APPENDIX

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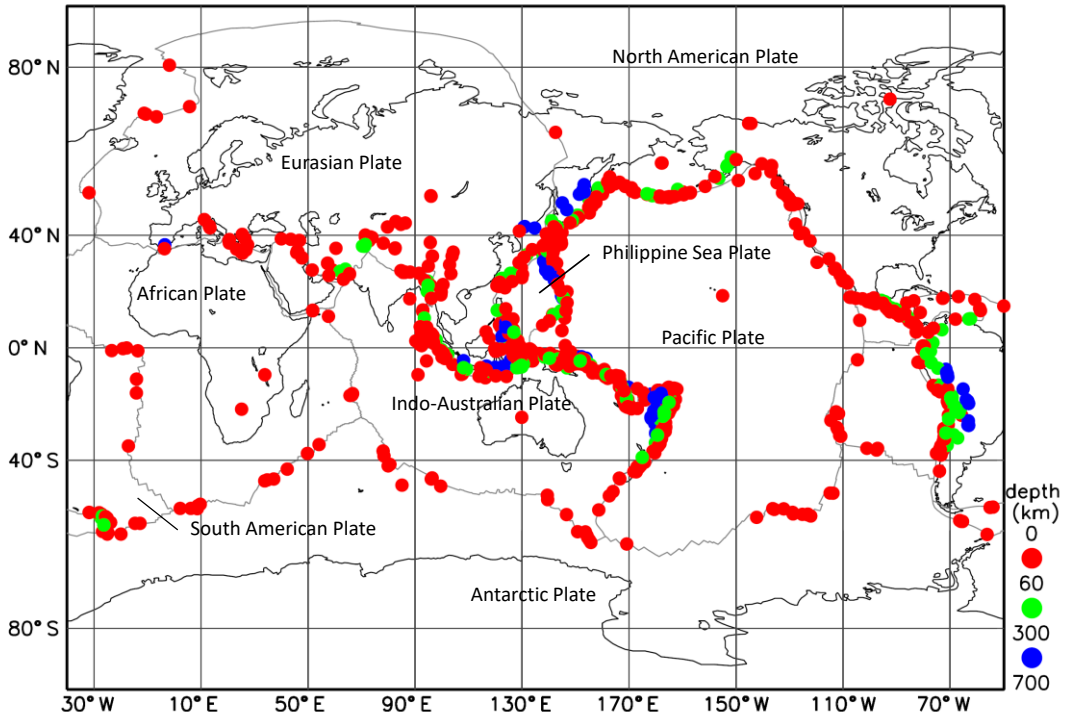
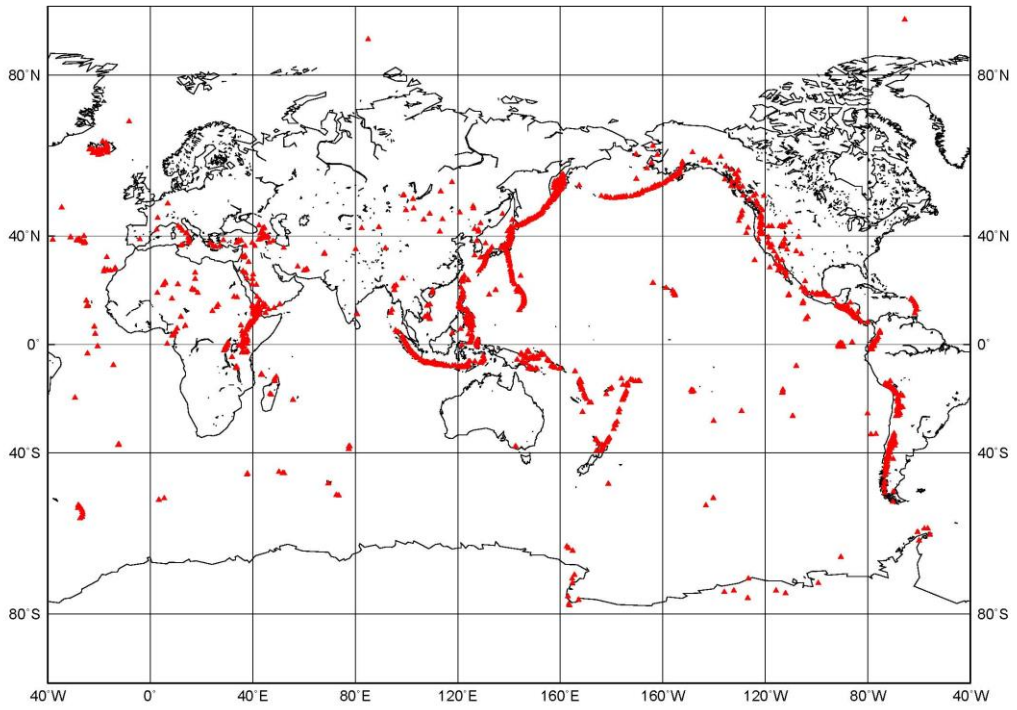
1. Overview of Japan's National Land

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



Note: 2011–2020
Source: Formulated by the Japan Meteorological Agency based on earthquake data from the U.S. Geological Survey

Fig. A-2 Distribution of Volcanoes Worldwide

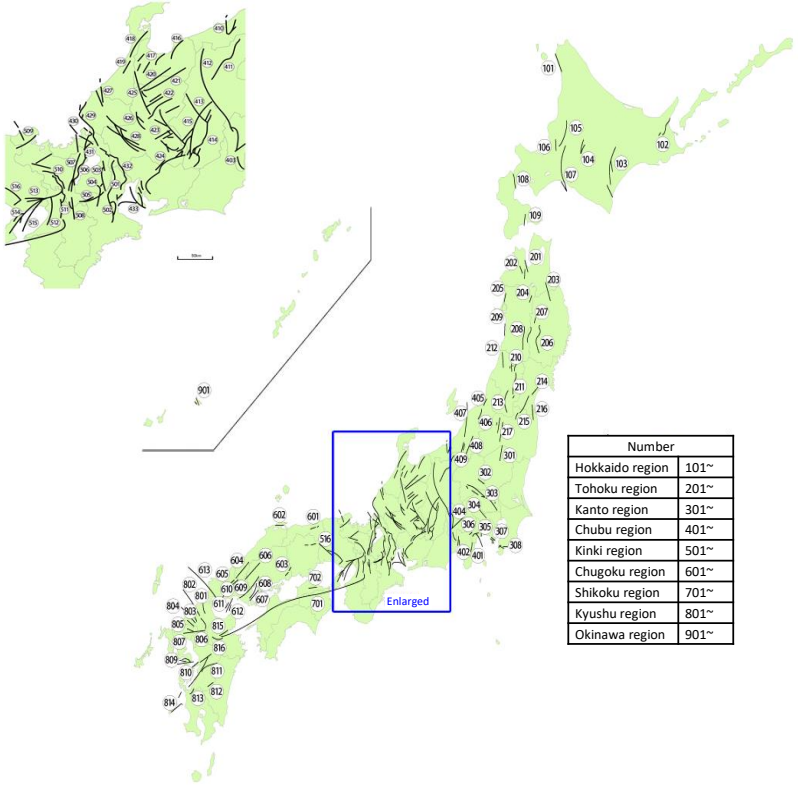


Note: Volcanoes are those which were active in the past 10,000 years.
Source: Prepared by the Japan Meteorological Agency based on volcanic data from the Global Volcanism Program of the Smithsonian National Museum of Natural History (USA).

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

Subduction Zone Earthquake Areas

Major Active Faults



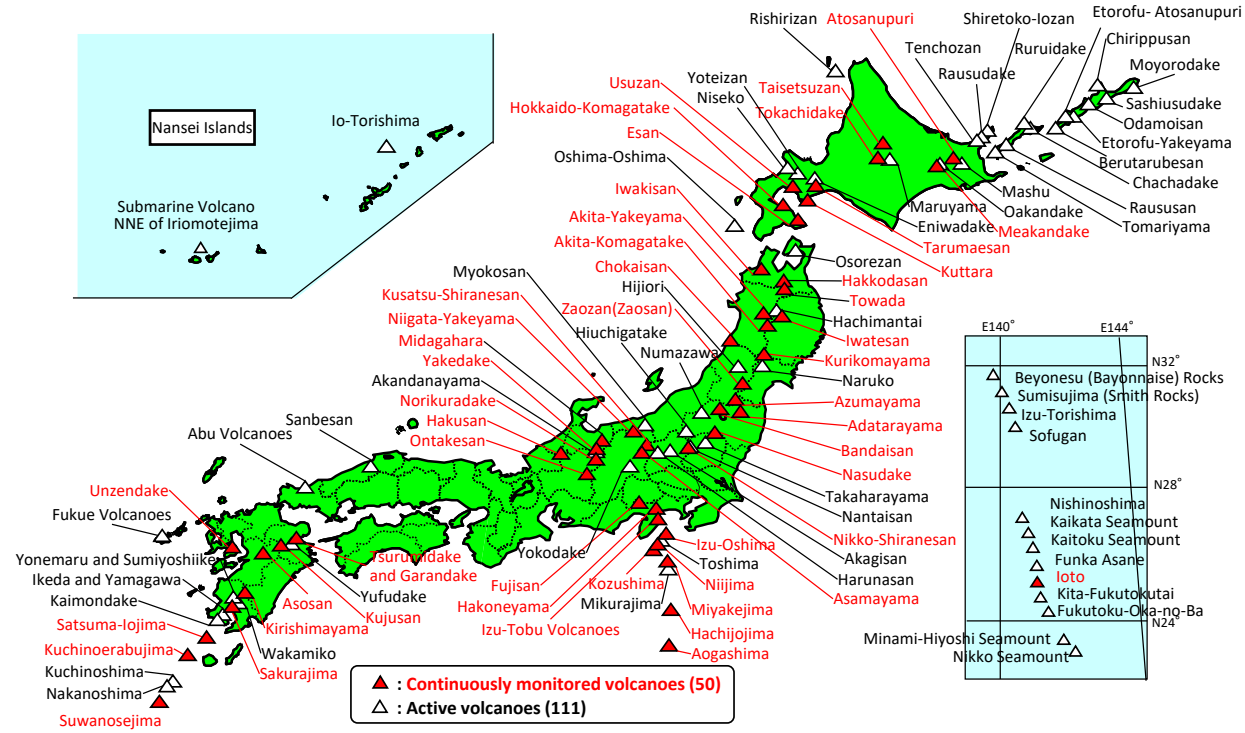
Number	
Hokkaido region	101~
Tohoku region	201~
Kanto region	301~
Chubu region	401~
Kinki region	501~
Chugoku region	601~
Shikoku region	701~
Kyushu region	801~
Okinawa region	901~

Source: Ministry of Education, Culture, Sports, Science and Technology

No.	Name of Fault	No.	Name of Fault
101	Sarobetsu fault zone	424	Byoubuyama Enasan fault zone & Sanageyama fault zone
102	Shibetsu fault zone	425	Shoukawa fault zone
103	Tokachi-heiya fault zone	426	Nagaragawa-joryu fault zone
104	Furano fault zone	427	Fukui-heiya-toen fault zone
105	Mashike-sanchi-toen fault zone · Numata-Sunagawa fault zone	428	Noubi fault zone
106	Toubetsu fault	429	Yanagase Sekigahara fault zone
107	Ishikari-teichi-toen fault zone	430	Nosaka Shufukuji fault zone
108	Kuromatsunai-teichi fault zone	431	Kohoku-sanchi fault zone
109	Hakodate-heiya-seien fault zone	432	Yoro-Kuwana-Yokkaichi
201	Aomori-wan-seigan fault zone	433	Isewan fault zone
202	Tsugaru-sanchi-seien fault zone	501	Suzuka-toen fault zone
203	Oritsume fault	502	Nunobiki-sanchi-toen fault zone
204	Hanawa-higashi fault zone	503	Suzuka-seien fault zone
205	Noshiro fault zone	504	Tongu fault
206	Kitakami-teichi-seien fault zone	505	Kizugawa fault zone
207	Shizukuishi-bonchi-seien - Mahiru-sanchi-toen fault zone	506	Biwako-seigan fault zone
208	Yokote-bonchi-toen fault zone	507	Mikata Hanaore fault zone
209	Kitayuri fault	508	Sourthern fault zone of Kyoto-bonchi-Nara-bonchi (Nara-bonchi-toen fault zone)
210	Shinjo-bonchi fault zone	509	Yamada fault zone
211	Yamagata-bonchi fault zone	510	Mitoke Kyoto Nishiyama fault zone
212	Shonai-heiya-toen fault zone	511	Ikoma fault zone
213	Nagai-bonchi-seien fault zone	512	Uemachi fault zone
214	Nagamachi-Rifu Line fault zone	513	Arima-Takatsuki fault zone
215	Fukushima-bonchi-seien fault zone	514	Rokko Awajishima fault zone
216	Futaba fault	515	Osaka-wan fault zone
217	Aizu-bonchi-seien-toen fault zone	516	Yamasaki fault zone
301	Sekiya fault	601	Shikano-Yoshioka fault
302	Okubo fault	602	Shinji (Kashima) fault
303	Fukaya Fault Zone and the Ayasegawa Fault (Kanto-heiya hokuseien fault zone and Motoarakawa fault zone)	603	Chojagahara-Yoshii fault
304	Tachikawa fault zone	604	Yasaka fault
305	Isehara fault	605	Jifuku fault
306	Shiozawa fault zone, Hirayama-Matsuda-kita fault zone and Kouzu-Matsuda fault zone (Kannawa Kouzu-Matsuda fault zone)	606	Tsutsuga fault
307	Miura-hanto fault group	607	Hiroshima-wan-Iwakuni-oki fault zone
308	Kamogawa-teichi fault zone	608	Akinada fault zone
401	Kitaizu fault zone	609	Iwakuni-Itsukaichi fault zone
402	Fujikawa-kako fault zone	610	Oharako fault
403	Minobu fault	611	Ogori fault
404	Sone-kyuryo fault zone	612	Suounada fault zone
405	Kushigata-sanmyaku fault zone	613	Kikugawa fault zone
406	Tsukioka fault zone	701	Chuo-kozosen fault zone (Kongo-sanchi-toen – Iyonada)
407	Nagaoka-heiya-seien fault zone	702	Nagao fault zone
408	Muikamachi fault zone	801	Fukuchiyama fault zone
409	Tokamachi fault zone	802	Nishiyama fault zone
410	Takada-heiya fault zone	803	Umi fault
411	Nagano-bonchi-seien fault zone (Shinanogawa fault zone)	804	Kego fault zone
412	Itoigawa-Shizuoka-kozosen fault zone	805	Hinata-toge-Okasagi-toge fault zone
413	Sakaitoge Kamiya fault zone	806	Minoh fault zone
414	Inadani fault zone	807	Saga-heiya-hokuen fault zone
415	Kiso-sanmyaku-seien fault zone	809	Unzen fault group
416	Uozu fault zone	810	Futagawa-Hinagu fault zone
417	Tonami-heiya fault zone · Kurehayama fault zone	811	Midorikawa fault zone
418	Ouchigata fault zone	812	Hitoyoshi-bonchi-nanen fault
419	Morimoto Togashi fault zone	813	Izumi fault zone
420	Ushikubi fault zone	814	Koshiki fault zone
421	Atotsugawa fault zone	815	Hijiu fault zone
422	Takayama Oppara fault zone	816	Haneyama－Kuenohirayama fault zone
423	Atera fault zone	901	Miyakojima fault zone

Source: Ministry of Education, Culture, Sports, Science and Technology

Fig. A-4 Distribution of Active Volcanoes in Japan



Source: Formulated by the Cabinet Office from the Japan Meteorological Agency website (As of March 2021)

2. Disasters in Japan

Fig. A-5 Major Earthquake Damage in Japan (Since the Meiji Period)

Disaster		Date	Number of Fatalities and Missing Persons
Nobi Earthquake	(M8.0)	October 28, 1891	7,273
Meiji Sanriku Earthquake and Tsunami	(M8.25)	June 15, 1896	Approx. 22,000
Great Kanto Earthquake	(M7.9)	September 1, 1923	Approx. 105,000
1927 Kita Tango Earthquake	(M7.3)	March 7, 1927	2,925
Showa Sanriku Earthquake Tsunami	(M8.1)	March 3, 1933	3,064
1943 Tottori Earthquake	(M7.2)	September 10, 1943	1,083
Tonankai Earthquake	(M7.9)	December 7, 1944	1,251
Mikawa Earthquake	(M6.8)	January 13, 1945	2,306
Nankai Earthquake	(M8.0)	December 21, 1946	1,443
Fukui Earthquake	(M7.1)	June 28, 1948	3,769
Tokachi-oki Earthquake	(M8.2)	March 4, 1952	33
1960 Chile Earthquake and Tsunami	(Mw9.5)	May 23, 1960	142
1964 Niigata Earthquake	(M7.5)	June 16, 1964	26
1968 Tokachi-oki Earthquake	(M7.9)	May 16, 1968	52
1974 Izu-hanto-oki Earthquake	(M6.9)	May 9, 1974	30
1978 Izu-Oshima-kinkai Earthquake	(M7.0)	January 14, 1978	25
1978 Miyagi-ken-oki Earthquake	(M7.4)	June 12, 1978	28
Nihon-kai-chubu Earthquake	(M7.7)	May 26, 1983	104
Nagano-ken-seibu Earthquake	(M6.8)	September 14, 1984	29
Hokkaido-nansei-oki Earthquake	(M7.8)	July 12, 1993	230
Great Hanshin-Awaji Earthquake	(M7.3)	January 17, 1995	6,437
Mid Niigata Prefecture Earthquake	(M6.8)	October 23, 2004	68
Iwate–Miyagi Nairiku Earthquake	(M7.2)	June 14, 2008	23
Great East Japan Earthquake	* (Mw9.0)	March 11, 2011	22,303
The 2016 Kumamoto Earthquake	(M6.5) (M7.3)	April 14, 2016 April 16	273
The 2018 Hokkaido Eastern Iburi Earthquake	(M6.7)	September 6, 2018	43

*Mw: Moment magnitude

Notes:

1. The earthquakes listed before World War II are those with more than 1,000 fatalities and missing persons, while the earthquakes listed after World War II are those with more than 20 fatalities and missing persons.
2. The number of fatalities and missing persons from the Great Kanto Earthquake are based on the revised Chronological Scientific Table (2006), which changed the number from approximately 142,000 to approximately 105,000.
3. The number of fatalities and missing persons from the Southern Hyogo Prefecture Earthquake (Great Hanshin-Awaji Earthquake) is the current figure as of May 19, 2006. The number of fatalities directly caused by structures collapsing, fire, and other factors caused by seismic shaking on the day of the earthquake, excluding so-called “related deaths,” is 5,515.
4. The number of fatalities (including disaster-related fatalities) and missing persons from the 2011 Tohoku Earthquake and Tsunami (Great East Japan Earthquake) is the current figure as of March 1, 2020.
5. The details given for the 2016 Kumamoto Earthquake is the current figure as of April 12, 2019 (including disaster-related fatalities).

Source: Chronological Scientific Tables, Fire and Disaster Management Agency materials, National Police Agency materials, Comprehensive List of Destructive Earthquakes in Japan, Extreme Disaster Management Headquarters materials, Major Disaster Management Headquarters materials

Fig. A-6 Major Natural Disasters in Japan Since 1945

Date	Disaster	Main Affected Areas	Number of Fatalities and Missing
January 13, 1945	Mikawa Earthquake (M6.8)	Southern Aichi	2,306
September 17-18, 1945	Typhoon Makurazaki	Western Japan (Especially in Hiroshima)	3,756
December 21, 1946	Nankai Earthquake (M8.0)	Various Places in West of Chubu	1,443
August 14, 1947	Mt. Asama Eruption	Around Mt. Asama	11
September 14-15, 1947	Typhoon Kathleen	North of Tokai	1,930
June 28, 1948	Fukui Earthquake (M7.1)	Around the Fukui Plains	3,769
September 15-17, 1948	Typhoon Ione	From Shikoku into Tohoku (Especially in Iwate)	838
September 2-4, 1950	Typhoon Jane	North of Shikoku (Especially in Osaka)	539
October 13-15, 1951	Typhoon RUTH (5115)	Nationwide (Especially in Yamaguchi)	943
March 4, 1952	Tokachi-oki Earthquake (M8.2)	Southern Hokkaido, Northern Tohoku	33
June 25-29, 1953	Heavy Rains	Kyushu, Shikoku, Chugoku (Especially Kitakyushu)	1,013
July 16-24, 1953	Torrential Rains	West of Tohoku (Especially in Wakayama)	1,124
May 8-12, 1954	Storm Disaster	Northern Japan, Kinki	670
September 25-27, 1954	Typhoon MARIE (5415)	Nationwide (Especially in Hokkaido and Shikoku)	1,761
July 25-28, 1957	Torrential Rains	Kyushu (Especially around Isahaya)	722
June 24, 1958	Mt. Aso Eruption	Around Mt. Aso	12
September 26-28, 1958	Typhoon IDA (5822)	East of Kinki (Especially in Shizuoka)	1,269
September 26-27, 1959	Typhoon VERA (5915)	Nationwide (Except for Kyushu, especially in Aichi)	5,098
May 23, 1960	Chile Earthquake Tsunami	Southern Coast of Hokkaido, Sanriku Coast, Shima Coast	142
January 1963	Heavy snowfall	Hokuriku, Sanin, Yamagata, Shiga, Gifu	231
June 16, 1964	Niigata Earthquake (M7.5)	Niigata, Akita, Yamagata	26
September 10-18, 1965	Typhoons SHIRLEY (6523), TRIX (6524), VIRGINIA (6525)	Nationwide (Especially in Tokushima, Hyogo, Fukui)	181
September 23-25, 1966	Typhoons HELEN (6624), IDA (6626)	Chubu, Kanto, Tohoku (Especially in Shizuoka, Yamanashi)	317
July to August 1967	Torrential Rains	West of Chubu, Southern Tohoku	256
May 16, 1968	Tokachi-oki Earthquake (M7.9)	Southern Hokkaido and Tohoku Area centering around Aomori	52
July 3-15, 1972	Typhoons PHYLLIS (7206), RITA (7207), TESS (7209) and Torrential Rains	Nationwide (Especially in Kitakyushu, Shimane, Hiroshima)	447
May 9, 1974	Izu-hanto-oki Earthquake (M6.9)	Southern Tip of Izu-hanto	30
September 8-14, 1976	Typhoon FRAN (7617) and Torrential Rains	Nationwide (Especially in Kagawa, Okayama)	171
January 1977	Snow Disasters	Tohoku, Northern Kinki, Hokuriku	101
August 7, 1977- October 1978	Mt. Usu Eruption	Hokkaido	3
January 14, 1978	Izu-Oshima-kinkai Earthquake (M7.0)	Izu-hanto	25
June 12, 1978	Miyagi-ken-oki Earthquake (M7.4)	Miyagi	28
October 17-20, 1979	Typhoon TIP (7920)	Nationwide (Especially Tokai, Kanto, Tohoku)	115
December 1980 - March 1981	Snow Disasters	Tohoku, Hokuriku	152
July to August 1982	Torrential Rains and Typhoon BESS (8210)	Nationwide (Especially in Nagasaki, Kumamoto, Mie)	439
May 26, 1983	Nihon-kai-chubu Earthquake (M7.7)	Akita, Aomori	104
July 20-29, 1983	Torrential Rains	East of Sanin (Especially in Shimane)	117
October 3, 1983	Miyake Is. Eruption	Around Miyake-jima Island	—
December 1983 - March 1984	Snow Disasters	Tohoku, Hokuriku (Especially in Niigata, Toyama)	131
September 14, 1984	Nagano-ken-seibu Earthquake (M6.8)	Western Nagano	29
November 15 - December 18, 1986	Izu-Oshima Eruption	Izu Oshima Island	—
November 17, 1990 – June 3, 1995	Mr. Unzen Eruption	Nagasaki	44
July 12, 1993	Hokkaido-nansei-oki Earthquake (M7.8)	Hokkaido	230
July 31 - August7, 1993	Torrential Rains	Nationwide	79
January 17, 1995	1995 Southern Hyogo Prefecture Earthquake (Great Hanshin-Awaji Earthquake) (M7.3)	Hyogo	6,437
March 31, 2000 - June 28, 2001	Mt. Usu Eruption	Hokkaido	—
June 25, 2001 - March 31, 2005	Miyake Is. Eruption and Niijima and Kozushima Is. Earthquake (M6.5)	Tokyo	1
October 20-21, 2004	Typhoon TOKAGE (0423)	Nationwide	98
October 23, 2004	Mid Niigata Prefecture Earthquake (M6.8)	Niigata	68
December 2005 - March 2006	Heavy Snowfall	Japan Sea Coast centering around Hokuriku Area	152
July 16, 2007	Niigataken Chuetsu-oki Earthquake (M6.8)	Niigata	15
June 14, 2008	Iwate-Miyagi Nairiku Earthquake (M7.2)	Tohoku (Especially in Miyagi, Iwate)	23
December 2010 - March 2011	Snow disaster	From Northern Japan through into West Japan on the Japan Sea Coast	131
March 11, 2011	2011 Tohoku Earthquake and Tsunami (Great East Japan Earthquake) (Mw9.0)	Eastern Japan (Especially in Miyagi, Iwate, Fukushima)	22,303
August 30 - September 5, 2011	Typhoon TALAS (1112)	Kinki, Shikoku	98

Date	Disaster	Main Affected Areas	Number of Fatalities and Missing
November 2011 - March 2012	Heavy Snow in 2011	From Northern Japan through into West Japan on the Japan Sea Coast	133
November 2012 - March 2013	Heavy Snow in 2012	From Northern Japan through into West Japan on the Japan Sea Coast	104
November 2013 - May 2014	Heavy Snow in 2013	From Northern Japan through into Kanto-Koshinetsu Area (Especially in Yamanashi)	95
August 20, 2014	Torrential Rains of August 2014 (Hiroshima Sediment Disaster)	Hiroshima	77
September 27, 2014	2014 Eruption of Mt. Ontake	Nagano, Gifu	63
April 14 and 16, 2014	The 2016 Kumamoto Earthquake (M7.3)	Kyushu Area (Especially in Kumamoto)	273
June 28 - July 8, 2018	The Heavy Rain Event of July 2018	Nationwide (Especially in Hiroshima, Okayama, Ehime)	271
September 6, 2018	The 2018 Hokkaido Eastern Iburi Earthquake (M6.7)	Hokkaido	43
October 10 – 13, 2019	Typhoon Hagibis in 2019 (T1919)	Kanto, Tohoku Area	108
July 3-31, 2020	The Heavy Rain Event of July 2020	Nationwide (Especially in Kyushu Area)	86

Notes:

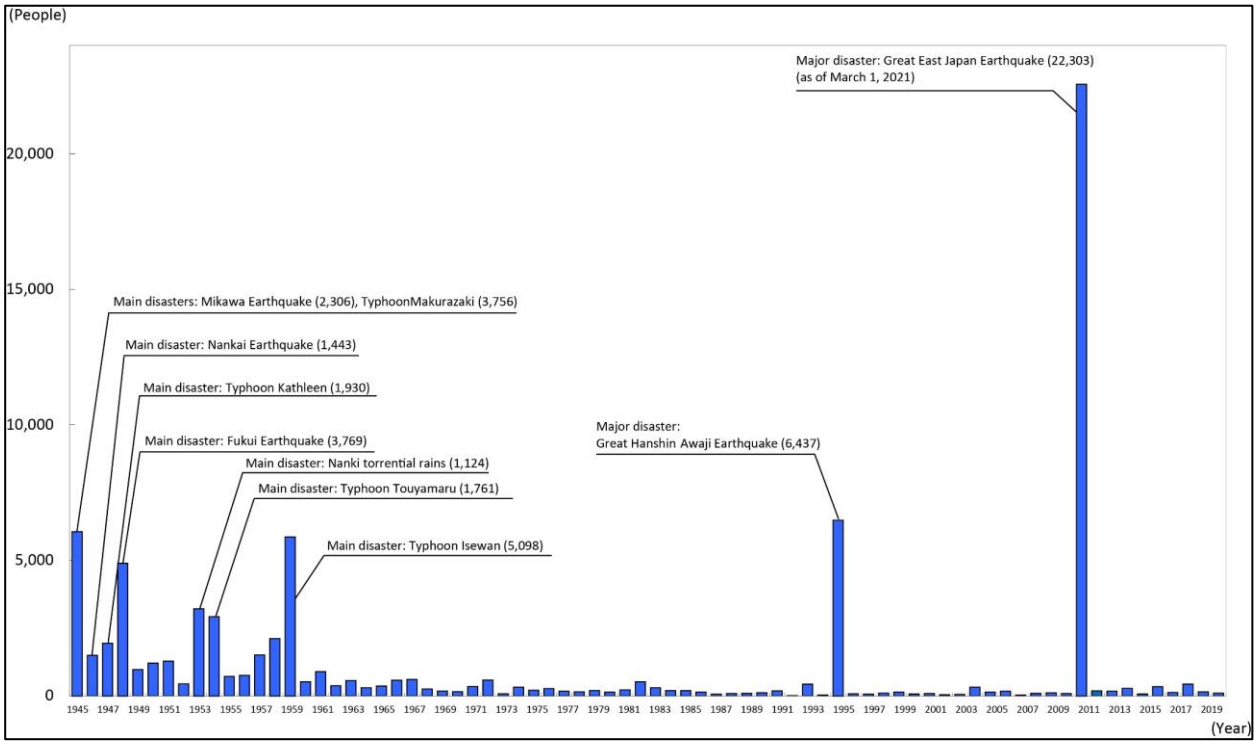
1. The disasters listed resulted in fatalities and missing persons as follows: 500 or more for storm and flood disasters, 100 or more for snow disasters, and 10 or more for earthquakes, tsunamis, and volcanic eruptions. It also includes disasters for which governmental Major Disaster Management Headquarters were established based on the Basic Act on Disaster Management.
2. The number of fatalities and missing persons from the Southern Hyogo Prefecture Earthquake (Great Hanshin-Awaji Earthquake) is the current figure as of May 19, 2006. The number of fatalities directly caused by structures collapsing, fire, and other factors caused by seismic shaking on the day of the earthquake, excluding so-called “related deaths,” is 5,515.
3. The numbers of fatalities from the Miyake Is. Eruption and Niijima and Kozushima Is. Earthquake are from the earthquake of July 1, 2000.
4. The number of fatalities (including disaster-related fatalities) and missing persons resulting from the 2011 Tohoku Earthquake and Tsunami (Great East Japan Earthquake) is the current figure as of March 1, 2020 (including disaster-related fatalities).
5. Disasters caused by Typhoon Hagibis in 2019 (T1919)

, which affected wide areas chiefly in eastern Japan are as of April 10, 2020

6. As of February 26, 2021

Source: Formulated by the Cabinet Office based on the meteorological almanac of Japan, Chronological Scientific Tables, National Police Agency materials, Fire and Disaster Management Agency materials, Extreme Disaster Management Headquarters materials, Major Disaster Management Headquarters materials, and Hyogo Prefecture materials

Fig. A-7 Number of Fatalities and Missing Persons Due to Natural Disasters



Year	People	Year	People	Year	People	Year	People	Year	People
1945	6,062	1962	381	1979	208	1996	84	2013	173
1946	1,504	1963	575	1980	148	1997	71	2014	283
1947	1,950	1964	307	1981	232	1998	109	2015	77
1948	4,897	1965	367	1982	524	1999	141	2016	344
1949	975	1966	578	1983	301	2000	78	2017	129
1950	1,210	1967	607	1984	199	2001	90	2018	444
1951	1,291	1968	259	1985	199	2002	48	2019	155
1952	449	1969	183	1986	148	2003	62	2020	107
1953	3,212	1970	163	1987	69	2004	327		
1954	2,926	1971	350	1988	93	2005	148		
1955	727	1972	587	1989	96	2006	177		
1956	765	1973	85	1990	123	2007	39		
1957	1,515	1974	324	1991	190	2008	101		
1958	2,120	1975	213	1992	19	2009	115		
1959	5,868	1976	273	1993	438	2010	89		
1960	528	1977	174	1994	39	2011	22,566		
1961	902	1978	153	1995	6,482	2012	190		

Note: Of the fatalities in 1995, the deaths from the Southern Hyogo Prefecture Earthquake (Great Hanshin-Awaji Earthquake) include 919 so-called "related deaths" (Hyogo Prefecture).
The fatalities and missing persons in 2020 are based on flash bulletins from the Cabinet Office.

Source: Fatalities and missing persons for the year 1945 came only from major disasters (source: Chronological Scientific Table). Years 1946–1952 use the Japanese Meteorological Disasters Annual Report; years 1953–1962 use National Police Agency documents; years 1963 and after formulated by the Cabinet Office based on Fire and Disaster Management Agency materials.

Fig. A-8 Breakdown of the Number of Fatalities and Missing Persons Due to Natural Disasters

(Unit: persons)

Year	Storm/Flood	Earthquake/ Tsunami	Volcano	Snow	Other	Total
1993	183	234	1	9	11	438
1994	8	3	0	21	7	39
1995	19	6,437	4	14	8	6,482
1996	21	0	0	28	35	84
1997	51	0	0	16	4	71
1998	80	0	0	28	1	109
1999	109	0	0	29	3	141
2000	19	1	0	52	6	78
2001	27	2	0	59	2	90
2002	20	0	0	26	2	48
2003	48	2	0	12	0	62
2004	240	68	0	16	3	327
2005	43	1	0	98	6	148
2006	87	0	0	88	2	177
2007	14	16	0	5	4	39
2008	22	24	0	48	7	101
2009	76	1	0	35	3	115
2010	31	0	0	57	1	89
2011	136	22,303	0	125	2	22,566
2012	52	0	0	138	0	190
2013	75	0	0	92	6	173
2014	112	0	63	108	0	283
2015	22	0	0	49	0	77
2016	38	228	0	6	0	344
2017	60	0	0	68	1	129
2018	285	49	1	103	6	444
2019	123	0	0	32	0	155
2020	92	0	0	15	0	107

Notes: This table shows the number of fatalities and missing persons between Jan. 1 and Dec. 31.
Fatalities and missing persons in 2019 are based on flash bulletins from the Cabinet Office.
(The earthquake/tsunami disaster figures for 2011 include 22,288 fatalities (including disaster-related fatalities) and missing persons from the 2011 Tohoku Earthquake and Tsunami (Great East Japan Earthquake) (March 1, 2020).)

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

Fig. A-9 Recent Major Natural Disasters (Since the Great Hanshin-Awaji Earthquake)

(Total: As of March 29, 2021)

Name of Disaster	Major Events	Human Casualties (persons)		Houses Damaged (houses)			Remarks
		Fatalities/ Missing Persons	Injured	Completely Destroyed	Half Destroyed	Above-floor Flooding	
The Great Hanshin-Awaji Earthquake (January 17, 1995)	Maximum seismic intensity of 7. Unprecedented major disaster in Western Japan. Became a turning point in DRR measures for national and local governments, with various DRR measures developed and strengthened.	6,437	43,792	104,906	144,274	—	・Establishment of Extreme Disaster Management Headquarters[*1] ・Establishment of Major Disaster Management Headquarters ・Site inspection by Prime Minister ・Dispatchment of government investigation team ・Invocation of Disaster Relief Act ・Invocation of Special Measures Act for Specified Disaster ・Designation as an extremely severe disaster
The Great East Japan Earthquake (March 11, 2011)	Maximum seismic intensity of 7. Tsunami caused extreme damage mainly along the coast of Eastern Japan, including Iwate, Miyagi, and Fukushima Prefectures.	22,303	6,242	122,005	283,156	1,489	・Establishment of Extreme Disaster Management Headquarters ・Establishment of On-site Extreme Disaster Management Headquarters ・Site inspection by Prime Minister ・Dispatchment of government investigation team ・Site inspection by Minister of State for Disaster Management ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Invocation of Special Measures Act for Specified Disaster ・Designation as an extremely severe disaster
2000 Eruption of Mt. Usu (March 31, 2000 - June 28, 2001)	The Japan Meteorological Agency announced emergency volcano information and residents evacuated before the eruption began, resulting in no human casualties.	—	—	119	355	—	・Establishment of Major Disaster Management Headquarters ・Establishment of On-site Major Disaster Management Headquarters ・Site inspection by Prime Minister ・Dispatchment of government investigation team ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Designation as an extremely severe disaster
2000 Miyake Is. Eruption and Niijima and Kozushima Is. Earthquake (June 25, 2000 - March 31, 2005)	A caldera was formed along with the summit eruption. Large amounts of volcanic gases were emitted over an extended period, and evacuation instructions were issued to all residents of the town of Miyake, which forced all residents to evacuate and live off the island.	1	15	15	20	—	・Establishment of Major Disaster Management Headquarters ・Site inspection by Prime Minister ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Designation as an extremely severe disaster
Typhoon TOKAGE (0423) (October 18-21, 2004)	Very large number of human casualties due to rising river levels, sediment disasters, and high waves nationally, but concentrated in the Kinki and Shikoku regions. The Maruyama River, Izushi River, and other Maruyama River system rivers overflowed their banks and flooded.	98	555	909	7,776	14,323	・Establishment of Major Disaster Management Headquarters ・Dispatchment of government investigation team ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Designation as an extremely severe disaster
2004 Mid Niigata Prefecture Earthquake (October 23, 2004)	Maximum seismic intensity of 7. Homes were destroyed, slope failure and other disasters caused many human casualties, communities were isolated, people were forced to evacuate, and there was massive damage to homes, lifelines, transportation, and agricultural land.	68	4,805	3,175	13,810	—	・Establishment of Major Disaster Management Headquarters ・Site inspection by Prime Minister ・Dispatchment of government investigation team ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Designation as an extremely severe disaster
Fukuoka-ken-Seihouoki Earthquake (March 20, 2005)	Maximum seismic intensity of Lower 6. Homes were destroyed on Genkai Island and elsewhere, and window glass fell from buildings in Fukuoka City.	1	1,204	144	353	—	・Site inspection by Prime Minister ・Dispatchment of government investigation team ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Invocation of Remote Islands Development Act
Typhoon NABI (0514) (September 4-8, 2005)	Record-breaking rains fell, mainly in the Kyushu region, and sediment disasters caused many human casualties.	29	177	1,217	3,896	3,551	・Dispatchment of government investigation team ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Designation as an extremely severe disaster
2006 Heavy Snows (December 2005 - March 2006)	Following 1963, the second-largest number of fatalities and missing persons since WW II (on par with 1981.)	152	2,145	18	28	12	・Invocation of Disaster Relief Act
2006 Torrential Rains Due to Seasonal Rain Front (June 10–July 29, 2006)	Many fatalities due to sediment disasters in Nagano and Kagoshima Prefectures.	33	64	313	1,457	1,971	・Dispatchment of government investigation team ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Designation as an extremely severe disaster
Typhoon SHANSHAN (0613) (September 15–20, 2006)	Damage due to strong winds from the Okinawa region to the Kyushu region, and a tornado in Nobeoka City, Miyazaki Prefecture.	10	446	121	518	251	・Dispatchment of government investigation team ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Designation as an extremely severe disaster
Tornado in Saroma Hokkaido Prefecture (November 7, 2006)	Highest number of fatalities on record attributed to a tornado.	9	31	7	7	—	・Dispatchment of government investigation team ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster

