquake caused 6 severe injuries and 44 minor injuries (*figures as of March 25, 2022) and it occurred when the last train time was approaching in the Tokyo metropolitan area, causing crowds of people unable to head home due to suspended train services.

(2) Response by Each Government Ministry and Agency

Immediately after the earthquake occurred on October 7, the government convened an emergency meeting team at the Crisis Management Center of the Prime Minister's Office. Prime Minister Kishida instructed the team to:

1. assess the damage immediately,
2. work closely with local governments and implement emergency disaster response measures together at all cost, including lifesaving and rescue measures for disaster victims,
3. provide information to the public promptly and accurately regarding evacuation and damage, and
4. thoroughly implement measures to prevent the spread of damage.

In light of these instructions, the relevant government ministries and agencies assessed the damage, shared and confirmed the government's response, etc.

The relevant railroad companies in the Tokyo metropolitan area progressively restored the suspended train services by early morning on August 8, and some lines remained in operation until early morning. In addition, some Shinkansen trains were opened to passengers for temporary stay and accommodation.

14-4 Earthquake Centered Off the Coast of Fukushima Prefecture [Seismic Intensity of 6+]

(1) Situation of the Disaster

At 11:36 p.m. on March 16, 2022, an earthquake of magnitude 7.4, whose epicenter was off the coast of Fukushima Prefecture, occurred. A seismic intensity of 6+ was observed in Tome City and Zao Town in Miyagi Prefecture, and Soma City, Minamisoma City and Kunimi Town in Fukushima Prefecture. In addition, an intensity of 6- down to 1 was observed over a wide area, mainly in Miyagi and Fukushima Prefectures. There were 3 fatalities (including 1 disaster-related death), 28 severe injuries and 217 minor injuries, and 111 houses were completely destroyed, 1,285 half-destroyed and 19,048 partially damaged (*Figures as of April 19, 2022). In addition to damage to lifelines such as electrical blackout and suspension of water supply, there was also damage to the transportation infrastructure, including railroad cancellations.

(2) Response by Each Government Ministry and Agency

After the earthquake on March 16, 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 Kishida, and dispatched a Cabinet Office Survey Team to Miyagi and Fukushima Prefectures by the Self-Defense Force's helicopter. On the following day, the 17th, an Inter-Agency Disaster Management Meeting was held to share information on the damage situation and the response of each ministry and agency. In response to requests from Miyagi and Fukushima Prefectures, the SDF conducted water supply support activities in 3 cities and towns in Miyagi Prefecture and 6 cities, towns, and villages in Fukushima Prefecture. On the 19th, the Minister of State for Disaster Management, Ninoyu, made an inspection tour of Fukushima Prefecture. Furthermore, on April 28, Prime Minister Kishida instructed the ministers concerned, under the initiative by Ninoyu, to work together to promptly compile a support plan based on the damage situation and requests from local governments. Based on this instruction, on April 8, the "Set of Support Measures for the Earthquake Centered Off the Coast of Fukushima Prefecture in 2022" was compiled to provide urgent measures for the restoration of lives and livelihoods of the affected.

As a result of the earthquake, the government applied the Disaster Relief Act to all municipalities (94 municipalities) in Miyagi and Fukushima Prefectures and the Act on Support for Reconstructing Livelihoods of Disaster Victims to 65 municipalities in Fukushima and Miyagi prefectures.

[Invocation of the Disaster Relief Act]

[Miyagi Prefecture] Sendai City, Ishinomaki City, Shiogama City, Kesennuma City, Shiroishi City, Natori City, Kakuda City, Tagajo City, Iwanuma City, Tome City, Kurihara City, Higashimatsushima City, Osaki City, Tomiya City, Zao Town, Shichikashuku Town, Ogawara Town, Murata Town, Shibata Town, Kawasaki Town, Marumori Town, Watari Town, Yamamoto Town, Matsushima Town, Shichigahama Town, Rifu Town, Taiwa Town, Osato Town, Ohira Village, Shikama Town, Kami Town, Wakuya Town, Misato Town, Onagawa Town, Minamisanriku Town (Effective date: March 16)

[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, Motomiya City, Koori Town, Kunimi Town, Kawamata Town, Otama Village, Kagamiishi Town, Tenei Village, Shimogo Town, Hinoemata Village, Tadami Town, Minamiaizu Town, Kitashiobara Village, Nishiaizu Town, Bandai Town, Inawashiro Town, Aizubange Town, Yugawa Village, Yanaizu Town, Mishima Town, Kaneyama Town, Showa Village, Aizumisato Town, Nishigo Village, Izumizaki Village, Nakajima Village, Yabuki Town, Tanagura Town, Yamatsuri Town, Hanawa Town, Samegawa Village, Ishikawa Town, Tamakawa Village, Hirata Village, Asakawa Town, Furudono Town, Miharu Town, Ono Town, Hirono Town, Naraha Town, Tomioka Town, Kawauchi Village, Okuma Town, Futaba Town, Namie Town, Katsurao Village, Shinchi Town, Iitate Village (applied on March 16)

[Invocation of the Act on Support for Reconstructing Livelihoods of Disaster Victims]

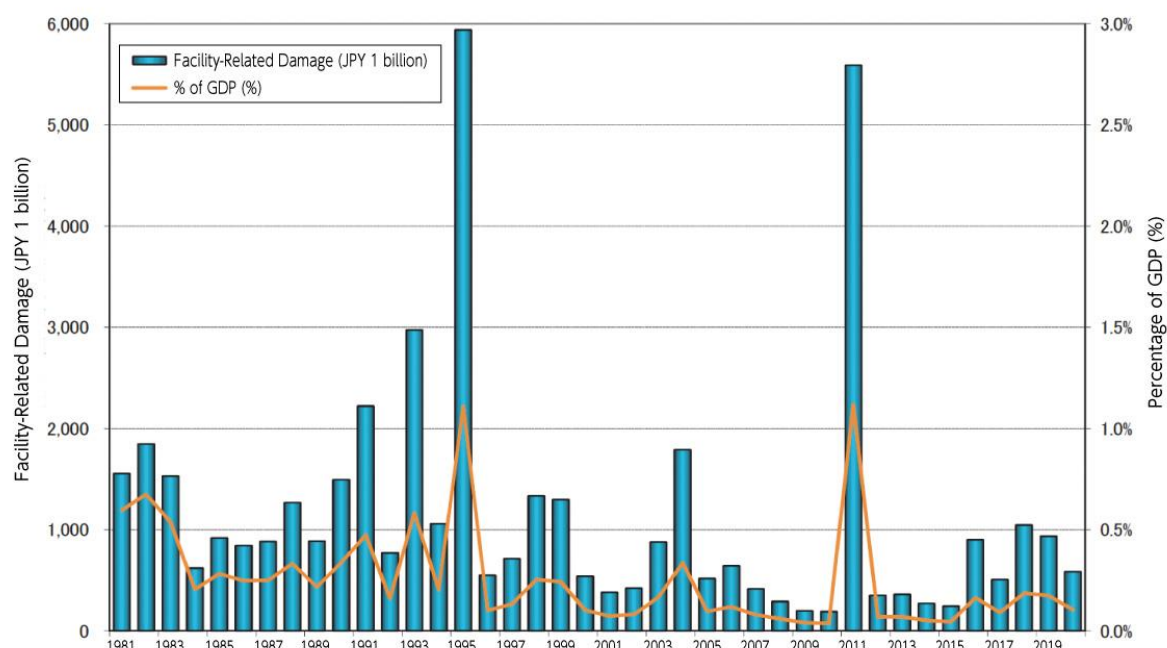
[Fukushima Prefecture] All areas in Fukushima Prefecture (occurred on March 16)

[Miyagi Prefecture] Yamamoto Town, Kakuda City, Shiroishi City, Zao Town, Watari Town, Shibata Town (occurred on March 16)

Concerning the earthquake disaster in Shinchi Town, Fukushima Prefecture, on March 16, 2022, the Cabinet decided to designate the disaster as a Disaster of Extreme Severity. Furthermore, the cabinet decision included Special Measures for Subsidies for Project to Recover Lands for Agriculture Damaged by Disaster and Including

Principal and Interest Redemption Money related to Small Disaster Bond into Baseline Financial Needs. The Cabinet announced the prospective designation on April 8, 2022, made the cabinet decision on April 22 and the promulgation and enforcement on April 27.

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 2020, by Hazard

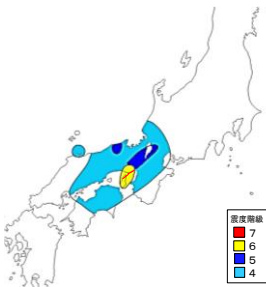
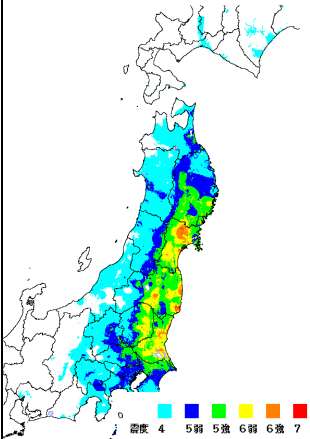
(Unit: JPY 1 million)

Facility type	Typhoon	Torrential rain	Earthquake	Heavy snowfall	Other	Total	Notes
Public works	16,884	274,406	74	0	13,973	305,337	Rivers, forestry conservation facilities, ports, etc.
Agriculture, forest, and fisheries industry	6,299	210,774	140	35	5,393	222,641	Farmland, agricultural facilities, forestry roads, fishing facilities, etc.
Educational facilities	1,003	4,306	789	0	150	6,248	School facilities, cultural properties, etc.
Public welfare facilities	3,037	28,979	14	0	10	32,039	Social welfare facilities, waterworks facilities, etc.
Other facilities	4,236	15,028	40	151	152	19,607	Nature parks, telegraph/telephone, urban facilities, etc.
Total	31,459	533,493	1,057	185	19,677	585,872	

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, Chiba, 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 in 2011	—
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 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	Mt. Hokkaido-Komagatake*	At least 700	Sector collapse, debris flow, tsunami, large amount of falling ash, pyroclastic flow
1663	Mt. Usu*	5	Nearby homes disappeared or were buried
1664	Mt. Unzendake	At least 30	Lava flow, flood of water from crater
1667	Mt. Tarumae*		Pyroclastic flow, large amount of falling ash/pumice
1694	Mt. Hokkaido-Komagatake		Eruption with earthquake/volcanic thunder, falling pumice stone, pyroclastic flow
1707	Mt. Fuji *		"Great Hoei eruption," large amount of falling ash, landslide disaster after eruption
1721	Mt. Asama	15	Cinders
1739	Mt. Tarumae *		Pyroclastic flow, large amount of falling ash/pumice
1741	Oshima-Oshima Island	1,467	Sector collapse, large tsunami occurred due to debris avalanche
1769	Mt. Usu		Large amount of falling ash/pumice, pyroclastic flow
1777	Izu-Oshima Island		"Great Anei eruption," lava flow, scoria fall
1779	Sakurajima Island*	At least 150	"Great Anei eruption," cinders, lava flow
1781	Sakurajima Island	15	Eruption on an island off of Komen, tsunami
1783	Mt. Asama	1,151	"Great Tenmei eruption," pyroclastic flow, lava flow, flooding of Agatsuma River and Tone River
1785	Aogashima Island	130–140	Cinders, mud, more than one-third of islanders became victims. Uninhabited island for more than 50 years thereafter
1792	Mt. Unzendake	15,000	"Shimabara taihen, Higo meiwaku," tsunami on opposing shore due to collapse of Mt. Mayuyama
1822	Mt. Usu	50–103	Pyroclastic flow, former Abuta village totally destroyed
1853	Mt. Usu		Large amount of volcanic ash/pumice, formation of lava dome, pyroclastic flow
1856	Mt. Hokkaido-Komagatake	21–29	Falling pumice, pyroclastic flow
1888	Mt. Bandai*	461–477	5 towns and 11 villages buried in debris avalanche, debris flow (volcanic mud flow)
1900	Mt. Adatara	72	Cinders, sulfur mine at crater totally destroyed
1902	Izu-Torishima Island	125	All islanders became victims
1914	Sakurajima Island*	58	"Great Taisho eruption," volcanic thunder, lava flow, earthquake, air wave, villages buried, large amount of falling ash
1926	Mt. Tokachidake	144	Larger mudflow, towns of Kamifurano and Biei buried
1929	Mt. Hokkaido-Komagatake	2	Large amount of falling ash/pumice, pyroclastic flow, volcanic gas damage
1940	Miyakejima Island	11	Large amount of volcanic ash/volcanic bombs, lava flow
1952	Beyonesu (Bayonnaise) Rocks (Myojin Reef)	31	Pyroclastic surge
1943–45	Mt. Usu	1	Large amount of volcanic ash, cinders, formation of Showa-shinzan (new mountain)
1958	Mt. Aso	12	Cinders
1991	Mt. Unzendake	43	Pyroclastic flow, debris flow
2014	Mt. Ontake	63	Cinders

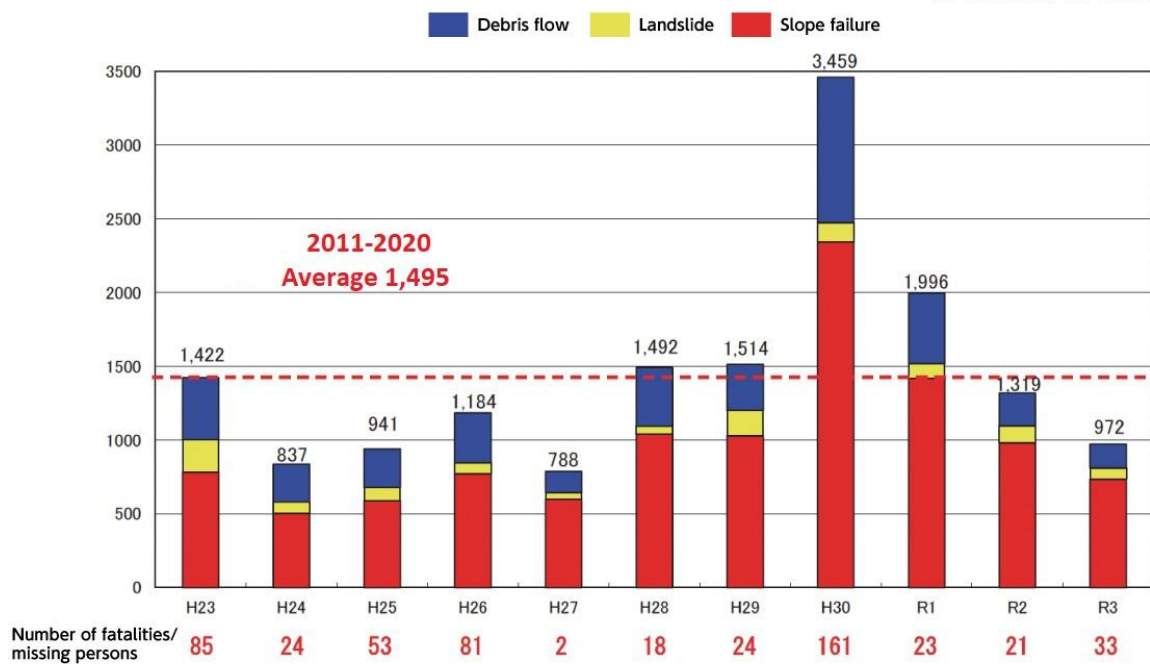
*Indicates eruptions with apparent volume of ejecta of more than 1 km³

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 km³ 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

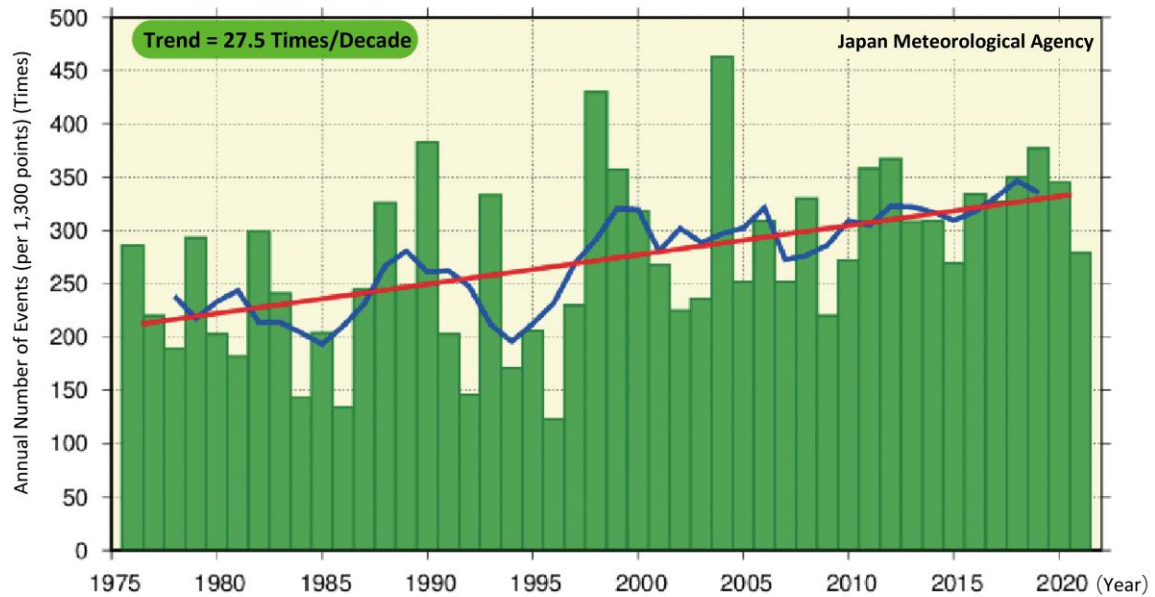
As of March 18, 2022



Source: Ministry of Land, Infrastructure, Transport and Tourism

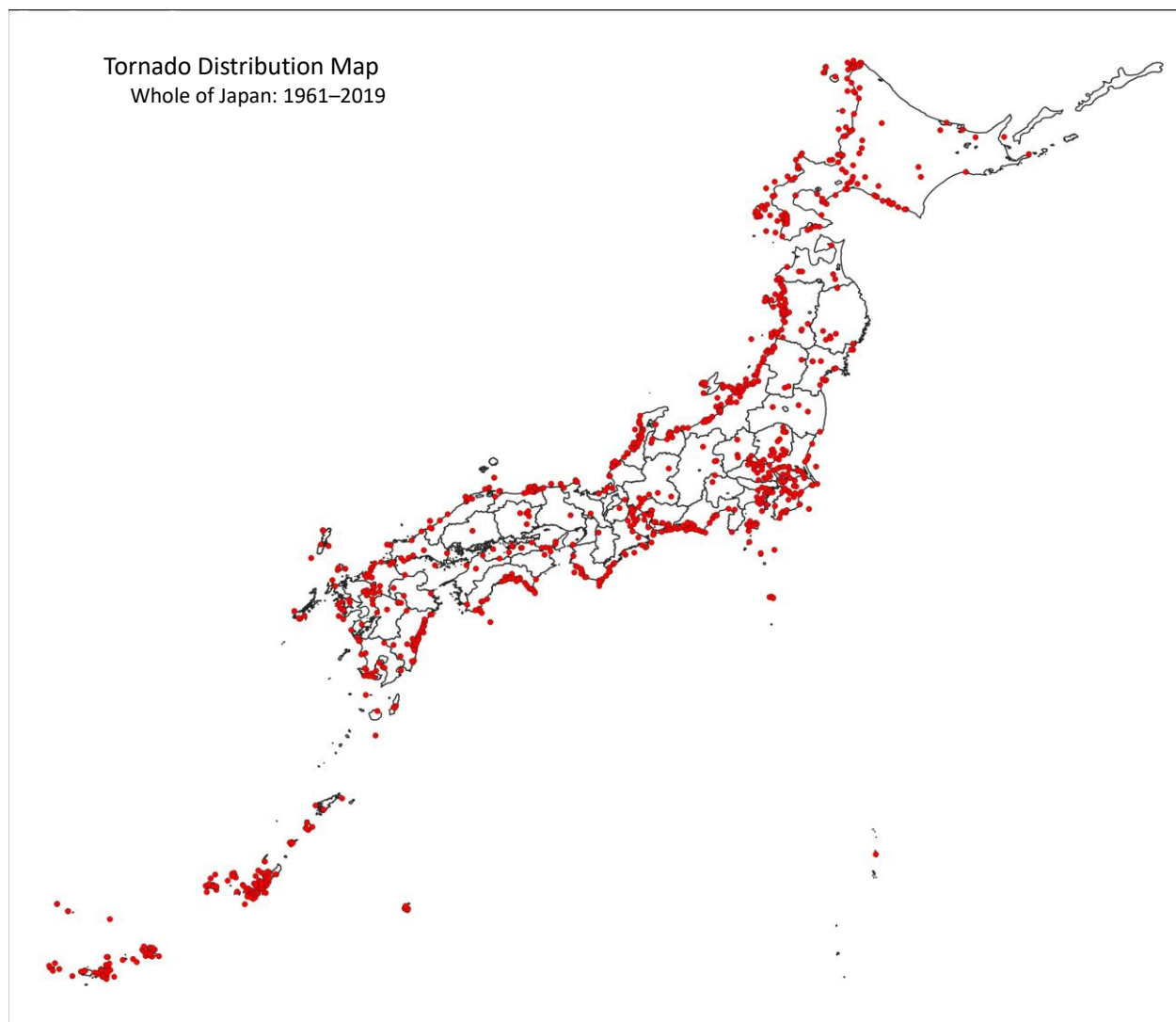
Fig. A-21 Increase in the frequency of hourly extreme precipitation

[AMeDAS] Annual Number of Events with Precipitation ≥ 50 mm/hour



The green bars indicate the annual number of events per 1,300 AMeDAS stations for each year. The blue line indicates the five-year running mean, and the straight red line indicates the long-term liner trend.

Fig. A-22 Number of Tornadoes



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
2021	Earthquake	EQ-2021-000116-HTI	Haiti	2,575
2022	Flood	FL-2021-000093-IND	India	1,282

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 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 12, 2022)

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 2021

Date	Country	Disaster Type	Fatalities	Affected People	Direct Damages (USD 1,000)
Jan. 1, 2021 - Dec.31, 2021	United States of America (the)	Drought	0	0	9,000,000
Jan. 1, 2021 - Dec.31, 2021	China	Drought	0	0	3,100,000
Jan. 5, 2021 - Jan. 11, 2021	Thailand	Flood	4	175,493	0
Jan. 7, 2021 - Jan. 12, 2021	Japan	Rainstorm	23	394	2,000,000
Jan. 8, 2021 - Jan. 12, 2021	Spain	Rainstorm	5	0	1,900,000
Jan. 10, 2021 - Jan. 18, 2021	Philippines (the)	Flood	2	261,580	0
Jan. 13, 2021 - Jan. 15, 2021	United States of America (the)	Rainstorm	3	0	675,000
Jan. 14, 2021 - Jan. 27, 2021	Syrian Arab Republic	Flood	1	142,003	0
Jan. 15, 2021 - Jan. 15, 2021	Indonesia	Earthquake	110	100,653	58,700
Jan. 15, 2021 - Jan. 21, 2021	Indonesia	Flood	21	126,025	0
Jan. 23, 2021 - Jan. 23, 2021	Mozambique	Tropical cyclone	11	481,901	0
Jan. 24, 2021 - Jan. 29, 2021	United States of America (the)	Rainstorm	2	75	1,100,000
Jan. 24, 2021 - Jan. 27, 2021	United States of America (the)	Rainstorm	1	30	120,000
Jan. 29, 2021 - Feb. 2, 2021	Chile	Rainstorm	0	521	175,000
Jan. 30, 2021 - Feb. 2, 2021	United States of America (the)	Rainstorm	4	0	100,000
Jan. 2021 - Apr. 2021	Afghanistan	Drought	0	11,000,000	0
Jan. 2021 - Aug.27, 2021	Iraq	Drought	0	7,000,000	0
Jan. 2021 - Oct. 2021	Syrian Arab Republic	Drought	0	5,500,000	0
Feb. 1, 2021 - Feb. 7, 2021	Australia	Wildfire	0	243	120,000
Feb. 7, 2021 - Feb. 8, 2021	India	Glacial lake outburst	234	0	210,000
Feb. 9, 2021 - Feb. 10, 2021	Bolivia (Plurinational State of)	Flood	9	145,000	0
Feb. 10, 2021 - Feb. 20, 2021	United States of America (the)	Rainstorm	235	10	30,000,000
Feb. 10, 2021 - Feb. 22, 2021	Brazil	Flood	6	100,000	36,000

Date	Country	Disaster Type	Fatalities	Affected People	Direct Damages (USD 1,000)
Feb. 12, 2021 - Feb. 20, 2021	Mexico	Rainstorm	12	0	100,000
Feb. 13, 2021 - Feb. 13, 2021	Japan	Earthquake	1	7,892	7,700,000
Feb. 19, 2021 - Feb. 23, 2021	Indonesia	Flood	7	228,650	50,000
Feb. 21, 2021 - Feb. 22, 2021	Philippines (the)	Tropical cyclone	5	272,453	3,114
Feb. 25, 2021 - Mar. 4, 2021	Australia	Tropical cyclone	0	6,000	155,000
Feb. 25, 2021 - Mar. 1, 2021	United States of America (the)	Flood	1	51	150,000
Mar. 16, 2021 - Mar. 18, 2021	United States of America (the)	Rainstorm	0	92	500,000
Mar. 18, 2021 - Mar. 19, 2021	Australia	Flood	2	18,000	2,100,000
Mar. 20, 2021 - Mar. 20, 2021	Japan	Earthquake	0	611	550,000
Mar. 24, 2021 - Mar. 26, 2021	United States of America (the)	Rainstorm	6	0	1,700,000
Mar. 24, 2021 - Mar. 24, 2021	China	Earthquake	3	195	125,000
Mar. 27, 2021 - Mar. 28, 2021	United States of America (the)	Flood	8	0	1,300,000
Mar. 2021 - Mar. 2021	South Africa	Drought	0	12,000,000	0
Mar. 2021 - Mar. 2022	Somalia	Drought	0	5,600,000	0
Mar. 2021 - Mar. 2022	Kenya	Drought	0	2,100,000	0
Mar. 2021 - Apr. 2021	Kenya	Epidemic	0	1,352,253	0
Mar. 2021 - Mar. 15, 2021	Ecuador	Volcanic eruption	0	133,306	0
Apr. 2, 2021 - Apr. 6, 2021	Indonesia	Tropical cyclone	226	509,625	800,000
Apr. 5, 2021 - Apr. 6, 2021	Timor-Leste	Tropical cyclone	41	143,670	0
Apr. 9, 2021 - Apr. 11, 2021	United States of America (the)	Rainstorm	3	7	945,000
Apr. 9, 2021 - Apr. 30, 2021	Saint Vincent and the Grenadines	Volcanic eruption	0	13,300	325,000
Apr. 11, 2021 - Apr. 11, 2021	Australia	Tropical cyclone	1	2,625	530,000
Apr. 13, 2021 - Apr. 15, 2021	United States of America (the)	Rainstorm	13	0	215,000
Apr. 15, 2021 - Apr. 16, 2021	United States of America (the)	Rainstorm	0	0	1,500,000
Apr. 20, 2021 - Apr. 23, 2021	Brazil	Flood	0	455,005	0
Apr. 27, 2021 - May 2, 2021	United States of America (the)	Rainstorm	0	0	3,100,000
May 1, 2021 - May 31, 2021	Somalia	Flood	25	400,000	0
May 2, 2021 - May 4, 2021	United States of America (the)	Rainstorm	4	8	1,300,000
May 2, 2021 - May 6, 2021	Afghanistan	Flood	116	30,833	0
May 11, 2021 - Jun.15, 2021	Guyana	Flood	0	150,000	0
May 14, 2021 - May 19, 2021	India	Tropical cyclone	198	700,153	1,400,000
May 14, 2021 - May 19, 2021	United States of America (the)	Rainstorm	6	250	1,300,000
May 21, 2021 - May 21, 2021	China	Earthquake	3	39,028	516,000
May 22, 2021 - May 23, 2021	Congo (the Democratic Republic of the)	Volcanic eruption	32	288,404	0
May 25, 2021 - May 29, 2021	India	Tropical cyclone	19	1,625,000	3,000,000
May 25, 2021 - May 29, 2021	Bangladesh	Tropical cyclone	3	1,300,000	0
May 2021 - Feb. 2022	Ethiopia	Drought	0	5,500,000	0
May 2021 - Oct.7, 2021	South Sudan	Flood	7	623,000	0
Jun. 1, 2021 - Aug.30, 2021	China	Flood	352	14,500,000	16,500,000
Jun. 1, 2021 - Sep.30, 2021	India	Flood	1,282	375,000	3,100,000
Jun. 1, 2021 - Jun.30, 2021	India	Flood	59	1,000	100,000

Date	Country	Disaster Type	Fatalities	Affected People	Direct Damages (USD 1,000)
Jun. 7, 2021 - Jun.10, 2021	United States of America (the)	Flood	0	636	950,000
Jun. 9, 2021 - Jun.11, 2021	Australia	Flood	2	600	330,000
Jun. 15, 2021 - Aug.31, 2021	Niger (the)	Flood	62	105,750	0
Jun. 17, 2021 - Jun.18, 2021	Ukraine	Rainstorm	1	1,700	170,000
Jun. 18, 2021 - Jun.21, 2021	United States of America (the)	Rainstorm	14	344	375,000
Jun. 24, 2021 - Jun.25, 2021	Czech Republic (the)	Rainstorm	6	3,813	701,000
Jun. 24, 2021 - Aug.11, 2021	Russian Federation (the)	Flood	0	24,000	200,000
Jun. 26, 2021 - Aug.31, 2021	Chad	Flood	32	269,180	0
Jun. 26, 2021 - Jul. 2021	Canada	Heat wave	808	0	0
Jun. 26, 2021 - Jun.30, 2021	United States of America (the)	Heat wave	229	0	0
Jun. 28, 2021 - Jul.2, 2021	China	Flood	0	1,080,000	161,000
Jul. 1, 2021 - Sep.30, 2021	Pakistan	Flood	194	0	10,000
Jul. 2, 2021 - Jul.9, 2021	United States of America (the)	Tropical cyclone	1	9	1,200,000
Jul. 3, 2021 - Jul.5, 2021	Japan	Landslide	26	900	250,000
Jul. 6, 2021 - Jul.31, 2021	United States of America (the)	Wildfire	0	483	325,000
Jul. 8, 2021 - Jul.11, 2021	United States of America (the)	Rainstorm	1	0	1,200,000
Jul. 12, 2021 - Jul.15, 2021	Germany	Flood	197	1,000	40,000,000
Jul. 13, 2021 - Aug.11, 2021	United States of America (the)	Wildfire	3	1,261	3,000,000
Jul. 14, 2021 - Jul.15, 2021	Belgium	Flood	43	1,950	1,700,000
Jul. 15, 2021 - Jul.17, 2021	New Zealand	Flood	0	200	140,000
Jul. 20, 2021 - Sep.24, 2021	Sudan (the)	Flood	52	303,045	0
Jul. 21, 2021 - Jul.28, 2021	China	Tropical cyclone	5	72,000	2,000,000
Jul. 21, 2021 - Jul.29, 2021	Myanmar	Flood	0	125,000	0
Jul. 22, 2021 - Jul.28, 2021	United States of America (the)	Flood	9	0	300,000
Jul. 22, 2021 - Jul.28, 2021	Costa Rica	Flood	3	200,000	0
Jul. 27, 2021 - Aug.3, 2021	Bangladesh	Flood	21	268,744	0
Jul. 28, 2021 - Aug.7, 2021	Turkey	Wildfire	9	561,088	232,000
Jul. 28, 2021 - Jul.29, 2021	Afghanistan	Flood	260	4,200	0
Jul. 29, 2021 - Aug.12, 2021	Greece	Wildfire	2	7,012	580,000
Jul., 2021 - Nov., 2021	Zambia	Drought	0	1,180,000	0
Aug. 9, 2021 - Aug.24, 2021	Niger (the)	Epidemic	144	4,283	0
Aug. 10, 2021 - Aug.13, 2021	United States of America (the)	Rainstorm	0	0	1,300,000
Aug. 10, 2021 - Aug.16, 2021	Turkey	Flood	70	2,660	290,000
Aug. 10, 2021 - Aug.16, 2021	United States of America (the)	Flood	3	0	225,000
Aug. 11, 2021 - Aug.16, 2021	Japan	Flood	12	30,000	100,000
Aug. 12, 2021 - Aug.13, 2021	China	Flood	21	286,100	0
Aug. 13, 2021 - Aug.31, 2021	United States of America (the)	Wildfire	0	2,136	1,500,000
Aug. 14, 2021 - Aug.14, 2021	Haiti	Earthquake	2,575	702,763	1,620,071
Aug. 17, 2021 - Aug.22, 2021	United States of America (the)	Tropical cycone	7	105	1,300,000
Aug. 20, 2021 - Aug.25, 2021	United States of America (the)	Tropical cyclone	0	86	550,000
Aug. 21, 2021 - Aug.23, 2021	Mexico	Tropical cyclone	13	0	500,000
Aug. 21, 2021 - Aug.22, 2021	United States of America (the)	Flood	22	89	150,000