Name of Disaster	Major Events	Human Casualties (persons)		Houses Damaged (houses)			Remarks
		Fatalities/ Missing Persons	Injured	Completely Destroyed	Half Destroyed	Above-floor Flooding	
2007 Noto Hanto Earthquake (March 25, 2007)	Maximum seismic intensity of Upper 6. Disaster in mountainous regions with a high percentage of aging population and advancing depopulation.	1	356	686	1,740	—	・Site inspection by Prime Minister ・Dispatchment of government investigation team ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Designation as an extremely severe disaster
2007 Heavy Rains from Typhoon MAN-YI (0704) and Seasonal Rain Front (July 5-31, 2007)	The typhoon made landfall in Japan in July with the strongest intensity in 57 years from 1951 to 2007. Record rainfalls in various regions.	7	75	33	33	434	・Dispatchment of government investigation team ・Invocation of Disaster Relief Act ・Designation as an extremely severe disaster
2007 Niigataken Chuetsu-oki Earthquake (July 16, 2007)	Maximum seismic intensity of Upper 6. Many human causalities due to homes collapsing. Damage to homes, lifelines, transportation, and nuclear power plants.	15	2,346	1,331	5,710	—	・Site inspection by Prime Minister ・Dispatchment of government investigation team ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Invocation of Special Measures Act for Specified Disaster ・Designation as an extremely severe disaster
2008 Iwate-Miyagi Nairiku Earthquake (June 14, 2008)	Maximum seismic intensity of Upper 6. Many human causalities due to landslides and other sediment disasters. Many river channels became blocked (natural dams) in rivers in mountainous areas.	23	426	30	146	—	・Site inspection by Prime Minister ・Dispatchment of government investigation team ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Designation as an extremely severe disaster
Earthquake epicentered on Northern Coast of Iwate Prefecture (July 24, 2008)	Maximum seismic intensity of Lower 6. Earthquake with a deep hypocenter occurring inside a plate. Seismic intensity of Lower 5 and higher recorded in affected areas of inland Iwate and Miyagi Prefectures.	1	210	1	0	—	・Dispatchment of government investigation team
Heavy Rains from July 28 (July 28-29, 2008)	Localized heavy rains in the Hokuriku and Kinki regions. Human casualties along the Toga River in Kobe City.	6	13	6	16	585	・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Designation as an extremely severe disaster
Torrential Rains at the End of August 2008 (August 26-31, 2008)	Record heavy rains in various regions, especially extensive flood damage in Aichi Prefecture.	2	7	6	7	3,106	・Dispatchment of government investigation team ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster
July 2009 Torrential Rains in Chugoku and Northern Kyushu (July 19-26, 2009)	Record heavy rains in Yamaguchi and Fukuoka Prefectures due to seasonal rain front. Numerous fatalities from sediment disasters in Yamaguchi Prefecture and other prefectures.	36	59	52	102	2,139	・Site inspection by Prime Minister ・Dispatchment of government investigation team ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Designation as an extremely severe disaster
Typhoon ETAU (0909) (August 8-11, 2009)	Heavy rains from the Chugoku and Shikoku regions to the Tohoku region due to the effects of the typhoon. Human casualties and homes damaged due to flooding in Hyogo Prefecture.	27	23	183	1,130	974	・Site inspection by Prime Minister ・Dispatchment of government investigation team ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Designation as an extremely severe disaster
Earthquake epicentered in Suruga Bay (August 11, 2009)	Maximum seismic intensity of Lower 6. Tomei Expressway closed due to slope collapse.	1	319	0	6	—	
Typhoon MELOR (0918) (October 6-8, 2009)	Destructive storm and heavy rains over a wide area from the Okinawa region to Hokkaido Prefecture due to the effects of the typhoon. Winds and rains in Aichi Prefecture caused partial damage and flood damage to many homes.	5	139	9	86	571	・Designation as an extremely severe disaster
Tsunami from Earthquake epicentered in Central Chilean Coast (February 27-28, 2010)	An earthquake struck the central coast of Chile just after noon on Feb. 27. A tsunami was approaching Japan the next day on the 28th, and a major tsunami warning and tsunami warning were issued at 9:33 a.m. on the 28th. Extensive fishery damage to aquaculture facilities.	0	0	0	0	6	・Designation as an extremely severe disaster
2010 Heavy Rains Due to Seasonal Rain Front (June 11 - July 19, 2010)	The seasonal rain front stalled over the region from Kyushu to Honshu from mid-June, with intermittent bursts of activity. Southern Kyushu received more than twice its average annual rainfall. There were large-scale slope failure in Kagoshima Prefecture, and fatalities and missing persons mainly in Hiroshima and Gifu Prefectures.	22	21	43	91	1,844	・Site inspection by Prime Minister ・Site inspection by Minister of State for Disaster Management ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Designation as an extremely severe disaster
Heavy Rains in Amami Region of Kagoshima Prefecture (October 18-25, 2010)	The rain front stalled over the Amami region, with moist air flowing in from the south toward this rain front, creating unstable atmospheric conditions. The Amami region received intense rainfall of more than 120 mm per hour, with more than 800 mm of rainfall since the rains began.	3	2	10	443	116	・Site inspection by Minister of State for Disaster Management ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Designation as an extremely severe disaster
Heavy Snow in 2010 (November 2010 - March 2011)	Record snows fell from the end of the year to the beginning of the following year in some areas of the Japan Sea side of Western Japan. Fishing boats overturned and sank along with other damage in Tottori and Shimane Prefectures.	131	1,537	9	14	6	・Ministerial meeting ・Site inspection by Minister of State for Disaster Management ・Invocation of Disaster Relief Act

Name of Disaster	Major Events	Human Casualties (persons)		Houses Damaged (houses)			Remarks
		Fatalities/ Missing Persons	Injured	Completely Destroyed	Half Destroyed	Above-floor Flooding	
Mt. Kirishima (Shinmoedake) Eruption (January 26 - September 7, 2011)	Following a small eruption on January 19, a medium-sized eruption occurred at Shinmoedake on January 26 and the volcanic alert level was raised to 3 (Do not approach the volcano). Eruptions continued repeatedly thereafter until early September, with air waves and cinders breaking windows and causing other damage. In addition, falling ash from the eruptions was recorded over a wide area mainly to the southeast of the mountain, including Kirishima City, Kagoshima Prefecture, and Miyakonojo City, Miyazaki Prefecture.	0	52	0	0	—	・Ministerial meeting (twice) ・Site inspection by Minister of State for Disaster Management ・Designation as an area requiring the emergency development of evacuation facilities and an ash prevention area ・Invocation of Disaster Relief Act
Typhoon MA-ON (1106) (July 12-24, 2011)	The typhoon made landfall on the southern part of Tokushima Prefecture around 11:00 p.m. on July 19, maintaining its strong intensity, with maximum winds of 40m/s, and its large scale. Record heavy rains were recorded in Western Japan, with rainfall of more than 1,000 mm recorded in some parts of the Shikoku region since the rains began.	3	54	0	1	28	・Designation as an extremely severe disaster
July 2011 Niigata and Fukushima Torrential Rains (July 27-30, 2011)	Rain began falling in Niigata Prefecture and Aizu, Fukushima Prefecture, from around noon on the 27th. Intermittent intense rains of more than 80 mm per hour fell starting on the 28th. In Niigata and Fukushima Prefectures, record heavy rains exceeding the July 2004 Niigata and Fukushima Torrential Rains were recorded.	6	13	74	1,000	1,082	・Dispatchment of government investigation team (twice) ・Site inspection by Minister of State for Disaster Management ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Designation as an extremely severe disaster
Typhoon TALAS (1112) (August 30 - September 5, 2011)	Record rains were recorded across a wide area from Western Japan to Northern Japan. Especially on the Kii Peninsula, the highest amount of rainfall since the rains began at 5:00 p.m. on August 30 exceeded 1,800 mm, and many river channels became blocked.	98	113	380	3,159	5,500	・Establishment of Major Disaster Management Headquarters ・Site inspection by Prime Minister ・Dispatchment of government investigation team (twice) ・Site inspection by Minister of State for Disaster Management ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Designation as an extremely severe disaster (national)
Typhoon ROKE (1115) (September 15-22, 2011)	Strong winds and record rains were recorded across a wide area from Western Japan to Northern Japan. Total rainfall from 12:00 a.m., September 15 to 9:00 a.m., September 22 exceeded 1,000 mm in some parts of Kyushu and Shikoku, with many points recording rainfall of more than double the average rainfall for September.	20	425	34	1,524	2,270	・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Designation as an extremely severe disaster
Heavy Snow in 2011 (November 2011 - March 2012)	Record snows fell mainly on the Japan Sea side, with cumulative snowfall of more than 28% higher than the average for the past 5 years. In addition, in some regions the depth of the snowfall was more than double the average for the past 30 years.	133	1,990	13	12	3	・Ministerial meeting (twice) ・Site inspection by Minister of State for Disaster Management (twice) ・Invocation of Disaster Relief Act
Wind Gusts in May 2012 (May 6, 2012)	Lightning strikes, wind gusts, and hail were recorded from the Tokai region to the Tohoku region. From Joso City to Tsukuba City, Ibaraki Prefecture, a tornado formed that was estimated to be one of the strongest (F3) recorded in Japan. Multiple tornadoes were recorded in the region from Mooka City, Tochigi Prefecture, to Hitachi-Omiya City, Ibaraki Prefecture, including a destructive tornado of approx. 32 km, the second longest recorded since statistics have been kept.	3	61	103	234	—	・Dispatchment of government investigation team ・Site inspection by Minister of State for Disaster Management ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster
Typhoon GUCHOL (1204) (June 18-20, 2012)	Heavy rains fell across a wide area from the Okinawa region to the Tohoku region due to the typhoon and seasonal rain front. Following the track of the typhoon, strong winds, high waves, and a storm surge were recorded across a wide area from the Okinawa region to the Tohoku region.	1	85	1	3	49	・Designation as an extremely severe disaster
Heavy Rains from June 21 to July 7, 2012 (June 21 - July 7, 2012)	Due to the effects of the seasonal rain front and a low-pressure system in the Yellow Sea forming above the seasonal rain front, from June 21 to July 7, rains were recorded from Western to Eastern Japan, and Northern Japan, with heavy rains in parts of Kyushu and other locations.	2	7	36 (*2)	180 (*2)	1,131 (*2)	・Dispatchment of government investigation team ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Designation as an extremely severe disaster
July 2012 Northern Kyushu Torrential Rains (July 11-14, 2012)	From July 11 to 14, moist air from the south flowed in toward the seasonal rain front that was stalled near Honshu, and heavy rains were recorded across a wide area from Western to Eastern Japan. Extremely heavy rains fell intermittently with thunder especially in the northern region of Kyushu.	33	34	276 (*3)	2,306 (*3)	2,574 (*3)	・Site inspection by Prime Minister ・Dispatchment of government investigation team (twice) ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Designation as an extremely severe disaster
Heavy Snow from November2012 (November 2012 - March 2013)	Due to the cold, there was a long stretch of low-temperature days in Northern Japan, with a large amount of snow falling mainly on the Japan Sea side. This resulted in record snowfall recorded mainly on the Japan Sea side of Northern Japan, including snowfall with a depth of 566 cm recorded at Sukayu, Aomori Prefecture.	104	1,517	5	7	2	・Ministerial meeting held ・Dispatchment of government investigation team ・Invocation of Disaster Relief Act

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		Fatalities/ Missing Persons	Injured	Completely Destroyed	Half Destroyed	Above-floor Flooding	
Earthquake epicentered Near Awajishima Island (April 13, 2013)	Maximum seismic intensity of Lower 6.	0	34	8	97	—	・Designation as an extremely severe disaster
Heavy Rains in 2013 Seasonal Rain Front (Disaster due to torrential rains and destructive storms between June 8 and August 9, 2013)	・From June 8 to August 9, the seasonal rain front stalled from Kyushu to the vicinity of Honshu with intermittent bursts of activity. In addition, warm and very moist air surrounding a high-pressure ridge flowed in even after the rainy season ended. During this time, Typhoons LEEPI (1304) and SOULIK (1307) approached Japan, causing heavy rains in various regions.	17	50	73	222	1,845	・Site inspection by Prime Minister ・Dispatchment of government investigation team (seven times) ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Designation as an extremely severe disaster
Heavy Rains from August 23, 2013 (August 23-28, 2013)	Warm, moist air flowed in toward the rain front, creating extremely unstable atmospheric conditions and heavy rains mainly on the Japan Sea side of Eastern Japan, and Western Japan. On August 24, record heavy rains on par with the torrential rains of July 28 were recorded, especially in Shimane Prefecture. Some areas of Hokkaido Prefecture also received heavy rains.	2	4	9	53	243	・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Designation as an extremely severe disaster
Tornadoes on September 2 and 4, 2013 (September 2, 4, & 7, 2013)	・On September 2, F2 tornadoes were recorded in Saitama City, Koshigaya City, and Matsubushi Town, Saitama Prefecture, Noda City, Chiba Prefecture, and Bando City, Ibaraki Prefecture. ・On September 4, an F0 tornado was recorded in Sukumo City, Kochi Prefecture, an F0 tornado in Aki City, Kochi Prefecture, F1 tornadoes respectively from Kanuma City to Utsunomiya City, Tochigi Prefecture, and from Shioya Town, Shioya District to Yaita City, and F0 tornadoes from Ise City to Obata Town, Mie Prefecture. ・On September 7, F0 wind gusts were recorded in Komaki City, Hokkaido Prefecture.	0	67	13	38	0	・Dispatchment of government investigation team (twice) ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster
Heavy Rains from Typhoon MAN-YI (1318) (September 15-16, 2013)	On September 15, localized intense rains fell in Eastern Japan and Northern Japan. On the 16th, heavy rains fell across a wide area from Shikoku to Hokkaido. Record heavy rains fell especially in Fukui, Shiga, and Kyoto Prefectures. A total of ten F0–F1 tornadoes also occurred.	6	136	40	967	2,453	・Dispatchment of government investigation team (five times) ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Designation as an extremely severe disaster
Typhoons WIPHA (1326) & FRANCISCO (1327) (October 14-16, 2013) (October 24-26, 2013)	Heavy rains fell mainly on the Pacific Ocean side of Eastern Japan and Northern Japan. Driving rains of more than 100 mm per hour fell especially in Oshima-machi, Tokyo Prefecture, with record rainfall of 824 mm recorded in 24 hours.	45	140	65	63	2,011	・Site inspection by Prime Minister ・Dispatchment of government investigation team ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Designation as an extremely severe disaster
Heavy Snow from 2013 (November 2013 - March 2014)	・Record heavy snowfall was recorded across a wide area from Northern Japan to Kanto-Koshinetsu. ・Especially from February 14 to 16, record heavy snows fell, substantially surpassing past snowfall depths mainly in the Kanto-Koshinetsu region, including Kofu (Yamanashi Prefecture) with 114 cm, Chichibu (Saitama Prefecture) with 98 cm, and Maebashi (Gunma Prefecture) with 73 cm of snowfall.	95	1,770	28	40	3	・Establishment of Major Disaster Management Headquarters ・Establishment of On-site Major Disaster Management Headquarters ・Site inspection by Prime Minister ・Dispatchment of government investigation team (five times) ・Invocation of Disaster Relief Act
Typhoon NEOGURI (1408) (July 6-11, 2014)	・Record heavy rains were recorded on Okinawa Island. ・Due to the effects of the moist southerly wind surrounding the typhoon and the seasonal rain front, some regions even far from the typhoon received localized driving rains.	3	70	14	12	409	・Dispatchment of government investigation team (three times) ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Designation as a disaster of extreme severity ・Appeal to the public by the Minister of State for Disaster Management
Torrential Rains of August 2014							
Typhoons NAKRI (1412) & HALONG (1411) (July 30 - August 11, 2014)	<Typhoon NAKRI (1412)> ・From the night of the 5th, heavy rains were recorded in the Chugoku and Tohoku regions. Especially in Yamaguchi Prefecture, localized driving rains of more than 100 mm per hour were recorded in some places. <Typhoon HALONG (1411)> Heavy rains fell across a wide area from Western Japan to Northern Japan. Especially in Kochi Prefecture, total rainfall from the 7th to the 11th, when the heaviest rains fell, was more than 1,000 mm. Total rainfall from the Shikoku region to the Tokai region was more than 600 mm. Atmospheric conditions were extremely unstable, with extremely strong winds including tornadoes in Tochigi Prefecture and other areas.	5	93	22	374	1,529	・Dispatchment of government investigation team (twice) ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Designation as an extremely severe disaster

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		Fatalities/ Missing Persons	Injured	Completely Destroyed	Half Destroyed	Above-floor Flooding	
Heavy Rains from August 15, 2014 (August 15-26, 2014) *Excludes Hiroshima Sediment Disaster on August 20	・Extremely intense localized rains with thunder. The amount of rainfall that fell during the 2 days of the 16th and 17th set new records in places such as Fukuchiyama City, Kyoto Prefecture, and Takayama City, Gifu Prefecture, with heavy rains mainly in the Kinki, Hokuriku, and Tokai regions.	8	7	38	332	2,240	・Dispatchment of government investigation team (twice) ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Designation as an extremely severe disaster
Hiroshima Sediment Disaster on August 20, 2014 (Disaster in Hiroshima Prefecture due to heavy rains from August 19, 2014)	・ Warm, moist air flowed in toward the rain front, and extremely unstable atmospheric conditions were recorded mainly in the Chugoku region and northern Kyushu region. ・At 3:30 a.m. on the 20th, driving rains of approx. 120 mm per hour were recorded in Hiroshima Prefecture, and heavy rains, including a new record set for the highest recorded rainfall in a 24-hour period, were recorded.	77	68	179	217	1,086	・Establishment of Major Disaster Management Headquarters ・Establishment of On-site Major Disaster Management Headquarters ・Site inspection by Prime Minister ・Dispatchment of government investigation team (three times) ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Designation as an extremely severe disaster
2014 Eruption of Mt. Ontake (September 27, 2014)	・Volcanic tremors started at 11:41 a.m. on September 27, with an eruption on the same day around 11:52 a.m. ・Volcanic smoke descended the southern slope and was recorded for more than 3 km. Therefore, a level 3 volcano warning (Do not approach the volcano) was issued. ・Entry within 4 km of the crater was restricted. ・Many mountain climbers suffered casualties due to this eruption.	63	69	0	0	0	・Establishment of Major Disaster Management Headquarters ・Establishment of On-site Major Disaster Management Headquarters ・Dispatchment of government investigation team (twice) ・Invocation of Disaster Relief Act
Earthquake with a Seismic Source in Northern Nagano Prefecture (November 22, 2014)	Maximum seismic intensity of Lower 6.	0	46	81	133	—	・Site inspection by Prime Minister ・Dispatchment of government investigation team (twice) ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Designation as an extremely severe disaster
Heavy Snow in 2014 (November 2014 - March 2015)	Due to the effects of a strong winter air-pressure pattern as well as a low-pressure system and cold air, heavy snows fell on the mountainous areas of the Japan Sea side from Northern Japan to Eastern Japan.	83	1,029	9	12	5	・Ministerial meeting ・Dispatchment of government investigation team ・Invocation of Disaster Relief Act ・Appeal to the public by the Minister of State for Disaster Management (four times)
Kuchinoerabu-jima Eruption [Volcanic Alert Level 5] (May 29, 2015)	・An explosive eruption occurred at Shindake at 9:59 am on May 29. This eruption triggered a volcanic cloud of black-gray smoke that rose 9,000m above the crater rim and a pyroclastic flow that reached the northwestern coast (Mukaehama district). ・At 10:07 am, the JMA raised the Volcanic Alert Level from 3 to 5 (evacuate). ・The municipal ferry, Ferry-Taiyo, and other vessels were used to evacuate all those on the island at the time of the eruption to Yakushima (all individuals were confirmed to be safe)	0	1	To be confirmed			・Installation of government on-site communications office (Yakushima Town, Kagoshima) ・Site inspection by Prime Minister ・Dispatchment of government investigation team ・Invocation of Disaster Relief Act
Eruption of Mt. Hakone [Volcanic Alert Level 3] (June 30, 2015)	・A very small amount of volcanic ash was observed inside the crater, which was thought to have been the result of a very small eruption, so the JMA raised the volcanic alert level from 2 to 3 (Do not approach the volcano) at 12:30 on June 30 ・At the same time, Hakone-machi imposed a ban on entering the area within around 1km of the crater and issued an evacuation instruction for parts of the Ubako, Kamiyuba, Shimoyuba, and Hakone Sounkyo Bessochi areas, as well as evacuating residents, etc. from those areas	0	0	0	0	0	・Deployment of a Cabinet Office advance information-gathering team
Typhoon NANGKA (1511) (July 16-18, 2015)	The typhoon and warm, moist air heading toward the typhoon caused increased rainfall, primarily over West and East Japan. The Kinki region in particular saw the highest rainfall in 24 hours since records began, with heavy rain in excess of the usual rainfall for the entire month of July in an ordinary year. This caused river flooding, damage to public civil engineering works, and suspension of transport services, mainly in West Japan.	2	57	5	10	85	・Appeal to the public by the Minister of State for Disaster Management

Name of Disaster	Major Events	Human Casualties (persons)		Houses Damaged (houses)			Remarks
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Volcanic activity at Sakurajima [Volcanic Alert Level 4] (August 15, 2015)	・At around 07:00 on August 15, a series of volcanic earthquakes centered on the island occurred. Rapid crustal movement indicative of inflation of the volcanic edifice was also observed. ・At 10:15 that day, the JMA raised the volcanic alert level from 3 to 4 (Prepare to evacuate) (caution required in Arimura-cho and Furusato-cho, within 3km of the Showa crater and the Minamidake summit crater). ・At 16:50 that day, Kagoshima City issued evacuation advisories to the residents of the Arimura district of Arimura-cho, the Furusato district of Furusato-cho (areas within 3km of the crater), and the Shioyagamoto district of Kurokami-cho. ・At 18:10 that day, evacuation of all residents (77 people from 51 households) in the areas subject to evacuation was completed.	0	0	0	0	0	・Site inspection by Parliamentary Vice Minister ・Deployment of a Cabinet Office liaison team
Typhoon GONI (1515) (August 22-26, 2015)	・The typhoon that made landfall near Arao City in Kumamoto Prefecture after 06:00 on the 25th moved northward to northern Kyushu, maintaining its strong intensity, and reached the Sea of Japan during the daylight hours of the 25th. ・A maximum instantaneous wind speed of 71.0m was observed at 21:16 on the 23rd on Ishigaki Island, Okinawa Prefecture. In addition, the typhoon and warm, moist air flowing in from the south resulted in heavy rain over the Ryukyu Islands, West Japan, and the Tokai region, with more than 500mm of rain falling on Mie Prefecture in a single day on the 25th.	1	147	12	138	53	・Designation as an extremely severe disaster
Torrential Rain of September 2015 in the Kanto and Tohoku Regions [Including Typhoon ETAU (1518)] (September 9-11, 2015)	・After making landfall near Nishio City, Aichi Prefecture at around 09:30 on September 9, 2015 Typhoon ETAU (1518) moved on to the Sea of Japan and transformed into an extra-tropical cyclone at 15:00 that day. ・As a result of Typhoon ETAU (1518) and weather fronts, heavy rain fell over a wide area from western to northern Japan. In particular, between the 9th and the 11th, a southerly wind flowing into the extra-tropical cyclone into which Typhoon ETAU (1518) transformed and, subsequently, a southeasterly wind from the vicinity of Typhoon KILO (1517) supplied flows of moist air that triggered a succession of line-shaped precipitation systems, causing record-breaking rainfall in the Kanto and Tohoku regions and prompting the issue of emergency heavy rain warnings for Tochigi, Ibaraki, and Miyagi prefectures.	20	82	81	7,090	2,523	・Minister of State for Disaster Management issues a list of requests to relevant ministries and agencies ・Deployment of a Cabinet Office advance information-gathering team ・Dispatchment of government investigation team ・Ministerial meeting (twice) ・Site inspection by Prime Minister (once) ・Site inspection by Minister of State for Disaster Management (twice) ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Designation as an extremely severe disaster
Mt. Aso Eruption [Volcanic Alert Level 3] (September 14, 2015)	・At 09:43 on September 14, an eruption occurred at Mt. Naka-dake 1st Crater. At 09:50, the Japan Meteorological Agency (JMA) issued a preliminary eruption report (the first issuing since the report system was established in August 2015). ・At 10:10, the JMA raised the volcanic alert level from 2 to 3 (Do not approach the volcano) (caution required in the area within 2 km of the crater). ・At 11:00, the local government confirmed that all tourists in the restricted area (2 km from the crater) had been evacuated.	—	—	—	—	—	
Typhoon DUJUAN (1521) (September 27-28, 2015)	・Typhoon DUJUAN (1521) approached the Ishigaki and Yonaguni island areas with violent intensity during the day on the 28th. ・On Yonaguni Island, a maximum instantaneous wind speed of 81.1m was observed at 15:41 on the 28th, the highest figure since statistics began to be compiled. A severe gale buffeted Yaeyama and the surrounding area, while the Sakishima Islands saw stormy seas with high swells and the Okinawa Island area was also battered by rough seas.	0	0	5	23	0	・Dispatchment of government investigation team ・Invocation of Disaster Relief Act

Name of Disaster	Major Events	Human Casualties (persons)		Houses Damaged (houses)			Remarks
		Fatalities/ Missing Persons	Injured	Completely Destroyed	Half Destroyed	Above-floor Flooding	
Heavy Snowfall since November, 2015 (November, 2015 - March, 2016)	In January 2016, a rapidly developing low pressure system caused heavy snowfall over a wide area, even in the plains of the Kanto area. The pace of snowfall was faster than usual due to the strong winter pressure system, which caused damage even in areas that normally receive little snowfall. In Amami Oshima Island, Kagoshima Prefecture, the first snowfall in 115 years was observed since February 12, 1901.	27	631	—	3	—	
The 2016 Kumamoto Earthquake (April 14 and 16, 2016)	・At 09:26 p.m. on April 14, 2016 Maximum seismic intensity of 7 ・At 01:25 a.m. on April 16, 2016 Maximum seismic intensity of 7	273	2,809	8,667	34,719	0	・Establishment of Major Disaster Management Headquarters ・Establishment of On-site Major Disaster Management Headquarters ・Site inspection by Prime Minister (three times) ・Dispatchment of government investigation team ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Invocation of Special Measures Act for Specified Disaster ・Partial invocation of the Act on Reconstruction from Large-Scale Disasters ・Designation as an extremely severe disaster
Heavy Rains from Seasonal Rain Front Starting June 20, 2016 (June 20-25, 2016)	・Warm, moist air flowed in toward the seasonal rain front having stalled over Western to Eastern Japan and a low-pressure system above the seasonal rain front, creating extremely unstable atmospheric conditions. ・Rainfall from 00:00 on 19 onward exceeded 300 mm over a wide area of Kyushu, as well as Chugoku, Shikoku and part of the Izu Islands, while rain in some parts of Kumamoto, Oita and Miyazaki Prefectures exceeded 500 mm.	7	12	37	165	520	・Designation as an extremely severe disaster
Typhoon CHANTHU (1607) (August 16-18, 2016)	・Typhoon CHANTHU (1607) moved northward along the Pacific coast of the Kanto and Tohoku regions, making landfall near Cape Erimo at around 17:30 on August 17. It then continued up through Hokkaido and transformed into an extra-tropical cyclone near Sakhalin island at 03:00 on the 18th. ・The passage of the cold front of the extra-tropical cyclone that was formerly Typhoon CHANTHU (1607) caused localized driving rains in the Kanto region, with 83 mm per hour of rain recorded in Utsunomiya City, Tochigi Prefecture up to 03:14 on the 18th. ・The total rainfall between 00:00 on August 16 and 06:00 on August 18 exceeded 100 mm over an extensive area in the Kanto, Tohoku, and Hokkaido regions.	0	5	0	9	67	・Designation as an extremely severe disaster
Typhoons KOMPASU (1611) & MINDULLE (1609) (August 20-23, 2016)	・Typhoon KOMPASU (1611) formed as a tropical storm over the sea east of Japan at 09:00 on August 20 and approached the Tohoku region before making landfall near Kushiro City, Hokkaido after 23:00 on the 21st. It then continued up through Hokkaido and transformed into an extra-tropical cyclone over the Sea of Okhotsk at 03:00 on the 22nd. ・Typhoon MINDULLE (1609) made landfall near Tateyama City, Chiba Prefecture at around 12:30 on August 22 and continued up through the Kanto and Tohoku regions, making landfall once more on the central part of Hidaka District of Hokkaido Prefercture before 06:00 on the 23rd. It then continued up through Hokkaido before transforming into an extra-tropical cyclone over the Sea of Okhotsk at 12:00 on the 23rd. ・These typhoons and weather fronts caused heavy rain in eastern and northern Japan. Between 00:00 on August 20 and 24:00 on the 23rd, there was 448.5 mm of rainfall at Mt. Amagi in Izu City, Shizuoka Prefecture; 297.5 mm at Ome in Ome City, Tokyo; and 296.0 mm at Itokushibetsu in Shibetsu Town, Hokkaido. Hokkaido experienced particularly heavy rain, receiving double the average rainfall for August.	2	76	6	19	665	・Dispatchment of government investigation team ・Designation as an extremely severe disaster

Name of Disaster	Major Events	Human Casualties (persons)		Houses Damaged (houses)			Remarks
		Fatalities/ Missing Persons	Injured	Completely Destroyed	Half Destroyed	Above-floor Flooding	
Typhoon LIONROCK (1610) (August 26-31, 2016)	・Typhoon LIONROCK (1610) approached the Kanto region in the morning of August 30 and made landfall near Ofunato City, Iwate Prefecture around 17:30 on the 30th, accompanied by a storm area. It then accelerated on a peculiar course that saw it pass through the Tohoku region and enter the Sea of Japan, and it transformed into an extra-tropical cyclone on the 31st. ・This was the first time that a typhoon had made landfall on the Pacific coast of the Tohoku region since the Japan Meteorological Agency began recording statistics in 1951.	29	14	518	2,281	279	・Installation of government on-site communications office ・Appeal to the public by the Minister of State for Disaster Management ・Site inspection by Prime Minister (twice) ・Dispatchment of government investigation team (twice) ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Designation as an extremely severe disaster
Typhoon NAMTHEUN in 2016(1612) (September 1 - 5, 2016)	Typhoon NAMTHEUN in 2016 (1612) made landfall near Nagasaki City, Nagasaki Prefecture, just after 1:00 on September 5. At 9:00 on September 5, it weakened to tropical depression intensity near Tsushima.	—	1	—	—	—	
Typhoon MALOU in 2016 (1613) (September 6 - 8, 2016)	Typhoon MALOU in 2016 (1613), after moving from south to northeastward of Japan, turned into an extratropical cyclone off the coast of Hokkaido.	1	2	15	42	112	
Typhoon MALAKAS (1616) (September 16-20, 2016)	・With strong intensity, Typhoon MALAKAS (1616) made landfall on the Osumi Peninsula, Kagoshima Prefecture after 00:00 on September 20 and then headed northeast across the waters off the coast of Shikoku before making landfall once more near Tanabe City, Wakayama Prefecture around 13:30 the same day. After making landfall yet again after 17:00 that day near Tokoname City, Aichi Prefecture, it transformed into an extra-tropical cyclone at 21:00 the same day off the coast of the Tokai region.	1	47	8	65	509	・Designation as an extremely severe disaster
Typhoon CHABA in 2016 (1618) (September 30 - October 5, 2016)	・Typhoon CHABA in 2016 (1618) approached Kume Island on October 3 with violent typhoon intensity. Then it moved northward across the East China Sea and then northeastward across the Sea of Japan. And it became an extratropical cyclone off Sado Island at 21:00 on October 5. *At 19:02 on October 3, an emergency warning (for storms, waves, heavy rain, and storm surge) was issued for the Okinawa Island area. All warnings were cancelled at 05:42 on October 4.	—	14	—	1	—	・Appeal to the public by the Minister of State for Disaster Management (once)
2016 Earthquake centered in the central Tottori Prefecture (October 21, 2016)	Maximum seismic intensity of Lower 6	0	32	18	312	—	・Dispatchment of government investigation team ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Designation as an extremely severe disaster
Earthquake centered in the northern Ibaraki Prefecture (December 28, 2016)	Maximum seismic intensity of Lower 6	0	2	0	1	—	—
March 27, 2017Avalanche in Nasu, Tochigi Prefecture on (March 27, 2017)	An avalanche hit the Nasu Onsen Family Ski Resort, affecting high-school students were involved during a mountain climbing workshop.	8	40	—	—	—	—
Heavy rains from Seasonal Rain Front starting June 30, 2017and Typhoon NANMADOL (1703) (including Northern Kyushu Heavy Rain) (June 30 - July 10, 2017)	Localized intense rain caused by a seasonal rain front and Typhoon NANMADOL (1703) fell mainly in northern Kyushu. Especially from July 5 to 6, record heavy rain hit northern Kyushu due to warm and very moist air flowing in toward the rain front stalling in the vicinity of the Tsushima Straits.	44	39	338	1,101	223	・Ministerial meeting (three times) ・Site inspection by Prime Minister (once) ・Deployment of a Cabinet Office advance information gathering team ・Dispatchment of government investigation team (twice) ・Installation of government on-site communications office ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Designation as an extremely severe disaster
Heavy Rains from Seasonal Rain Front Starting July 22, 2017 (July 22 - 26, 2017)	Warm and moist air flowed in towards the rain front stalling over Tohoku and Hokuriku regions; stimulating it and causing heavy rain, concentrated in these regions, from July 22.	0	0	3	44	618	・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Designation as an extremely severe disaster

Name of Disaster	Major Events	Human Casualties (persons)		Houses Damaged (houses)			Remarks
		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 Sea of Japan, and at 3:00 a.m. on August 9, it turned into an extratropical cyclone off Yamagata Prefecture. Due to the slow movement of the typhoon, heavy rains were recorded in the Amami region, western Japan, and eastern Japan. In addition to heavy rainfall, gusty winds were observed. The typhoon caused damage to a wide area.	2	51	5	6	47	・Designation as a disaster of extreme severity
Typhoon TALIM (1718) (September 13 - 18, 2017)	Typhoon TALIM (1718), heading north near Miyako Island from September 13 to 14, crossed the Satsuma Peninsula, Kagoshima Prefecture around 11:30 on 17th and made landfall on Tarumizu City, Kagoshima Prefercture around 12:00 the same day. It continued to move north along the Japanese islands with a storm area and transformed into an extra-tropical cyclone at 03:00 on 18th around Sado Island. The typhoon and active rain front caused driving rains from Western to Northern Japan.	5	73	5	615	1,553	・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Designation as an extremely severe disaster
Typhoon LAN (1721) (October 21 - 23, 2017)	Typhoon LAN (1721) moved northward over the sea south of Japan during October 21-22 and made landfall around Kakegawa City in Shizuoka Prefecture around 03:00 on the 23rd with its strong intensity and its very large scale. After crossing the Kanto region with a storm area. It transformed into an extra-tropical cyclone around the sea east of Japan at 09:00 on 23rd. This brought heavy rain over much of Western and Eastern Japan and the Tohoku region; due to well-developed rain clouds surrounding the typhoon and the rain front stalling near Honshu.	8	245	13	485	2,794	・Dispatchment of government investigation team ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Designation as an extremely severe disaster
Heavy Snow from 2017 (November 2017 - March 2018)	Due to the effects of a strong winter air-pressure pattern, heavy snowfalls were observed in some areas on the Japan Sea side. Especially large amounts of well-developed snow clouds flowed in from the Japan Sea side from early to mid-February. In Fukui, Fukui Prefecture, the daily maximum snow depth exceeded 140 cm for the first time in 37 years. The Hokuriku region observed heavy snowfalls overall, with some areas recording snow exceeding six times the average.	116	1,539	9	18	13	・Dispatchment of government investigation team ・Invocation of Disaster Relief Act
Eruption of Kusatsu-Shiranesan (January 23, 2018)	・An eruption occurred at 10:02 a.m., January 23. Volcanic rocks travelled farther than 1 km from the crater near Kagami-ike, Motoshiranesan. ・At 11:05 a.m., the volcanic alert level was raised from 1 to 2 (Do not approach the crater). ・At 11:50 a.m., the volcanic alert level was raised from 2 to 3 (Do not approach the volcano) (caution required within a 2 km radius from the crater near Kagami-ike).	1	11	0	0	0	—
Earthquake centered in the western Shimane Prefecture (April 9, 2018)	Maximum seismic intensity of Upper 5	0	9	16	58	0	・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster
Sediment Disaster in Nakatsu, Oita Prefecture (April 14, 2018)	A landslide in Yabakeimachi, Nakatsu City	6	0	4	0	0	—
Earthquake centered in the northern Osaka Prefecture (June 18, 2018)	Maximum seismic intensity of Lower 6	6	462	21	483	0	・Deployment of a Cabinet Office advance information gathering team ・Ministerial meeting (once) ・Site inspection by Prime Minister (once) ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster

Name of Disaster	Major Events	Human Casualties (persons)		Houses Damaged (houses)			Remarks
		Fatalities/ Missing Persons	Injured	Completely Destroyed	Half Destroyed	Above-floor Flooding	
The Heavy Rain Events of July 2018 (June 28 – July 8, 2018)	Due to the effects of the rain front and Typhoon PRAPIROON (1807), warm and highly humid air was continuously supplied into the vicinity of Japan, resulting in record rainfalls in western Japan and other areas. The rains caused some serious disasters, including river overflows, floods, and landslides, leaving more than 200 people dead or missing. The lifelines were also affected, with water and electricity outages occurring in various areas across Japan, while rail and road transportation was also disrupted.	271	449	6,783	11,342	6,982	・Establishment of Major Disaster Management Headquarters ・Ministerial meeting (once) ・Deployment of a Cabinet Office advance information gathering team ・Dispatchment of government investigation team ・Site inspection by Prime Minister (four times) ・Site inspection by Minister of State for Disaster Management (three times) ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Invocation of Special Measures Act for Specified Disaster ・Designation as an extremely severe disaster
Volcanic activity at Kuchinoerabu-jima [Volcanic Alert Level 4] (August 15, 2018)	From around August 8, many volcanic earthquakes and large amounts of volcanic gases were observed. From around midnight on August 15, an increasing number of volcanic earthquakes were observed at deeper spots. In the small hours of the same day, an earthquake with a maximum magnitude of 1.9 (preliminary) was observed. At 10:30 a.m., the volcanic alert level was raised to 4 (prepare to evacuate).	—	—	—	—	—	—
Typhoon JEBI (1821) (September 4 - 5, 2018)	With very strong intensity, Typhoon JEBI (1821) made landfall on the southern part of Tokushima Prefecture before noon on September 4. It then made landfall again around Kobe City, Hyogo Prefecture before 2 p.m. and continued up through the Kinki region while accelerating. At 9 a.m. on the 5th, it transformed into an extra-tropical cyclone off the coast of the Russian Primorsky Krai. During the approach and passage of the typhoon, very intense winds and rains hit western to northern Japan. The Shikoku and Kinki regions experienced particularly strong winds and rains, with some areas observing record high waves.	14	980	68	833	244	・Ministerial meeting (once) ・Dispatchment of government investigation team ・Designation as an extremely severe disaster
The 2018 Hokkaido Eastern Iburi Earthquake (September 6, 2018)	Maximum seismic intensity of 7 A major power outage occurred across the prefecture.	43	782	469	1,660	—	・Deployment of a Cabinet Office advance information gathering team ・Ministerial meeting (nine times) ・Installation of government on-site communications office ・Dispatchment of government investigation team ・Site inspection by Prime Minister (once) ・Site inspection by Minister of State for Disaster Management (once) ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Designation as an extremely severe disaster
Typhoon TRAMI (1824) (September 29 - October 1, 2018)	From September 28 to dawn on the 30th, Typhoon TRAMI (1824) approached the Okinawa region with very strong intensity. It made landfall near Tanabe City, Wakayama Prefecture around 8 p.m. on the 30th while rapidly accelerating. After crossing eastern and northern Japan, it transformed into an extra-tropical cyclone over the sea east of Japan at 9 a.m. on October 1.	4	231	62	404	326	・Designation as an extremely severe disaster ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster
Earthquake centered in the Kumamoto region of Kumamoto Prefecture (January 3, 2019)	Maximum seismic intensity of Lower 6	1	3	0	0	—	—
Earthquake centered in the Central-Eastern Iburi region of Hokkaido (February 21, 2019)	Maximum seismic intensity of Lower 6	0	6	0	0	—	—
Earthquake centered offshore of Yamagata Prefecture (June 18, 2019)	Maximum seismic intensity of Upper 6	0	43	0	28	—	・Ministerial meeting (two times) ・Dispatchment of government investigation team

Name of Disaster	Major Events	Human Casualties (persons)		Houses Damaged (houses)			Remarks
		Fatalities/ Missing Persons	Injured	Completely Destroyed	Half Destroyed	Above-floor Flooding	
Heavy Rain since Late June (June 28 -July 5, 2019)	Since late June, seasonal rain front was stalling in western and around eastern Japan and warm moist air flowing toward the front has increased its activity. The total precipitation from June 28 to July 8 reached 1,089.5 mm in Ebino, Ebino City of Miyazaki Prefecture, exceeded 500 mm in Kagoshima, Miyazaki, and Kumamoto Prefectures. Resulting in the record-breaking heavy rainfalls.	2	5	11	9	92	・Ministerial meeting (three times) ・Deployment of a Cabinet Office advance information gathering team ・Designation as an extremely severe disaster
Heavy rains from Seasonal Rain Front and 2019 Typhoon Danas (1905) (July 17 – 22, 2019)	Warm and humid air around Typhoon Danas (1905) and the North Pacific Subtropical High brought heavy localized rainfall in western Japan from 20 to 21. From the night of 19 to the afternoon of 20, Goto and Tsushima in Nagasaki Prefecture experienced the record-breaking heaviest rain in decades, and at 10:05 pm on 20, an emergency heavy rain warning was issued (all warnings were cancelled by 4:10 pm on the same day). In addition, developed rain clouds stalled over Saga and Fukuoka Prefectures on the early morning of 21, resulting in record-breaking heavy rain in some areas, exceeding the July average rainfall in 24 hours. Typhoon Danas transformed into an extra-tropical cyclone at 9:00 p.m. On 21.	1	6	0	1	216	・Ministerial meeting (once) ・Dispatchment of government investigation team ・Designation as an extremely severe disaster
Typhoon FRANCISCO in 2019 (1908) (August 5 – 7, 2019)	Typhoon FRANCISCO in 2019 (1908) made landfall near Miyazaki City at around 5:00 on the 6th, and continued to move northwestward and weakened to tropical depression intensity in the Sea of Japan at 9:00 on the 7th. In Nobeoka City, Miyazaki Prefecture, and Saiki City, Oita Prefecture, it rained heavily, about 110 to 120 millimeters per hour. The total rainfall from the 5th to the 7th 24:00 was 467 millimeters in Kigashira, Naga Town, Tokushima Prefecture. In addition, the Pacific side of Kyushu and Shikoku experienced heavy rainfall of around 300 mm.	1	5	1	0	1	
Typhoon KROSA in 2019 (1910) (August 12 – 16, 2019)	Typhoon KROSA in 2019 (1910) made landfall near Kure City in Hiroshima Prefecture around 3:00 p.m. on 15 and brought heavy rain with strong winds over the wide range of western and eastern Japan on the Pacific side, with total rainfall exceeding 800 mm in some places. Though it transformed into an extra-tropical cyclone in western Hokkaido at 9 p.m. on 16, it approached Hokkaido with its strength maintained, and very intense rainfalls with strong wind hit Hokkaido and other areas until the dawn of 17.	2	58	1	0	2	・Ministerial meeting (two times) ・Designation as an extremely severe disaster
Heavy Rain Event of August 2019 related to the rain front (August 26 – 29, 2019)	The front and humid air resulted in record-breaking heavy rainfall, with total rainfall exceeding 600 mm in northern Kyushu and other areas since August 26. In particular, as the threat of serious disasters significantly increased, with record-breaking heavy rainfalls of at least100 mm per hour recorded at dawn on August 28, an emergency heavy rain warning was issued for Saga, Fukuoka and Nagasaki prefectures at 5:50 a.m. on 28.	4	4	95	890	918	・Ministerial meeting (three times) ・Deployment of a Cabinet Office advance information gathering team ・Dispatchment of government investigation team ・Site inspection by Minister of State for Disaster Management ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Designation as an extremely severe disaster
Typhoon FAXAI in 2019 (T1915) (September 7 – 9, 2019)	From July 7 to 8, the typhoon moved northward from the ocean surrounding the Ogasawara Islands to the Izu Islands, passed near the Miura Peninsula before 3:00 a.m. on 9, and made powerful landfall near Chiba City before 5:00 a.m. As the typhoon approached and passed Japan, fierce wind and rain hit the Izu Islands, the southern Kanto region, and others. The storm was a record-breaking one, with many points having the highest maximum wind speeds and the highest maximum instantaneous wind speeds ever recorded in Japan. In particular, the maximum wind velocity of 35.9 m and the maximum instantaneous wind speed of 57.5 m were observed in Chiba City.	9	160	457	4,806	125	・Deployment of a Cabinet Office advance information gathering team ・Site inspection by Minister of State for Disaster Management (three times) ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Designation as an extremely severe disaster