Date	Country	Disaster Type	Fatalities	Affected People	Direct Damages (USD 1,000)
Aug. 23, 2021 - Aug.24, 2021	Venezuela (Bolivarian Republic of)	Flood	46	1,400,100	0
Aug. 27, 2021 - Aug.31, 2021	Thailand	Flood	0	325,400	0
Aug. 28, 2021 - Sep.2, 2021	United States of America (the)	Tropical cyclone	96	14,000	65,000,000
Aug. 28, 2021 - Aug.30, 2021	Mexico	Tropical cyclone	2	1,503	100,000
Aug. 28, 2021 - Sep.2, 2021	Cuba	Tropical cyclone	0	0	100,000
Aug. 29, 2021 - Sep.2, 2021	Spain	Flood	2	150	105,000
Aug. 2021 - Dec.19, 2021	Nigeria	Epidemic	3,604	179,189	0
Aug. 2021 - Feb. 2022	Zimbabwe	Drought	0	167,000	0
Sep. 7, 2021 - Sep.13, 2021	Congo (the Democratic Republic of the)	Epidemic	131	301	0
Sep. 8, 2021 - Sep.8, 2021	Mexico	Earthquake	3	21,951	200,000
Sep. 12, 2021 - Sep.17, 2021	United States of America (the)	Tropical cyclone	0	0	1,000,000
Sep. 13, 2021 - Sep.15, 2021	India	Flood	7	850,000	0
Sep. 16, 2021 - Sep.16, 2021	China	Earthquake	3	24,395	250,000
Sep. 19, 2021 - Dec.25, 2021	Canary Isls	Volcanic eruption	1	6,888	1,000,000
Sep. 19, 2021 - Oct.6, 2021	Thailand	Flood	10	298,900	591,000
Oct. 2, 2021 - Oct.7, 2021	China	Flood	18	1,760,000	1,800,000
Oct. 3, 2021 - Oct.3, 2021	India	Tropical cyclone	7	179,000	0
Oct. 4, 2021 - Oct.7, 2021	United States of America (the)	Flood	4	0	325,000
Oct. 11, 2021 - Oct.12, 2021	Philippines (the)	Tropical cyclone	59	1,140,539	103,128
Oct. 16, 2021 - Oct.22, 2021	Nepal	Flood	118	10	0
Nov. 4, 2021 - Nov.5, 2021	Bosnia and Herzegovina	Flood	0	250,000	0
Nov. 5, 2021 - Nov.9, 2021	China	Rainstorm	1	5,600	935,000
Nov. 6, 2021 - Nov.7, 2021	Sri Lanka	Flood	26	230,004	0
Nov. 13, 2021 - Nov.16, 2021	Canada	Flood	4	15,000	2,000,000
Nov. 13, 2021 - Nov.15, 2021	United States of America (the)	Flood	1	500	200,000
Nov. 14, 2021 - Nov.14, 2021	Iran (Islamic Republic of)	Earthquake	1	36,583	165,000
Nov. 15, 2021 - Jan. 16, 2022	Brazil	Flood	52	966,173	417,000
Nov. 15, 2021 - Dec.1, 2021	Australia	Flood	2	1,000	100,000
Nov. 27, 2021 - Nov.30, 2021	Viet Nam	Flood	18	300,000	0
Nov. 29, 2021 - Dec.2, 2021	Thailand	Flood	0	132,900	0
Dec. 10, 2021 - Dec.11, 2021	United States of America (the)	Rainstorm	93	100	5,200,000
Dec. 15, 2021 - Dec.16, 2021	United States of America (the)	Rainstorm	5	120	1,900,000
Dec. 16, 2021 - Dec.17, 2021	Philippines (the)	Tropical cyclone	457	10,608,996	915,271
Dec. 17, 2021 - Jan. 3, 2022	Malaysia	Flood	52	62,999	200,000
Dec. 27, 2021 - Dec.28, 2021	Sao Tome and Principe	Flood	8	219,668	0
Dec. 30, 2021 - Jan. 1, 2022	United States of America (the)	Wildfire	2	3,654	3,300,000
2021 - Aug. 2021	Iran (Islamic Republic of)	Drought	0	2,580,000	0

Source: Formulated by the Cabinet Office based on materials from Emergency Events Database (EM-DAT, the international disaster database) of Centre for Research on the Epidemiology of Disasters (CRED), Université catholique de Louvain).

Western Canada and northwestern U.S. suffered intense heat from late June to July of 2021. Lytton, near Vancouver, Canada, recorded 46.6 Celsius degrees on 27, beating the highest temperature on record in this country for the first time in 84 years. High temperature warnings and advisories were issued in various areas, and in Lytton, the site with the highest ever recorded temperature in Canada, wildfires broke out and destroyed much of the village.

<https://www.nikkei.com/article/DGXZQOGN28CKC0Y1A620C2000000/>
<https://www.nikkei.com/article/DGXZQOGN02EB40S1A700C2000000/>
<https://www.cbc.ca/news/canada/british-columbia/sudden-deaths-heat-wave-b-c-1.6086770>

On August 14 of 2021, at 8:29 AM (local time), an earthquake of magnitude 7.2 occurred at southwestern Haiti located in the Caribbean Sea. The epicenter was located near 12 km northeast of Saint-Louis-du-Sud, 125 km west of the capital Port-au-Prince, and the depth of the earthquake was 10 km. The earthquake caused many affected people including deaths and injuries as well as material damage. As of March 10, 2022, the EM-DAT database showed 2,575 deaths, 702,763 affected people, and economic damage of over US\$1.6 billion. Haiti experienced a megaquake of magnitude 7.0 in 2010 as well and suffered devastating damage including more than 220,000 deaths.

https://www.mofa.go.jp/mofaj/press/release/press1_000585.html
https://www.mofa.go.jp/mofaj/press/release/press1_000601.html
<https://www.jrc.or.jp/international/results/2021HaitiEQ.html>

From December 16 to 17 of 2021, Typhoon Rai (T2122) (Asian name: Rai, Philippine name: Odette) made landfall in southeastern Philippines, caused many affected people including deaths and injuries as well as material damage to key infrastructure such as electric power and houses.

Upon request from the Philippine Government, the Japanese Government provided emergency relief supplies through the Japan International Cooperation Agency (JICA) as well as Emergency Grant Aid of US\$13 million.

A-56

3. Laws and Systems

Fig. A-26 Evolution of Disaster Management Laws and Systems Since 1945

Disasters that triggered law/system introduction	Disaster Management Law	Explanation
1940s 1945 Typhoon Ida (Makurazaki) 1946 The Nankai Earthquake 1947 Typhoon Kathleen 1948 The Fukui Earthquake	47 The Disaster Relief Act 49 The Flood Control Act	
1950s 1959 Typhoon Vera (Isewan)	50 The Building Standards Act	
1960s 1961 Heavy Snows 1964 The 1964 Niigata Earthquake 1967 Torrential Rains in Uetsu	60 Soil Conservation and Flood Control Urgent Measures Act 61 Basic Act on Disaster Management 62 National Disaster Management Council established 63 Basic Disaster Management Plan 62 Act on Special Financial Support to Deal with Extremely Severe Disasters Act on Special Measures for Heavy Snowfall Areas 66 Act on Earthquake Insurance	Establishment of fundamental disaster prevention laws Clear assignment of federal responsibilities Development of cumulative and organized disaster prevention structures etc.
1970s 1973 Mt. Sakurajima Eruption Mt. Asama Eruption 1976 The Seismological Society of Japan publishes reports on a possible Tokai Earthquake 1978 The 1978 Miyagi Earthquake	73 Act on Provision of Disaster Condolence Grant Act on Development of Evacuation Facilities in Areas Surrounding Active Volcanoes (Act on Special Measures for Active Volcanoes (1978)) 78 Act on Special Measures Concerning Countermeasures for Large-Scale Earthquakes	
1980s	80 Act on Special Financial Measures for Urgent Earthquake Countermeasure Improvement Projects in Areas for Intensified Measures 81 Partial amendment of Order for Enforcement of the Building Standard Law	Induction of current earthquake engineering laws, etc.
1990s 1995 The Southern Hyogo Earthquake (The Great Hanshin-Awaji Earthquake) 1999 Torrential Rains in Hiroshima Tokaimura Nuclear Accident (The JCO Nuclear Accident)	95 Act on Special Measures for Earthquake Disaster Countermeasures Act on Promotion of the Earthquake-proof Retrofit of Buildings Partial amendment of Basic Act on Disaster Management 96 Act on Special Measures for the Preservation of Rights and Interests of the Victims of Specified Disasters 97 Act on Promotion of Disaster Resilience Improvement in Densely Inhabited Areas 98 Act on Support for Reconstructing Livelihoods of Disaster Victims 99 Act on Special Measures Concerning Nuclear Emergency Preparedness	Establishment of disaster management mechanisms based on volunteer groups and private organizations, loosening of requirements for the establishment of a National Disaster Management Council led by the Prime Minister, the codification of disaster relief requests for the JSDF, etc.
2000s 2000 Torrential Rains in the Tokai Region 2004 Torrential Rains in Niigata, Fukushima The 2004 Niigata Chuetsu Earthquake 2011 The 2011 Tohoku Region Pacific Coast Earthquake (The Great East Japan Earthquake)	00 Act on the Promotion of Sediment Disaster Countermeasures for Sediment Disaster Hazard Areas 01 Partial amendment of the Flood Control Act 02 Act on Special Measures for Promotion of Tohankai and Nankai Earthquake Disaster Management 03 Specified Urban River Inundation Countermeasures Act 04 Act on Special Measures for Promotion of Disaster Management for Trench-type Earthquakes in the Vicinity of the Japan and Chishima Trenches 05 Partial amendment of the Flood Control Act Partial amendment of the Act on the Promotion of Sediment Disaster Countermeasures in Sediment Disaster Hazard Areas Partial amendment of the Act on the Promotion of the Seismic Reinforcement and Retrofitting of Buildings 06 Partial amendment of the Act on the Regulation of Residential Land Development 11 Act on the Promotion of Measures for Tsunami Act on Development of Areas Resilient to Tsunami Disasters 12 Partial amendment of Basic Act on Disaster Management Act for Establishment of the Nuclear Regulation Authority 13 Partial amendment of Basic Act on Disaster Management Act on Reconstruction from Large-Scale Disasters Partial amendment of the Act on the Promotion of the Seismic Reinforcement and Retrofitting of Buildings Partial amendment of the Flood Control Act and River Act Act on Special Measures for Land and Building Leases in Areas Affected by Large-scale Disasters Act on Special Measures for the Promotion of Nankai Trough Earthquake Disaster Management (Partial amendment of the Act on Special Measures for the Promotion of Tohankai and Nankai Earthquake Disaster Management) Act on Special Measures against Tokyo Inland Earthquake	More rivers were added to flood alert lists, announcement of expected inundation areas. Expansion of list of designated rivers in expected inundation area. Increased efforts in public education through use of Sediment Disaster Hazard Maps. Establishment of basic national directives and regional earthquake - proof retrofit plans, and promotion of organized earthquake - proofing. First Amendment (2012) Regional response for large - scale disasters. Incorporated lessons from the disaster, improvements to disaster management education, and improvements to regional disaster management capabilities through participation of diverse entities (civilization). Second Amendment (2013) Improvement of support for affected people. Improvements to rapid response capabilities in the event of a large - scale and regional disaster. Smooth and safe evacuation of residents. Improvements in disaster countermeasures in daily life. Establishment of obligatory earthquake - proofing examinations and publication of test results for large buildings in need of emergency safety checks. Participation of diverse entities including river management organizations in flood control activities, acquisition of appropriate maintenance and management needs in river management facilities, etc. Designation of Nankai Trough Earthquake Disaster Countermeasure Promotion Areas, promotion of earthquake disaster management for the Nankai Trough Earthquake through the creation of a Basic Plan. Designation of Areas for Urgent Implementation of Measures against a Tokyo Inland Earthquake and promotion of earthquake management through the creation of a Basic Plan. Establishment of laws regarding abandoned vehicles in opening up transportation routes for emergency vehicles in large - scale disasters, etc. (Responsible organization: road managers) Clear definitions of sediment disaster - prone areas (publication of basic investigations), provision of information necessary for issuing evacuation alerts. Formulation of basic guidelines by the government; designation of volcanic eruption hazard zones; establishment of Volcanic Disaster Management Councils in designated zones; imposition of mandatory preparation of evacuation implementation plans, etc.
2014 Heavy Snow Hiroshima Sediment Disaster Mt. Ontake Eruption	14 Partial amendment of Basic Act on Disaster Management Partial amendment of Act on the Promotion of Sediment Disaster Countermeasures for Sediment Disaster Hazard Areas 15 Partial amendment of Act on Special Measures for Active Volcanoes Partial amendment of Basic Act on Disaster Management 16 Partial amendment of Basic Act on Disaster Management	Matters concerning the disposal of waste generated by a specific major disaster: formulation of disaster waste management guidelines by the Minister of the Environment; central government takeover of the disposal of disaster waste, etc. Establishment of laws regarding abandoned vehicles in opening up transportation routes for emergency vehicles in large-scale disasters. (Port management bodies and fishing port management bodies added as responsible organizations)
2016 The 2016 Kumamoto Earthquake	18 Partial amendment of the Disaster Relief Act	Establishment of a system to allow rescue implementing cities to carry out rescue operations as their own administrative tasks.
2018 Typhoon Faxai in 2019 Typhoon Hagibis in 2019	20 Partial Amendment of Act on Special Measures concerning Urban Reconstruction Partial Amendment of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster	Clearly stipulating that prefectures receiving a support request from an affected prefecture can order municipalities in their jurisdictions to support affected municipalities. Taking comprehensive measures to create a safe community such as: to curb development in disaster hazard areas, promote relocation, and strengthen site optimization plans, in order to cope with natural disasters that are becoming more frequent and severe.
2020 July Torrential Rains	21 Partial Amendment of Basic Act on Disaster Management Partial Amendment of the Specified Urban River Inundation Countermeasures Act	Expanding the scope of support payments to include medium-scale half-destruction (damage ratio of more than 30% but less than 40%)
2021		Consolidating evacuation recommendation and evacuation instruction, making it mandatory to make an effort to create an individual evacuation plan, taking measures under the provisions on acceptance of residents pertaining to wide-area evacuation, and establishing the National Disaster Management Headquarters and applying the Disaster Relief Act when a disaster is likely to occur. Strengthening the plan and system for flood control in the basin, strengthening rainwater harvesting measures in the watershed, cooperating with urban development responding for water disasters and considering housing style, and expanding the preparation of hazard maps for floods into small and medium rivers.