Name of Disaster	Major Events	Human Casualties (persons)		Houses Damaged (houses)			Remarks
		Fatalities/ Missing Persons	Injured	Completely Destroyed	Half Destroyed	Above-floor Flooding	
Typhoon HAGIBIS in 2019 (T1919) (October 10 – 13, 2019)	Before 7 p.m. on 12, the large typhoon with strong power made landfall on the Izu Peninsula. It passed through the Kanto region and blew out to the east sea of the Tohoku region before dawn on 13. The typhoon caused record rainfall over a wide area in Shizuoka and Niigata Prefectures, as well as in the Kanto-Koshin and the Tohoku regions, due to the typhoon's developed rain clouds and moist air around it. Atmospheric conditions became extremely unstable as the typhoon approached, and gusts of wind, believed to be tornadoes, were reported in Ichihara City, Chiba Prefecture.	108	375	3,229	28,107	7,524	・Establishment of Major Disaster Management Headquarters ・Ministerial meeting (two times) ・Deployment of a Cabinet Office Investigation Team ・Dispatchment of government investigation team ・Site inspection by Prime Minister (two times) ・Site inspection by Minister of State for Disaster Management (six times) ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Specified disaster designation ・Designation as an extremely severe disaster ・Major disaster designation
The Heavy Rain Event of July 2020 (July 3 - 31, 2020)	Total precipitation from July 3 to 14 exceeded half of the normal annual precipitation at some points. The rainfall was heavy for a long period of time over a wide area of western and eastern Japan, mainly in the Kyushu region. Especially in the northern Kyushu region, the 48-hour rainfall was 1.4 times more than the previous record, and several locations set new records. As a result of this record-breaking rainfall, a special warning for heavy rain was issued in Kumamoto and Kagoshima Prefectures at 4:50 on the 4th, and Fukuoka, Saga and Nagasaki Prefectures at 16:30 on the 6th. It was also issued in Gifu Prefecture at 6:30 on the 8th, and at 6:43 on the same day in Nagano Prefecture.	86	80	1,620	4,509	1,652	・Establishment of Major Disaster Management Headquarters ・Ministerial meeting ・Deployment of a Cabinet Office Investigation Team ・Site inspection by Prime Minister ・Site inspection by Minister of State for Disaster Management (6 times) ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster ・Specified disaster designation ・Designation as a disaster of extremely severity ・Major disaster designation
Typhoon HAISHEN in 2020 (T2010) (September 5 - 7, 2020)	Typhoon HAISHEN in 2020 (T2010) approached the Nansei Islands and Kyushu from September 5 to 7 with a large and very strong storm. It then made landfall on the Korean Peninsula and turned into an extratropical cyclone at 3:00 on September 8. The maximum wind speed was 44.2 m/s and the maximum wind gust speed was 59.4 m/s at Nomozaki, Nagasaki. Violent storm or storm winds were observed mainly in the Nansei Islands and Kyushu, exceeding the first value in the history of observation, making it a record-breaking storm.	6	110	7	40	31	・Ministerial meeting (twice) ・Appeal to the public by the Minister of State for Disaster Management (twice)
Typhoon CHAN-HOM in 2020 (2014) (October 7 - 12, 2020)	Typhoon CHAN-HOM in 2020 (2014) brought record-breaking rainfall to the southern Izu Islands, exceeding 700 millimeters in many places due to the effects of the stationary front and typhoon. A heavy rain emergency warning was announced at 17:00 on the 10th in Miyake Village and Mikurajima Village in Tokyo.	0	3	0	0	0	・Ministerial meeting ・Invocation of Disaster Relief Act
Heavy Snowfall since December 16 (December 16 - 18, 2020)	Due to a strong winter pressure system, it snowed intermittently from northern Japan to western Japan, mainly on the Sea of Japan side. Heavy snowfall occurred mainly in the mountainous areas of the Kanto, Hokuriku and Tohoku regions. In particular, Fujiwara, Minakami -machi, Tone-gun, Gunma Prefecture, experienced a record-breaking snowfall, with the maximum snowfall amounts per 48 and 72 hours, ranking the first in Japan (based on observations by Automated Meteorological Data Acquisition System).	6 (*5)	63 (*4)	0	0	0	・Ministerial meeting ・Invocation of Disaster Relief Act
Heavy Snowfall since January 7 (January 7 - 11, 2021)	A low pressure system developed rapidly from January 7 to 8 in the morning. It moved from the Sea of Japan through northern Japan to the waters near the Chishima Islands. After that, strong cold air flowed into the sky over Japan, and a strong winter-type pressure pattern continued through the 11th. These factors resulted in heavy snow and wind storms over a wide area from northern Japan to western Japan. In particular, Takada, Joetsu City, Niigata Prefecture, observed 103 cm of snowfall in 24 hours on the 9th, setting a new record for the most snowfall in the history of observation. Many locations experienced record-breaking snow and wind storms.	35 (*5)	382 (*4)	1	2	1	・Ministerial meetin ・Deployment of a Cabinet Office Investigation Team ・Invocation of Disaster Relief Act
Earthquake Centered off the Coast of Fukushima Prefecture in 2021 (February 13, 2021)	Maximum intensity of 6.0 earthquake	1	186	96	1,372	0	・Ministerial meeting （twice） ・Deployment of a Cabinet Office Investigation Team ・Site inspection by Minister of State for Disaster Management (six times) ・Invocation of Disaster Relief Act ・Invocation of Act on Support for Reconstructing Livelihoods of the Affected due to Disaster

*1 Established by a Ministerial meeting decision, and therefore not based on the Basic Act on Disaster Management.
*2 The number of damaged houses in the July 2012 Northern Kyushu Torrential Rains contains some duplications.
*3 The number of damaged houses due to heavy rains from June 21 to July 7, 2012 contains some duplications.
*4 The total of those caused by stranded vehicles and those caused by accidents during snow removal.
*5 Due to accidents during snow removal.
Source: Cabinet Office, Fire and Disaster Management Agency Materials, Major Disaster Management Headquarters materials

Fig. A-10 Establishment of Extreme Disaster Management Headquarters and Major Disaster Management Headquarters

As of March 1, 2021

	Name of Headquarters	Period of Establishment	Manager of Headquarters
1	Heavy Snowfall Major Disaster Management Headquarters	Jan. 29 - May 31, 1963	Minister of State
2	Niigata Earthquake Major Disaster Management Headquarters	Jun. 16 - Oct. 31, 1964	Minister of State
3	Typhoons SHIRLEY (6523), TRIX (6524), and VIRGINIA (6525) Major Disaster Management Headquarters	Sep. 17 - Dec. 17, 1965	Minister of State
4	Typhoons HELEN (6624) and IDA (6626) Major Disaster Management Headquarters	Sep. 26 - Dec. 27, 1966	Minister of State
5	1967 July and August Torrential Rains Major Disaster Management Headquarters	Jul. 9 - Dec. 26, 1967	Minister of State
6	1968 Tokachi-oki Earthquake Major Disaster Management Headquarters	May 16, 1968 - May 2, 1969	Minister of State
7	July 1972 Torrential Rains Major Disaster Management Headquarters	Jul. 8 - Dec. 19, 1972	Minister of State
8	Typhoon FRAN (7617) Major Disaster Management Headquarters	Sep. 13 - Dec. 10, 1976	Director General of National Land Agency (NLA)
9	1977 Mt. Usu Eruption Major Disaster Management Headquarters	Aug. 11, 1977 - Dec. 4, 1979	Director General of NLA
10	1978 Izu-Oshima-kinkai Earthquake Major Disaster Management Headquarters	Jan. 15 - Aug. 4, 1978	Director General of NLA
11	1978 Miyagi-ken-oki Earthquake Major Disaster Management Headquarters	Jun. 13 - Nov. 28, 1978	Director General of NLA
12	Typhoon TIP (7920) Major Disaster Management Headquarters	Oct. 20 - Dec. 4, 1979	Director General of NLA
13	July and August 1982 Torrential Rains Major Disaster Management Headquarters	Jul. 24 - Dec. 24, 1982	Director General of NLA
14	1983 Nihon-kai-chubu Earthquake Major Disaster Management Headquarters	May 26 - Dec. 23, 1983	Director General of NLA
15	July 1983 Torrential Rains Major Disaster Management Headquarters	Jul. 23 - Dec. 23, 1983	Director General of NLA
16	1983 Miyake Island Eruption Major Disaster Management Headquarters	Oct. 4, 1983 - Jun. 5, 1984	Director General of NLA
17	1984 Nagano-ken-seibu Earthquake Major Disaster Management Headquarters	Sep. 16, 1984 - Feb. 19, 1985	Director General of NLA
18	1991 Mt. Unzen Eruption Major Disaster Management Headquarters	Jun. 4, 1991 - Jun. 4, 1996	Director General of NLA
19	1993 Hokkaido-nansei-oki Earthquake Major Disaster Management Headquarters	Jul. 13, 1993 - Mar. 31, 1996	Director General of NLA
20	August 1993 Torrential Rains Major Disaster Management Headquarters	Aug. 9, 1993 - Mar. 15, 1994	Director General of NLA
21	1995 Great Hanshin-Awaji Earthquake Major Disaster Management Headquarters	Jan. 17, 1995 - Apr. 21, 2002	Director General of NLA ↓ Minister of Great Hanshin-Awaji Earthquake Measures ↓ Director General of NLA ↓ Minister of State for Disaster Management
	Great Hanshin-Awaji Earthquake Extreme Disaster Management Headquarters*1	Jan. 19 - Apr. 28, 1995	Prime Minister
22	1997 Diamond Grace Oil Spill Major Disaster Management Headquarters	Jul. 2-11, 1997	Minister of Transport
23	2000 Mt. Usu Eruption Major Disaster Management Headquarters	Mar. 31, 2000 - Jun. 28, 2001 *2	Director General of NLA ↓ Minister of State for Disaster Management
24	2000 Miyake Island Eruption and Niijima and Kozushima Island Earthquake Emergency Management Headquarters	Aug. 29, 2000 - May 15, 2002	Director General of NLA ↓ Minister of State for Disaster Management
	2000 Miyake Island Eruption Major Disaster Management Headquarters*3	May 16, 2002 - Mar. 31, 2005	
25	Typhoon TOKAGE (0423) Major Disaster Management Headquarters	Oct. 21, 2004 - Mar. 31, 2007	Minister of State for Disaster Management
26	2004 Mid Niigata Prefecture Earthquake Major Disaster Management Headquarters	Oct. 24, 2004 - Mar. 31, 2008	Minister of State for Disaster Management
27	2011 Great East Japan Earthquake Extreme Disaster Management Headquarters	Mar. 11, 2011 -	Prime Minister
28	Typhoon TALAS (1112) Major Disaster Management Headquarters	Sep. 4, 2011 - Dec. 26, 2014	Minister of State for Disaster Management
29	2014 Torrential Rains Major Disaster Management Headquarters	Feb. 18 - May 30, 2014	Minister of State for Disaster Management
30	August 2014 Torrential Rains Major Disaster Management Headquarters	Aug. 22, 2014 - Jan. 9, 2015	Minister of State for Disaster Management
31	2014 Mt. Ontake Eruption Major Disaster Management Headquarters	Sep. 28, 2014 - Nov. 9, 2015	Minister of State for Disaster Management
32	2016 Emergency Response Headquarters for the Earthquake Centered in the Kumamoto Region of Kumamoto Prefecture	Apr. 14, 2016 - Nov. 30, 2018	Minister of State for Disaster Management
33	Emergency Response Headquarters for the Heavy Rain in July 2018	Jul. 8 - Nov. 30, 2018	Minister of State for Disaster Management
34	Typhoon Hagibis in 2019 (T1919) Major Disaster Management Headquarters	Oct. 13, 2019 – Mar. 31, 2020	Minister of State for Disaster Management
35	Major Disaster Management Headquarters for the Heavy Rain Event of July 2020	Jul. 5 - Dec. 25, 2020	Minister of State for Disaster Management

Notes: The above are Extreme Disaster Management Headquarters and Major Disaster Management Headquarters based on the Basic Act on Disaster Management (Act No. 223 of 1961).

*1 Established within the Cabinet Office based on a Ministerial meeting resolution, not based on the Basic Act on Disaster Management.

*2 Based on reports that the eruption had subsided. Upon dissolution of the Headquarters, the Mt. Usu Eruption Disaster Restoration and Recovery Measures Council was established.

*3 The names of Niijima Island and Kozushima Island were changed with the conclusion of response measures.

Source: Cabinet Office

Fig. A-11 Dispatchment of Government Investigation Teams (Since the Great Hanshin-Awaji Earthquake)

As of March 1, 2021

Year	Name of Disaster	Deployment Dates	Prefecture Surveyed	Team Leader
1995	1995 Hyogo-ken-Nanbu Earthquake (Great Hanshin-Awaji Earthquake)	Jan. 17-18	Hyogo	Director General of National Land Agency (NLA)
1997	July 1997 Torrential Rains from Seasonal Rain Front	Jul. 11-12	Kagoshima, Kumamoto	Director General of NLA
1998	End of August 1998 Torrential Rains	Aug. 28	Tochigi, Fukushima	Parliamentary Vice-Minister of National Land
1999	Heavy Rains Starting June 23, 1999	Jun. 30 - Jul. 1	Hiroshima	Director General of NLA
	Heavy Rains from Typhoon BART (9918) and Rain Front	Sep. 25	Kumamoto	Director General of NLA
2000	2000 Eruption of Mt. Usu	Mar. 31 - Apr. 1	Hokkaido	Director General of NLA
	2000 Tottori-seibu Earthquake	Oct. 7	Tottori	Director General of NLA
2001	2001 Geiyo Earthquake	Mar. 29	Hiroshima, Ehime	Parliamentary Vice-Minister of Cabinet Office
2003	July Seasonal Rain Front Torrential Rains	Jul. 22	Kumamoto, Kagoshima	Minister of State for Disaster Management
	Northern Miyagi Earthquake	Jul. 27	Miyagi	Minister of State for Disaster Management
	2003Tokachi-oki Earthquake	Sep. 26-27	Hokkaido	State-Minister of the Cabinet Office
2004	July 2004 Niigata and Fukushima Torrential Rains	Jul. 14	Niigata	Minister of State for Disaster Management
		Jul. 15	Fukushima	State-Minister of the Cabinet Office
	July 2004 Fukui Torrential Rains	Jul. 20	Fukui	State-Minister of the Cabinet Office
	Typhoon MEARI (0421)	Oct. 1	Mie	Minister of State for Disaster Management
	Typhoon MA-ON (0422)	Oct. 14	Shizuoka	State Minister of the Cabinet Office
	Typhoon TOKAGE (0423)	Oct. 22	Hyogo, Kyoto	Minister of State for Disaster Management
		Oct. 22	Kagawa, Okayama	State-Minister of the Cabinet Office
	2004 Mid Niigata Prefecture Earthquake	Oct. 24	Niigata	Minister of State for Disaster Management
2005	Fukuoka-ken-Seihou-oki Earthquake	Mar. 20-21	Fukuoka	State-Minister of the Cabinet Office
	Miyagi-ken-oki Earthquake	Aug. 16-17	Miyagi	Parliamentary Vice-Minister of Cabinet Office
	Typhoon NABI (0514)	Sep. 9	Miyazaki	Minister of State for Disaster Management
2006	Heavy Rains from Seasonal Rain Front Starting July 4	Jul. 21	Nagano	Minister of State for Disaster Management
		Jul. 25	Kagoshima	State-Minister of the Cabinet Office
	Typhoon SHANSHAN (0613)	Sep. 19	Miyazaki	Minister of State for Disaster Management
	Tornado in Saroma, Hokkaido	Nov. 7-8	Hokkaido	Minister of State for Disaster Management
2007	2007 Noto-hanto Earthquake	Mar. 25-26	Ishikawa	Minister of State for Disaster Management
	Heavy Rains from Typhoon MAN-YI (0704) and Seasonal Rain Front	Jul. 13	Kumamoto	State-Minister of the Cabinet Office
	2007 Niigataken Chuetsu-oki Earthquake	Jul. 16	Niigata	Minister of State for Disaster Management
2008	2008 Iwate-Miyagi Nairiku Earthquake	Jun. 14-15	Iwate, Miyagi	Minister of State for Disaster Management
	Earthquake Epicentered Along Northern Coast of Iwate Prefecture	Jul. 24	Iwate, Aomori	Minister of State for Disaster Management
	End of August 2008 Torrential Rains	Aug. 29	Aichi	Minister of State for Disaster Management
2009	July 2009 Torrential Rains in Chubu and Northern Kyushu	Jul. 22	Yamaguchi	Minister of State for Disaster Management
		Jul. 27	Fukuoka	Minister of State for Disaster Management
	Typhoon ETAU (0909)	Aug. 11	Hyogo, Okayama	Minister of State for Disaster Management
2011	2011 Tohoku Earthquake and Tsunami (Great East Japan Earthquake)	Mar. 11	Miyagi	State-Minister of the Cabinet Office
		Mar. 12	Iwate	State-Minister of the Cabinet Office
		Mar. 12	Fukushima	Parliamentary Vice-Minister of Finance
	July 2011 Niigata and Fukushima Torrential Rains	Jul. 31	Niigata, Fukushima	Minister of State for Disaster Management
		Aug. 2	Fukushima	State-Minister of the Cabinet Office
	Typhoon TALAS (1112)	Sep. 4-7	Wakayama, Nara, Mie	Parliamentary Vice-Minister of Cabinet Office
		Sep. 6	Nara	Minister of Land, Infrastructure, Transport and Tourism
2012	May 2012 Gust	May 7	Ibaraki, Tochigi	State-Minister of the Cabinet Office
	July 2012 Torrential Rains in Northern Kyushu	Jul. 13-14	Kumamoto, Oita	Minister of State for Disaster Management
		Jul. 21-22	Fukuoka, Oita, Kagoshima	Minister of State for Disaster Management

Year	Name of Disaster	Deployment Dates	Prefecture Surveyed	Team Leader
2013	Heavy Snow in2012	Mar. 4-5	Hokkaido	Parliamentary Vice-Minister of Cabinet Office, Special Advisor to the Prime Minister
	Heavy Rains with Seasonal Rain Front	Jul. 29-30	Shimane, Yamaguchi	State-Minister of the Cabinet Office
		Aug. 3	Yamagata, Fukushima	Parliamentary Vice-Minister of Cabinet Office
		Aug. 3	Niigata	Parliamentary Vice-Minister of Agriculture, Forestry and Fisheries
		Aug. 3	Iwate, Miyagi	Parliamentary Vice-Minister of Land, Infrastructure, Transport and Tourism
		Aug. 9	Shimane, Yamaguchi	Minister of State for Disaster Management
		Aug. 13	Akita	State-Minister of the Cabinet Office
		Aug. 13	Iwate, Akita	Parliamentary Vice-Minister of Cabinet Office
	Tornadoes on September 2 and 4	Sep. 3	Saitama	Parliamentary Vice-Minister of Cabinet Office
		Sep. 4	Chiba	Parliamentary Vice-Minister of Cabinet Office
	Heavy Rains from Typhoon MAN-YI (1318)	Sep. 17	Saitama	Parliamentary Vice-Minister of Cabinet Office
		Sep. 18	Kyoto	Acting Minister of State for Disaster Management
		Sep. 18	Shiga, Fukui	State-Minister of the Cabinet Office
		Sep. 19	Mie	Parliamentary Vice-Minister of Cabinet Office
		Sep. 19-20	Aomori, Iwate, Akita	Special Advisor to the Prime Minister
	Typhoon WIPHA (1326)	Oct. 19	Oshimacho (Tokyo)	Minister of State for Disaster Management
2014	Heavy Snow in 2013	Feb. 6	Akita	State-Minister of the Cabinet Office
		Feb. 17	Yamanashi	Parliamentary Vice-Minister of Cabinet Office
		Mar. 7	Tokyo, Yamanashi	State-Minister of the Cabinet Office, State-Minister of the Environment
		Mar. 10	Saitama	State-Minister of the Cabinet Office
		Mar. 15	Nagano, Gunma	State-Minister of the Cabinet Office
	Typhoon NEOGURI (1408) and Seasonal Rain Front	Jul. 11	Nagano	Parliamentary Vice-Minister of Cabinet Office
		Jul. 12	Yamagata	Parliamentary Vice-Minister of Cabinet Office
		Jul. 14-15	Okinawa	Parliamentary Vice-Minister of Cabinet Office
	Typhoons NAKRI (1412) & HALONG (1411)	Aug. 11-13	Tokushima, Kochi	State-Minister of the Cabinet Office
		Aug. 11	Tochigi	Parliamentary Vice-Minister of Cabinet Office
	Heavy Rains Starting August 15	Aug. 18-19	Hyogo, Kyoto	State-Minister of the Cabinet Office
		Aug. 19	Gifu	Parliamentary Vice-Minister of Cabinet Office
	Heavy Rains in Hiroshima Prefecture Starting August 19	Aug. 20-21	Hiroshima	Minister of State for Disaster Management
		Sep. 6	Hiroshima	Minister of State for Disaster Management
		Sep. 17	Hiroshima	Parliamentary Vice-Minister of Cabinet Office
	Mt. Ontake Eruption	Sep. 28	Nagano	State-Minister of the Cabinet Office
		Oct. 11	Nagano	Minister of State for Disaster Management
	Earthquake Epicentered in Northern Nagano Prefecture	Nov. 23	Nagano	Parliamentary Vice-Minister of Cabinet Office
		Dec. 2	Nagano	Minister of State for Disaster Management
	Heavy Snow in 2014	Dec. 9	Tokushima	Minister of State for Disaster Management
2015	Eruption of Kuchinoerabu-jima	May 29-30	Kagoshima	State-Minister of the Cabinet Office
	Torrential Rain of September 2015 in the Kanto and Tohoku Regions	Sep. 11	Ibaraki, Tochigi	State-Minister of the Cabinet Office
	Typhoon DUJUAN (1521)	Sep. 30-Oct. 1	Okinawa	Parliamentary Vice-Minister of Cabinet Office
2016	The 2016 Kumamoto Earthquake	Apr. 15	Kumamoto	State-Minister of the Cabinet Office
	Typhoons KOMPASU (1611) & MINDULLE (1609)	Aug. 28-29	Hokkaido	Parliamentary Vice-Minister of Cabinet Office
	Typhoon LIONROCK (1610)	Aug. 31-Sep. 1	Iwate	Parliamentary Vice-Minister of Cabinet Office
		Sep. 5	Hokkaido	Minister of State for Disaster Management
	Earthquake centered in the central Tottori Prefecture	Oct. 29	Tottori	State-Minister of the Cabinet Office
2017	Heavy Rains from Seasonal Rain Front Starting June 30, 2017 and Typhoon NANMADOL (1703)	Jul. 7	Fukuoka	State-Minister of the Cabinet Office
		Jul. 9	Oita, Fukuoka	Minister of State for Disaster Management
	Typhoon LAN (1721)	Oct. 27	Osaka, Wakayama	Minister of State for Disaster Management
2018	Heavy Snow in 2017	Feb. 24	Fukui	Minister of State for Disaster Management
	The Heavy Rain Event of July 2018	Jul. 9	Okayama, Hiroshima	Minister of State for Disaster Management
	Typhoon JEBI (1821)	Sep. 11	Hyogo Osaka	Minister of State for Disaster Management
	The 2018 Hokkaido Eastern Iburi Earthquake	Sep. 19	Hokkaido	Minister of State for Disaster Management

2019	Earthquake centered offshore of Yamagata Prefecture	Jul. 1	Niigata, Yamagata	Minister of State for Disaster Management
	Heavy Rains from Seasonal Rain Front and Typhoon Danas (1905)	Jul. 24 - 25	Nagasaki, Kagoshima	Minister of State for Disaster Management
	Heavy rainfall associated with the Baiu front in August 2019	Aug. 31	Saga	Minister of State for Disaster Management
	Typhoon Hagibis in 2019 (T1919)	Oct. 14	Fukushima	Minister of State for Disaster Management

Source: Cabinet Office

Fig. A-12 Application of the Disaster Relief Act (Since the Great Hanshin-Awaji Earthquake)

As of March 4, 2021

Year	Name of Disaster	Date of Invocation	Prefecture	No. of Municipalities to which the Act was applied
1995	1995 Hyogo-ken-Nanbu Earthquake (Great Hanshin-Awaji Earthquake)	Jan. 17	Hyogo	20
			Osaka	5
	Niigata-ken-Hokubu Earthquake	Apr. 1	Niigata	1
	Heavy Rain Starting on July 3	Jul. 5	Ehime	1
	July 1995 Seasonal Rain Front Torrential Rains	Jul. 11	Niigata	2
		Jul. 11, Jul. 12	Nagano	2
	Heavy Rain Starting on August 10	Aug. 10	Niigata	1
1996	Typhoon VIOLET (9617)	Sep. 22	Saitama	1
		Sep. 22	Chiba	2
1997	July 1997 Seasonal Rain Front Torrential Rains	Jul. 10	Kagoshima	1
	Typhoon OLIWA (9719)	Sep. 16	Oita	1
			Miyazaki	4
			Kagoshima	1
1998	Early August 1998 Torrential Rains	Aug. 4	Niigata	3
	End of August 1998 Torrential Rains	Aug. 27	Fukushima	3
		Aug. 28	Ibaraki	1
		Aug. 27, Aug. 30	Tochigi	4
		Aug. 28	Saitama	1
		Aug. 3	Shizuoka	1
	Typhoon STELLA (9805)	Sep. 16	Saitama	1
	Typhoon VICKI (9807)	Sep. 22	Fukui	1
			Hyogo	1
			Nara	1
	Heavy Rains of September 23–25, 1998	Sep. 25	Kochi	6
	Typhoon ZEB (9810)	Oct. 17	Okayama	4
1999	Heavy Rains Starting June 23, 1999	Jun. 29	Hiroshima	2
			Fukuoka	1
	Torrential Rains in Tsushima Region on August 27–28, 1999	Aug. 27	Nagasaki	1
	Heavy Rains from Typhoon BART (9918) and Rain Front	Sep. 24	Yamaguchi	9
			Fukuoka	1
			Kumamoto	9
	Tokaimura Criticality Accident	Sep. 3	Ibaraki	2
	Heavy Rains Starting October 27, 1999	Oct. 28	Aomori	1
			Iwate	1
2000	2000 Eruption of Mt. Usu	Mar. 29	Hokkaido	3
	2000 Miyake Is. Eruption	Jun. 26	Tokyo	1
	2000 Niijima and Kozushima Is. Earthquake	Jul. 1, Jul. 15	Tokyo	2
	Typhoon KIROGI (0003)	Jul. 8	Saitama	1
	Heavy Rains from 2000 Autumn Rain Front and Typhoon SAOMAI (0014)	Sep. 11	Aichi	21
			Gifu	1
	2000 Tottori-ken-Seibu Earthquake	Oct. 6	Tottori	6
			Shimane	2
2001	2001 Geiyo Earthquake	Mar. 24	Hiroshima	13
			Ehime	1
	Heavy Rains of September 6, 2001	Sep. 6	Kochi	2
	Typhoon NARI (0116)	Sep. 8, Sep. 11	Okinawa	2
2002	Typhoon CHATAAN (026)	Jul. 10	Iwate	1
		Jul. 11	Gifu	1
2003	July Seasonal Rain Front Torrential Rains	Jul. 19	Fukuoka	5
		Jul. 20	Kumamoto	1
	Northern Miyagi Earthquake	Jul. 26	Miyagi	5
	Typhoon ETAU (0310)	Aug. 9	Hokkaido	3
2004	July 2004 Niigata and Fukushima Torrential Rains	Jul. 13	Niigata	7
	July 2004 Fukui Torrential Rains	Jul. 18	Fukui	5
	Typhoon NAMTHEUN (0410), Typhoon MALOU (0411), and Related Heavy Rains	Jul. 31	Tokushima	2

Year	Name of Disaster	Date of Invocation	Prefecture	No. of Municipalities to which the Act was applied
2004	Typhoon MEGI (0415) and Heavy Rains from Rain Front	Aug. 17	Ehime	1
			Kochi	1
	Typhoon CHABA (0416)	Aug. 30	Okayama	9
			Kagawa	13
			Ehime	1
			Miyazaki	2
	Typhoon SONGDA (0418)	Sep. 7	Hiroshima	2
	Typhoon MEARI (0421)	Sep. 29	Mie	5
			Ehime	4
			Hyogo	2
	Typhoon MA-ON (0422)	Oct. 9	Shizuoka	1
	Typhoon TOKAGE (0423)	Oct. 2	Miyazaki	1
			Tokushima	4
			Kagawa	9
			Hyogo	18
			Gifu	1
			Kyoto	7
	2004 Mid Niigata Prefecture Earthquake	Oct. 23	Niigata	54
2005	2005 Fukuoka-ken-Seihou-oki Earthquake	Mar. 20	Fukuoka	1
	Typhoon NABI (0514)	Sep. 4	Tokyo	2
		Sep. 6	Yamaguchi	2
			Kochi	1
			Miyazaki	13
		Sep. 4	Kagoshima	1
	2006 Heavy Snowfall	Jan. 6, Jan. 8, Jan. 11, Jan. 13	Niigata	11
		Jan. 7, Jan. 12	Nagano	8
2006	June 2006 Extended Rain Landslide Disaster	Jun. 15	Okinawa	2
	Heavy Rains from Seasonal Rain Front Starting July 4	Jul. 19	Nagano	3
		Jul. 22	Kagoshima	6
			Miyazaki	1
	Typhoon SHANSHAN (0613)	Sep. 17	Miyazaki	1
	Tornado in Saroma, Hokkaido	Nov. 7	Hokkaido	1
2007	2007 Noto-hanto Earthquake	Mar. 25	Ishikawa	7
	Heavy Rains from Typhoon MAN-YI (0704) and Seasonal Rain Front	Jul. 6	Kumamoto	1
	2007 Niigataken Chuetsu-oki Earthquake	Jul. 16	Niigata	10
	Typhoon USAGI (0705)	Aug. 2	Miyazaki	1
	2007 Heavy Rains from Typhoon NARI (0711) and Rain Front	Sep. 17	Akita	2
2008	Low-Pressure System from February 23 to 24	Feb. 24	Toyama	1
	2008 Iwate-Miyagi Nairiku Earthquake	Jun. 14	Iwate	5
			Miyagi	2
	Heavy Rains Starting July 28	Jul. 28	Toyama	1
			Ishikawa	1
	End of August 2008 Torrential Rains	Aug. 28	Aichi	2
2009	July 2009 Torrential Rains in Chubu and Northern Kyushu	Jul. 21	Yamaguchi	2
		Jul. 24	Fukuoka	1
	Typhoon ETAU (0909)	Aug. 9	Hyogo	3
			Okayama	1
2010	2010 Heavy Rains from Seasonal Rain Front	Jul. 14	Hiroshima	2
		Jul. 15	Yamaguchi	1
		Jul. 16	Hiroshima	1
	Heavy Rains in Amami Region, Kagoshima Prefecture	Oct. 20	Kagoshima	3
2011	Heavy Snow Starting November 2010	Jan. 27	Niigata	4
		Jan. 30	Niigata	2
		Jan. 31	Niigata	3
	Mt. Kirishima (Shinmoedake) Eruption	Jan. 30	Miyazaki	1
		Feb. 10	Miyazaki	1

Year	Name of Disaster	Date of Invocation	Prefecture	No. of Municipalities to which the Act was applied
2011	2011 Great East Japan Earthquake	Mar. 11	Aomori	2
			Iwate	34
			Miyagi	35
			Fukushima	59
			Ibaraki	37
			Tochigi	15
			Chiba	8
			Tokyo	47
	July 2011 Niigata and Fukushima Torrential Rains	Jul. 29	Niigata	15
			Fukushima	9
	Typhoon TALAS (1112)	Sep. 2	Mie	3
			Nara	10
			Wakayama	5
			Okayama	1
		Sep. 3	Tottori	2
	Typhoon ROKE (1115)	Sep. 21	Aomori	1
			Fukushima	1
2012	Heavy Winter Snowfall	Jan. 14	Niigata	2
		Jan. 28	Niigata	4
		Jan.31	Niigata	1
		Feb. 1	Aomori	2
			Nagano	5
		Feb. 3	Niigata	4
		Feb. 4	Niigata	1
	May 2012 Gust	May 6	Ibaraki	4
			Tochigi	3
	Heavy Rains Starting July 3	Jul. 3	Fukuoka	1
			Oita	2
	Heavy Rains from Seasonal Rain Front Starting July 11	Jul. 12	Kumamoto	5
			Oita	1
		Jul. 13	Fukuoka	7
	Heavy Rains Starting August 13	Aug. 14	Kyoto	1
	Typhoon SANBA (1216)	Sep. 15	Kagoshima	1
	November 27 Destructive Snow Storm	Nov. 27	Hokkaido	7
2013	Heavy Winter Snowfall	Feb. 22	Niigata	8
		Feb. 25	Niigata	1
		Feb. 26	Yamagata	1
		Feb. 28	Yamagata	1
	Snow Melt Landslide	May 1	Yamagata	1
	Heavy Rains Starting July 22	Jul. 22	Yamagata	4
	Heavy Rains Starting July 28	Jul. 28	Yamaguchi	3
			Shimane	1
	Heavy Rains Starting August 9	Aug. 9	Akita	3
			Iwate	1
	Heavy Rains Starting August 23	Aug. 23	Shimane	1
	September 2 Gust	Sep. 2	Saitama	2
	Typhoon MAN-YI (1318)	Sep. 16	Saitama	1
			Kyoto	2
	Typhoon DANAS (1324)	Oct. 7	Kagoshima	1
	Typhoon WIPHA (1326)	Oct. 16	Tokyo	1
			Chiba	1

Year	Name of Disaster	Date of Invocation	Prefecture	No. of Municipalities to which the Act was applied
2014	Heavy Winter Snowfall	Feb. 15	Nagano	4
			Gunma	1
			Yamanashi	16
		Feb. 17	Gunma	7
			Saitama	7
		Feb. 18	Gunma	1
			Yamanashi	3
		Feb. 21	Yamanashi	2
	Heavy Rains from Typhoon NEOGURI (1408)	Jul. 9	Nagano	1
			Yamagata	1
	Typhoon NAKRI (1412)	Aug. 3	Kochi	1
	Typhoon HALONG (1411)	Aug. 9	Kochi	3
			Tokushima	1
	Heavy Rains Starting August 15, 2014	Aug. 17	Kyoto	1
			Hyogo	1
	Heavy Rains Starting August 19, 2014	Aug. 20	Hiroshima	1
	Damage Related to Mt. Ontake Eruption	Sep. 27	Nagano	2
	Nagano Prefecture Kamishiro Fault Earthquake	Nov. 22	Nagano	3
	Heavy Snow Starting December 5	Dec. 8	Tokushima	3
2015	Eruption of Kuchinoerabu-jima	May 29	Kagoshima	1
	Torrential Rain of September 2015 in the Kanto and Tohoku Regions	Sep. 9	Ibaraki	10
			Tochigi	8
		Sep. 10	Miyagi	8
	Typhoon DUJUAN (1521)	Sep. 28	Okinawa	1
2016	2016 Kumamoto Earthquake	Apr. 14	Kumamoto	45
	Typhoon LIONROCK (1610)	Aug. 30	Hokkaido	20
			Iwate	12
	2016 Earthquake centered in the central Tottori Prefecture	Oct. 21	Tottori	4
	2016 Conflagration in Itoigawa City, Niigata Prefecture	Dec. 22	Niigata	1
2017	July 2017 Northern Kyushu Heavy Rain	Jul. 5	Fukuoka	3
		Jul. 5	Oita	2
	Heavy Rain Starting on July 22, 2017	Jul. 22	Akita	1
	Typhoon TALIM (1718)	Sep. 17	Oita	2
	Typhoon LAN (1721)	Oct. 22	Mie	2
		Oct. 22	Kyoto	1
		Oct. 21	Wakayama	1
2018	Heavy Snow Starting February 4, 2018	Feb. 6	Fukui	8
		Feb. 13	Fukui	1
	Heavy Snowfall in FY2017	Feb. 14	Niigata	5
	2018 Earthquake centered in the northern Osaka Prefecture	Jun. 18	Osaka	13
	The Heavy Rain Event of July 2018	Jul. 5	Kyoto	9
			Hyogo	6
			Okayama	19
			Hiroshima	15
			Ehime	7
			Fukuoka	2
		Jul. 6	Gifu	17
			Hyogo	5
			Tottori	10
			Shimane	2
			Okayama	2
			Yamaguchi	1
			Kochi	3
		Jul. 7	Hyogo	4
			Kochi	1
		Jul. 8	Gifu	4
			Kochi	3
	Heavy Rain Starting on August 30, 2018	Aug. 31	Yamagata	7
	The 2018 Hokkaido Eastern Iburi Earthquake	Sep. 6	Hokkaido	179

Year	Name of Disaster	Date of Invocation	Prefecture	No. of Municipalities to which the Act was applied
2019	Heavy rainfall associated with Seasonal Rain Front in August 2019	Aug. 28	Saga	20
	Disasters caused by Typhoon Faxai in 2019 (T1915)	Sep. 8	Tokyo	1
	Electrical blackout due to the influence of Typhoon Faxai in 2019 (T1915)	Sep. 9	Chiba	41
	Disasters caused by Typhoon HAGIBIS in 2019 (T1919)	Oct. 12	Iwate	14
			Miyagi	34
			Sendai City	1
			Fukushima	55
			Ibaraki	30
			Tochigi	21
			Gunma	30
			Saitama	48
			Tokyo	28
			Kanagawa	17
			Kawasaki City	1
			Sagamihara City	1
			Niigata	3
			Yamanashi	20
			Nagano	43
			Shizuoka	2
		—	(Tokyo)	Aforementioned (1)
			(Chiba)	Aforementioned (41)
2020	The Heavy Rain Event of July 2020	Jul. 4	Kumamoto	16
			Kagoshima	11
		Jul. 6	Fukuoka	4
			Saga	1
			Kumamoto	10
			Oita	4
		Jul. 8	Nagano	14
			Gifu	6
		Jul. 13	Shimane	1
		Jul. 28	Yamagata	31
	Disasters Associated with Typhoon Chan-Hom in 2020	Oct. 10	Tokyo	2
	Disaster Caused by Heavy Snowfall since December 16, 2020	Dec. 17	Niigata	2
	Disaster Caused by Heavy Snowfall since January 7, 2021	Jan. 7	Akita	7
		Jan. 9	Toyama	4
			Fukui	3
		Jan. 10	Niigata	6
			Fukui	2
	Disaster Caused by Earthquake Centered off the Coast of Fukushima Prefecture in 2021	Feb. 13	Fukushima	17
	Large-Scale Fire in Ashikaga City, Tochigi Prefecture in 2021	Feb. 23	Tochigi	1
	Landslide in Itoigawa City, Niigata Prefecture, 2021	Mar. 4	Niigata	1

Source: Cabinet Office

Fig. A-13 Designations of Extremely Severe Disasters in the Past Five Years

Title of Legislation	Disaster Name	Main Affected Areas	Main Applicable Measures								Other Applicable Measures
			Art. 3, 4	Art. 5	Art. 6	Art. 7	Art. 12	Art. 16	Art. 17	Art. 19	Art. 24	
Cabinet Order on the Extremely Severe Disaster Designation and Identification of Essential Response Measures for Torrential Rains and Rainstorms from June 2 to July 26, 2015	Seasonal Rain Front/Typhoon CHAN-HOM (1509)/ Typhoon ANGKA (1511)/ Typhoon HALOLA (1512)	Kumamoto Pref.	●	○							○ *1	
Cabinet Order on the Extremely Severe Disaster Designation and Identification of Essential Response Measures for the Districts of Odai Town, Taki-gun and Kihoku Town, Kitamuro-gun, Mie Prefecture Due to Rainstorms on August 24 and 26, 2015	Typhoon GONI (1515)	Mie Pref.		●							●	
Cabinet Order on the Extremely Severe Disaster Designation and Identification of Essential Response Measures for Rainstorms and Torrential Rains from September 7 to 11, 2015	Typhoon ETAU (1518), etc.	Miyagi, Fukushima, Ibaraki, and Tochigi Pref.	●	○	○		●				○ *1	
Cabinet Order on the Extremely Severe Disaster Designation and Identification of Essential Response Measures for Specified Regions in 2015	2015 Regional Disasters	—	●	●							●	
Cabinet Order on the Extremely Severe Disaster Designation and Identification of Essential Response Measures for the 2016 Kumamoto Earthquake	The 2016 Kumamoto Earthquake	Kumamoto Pref., etc.	○	○	○		○	○	○	○	○	○
Cabinet Order on the Extremely Severe Disaster Designation and Identification of Essential Response Measures for Torrential Rains from June 6 to July 15, 2016	Seasonal Rain Front	Kumamoto and Miyazaki Pref.	●	○							○ *1	
Cabinet Order on the Extremely Severe Disaster Designation and Identification of Essential Response Measures for Rainstorms and Torrential Rains from August 16 to September 1, 2016	Typhoon CHANTHU (1607)/ Typhoon MINDULLE (1609)/ Typhoon LIONROCK (1610)/ Typhoon KOMPASU (1611), etc.	Hokkaido and Iwate Pref.	○	○	○	○ *2	●	○	○	○	○	
Cabinet Order on the Extremely Severe Disaster Designation and Identification of Essential Response Measures for Rainstorms and Torrential Rains from September 17 to 21, 2016	Typhoon MALAKAS (1616)	Miyazaki and Kagoshima Pref.	●	○	○						○ *1	
Cabinet Order on the Extremely Severe Disaster Designation and Identification of Essential Response Measures for Specified Regions in 2016	2016 Regional Disasters	—	●	●							●	
Cabinet Order on the Extremely Severe Disaster Designation and Identification of Essential Response Measures for Torrential Rains and Rainstorms on June 7 - July 27, 2017	Seasonal Rain Front (Northern Kyushu Heavy Rain, etc.)/ Typhoon NANMADOL (1703)	Fukuoka and Oita Pref.	●	○	○		●				○ *1	
Cabinet Order on the Extremely Severe Disaster Designation and Identification of Essential Response Measures for Rainstorms and Torrential Rains on September 15 - 19, 2017	Typhoon TALIM (1718)	Kyoto, Ehime, and Oita Pref.	●	○							○ * 1	
Cabinet Order on the Extremely Severe Disaster Designation and Identification of Essential Response Measures for Rainstorms on October 21 - 23, 2017	Typhoon LAN (1721)	Niigata and Mie Pref., Kinki region	●	○	○						○ * 1	○
Cabinet Order on the Extremely Severe Disaster Designation and Identification of Essential Response Measures for Specified Regions in 2017	2017 Regional Disasters	—	●	●							●	
Cabinet Order on the Extremely Severe Disaster Designation and Identification of Essential Response Measures for Torrential Rains and Rainstorms from May 20 to July 10, 2018	Seasonal Rain Front (The Heavy Rain Event of July 2018, etc.)/ Typhoon MALIKSI (1805)/ Typhoon GAEMI (1806)/ Typhoon PRAPIROON (1807)/ Typhoon MARIA (1808)	Okayama, Hiroshima and Ehime Pref.	○	○	○		○	○	○	○	○	○

Title of Legislation	Disaster Name	Main Disaster-Affected Regions	Main Applicable Measures								Other Applicable Measures
			Art. 3, 4	Art. 5	Art. 6	Art. 7	Art. 12	Art. 16	Art. 17	Art. 19	Art. 24	
Cabinet Order on the Extremely Severe Disaster Designation and Identification of Essential Response Measures for the Districts of Awashimaura Village, Iwafune-gun, Niigata Prefecture Due to Rainstorms and Torrential Rains from August 20 to September 5, 2018	Typhoons SOULIK (1819), CIMARON (1820), and JEBI (1821)	Wakayama, Nara, Osaka, Nagano and Niigata Pref.	●	●	●						●	●
Cabinet Order on the Extremely Severe Disaster Designation and Identification of Essential Response Measures for the 2018 Hokkaido Eastern Iburi Earthquake	The 2018 Hokkaido Eastern Iburi Earthquake	Hokkaido	○	○	○		●	○	○	○	○	○
Cabinet Order on the Extremely Severe Disaster Designation and Identification of Essential Response Measures for Rainstorms from September 28 to October 1, 2018	Typhoon TRAMI (1824)	Tottori, Miyazaki and Kagoshima Pref.	●	○	○						○ *1	
Cabinet Order on the Extremely Severe Disaster Designation and Identification of Essential Response Measures for Specified Regions in 2018	2018 Regional Disasters	—	●	●	●						●	●
Cabinet Order on the Extremely Severe Disaster Designation and Identification of Essential Response Measures for Torrential Rains and Rainstorms from June 6 to July 24, 2019	Seasonal Rain Front/ Typhoon SEPAT (1903) and DANAS (1905)	Kagoshima and Kumamoto Pref.		○							○	
Cabinet Order on the Extremely Severe Disaster Designation and Identification of Essential Response Measures for due to Rainstorms and Torrential Rains from August 13 to September 24, 2018	Heavy Rains from Rain Front and Typhoons KROSA (1910), LINGLING (1913), FAXAI (1915), and TAPAH (1917)	Saga and Chiba Pref.	●	○	○		●				○ *1	
Cabinet Order on the Extremely Severe Disaster Designation and Identification of Essential Response Measures for due to Rainstorms and Torrential Rains from October 11 to 26, 2019	Typhoons HAGIBIS (1919), NEOGURI (1920) and BUALOI (1921)	Iwate, Miyagi, Fukushima, Ibaraki, Tochigi, Gunma, Saitama, Chiba, Tokyo, Kanagawa, Niigata, Yamanashi, Nagano and Shizuoka Pref.	○	○	○		○	○	○	○	○	○
Cabinet Order on the Extremely Severe Disaster Designation and Identification of Essential Response Measures for Specified Regions in 2019	2019 Regional Disasters	—	●	●							●	
Cabinet Order on disaster of extreme severity due to torrential rain during the period from May 15 to July 31, 2020 and the designation of measures to be applied to this.	Rainy season front (the Heavy Rain Event of July 2020, etc.)	Yamagata, Nagano, Gifu, Shimane, Fukuoka, Saga, Kumamoto, Oita, Kagoshima Pref.	○	○	○		○	○	○	○	○	○
Cabinet Order on disaster of extreme severity pertaining to specified areas in 2020 and the designation of measures to be applied to this.	2020 Regional Disasters		●	●							●	

*1 Public works facilities were considered as regional disaster
*2 Limited to portions concerning item 3
[Legend]
○: Indicates a national disaster (Region is not specified, the disaster itself is specified).
●: Indicates a regional disaster (Disaster is specified at the municipal level.).
The applicable measures are the measures listed below prescribed in the Act on Special Financial Support to Deal with Extremely Severe Disasters.

[Main applicable measures]
Art. 3, 4: Special financial support for disaster recovery projects for public works facilities
Art. 5: Special measures on subsidies for disaster recovery projects for agricultural land
Art. 6: Special cases of subsidies for disaster recovery projects for agricultural, forestry, and fisheries shared-used facilities
Art. 7 (iii): Special financial support for disaster recovery projects for plant and animal aquaculture facilities
Art. 12: Special provision concerning disaster-related credit guarantees under the Small and Medium-sized Enterprise Credit Insurance Act
Art 16: Subsidies for disaster recovery projects for public social and educational facilities
Art. 17: Subsidies for disaster recovery projects for private school facilities
Art. 19: Special cases of cost coverage for projects implemented by municipalities to prevent infectious diseases
Art. 24: Inclusion of funds for the redemption of principal and interest related to small disaster bonds in the standard budget request

[Other applicable measures]
Art. 8: Application of interim measures related to financing for agricultural, forestry, and fishery operators who are victims of natural disasters
Art. 9: Subsidies for projects to remove deposited earth and sand conducted by forestry associations
Art. 10: Subsidies for projects to remove floodwater conducted by land improvement districts
Art. 11: Subsidies for construction expenses for shared-use small fishing boats
Art. 11-2: Subsidies for disaster recovery projects for forests
Art. 14: Subsidies for disaster reconstruction projects for facilities including business cooperatives
Art. 20: Special cases of government loans based on the Act for the Welfare of Fatherless Families, motherless families and Widows
Art. 22: Special cases of subsidies for public housing construction projects for victims
Art. 25: Special cases of paying job seeker benefits based on the Employment Insurance Act

Source: Cabinet Office

Fig. A-14 Response of Government Ministries and Agencies to Major Disasters Since 2020

14-1 The Heavy Rain Event of July 2020

(1) Situation of the Disaster

From July 3rd to 8th, the rainy season front extended from Center China into eastern Japan via Kyusyu and remained almost stagnant. It was so active and caused heavy rainfall in western and eastern Japan. Especially in Kyushu, they had record-breaking rainfall from the 4th to the 7th. In addition, heavy rains fell intermittently around Gifu Prefecture from the 6th, which caused record-breaking rainfall from the 7th and 8th. The Japan Meteorological Agency issued a heavy rain emergency warning for seven prefectures: Kumamoto, Kagoshima, Fukuoka, Saga, Nagasaki, Gifu and Nagano and called out extreme alert. After that, the front remained stagnant near the main island of Japan and rainfall became more frequent over a wide area from western Japan to the Tohoku region. Particularly, heavy rainfall occurred mainly in the Chugoku region from the 13th to the 14th, and in the Tohoku region from the 26th to the 29th.

Total precipitation from July 3 to July 31 exceeded 2,000 millimeters at most in Nagano and Kochi prefectures. The rainfall amounts per 24 hours, 48 hours and 72 hours exceeded the highest value in recorded history at many locations in southern Kyushu, northern Kyushu, Tokai, and Tohoku regions.

This torrential rain caused a series of flooding in large rivers such as the Kuma River, Chikugo River, Hida River, Gono River, and Mogami River, which eventually led to Sediment Disaster (Landslide Disaster) and flooding at lowlands. As of February 26, 2021, 86 people were dead or missing, 80 people were seriously injured, and 1,620 houses were completely destroyed, 4,509 were half destroyed, 3,594 were partially destroyed, and 1,652 were flooded above floor level. In addition, lifelines were severely damaged, with electrical blackout and suspension of water supply occurring one after another, especially in the Kyushu region. In Kumamoto Prefecture, there was a power outage of approximately 8,800 households (maximum) and a water outage of approximately 27,000 households (maximum).

(2) Response by Government Ministries and Agencies

Since July 4, immediately after the disaster, then Prime Minister Abe gave the national government instructions to provide accurate information on evacuation and conditions as to heavy rain and rivers as needed and to take all possible precautionary measures to support evacuation so that residents living in areas that were expected to be flooded could evacuate by collaborating with local governments. After that, the ministerial meeting was held. Then Prime Minister Abe mentioned that the government would work closely with local governments and make every measurement to implement emergency measures. On the same day, the Minister of State for Disaster Management, Takeda, made a field trip to Kumamoto Prefecture* to directly confirm the damage. Also, the Cabinet Office Research Team was dispatched to Kumamoto and Kagoshima Prefectures. On July 5, 2020, the "Major Disaster Management Headquarters of the Heavy Rain Event of July 2020" was established (in total, 12 meetings of the Meeting for the Major Disaster Management Headquarters were held). In order to quickly assist the affected people in rebuilding their lives and livelihoods, a "Team to Support the Daily Lives and Livelihood Restoration of Affected People" was established, consisting of officials at the level of vice-ministers from each government ministry. On the 13th, then Prime Minister Abe and Minister of State for Disaster Management, Takeda made a field trip to Kumamoto Prefecture. On the 14th, the Heavy Rain Event of July 2020 was designated as a specified disaster. The government made a concerted measurement to promote disaster response measures by taking special measures to protect the rights of the affected people.

* In addition, Minister of State for Disaster Management, Takeda made a field trip to Kumamoto Prefecture on July 5, Fukuoka Prefecture on July 7, Kumamoto Prefecture on July 8, Kagoshima Prefecture on July 9, and Gifu Prefecture on July 23; Minister of State for Disaster Management, Takeda and Parliamentary Secretary of Cabinet Office, Imai made a field trip to Fukuoka Prefecture on July 15, Fukuoka Prefecture and Oita Prefecture on July 16; and Minister of State for Disaster Management Okonogi made a field trip to Kumamoto Prefecture on September 26.

The police, fire department, Self-Defense Forces, and the Ministry of Land, Infrastructure, Transport and Tourism dispatched their units across the country to the affected areas immediately after the disaster to carry out rescue and relief activities, secondary disaster prevention activities, and livelihood support. The total number of Police Disaster Response Units, Emergency Fire Response Teams, Self-Defense Forces, and the Technical Emergency Control Force (TEC-FORCE) was approximately 2,900, 400, 350,000, and 10,000, respectively.

In addition, comprehensive support for disaster management through advice to the heads of disaster-affected municipalities, and support for disaster response operations which were conducted by disaster-affected municipalities were conducted (logistical support) based on the "staff allocation system to support local governments in affected areas" (a total of approximately 460 people from 10 prefectures and cities were dispatched to the 8 affected municipalities as General Adviser Team, and a total of approximately 5,900 people from 11 prefectures and cities were dispatched to the 8 affected municipalities as logistical support.).

At the 7th Meeting for the Major Disaster Management Headquarters held on July 13, then Prime Minister Abe instructed us to put together Restoration of Lives and Livelihoods of the Affected. In response, the government put together measures to rebuild homes according to the needs of the affected people, support small and medium-sized businesses, agriculture, forestry and fisheries, disaster recovery and smooth disposal of disaster waste. At the same time, the Cabinet decided to use reserve funds of about 2.21 billion yen on July 14 and 101.7 billion yen on July 31 so that the affected municipalities could deal with the problem without worrying about their financial resources. On July 31, the Cabinet decided to designate the Heavy Rain Event of July 2020 as an emergency disaster under the Act on Reconstruction from Large-Scale Disasters. Therefore, prefectures and municipalities damaged by this disaster may request the national or prefectural government to act on their behalf for construction work related to disaster recovery projects. In this case, based on local conditions, the national and prefectural governments can now act on behalf of municipalities to the extent that it does not interfere with the execution of such administrative tasks as considering construction implementation systems for smooth and speedy recovery.

As a result of this torrential rain disaster, the Disaster Relief Act was applied to 98 municipalities in 9 prefectures, and the Act on Support for Reconstructing Livelihoods of the Affected due to Disaster was applied to 54 municipalities in 6 prefectures.

[Invocation of the Disaster Relief Act]

[Yamagata Prefecture]	Yamagata City, Yonezawa City, Tsuruoka City, Sakata City, Shinjo City, Sagae City, Kaminoyama City, Murayama City, Nagai City, Tendo City, Higashine City, Obanazawa City, Nanyo City, Yamanobe-machi in Higashimurayama-gun, Nakayama-machi in Higashimurayama-gun, Kahoku-cho in Nishimurayama-gun, Nishikawa-machi in Nishimurayama-gun, Asahi-machi in Nishimurayama-gun, Oe-machi in Nishimurayama-gun, Oishida-machi in Kitamurayama-gun, Mogami-gun in Mogami-gun, Funagata-machi in Mogami-gun, Okura-mura in Mogami-gun, Tozawa-mura in Mogami-gun, Takahata-machi in Higashi oki tama-gun, Kawanishi-machi Town in Higashi oki tama-gun, Oguni-machi in Nishi oki tama-gun, Shirataka-machi in Nishi oki tama-gun, Iide-machi in Nishi oki tama gun, Mikawa-machi in Higashitagawa-gun, Shonai-machi in Higashitagawa-gun (Date of invocation: July 28)
[Nagano Prefecture]	Matsumoto City, Iida City, Ina City, Azumino City, Miyada-mura in Kamiina-gun, Anan-cho in Shimoina-gun, Achi-mura in Shimoina-gun, Shimojo-mura in Shimoina-gun, Urugi-mura in Shimoina-gun, Agematsu-machi in Kiso-gun, Nagiso-machi in Kiso-gun, Otaki-mura in Kiso-gun, Okuwa-mura in Kiso-gun, Kiso-machi in Kiso-gun (Date of invocation: July 8)
[Gifu Prefecture]	Takayama City, Nakatsugawa City, Ena City, Hida City, Gujyou City, Gero City (Date of invocation: July 8)
[Shimane Prefecture]	Goutsu City (Date of invocation: July 13)
[Fukuoka Prefecture]	Omuta City, Yame City, Miyama City, Kurume City (Date of invocation: July 6)
[Saga Prefecture]	Kashima City (Date of invocation: July 6)
[Kumamoto Prefecture]	Yatsushiro City, Hitoyoshi City, Minamata City, Kamiamakusa City, Amakusa City, Ashikita-machi in Ashikita-gun, Tsunagi-machi in Ashikita-gun, Nishiki-machi in Kuma-gun, Taragi-machi in Kuma-gun, Yunomae-machi in Kuma-gun, Mizukami in Kuma-gun, Sagara-mura in Kuma-gun, Itsuki-mura in Kuma-gun, Yamae-mura in Kuma-gun, Kuma-mura in Kuma-gun, Asagiri-cho in Kuma-gun (Date of invocation: July 4) Arao City, Tamana City, Yamaga City, Kikuchi City, Gyokutou-machi in Tamana-gun, Nankan-machi in Tamana-gun, Nagasu-machi in Tamana-gun, Nagomi-machi in Tamana-gun, Minamioguni-machi in Aso-gun, Oguni-machi in Aso-gun (Date of invocation: July 6)
[Oita Prefecture]	Hita City, Yufu City, Kokonoe-machi in Kusu-gun, Kusu-machi in Kusu-gun (Date of invocation: July 6)
[Kagoshima Prefecture]	Akune City, Izumi City, Isa City, Nagashima-cho in Izumi-gun, Kanoya City, Soo City, Shibushi City, Tarumizu City, Satsumasendai City, Ichikikushikino City, Osaki-cho in Soo-gun (Date of invocation: July 4)

[Invocation of the Act on Support for Reconstructing Livelihoods of the Affected due to Disaster]

[Kumamoto Prefecture]	All areas of the prefecture (Date of occurrence: July 4)
[Fukuoka Prefecture]	Omuta City (Date of occurrence: July 6)
[Oita Prefecture]	Kokonoe-machi, Hita City, Yufu City, Kusu-machi in Kusu-gun (Date of occurrence: July

6)
[Shimane Prefecture] Goutsu City (Date of occurrence: July 13)
[Gifu Prefecture] Gero City (Date of occurrence: July 8)
[Kagoshima Prefecture] Kanoya City, Tarumizu City (Date of occurrence: July 4)

The status of the designation of this disaster as Disaster of Extreme Severity is as follows.
Disaster caused by torrential rain between May 15 and July 31, 2020.
Announcement of expected designation: July 10, 13, 17. Cabinet decision: August 25 Proclamation and enforcement August 28.

Area	Applicable Measures
Nationwide	Special Financial Support for Project to Recover Public Civil Engineering Works Damaged by Disaster Special Measures for Subsidies for Project to Recover Lands for Agriculture Damaged by Disaster Special Provisions of Subsidies for Project to Recover Joint Use Facilities for Agriculture, Forestry and Fisheries Damaged by Disaster Special Provisions for Disaster-Related Guarantees by Small and Medium-sized Enterprise Credit Insurance Act Subsidies for Project to Recover Public Social Education Facilities Damaged by Disaster Subsidies for Project to Recover Private School Facilities Damaged by Disaster Special Provisions for Burden of Infectious Disease Prevention Projects Implemented by Municipalities Special Provisions for Loan by the Act on Welfare of Mothers with Dependents, Fathers with Dependents, and Widows Special Provisions of Subsidies for Project of Construction of Public Housing for the Affected Including Principal and Interest Redemption Money related to Small Disaster Bond into Baseline Financial Needs Special Provisions of Job Seeker's Benefits by Employment Insurance Act

14-2 Typhoon Haishen in 2020 (T2010)

(1) Situation of the Disaster

Typhoon Haishen in 2020 (T2010), which was upgraded to tropical storm intensity on the night of September 1 near the Ogasawara Islands, passed through the area with high seawater temperature and developed into a very strong typhoon at 3:00 on September 4. It approached the Nansei Islands and Kyushu with a large and very strong typhoon intensity from the 5th to the 7th, then landed on the Korean Peninsula and changed to an extratropical cyclone in the northeastern part of China at 3:00 on the 8th. The maximum wind speed was 44.2 m/s, and the maximum wind gust speed was 59.4 m/s at Nomozaki in Nagasaki Prefecture. Violent storm or storm winds were observed mainly in the Nansei Islands and Kyushu, exceeding the previous maximum value, which became a record-breaking wind storm. In addition, 11.4-meters high waves were observed off the coast of Hyuga, Miyazaki Prefecture, and 10.4-meters high waves were observed on Yakushima Island, Kagoshima Prefecture, resulting in a fierce storm in the Nansei Islands and Kyushu. The total precipitation from the 4th to the 7th was 599 millimeters in Mikado, Misato-cho in Higashi-usuki-gun, Miyazaki Prefecture. Four locations in Miyazaki Prefecture had 24-hour rainfall exceeding 400 millimeters, while the Pacific side of western Japan and eastern Japan, even far from the center of the typhoon, had heavy rain exceeding 200 millimeters in 24 hours.

The typhoon left 4 people dead or missing in Sediment Disaster (Landslide Disaster) in Shiiba-son, Miyazaki Prefecture, and one person dead in Saga and Kagoshima Prefectures, respectively. 110 people were injured, mainly in the Kyushu region. In addition, 7 houses were completely destroyed, 40 were half destroyed, 1,637 were partially destroyed, 31 were flooded above floor level, and 236 were flooded below floor level, mainly in Kagoshima and other parts of Kyushu (*the figures are as of February 26, 2021.).

(2) Response by Each Government Ministry and Agency

On September 3, prior to the approach of heavy rain or typhoons, an Inter-Agency Disaster Alert Meetings was held under the leadership of Minister of State for Disaster Management Takeda to ensure a precautionary

approach to heavy rain and other disasters. At 3:30 p.m. on September 4, the first ministerial meeting was held. Prime Minister Abe instructed related ministries and agencies (1) to ensure that the Minister of State for Disaster Management and other ministers disseminate information to the public in a prompt and easy-to-understand manner, (2) to take proactive measures in close collaboration with local governments and related organizations, and (3) to secure a sufficient number of shelters in each region and to establish the necessary arrangements, taking into consideration measures against the COVID-19 countermeasures. Additionally, the following requests were made for to the public to take actions for save their own lives vigilantly: (1) to prepare in advance for the possibility of record-breaking heavy rain, windstorms, high waves, and storm surge by stockpiling supplies and confirming evacuation routes, (2) to refrain from going out unless it is essential /urgent and to evacuate as soon as possible based on evacuation information from local governments. Furthermore, as a typhoon of emergency warning level was expected to approach the area, Minister of State for Disaster Management Takeda issued a call for the early evacuation of the people at 04:15 p.m. on the same day.

On the 5th, the Disaster Management Bureau of the Cabinet Office, the Fire and Disaster Management Agency of the Ministry of Internal Affairs and Communications, the Ministry of Health, Labour and Welfare, the Ministry of Land, Infrastructure, Transport and Tourism, and the Japan Meteorological Agency jointly issued a notice concerned on the urgent need to evacuate due to Typhoon Haishen in 2020 (T2010).Minister Takeda requested the relevant governors and deputy governors to urge the mayors of municipalities to prepare for evacuation of residents early. Furthermore, on the 6th, Minister of State for Disaster Management Takeda called on the public for the 2nd time to evacuate as soon as possible. On the same day, the 2nd ministerial meeting was held, and on the following day, the 7th, Inter-Agency Disaster Management Meetings was held to confirm the alert posture and local damage information.

14-3 Heavy Snowfall since January 7

(1) Situation of the Disaster

From January 7 to the morning of January 8, a low pressured system rapidly developed and advanced from the Sea of Japan through northern Japan to the sea near the Kuril Islands. After that, strong cold air flowed into the sky over Japan, and a strong winter-type pressure pattern continued through the 11th. These factors resulted in heavy snow and windstorms over a wide area from northern Japan to western Japan.

From the 7th to the 11th, strong snow fell intermittently mainly on the Sea of Japan side from northern to western Japan, and some places such as Kyushu, which usually has little snow, received snowfall. The amount of snowfall during the period from July 7 to 11 was 213 centimeters in Takada, Joetsu City, Niigata Prefecture, 192 centimeters in Shirakawa, Shirakawa Village, Ono-gun, Gifu Prefecture, and 158 centimeters in Ono, Ono City, Fukui Prefecture. As snow clouds continued to move in from the 7th to the 9th, mainly in the Hokuriku region, a remarkable amount of snowfall exceeding 20 cm in three hours was observed. In Takada, Joetsu City, Niigata Prefecture, 103 centimeters of snowfall was observed for 24 hours on the 9th, setting a new record for the most snowfall in the history of observation.

In addition, from the 7th to the 8th, very strong winds blew over a wide area mainly on the Japan Sea side of northern and eastern Japan. In Yamori, Happo Town, Yamamoto-gun, Akita Prefecture, the maximum wind speed of 28.1 meters and the maximum instantaneous wind speed of 42.4 meters were observed on the 7th, both of which were the first records in the history of observation.

With heavy snowfall in mid-December and New Year's holidays, much of the snow remained on the Sea of Japan side of northern and eastern Japan. The heavy snowfall since January 7 resulted in even more snowfall, causing many vehicles to be stranded in Fukui and Niigata prefectures and traffic disruptions such as road closures, railroad cancellations, and aircraft and ship cancellations throughout northern and western Japan. In addition, 35 people died and 375 were seriously injured due to accidents during snow removal work, and 7 people were slightly injured due to vehicles being stranded. As for damage to houses, 1 house was completely destroyed, 2 houses were half destroyed, and 297 houses were partially destroyed (*figures as of February 26, 2021).

(2) Response by Each Government Ministry and Agency

On January 6, Inter-Agency Disaster Management Meeting was held with the attendance of Minister of State for Disaster Management Okonogi to ensure the government's alert system. A ministerial meeting was held on August 8, and a Cabinet Office Research Team was dispatched to Fukui Prefecture on October 10. The police, the Self-Defense Forces, the Ministry of Land, Infrastructure, Transport and Tourism, NEXCO Central Japan, and other organizations worked together to remove snow, guide vehicles, and distribute food and other supplies to stranded vehicles on the Hokuriku Expressway and Tokai-Hokuriku Expressway. Drivers and others in the vehicles to stay were also transported to the hotel if they wished. The Self-Defense Force also carried out activities such as removing snow outside elderly facilities at the request of the governors of Akita and Niigata prefectures. On the

14th, the Minister of State for Disaster Management, Okonogi made an on-site inspection of Niigata and Toyama prefectures. On the following day, the 15th, the first Inter-Agency Disaster Management Meetings was held to share the results of the on-site inspection. On the 18th, the Fire and Disaster Management Agency and the Disaster Management Bureau of the Cabinet Office jointly issued an administrative notice to alert the public to prevent accidents, including the implementation of snow removal work by multiple people. On April 22, the second Inter-Agency Disaster Management Meeting was held. The "Countermeasures for Heavy Snow Damage in December 2020 to January 2021" was compiled, which includes support for snow removal and clearance projects by local governments, and support for agriculture, forestry, fisheries, and small and medium-sized businesses in the event of snow damage.

In addition, the Disaster Relief Act was applied to 22 municipalities in 4 prefectures due to the disaster caused by this heavy snowfall and other factors.

[Invocation of the Disaster Relief Act]

[Akita Prefecture]	Yokote City, Yuzawa City, Daisen City, Senboku City, Misato-cho in Senboku-gun, Ugo-machi in Ogachi-gun, Higashinaruse-mura in Ogachi-gun (Date of invocation: January 7)
[Niigata Prefecture]	Nagaoka City, Kashiwazaki City, Tokamachi City, Itoigawa City, Myoko City, Joetsu City (Date of invocation: January 10)
[Toyama Prefecture]	Tonami City, Oyabe City, Nanto City, Himi City (Date of invocation: January 9)
[Fukui Prefecture]	Fukui City, Awara City, Sakai City (Date of invocation: January 9)
	Ono City, Katsuyama City (Date of invocation: January 10)

14-4 Earthquake Centered Off the Coast of Fukushima Prefecture in 2021 [Seismic Intensity of 6+]

(1) Situation of the Disaster

At around 11:07 p.m. on February 13, 2021, an earthquake of magnitude 7.3, whose epicenter was off the coast of Fukushima Prefecture, occurred. A seismic intensity of 6.0 was observed on the large scale in Zao Town in Miyagi Prefecture, and Soma City, Kunimi Town, and Shinchi Town in Fukushima Prefecture respectively. The earthquake caused one person death, seriously injured 16, and slightly injured 170, and completely destroyed 32 houses, half destroyed 259 houses, and partially destroyed 8,846 houses (*figures as of March 12, 2021). In addition to damage to lifelines such as electrical blackout and suspension of water supply, there was also damage to the transportation infrastructure, including road closures and railroad cancellations.

(2) Response by Each Government Ministry and Agency

After the earthquake on February 13, the government immediately convened an emergency meeting team at the Crisis Management Center of the Prime Minister's Office to collect information on the damage under the direction of Prime Minister Suga, and dispatched a Cabinet Office Research Team to Fukushima Prefecture by the Self-Defense Force’s helicopter. On the morning of the 14th, the first ministerial meeting was held to assess the damage situation and to share and confirm the government's response. The Self-Defense Force also carried out water supply support for two towns and villeages in the prefecture at the request of the governor of Fukushima Prefecture in the some day. On the 16th, Minister of State for Disaster Management, Okonogi made an on-site inspection of Fukushima Prefecture.

At Ministerial Round Table on March 19, Prime Minister Suga instructed that the relevant ministers, led by Minister of State for Disaster Management Okonogi, should work together to assess the damage as soon as possible and quickly compile support measures. In light of this, the second ministerial meeting was held on March 26, and the "Set of Support Measures for the

Earthquake Centered Off the Coast of Fukushima Prefecture in

2021" was issued in order to make every effort to restore the affected areas to normalcy, rebuild people's lives, and restore livelihoods as soon as possible.

As a result of the earthquake, the Disaster Relief Act was applied to 17 cities and towns in Fukushima Prefecture, and the Act on Support for Reconstructing Livelihoods of the Affected due to Disaster was applied to 3 cities and towns in Fukushima Prefecture.

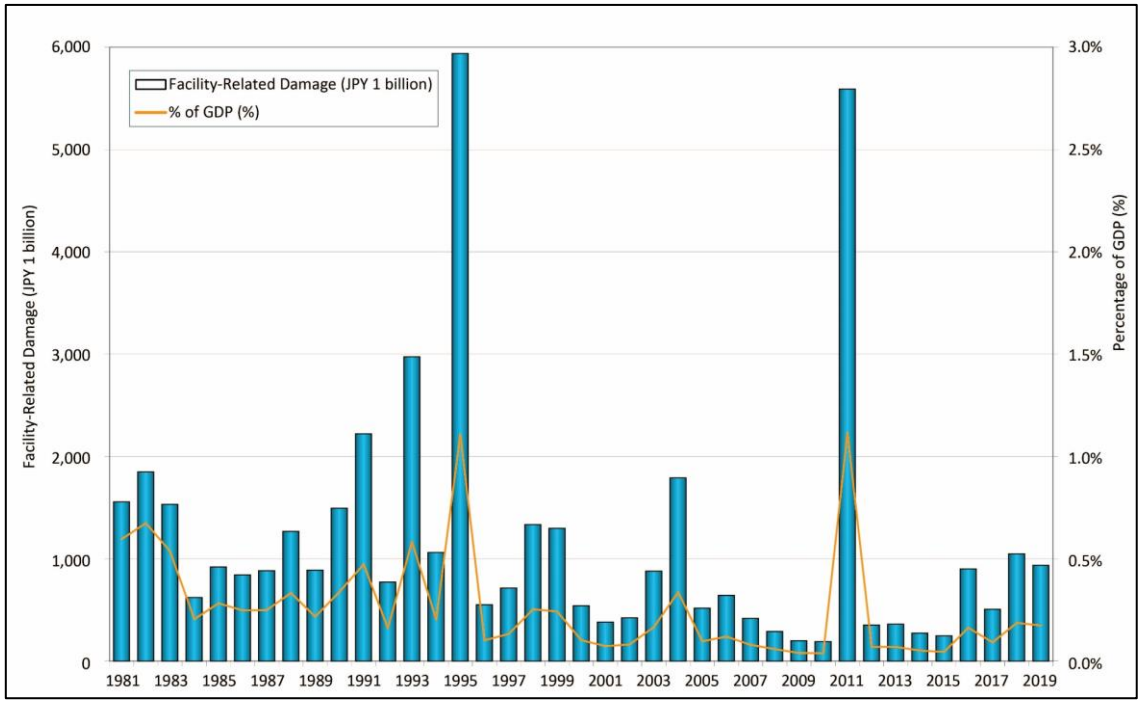
[Invocation of the Disaster Relief Act]

[Fukushima Prefecture]	Fukushima City, Koriyama City, Shirakawa City, Sukagawa City, Soma City, Minamisoma City, Date City, Motomiya City, Kori-machi in Date-gun, Kunimi-machi in Date-gun, Kagamiishi-machi in Iwase-gun, Aizu Misato-machi in Onuma-gun, Hirono-machi in Futaba-gun, Naraha-machi in Futaba-gun, Tomioka-machi in Futaba-gun, Namie-machi

in Futaba-gun, Shinchi-machi in Soma-gun (Date of invocation: February 13)

[Invocation of the Act on Support for Reconstructing Livelihoods of the Affected due to Disaster]
[Fukushima Prefecture] Fukushima City, Kori-machi, Shinchi-machi (Date of occurrence: February 13)

Fig. A-15 Trends in Facility Damage and the Amount and as a Percentage of Gross Domestic Product (GDP)



Note: Gross domestic product (GDP) figures up to 1993 are based on the 2000 standard (SNA 1993), while those for 1994 onward are based on the 2011 standard (SNA 2008)
Source: Formulated by the Cabinet Office based on materials from various ministries and agencies

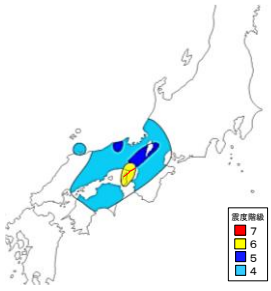
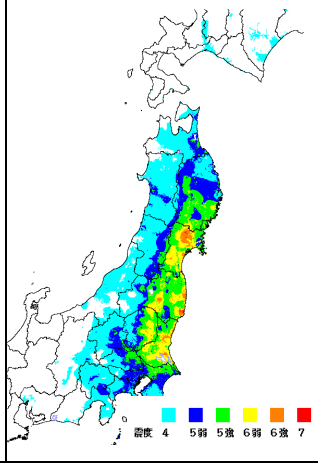
Fig. A-16 Facility Damage Due to Disasters in 2019, by Hazard

(Unit: JPY 1 million)

Facility type	Typhoon	Torrential rain	Earthquake	Heavy snowfall	Other	Total	Notes
Public works	413,222	39,052	449	0	11,788	464,510	Rivers, forestry conservation facilities, ports, etc.
Agriculture, forest, and fisheries industry	304,951	36,679	177	0	3,373	345,180	Farmland, agricultural facilities, forestry roads, fishing facilities, etc.
Educational facilities	11,188	2,825	431	13	138	14,595	School facilities, cultural properties, etc.
Public welfare facilities	76,780	1,611	39	0	46	78,476	Social welfare facilities, waterworks facilities, etc.
Other facilities	30,746	1,346	0	0	1	32,093	Nature parks, telegraph/telephone, urban facilities, etc.
Total	836,887	81,515	1,095	13	15,345	934,855	

Note: Totals may not agree due to rounding.
Source: Formulated by the Cabinet Office based on materials from various ministries and agencies

Fig. A-17 Comparison of the Great Hanshin-Awaji Earthquake, the Great East Japan Earthquake, and the Sumatra Earthquake

	Great Hanshin-Awaji Earthquake (Japan)	Great East Japan Earthquake (Japan)	Sumatra Earthquake (Indonesia)
Date & time	5:46 a.m., Jan. 17, 1995	2:46 p.m., March 11, 2011	9:58 a.m., Dec. 26, 2004
Magnitude	M7.3	*Mw9.0	*Mw9.1
Earthquake type	Inland	Oceanic trench	Oceanic trench
Affected area	City center	Mainly agricultural, forestry, and fishery regions	Mainly agricultural, forestry, and fishery regions
No. of prefectures with seismic intensity of Lower 6 or higher	1 (Hyogo)	8 (Miyagi, Fukushima, Ibaraki, Tochigi, Iwate, Gunma, Saitama, Chiba)	—
Tsunami	Reports of tsunami measuring tens of centimeters, no damage	Large tsunami observed in various regions (max. wave height of more than 9.3 m in Soma, more than 8.5 m in Miyako, more than 8.0 m in Ofunato)	Large tsunami observed in Indonesia as well as other countries with coastline along the Indian Ocean
Damage characteristics	Structures destroyed, large fires erupted mainly in Nagata-ku	Large tsunami caused massive damage in coastal areas, destruction across many districts	Large tsunami caused damage to countries with coastline along the Indian Ocean, with Indonesia suffering particularly massive damage
Fatalities Missing persons	Fatalities: 6,437 Missing persons: 3 (May 19, 2006)	Fatalities: 19,747 Missing persons: 2,556 (as of March 1, 2021)	Fatalities: 126,732 Missing persons: 93,662 (as of March 30, 2005)
Homes damaged (totally destroyed)	104,906	122,005 (as of March 1, 2021)	Unknown*
Invocation of the Disaster Relief Act	25 municipalities (2 prefectures)	241 municipalities (10 prefectures) *Including 4 municipalities (2 prefectures) that invoked the Act for an earthquake centered in northern Nagano prefecture in2011	—
Seismic intensity distribution map (showing seismic intensity of 4 and above)			—

* Mw: Moment magnitude

Note: The seismic intensity levels were revised in 1996 to newly add Lower 5, Upper 5, Lower 6, and Upper 6.

Source: Formulated by the Cabinet Office from Cabinet Office materials, Fire and Disaster Management Agency materials, and UNOCHA materials.

Fig. A-18 Damage Estimate for the Great East Japan Earthquake

June 24, 2011

Category	Damage (Approx. Value)
Structures (Homes/housing sites, stores/offices, factories, machines, etc.)	JPY 10.4 trillion
Lifeline facilities (Water, gas, electricity, communications/broadcasting facilities)	JPY 1.3 trillion
Infrastructure facilities (Rivers, roads, ports, sewers, airports, etc.)	JPY 2.2 trillion
Agriculture, forest, and fisheries-related facilities (Farmland/agricultural facilities, forests and fields, fisheries-related facilities, etc.)	JPY 1.9 trillion
Other (Educational facilities, healthcare/social welfare facilities, waste treatment facilities, other public facilities)	JPY 1.1 trillion
Total	JPY 16.9 trillion

Note: This information has been compiled by Disaster Management Bureau of the Cabinet Office based on information provided by individual prefectures and relevant ministries and agencies regarding damage to property (including buildings, lifeline facilities, and infrastructure facilities). Information is subject to change as the details become clear.