Disasters that triggered law/system introduction	Disaster Management Law	Explanation
2020s		
2022	<p>22 Partial Amendment of the "Act on the Promotion of Measures for Tsunami"</p> <p>22 Partial Amendment of the "Act on Special Measures concerning Countermeasures for Heavy Snowfall Areas"</p> <p>22 Partial Amendment of the "Act on Special Measures concerning Advancement of Countermeasures against Earthquake Disaster in Relation to Subduction Zone Earthquake Around Japan Trench and Chishima Trench"</p> <p>22 Act on Regulation of Residential Land Development and Specified Embankment (Partial Amendment of the "Act on the Regulation of Residential Land Development")</p>	<p>Prepare Tsunami shelters suitable for regional characteristics, add regulations on utilizing digital technologies in tsunami countermeasures, and such</p> <p>Extend the term of exceptional measures for special heavy snowfall areas, maintain the general regulations, add and review regulations on the formulation and implementation of the basic plans, add regulations on measures that the national and local governments should take (Grants, prevention of death and injury from snow removing work, ensuring major roads, etc.)</p> <p>Designation of areas to promote disaster management measures for the greatest scale trench-type earthquakes in the vicinity of the Japan and Chishima Trenches which can be scientifically estimated, designation of special areas to reinforce evacuation measures for trench-type earthquakes and tsunami in the vicinity of the Japan and Chishima trenches, exceptional measures for projects regarding the emergency project plans of evacuation measures for tsunami , and such</p> <p>Based on the national standard regardless of land use purposes, make land embankment which can be dangerous to houses a subject of prefectural governors' approval to ensure their security, as well as take measures for clarifying the responsibility of land owners and persons who raise the ground level and strengthening penalties</p>

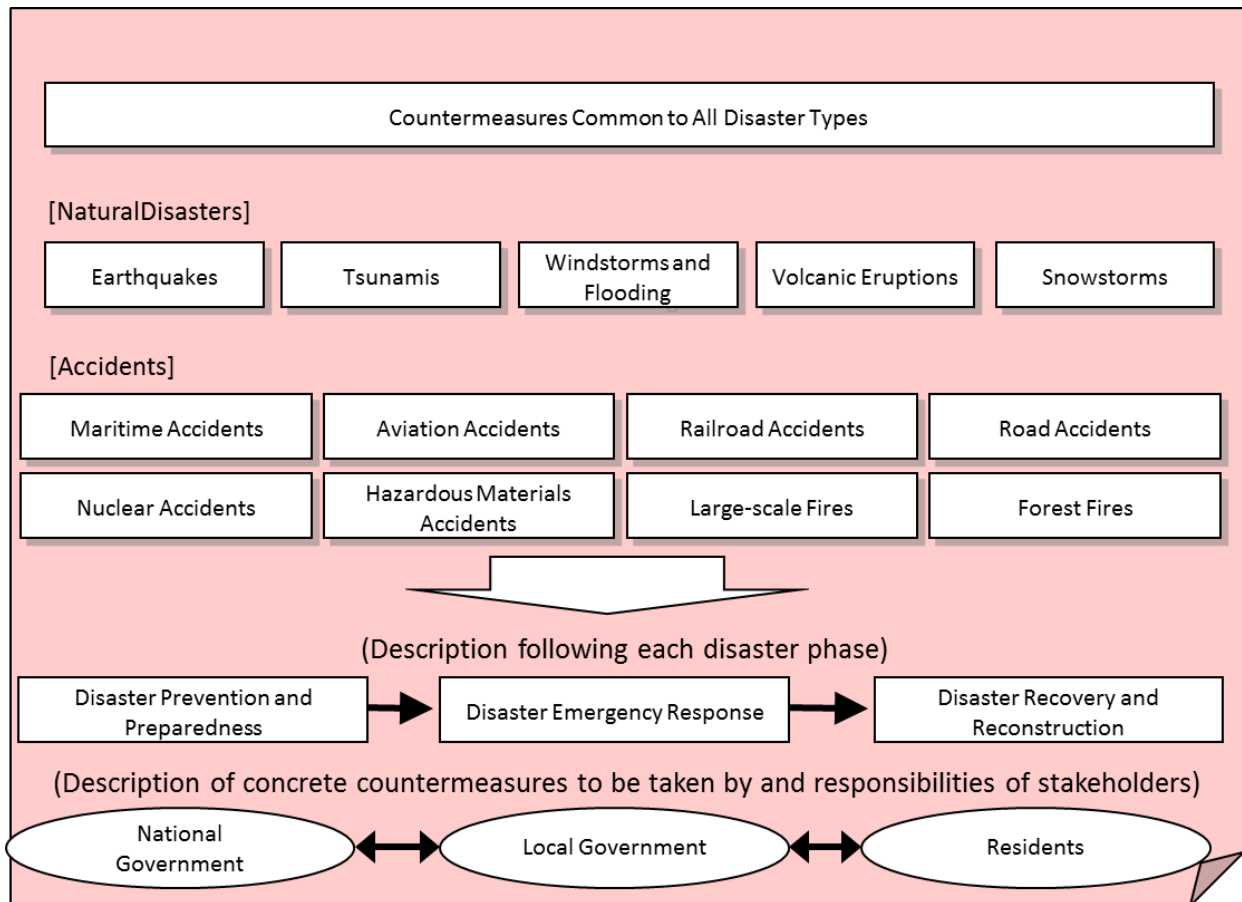
Source: Cabinet Office

Fig. A-27 Major Disaster Management Laws by Type of Disaster

Type	Prevention	Emergency Response	Recovery/Reconstruction
Earthquakes, Tsunamis	Basic Act on Disaster Management <ul style="list-style-type: none"> • Act on Special Measures Concerning Countermeasures for Large-Scale Earthquakes • Act on the Promotion of Measures for Tsunami • Act on Special Financial Measures for Urgent Earthquake Countermeasure Improvement Projects in Areas for Intensified Measures • Act on Special Measures for Earthquake Disaster Countermeasures • Act on Special Measures for the Promotion of Nankai Trough Earthquake Disaster Management • Act on Special Measures against Tokyo Inland Earthquake • Act on Special Measures for Promotion of Disaster Management for Trench-type Earthquakes in the Vicinity of the Japan and Chishima Trenches • Act on Promotion of the Earthquake-proof Retrofit of Buildings • Act on Promotion of Disaster Resilience Improvement in Densely Inhabited Areas • Act on Development of Areas Resilient to Tsunami Disasters 	<ul style="list-style-type: none"> • Disaster Relief Act • Fire Service Act • Police Act • Self-Defense Forces Act • Act on Promotion of Development of Ships Utilization Medical Care Provision System in Times of Disaster, etc. 	<ul style="list-style-type: none"> <General Relief and Support Measures> • Act on Special Financial Support to Deal with Extremely Severe Disasters <Relief and Support Measures for Affected People> • Small and Medium-sized Enterprise Credit Insurance Act • Act on Financial Support of Farmers, Forestry Workers and Fishery Workers Suffering from Natural Disaster • Act on Provision of Disaster Condolence Grant • Employment Insurance Act • Act on Support for Reconstructing Livelihoods of Disaster Victims • Japan Finance Corporation Act • Act on Prohibition regarding Attachment of Donation for Natural Disaster <Disposal of Disaster Waste> • Waste Management and Public Cleansing Act <Disaster Recovery Work> • Act on Temporary Measures for Subsidies from National Treasury for Expenses for Project to Recover Facilities for Agriculture, Forestry and Fisheries Damaged by Disaster • Act on National Treasury's Sharing of Expenses for Project to Recover Public Civil Engineering Works Damaged by Disaster • Act on National Treasury's Sharing of Expenses for Recovery of Public School Facilities Damaged by Disaster • Act on Special Measures concerning Reconstruction of Urban Districts Damaged by Disaster • Act on Special Measures concerning Reconstruction of Condominiums Destroyed by Disaster <Insurance and Mutual Aid System> • Act on Earthquake Insurance • Agricultural Insurance Act • Government Managed Forest Insurance Act <Acts relating to Disaster Taxation> • Act on Reduction or Release, Deferment of Collection and Other Measures Related to Tax Imposed on Disaster Victims <Other> • Act on Special Measures for the Preservation of Rights and Interests of the Victims of Specified Disasters • Act on Special Financial Support for Promoting Group Relocation for Disaster Mitigation • Act on Special Measures for Land and Building Leases in Areas Affected by Large-scale Disaster
Volcanic eruptions	<ul style="list-style-type: none"> • Act on Special Measures for Active Volcanoes 		
Windstorms, flooding	<ul style="list-style-type: none"> • River Act 		
Landslides, rockfalls, debris flow	<ul style="list-style-type: none"> • Erosion Control Act • Forest Act • Landslide Prevention Act • Act on Prevention of Disasters Caused by Steep Slope Failure • Act on Promotion of Sediment Disaster Countermeasures in Sediment Disaster Hazard Areas • Act on the Regulation of Residential Land Development and Specified Embankments 		
Heavy snowfall	<ul style="list-style-type: none"> • Act on Special Measures for Heavy Snowfall Areas • Act on Special Measures concerning Maintenance of Road Traffic in Specified Snow Coverage and Cold Districts 		
Nuclear power	<ul style="list-style-type: none"> • Act on Special Measures Concerning Nuclear Emergency Preparedness 	<ul style="list-style-type: none"> • Flood Control Act 	<ul style="list-style-type: none"> • Act on Reconstruction from Large-Scale Disasters

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

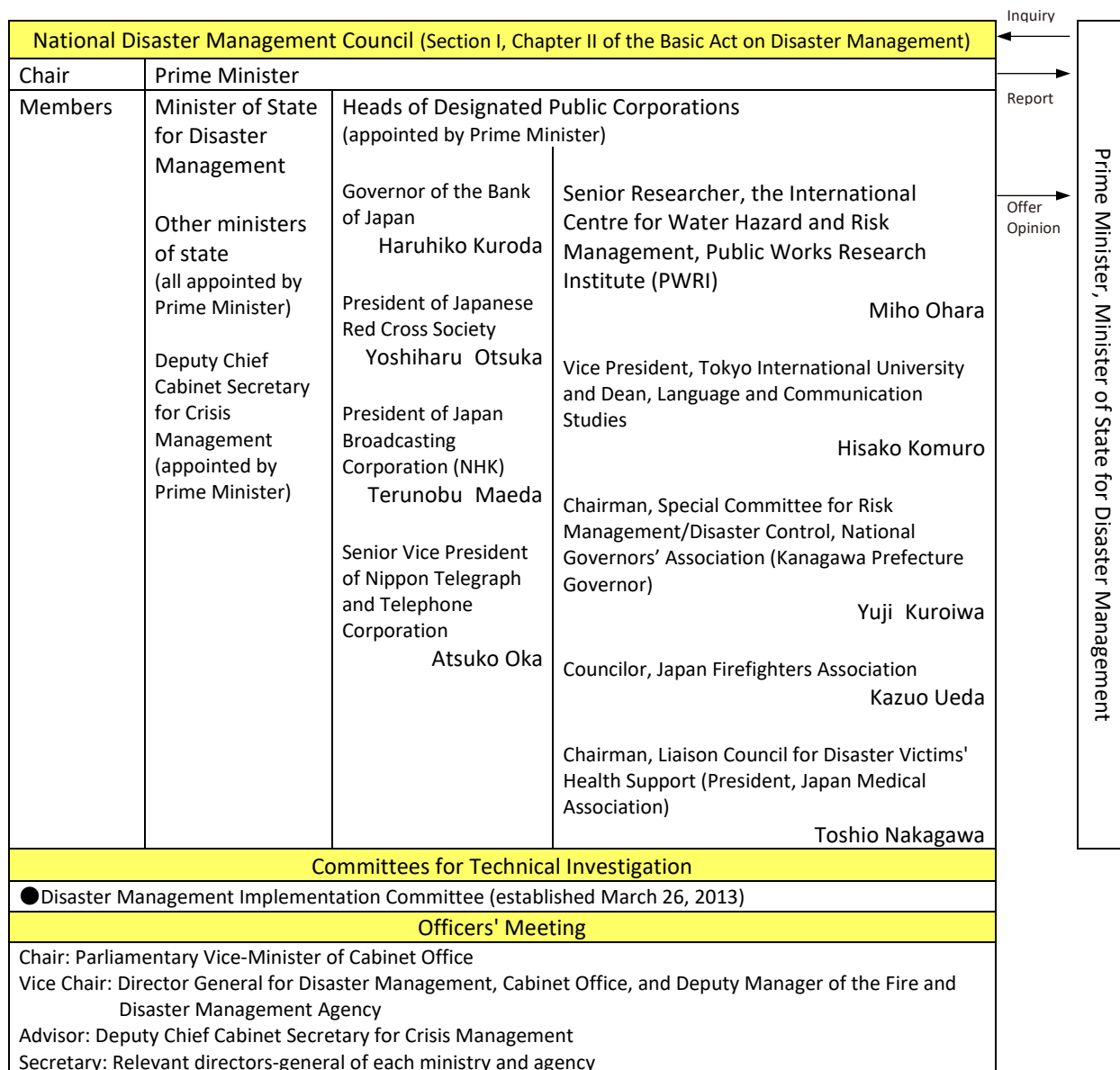
Revision Date	Outline of Revision	Background
June 1963	- The Basic Disaster Management Plan formulated based on the Basic Act on Disaster Management - Stipulations regarding various measures to prevent natural disasters, mitigate damage, and promote disaster reconstruction	Sep. 26, 1959: Typhoon VERA (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 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 Village, Ibaraki prefecture
December 2000	Partial revision - Revisions resulting from the government reformation	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 Tohankai 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 the Ministry of Defense	Transition from Defense Agency to the 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 Earthquake Off the Coast of Chuetsu in Niigata Prefecture	July 16, 2007: The Earthquake Off the Coast of Chuetsu in Niigata Prefecture
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 response (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)
May 2021	Partial Revision • Revision in response to amendment of the Basic Act on Disaster Management and measures against COVID-19 (each part)	May 10, 2021: Partial amendment of the Basic Act on Disaster Management

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

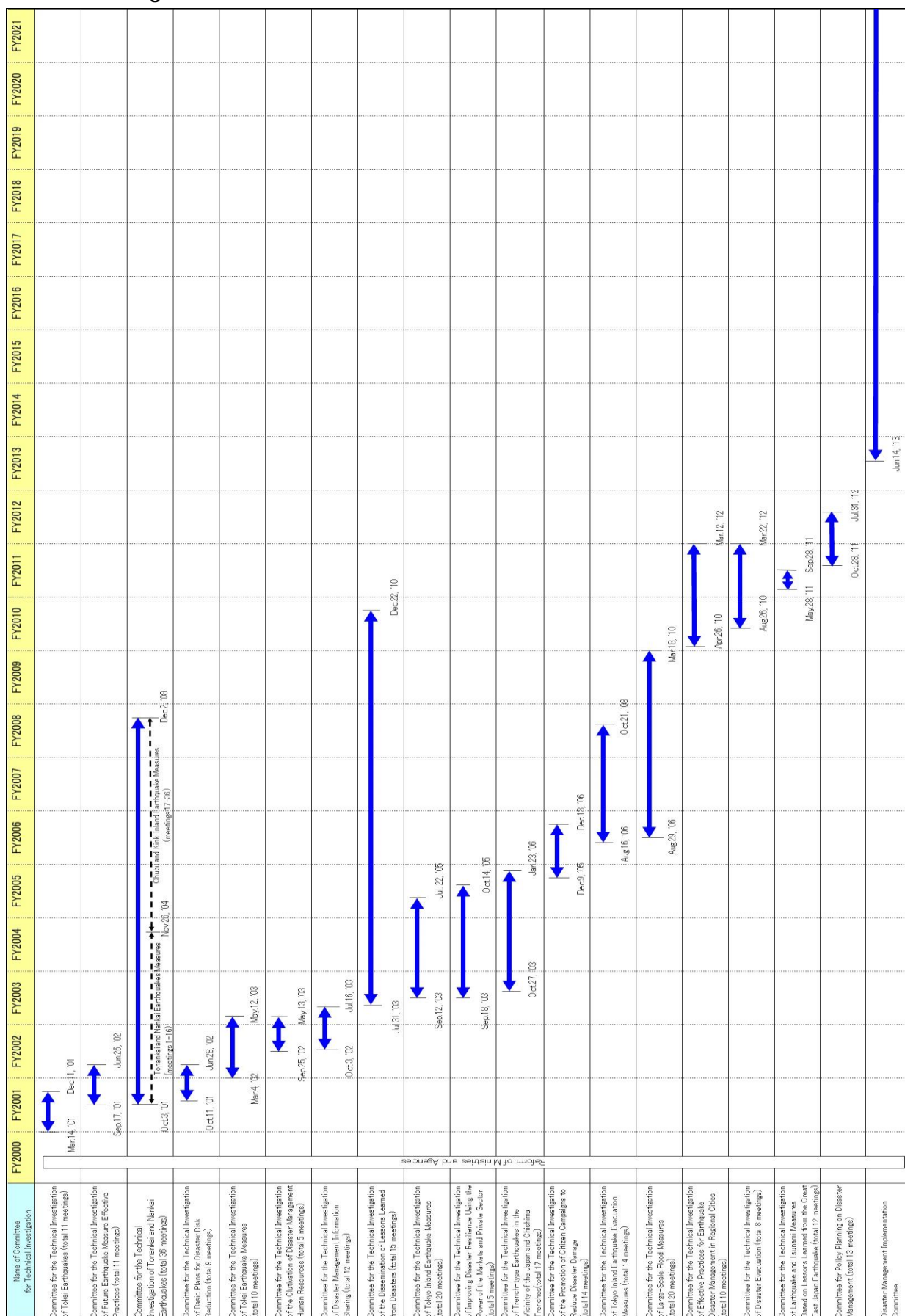
Source: Cabinet Office

Fig. A-31 Recent Meetings of the National Disaster Management Council (Since 2011)

FY2011	
Apr. 27, 2011	<ul style="list-style-type: none"> • Great East Japan Earthquake: Characteristics and Challenges • Conventional earthquake and tsunami policies
Oct. 11, 2011	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Revisions to the Basic Disaster Management Plan
Mar. 31, 2015	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Revisions to the Basic Disaster Management Plan
Feb. 16, 2016	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • FY2016 Comprehensive Disaster Management Drill Framework • Revisions to the Basic Disaster Management Plan
FY2017	
Apr. 11, 2017	<ul style="list-style-type: none"> • Revisions to the Basic Disaster Management Plan • FY2017 Comprehensive Disaster Management Drill Framework
FY2018	
Jun. 29, 2018	<ul style="list-style-type: none"> • Revisions to the Basic Disaster Management Plan • Partial amendment of the Disaster Relief Act
FY2019	
May 31, 2019	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Amendment of Basic Disaster Management Plan • Outline of the Comprehensive Disaster Management Drill Framework of 2020
FY2021	
May 25, 2021	<ul style="list-style-type: none"> • Regarding the revision of the Basic Disaster Management Plan • Regarding FY2021 Comprehensive Disaster Management Drill Framework, etc.