Source: Cabinet Office

Fig. A-19 Main Volcanic Eruptions and Volcanic Disasters in Japan

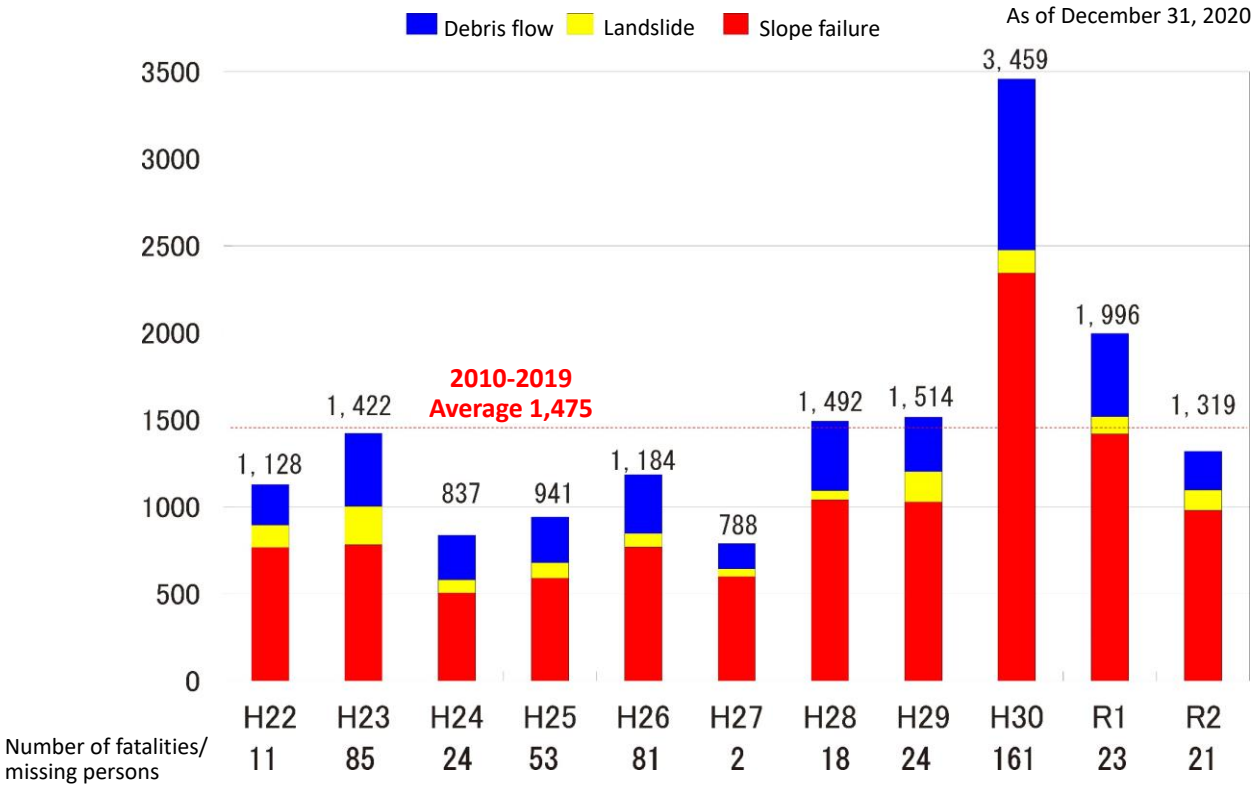
Year of Eruption	Name of Volcano	No. of Victims	Eruption and Damage Characteristics
1640	Hokkaido-Komagatake*	At least 700	Sector collapse, debris flow, tsunami, large amount of falling ash, pyroclastic flow
1663	Usuzan*	5	Nearby homes disappeared or were buried
1664	Unzendake	At least 30	Lava flow, flood of water from crater
1667	Tarumaesan*		Pyroclastic flow, large amount of falling ash/pumice
1694	Hokkaido-Komagatake		Eruption with earthquake/volcanic thunder, falling pumice stone, pyroclastic flow
1707	Fujisan *		"Great Hoei eruption," large amount of falling ash, landslide disaster after eruption
1721	Asamayama	15	Cinders
1739	Tarumaesan *		Pyroclastic flow, large amount of falling ash/pumice
1741	Oshima-Oshima	1,467	Sector collapse, large tsunami occurred due to debris avalanche
1769	Usuzan		Large amount of falling ash/pumice, pyroclastic flow
1777	Izu-Oshima		"Great Anei eruption," lava flow, scoria fall
1779	Sakurajima*	At least 150	"Great Anei eruption," cinders, lava flow
1781	Sakurajima	15	Eruption on an island off of Komen, tsunami
1783	Asamayama	1,151	"Great Tenmei eruption," pyroclastic flow, lava flow, flooding of Agatsuma River and Tone River
1785	Aogashima	130–140	Cinders, mud, more than one-third of islanders became victims. Uninhabited island for more than 50 years thereafter
1792	Unzendake	15,000	"Shimabara taihen, Higo meiwaku," tsunami on opposing shore due to collapse of Mt. Mayuyama
1822	Usuzan	50–103	Pyroclastic flow, former Abuta village totally destroyed
1853	Usuzan		Large amount of volcanic ash/pumice, formation of lava dome, pyroclastic flow
1856	Hokkaido-Komagatake	21–29	Falling pumice, pyroclastic flow
1888	Bandaisan*	461–477	5 towns and 11 villages buried in debris avalanche, debris flow (volcanic mud flow)
1900	Adatarayama	72	Cinders, sulfur mine at crater totally destroyed
1902	Izu-Torishima	125	All islanders became victims
1914	Sakurajima*	58	"Great Taisho eruption," volcanic thunder, lava flow, earthquake, air wave, villages buried, large amount of falling ash
1926	Tokachidake	144	Larger mudflow, towns of Kamifurano and Biei buried
1929	Hokkaido-Komagatake	2	Large amount of falling ash/pumice, pyroclastic flow, volcanic gas damage
1940	Miyakejima	11	Large amount of volcanic ash/volcanic bombs, lava flow
1952	Beyonesu (Bayonnaise) Rocks (Myojin-sho)	31	Pyroclastic surge
1943–45	Usuzan	1	Large amount of volcanic ash, cinders, formation of Showa-shinzan (new mountain)
1958	Asosan	12	Cinders
1991	Unzendake	43	Pyroclastic flow, debris flow
2014	Ontakesan	63	Cinders

*Indicates eruptions with apparent volume of ejecta of more than 1 km^3

Note: Lists "Eruption disasters with 10 or more fatalities and/or missing persons" and "Large eruptions with an apparent volume of ejecta of 0.1 km^3 or more"

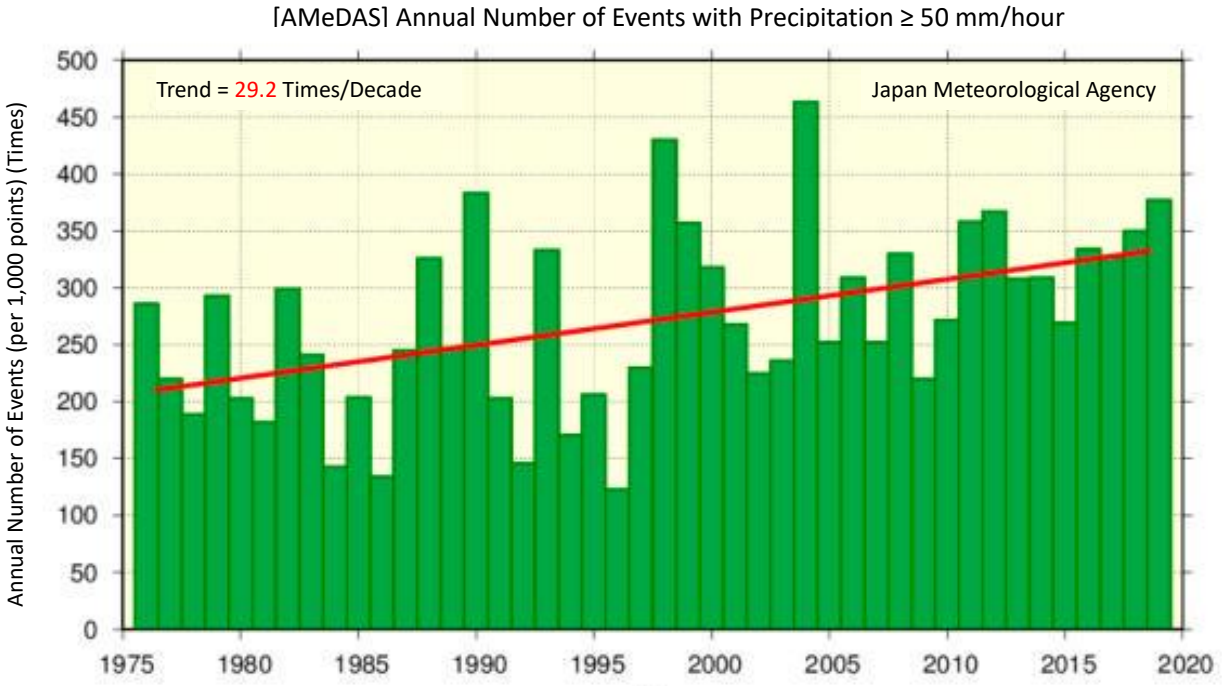
Source: Formulated by the Cabinet Office based on the National Catalogue of the Active Volcanoes in Japan (4th Edition) (edited by the Japan Meteorological Agency, 2013).

Fig. A-20 Number of Sediment Disasters



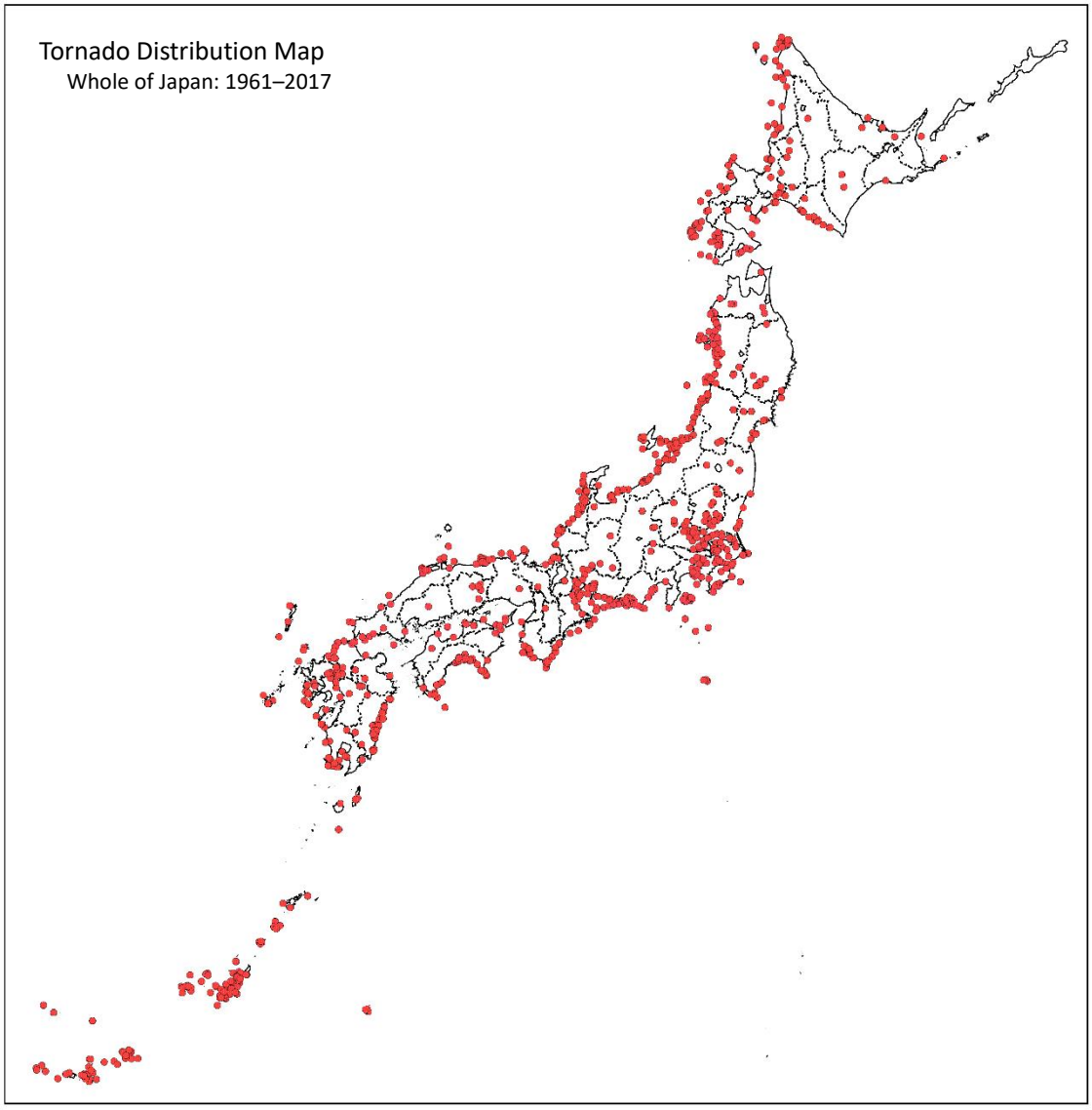
Source: Ministry of Land, Infrastructure, Transport and Tourism

Fig. A-21 Increase in the frequency of short-duration downpours



Source: Japan Meteorological Agency (website)

Fig. A-22 Number of Tornados



Source: Japan Meteorological Agency.

Fig. A-23 Major Natural Disasters in the World Since 1900

Year	Disaster Type	GLIDE number	Country (Areas)	Fatalities/Missing Persons (approx.)
1900	Hurricane Galveston		Texas, USA	6,000
1902	Volcanic Eruption		Martinique (West Indies, Mt. Pelée)	29,000
1902	Volcanic Eruption		Santa Maria Volcano, Guatemala	6,000
1905	Earthquake		Northern India	20,000
1906	Earthquake (Chiayi earthquake)		Taiwan	6,000
1906	Earthquake/Fire		San Francisco, USA	1,500
1906	Earthquake		Chile	20,000
1906	Typhoon		Hong Kong	10,000
1907	Earthquake		Tianshan, China	12,000
1907	Earthquake		Uzbekistan (former Soviet Union)	12,000
1908	Earthquake (Messina earthquake)		Sicily, Italy	75,000
1911	Flood		China	100,000
1911	Volcanic Eruption		Taal Volcano, Philippines	1,300
1912	Typhoon		Wenzhou, China	50,000
1915	Earthquake		Central Italy	30,000
1916	Landslide		Italy, Austria	10,000
1917	Earthquake		Bali, Indonesia	15,000
1918	Earthquake		Guangdong, China	10,000
1919	Volcanic Eruption		Kelut Volcano, Indonesia	5,200
1920	Earthquake/Landslide (Haiyuan earthquake)		Gansu, China	180,000
1922	Typhoon		Shantou, China	100,000
1923	Earthquake/Fire (Great Kanto earthquake)		Southeast Kanto region, Japan	143,000
1927	Earthquake (Kitatango earthquake)		Northern Kyoto, Japan	2,930
1927	Earthquake		Nanchang, China	200,000
1928	Hurricane/Flood		Florida, USA	2,000
1930	Volcanic Eruption		Merapi volcano, Indonesia	1,400
1931	Flood		Coastal areas of the Yangtze River and other rivers in China	3,700,000
1932	Earthquake (Gansu earthquake)		Gansu, China	70,000
1933	Flood		Henan, China	18,000
1933	Tsunami (Showa Sanriku Tsunami)		Sanriku, Japan	3,000
1933	Earthquake		China	10,000
1935	Flood		China	142,000
1935	Earthquake (Quetta Earthquake)		Baltistan, Pakistan	60,000
1939	Earthquake/Tsunami		Chile	30,000
1939	Flood		Hunan, China	500,000
1939	Earthquake		Eastern Turkey	32,962
1942	Cyclone		Bangladesh	61,000
1942	Cyclone		Orissa, India	40,000
1943	Earthquake		Tottori, Japan	1,083
1944	Earthquake (Showa Tonankai Earthquake)		Tonankai, Japan	1,200
1944	Earthquake		Midwestern Argentina	10,000
1945	Earthquake (Mikawa Earthquake)		Aichi, Japan	2,300
1945	Typhoon (Typhoon Makurazaki)		Western Japan	3,700
1946	Earthquake/Tsunami (Showa Nankai Earthquake)		Nankai, Japan	1,400
1947	Typhoon (Typhoon Kathleen)		North of Tohoku, Japan	1,900
1948	Earthquake (Fukui Earthquake)		Fukui, Japan	3,900
1948	Earthquake (Ashgabat Earthquake)		Turkmenistan (former Soviet Union)	110,000
1949	Earthquake/Landslide		Tajikistan (former Soviet Union)	12,000
1949	Flood		China	57,000
1949	Flood		Guatemala	40,000
1951	Volcanic Eruption		Mt. Lamington, Papua New Guinea	2,900
1953	Flood		Coastal areas of the North Sea	1,800
1953	Flood		Kyushu, Japan	1,000
1953	Flood		Honshu, Japan	1,100
1954	Flood		China	40,000
1954	Typhoon (Typhoon MARIE (5415))		Japan	1,700
1959	Flood		China	2,000,000
1959	Typhoon (Typhoon VERA (5915))		Japan	5,100
1960	Flood		Bangladesh	10,000
1960	Earthquake		Southwestern Morocco	12,000
1960	Earthquake/Tsunami		Chile	6,000

Year	Disaster Type	GLIDE number	Country (Areas)	Fatalities/Missing Persons (approx.)
1961	Cyclone		Bangladesh	11,000
1962	Earthquake		Northwestern Iran	12,000
1963	Cyclone		Bangladesh	22,000
1965	Cyclone		Bangladesh	36,000
1965	Cyclone		Southern Pakistan	10,000
1968	Earthquake		Northwestern Iran	12,000
1970	Earthquake		Yunnan, China	10,000
1970	Earthquake/Landslide		Northern Peru	70,000
1970	Cyclone Bhola		Bangladesh	300,000
1971	Cyclone		Orissa, India	10,000
1972	Earthquake (Managua earthquake)		Nicaragua	10,000
1974	Earthquake		Yunnan and Sichuan, China	20,000
1974	Flood		Bangladesh	28,700
1975	Earthquake		Liaoning, China	10,000
1976	Earthquake (Guatemala earthquake)		Guatemala	24,000
1976	Earthquake (Tangshan earthquake)		Tianjin, China	242,000
1977	Cyclone		Andhra Pradesh, India	20,000
1978	Earthquake		Northeastern Iran	25,000
1982	Volcanic Eruption		El Chichon Volcano, Mexico	17,000
1985	Cyclone		Bangladesh	10,000
1985	Earthquake		Mexico City, Mexico	10,000
1985	Volcanic Eruption		Nevado del Ruiz Volcano, Colombia	22,000
1986	Toxic gas		Lake Nyos, Western Cameroon	1,700
1986	Earthquake		San Salvador, El Salvador	1,000
1987	Earthquake		Northwestern Ecuador	5,000
1987	Flood		Bangladesh	1,000
1988	Earthquake		India, Nepal	1,000
1988	Flood		Bangladesh	2,000
1988	Earthquake (Spitak Earthquake)		Armenia (former Soviet Union)	25,000
1988	Earthquake		Yunnan, China	1,000
1989	Flood		India	1,000
1989	Flood/Landslide		Sichuan, China	2,000
1990	Earthquake (Manjil Earthquake)		Northern Iran	41,000
1990	Earthquake		Philippines	2,000
1991	Cyclone/Storm Surge		Chittagong, Bangladesh	137,000
1991	Flood		Jiangsu, China	1,900
1991	Typhoon THELMA (9125)		Philippines	6,000
1992	Flood		Pakistan	1,300
1992	Earthquake/Tsunami		Indonesia	2,100
1993	Flood		Nepal	1,800
1993	Earthquake (Maharashtra Earthquake)		India	9,800
1993	Flood		India	1,200
1994	Torrential Rain, Flood		India	2,000
1994	Typhoon, Flood		Six Southern Provinces of China	1,000
1994	Tropical Storm		Haiti	1,100
1995	Earthquake (Great Hanshin-Awaji Earthquake)		Japan	6,300
1995	Earthquake		Russia	1,800
1995	Flood		China	1,200
1996	Flood/Typhoon		Seven southern and five northern and northwestern provinces of China	2,800
1996	Typhoon/Flood		Viet Nam	1,000
1997	Earthquake	EQ-1997-000095-IRN	Eastern Iran	1,600
1997	Flood	FL-1997-000260-IND	India	1,400
1997	Flood	FL-1997-000265-SOM	Southern Somalia	2,000
1997	Typhoon LINDA (9726)	TC-1997-000007-VNM	Southern Viet Nam	3,700
1998	Earthquake	EQ-1998-000026-AFG	Northern Afghanistan	2,300
1998	Earthquake	EQ-1998-000152-AFG	Northern Afghanistan	4,700
1998	Flood/Landslide	FL-1998-000392-IND	Assam state, India	3,000
1998	Cyclone		India	2,900
1998	Flood	FL-1998-000203-BGD	Bangladesh	1,000
1998	Flood	FL-1998-000165-CHN	Coastal areas of the Yangtze River and other rivers in China	3,700
1998	Tsunami (Aitape Tsunami)	TS-1998-000220-PNG	Papua New Guinea	2,600
1998	Hurricane Mitch	TC-1998-000012-HND	Honduras, Nicaragua	17,000

Year	Disaster Type	GLIDE number	Country (Areas)	Fatalities/Missing Persons (approx.)
1999	Earthquake (Quindio Earthquake)	EQ-1999-000007-COL	Mid-western Colombia	1,200
1999	Earthquake (Izmit Earthquake)	EQ-1999-000008-TUR	Western Turkey	15,500
1999	Earthquake (Chi-Chi earthquake)	EQ-1999-000321-TWN	Taiwan	2,300
1999	Cyclone	ST-1999-000425-IND	India	9,500
2000	Flood		Venezuela	30,000
2001	Earthquake (Gujarat earthquake)	EQ-2001-000033-IND	India	20,000
2001	Earthquake	EQ-2001-000013-SLV	El Salvador	1,200
2003	Earthquake	EQ-2003-000074-DZA	Northern Algeria	2,300
2003	Earthquake (Bam earthquake)	EQ-2003-000630-IRN	Iran	26,800
2004	Flood	FL-2004-000028-HTI	Haiti	2,700
2004	Hurricane	TC-2004-000089-JAM	USA, Jamaica, Puerto Rico, Haiti	3,000
2004	Earthquake, Tsunami (2004 Indian Ocean Earthquake and Tsunami)	TS-2004-000147-LKA TS-2004-000147-IDN TS-2004-000147-MDV TS-2004-000147-IND TS-2004-000147-THA TS-2004-000147-MYS TS-2004-000147-MMR TS-2004-000147-SOM TS-2004-000147-BGD	Sri Lanka, Indonesia, Maldives, India, Thailand, Malaysia, Myanmar, Seychelles, Somalia, Tanzania, Bangladesh, Kenya	Over 226,000
2005	Flood/Landslide	FL-2005-000125-IND	India	1,200
2005	Hurricane Katrina	TC-2005-000144-USA	USA	1,800
2005	Rainstorm	ST-2005-000162-IND ST-2005-000162-BGD	India, Bangladesh	1,300
2005	Hurricane Stan/Flood	TC-2005-000171-GTM FL-2005-000171-SLV	Guatemala, El Salvador, Mexico	1,500
2005	Earthquake (Pakistan earthquake)	EQ-2005-000174-PAK EQ-2005-000174-IND	Pakistan and northern India	75,000
2006	Landslide	LS-2006-000024-PHL	Philippines	1,100
2006	Earthquake/Volcanic Eruption	VO-2006-000048-IDN	Merapi volcano, Indonesia	5,800
2006	Typhoon XANGSANE (0615)	TC-2006-000144-PHL	Luzon, Philippines	1,400
2007	Heavy Rain, Flood	FL-2007-000096-IND	India	1,100
2007	Cyclone Sidr	TC-2007-000208-BGD	Bangladesh	4,200
2008	Earthquake (Great Sichuan Earthquake)	EQ-2008-000062-CHN	China	87,500
2008	Cyclone Nargis	TC-2008-000057-MMR	Myanmar	138,400
2008	Flood	FL-2008-000089-IND	North-eastern India	1,100
2009	Earthquake (2009 Sumatra Earthquake)	EQ-2009-000273-IDN	Indonesia	1,200
2009	Flood	FL-2009-000217-IND	Southern India	1,200
2010	Earthquake (Haiti Earthquake)	EQ-2010-000009-HTI	Haiti	222,600
2010	Earthquake (Yushu Earthquake)	EQ-2010-000073-CHN	Qinghai, China	3,000
2010	Flood	FL-2010-000141-PA	North-western Pakistan	2,000
2010	Torrential Rain, Debris Flow	LS-2010-000156-CHN	Yangtze River Basin, China	1,800
2011	Earthquake, Tsunami (Great East Japan Earthquake)	EQ-2011-000028-JPN	Tohoku and Kanto regions, Japan	19,000
2011	Typhoon WASHI (1121)	TC-2011-000189-PH	Mindanao, Philippines	1,400
2012	Typhoon BOPHA (1224)	TC-2012-000197-PHL	Mindanao, Philippines	1,900
2013	Flood	FL-2013-000070-IND	Northern India	1,500
2013	Typhoon HAIYAN (1330)	TC-2013-000139-PHL	Leyte, Philippines	6,200
2015	Earthquake (Nepal Earthquake)	EQ-2015-000048-NPL	Nepal	9,000
2018	Earthquake, Tsunami	EQ-2018-000156-IDN	Sulawesi, Indonesia	3,400
2019	Flood	FL-2019-000084-IND	India	1,900
2020	Flood	FL-2020-000164-IND	India	1,922

Source: Formulated by the Cabinet Office based on the OFDA/CRED International Disaster Database (EM-DAT) (www.emdat.be), Université Catholique de Louvain, Brussels (Belgium), and Chronological Scientific Tables

Note) GLIDE number (GLobal unique disaster IDEntifier number) was proposed by the Asian Disaster Reduction Center (ADRC) in 2001 to share disaster information between different databases by allocating a common and unique disaster number to each of various disasters in the world, and operated jointly by the Office for the Coordination of Humanitarian Affairs (OCHA, ReliefWeb) for use of numerous disaster-related organizations. The number does not cover all kinds of disasters because it is allocated for a disaster when the relevant organization decides to allocate as required according to respective criteria. If the use of GLIDE is more common in disaster-related organizations in the future, more information on disasters can be shared.

Fig. A-24 Top 10 Largest Earthquakes Since 1900

(As of March 9, 2021)

Ranking	Date (Japan Time)	Location	Magnitude (Mw)
1	May 23, 1960	Chile	9.5
2	March 28, 1964	Gulf of Alaska	9.2
3	December 26, 2004	Off the West Coast of Northern Sumatra, Indonesia	9.1
4	March 11, 2011	Off the Sanriku Coast, Japan (The 2011 off the Pacific coast of Tohoku Earthquake)	9.0
	November 5, 1952	Kamchatka Peninsula	9.0
6	February 27, 2010	Offshore Maule, Chile	8.8
	February 1, 1906	Offshore Ecuador	8.8
8	February 4, 1965	Aleutian Islands, Alaska	8.7
9	August 16, 1950	Tibet, Assam	8.6
	April 11, 2012	Off the West Coast of Northern Sumatra, Indonesia	8.6
	March 29, 2005	Northern Sumatra, Indonesia	8.6
	March 10, 1957	Aleutian Islands, Alaska	8.6
	April 1, 1946	Aleutian Islands, Alaska	8.6

*Mw: Moment magnitude

*The magnitude (Mw) of the 2011 off the Pacific coast of Tohoku Earthquake is based on materials from JMA.

Source: US Geological Survey

Fig. A-25 Major Natural Disasters Since 2020

Date	Country	Disaster Type	Fatalities	Affected People	Direct Damages (USD 1,000)
Jan. - Dec., 2020	Madagascar	Drought	0	725,620	0
Jan. - Dec., 2020	Brazil	Drought	0	0	3,000,000
Jan. - Dec., 2020	United States of America (the)	Drought	45	0	4,500,000
Jan. 01 - Jan. 24, 2020	Madagascar	Flood	40	106,846	0
Jan. 04 - Jan. 24, 2020	Israel	Flood	7	0	580,000
Jan. 07 - Jan. 07, 2020	Puerto Rico	Earthquake	4	5,078	800,000
Jan. 09 - Jan. 22, 2020	Iran (Islamic Republic of)	Flood	4	196,152	808,000
Jan. 10 - Jan. 12, 2020	United States of America (the)	Storm	10	0	1,200,000
Jan. 11 - Jan. 13, 2020	Pakistan	Storm	107	1,000,104	0
Jan. 12 - Jan. 22, 2020	Philippines (Republic of the)	Volcanic activity	1	736,802	66,000
Jan. 17 - Jan. 27, 2020	Brazil	Flood	61	11,012	300,000
Jan. 19 - Jan. 21, 2020	Australia	Storm	0	0	1,500,000
Jan. 19 - Jan. 21, 2020	Spain	Storm	17	2,000	315,000
Feb. 04 - Feb. 11, 2020	Australia	Flood	1	0	1,200,000
Feb. 10 - Feb. 17, 2020	United States of America (the)	Flood	0	3,000	175,000
Feb. 13 - Feb. 26, 2020	Indonesia	Flood	6	115,000	10,000
Feb. 24 - Apr. 30, 2020	Iran (Islamic Republic of)	Flood	21	22	1,500,000
Feb. 26 - Feb. 28, 2020	Indonesia	Flood	10	112,000	0
Mar. 02 - Mar. 05, 2020	United States of America (the)	Storm	25	12,300	2,500,000
Mar. 18 - Mar. 21, 2020	Iraq	Flood	8	1,500	100,000
Mar. 20 - Mar. 26, 2020	Zambia	Flood	0	700,000	0
Mar. 22 - Mar. 22, 2020	Croatia	Earthquake	1	78,942	6,800,000
Mar. 27 - Mar. 28, 2020	United States of America (the)	Storm	0	0	2,900,000

Date	Country	Disaster Type	Fatalities	Affected People	Direct Damages (USD 1,000)
Apr. 06 - Apr. 09, 2020	Tonga	Tropical cyclone	0	1,289	111,000
Apr. 06 - Apr. 09, 2020	United States of America (the)	Storm	0	0	2,900,000
Apr. 08 - Apr. 09, 2020	Fiji	Tropical cyclone	1	180,000	13,000
Apr. 10 - Apr. 14, 2020	United States of America (the)	Storm	38	200	3,500,000
Apr. 15 - Apr. 30, 2020	Yemen	Flood	10	150,030	10,000
Apr. 18 - Jun. 01, 2020	Kenya	Flood	285	810,655	10,000
Apr. 20 - Apr. 26, 2020	Djibouti	Flood	8	110,000	0
Apr. 20 - May. 08, 2020	Ethiopia	Flood	12	219,000	0
Apr. 20 - Apr. 28, 2020	Somalia	Flood	26	1,000,020	0
Apr. 21 - Apr. 24, 2020	United States of America (the)	Storm	3	31	1,400,000
Apr. 26 - Apr. 30, 2020	Canada	Flood	1	12,936	1,300,000
Apr. 30 - May 05, 2020	Indonesia	Flood	2	110,000	0
May 01 - May 31, 2020	China	Storm	20	600,000	1,100,000
May 02 - May 02, 2020	Puerto Rico	Earthquake	0	150	150,000
May 02 - May 03, 2020	United States of America (the)	Storm	2	0	850,000
May 08 - May 08, 2020	Uganda	Flood	3	100,000	0
May 15 - May 17, 2020	Philippines (Republic of the)	Tropical cyclone	5	578,740	31,100
May 17 - May 20, 2020	United States of America (the)	Flood	1	10,000	2,100,000
May 20 - May 20, 2020	Bangladesh	Tropical cyclone	26	2,600,000	1,500,000
May 20 - May 20, 2020	India	Tropical cyclone	90	18,000,000	13,500,000
May 20 - May 23, 2020	United States of America (the)	Storm	2	0	1,600,000
May 21 - Jul. 30, 2020	China	Flood	280	4,200,000	17,000,000
May 27 - Jun. 02, 2020	India	Landslide	21	155,850	0
May 27, 2020	United States of America (the)	Storm	0	0	1,400,000
May 30 - May 31, 2020	Guatemala	Tropical cyclone	2	306,886	0
May 31 - May 31, 2020	El Salvador	Tropical cyclone	32	149,840	220,000
Jun. 03 - Jun. 03, 2020	India	Tropical cyclone	6	7,500	820,000
Jun. 07 - Jun. 07, 2020	United States of America (the)	Tropical cyclone	1	0	325,000
Jun. 13 - Jun. 14, 2020	Canada	Storm	0	60,000	1,200,000
Jun. 15 - Sep. 30, 2020	Bangladesh	Flood	257	5,448,271	500,000
Jun. 15 - Jul. 20, 2020	Somalia	Flood	6	191,000	0
Jun. 24 - Oct. 31, 2020	Nigeria	Flood	155	193,425	100,000
Jun. 29 - Jul. 10, 2020	Japan	Flood	82	250,114	5,800,000
Jun. 30 - Jul. 01, 2020	Brazil	Storm	12	1,119	100,000
Jun. 30 - Jul. 05, 2020	China	Flood	22	10,000,000	0
Jun. 01 - Aug. 16, 2020	India	Flood	1922	1,300,000	7,500,000
Jun. 01 - Sep. 01, 2020	Nepal	Flood	448	117,677	100,000
Jun. 01 - Sep. 09, 2020	Sudan (Republic of the)	Flood	155	875,013	250,000
Jun. 01 - Aug. 01, 2020	United Kingdom of Great Britain and Northern Ireland (the)	Extreme temperature	2556	0	0
Jul. 01 - Jul. 02, 2020	Myanmar	Landslide	172	1,142	0
Jul. 01 - Sep. 10, 2020	Niger (Republic of)	Flood	73	632,608	10,000
Jul. 03 - Jul. 31, 2020	Indonesia	Flood	105	14,534	10,000
Jul. 06 - Jul. 06, 2020	Ukraine	Wildfire	5	300	162,000
Jul. 25 - Jul. 26, 2020	Mexico	Storm	5	0	135,000

Date	Country	Disaster Type	Fatalities	Affected People	Direct Damages (USD 1,000)
Jul. 25 - Jul. 25, 2020	United States of America (the)	Storm	0	0	1,100,000
Jul. 30 - Aug. 16, 2020	France	Extreme temperature	1924	0	0
Jul. 31 - Aug. 02, 2020	Dominican Republic (the)	Storm	2	5,500	165,000
Jul. 31 - Aug. 02, 2020	United States of America (the)	Storm	16	0	4,800,000
Jul. 01 - Dec. 01, 2020	South Sudan	Flood	0	1,042,000	0
Aug. 01 - Aug. 12, 2020	Korea (Republic of)	Flood	42	6,000	420,000
Aug. 01 - Sep. 01, 2020	Pakistan	Flood	410	1,550,170	1,500,000
Aug. 05 - Aug. 08, 2020	Belgium	Extreme temperature	1460	0	0
Aug. 05 - Aug. 16, 2020	Netherlands (Kingdom of the)	Extreme temperature	400	0	0
Aug. 08 - Aug. 12, 2020	United States of America (the)	Storm	4	0	6,800,000
Aug. 10 - Aug. 11, 2020	China	Storm	0	12,235	161,000
Aug. 16 - Oct. 01, 2020	United States of America (the)	Wildfire	32	0	11,000,000
Aug. 22 - Aug. 23, 2020	Turkey	Flood	16	0	250,000
Aug. 25 - Aug. 04, 2020	Afghanistan	Flood	212	20,445	0
Aug. 27 - Aug. 28, 2020	United States of America (the)	Storm	33	6,500	13,000,000
Aug. 01 - Aug. 01, 2020	China	Flood	92	0	4,800,000
Sep. 01 - Oct. 15, 2020	Syrian Arab Republic	Wildfire	3	140,079	0
Sep. 06 - Sep. 08, 2020	Korea (Republic of)	Storm	2	0	1,200,000
Sep. 11 - Sep. 18, 2020	United States of America (the)	Storm	8	0	6,300,000
Sep. 18 - Sep. 21, 2020	Viet Nam	Storm	6	125,000	33,000
Sep. 01 - Nov. 01, 2020	Lesotho	Drought	0	766,000	0
Oct. 01 - Oct. 24, 2020	Cambodia	Storm	38	759,360	100,000
Oct. 01 - Oct. 26, 2020	India	Flood	152	150,000	4,000,000
Oct. 01 - Oct. 31, 2020	Mozambique	Flood	22	145,000	0
Oct. 02 - Oct. 04, 2020	France	Storm	26	600	1,000,000
Oct. 02 - Oct. 06, 2020	Mexico	Tropical cyclone	6	3,500	100,000
Oct. 06 - Nov. 03, 2020	Viet Nam	Tropical cyclone	243	1,500,000	850,000
Oct. 07 - Oct. 11, 2020	Mexico	Tropical cyclone	0	0	100,000
Oct. 07 - Oct. 11, 2020	United States of America (the)	Tropical cyclone	4	9,400	2,900,000
Oct. 09 - Oct. 31, 2020	Thailand	Tropical cyclone	6	274,923	0
Oct. 24 - Oct. 30, 2020	United States of America (the)	Tropical cyclone	6	0	3,500,000
Oct. 28 - Oct. 28, 2020	Philippines (Republic of the)	Tropical cyclone	31	888,415	87,100
Oct. 29 - Oct. 29, 2021	Viet Nam	Tropical cyclone	41	450,000	540,000
Oct. 30 - Oct. 30, 2022	Turkey	Earthquake	115	6,034	450,000
Oct. 31 - Nov. 01, 2020	Philippines (Republic of the)	Tropical cyclone	31	3,356,394	503,294
Oct. 31- Oct. 31, 2020	Australia	Storm	0	0	1,200,000
Oct. 01 - Dec. 01, 2020	Mozambique	Drought	0	2,700,000	0
Nov. 03 - Nov. 04, 2020	Guatemala	Tropical cyclone	160	2,415,888	386,000
Nov. 03 - Nov. 04, 2020	Nicaragua	Tropical cyclone	2	30,000	178,000
Nov. 03 - Nov. 04, 2020	Honduras	Tropical cyclone	110	4,566,584	5,000,000
Nov. 08 - Nov. 12, 2020	United States of America (the)	Tropical cyclone	12	0	1,500,000
Nov. 10 - Nov. 10, 2020	United States of	Storm	11	0	350,000

Date	Country	Disaster Type	Fatalities	Affected People	Direct Damages (USD 1,000)
	America (the)				
Nov. 11 - Nov. 12, 2020	Philippines (Republic of the)	Tropical cyclone	111	4,945,461	421,000
Nov. 14 - Nov. 17, 2020	Colombia	Tropical cyclone	23	228,000	100,000
Nov. 17 - Nov. 17, 2020	Guatemala	Tropical cyclone	2	131,298	0
Nov. 17 - Nov. 18, 2020	Honduras	Tropical cyclone	14	578,000	0
Nov. 17 - Nov. 18, 2020	Nicaragua	Tropical cyclone	18	900,000	741,000
Nov. 22 - Nov. 13, 2020	Somalia	Tropical cyclone	9	120,000	0
Nov. 25 - Nov. 26, 2020	India	Tropical cyclone	14	0	600,000
Nov. 25 - Dec. 14, 2020	Thailand	Flood	29	691,659	50,000
Dec. 02 - Dec. 10, 2020	Indonesia	Flood	5	110,000	0
Dec. 02 - Dec. 05, 2020	Sri Lanka	Flood	3	111,665	0
Dec. 16 - Dec. 21, 2020	Thailand	Flood	1	139,000	0
Dec. 16 - Dec. 18, 2020	Japan	Storm	0	0	200,000
Dec. 29 - Dec. 29, 2020	Croatia	Earthquake	8	140,036	1,200,000
Dec. 30 - Dec. 30, 2020	Norway	Landslide	10	1,010	130,000
2020 - Jun. 01, 2020	Burkina Faso	Drought	0	2,900,000	0
2020 - Dec. 01, 2020	Mali	Drought	0	6,800,000	0
2020 - Dec. 23, 2020	Niger (Republic of)	Drought	0	3,700,000	0

Source: Formulated by the Cabinet Office based on materials from EM-DAT: The International Disaster Database (Centre for Research on the Epidemiology of Disasters (CRED), Université Catholique de Louvain).

1) Turkey Earthquake (EQ-2020-000215-TUR)

Turkey, like Japan, is an earthquake-prone country, and moderate-sized earthquakes occurred frequently in 2020. At 2:51 p.m. local time on October 30, a magnitude 6.6 earthquake (magnitude 7.0 according to the U.S. Geological Survey (USGS)), whose epicenter was the Aegean Sea between Turkey and Greece, occurred. As a result, damage was confirmed mainly in Izmir province, which is located in western Turkey.

According to an announcement by the Disaster and Emergency Management Authority (AFAD) of the Ministry of Interior of Turkeyon November 6, 114 people were killed and 1,035 were injured due to the earthquake. According to EM-DAT, the earthquake caused economic damage of US$450 million.
https://reliefweb.int/report/turkey/afad-press-bulletin-izmir-turkey-earthquake-report-6-november-2020

2) Vietnam Rainstorms and Floods
(FL-2020-000211-VNM, TC-2020-000234-VNM, TC-2020-000235-VNM)

Vietnam was hit by frequent tropical cyclones and typhoons (including Linfa, Molave, Vamco) from early October to November, which caused heavy rains over a long time period. Severe flooding occurred mainly along rivers in central part of Vietnam, and landslide damage occurred in mountainous areas.

According to EM-DAT, from October 6 to November 3, the number of deaths was 243, the number of the affected was 1.5 million, and the economic damage amounted to US$850 million.

On October 15, in response to a request from the Vietnamese government, the Japanese government decided to provide emergency relief supplies (plastic sheets and water purifiers) through the Japan International Cooperation Agency (JICA) in response to typhoon damage in Vietnam.
https://www.jica.go.jp/information/jdrt/2020/201015.html

3) Central American Countries Hurricanes Eta and Iota

The tropical cyclone (Hurricane Eta), which occurred in the Caribbean on October 31, developed at a furious pace. On November 3, it became a Category 4 hurricane, the second strongest of the five levels of hurricane force, and made landfall in Central American countries. Torrential rain caused extensive flooding and landslides in Honduras (TC-2020-000220-HND), Nicaragua (TC-2020-000218-NIC), Guatemala (TC-2020-000222-GTM) and other countries, resulting in serious damage. In addition, about two weeks later, Hurricane Iota, which temporarily developed into a Category 5 hurricane, struck these countries, forcing many people to evacuate during the spread of COVID-19.

According to the International Federation of Red Cross and Red Crescent Societies (IFRC), both cyclones killed 99 people, left 11 missing and evacuated more than 1 million people in Honduras (as of December 3). In

Guatemala, 60 people died, 100 were missing and more than 310,000 people were evacuated (as of December 6), and in Nicaragua 21 people were killed, and more than 160,000 people were evacuated (as of 7 December).

In addition to the Provision of Emergency Relief Goods through JICA, on December 18, the Government of Japan decided to provide emergency grant aid of $8.8 million (968 million yen) to three Central American countries (Guatemala, Honduras, and Nicaragua) to assist the people affected by Hurricanes Eta and Iota.

Through the United Nations World Food Programme (WFP), the United Nations Children's Fund (UNICEF), the International Organization for Migration (IOM), and the International Federation of Red Cross and Red Crescent Societies (IFRC), food, housing repair materials, and non-food aid supplies were provided. Also, support was provided in the areas of water and sanitation, and coordination and management within shelters were secured.

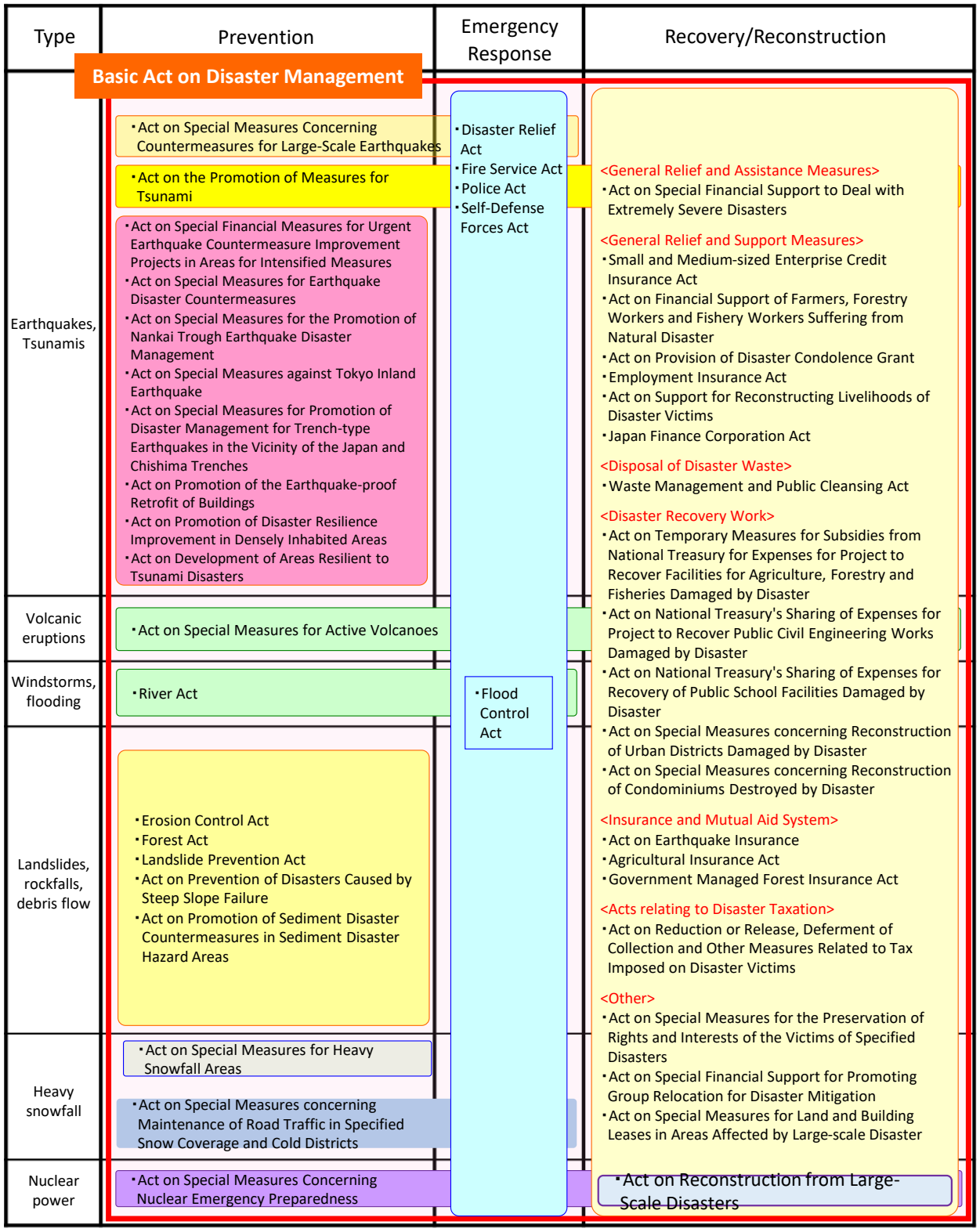
https://go.ifrc.org/emergencies/4889#current-situation
https://www.mofa.go.jp/mofaj/press/release/press24_000073.html

3. Laws and Systems

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

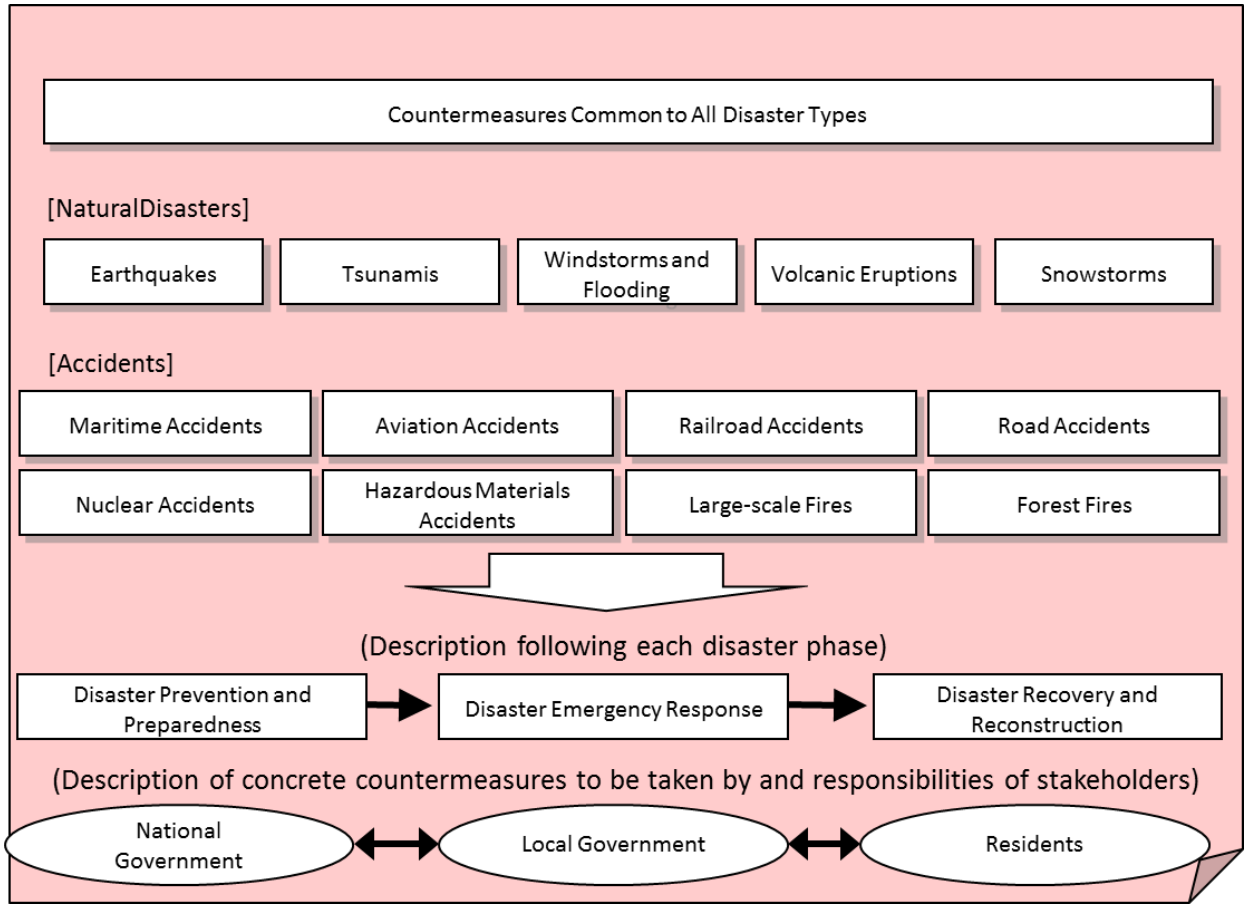
Source: Cabinet Office

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



Source: Cabinet Office

Fig. A-28 Structure of the Basic Disaster Management Plan



Source: Cabinet Office

Fig. A-29 Revisions to the Basic Disaster Management Plan

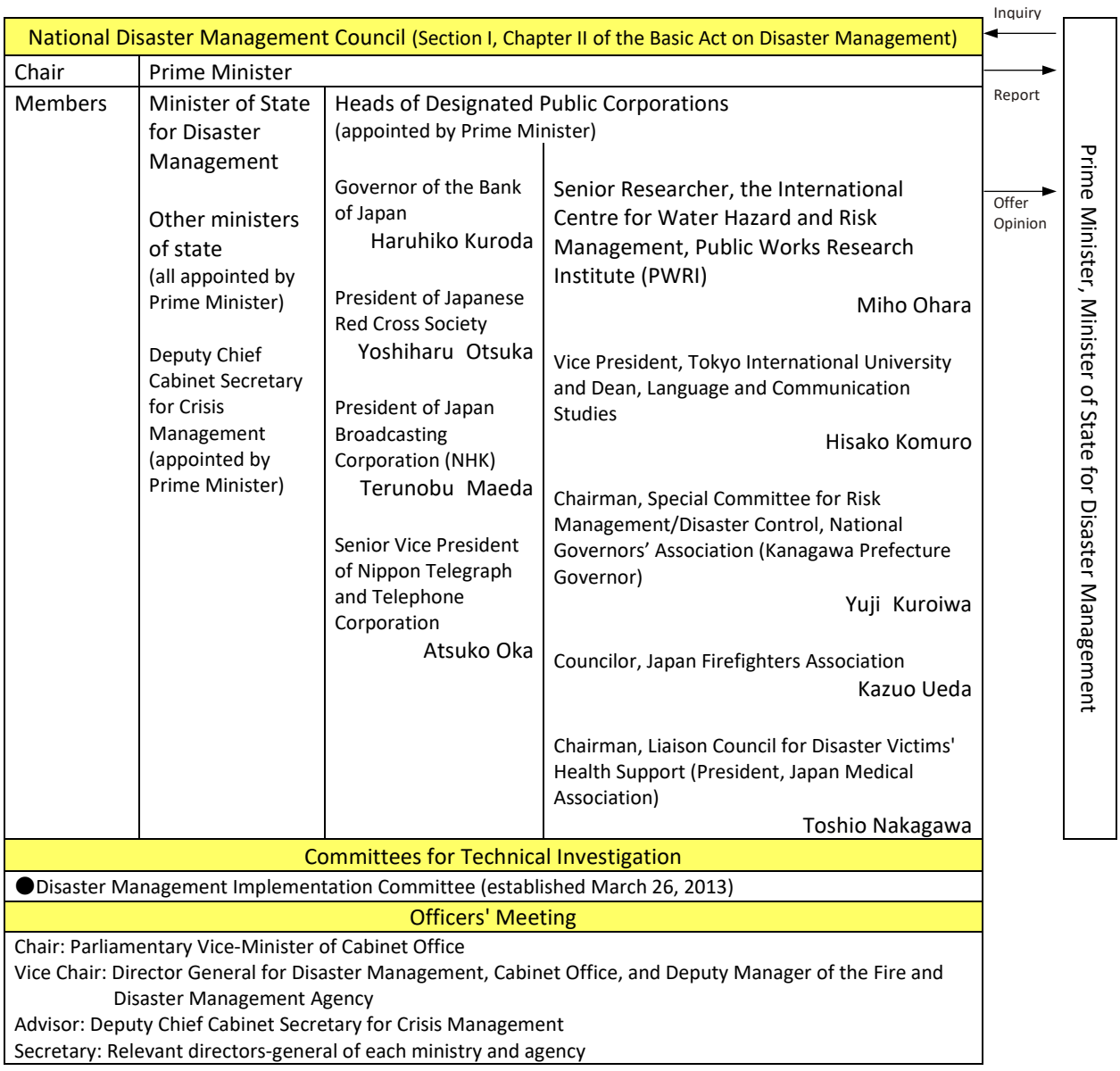
Revision Date	Outline of Revision	Background
June 1963	- The Basic Disaster Management Plan formulated based on the Basic Act on Disaster Management - Stipulations regarding various measures to prevent natural disasters, mitigate damage, and promote disaster reconstruction	Sep. 26, 1959: Typhoon VERA (5915) Nov. 15, 1961: Enactment of the Basic Act on Disaster Management
May 1971	Partial revision - Enhancement of earthquake countermeasures (facilities for earthquake prediction, preparation of fire fighting helicopters) - Renewed positioning of countermeasures to tackle hazardous materials, petrochemical complexes, and wildfires	Sep. 6, 1967 Recommendation concerning Disaster Prevention Measures (recommending revisions in response to a modern socioeconomy)
July 1995	Complete revision - Structured this version by disaster type, and included stipulations in the following order: prevention, emergency response, recovery/reconstruction - Clearly defined the stakeholders, such as national governments, public agencies, local governments, and businesses, and specified countermeasures - Stipulated that changes in social structure such as the aging of society should be taken into account	Jan. 17, 1995: Southern Hyogo Prefecture Earthquake (Great Hanshin-Awaji Earthquake)
June 1997	Partial revision - Addition of section on countermeasures to address disasters caused by accidents (structural improvements such as the establishment of an emergency countermeasures headquarters) - Addition of a section on snowstorm countermeasures	Jan. 2, 1997: Nakhodka Oil Spill Accident
May 2000	Partial revision - Revision of the section on countermeasures to tackle nuclear power disasters, following the enactment of the Act on Special Measures Concerning Nuclear Emergency Preparedness	Sep. 30, 1999: Criticality accident at uranium fabrication plant in Tokai-mura, Ibaraki prefecture
December 2000	Partial revision - Revisions resulting from the national government reformation	National government reformation
April 2002	Partial revision - Enhancement of descriptions relating to information transmission to residents and evacuation measures regarding countermeasures against flooding, sediment disasters, and storm surges - New positioning of nuclear power disasters related to nuclear vessels	Jun. 29, 1999: Torrential rain disaster in Hiroshima Prefecture Sep. 24, 1999: Storm surge disaster in Kumamoto Prefecture
March 2004	Partial revision - Revisions based on the creation of the Basic Plan for the Promotion of Tonankai and Nankai Earthquake Countermeasures (seismic retrofitting of public buildings, etc.) - Revisions based on the development of policies such as the development of an earthquake early warning system	Mar. 31, 2004: Creation of a Basic Plan for the Promotion of Tohnankai and Nankai Earthquake Countermeasures
July 2005	Partial revision - Revisions based on developments in policy, such as the promotion of a nationwide movement to practice disaster preparedness, the promotion of corporate disaster risk reduction efforts, the formulation and implementation of an earthquake DRR strategy, tsunami DRR measures such as the development of tsunami evacuation buildings, information transmission during torrential rains, evacuation support for the elderly, etc.	July 28, 2004: Creation of an Earthquake Disaster Risk Reduction Strategy Dec. 26, 2004: Indian Ocean Tsunami (Sumatra/Andaman Earthquake)
March 2007	Partial revision - Revisions resulting from the transition from Defense Agency to Ministry of Defense	Transition from Defense Agency to Ministry of Defense
February 2008	Partial revision - Implementation of follow-up actions on key issues regarding the Basic Disaster Management Plan, development of strategic national movements, establishment of conditions for the promotion of corporate disaster risk reduction, full-scale introduction of earthquake early warning system, strengthening of nuclear power disaster countermeasures in light of lessons learned from the Niigataken Chuetsu-oki Earthquake	July 16, 2007: The Niigataken Chuetsu-oki Earthquake
December 2011	Partial revision - Radical strengthening of earthquake/tsunami countermeasures in light of the Great East Japan Earthquake (addition of tsunami disaster countermeasure section)	Mar. 11, 2011 Tohoku Earthquake and Tsunami (The Great East Japan Earthquake)
September 2012	Partial revision - Strengthening of countermeasures against large-scale regional disasters in light of revisions to the Basic Act on Disaster Management (First Revision), and the final report of the National Disaster Management Council's Committee for Policy Planning on Disaster Management (each section) - Strengthening of nuclear power disaster countermeasures in light of the enactment of the Act for Establishment of the Nuclear Regulation Authority (nuclear power disaster countermeasures section)	Mar. 11, 2011 The Great East Japan Earthquake Jun. 27, 2012 Partial Amendment of the Basic Act on Disaster Management Sep. 19, 2012 Inauguration of the Nuclear Regulatory Authority
January 2014	Partial revision - Strengthening of countermeasures against large-scale disasters in light of revisions to the Basic Act on Disaster Management (Second Revision) and the enactment of the Act on Reconstruction from Large-Scale Disasters (each section) - Strengthening of nuclear disaster countermeasures in light of investigations by the Nuclear Regulation Authority	Mar. 11, 2011 The Great East Japan Earthquake Jun. 21, 2013 Partial Amendment of the Basic Act on Disaster Management, enactment of the Act on Reconstruction from Large-Scale Disasters

Revision Date	Outline of Revision	Background
November 2014	Partial revision - Strengthening of countermeasures against abandoned and stranded vehicles following revision of the Basic Act on Disaster Management - Addition of descriptions in light of lessons learned from heavy snowfall of February 2014, such as the diversification of information transmission methods such as warnings of heavy snow	Feb. 2014: Heavy snowfall Nov. 21, 2014: Partial Amendment of the Basic Act on Disaster Management
March 2015	Partial revision - Improvement and strengthening of nuclear emergency preparedness systems e.g., through the establishment of local nuclear disaster management committees and national support for the enhancement of local plans for disaster risk reduction/evacuation plans (nuclear disaster countermeasures section)	Mar. 5, 2015: Cabinet Secretariat Three-Year Revision and Investigation Team "Improvement and Strengthening of the Nuclear Emergency Preparedness System (Second Report)"
July 2015	Partial revision -Revisions resulting from the strengthening of measures in light of lessons learned from the Hiroshima Sediment Disaster and the Mt. Ontake Eruption (each section)	Jan. 18, 2015: Partial Amendment of the Act on the Promotion of Sediment Disaster Countermeasures in Sediment Disaster Hazard Areas Mar. 26, 2015: Working Group for the Promotion of Volcano Disaster Prevention report Jun. 4, 2015: Working Group for Studying Comprehensive Countermeasures against Sediment Disasters report
February 2016	Partial revision -Revisions resulting from the strengthening of measures in light of the revision of laws, including the Act on Special Measures for Active Volcanoes, the Flood Control Act, the Sewerage Act, the Waste Management and Public Cleansing Act, and the Basic Act on Disaster Management (each section)	Dec. 10, 2015: Partial Amendment of the Act on Special Measures for Active Volcanoes
May 2016	Partial revision -Revisions resulting from the strengthening of measures in light of lessons learned from the Torrential Rain of September 2015 in the Kanto and Tohoku Regions (each section)	Mar. 31, 2016: Working Group on Study on Evacuation and Emergency Response Measures for Flood Disasters report
April 2017	Partial revision -Revisions resulting from the strengthening of measures in light of lessons learned from the 2016 Kumamoto Earthquake and Typhoon LIONROCK (1610) disaster (each section)	Dec. 20, 2016: Report of the Working Group for Studying Emergency Response and Livelihood Support Measures in Light of the 2016 Kumamoto Earthquake Dec. 26, 2016: Report of the Study Group on Guidelines for Producing a Handbook on Decision and Dissemination for Evacuation Recommendations
June 2018	Partial revision -Revisions resulting from the strengthening of measures in light of the revision of laws, including the Disaster Relief Act, the Road Act, and the Flood Control Act, etc. (each section) - Revisions resulting from the strengthening of measures in light of lessons learned from the 2017 July Northern Kyushu Heavy Rain and the heavy snow from January to February 2018 (each section)	Dec. 8, 2017: Report of the Study Group on Evacuation from the 2017 July Northern Kyushu Heavy Rain May 16, 2018: Interim Report on Measures to Secure Road Traffic in Heavy Snow June 15, 2018: Partial Amendment of the Disaster Relief Act
May 2019	Partial revision -Amendments to evacuation measures from flood and sediment disasters in light of the heavy rain event of July 2018 (each section)	Dec.26, 2018: Amendments to evacuation measures from flood and sediment disasters in light of the heavy rain event of July 2018 (report) Mar. 29, 2019 Revision of the guidelines on evacuation recommendations
May 2020	Partial Amendment ・Verification of the Typhoon Faxai in 2019 (T1915) and the Typhoon Hagibis in 2019 (T1919), and amendments to strengthen countermeasures based on COVID-19 countermeasures (each part).	March 31, 2020: Verification of the series of disasters including Typhoon Faxai in 2019 (T1915) and Typhoon Hagibis in 2019 (T1919). Report (final summary)

Source: Cabinet Office

4. Organizations

Fig. A-30 Organization of the National Disaster Management Council



[Role]

- ○ Formulate a Basic Disaster Management Plan and Earthquake Disaster Management Plan and promote their implementation
- ○ Discuss important issues related to disaster management in response to inquiries from the Prime Minister or the Minister of State for Disaster Management (e.g. basic approaches to disaster management, comprehensive coordination of disaster management policies, and the declaration of states of emergency)
- ○ Offer opinions on important issues related to disaster management to the Prime Minister or the Minister of State for Disaster Management

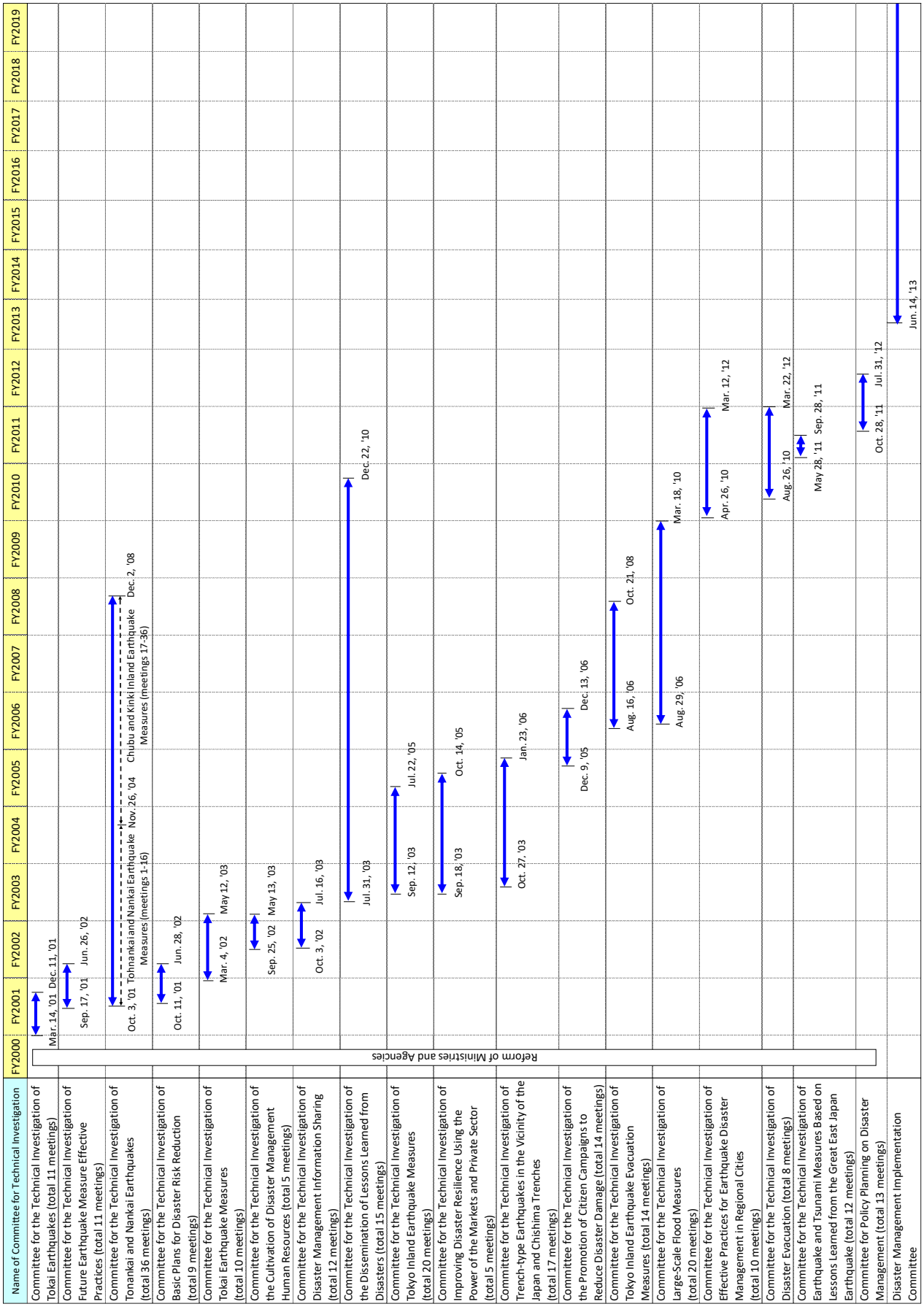
Source: Cabinet Office

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

FY2011	
Apr. 27, 2011	• Great East Japan Earthquake: Characteristics and Challenges • Conventional earthquake and tsunami policies
Oct. 11, 2011	• Report of the Committee for the Technical Investigation of Earthquake and Tsunami Measures Based on Lessons Learned from the Great East Japan Earthquake • Government ministry and agency efforts related to future DRR efforts • Establishment of the Committee for Policy Planning on Disaster Management
Dec. 27, 2011	• Revisions to the Basic Disaster Management Plan • Revisions to the National Disaster Management Council Operation Guidelines • Report of the Committee for the Technical Investigation of the Dissemination of Lessons Learned from Disasters • Status of the investigations by the Committee for Policy Planning on Disaster Management
Mar. 29, 2012	• Interim Report of the Committee for Policy Planning on Disaster Management • Current efforts aimed at bolstering and reinforcing DRR measures • FY2012 Comprehensive Disaster Management Drill Framework
FY2012	
Sep. 6, 2012	• Revisions to the Basic Disaster Management Plan • Framework for Large-Scale Flood Measures in the Capital Region • New Promotion of Earthquake Research • Final Report of the Committee for Policy Planning on Disaster Management • Report of the Committee for the Technical Investigation of Best Practices for Earthquake Disaster Management in Regional Cities • Report of the Committee for the Technical Investigation of Disaster Evacuation • Report on Tsunami Heights and Inundation Areas Resulting from Nankai Trough Megaquake (Secondary Report) and Damage Estimates (Primary Report)
Mar. 26, 2013	• Review of the legal systems for disaster management; status of investigations into Nankai Trough Megaquake Measures and Tokyo Inland Earthquake Measures • Establishment of the Disaster Management Implementation Committee • FY2013 Comprehensive Disaster Management Drill Framework
FY2013	
Jan. 17, 2014	• Designation of Areas for the Promotion of Nankai Trough Earthquake DRR Measures and Areas for the Special Reinforcement of Nankai Trough Earthquake Tsunami Evacuation Measures • Designation of Tokyo Inland Earthquake Emergency Management Zones • Revisions to the Basic Disaster Management Plan • Final Report of the Working Group to Investigate Tokyo Inland Earthquake Measures and a National Government Business Continuity Plan Proposal
Mar. 28, 2014	• Act on Special Measures for the Promotion of Nankai Trough Earthquake Disaster Management • Act on Special Measures against Tokyo Inland Earthquake • Framework for Large-Scale Earthquake Disaster Management and Reduction • FY2014 Comprehensive Disaster Management Drill Framework
FY2014	
Nov. 28, 2014	• Revisions to the Basic Disaster Management Plan
Mar. 31, 2015	• Revisions to the Basic Disaster Management Plan • FY2015 Comprehensive Disaster Management Drill Framework • Earthquake Disaster Risk Reduction Strategy for a Tokyo Inland Earthquake
FY2015	
Jul. 7, 2015	• Revisions to the Basic Disaster Management Plan
Feb. 16, 2016	• Basic Guidelines on the Comprehensive Promotion of Measures for Active Volcanoes • Designation of volcanic eruption hazard areas • Revisions to the Basic Disaster Management Plan
FY2016	
May 31, 2016	• FY2016 Comprehensive Disaster Management Drill Framework • Revisions to the Basic Disaster Management Plan
FY2017	
Apr. 11, 2017	• Revisions to the Basic Disaster Management Plan • FY2017 Comprehensive Disaster Management Drill Framework
FY2018	
Jun. 29, 2018	• Revisions to the Basic Disaster Management Plan • Partial amendment of the Disaster Relief Act
FY2019	
May 31, 2019	• Revisions to the Basic Disaster Management Plan • Revisions to the Basic Plan for the Promotion of Nankai Trough Earthquake Disaster Risk Reduction Countermeasures • FY2019 Comprehensive Disaster Management Drill Framework • Promotion of Earthquake Research (third period)
FY2020	
May 29, 2020	• Amendment of Basic Disaster Management Plan • Outline of the Comprehensive Disaster Management Drill Framework of 2020

Source: Cabinet Office

Fig. A-32 **Status of the Establishment of National Disaster Management Council Committees for Technical Investigation**



Source: Cabinet Office

5. Budget

Fig. A-33 Disaster Risk Management Budgets by Year

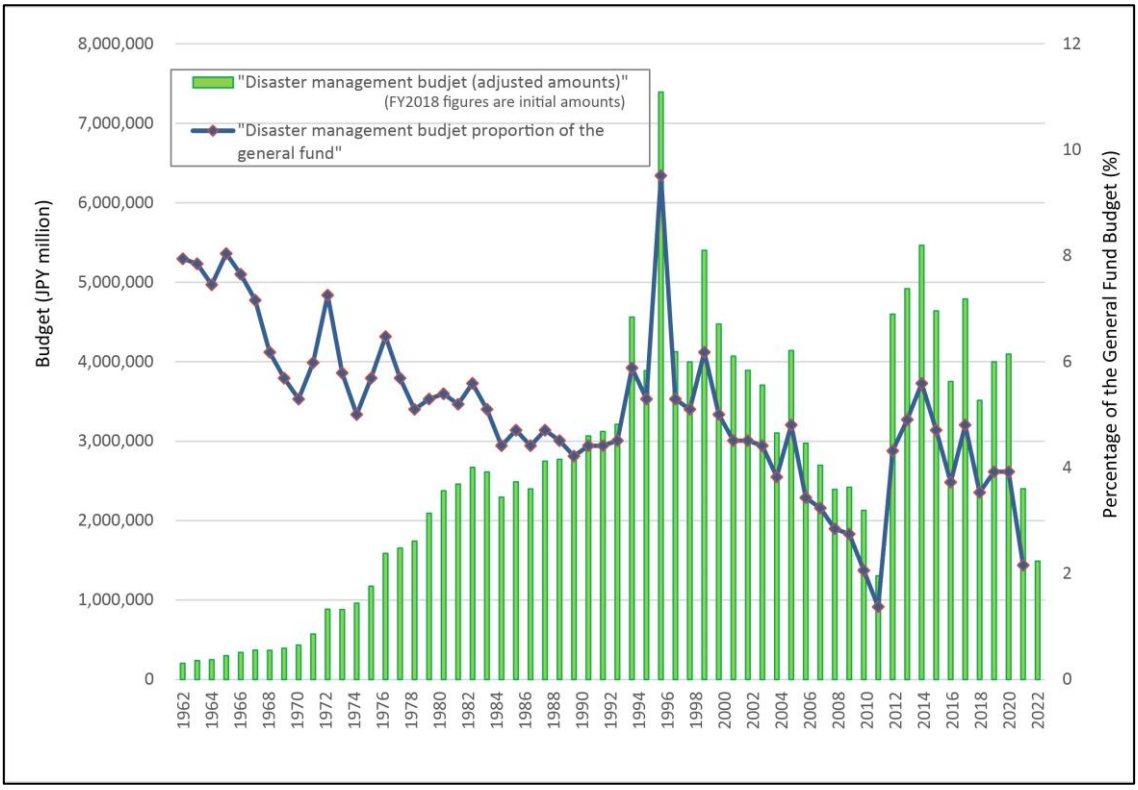
Fiscal Year	Science and Technology Research		Disaster Prevention		Land Conservation		Disaster Reconstruction		Total
	(JPY million)	Share (%)	(JPY million)	Share (%)	(JPY million)	Share (%)	(JPY million)	Share (%)	(JPY million)
1962	751	0.4	8,864	4.3	97,929	47.1	100,642	48.3	208,006
1963	1,021	0.4	8,906	3.7	116,131	47.7	117,473	48.2	243,522
1964	1,776	0.7	13,724	5.4	122,409	48.3	115,393	45.6	253,302
1965	1,605	0.5	17,143	5.6	147,858	48.3	139,424	45.6	306,030
1966	1,773	0.5	20,436	5.9	170,650	49.0	155,715	44.7	348,574
1967	2,115	0.6	23,152	6.1	197,833	52.3	154,855	41.0	377,955
1968	2,730	0.7	25,514	6.8	207,600	55.4	138,815	37.1	374,659
1969	2,747	0.7	30,177	7.5	236,209	59.0	131,270	32.8	400,403
1970	2,756	0.6	36,027	8.2	269,159	60.9	133,998	30.3	441,940
1971	3,078	0.5	50,464	8.6	352,686	60.3	178,209	30.5	584,437
1972	3,700	0.4	93,425	10.3	488,818	54.1	316,895	35.1	902,838
1973	6,287	0.7	111,321	12.4	493,580	54.9	287,082	32.0	898,270
1974	14,569	1.5	118,596	12.1	505,208	51.5	342,556	34.9	980,929
1975	17,795	1.5	159,595	13.3	615,457	51.3	405,771	33.9	1,198,618
1976	21,143	1.3	186,297	11.5	711,159	43.9	700,688	43.3	1,619,287
1977	22,836	1.4	234,409	13.9	904,302	53.6	525,886	31.2	1,687,433
1978	29,642	1.7	307,170	17.3	1,093,847	61.6	345,603	19.5	1,776,262
1979	35,145	1.6	435,963	20.4	1,229,401	57.6	432,759	20.3	2,133,268
1980	29,929	1.2	456,575	18.9	1,229,615	50.8	705,168	29.1	2,421,287
1981	29,621	1.2	474,926	18.9	1,240,788	49.5	761,950	30.4	2,507,285
1982	28,945	1.1	469,443	17.2	1,261,326	46.3	963,984	35.4	2,723,698
1983	29,825	1.1	489,918	18.4	1,268,712	47.6	875,851	32.9	2,664,306
1984	28,215	1.2	485,219	20.7	1,350,592	57.7	475,878	20.3	2,339,904
1985	27,680	1.1	512,837	20.2	1,355,917	53.5	640,225	25.2	2,536,659
1986	28,646	1.2	482,889	19.7	1,354,397	55.3	581,462	23.8	2,447,394
1987	38,296	1.4	612,505	21.9	1,603,599	57.2	548,337	19.6	2,802,737
1988	31,051	1.1	587,073	20.8	1,550,132	54.9	657,681	23.3	2,825,937
1989	34,542	1.2	588,354	20.7	1,638,104	57.5	587,819	20.6	2,848,819
1990	35,382	1.1	625,239	20.0	1,669,336	53.4	796,231	25.5	3,126,188
1991	35,791	1.1	628,596	19.8	1,729,332	54.3	788,603	24.8	3,182,322
1992	36,302	1.1	745,405	22.8	2,017,898	61.6	475,411	14.5	3,275,015
1993	43,152	0.9	866,170	18.6	2,462,800	52.9	1,280,569	27.5	4,652,691
1994	40,460	1.0	747,223	18.9	1,945,295	49.1	1,230,072	31.0	3,963,050
1995	105,845	1.4	1,208,134	16.0	2,529,386	33.5	3,696,010	49.0	7,539,375
1996	52,385	1.2	1,029,658	24.5	2,156,714	51.3	968,182	23.0	4,206,938
1997	49,128	1.2	1,147,102	28.2	2,014,695	49.4	864,370	21.2	4,075,295
1998	62,435	1.1	1,228,539	22.3	2,905,921	52.8	1,310,515	23.8	5,507,411
1999	78,134	1.7	1,142,199	25.0	2,400,534	52.6	941,886	20.6	4,562,752
2000	73,502	1.8	1,011,535	24.4	2,376,083	57.3	689,225	16.6	4,150,346
2001	49,310	1.2	1,060,445	26.7	2,238,816	56.4	618,427	15.6	3,966,998
2002	48,164	1.3	1,202,984	31.9	1,981,686	52.5	543,949	14.4	3,776,783
2003	35,133	1.1	814,101	25.7	1,625,670	51.4	689,255	21.8	3,164,159
2004	30,478	0.7	815,059	19.3	1,753,418	41.5	1,622,112	38.4	4,221,067
2005	11,097	0.4	866,290	28.6	1,426,745	47.0	728,606	24.0	3,032,738
2006	11,627	0.4	689,505	25.1	1,439,129	52.3	610,302	22.2	2,750,563

Fiscal Year	Science and Technology Research		Disaster Prevention		Land Conservation		Disaster Reconstruction		Total
	(JPY million)	Share (%)	(JPY million)	Share (%)	(JPY million)	Share (%)	(JPY million)	Share (%)	(JPY million)
2007	9,687	0.4	706,853	29.0	1,332,222	54.6	391,637	16.0	2,440,399
2008	8,921	0.4	819,359	33.2	1,275,135	51.7	363,471	14.7	2,466,886
2009	8,761	0.4	498,397	23.0	1,383,254	63.7	279,789	12.9	2,170,201
2010	7,695	0.6	224,841	16.9	813,359	61.1	285,038	21.4	1,330,933
2011	28,072	0.6	376,169	8.0	743,936	15.9	3,536,475	75.5	4,684,652
2012	29,422	0.6	561,021	12.0	790,422	17.0	3,129,561	67.2	4,656,656
2013	15,339	0.3	788,576	14.1	879,932	15.8	3,883,911	69.6	5,578,036
2014	16,688	0.4	639,966	13.9	836,580	18.2	3,101,555	67.5	4,594,789
2015	14,961	0.4	713,477	18.6	155,475	4.1	2,954,355	77.0	3,838,268
2016	14,023	0.3	696,399	14.3	318,320	6.5	3,855,516	78.9	4,884,258
2017	10,123	0.3	790,361	22.1	267,629	7.5	2,515,384	70.2	3,583,497
2018	22,781	0.8	737,429	16.3	482,711	4.0	2,834,284	78.8	4,077,205
2019	14,390	0.3	814,471	19.5	512,324	12.3	2,839,061	67.9	4,180,246
2020	15,726	0.4	1,037,401	27.2	437,134	7.5	2,320,286	60.9	3,810,547
2021	7,368	0.5	506,281	33.3	121,306	7.5	885,747	58.2	1,520,702

Notes:

1. These are adjusted budget (national expenditures) amounts. However, the FY2021 figures are preliminary figures reflecting the initial budget.
2. The reduced amount allocated to science and technology research in FY2007 is largely due to the structural conversion of national lab and research institutions into independent administrative agencies (the budgets of independent administrative agencies are not included in this table).
3. The amount allocated to disaster prevention in FY2009 is reduced because a portion of the revenue sources set aside for road construction were converted to general fund sources making it impossible to allocate certain portions to the disaster management budget.
4. The reduced amount allocated to disaster prevention and land conservation in FY2010 is due to the fact that, following the creation of the General Grant for Social Capital Development, some disaster prevention policies and many subsidy programs in land conservation were established using those grants.

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



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

Fig. A-34 Earthquake Emergency Development Project Plans

(As of the end of FY2019; Unit: JPY million)

Category	FY1980 - FY2019		
	Planned Amount (a)	Implemented Amount (b)	Rate of Progress (b)/(a)
1 Evacuation sites	177,539	176,549	99.4%
2 Evacuation roads	93,983	88,246	93.9%
3 Firefighting facilities	141,238	131,794	93.3%
4 Emergency transport routes	951,600	940,067	98.8%
4-1 Emergency transport routes	840,671	832,787	99.1%
4-2 Emergency transport ports	59,631	58,299	97.8%
4-3 Emergency transport fishing ports	51,298	48,981	95.5%
5 Telecommunications facilities	17,514	16,545	94.5%
6 Public medical institutions	54,012	54,012	100.0%
7 Social welfare facilities	55,586	55,586	100.0%
8 Public elementary and junior high schools	440,770	428,721	97.3%
9 Tsunami countermeasures	272,080	229,010	84.2%
9-1 River management facilities	104,233	72,776	69.8%
9-2 Coastal preservation facilities	167,847	156,234	93.1%
10 Landslide prevention	541,392	534,770	98.8%
10-1 Erosion control facilities	103,265	102,391	99.2%
10-2 Security facilities	171,243	168,409	98.3%
10-3 Landslide facilities	84,622	83,971	99.2%
10-4 Steep slope facilities	160,632	160,272	99.8%
10-5 Ponds	21,630	19,727	91.2%
Total	2,745,714	2,655,300	96.7%

Notes:

1. The content of Earthquake Emergency Development Project Plans (FY1980-2019) is as of the end of FY2018.
2. Project expenses include expenses for projects that may not be solely designed for earthquake disaster management, but that, while having other policy objectives, also are intended to have an overall effect on earthquake disaster management. Project expenses are not comprised solely of expenses used entirely for disaster management.