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

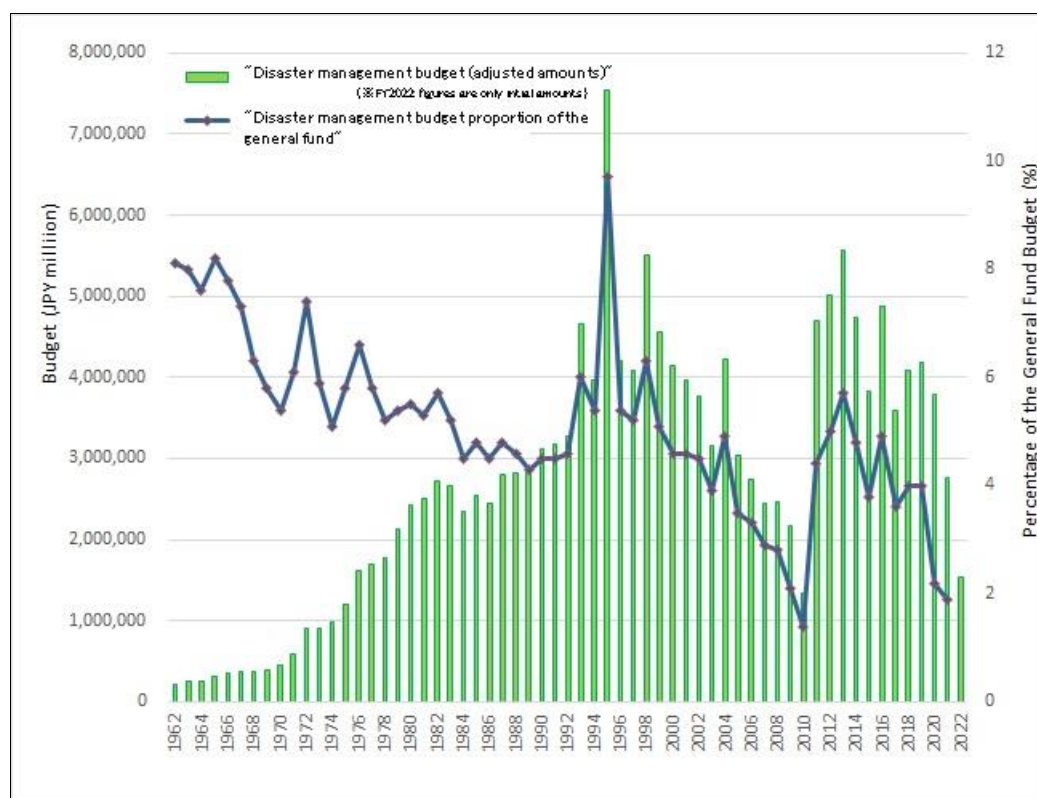
Fiscal Year	Science and Technology Research		Disaster Prevention		Land Conservation		Disaster Reconstruction		Total (JPY million)
	(JPY million)	Share (%)	(JPY million)	Share (%)	(JPY million)	Share (%)	(JPY million)	Share (%)	
1962	751	0.4	8,864	4.3	97,929	47.1	100,642	48.3	208,006
1963	1,021	0.4	8,906	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	11.5	2,320,286	60.9	3,810,547
2021	26,756	0.5	1,108,485	33.3	404,554	7.5	1,226,931	58.2	2,766,726
2022	7,060	0.5	542,716	35.5	116,860	7.6	861,170	56.4	1,527,806

Notes:

1. These are adjusted budget (national expenditures) amounts. However, the FY2022 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 FY2020; Unit: JPY million)

Category	FY1980 - FY2024		
	Planned Amount (a)	Implemented Amount (b)	Rate of Progress (b)/(a)
1 Evacuation sites	202,572	196,515	97.0%
2 Evacuation roads	136,082	94,676	69.6%
3 Firefighting facilities	149,684	133,285	89.0%
4 Emergency transport routes	1,150,690	1,020,763	88.7%
4-1 Emergency transport routes	1,016,648	898,820	88.4%
4-2 Emergency transport ports	72,924	63,744	87.4%
4-3 Emergency transport fishing ports	61,118	58,199	95.2%
5 Telecommunications facilities	16,819	16,637	98.9%
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	456,315	432,314	94.7%
9 Tsunami countermeasures	300,638	251,964	83.8%
9-1 River management facilities	99,381	79,745	80.2%
9-2 Coastal preservation facilities	201,257	172,219	85.6%
10 Landslide prevention	615,613	560,620	91.1%
10-1 Erosion control facilities	123,888	110,695	89.4%
10-2 Security facilities	179,201	171,720	95.8%
10-3 Landslide facilities	93,050	86,384	92.8%
10-4 Steep slope facilities	187,922	168,646	89.7%
10-5 Ponds	31,552	23,175	73.4%
Total	3,138,011	2,816,371	89.8%

Notes:

1. The content of Earthquake Emergency Development Project Plans (FY1980-2024) is as of the end of FY2020.
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

Fig. A-35 Estimated Budgets of Five-Year Plans for Emergency Earthquake Disaster Management Project

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, health, 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 FY 2020. 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.		Planned Amt.		Actual Amt.		Planned Amt.		Actual Amt.		Planned Amt.		Actual Amt.		Planned Amt.		Actual Amt.					
	(a)	(b)	(b)/(a)	% Complete	(c)	(d)	(e)	(e)/(d)	(f)	(g)	(h)	(h)/(g)	% Complete	(i)	(j)	(k)	(k)/(j)	% Complete	(l)	(m)	(n)	(n)/(m)	% Complete	
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%	1,090	ha	286,744	222,144	77.5%
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%	601	km	832,907	613,192	73.6%
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%	18,421	locations	442,422	335,743	75.9%
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	24,167	19,265	79.0%
5. Emergency transport roads, etc.	6,067,258	5,719,897	94.3%		3,920	km	4,998,577	4,242,139	80.5%	2,552	km	3,813,169	3,291,461	86.3%	2,191	km	2,773,563	2,443,339	88.1%			2,744,914	2,689,146	98.0%
5-1. Emergency transport roads	5,555,626	5,355,365	96.4%		3,448	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%	2,189	km	2,627,436	2,601,846	99.0%
5-2. Emergency transport/traffic control facilities	23,900	21,017	87.9%		1	site	550	387	70.4%	2,439	facilities	9,242	6,844	74.0%	4,837	sites	15,464	12,214	79.0%	6,458	locations	21,854	13,750	62.9%
5-3. Emergency transport heliports	6,327	2,094	33.1%							0	sites	0	0		2	sites	117	78	66.7%	0	locations	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	locations	75,612	54,542	72.1%
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	locations	20,012	19,008	95.0%
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	274,331	261,466	95.3%
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%	75	facilities	243,765	239,519	98.3%
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%	254	facilities	46,324	28,821	62.2%
8-2. Public kindergartens	-	-	-	-	-	-	-	-	-	995	schools	35,198	7,074	20.1%	1,159	schools	54,480	27,203	49.9%	266	schools	24,385	12,367	50.7%
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%	1,233	schools	381,065	285,895	75.0%
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	5,293	3,957	74.8%
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%	743	facilities	272,033	194,526	71.5%
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%	812	locations	652,554	584,092	89.5%
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%	581	locations	359,579	325,025	90.4%
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	locations	292,975	259,067	88.4%
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%	9,130	locations	927,623	942,540	101.6%
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	locations	285,869	315,200	110.3%
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%	2,762	locations	173,877	178,676	102.8%
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%	718	locations	94,636	92,178	97.4%
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%	1,917	locations	195,522	201,909	103.3%
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%	1,879	locations	177,719	154,577	87.0%
14. Community DRR base facilities	162,319	102,857	63.4%		121	sites	81,642	40,342	49.4%	78	sites	60,905	34,777	56.3%	161	sites	90,683	68,591	75.6%	125	locations	106,287	82,116	77.3%
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%	9,134	locations	173,526	118,549	68.3%
16. Probable 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%	455	locations	125,379	97,965	78.1%
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%	458	locations	10,822	7,177	66.3%
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	sets	150	70	46.7%
19. Downstream areas with high density dilapidated housing	2,814,605	1,431,714	50.9%		6,960	ha	1,725,532	916,881	53.1%	7,839	ha	846,197	563,811	66.6%	12,156	ha	501,836	340,080	67.8%	12,685	ha	434,409	238,108	54.8%
20. Downstream areas with high density dilapidated housing	18,503,368	14,117,470	76.3%		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
																</								

Notes:

- The content of the Fifth Five-Year Plan (FY2016-2020) is as of the end of FY 2020.
- 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 terms of earthquake DRR.
- Public special education schools include schools known as schools for the blind, schools for the physically or mentally handicapped prior to FY 2006.

Source: Cabinet Office materials.

6. Disaster Management Facilities and Equipment

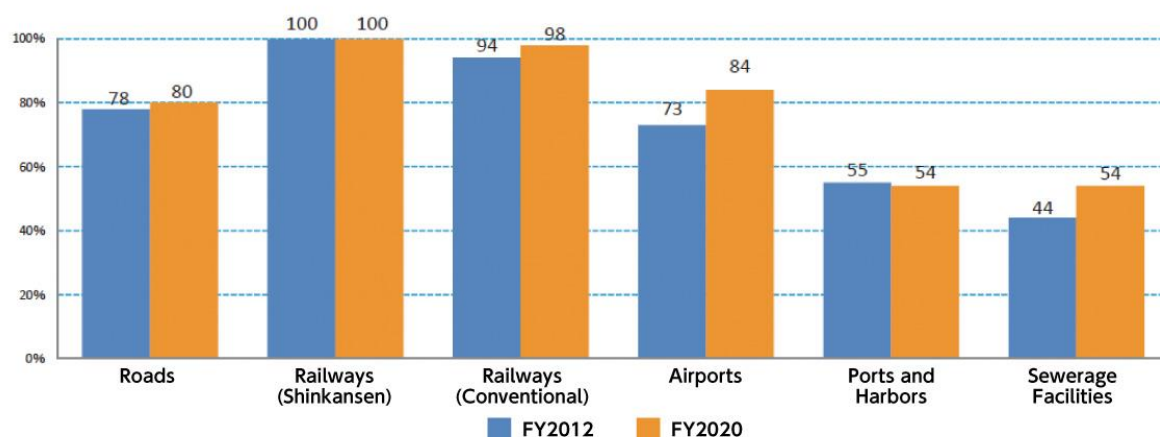
Fig. A-36 Number of Red Cross Hospitals, Emergency Medical Centers, and Disaster Base Hospitals

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	2	13	Nara	0	3	7
Yamagata	0	3	7	Wakayama	1	3	10
Fukushima	1	4	8	Tottori	1	2	4
Ibaraki	2	6	18	Shimane	2	4	10
Tochigi	3	5	11	Okayama	2	5	11
Gunma	2	4	18	Hiroshima	3	7	19
Saitama	3	9	23	Yamaguchi	2	5	15
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	14
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	24	37	Okinawa	1	3	13
Mie	1	4	17	Total	96	293	765

Source: Red Cross Hospital information was formulated by the Cabinet Office based on the website of the Japanese Red Cross Society (as of March 2022).

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 2022).

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 FY2020)

Railway (Shinkansen): Elevated bridges. (Left: As of end of FY2013. Right: As of end of FY2020.)

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 FY2020.)

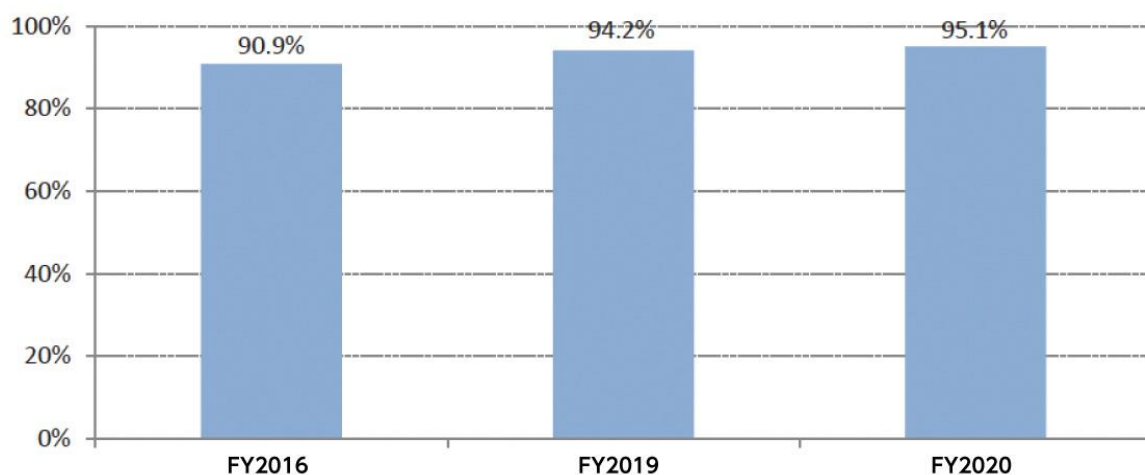
Airports: Percentage of population in a 100 km area around an airport that could be used for emergency transport.

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 FY2020.)

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 FY2020.)

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



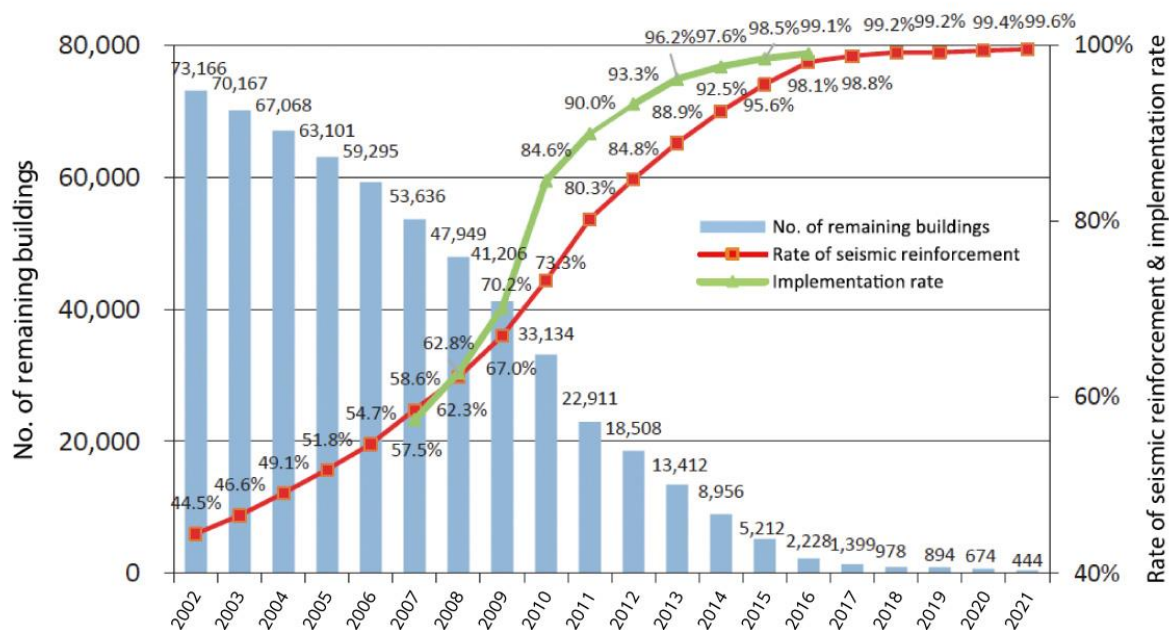
Note) Of all the public facilities owned or managed by local governments (buildings for public or public-private use: non-wooden structures built two stories or taller or buildings with a floor area of 200 m² or more), the facilities that could serve as disaster management bases for implementing disaster 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 (October 2021)

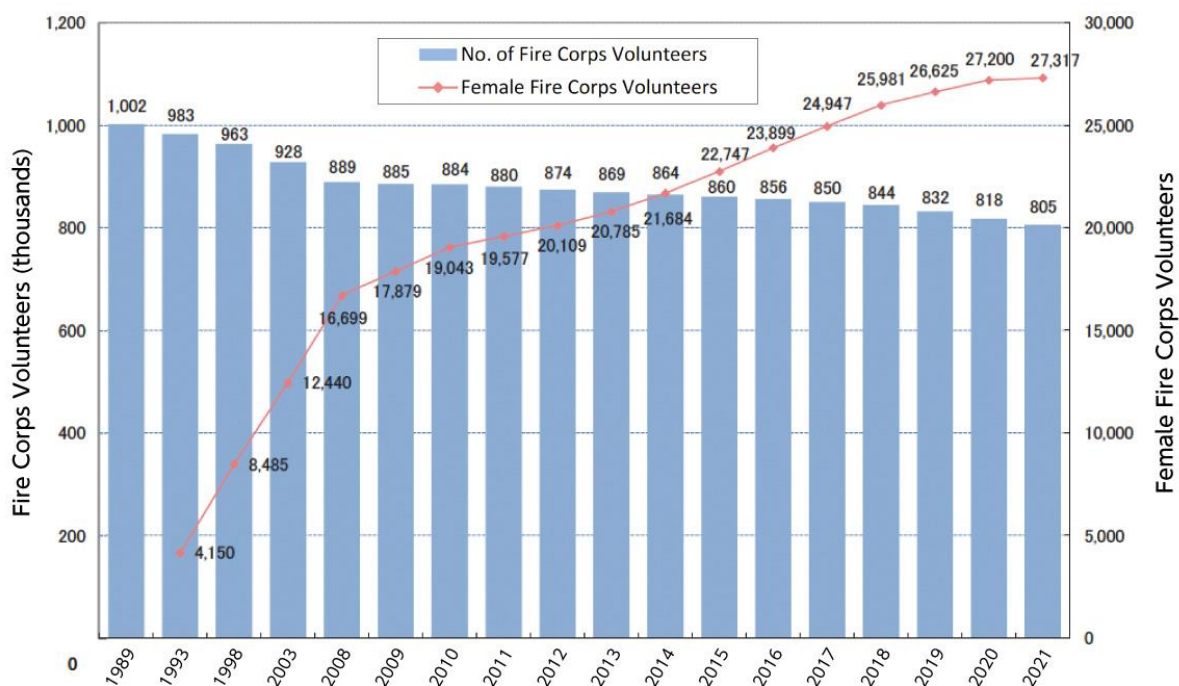
Fig. A-39 Seismic Reinforcement of Public Elementary and Junior High Schools



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 2021)

7. Trends in Numbers of Workers in Disaster Management

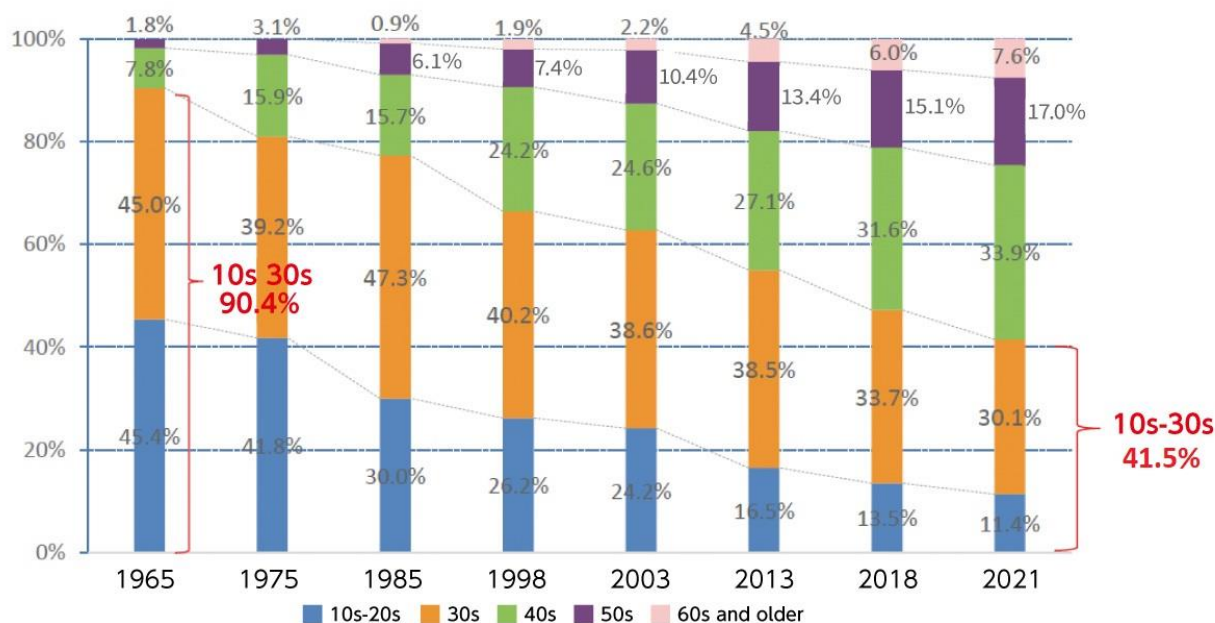
Fig. A-40 Numbers of Fire Corps Volunteers



Note: As a result of the Great East Japan Earthquake, the figure for 2012 for Onagawa Town, Meshika Country, Miyagi prefecture is the figure from 2010 (as of April 1, 2010)

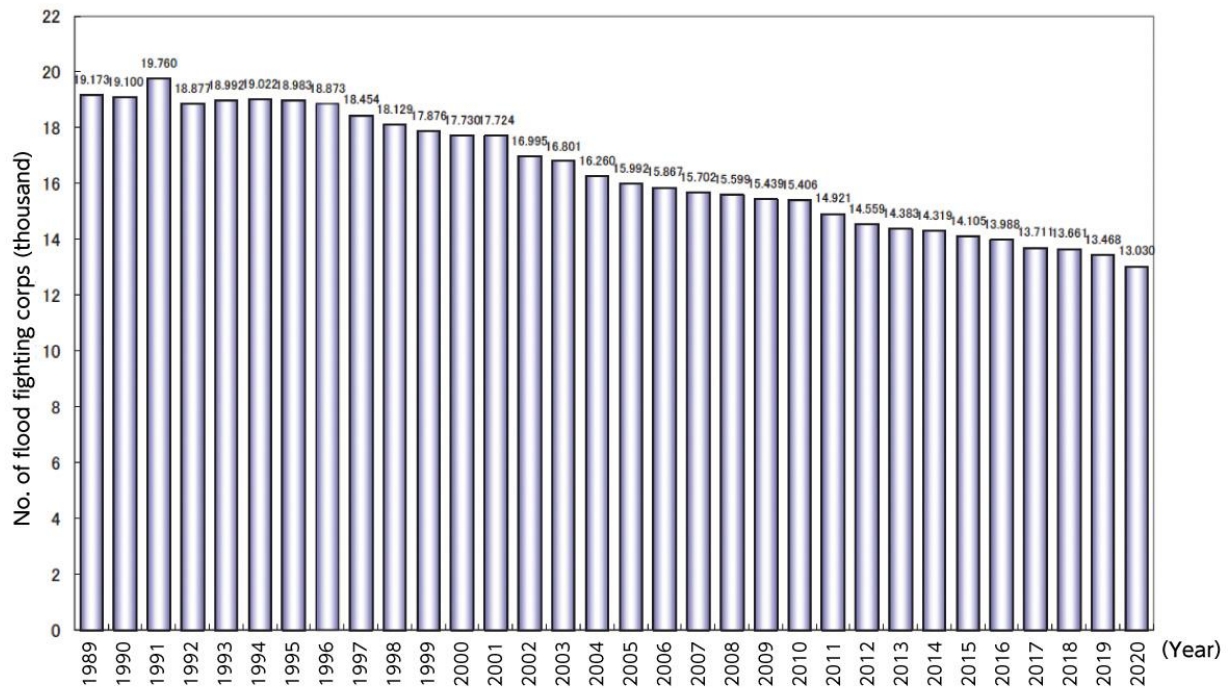
Source: Formulated by the Cabinet Office based on the Survey on the Current Status of Fire and Earthquake Disaster Management Measures of Fire and Disaster Management Agency

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 Fire and Disaster Management Agency

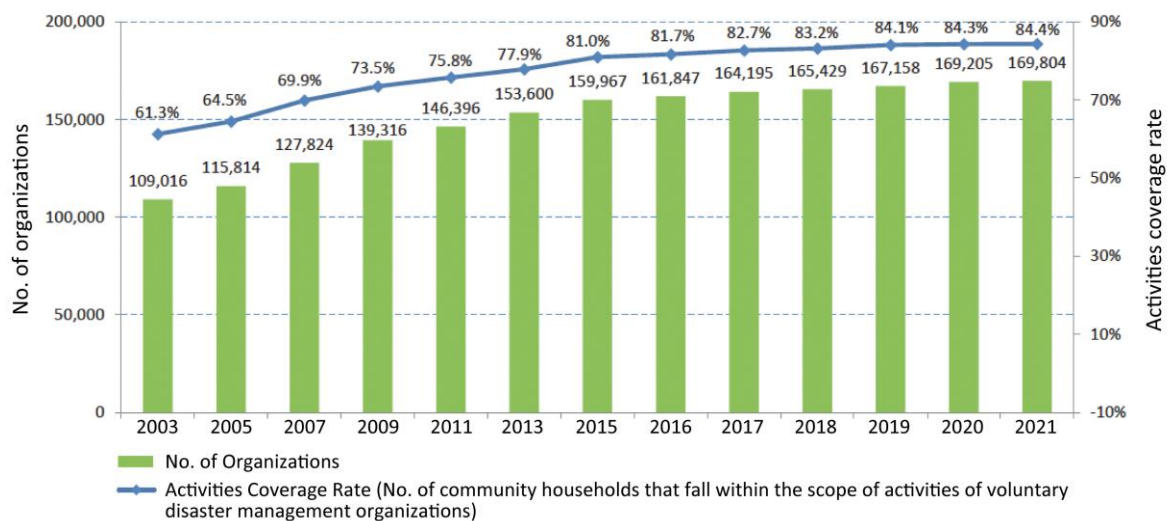
Fig. A-42 Numbers of Flood Fighting Corps Personnel



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 Fire and Disaster Management Agency. Figures as of April 1 each year.

Fig. A-44 Female Representation in Local Disaster Management Councils (by Prefecture, 2021)

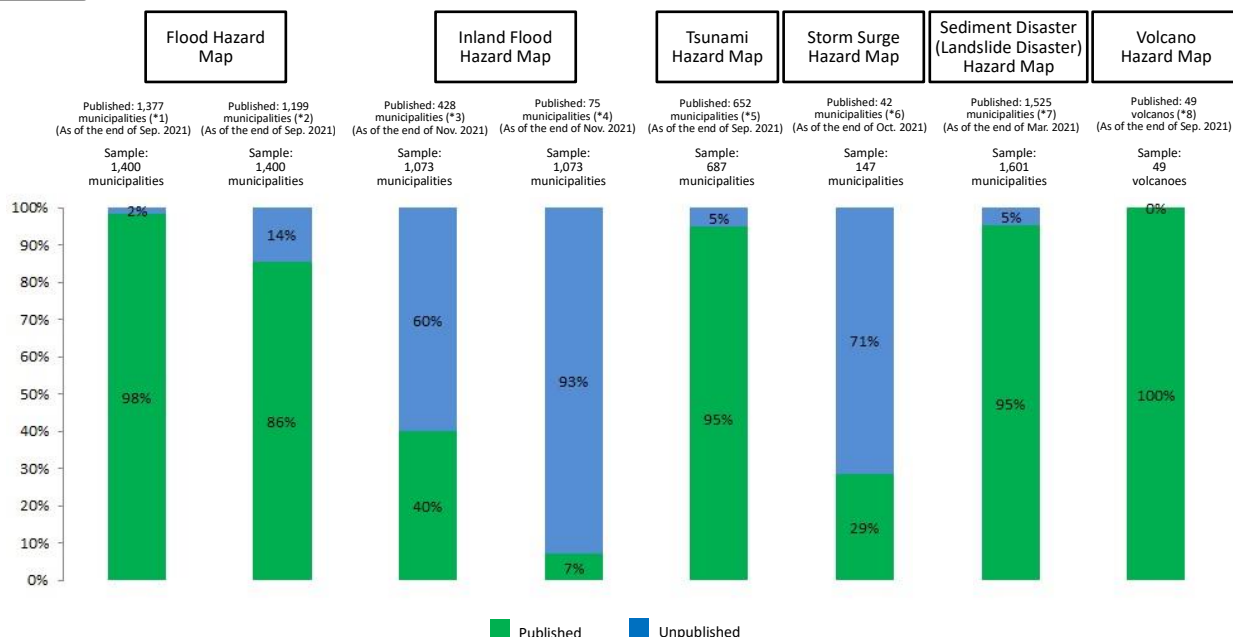
	Prefectural Disaster Management Council			Municipal Disaster Management Council		
	Total Members	Of which, Female Members	Proportion of Women (%)	Total Members	Of which, Female Members	Proportion of Women (%)
Hokkaido	68	4	5.9	3,901	145	3.7
Aomori	60	11	18.3	753	42	5.6
Iwate	77	13	16.9	1,159	123	10.6
Miyagi	59	7	11.9	832	68	8.2
Akita	61	4	6.6	723	75	10.4
Yamagata	60	6	10.0	1,003	74	7.4
Fukushima	54	10	18.5	1,186	63	5.3
Ibaraki	52	14	26.9	1,291	127	9.8
Tochigi	56	10	17.9	745	68	9.1
Gunma	48	7	14.6	1,010	100	9.9
Saitama	73	11	15.1	2,016	246	12.2
Chiba	52	10	19.2	1,493	186	12.5
Tokyo	74	8	10.8	2,229	296	13.3
Kanagawa	57	7	12.3	955	107	11.2
Niigata	77	14	18.2	874	58	6.6
Toyama	67	12	17.9	530	36	6.8
Ishikawa	70	5	7.1	452	34	7.5
Fukui	56	7	12.5	429	40	9.3
Yamanashi	64	3	4.7	569	55	9.7
Nagano	80	15	18.8	1,896	147	7.8
Gifu	61	12	19.7	955	80	8.4
Shizuoka	60	4	6.7	1,052	90	8.6
Aichi	69	4	5.8	1,518	153	10.1
Mie	64	8	12.5	863	87	10.1
Shiga	62	16	25.8	494	48	9.7
Kyoto	66	14	21.2	747	84	11.2
Osaka	61	7	11.5	1,418	164	11.6
Hyogo	56	7	12.5	1,297	137	10.6
Nara	60	6	10.0	842	68	8.1
Wakayama	55	7	12.7	564	38	6.7
Tottori	67	27	40.3	368	51	13.9
Shimane	72	29	40.3	570	54	9.5
Okayama	59	8	13.6	514	85	16.5
Hiroshima	59	3	5.1	827	65	7.9
Yamaguchi	60	7	11.7	624	77	12.3
Tokushima	81	39	48.1	585	51	8.7
Kagawa	60	9	15.0	425	52	12.2
Ehime	60	7	11.7	508	37	7.3
Kochi	59	6	10.2	781	85	10.9
Fukuoka	61	6	9.8	1,293	220	17.0
Saga	70	19	27.1	356	66	18.5
Nagasaki	68	11	16.2	689	53	7.7
Kumamoto	57	8	14.0	1,663	121	7.3
Oita	59	5	8.5	518	42	8.1
Miyazaki	55	7	12.7	757	60	7.9
Kagoshima	63	10	15.9	1,129	59	5.2
Okinawa	55	10	18.2	463	38	8.2
Total	2,944	474	16.1	45,866	4,255	9.3

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” (FY2021)
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.

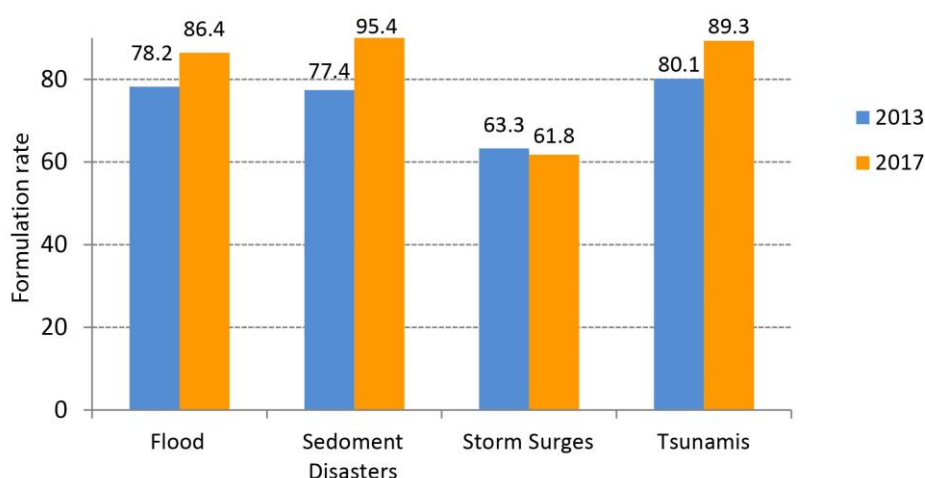
*5 Municipalities located in coastal areas or the tsunami hazard areas under Article 8 of the Act on Regional Development for Tsunami Disaster Prevention, which have already published a tsunami hazard map.