Source: Cabinet Office

Based on lessons learned from the Great Hanshin-Awaji Earthquake, the Act on Special Measures for Earthquake Disaster Countermeasures was enacted in July 1995 to protect citizens' lives, heath, and assets from earthquake-related damage. This law allows prefectural governors to create a Five-Year Plan for Emergency Earthquake Disaster Management Projects for communities where there are concerns about the occurrence of a severe earthquake disaster and a portion of the projects to be implemented based on this plan are eligible for an increased rate of financial support from the national government.
Thus far, these plans have been created by the prefectural governors over fifth terms, and earthquake disaster projects have begun to be implemented.
These plans are five-year plans created for 29 facilities that need to be urgently developed from the perspective of achieving earthquake disaster reduction. When a prefecture wants to create a plan, hearings are held to listen to the opinions of the municipalities

(All prefectures, As of the end of 2019. Unit: JPY 1,000,000)

Category	First Five-Year Plan (FY 1996-2000)			Second Five-Year Plan (FY 2001-2005)				Third Five-Year Plan (FY 2006-2010)				Fourth Five-Year Plan (FY 2011-2015)				Fifth Five-Year Plan (FY 2016-2020)			
	Planned Amt.	Actual Amt.	% Complete	Project Scope (Unit)	Planned Amt.	Actual Amt.	% Complete	Project Scope (Unit)	Planned Amt.	Actual Amt.	% Complete	Project Scope (Unit)	Planned Amt.	Actual Amt.	% Complete	Project Scope (Unit)	Planned Amt.	Actual Amt.	% Complete
	(a)	(b)	(b)/(a)	(c)	(d)	(e)	(e)/(d)	(f)	(g)	(h)	(h)/(g)	(i)	(j)	(k)	(k)/(j)				
1. Evacuation sites	1,462,542	959,276	65.6%	3,168 ha	931,413	543,233	58.3%	2,515 ha	488,257	400,283	82.0%	1,456 ha	305,490	257,218	84.2%	1,058 ha	280,021	185,466	66.2%
2. Evacuation routes	1,481,509	1,105,639	74.6%	2,601 km	1,188,051	900,446	75.8%	1,405 km	952,865	625,957	65.7%	897 km	1,336,465	781,628	58.5%	604 km	832,795	547,838	65.8%
3. Firefighting facilities	917,213	697,067	76.0%	28,153 sites	540,784	297,301	55.0%	21,039 sites	448,460	246,745	55.0%	20,052 sites	677,209	472,644	69.8%	18,436 sites	433,337	262,919	60.7%
4. Roads for firefighting activities	168,387	128,163	76.1%	161 km	119,329	92,958	77.9%	102 km	46,719	49,136	105.2%	56 km	23,506	19,998	85.1%	29 km	24,545	16,182	65.9%
5. Emergency transport roads, etc.	6,067,258	5,719,897	94.3%		5,267,908	4,242,139	80.5%		3,813,169	3,291,461	86.3%		2,773,563	2,443,339	88.1%		2,739,969	2,190,037	79.9%
5-1. Emergency transport roads	5,555,626	5,355,365	96.4%	3,920 km	4,998,577	4,067,023	81.4%	2,552 km	3,557,657	3,106,165	87.3%	2,191 km	2,584,039	2,279,595	88.2%	2,188 km	2,622,498	2,116,329	80.7%
5-2. Emergency transport/traffic control facilities	23,900	21,017	87.9%	3,448 facilities	16,855	8,473	50.3%	2,439 facilities	9,242	6,844	74.0%	4,837 sites	15,464	12,214	79.0%	6,458 sites	21,847	11,825	54.1%
5-3. Emergency transport heliports	6,327	2,094	33.1%	1 site	550	387	70.4%	0 sites	0	0		2 sites	117	78	66.7%	0 sites	0	0	—
5-4. Emergency transport port facilities	359,671	237,940	66.2%	113 sites	181,503	119,869	66.0%	100 sites	198,676	136,895	68.9%	77 sites	153,101	133,801	87.4%	46 sites	75,612	45,943	60.8%
5-5. Emergency transport fishing port facilities	121,734	103,481	85.0%	73 sites	70,423	46,387	65.9%	43 sites	47,594	41,558	87.3%	26 sites	20,843	17,652	84.7%	24 sites	20,012	15,940	79.7%
6. Multipurpose underground utility conduits	261,385	275,928	105.6%	844 km	394,948	257,890	65.3%	591 km	259,420	175,571	67.7%	471 km	255,017	208,175	81.6%	485 km	271,956	207,490	76.3%
7. Medical institutions	784,899	526,548	67.1%	115 facilities	391,016	277,721	71.0%	93 facilities	239,424	150,877	63.0%	219 facilities	689,917	506,681	73.4%	73 facilities	245,659	204,786	83.4%
8. Social welfare facilities	482,317	219,490	45.5%	857 facilities	280,028	176,408	63.0%	521 facilities	114,756	56,400	49.1%	681 facilities	126,275	98,772	78.2%	253 facilities	44,143	27,183	61.6%
8-2. Public kindergartens	-	-	-	-	-	-	-	995 schools	35,198	7,074	20.1%	1,159 schools	54,480	27,203	49.9%	266 schools	24,566	9,986	40.6%
9. Public elementary and jr. high schools	1,359,672	765,344	56.3%	5,840 schools	1,078,849	594,777	55.1%	16,256 schools	3,077,544	1,399,624	45.5%	13,612 schools	2,322,751	1,631,920	70.3%	1,189 schools	378,048	249,247	65.9%
10. Public special education schools	84,577	29,685	35.1%	114 schools	32,094	12,070	37.6%	264 schools	56,834	23,262	40.9%	199 schools	43,173	29,955	69.4%	5 schools	7,363	5,426	73.7%
11. Public buildings	24,169	5,267	21.8%	29 facilities	2,662	1,199	45.0%	670 facilities	62,975	24,429	38.8%	1,737 facilities	369,417	209,134	56.6%	741 facilities	263,694	174,160	66.0%
12. Coast and river facilities	235,686	187,310	79.5%	334 sites	272,744	225,598	82.7%	491 sites	237,787	182,911	76.9%	687 sites	345,184	302,195	87.5%	804 sites	644,901	459,082	71.2%
12-1. Coastal preservation facilities	140,865	109,501	77.7%	215 sites	196,496	146,699	74.7%	423 sites	187,407	146,044	77.9%	525 sites	229,583	184,601	80.4%	573 sites	351,926	259,604	73.8%
12-2. River management facilities	94,821	77,809	82.1%	119 sites	76,248	78,899	103.5%	68 sites	50,380	36,867	73.2%	162 sites	115,601	117,594	101.7%	231 sites	292,975	199,478	68.1%
13. Erosion control facilities, etc.	1,729,574	1,702,042	98.4%	14,332 sites	1,622,048	1,339,438	82.6%	10,504 sites	1,069,686	976,742	91.3%	9,327 sites	845,288	786,324	93.0%	9,119 sites	932,724	755,899	81.0%
13-1. Erosion control facilities	268,151	247,050	92.1%	2,278 sites	436,635	409,636	93.8%	2,033 sites	354,972	325,910	91.8%	2,063 sites	303,286	257,665	85.0%	1,854 sites	286,099	238,776	83.5%
13-2. Security facilities	409,216	469,126	114.6%	5,583 sites	330,719	263,907	79.8%	3,673 sites	210,861	202,299	95.9%	2,683 sites	146,012	173,261	118.7%	2,758 sites	173,770	141,442	81.4%
13-3. Landslide prevention facilities	359,433	356,531	99.2%	1,651 sites	275,558	219,200	79.5%	1,151 sites	158,479	160,883	101.5%	849 sites	119,025	109,130	91.7%	717 sites	96,257	78,740	81.8%
13-4. Steep slope failure prevention facilities	522,261	497,690	95.3%	3,568 sites	446,098	356,530	79.9%	2,500 sites	244,461	220,779	90.3%	2,629 sites	193,935	185,729	95.8%	1,915 sites	198,357	181,151	91.3%
13-5. Reservoirs	170,513	131,645	77.2%	1,252 sites	133,038	90,165	67.8%	1,147 sites	100,913	66,870	66.3%	1,103 sites	83,029	60,539	72.9%	1,875 sites	178,241	118,252	66.3%
14. Community DRR base facilities	162,319	102,857	63.4%	121 sites	81,642	40,342	49.4%	78 sites	60,905	34,277	56.3%	161 sites	90,683	68,591	75.6%	124 sites	104,798	69,988	66.8%
15. Disaster management radio communications system	224,276	126,236	56.3%	1,702 sites	126,944	38,693	30.5%	5,844 sites	239,525	78,112	32.6%	8,777 sites	190,612	105,334	55.3%	9,078 sites	171,079	92,551	54.1%
16. Potable water facilities/power generation systems	221,622	126,320	57.0%	444 sites	89,822	55,599	61.9%	405 sites	142,958	72,142	50.5%	517 sites	121,728	93,437	76.8%	453 sites	123,459	85,628	69.4%
17. Storage warehouses	17,763	8,028	45.2%	437 sites	10,338	5,292	51.2%	296 sites	4,081	838	20.5%	650 sites	7,053	3,968	56.3%	454 sites	11,037	6,212	56.3%
18. Response and relief systems	3,595	659	18.3%	610 groups	1,133	687	60.6%	515 groups	314	262	83.4%	304 groups	891	161	18.0%	29 groups	150	40	26.7%
19. Downtown areas with high density dilapidated housing	2,814,605	1,431,714	50.9%	6,960 ha	1,725,532	916,981	53.1%	7,839 ha	846,197	563,811	66.6%	12,156 ha	501,836	340,080	67.8%	12,685 ha	438,272	200,769	45.8%
	18,503,368	14,117,470	76.3%		14,157,285	10,018,773	70.8%		12,197,074	8,359,916	68.5%		11,080,537	8,386,758	75.7%		7,972,515	5,750,889	72.1%

Notes:

1. The content of the Fifth Five-Year Plan (FY2016-2020) is current as of the end of FY 2019.

2. The expenses for each project are not limited to projects aimed at achieving earthquake DRR; they include expenses for projects that have other policy purposes, such as those related to urban infrastructure development, but that also are effective in termsof earthquake DRR.

3. Public special education schools include schools known as schools for the blind, schools for the deaf, and schools for the physically or mentally/physically handicapped prior to FY 2006.

Source: Cabinet Office materials.

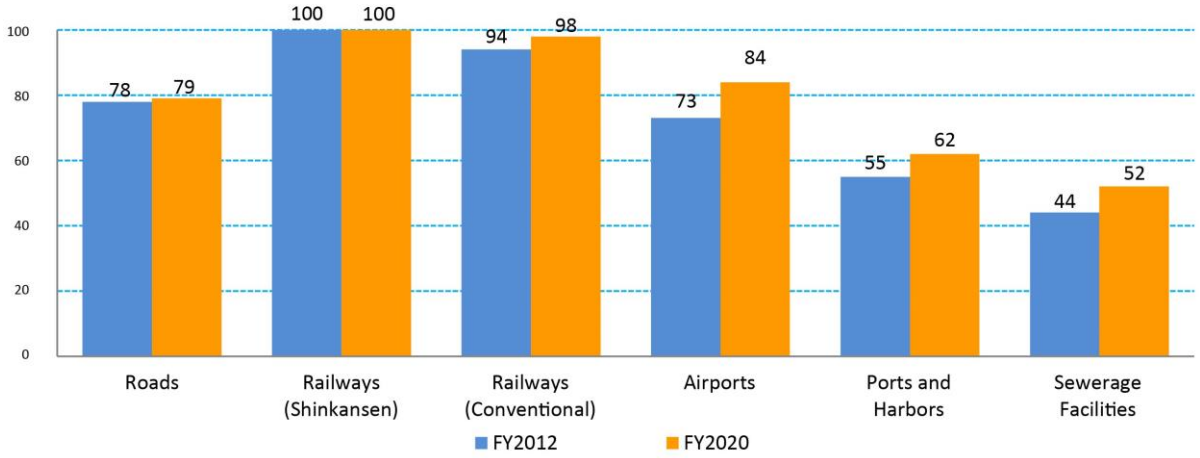
6. Disaster Management Facilities and Equipment

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

Prefectures	Red Cross Hospital	Emergency Medical Center	Disaster Base Hospital	Prefectures	Red Cross Hospital	Emergency Medical Center	Disaster Base Hospital
Hokkaido	10	12	34	Shiga	3	4	10
Aomori	1	3	10	Kyoto	3	6	13
Iwate	1	3	11	Osaka	2	16	20
Miyagi	2	6	16	Hyogo	3	10	18
Akita	2	1	14	Nara	0	3	7
Yamagata	0	3	7	Wakayama	1	3	10
Fukushima	1	4	8	Tottori	1	2	4
Ibaraki	2	6	14	Shimane	2	4	10
Tochigi	3	5	11	Okayama	2	5	11
Gunma	2	4	18	Hiroshima	3	7	19
Saitama	3	9	22	Yamaguchi	2	5	13
Chiba	1	14	26	Tokushima	1	3	11
Tokyo	4	26	86	Kagawa	1	3	10
Kanagawa	6	21	33	Ehime	1	3	8
Niigata	1	6	14	Kochi	1	3	12
Toyama	1	2	8	Fukuoka	3	10	31
Ishikawa	1	2	10	Saga	1	4	8
Fukui	1	2	9	Nagasaki	2	3	13
Yamanashi	1	1	9	Kumamoto	2	3	15
Nagano	6	7	13	Oita	1	4	14
Gifu	2	6	12	Miyazaki	0	3	12
Shizuoka	5	11	23	Kagoshima	1	3	14
Aichi	2	23	35	Okinawa	1	3	13
Mie	1	4	17	Total	96	291	756

Source: Red Cross Hospital information was formulated by the Cabinet Office based on the website of the Japanese Red Cross Society (as of March 2021).
Information on emergency medical centers and disaster base hospitals was formulated by the Cabinet Office based on materials from the Emergency Medical Information System (EMIS) (as of March 2021).

Fig. A-37 Seismic Reinforcement of Public Infrastructure



Notes

Roads: The rate of bridges not in danger of being damaged related to all bridges along emergency transport roads (important roads that have to be secured for evacuation and rescue as well as ensuring the passage of emergency vehicles immediately after the earthquake, including national expressways, national highways and the arterial roads that connect them.) (As of the end of FY2019)

Railway (Shinkansen): Elevated bridges. (Left: As of end of FY2013. Right: As of end of FY2019.)

Railway (Conventional): Elevated bridges of major railway lines in regions where a seismic intensity of 6 Upper or greater would be expected to occur in the case of a Tokyo Inland Earthquake or Nankai Trough Earthquake. (Left: As of end of FY2013. Right: As of end of FY2019.)

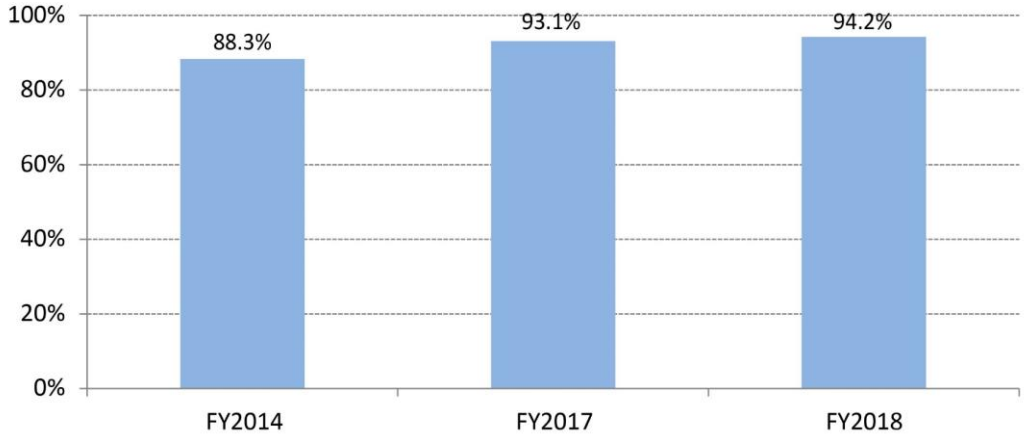
Airports: Percentage of population in a 100 km area around an airport that could be used for emergency transport.

Ports and Harbors: Seismically reinforced piers (number completed as a proportion of those detailed in plans for seismic retrofit of piers to facilitate the transportation of emergency supplies (those classed as major ports or higher)). (Left: As of end of FY2013. Right: As of end of FY2019.)

Sewerage Facilities: Important main lines (pipes that can accommodate drainage from river basin lines, DRR bases, and evacuation sites, main pipes connected to pump stations and disposal stations, pipes buried beneath emergency transport roads and railroad tracks. (Left: As of end of FY2013. Right: As of end of FY2019.)

Source: Formulated by the Cabinet Office using materials from the Ministry of Land, Infrastructure, Transport and Tourism (MLIT)

Fig. A-38 Trends in the Seismic Reinforcement Rate of Public Facilities That Serve as Disaster Management Bases

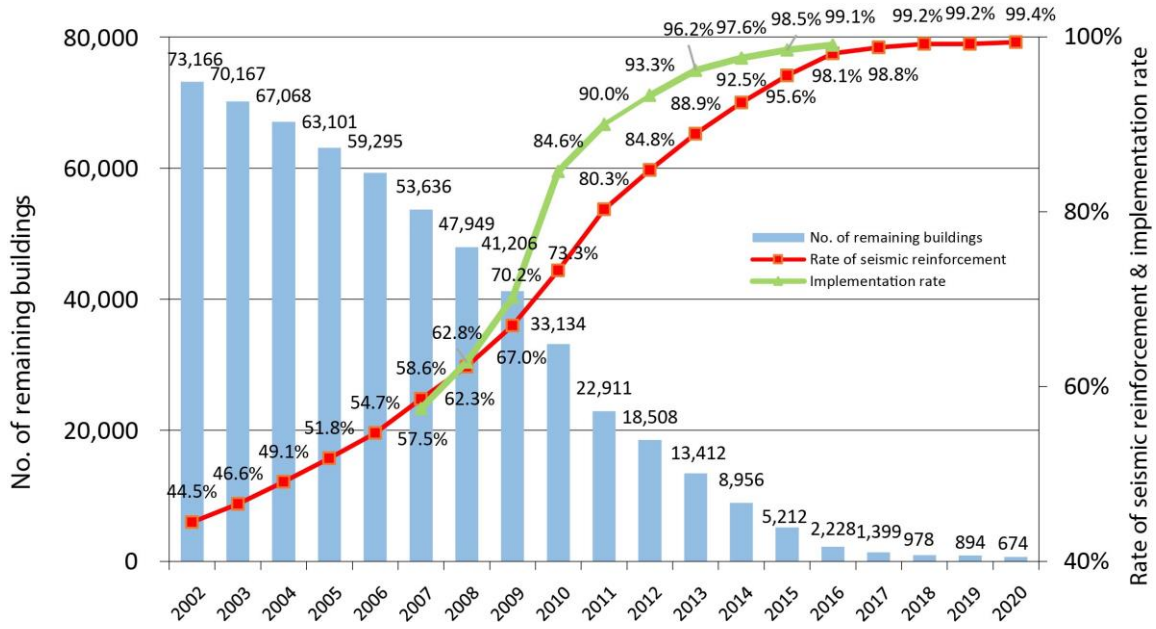


Note) Of all the public facilities owned or managed by local governments (buildings for public or public-private use: non-wooden structures built two stories or taller or buildings with a floor area of 200 m^2 or more), the facilities that could serve as disaster management bases for implementing disaster response measures are identified, consolidated and analyzed based on the criteria below.

<Classification criteria of public facilities that serve as disaster management bases>	
(1) Social welfare facilities	All facilities
(2) Education facilities (classrooms, gymnasiums)	Facilities designated as designated emergency evacuation site or designated shelter, etc.
(3) Government buildings	Facilities that will be used for the implementation of disaster response measures
(4) Prefectural civic halls, civic centers	Facilities designated as designated emergency evacuation site or designated shelter, etc.
(5) Gymnasiums	Facilities designated as designated emergency evacuation site or designated shelter, etc.
(6) Health care facilities	Facilities positioned in local plans for disaster risk reduction as medical care facilities
(7) Police headquarters and police stations	All facilities

Source: "Results of the Survey on the Seismic Reinforcement Rate of Public Facilities That Serve as Disaster Management Bases," Ministry of Internal Affairs and Communications (July 2020)

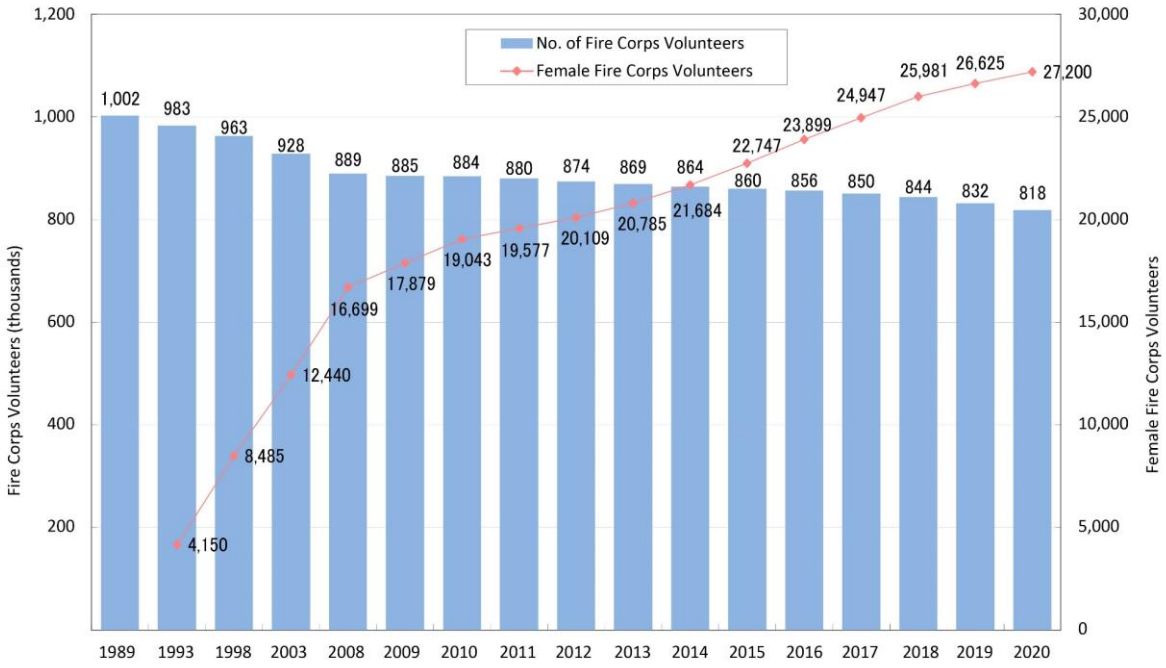
Fig. A-39 Seismic Reinforcement of Public Elementary and Junior High Schools



Source: "Results of a Follow-up Investigation on the Progress of the Seismic Retrofitting of Public School Facilities," Ministry of Education, Culture, Sports, Science and Technology (MEXT) (August 2020)

7. Trends in Numbers of Workers in Disaster Management

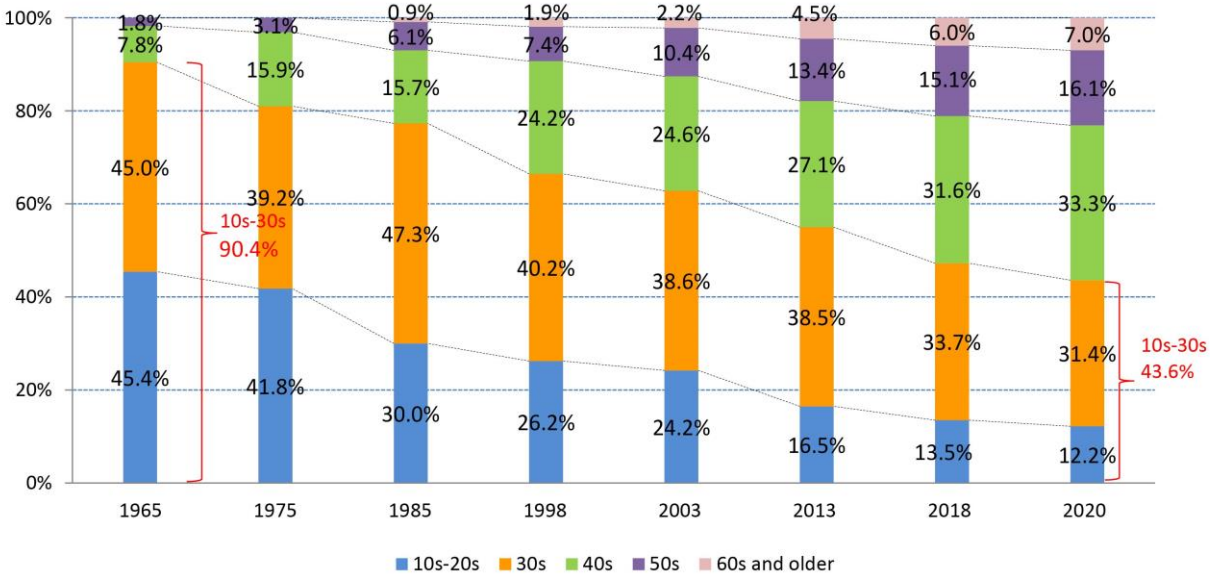
Fig. A-40 Numbers of Fire Corps Volunteers



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

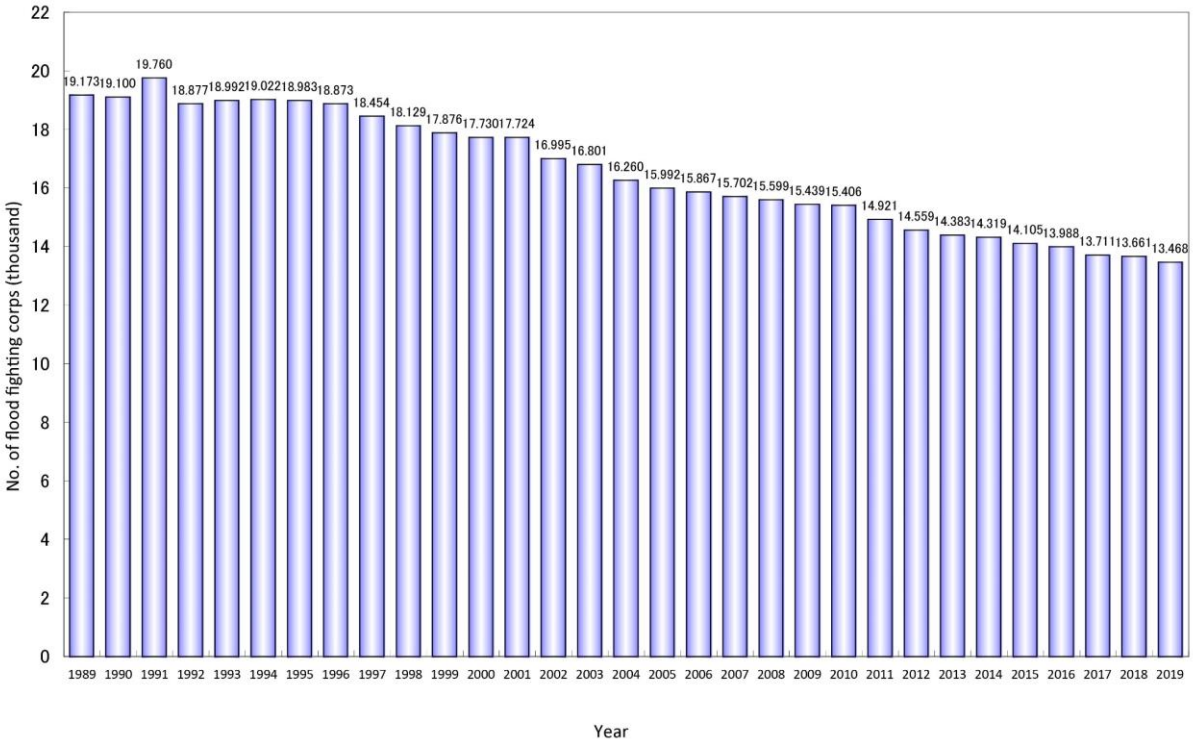
Source: Formulated by the Cabinet Office based on the Survey on the Current Status of Fire and Earthquake Disaster Management Measures of the Fire and Disaster Management Agency

Fig. A-41 Age Composition Ratios among Fire Corps Volunteers



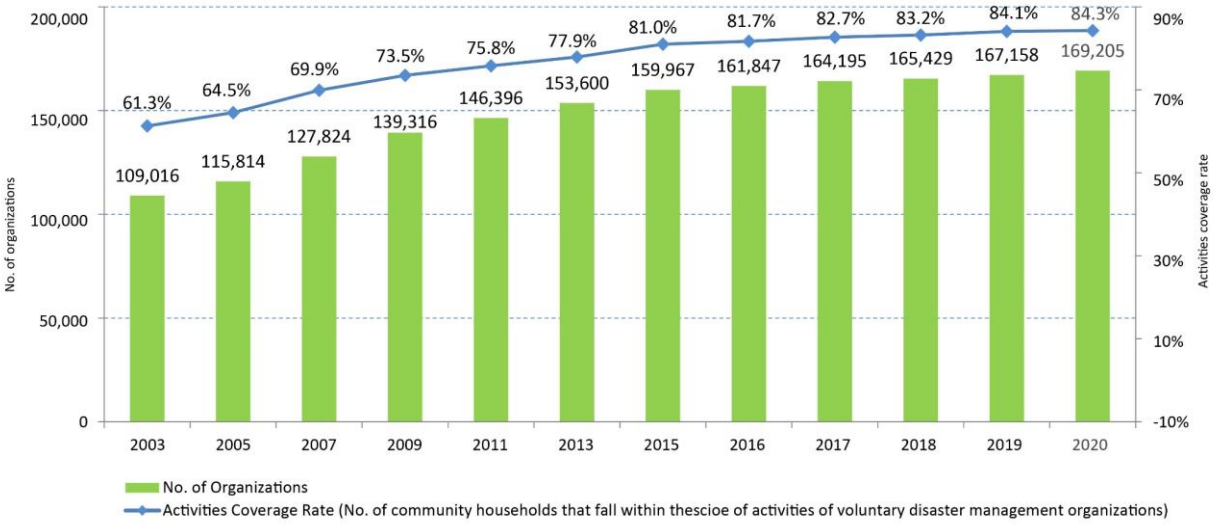
Source: Formulated by the Cabinet Office based on the Survey on the Current Status of Fire and Earthquake Disaster Management Measures of the Fire and Disaster Management Agency

Fig. A-42 Numbers of Flood Fighting Corps Personnel



Note) Number of full-time flood fighting corps personnel
Source: Ministry of Land, Infrastructure, Transport and Tourism (MLIT)

Fig. A-43 Numbers of Voluntary Disaster Management Organizations



Source: Formulated by the Cabinet Office based on the Survey on the Current Status of Fire and Earthquake Disaster Management Measures of the Fire and Disaster Management Agency. Figures as of April 1 each year.

Fig. A-44 Female Representation in Local Disaster Management Councils (by Prefecture, 2020)

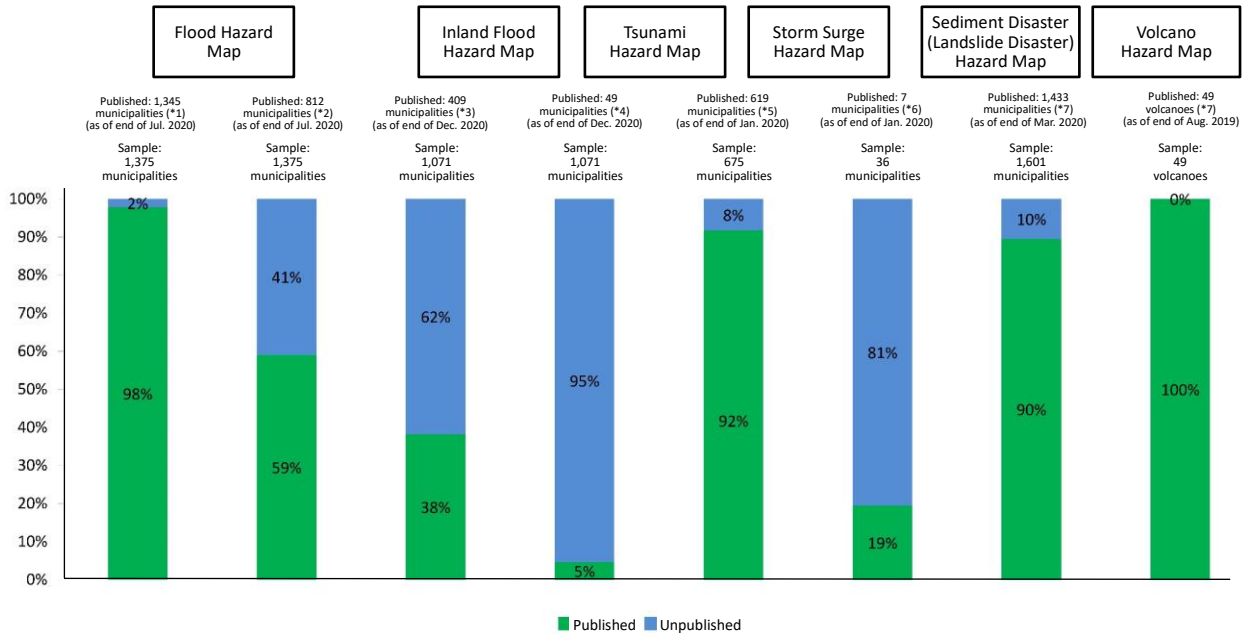
	Prefectural Disaster Management Council			Municipal Disaster Management Council		
	Total Members	Of which, Female Members	Proportion of Women (%)	Total Members	Of which, Female Members	Proportion of Women (%)
Hokkaido	67	4	6.0	3,845	129	3.4
Aomori	60	11	18.3	730	40	5.5
Iwate	76	15	19.7	1,093	98	9.0
Miyagi	58	9	15.5	823	60	7.3
Akita	61	4	6.6	717	71	9.9
Yamagata	62	8	12.9	1,044	65	6.2
Fukushima	54	9	16.7	1,099	52	4.7
Ibaraki	52	7	13.5	1,244	103	8.3
Tochigi	56	11	19.6	637	61	9.6
Gunma	48	6	12.5	991	90	9.1
Saitama	73	8	11.0	2,035	262	12.9
Chiba	53	9	17.0	1,534	180	11.7
Tokyo	74	9	12.2	2,124	243	11.4
Kanagawa	57	12	21.1	984	122	12.4
Niigata	76	14	18.4	887	54	6.1
Toyama	68	11	16.2	519	34	6.6
Ishikawa	70	7	10.0	459	26	5.7
Fukui	56	3	5.4	456	42	9.2
Yamanashi	64	6	9.4	604	53	8.8
Nagano	78	15	19.2	2,019	139	6.9
Gifu	61	12	19.7	937	79	8.4
Shizuoka	58	4	6.9	1,056	90	8.5
Aichi	69	5	7.2	1,476	153	10.4
Mie	60	5	8.3	876	87	9.9
Shiga	60	14	23.3	510	53	10.4
Kyoto	66	15	22.7	750	64	8.5
Osaka	59	7	11.9	1,358	144	10.6
Hyogo	56	8	14.3	1,294	136	10.5
Nara	61	8	13.1	849	78	9.2
Wakayama	55	8	14.5	603	43	7.1
Tottori	67	27	40.3	386	54	14.0
Shimane	72	29	40.3	591	50	8.5
Okayama	58	8	13.8	499	91	18.2
Hiroshima	59	3	5.1	800	58	7.3
Yamaguchi	60	7	11.7	622	70	11.3
Tokushima	81	38	46.9	558	50	9.0
Kagawa	60	8	13.3	425	52	12.2
Ehime	61	5	8.2	478	34	7.1
Kochi	60	6	10.0	793	84	10.6
Fukuoka	61	4	6.6	1,297	213	16.4
Saga	70	20	28.6	364	49	13.5
Nagasaki	68	14	20.6	690	47	6.8
Kumamoto	57	7	12.3	1,708	124	7.3
Oita	58	5	8.6	518	45	8.7
Miyazaki	55	9	16.4	689	48	7.0
Kagoshima	63	10	15.9	1,134	58	5.1
Okinawa	54	7	13.0	601	43	7.2
Total	2,932	471	16.1	45,706	4,021	8.8

Notes)

1. Formulated by the Cabinet Office from its material titled the “Implementation Status of Measures for Promoting the Formation of a Gender-equal Society or Policy Considerations for Gender in Local Government” (FY2020)
2. Figures for April 1, in principle.

8. Various Policies and Measures

Fig. A-45 Hazard Map Development



Source: Formulated by the Cabinet Office based on materials of the Ministry of Land, Infrastructure, Transport and Tourism (volcano hazard maps are materials owned by the Cabinet Office)

*1 Municipalities (including special wards) with designated flood and inundation hazard areas based on Article 14 of the Flood Control Act, which have published a hazard map pursuant to Article 15, paragraph (3) of the Flood Control Act

*2 Municipalities (including special wards) that have published a hazard map covering the estimated maximum precipitation

*3 Municipalities with sewerage systems that have implemented flood prevention measures and have published internal water hazards maps corresponding to the maximum rainfall on record.

*4 Municipalities with sewerage systems that have implemented flood prevention measures and have published internal water hazards maps corresponding to the maximum rainfall on assumption.

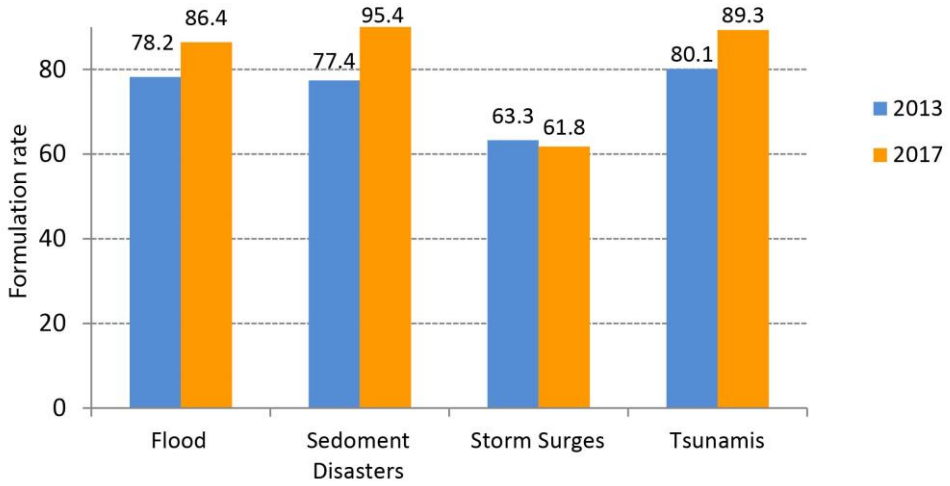
*5 Municipalities located in coastal areas or the tsunami hazard areas under Article 8 of the Act on Regional Development for Tsunami Disaster Prevention, which have already published a tsunami hazard map.

*6 Municipalities which were designated as storm surge and inundation hazard areas under Article 14-3 of the Flood Control Act and have already published a hazard map pursuant to Article 15, paragraph (3) of the Flood Control Act are tallied.

*7 Municipalities (including special wards) designated as sediment disaster hazard areas that have already published a hazard map pursuant to Article 8, paragraph (3) of the Act on Sediment Disaster Countermeasures for Sediment Disaster Prone Areas.

*8 Volcanoes for which Volcanic Disaster Management Councils were established in accordance with Article 4 of the Act on Special Measures for Active Volcanoes, and of which a volcano hazard map has already been published (one of the tasks of a Volcanic Disaster Management Council).

Fig. A-46 Formulation of Official Announcement Criteria for Evacuation Recommendations in Municipalities



Note) The disasters anticipated vary from one municipality to another, so the formulation rate is calculated using different denominators, according to the type of disaster.