*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 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%
2021	1,229 71%	1,483 85%	129 7%	1,647 95%	1,247 72%	166 10%	1,119 64%	1,240 71%	1,284 74%	1,089 63%

Source: Formulated by the Cabinet Office based on 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 and Contract 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
2021	91	7	393	46	476	42	1,971	47	660	47	3,756	47	2,099	47	3,384	47

Source: Formulated by Cabinet Office based on 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%
2021	1,741	—	1,704 98%

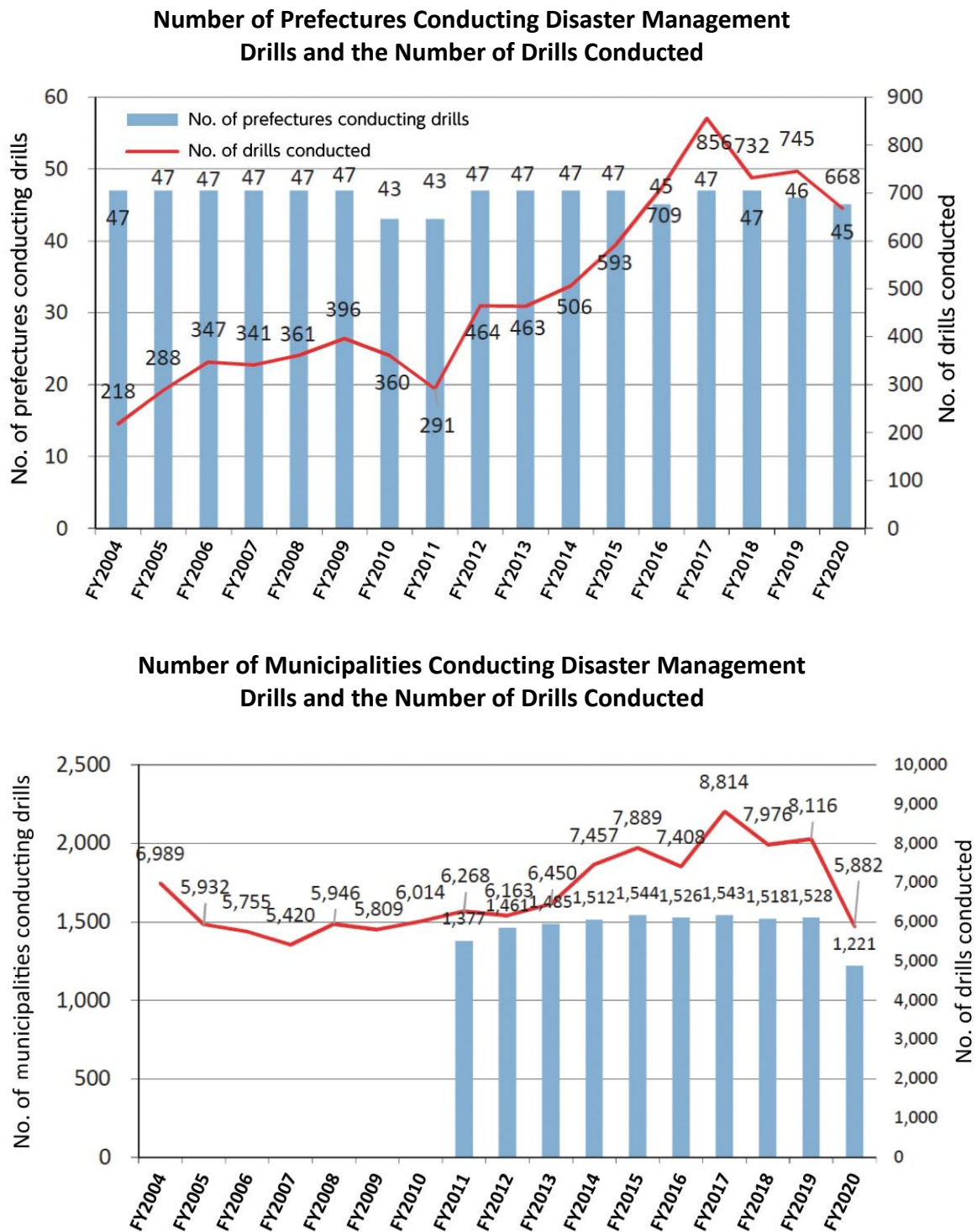
Source: Formulated by Cabinet Office based on Fire and Disaster Management Agency report “Status of Regional Disaster Management Administration”

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
2021	829	132	197		1,057	156	1045	11	1,531	185	1,601	53	889	12

Source: Formulated by Cabinet Office based on Fire and Disaster Management Agency report "Status of Regional Disaster Management Administration"

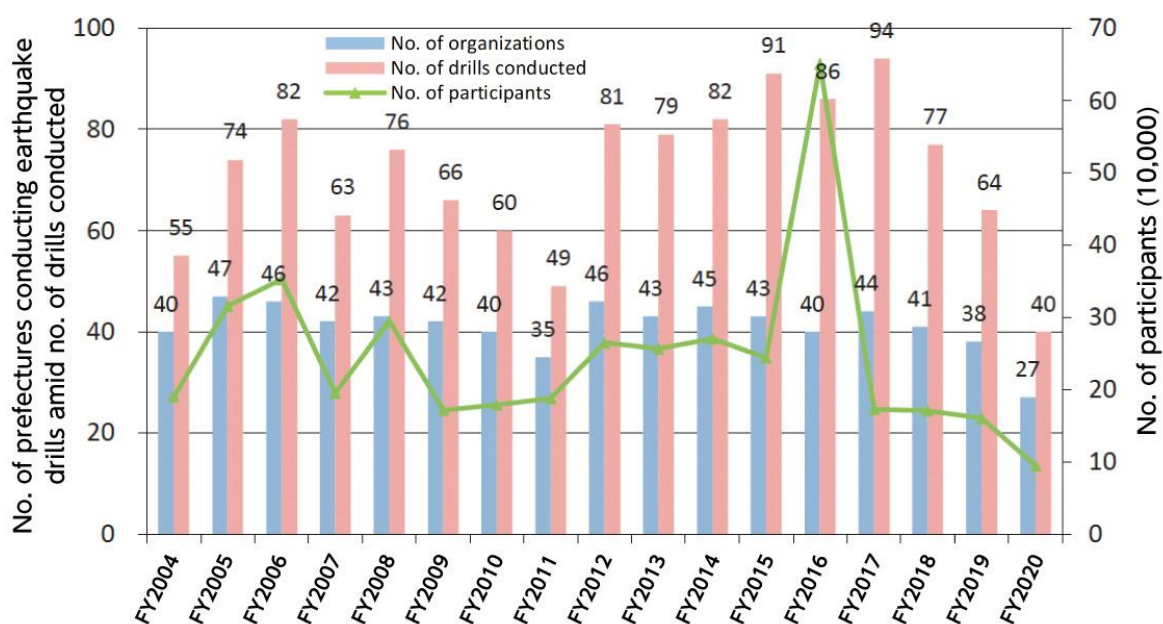
Fig. A-51 Disaster Management Drill Implementation



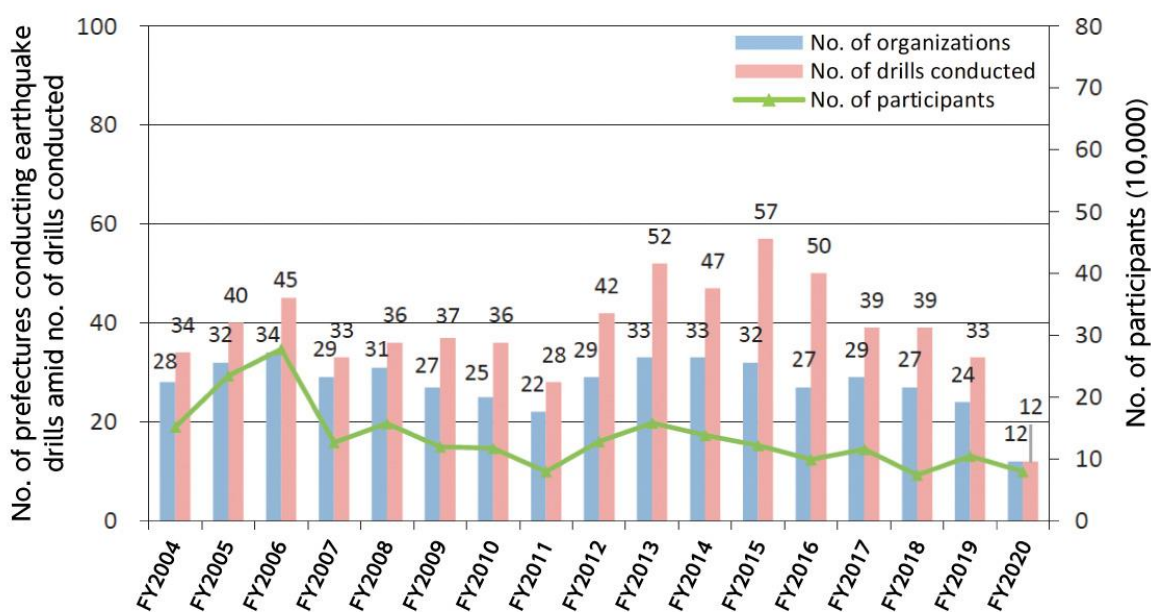
Source: Formulated by Cabinet Office based on Fire and Disaster Management Agency report “Status of Regional Disaster Management Administration”

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 Wide-area Drills)



Source: Formulated by Cabinet Office based on 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 Cabinet Office based on 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 FY2021 (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
	Cooperation for Disaster Management with ASEAN	Member states and the Secretariat of ASEAN	On October 14, 2021, the first ASEAN-Japan Ministerial Meeting on Disaster Management was held via videoconference by Japan and 10 ASEAN member states. Minister of State for Disaster Management, Ninoyu acted as a co-chairperson. After they discussed how Japan and ASEAN could cooperate in the disaster management field, they agreed on a policy for the future and adopted a joint statement.	—	International Cooperation Division, Disaster Management Bureau, the Cabinet Office
	International Cooperation through Asian Disaster Reduction Center (ADRC)	ADRC member countries, etc.	ADRC coporates mainly with its member countries to share disaster information, develop human resources, and improve the community's disaster management abilities. Also, they have held the "Asian Conference on Disaster Reduction" annually since 2003 to improve disaster management abilities in Asian countries as well as improve and strengthen the disaster management network in Asia.	102	International Cooperation Division, Disaster Management Bureau, the Cabinet Office
	Japan International Public-Private Association for Disaster Risk Reduction (JIPAD) for Global Expansion of the Disaster Management Technologies	Related countries	In August 2019, JIPAD was established to encourage the global expansion of Japanese technologies for disaster management with collaboration between public and private sectors and take the lead in improving disaster management abilities all over the world. As of January 15, 2022, the number of participating companies and organizations hit 205. They introduce Japanese policies, and the Japanese private sector's technologies and knowledge on disaster management integrally through the "Public-Private Sectors Disaster Management Seminar."	30	International Cooperation Division, Disaster Management Bureau, the Cabinet Office
Ministry of Internal Affairs and Communications (MIC)	Technical Survey on the Introduction and Dissemination of Digital Terrestrial Television Broadcasting Systems in Latin America	Peru, Nicaragua, Costa Rica, El Salvador, etc.	Japan conducted research, demonstrate, and cooperate in introducing and operating the disaster management system (Emergency Warning Broadcast System, EWBS), which is one of the characteristics of the Integrated Services Digital Broadcasting - Terrestrial (ISDB-T) in countries that adopted ISDB-T.	38	International Economic Affairs Division, Global Strategy Bureau
Fire and Disaster Management Agency (FDMA)	Cooperation between the Fire and Disaster Management Agency and the Ministry of Public Safety of Vietnam in the field of fire and disaster management	Vietnam	Based on the memorandum of cooperation in the fire service field signed in October 2018, exchange of views is conducted with relevant agencies of Vietnam. We cooperate with them to improve fire safety in the country, including the establishment of a standard and verification system for fire safety equipments, etc.	—	Fire and Disaster Management Agency Prevention Division
	International Forum on Fire and Disaster Management	Mainly Asian countries	The International Forum on Fire and Disaster Management has been held since 2007 to enhance their firefighting and disaster management capacity in Asian countries through sharing Japan's firefighting technologies and systems with them.	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

Ministry/ Agency	Project	Partner/ Target Country (Target Institution)	Description	Budget for FY2021 (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 FY2021, 30 projects have been implemented in 21 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 95, 38	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 FY2021, we provided assistance to 12 countries (total of 13 projects) such as provision of oxygen concentrators for the rapid spread of the novel coronavirus infection in India. *As of March 31, 2022	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 the event of a large-scale disaster overseas, MOFA dispatches Japan Disaster Relief (JDR) teams, upon request of the government of the affected country. In FY2021, the Japan Disaster Relief team and the Self Defense Force Units were dispatched to the Kingdom of Tonga to assist with response to volcanic eruptions and tsunami damage. We transported emergency relief supplies to Tonga via the Self Defense Force aircrafts and transport ships. Additionally, we supplied water (seawater desalination). *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)	Science and Technology Research Partnership for Sustainable Development (SATREPS)	128 countries among the objects of ODA (Public offering in FY2022)	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 FY2021, 30 projects have been implemented in 21 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
	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 2022).	Included in JAXA Management Expenses Grant	Office for Space Utilization Promotion, Space Development and Utilization Division, Research and Development 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.	86	International Forestry Cooperation Office, Forestry Agency

Ministry/ Agency	Project	Partner/ Target Country (Target Institution)	Description	Budget for FY2021 (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, Thailand, Philippines and India	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.	53	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
	Discussion on Disaster Management Technologies through a Bilateral Conference with India	The Indian Ministry of Road Transport and Highways	The seventh Japan-India Joint Working Group on Roads and Road Transport was held online. Japan introduced cases of slope protection in Japan and discussed them with India.	—	International Affairs Office, Planning Division, Road Bureau, Ministry of Land, Infrastructure, Transport and Tourism
	International Cooperation through United Nations Committee of Experts on Global Geospatial Information Management (UN-GGIM)	All relevant countries	Promoting the use of technologies in the field of geospatial information to share disaster and disaster risk information as Co-Chair of Working Group on Geospatial Information and Services for Disasters (WG-Disasters) at the United Nations Committee of Experts on Global Geospatial Information Management (UN-GGIM).	—	International Affairs Division, Planning Department, Geospatial Information Authority of Japan, MLIT
	The United States-Japan Cooperative Program in Natural Resources (UJNR) / Panel on Earthquake Research	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 U.S. in 2022 (the event will be held every two years in Japan and the U.S. alternately).	—	Research Planning 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 29, 2021, the award was presented to 2 people and 1 organization: Hideo Matsutomi, Professor Emeritus of Akita University and Visiting Professor of Research and Development Initiative, Chuo University, Dr. Gerassimos A. Papadopoulos, President of the International Society for the Prevention and Mitigation of Natural Hazards (Greece), and the Pacific Tsunami Museum (US).	—	Port and Airport Research Institute, National Institute of Maritime, Port and Aviation Technology
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
Japan Meteorological Agency (JMA)	International Cooperation through World Meteorological Organization (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 United Nations Educational, Scientific and Cultural Organization (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 FY2021 (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
Ministry of Environment (MOE)	Promotion of Assessment of Climate Change Impact and Plan Formulation with International Cooperation	Mainly the Asia Pacific region	Promote international cooperation in climate change adaptation by offering information on climate change risks through developing coastal inundation hazard predictions, providing its information and operating the Asia-Pacific Climate Change Adaptation Information Platform (AP-Plat).	288	Climate Change Adaptation Office, Policy and Coordination Division Global Environment Bureau
Ministry of Defense (MOD)	Japan-Philippines Bilateral Training on Humanitarian Assistance and Disaster Relief	Philippines	Japan and the Philippines conducted a bilateral training on humanitarian assistance and disaster relief activities.		Training Division, Defense Policy Bureau, Ministry of Defense
	Multinational Training Exercise Cobra Gold 2021	Thailand, the United States, Indonesia, Malaysia, Singapore, South Korea, China, India and Australia	The United States and Thailand sponsored the multinational training exercise. Japan participated in tabletop exercises assuming humanitarian assistance and disaster relief with the referenced countries.		Training Division, Defense Policy Bureau, Ministry of Defense
	U.S.-Philippines Sponsored Multinational Training Exercise (Exercise SAMA SAMA 2021)	The United States and Philippines	The United States and Philippines sponsored the multinational training exercise, which is a video teleconference for a discussion on humanitarian assistance and disaster relief among experts.		Training Division, of Defense Policy Bureau, Ministry of Defense
	Participation in U.S.-Philippines Multinational Training Exercise (Kamandag 2021)	Philippines	The United States and Philippines sponsored the multinational training exercise, including a training exercise on humanitarian assistance and disaster relief activities. (The United States was absent from it this year.)		Training Division, Defense Policy Bureau, Ministry of Defense
	Multinational Training Exercise on Humanitarian Assistance and Disaster Relief in the Federated States of Micronesia and Other Pacific Islands (Operation Christmas Drop)	The United States, etc.	The United States and other participating countries conducted a multinational training exercise on humanitarian assistance and disaster relief activities.		Training Division, Bureau, Ministry of Defense
	Multinational Training Exercise Cobra Gold 2022	Thailand, the United States, Indonesia, Malaysia, Singapore, South Korea, China, India and Australia	The United States and Thailand sponsored the multinational training exercise. Japan participated in tabletop exercises assuming humanitarian assistance and disaster relief with the referenced countries.		Training Division, Defense Policy Bureau, Ministry of Defense
	Joint Training for Humanitarian Assistance and Disaster Relief at Cope North 2022	The United States, Australia, India, France and Singapore	It is a joint training conducted by Japan, the U.S., Australia, India, France and Singapore, for humanitarian assistance and disaster relief activities.		Training Division, Defense Policy Bureau, Ministry of Defense

Source: Formulated by the Cabinet Office based on materials from various ministries and agencies.

Fig. A-55 Technical Cooperation Projects in Disaster Risk Reduction (FY2021)

Country	Cooperation Period	Project Name	Description
Indonesia	2022-2026	Project for Flood Control Master Plan toward Disaster Risk Reduction Investment	This project will develop a master plan and implementation system through the establishment of Flood Control Master Plan in pilot watersheds. Through this effort, we aim to strengthen the institutional capacity of the Ministry of Public Works and Housing (PUPR) in developing and implementing the Flood Control Master Plan. Further, this effort will contribute to the pre-investment in disaster risk reduction of the flood control sector.
Indonesia	2022-2027	New Sustainability System for Building a Coastal Resilient Society (Science and Technology Cooperation)	This project aims to realize the coastal areas where disaster prevention, environment and economy will be in harmony in the next 5 to 10 years by means of (1) improving coastal defense functions based on the latest scientific evidence from monitoring, modeling and green infrastructure and establishing social implementation methods, and (2) organizing monitoring networks using the latest technologies and transferring analytic technologies.
Indonesia	2021-2024	Earthquake and Tsunami Observation and Communication Capacity Improvement Project	This project aims to establish a system for BMKG (Meteorological, Climatological, and Geophysical Agency, Indonesia) to communicate earthquake information and tsunami warnings more accurately and appropriately with disaster risk reduction agencies and residents, and thereby, contributes to the promotion of their disaster prevention activities, which will be brought by strengthening BMKG's capability of observing earthquakes and tsunamis, and disseminating information.
Philippines	2017-2022	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.
Philippines	2019-2024	Disaster Risk Reduction and Management Capacity Enhancement Project Phase 2	This project will support local jurisdictions (regions) and municipalities (provinces, cities and towns) to develop, implement and monitor disaster risk reduction measures to reduce human and economic losses from natural disasters. This will be done based on technical support from the national emergency preparedness system.
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	2018-2023	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.
Vietnam	2021-2024	Project of Strengthening the capacity to cope with and minimize damages caused by flash floods and landslides for the northern mountainous regions	This project intends to strengthen the organizational structure and the capacity to advance sediment disaster (landslide disaster) countermeasures through the demonstration of the effectiveness of measures proposed in the sediment disaster (landslide disaster) risk reduction plan, and thereby, contributes to sediment disaster (landslide disaster) risk reduction in 14 northern mountainous provinces. This will be established by the development of methodology for sediment disaster (landslide disaster) hazard and risk assessment, using scientific data in target provinces in the northern mountainous regions of Vietnam, by the arrangement of prioritized countermeasure works in pilot watersheds, and by the pilot operations for structural and non-structural countermeasures.
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.
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.

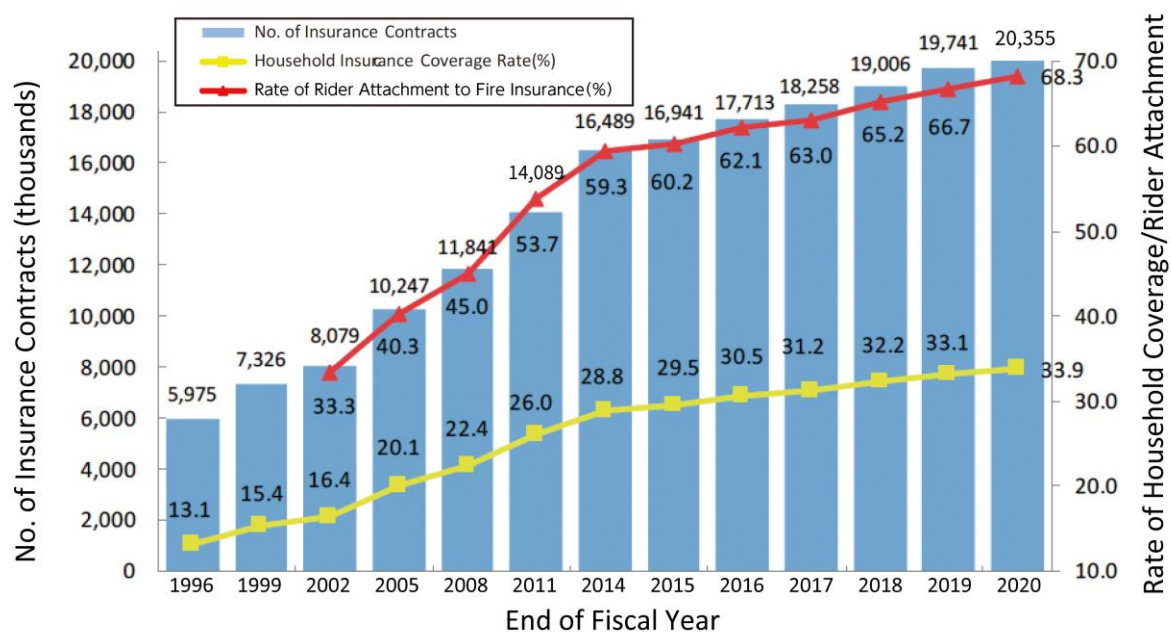
Country	Cooperation Period	Project Name	Description
Bangladesh	2020-2024	Project for Strengthening Abilities to Formulate and Conduct Local Disaster Plans	The project provides support to formulate local disaster management plans for weather-related disasters in two Upazilas of Cox's Bazar, Shunamganj 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.
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.
Nepal	2016-2021	The project for Integrated Resear Townn 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.
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.
India	2022-2024	Chennai Urban River Basin Comprehensive Flood Control Master Plan Development Project	This project aims to contribute to reducing flood risk by creating a comprehensive flood control master plan which optimally and systematically combines flood control measures based on the findings of the complex factors and mechanisms of diverse and complex types of floods.
Pakistan	2016-2022	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.
Pakistan	2022-2025	Technical Assistance Project for Updating the National Disaster Management Plan	This project will contribute to the promotion of pre-investment in disaster risk reduction by reinforcing the disaster management planning process in Pakistan. Further, this will be made possible by conducting disaster risk analysis, preparing technical review documents for updating the National Disaster Management Plan, reviewing drafts of pre-investment plan related to disaster management in the flood sector and coordinating with relevant agencies.
Sri Lanka	2018-2022	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	2021-2024	The Project for early warning technology of rain induced rapid and long traveling landslide	This project aims to contribute to improving the capacity of the early warning system of RRLL in Sri Lanka by utilizing its technology. This will be done by developing evaluation methods of the RRLL occurrence and flow process on the Sri Lankan pilot sites, and strengthening risk communication methods and procedures. And these technologies combine to form the technology of the early warning system of RRLL.
Sri Lanka	2020-2024	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.
Maldives	2021-2025	Development of Climate Resilient and Safe Island Project	This project aims to improve the resilience and safety of the nation against climate change by establishing a system to promote coastal protection and conservation measures that take into account the effects of climate change. Also it is known as a Component (JICA's Co-finance project) of "Building Climate Resilient Safer Islands in the Maldives" which is contracted business of Green Climate Fund (hereinafter called "GCF").
Turkmenistan	2017-2022	The Project for Improvement of the Earthquake Monitoring System in and around Ashgabat City	This project will contribute to the implementation of earthquake risk assessment through the application of the resulting data from observation of earthquakes and earthquake hazard assessment along with the formulation of the Earthquake Disaster Management Plan. For these purposes, the improvement of the ability to observe earthquakes and assess earthquake hazards will be conducted in and around Ashgabat City by the development of seismic and strong-motion observation systems, the rapid determination of seismic intensity, epicenter and magnitude of the earthquake, and the establishment of a system to estimate the seismic intensity in the pilot areas.
Armenia	2019-2022	The Project for the Improvement of Crisis Communication and Public Awareness for Disaster Risk Reduction	This project will reinforce crisis communication in the Ministry of Emergency Situations of Armenia and the national media so that they are able to ensure timely and accurate delivery of emergency information. This will be conducted through the organization of standard operating procedures, the implementation of training based on these procedures, and the development of training materials and plans for crisis communication.
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	2018-2023	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.

Country	Cooperation Period	Project Name	Description
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	2018-2023	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.
Colombia	2015-2022	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	2021-2025	The Project for the Capacity Improvement of the Sediment Disaster (Landslide Disaster) Risk Reduction	This project will improve the capacity of the IIGE (Instituto de Investigación Geológica y Energética) and the Quito City Hall to approach sediment disaster (landslide disaster), and thereby contribute to the implementation of countermeasures based on hazard analysis and risk assessment in sediment disaster (landslide disaster) hazard areas in Ecuador. This will be achieved by improving sediment disaster (landslide disaster) investigation and analysis abilities, enhancing risk assessment and hazard mapping capabilities, reinforcing early warning and evacuation systems and utilizing risk assessment in land use regulations/development standards.
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).
Chile	2018-2021	Institutional Strengthening of ONEMI in Disaster Risk Reduction Project	Under the Sendai Framework for Disaster Risk Reduction, this project aims to contribute to promotion of disaster prevention measures taken by ONEMI (Chile's national disaster control institution) by improving capabilities and developing disaster-prevention human resources required for the promotion of disaster prevention and reduction measures, development of a disaster knowledge management system, and formulation of regional disaster management plans.
Chile	2021-2022	Project on Improving Infection Prevention Measures during Disasters under the COVID-19	This project aims to improve the ability to manage shelters during disasters, including situations of the spread of infectious diseases, and thereby contributes to strengthen disaster response capacity of the metropolitan area through ONEMI. This will be possible by providing equipment to control infectious diseases to ONEMI and pilot cities in the metropolitan area of Santiago, Chile.
El Salvador	2021-2025	Project to Improve the Ability for Seismic Evaluation and Retrofitting Buildings in the Metropolitan Area	This project will promote appropriate seismic diagnosis, earthquake-proof retrofit design and construction of public buildings in the Metropolitan Area of San Salvador (AMSS), and thereby contributes to the resilience of urban functions through the promotion of seismic retrofitting of public buildings inside and outside of the AMSS. This will be done through the improvement of administrative and technical abilities for diagnosis, design and construction management related to earthquake resistance in the AMSS.
Peru	2021-2026	The Project for development of integrated expert system for estimation and observation of damage level of infrastructure in Lima Metropolitan Area Just after an Earthquake (Science and Technology Cooperation)	This project aims to contribute to improving Peru's capacity of disaster response to earthquakes and tsunamis (reduction of secondary damage and expedition of recovery and reconstruction). This will be done by the improvement of estimation of damages and the establishment of immediate damage assessment system for buildings and lifelines at the time of earthquakes and tsunamis, thereby building an expert system that integrates those pieces of information and developing human resources to utilize this system in the metropolitan area of Lima, Peru.
Brazil	2021-2026	Capacity Development Project for Structural Measures against Sediment Disaster for Resilient Cities	This project will improve the ability for the Ministry of Regional Development to design and supervise the construction and maintenance of debris flow control structures, thereby contributing to the expansion of debris flow management projects in Brazil. This will be conducted by developing technical guidelines for the characteristics, design, construction management and maintenance of debris flow control structures, and formulating tools and plans to utilize and disseminate them in Brazil.
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.

Source: Japan International Cooperation Agency (JICA)

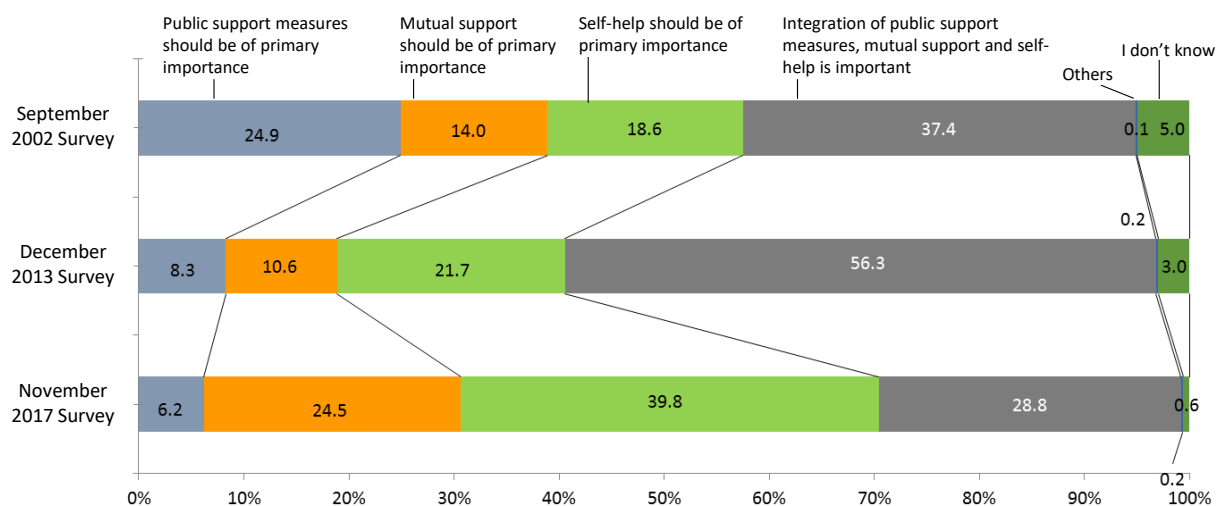
10. Others

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	Extremely limited. Hardly ever.
A few/little	Number/extent is extremely small. Just a little bit.
Majority	Half or more. Less than “almost all.”
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 buildings. Earthquake resistance tends to be low for structures built up to 1981, and high for those built since 1982. However, earthquake resistance may have a range and depends on structure of buildings and wall placement, resistance is not necessarily determined only by building age. The earthquake resistance of existing buildings can be ascertained through quakeproof 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

Criteria for Meteorological Emergency Warnings		
Phenomenon	Criteria	
Heavy rain	Heavy rainfall with a level of intensity observed only once every few decades is predicted in association with a typhoon or similar.	
Storm	A storm 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.
Storm surge	A storm surge is predicted...	
High waves	High waves are predicted...	
Snowstorm	A snowstorm is predicted in association with an extratropical cyclone expected to have a level of intensity observed only once every few decades.	
Heavy snow	Heavy snowfall with a level of intensity observed only once every few decades is predicted.	

■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

Alert Level 1
Increase preparedness <small>(announced by the Japan Meteorological Agency)</small>

Alert Level 2
Confirm evacuation actions <small>(announced by the Japan Meteorological Agency)</small>

Alert Level 3
Evacuation of Elderly from dangerous areas! <small>(Issued by municipality)</small>

Alert Level 4
Evacuate all from dangerous areas! <small>(Issued by municipality)</small>

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
GSI	Geospatial Information Authority of Japan
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
SMSG	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