Source: Formulated by the Cabinet Office based on the "Results of a Survey into the Formulation Status of Specific Official Announcement Criteria for Evacuation Recommendations" from the Fire and Disaster Management Agency

Fig. A-47 Communication Method of Evacuation Instructions in Municipalities

Year	Disaster management radio communications system		Communication facilities of agricultural/ fishery cooperatives (including wired systems)	Patrols by loudspeaker vans	Siren	Bell ringing	News media	Through voluntary disaster management organizations	email	Other
	Individual Home Receivers System	Simultaneous Broadcasting System								
2003	1,748 54%	2,126 66%	591 18%	2,942 92%	2,537 79%	698 22%	675 21%	1,065 33%	- -	1,106 34%
2004	1,731 55%	2,095 67%	559 18%	2,864 92%	2,463 79%	659 21%	663 21%	1,064 34%	- -	1,106 35%
2005	1,365 56%	1,670 69%	449 19%	2,254 93%	1,927 80%	525 22%	642 27%	942 39%	- -	925 38%
2006	1,118 61%	1,349 73%	362 20%	1,739 94%	1,487 81%	414 22%	666 36%	887 48%	- -	781 42%
2007	1,125 62%	1,350 74%	343 19%	1,722 94%	1,462 80%	383 21%	718 39%	939 51%	- -	800 44%
2008	1,117 62%	1,348 74%	323 18%	1,713 95%	1,455 80%	358 20%	750 41%	987 55%	- -	829 46%
2009	1,118 62%	1,361 76%	311 17%	1,702 95%	1,440 80%	345 19%	782 43%	1,015 56%	- -	830 46%
2010	1,096 63%	1,333 76%	289 17%	1,647 94%	1,383 79%	324 19%	811 46%	1,033 59%	- -	830 47%
2011	1,006 62%	1,240 77%	248 15%	1,530 95%	1,271 79%	270 17%	787 49%	1,002 62%	- -	806 50%
2012	1,086 62%	1,340 77%	245 14%	1,644 94%	1,357 78%	285 16%	848 49%	1,129 65%	- -	955 55%
2013	1,097 63%	1,377 79%	219 13%	1,648 95%	1,347 77%	276 16%	878 50%	1,154 66%	- -	998 57%
2014	1,112 64%	1,398 80%	206 12%	1,651 95%	1,334 77%	256 15%	925 50%	1,169 67%	- -	1,049 60%
2015	1,128 65%	1,412 81%	192 11%	1,659 95%	1,317 76%	238 14%	975 56%	1,193 69%	- -	1,093 63%
2016	1,145 66%	1,426 82%	178 10%	1,654 95%	1,282 74%	219 13%	993 57%	1,204 69%	- -	1,078 62%
2017	1,157 66%	1,443 83%	169 10%	1,651 95%	1,277 73%	208 12%	1,028 59%	1,212 70%	- -	1,081 62%
2018	1,170 67%	1,450 83%	155 9%	1,651 95%	1,256 72%	195 11%	1,046 60%	1,203 69%	883 51%	972 56%
2019	1,181 68%	1,466 84%	149 9%	1,658 95%	1,255 72%	182 10%	1,070 61%	1,211 70%	1,070 61%	990 57%
2020	1,192 68%	1,469 84%	141 8%	1,653 95%	1,250 72%	170 10%	1,098 63%	1,233 71%	1,207 69%	1,036 60%

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

Fig. A-48 Performance of Assistance based on Mutual Support Agreements between Prefectures andContract Status of Support Agreements with Private-Sector Institutions

Year	Support Based on Mutual Support Agreements Between Prefectures		Support Agreements with Private-Sector Institutions													
			Broadcasting Agreements (agmts.)		Reporting Agreements		Emergency Relief Agreements		Transportation Agreements		Disaster Recovery Agreements		Resources Agreements		Other	
	Total no.	No. of orgs.	Total no. of concluded agmts.	No. of orgs.	Total no. of concluded agmts.	No. of orgs.	Total no. of concluded agmts.	No. of orgs.	Total no. of concluded agmts.	No. of orgs.	Total no. of concluded agmts.	No. of orgs.	Total no. of concluded agmts.	No. of orgs.	Total no. of concluded agmts.	No. of orgs.
2003	23	6	288	47	347	31	191	37	148	39	400	37	711	34	124	19
2004	4	2	288	47	359	33	218	39	165	41	474	39	828	36	134	23
2005	13	8	304	47	362	32	221	43	178	42	504	40	873	40	182	31
2006	5	2	301	46	370	33	241	44	201	40	587	43	992	42	212	37
2007	0	0	304	46	337	34	272	43	211	41	778	43	1,196	44	317	36
2008	12	1	306	46	400	36	316	45	239	43	818	45	1,294	46	461	39
2009	5	1	314	46	399	36	339	44	247	43	857	45	1,364	46	546	41
2010	24	5	329	47	393	36	420	45	254	43	1,590	46	1,431	45	676	42
2011	18	4	318	44	373	33	472	43	235	41	1,568	43	1,357	44	676	39
2012	25	6	334	47	395	36	495	46	291	44	1,825	46	1,461	47	931	46
2013	29	8	360	47	419	38	575	47	317	46	1,913	47	1,558	47	1,178	46
2014	28	6	351	47	445	40	703	47	374	46	2,360	47	1,672	47	1,299	46
2015	24	6	343	47	454	39	893	47	382	46	2,397	47	1,694	47	1,515	46
2016	19	5	352	47	461	40	970	47	438	46	2,626	47	1,795	47	1,751	47
2017	16	5	351	47	438	40	1,065	47	477	47	2,648	47	1,754	47	1,898	47
2018	10	5	349	47	457	41	1,272	47	514	47	3,392	47	1,850	47	2,384	47
2019	14	5	364	47	467	41	1,415	47	561	47	3,461	47	1,998	47	2,893	47
2020	24	7	383	47	476	41	1,576	47	627	47	3,531	47	2,028	47	3,147	47

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

Fig. A-49 Contract Status of Mutual Support Agreements in Municipalities

Year	No. of Municipalities	No. of mutual support agreements concluded between municipalities in the same prefecture	No. of municipalities that have concluded mutual support agreements with other municipalities
2003	3,213	1,459	2,363 74%
2004	3,123	1,527	2,306 74%
2005	2,418	1,502	1,771 73%
2006	1,843	1,408	1,457 79%
2007	1,827	1,512	1,471 81%
2008	1,811	1,625	1,656 91%
2009	1,800	1,725	1,646 91%
2010	1,750	1,778	1,571 90%
2011	1,619	1,738	1,476 91%
2012	1,742	2,254	1,645 94%
2013	1,742	2,920	1,650 95%
2014	1,742	3,419	1,697 97%
2015	1,741	3,642	1,705 98%
2016	1,741	4,013	1,699 98%
2017	1,741	4,280	1,698 98%
2018	1,741	—	1,701 98%
2019	1,741	—	1,708 98%
2020	1,741	—	1,708 98%

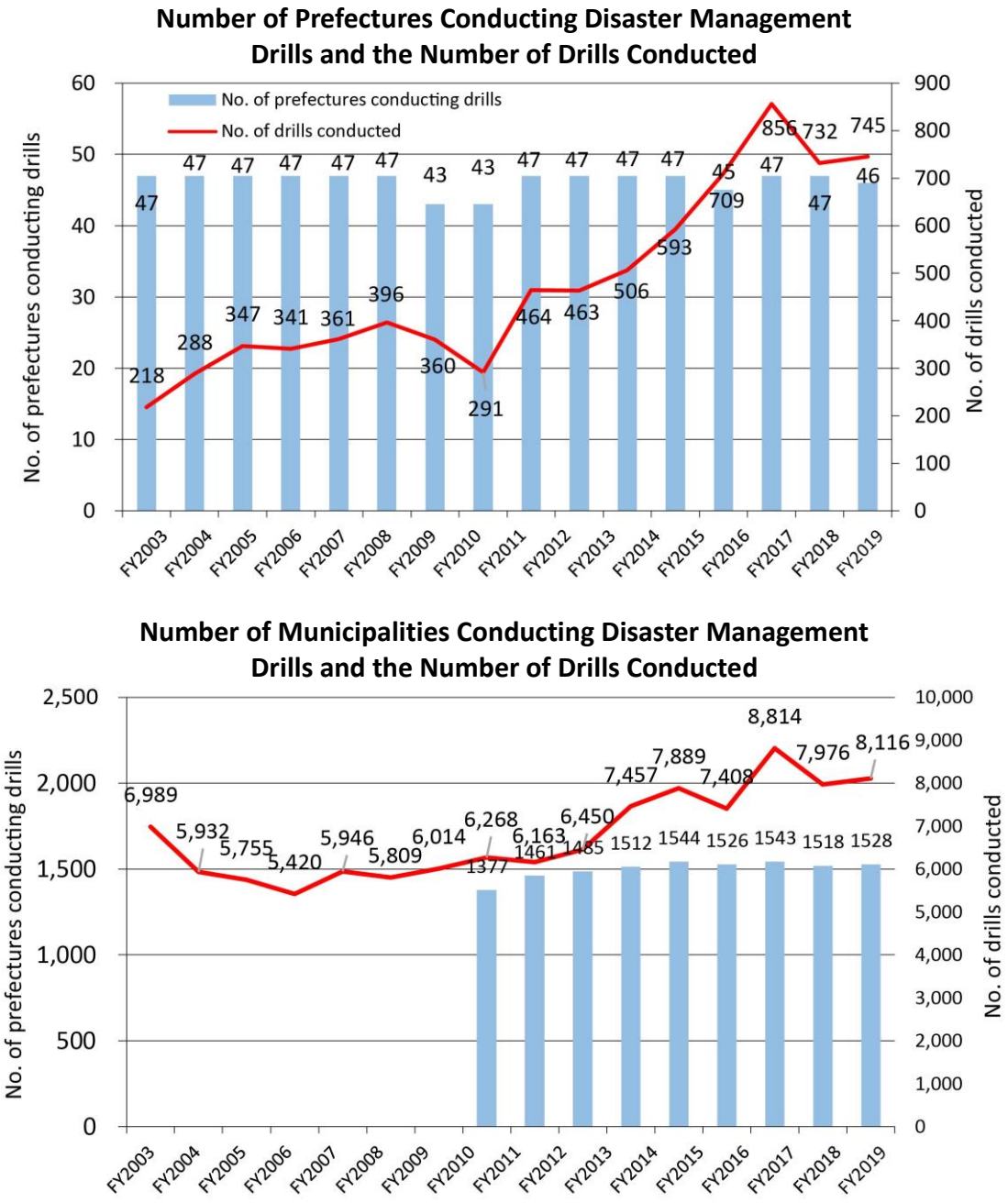
Source: Formulated by the Cabinet Office based on the Fire and Disaster Management Agency report “Status of Regional Disaster Management Administration”

Fig. A-50 Municipalities' Support Agreements with Private-Sector Institutions

Year	Broadcast Agreements		Reporting Agreements		Emergency Relief Agreements		Transportation Agreement		Disaster Recovery Agreements		Resources Agreements		Other	
	No. of orgs.	No. of support instances	No. of orgs.	No. of support instances	No. of orgs.	No. of support instances	No. of orgs.	No. of support instances	No. of orgs.	No. of support instances	No. of orgs.	No. of support instances	No. of orgs.	No. of support instances
2003	150	10	22	2	726	4	253	2	392	21	562	7	334	6
2004	171	20	20	2	713	4	260	2	445	18	589	5	361	5
2005	191	50	27	2	647	6	271	15	445	39	583	17	376	9
2006	225	38	18	2	574	10	267	3	451	24	619	8	401	2
2007	275	35	24		596	7	292	2	662	23	794	6	484	9
2008	315	62	33		619	2	319	5	813	35	936	17	510	5
2009	362	48	33		658	3	355	2	979	35	1,060	33	559	11
2010	378	35	35		683	6	376	3	1,052	42	1,125	22	580	8
2011	376	107	36	2	645	17	386	109	1,066	548	1,118	226	579	57
2012	437	59	41	3	719	19	462	48	1,242	167	1,309	123	684	54
2013	495	81	58		778	3	519	9	1,318	42	1,412	20	743	6
2014	554	59	66		827	2	602	3	1,360	131	1,466	40	800	17
2015	609	50	83	1	869	34	719	3	1,408	62	1,500	31	809	15
2016	636	48	101	1	921	43	811	6	1,451	41	1,526	44	810	25
2017	676	108	116	1	948	2	870	14	1,454	49	1,543	40	821	11
2018	708	140	117		981	31	925	10	1,478	213	1,561	56	826	276
2019	731	100	135	1	1,007	54	958	20	1,492	1,020	1,577	107	837	37
2020	783	114	173	2	1,039	72	1,009	30	1,520	598	1,586	99	863	52

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

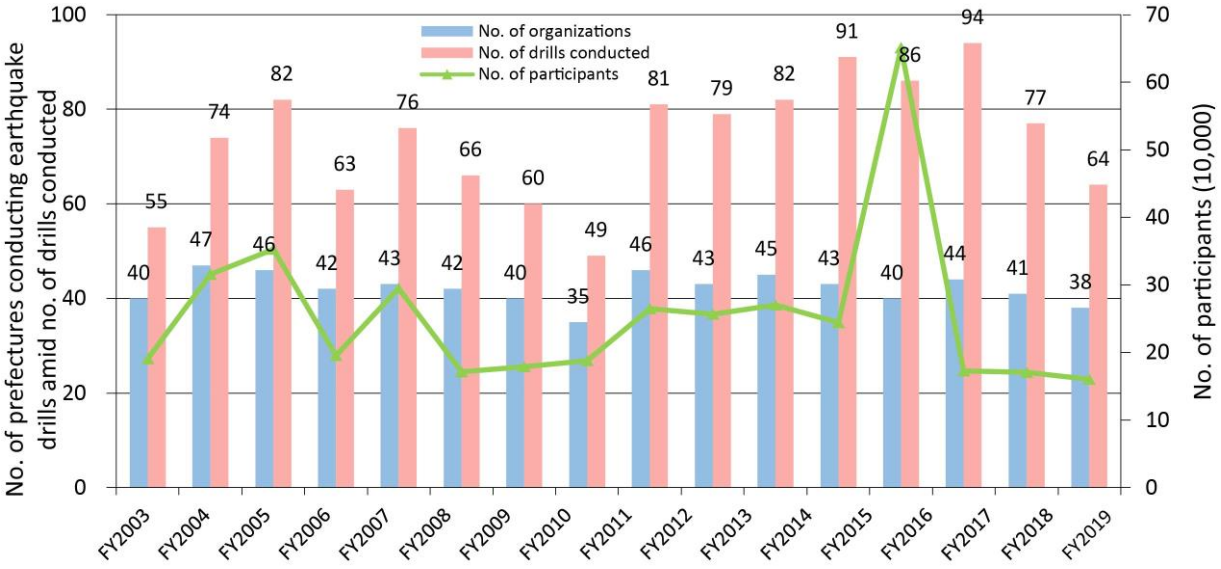
Fig. A-51 **Disaster Management Drill Implementation**



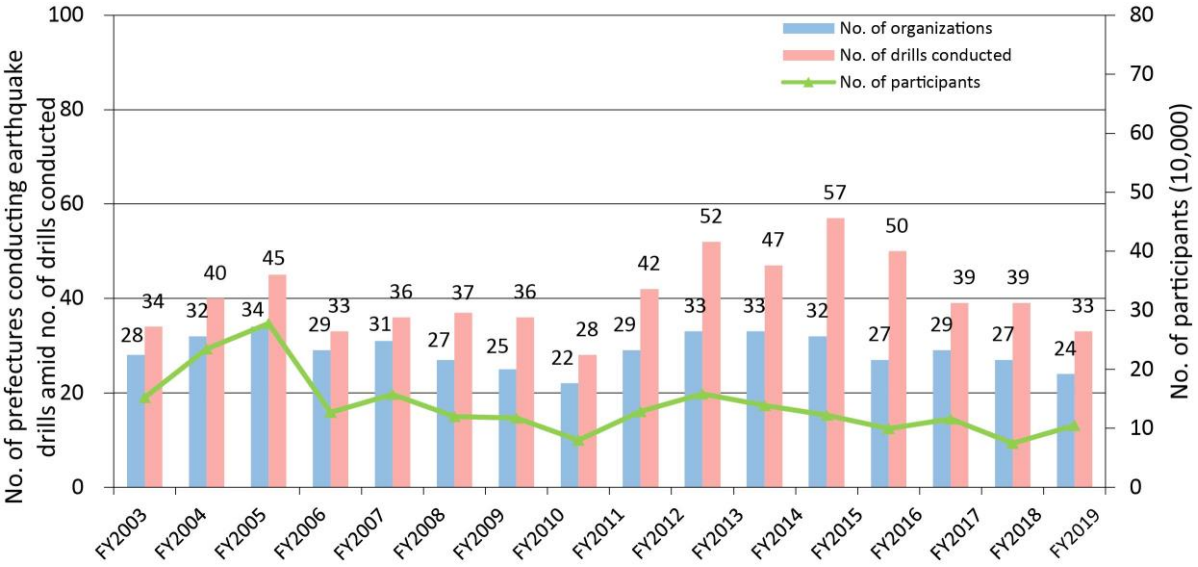
Source: Formulated by the Cabinet Office based on the Fire and Disaster Management Agency report “Status of Regional Disaster Management Administration”

Fig. A-52 **Earthquake Disaster Management Drill Implementation**

Number of Prefectures Conducting Earthquake Disaster Management Drills, Number of Drills Conducted, and the Number of Participants (Comprehensive Drills)



Number of Prefectures Conducting Earthquake Disaster Management Drills, Number of Drills Conducted, and the Number of Participants (Including Region-Wide Drills)



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

Fig. A-53 Implementation of Tsunami Countermeasures

(Unit: Extended Distance = km)

Year	No. of govts.	Coastlines		Designated as hazardous tsunami inundation areas	Measures incorporated into local disaster risk reduction plan	Evacuation Routes		Evacuation Sites		Tsunami Breakwaters	
		Present	Absent			No. of routes	No. of govts.	No. of facilities	No. of govts.	Extended distance (km)	No. of govts.
2003	3,213	1,014	2,199	401	812	1,700	108	5,355	311	1,631	204
2004	3,123	984	2,139	420	799	1,817	104	5,609	306	1,535	204
2005	2,418	806	1,612	374	465	2,099	111	6,442	316	1,472	180
2006	1,843	666	1,177	367	299	3,066	107	6,830	286	1,233	149
2007	1,827	667	1,160	374	384	2,297	108	7,307	292	1,231	143
2008	1,811	659	1,152	417	393	2,593	118	7,647	297	1,105	133
2009	1,800	655	1,145	424	353	2,674	118	7,919	307	1,042	125
2010	1,750	648	1,102	439	385	2,757	118	8,396	304	1,025	123
2011	1,619	609	1,010	425	357	2,448	106	7,448	276	787	93
2012	1,742	646	1,096	492	379	4,058	130	12,110	323	886	107
2013	1,742	646	1,096	539	383	5,054	139	16,238	361	905	104
2014	1,742	646	1,096	576	403	5,591	155	19,405	380	848	96
2015	1,741	646	1,095	603	431	6,176	166	22,589	410	841	97
2016	1,741	646	1,095	612	444	6,086	174	23,263	418	913	93
2017	1,741	645	1,096	623	483	9,414	179	23,481	425	959	98
2018	1,741	645	1,096	626	500	10,058	184	23,285	414	967	101
2019	1,741	645	1,096	628	525	10,279	187	24,331	432	1,023	101
2020	1,741	645	1,096	630	538	10,683	187	26,040	432	1,004	101

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

9. Japan's International Cooperation

Fig. A-54 List of Cooperation Projects Conducted by Ministries and Agencies

Ministry/ Agency	Project	Partner/ Target Country (Target Institution)	Description	Budget for FY2020 (in JPY million; if applicable)	Department Responsible
Cabinet Office (CAO)	Partnership between the Cabinet Office and FEMA	US	Based on the Memorandum of Cooperation between the Cabinet Office and FEMA signed in December 2014 and revised in December 2019, Japan-U.S. Video Conference on Cooperation in Disaster Risk Reduction was held in December 2020.	—	Disaster Preparedness, Public Relations and International Cooperation Division, Disaster Management Bureau, CAO
	Japan-U.S. Emergency Management Working Group	US	Partnerships in the field of Nuclear Emergency Preparedness Systems were deepened through regular exchanges of information and opinions since 2013, and reciprocal invitations to exercises, which took place within the framework of the Emergency Management Working Group (EMWG) under the U.S.-Japan Bilateral Commission on Civil Nuclear Cooperation established in 2012. In FY 2020, online technical exchange meetings as regards protective actions under infectious disease epidemic, drills and professional development were held 3 times.	—	Director General for Nuclear Disaster Management, CAO
	Cooperation between the Cabinet Office of Japan and the Ministry of the Interior of France on emergency management related to nuclear accidents	France	Opinions are exchanged with relevant bodies in the country and reciprocal invitations to exercises were issued within the framework of the memorandum of cooperation on nuclear emergency preparedness signed in May 2015. The Cabinet Office also held a meeting of the "Committee for Cooperation in the Field of Emergency Situation and Management in the Event of a Nuclear Accident." In 2020, the on-line opinion exchanges were held for infection protection measures during nuclear disaster response.	—	Director General for Nuclear Disaster Management, CAO
	Hosting observers of a comprehensive nuclear emergency response exercise	Countries concerned and regions and international organizations	With the objective of sharing information and exchanging views concerning nuclear emergency preparedness in each country, opinion exchanges are held by inviting countries, regions, and international organizations with cooperative relationships outside Japan to Comprehensive Nuclear Emergency Response Exercise (the implementation of the Comprehensive Nuclear Emergency Response Exercise in 2020 was postponed based on the situation of COVID-19.	—	Director General for Nuclear Disaster Management, CAO/ International Affairs Office, Policy Planning and Coordination Division, Secretary-General's Secretariat, the Secretariat of the Nuclear Regulation Authority
Ministry of Internal Affairs and Communications (MIC)	Technical Survey on the Introduction and Dissemination of Digital Terrestrial Television Broadcasting Systems in Latin America	Ecuador, Chile, and Peru	Researches, technical supports and demonstration tests were conducted for Emergency Warning Broadcast System (EWBS), which is a disaster prevention system using digital terrestrial television broadcasting, to be disseminated. Encouragement to introduce the technology was also provided.	25	International Cooperation Division, Global Strategy Bureau, MIC
Fire and Disaster Management Agency (FDMA)	International Forum on Fire and Disaster Management	Mainly Asian countries	The International Forum on Fire and Disaster Management has been held since 2007 to enable the countries of Asia, first and foremost, to enhance their firefighting and disaster management capacity, and to introduce Japan's firefighting technologies and systems.	3	(Counselor of) Civil Protection and Disaster Management Department, FDMA
	Japan-Republic of Korea Firefighting Administration Seminar	Republic of Korea	During the Year of Japan-Republic of Korea National Exchange, which was held to coincide with the joint hosting of the 2002 FIFA World Cup by Japan and the Republic of Korea, a Japan-Republic of Korea Firefighting Administration Seminar was held in both countries to promote Japanese-Republic of Korean exchange, partnership, and cooperation, through the sharing of information and the exchange of ideas regarding firefighting and disaster management in both countries.	1	(Counselor of) Civil Protection and Disaster Management Department, FDMA
	Cooperation in the fire control field between the Fire and Disaster Management Agency and the Ministry of Public Security of Vietnam	Vietnam	Based on the Memorandum of Cooperation in the fire control field signed in October 2018, the Fire and Disaster Management Agency will exchange opinions with relevant Vietnamese agencies and provide them with support in improving fire control and safety, including the standardization of fire control equipment and the establishment of a certification system.	—	Fire Prevention Division, FDMA
Ministry of Foreign Affairs (MOFA)	Operation of IAEA RANET Capacity Building Centre (CBC)	IAEA member countries (IAEA)	The IAEA RANET Capacity Building Centre (CBC), where IAEA staff are permanently stationed, was designated in Fukushima Prefecture in May 2013, based on the "Practical Arrangements Between the Ministry of Foreign Affairs of Japan and the International Atomic Energy Agency on Cooperation in the Area of Emergency Preparedness and Response" signed between MOFA and the IAEA in December 2012. Materials and equipment stored for emergence response in the CBC are used in an emergency involving radiation. In addition, the CBC serves as the venue for training courses for officials from foreign and Japanese governments and local government officials held several times a year.	28.1	International Nuclear Energy Cooperation Division, Disarmament, Non-proliferation and Science Department, MOFA

Ministry/ Agency	Project	Partner/ Target Country (Target Institution)	Description	Budget for FY2020 (in JPY million; if applicable)	Department Responsible
Ministry of Foreign Affairs (MOFA)	Japan-Turkey Disaster Management Cooperation	Turkey	Based on the Japan-Turkey Summit Meeting in 2017 and 2018, a Memorandum of Understanding (MOU) on Disaster Prevention and Cooperation was signed in December 2018. Various trainings and sharing of know-how in the field of disaster prevention were held. In addition, the two countries have been exchanging opinions and confirming the progress in the annual consultation.	—	First Middle East Division, Middle Eastern and African Affairs Bureau, MOFA
	Science and Technology Research Partnership for Sustainable Development (SATREPS)	128 countries among the objects of ODA (Public offering in 2021)	This program is jointly implemented by MOFA, the Japan International Cooperation Agency (JICA), MEXT, the Japan Science and Technology Agency (JST), and the Japan Agency for Medical Research and Development (AMED). Research institutions in Japan and developing countries cooperate with one another to conduct joint international research on solutions to global issues, tapping into the power of Japanese leading science and technology and the Official Development Assistance (ODA). Disaster prevention is one of the research fields under this program; by FY2020, 28 projects were carried out in 20 countries.	(MOFA) Included in JICA Management Expenses Grant (MEXT) Included in JST Management Expenses Grant	Development Administration Division, International Cooperation Bureau, MOFA International Science and Technology Affairs Division, Science and Technology Policy Bureau, MEXT
	Cooperation in Disaster Prevention and Support for Disaster Recovery through Collaboration with Japanese International Cooperation NGOs	Countries affected by natural disasters	(1) Cooperation for disaster prevention in developing countries through the Grant Aid for Japanese NGO's Projects (N-NGO), and emergency humanitarian aid and disaster recovery support through the Japan Platform (JPF) (Note 1), (2) Establishment of an international disaster prevention network and emergency humanitarian assistance in the Asia-Pacific region through Asia Pacific Alliance (A-PAD) (Note 2). (Note 1) A framework in which Japanese NGOs, the business community, and the government work together to provide emergency humanitarian assistance in the event of a large-scale natural disaster or conflict in Japan or abroad. (Note 2) A framework that aims to build an international disaster prevention network for the purpose to promote collaboration among NGOs, the business community, and governments of A-PAD member countries in the region, in response to large-scale natural disasters and disaster prevention measures in the Asia Pacific region, under the leadership of Japanese NGOs.	（1）The number of grant aid （2）Voluntary contributions to A-PAD 94.6	Non-Governmental Organizations Cooperation Division, International Cooperation Bureau, MOFA
	Provision of Emergency Relief Goods	Countries affected by natural disasters	In the event of a large-scale disaster overseas, MOFA decides providing emergency relief goods to support the immediate needs of affected people, upon request of the government of the affected country through Japan International Cooperation Agency (JICA). In 2020, assistance was provided to 10 countries (10 cases in total), including the provision of tents, plastic containers, and other supplies to people affected by the cyclone that struck Fiji in April. * As of the end of February 2021.	Included in JICA Management Expenses Grant	Humanitarian Assistance and Emergency Relief Division International Cooperation Bureau, MOFA
	Deployment of Japan Disaster Relief (JDR) teams	Countries affected by natural disasters	In 2019, seven teams were dispatched to five countries in total, including the Japan Disaster Relief (JDR) teams and the Infection Control Team (ICT) (the first and second teams). In 2020, a team of experts from the Japan Disaster Relief Team was dispatched to the oil spill incident on the coast of Mauritius, and a total of three teams were dispatched: the first, second and third teams. (*) As of the end of February 2021.	Included in JICA Management Expenses Grant	Humanitarian Assistance and Emergency Relief Division International Cooperation Bureau, MOFA
Ministry of Education, Culture, Sports, Science and Technology (MEXT)	Promotion of "Sentinel Asia" Project to Share Information on Natural Disasters Between Asia - Pacific Countries	28 countries and regions of the Asia Pacific Region/ 17 international organizations	This project is led and implemented by Japan to contribute to disaster management efforts in the Asia-Pacific Region. It uses satellites to share information relating to natural disasters. Participants consist of 28 countries and regions, 95 institutions, and 17 international organizations (As of February 2021).	Included in JAXA Management Expenses Grant	Office for Space Utilization Promotion, Space Development and Utilization Division, Research and Development Bureau, MEXT
	Science and Technology Research Partnership for Sustainable Development (SATREPS)	128 countries among the objects of ODA (Public offering in 2021)	This program is jointly implemented by MOFA, the Japan International Cooperation Agency (JICA), MEXT, the Japan Science and Technology Agency (JST), and the Japan Agency for Medical Research and Development (AMED). Research institutions in Japan and developing countries cooperate with one another to conduct joint international research on solutions to global issues, tapping into the power of Japanese leading science and technology and the Official Development Assistance (ODA). Disaster prevention is one of the research fields under this program; by FY2020, 28 projects were carried out in 20 countries.	(MOFA) Included in JICA Management Expenses Grant (MEXT) Included in JST Management Expenses Grant	Development Administration Division, International Cooperation Bureau, MOFA International Science and Technology Affairs Division, Science and Technology Policy Bureau, MEXT
Ministry of Agriculture, Forestry and Fisheries (MAFF)	Enhancing community resilience to climate change in mountain watersheds	Philippines and Peru (The Food and Agriculture Organization of the United Nations)	To strengthen community resilience in mountain watersheds by forest management and conservation, the project supports research and analysis of disaster risk assessment and issues, capacity building through development of educational materials and training, collection of good practices such as demonstration of risk mitigation measures and holding of workshops.	52	International Forestry Cooperation Office, Forestry Agency

Ministry/ Agency	Project	Partner/ Target Country (Target Institution)	Description	Budget for FY2020 (in JPY million; if applicable)	Department Responsible
Ministry of Agriculture, Forestry and Fisheries (MAFF)	Development of technologies to enhance the functions of forests for disaster prevention and mitigation in developing countries	Vietnam, Myanmar and Indonesia	Promoting the global expansion of Japanese private companies for contributing to disaster prevention and mitigation in developing countries through providing information on disaster occurrence and current measures of forest-based disaster prevention and mitigation in developing countries, and development of methods to enhance functions of forests in disaster risk reductions by using remote sensing technologies.	57	International Forestry Cooperation Office, Forestry Agency
Ministry of Land, Infrastructure Transport and Tourism (MLIT)	Disaster Management Collaboration Dialogues	Vietnam, Myanmar, Indonesia, Turkey,	Since 2013, workshops have been held to match Japanese technologies for DRR/DRM with disaster management issues of other countries.	40	River Planning Division, Water and Disaster Management Bureau, MLIT /Overseas Projects Division, Policy Bureau, MLIT
	International Cooperation through UN Committee of Experts on Global Geospatial Information Management (UNCE-GGIM)	All relevant countries	Promoting the use of technologies in the field of geospatial information to share disaster and disaster risk information as co-chairs of Working Group of Disasters (WG-Disasters) at the UN Committee of Experts on Global Geospatial Information Management (UNCE-GGIM).	—	International Policy and Project Division, Planning Department, Geospatial Information Authority of Japan, MLIT
	Collaboration with the Land Information New Zealand (LINZ)	New Zealand (LINZ: Land Information New Zealand)	The cooperation document was exchanged on November 10, 2020 under the Japan-New Zealand Agreement on Cooperation in Science and Technology in order to strengthen cooperation in surveying technology between the two countries where there is a large crustal movement. In the future, the technologies of both countries will be utilized to support disaster prevention and mitigation, and measurements will be made to improve surveying technology, which is indispensable for understanding crustal movement and providing accurate location information.	—	International Policy and Project Division, Planning Department, Geospatial Information Authority of Japan, MLIT
	US-Japan Natural Resources Panel on Earthquake Research (UJNR)	US	With a view to contributing to the establishment of earthquake disaster reduction technologies, researchers from public seismic research institutions in Japan and the U.S. met to present the latest research outcomes and exchange opinions. The event was held in Kumamoto Prefecture in 2022 (the event will be held every two years in Japan and the U.S. alternately).	—	Research Management Division, Geography and Crustal Dynamics Research Center, Geospatial Information Authority of Japan, MLIT
	Raising Awareness of World Tsunami Awareness Day (Hamaguchi Award)	All relevant countries	Taking advantage of the opportunity presented by the establishment of World Tsunami Awareness Day, Japan founded the Hamaguchi Award (presented by the Minister of Land, Infrastructure and Transport and Tourism) in FY2016 for individuals and/or organizations within Japan or overseas that have made significant contributions in the field of technologies for coastal disaster risk reduction, especially tsunami preparedness. At the award ceremony held on November 4, 2020, 2 people and 1 organization were awarded: IMAMURA Fumihiko, Director and Professor of The International Research Institute of Disaster Science (IRIDeS), Tohoku University, Costas Synolakis, Professor at University of Southern California (USA) and Museum Tsunami Aceh (Indonesia).	—	Port and Airport Research Institute, National Institute of Maritime, Port and Aviation Technology
	International Centre for Water Hazard and Risk Management (ICHARM)	UNESCO, etc.	As a UNESCO Category 2 Center, Water Hazard and Risk Management (ICHARM) actively undertook research, training, and information networking activities aimed at mitigating damage due to water hazards worldwide. Specifically, it developed the Rainfall-Runoff-Inundation model (WEB-RRI model), and put them into practice in the field; conducted research and development on risk management; and offered master's and doctoral courses in disaster mitigation studies. In addition, it undertook technical assistance and international support initiatives funded by organizations including UNESCO and the World Bank.	—	Public Works Research Institute
Japan Metrological Agency (JMA)	International Cooperation through WMO	WMO member countries	The Japan Meteorological Agency (JMA) plays a central role in a number of international center operations as the keystone of WMO's weather information service in Asia. Also, many staff members of the Japan Meteorological Agency contribute to the activities of the WMO as experts.	—	Office of Disaster Mitigation, Planning Division, Administration Department, JMA
	International Cooperation through UNESCO	UNESCO member countries, etc.	Under the framework of the UNESCO Intergovernmental Oceanographic Commission (IOC), the JMA collects, analyzes, and provides data on oceans and maritime meteorology for the northeast Asian region. It also provides information on tsunamis caused by earthquakes that occur in the northwest Pacific region.	—	Office of Disaster Mitigation, Planning Division, Administration Department, JMA
	International Cooperation through International Civil Aviation Organization (ICAO)	ICAO member countries	The JMA participates in meetings organized by the ICAO, as well as investigations into adopting and improving standard international criteria for aviation weather services. It has also been appointed by the ICAO to operate international centers, thus contributing to the safe operation of global aircraft.	—	Office of Disaster Mitigation, Planning Division, Administration Department, JMA

Ministry/ Agency	Project	Partner/ Target Country (Target Institution)	Description	Budget for FY2020 (in JPY million; if applicable)	Department Responsible
Japan Metrological Agency (JMA)	Collaboration on International Research Plans	All relevant countries	The JMA promotes various international research projects in cooperation with other countries. On climate change, it has been involved in writing evaluation reports on the activities of the Intergovernmental Panel on Climate Change (IPCC) since the panel was established in 1988.	—	Office of Disaster Mitigation, Planning Division, Administration Department, JMA
	Human Resource Development Aid and Technological Cooperation to Developing Countries	All relevant countries	Together with the Japan International Cooperation Agency (JICA), the JMA conducts training for developing countries to improve their meteorological services. Also, in response to requests from developing countries, the JMA dispatches expert staff and accepts trainees from national meteorological institutions.	—	Office of Disaster Mitigation, Planning Division, Administration Department, JMA
Japan Coast Guard (JCG)	Participation in the projects of the Northwest Pacific Action Plan (NOWPAP) Marine Environmental Emergency Preparedness and Response Regional Activity Centre (MERRAC)	Republic of Korea, China, Russia	The JCG participates in the projects of the NOWPAP MERRAC, which is a center responsible for preparing for and responding to marine environmental emergencies. As well as undertaking a marine environmental conservation initiative focused on the Sea of Japan and the Yellow Sea, etc. in partnership with neighboring countries, the JCG takes part in joint oil spill cleanup drills organized by relevant organizations and attends meetings held each year. Through these activities, it promotes international cooperation by striving to build systems that will enable relevant countries to work together in the event of an accident.	0.4	Protection of Marine Environment Division, Guard & Rescue Department, JCG
Ministry of Defense (MOD)	Japan-U.S.-Australia Joint Training at Cope North 20	US, Australia	A joint training among Japan, the U.S., and Australia. Japan conducted the drills related to humanitarian aid and disaster relief activities.	—	Training Division, Bureau of Defense Policy, MOD

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

Fig. A-55 Technical Cooperation Projects in Disaster Risk Reduction (FY2020)

Country	Cooperation Period	Project Name	Description
Philippines	2017-2021	Development of an Extreme Weather Observation and Information Sharing System (SATREPS)	This includes establishing a lightning, weather and 3D cloud structure monitoring system, developing technologies for short-term weather forecasts of extreme weather and the intensity of cyclones in Metropolitan Manila using an extrapolation method and developing software to distribute information to disaster management organizations.
Philippines	2018-2022	Project for Developing a Flood Control Master Plan for Davao	This project aims to support the preparation of a comprehensive flood control master plan for three river basins (Davao river, Matina river, Talomo river) in Davao city and carry out feasibility studies on priority plans.
Philippines	2020-2023	Project for Strengthening Capacity on High-quality Weather Observation, Forecasting and Warning	Strengthening the ability to provide high quality observations, forecasts, warnings and information by improving maintenance and management capabilities of ground-based weather observation systems and development of quantitative precipitation estimation and precipitation guidance for the purpose of contributing to the widespread use of this information at the national and local levels to mitigate weather-related disasters.
Thailand	2018-2022	The project on regional resilience enhancement through establishment of Area-BCM at industry complexes in Thailand	This project aims to establish a method to introduce and use Area-BCM in clusters in Thailand through the development of a method to analyze and assess flood risks, development of a method for business impact analysis concerning natural disasters, establishment of systems to manage Area-BCM in specific clusters, and development of training programs for the domestic and international introduction of Area-BCM.
Vietnam	2018-2021	The project for strengthening capacity in weather forecasting and flood early warning system	This project aims to provide disaster management institutions and residents with more accurate meteorological information in a prompt manner by improving maintenance, inspection, and calibration skills for meteorological observation equipment, improving abilities to analyze data obtained from two weather radars introduced under the Grand Aid program and quality control skills, improving monitoring and forecasting skills concerning heavy rains and typhoons, and improving communication skills.
Myanmar	2015-2020	Project for Development of a Comprehensive Disaster Resilience System and Collaboration Platform in Myanmar (SATREPS)	Yangon Technological University, which falls under the jurisdiction of Myanmar's Ministry of Education, is planning to develop and build a scenario analysis system that forecasts changes in disaster vulnerability as needed, and an integrated disaster response system based on this to enhance disaster resilience. In addition, it is planning to establish an industry-academia-government collaborative platform to disseminate these systems in governmental organizations and industry. Japan will provide support for R&D of these systems, human resource development required for this R&D, and the establishment of a platform, thereby helping to enhance disaster resilience in Myanmar.
Central America	2015-2020	Project on Capacity Development for Disaster Risk Management in Central America, Phase 2	The Project on Capacity Development for Disaster Risk Management in Central America was conducted to build disaster-resilient societies by improving the disaster risk reduction capabilities of six countries in Central America (El Salvador, Honduras, Guatemala, Nicaragua, Costa Rica, and Panama), which face similar risks in terms of natural disasters, including earthquakes, floods, and volcanic disasters. Based on the results of that project, Phase 2 supports the strengthening of capacity among administrative organizations with a view to nationwide rollout, and the strengthening of frameworks for sustained efforts to popularize systematic community disaster preparedness, as well as supporting the construction of frameworks for sharing each country's experiences with others in Central America, with the aim of developing disaster risk management capacity throughout the region.
Myanmar	2019-2022	Project for Enhancing Capacity of Weather Observation and Forecasting in Myanmar	This program aims to improve the Myanmar Department of Meteorology and Hydrology's capacity for the maintenance of meteorological observation equipment and weather data analysis and processing skills. By ensuring more effective forecasting, Myanmar aims to reduce damage from disasters. This program is intended to create a synergy effect with support related to meteorological observation equipment, such as the introduction of three weather radars under the Grand Aid program.
Turkmenistan	2017-2020	Project for Improvement of the Earthquake Monitoring System in and around the Ashgabat City	The purpose of this project is to improve the capacity of the nation in earthquake observation and earthquake hazard assessment of earthquake risk using earthquake observation data and the result of earthquake hazard assessment and formulate earthquake disaster management plans by developing an earthquake observation and strong motion observation system to establish a system for early decision-making on seismic intensity, epicenter and earthquake size and prediction of seismic intensity in pilot districts of the Ashgabat Area.
Armenia	2019-2022	The Project for the Improvement of Crisis Communication and Public Awareness for Disaster Risk Reduction	This program aims to improve the crisis communication capabilities of the Ministry of Emergency Situations (Armenia) and domestic media by developing crisis communication guidelines, conducting drills based on the guidelines, developing training materials and plans, and conducting training, with a view to ensuring accurate and timely emergency communication.
Bangladesh	2015-2021	Building Safety Promotion Project for Disaster Risk Reduction (BSPP)	Primarily targeting staff at the Public Works Department under the Ministry of Housing and Public Works, this project seeks to increase the safety of buildings in Bangladesh and reduce the risk of disaster in urban areas by supporting efforts to strengthen human resource development systems aimed at increasing building safety and making use of manuals to enhance the capability of the staff for evaluating seismic capacity, undertaking seismic design and supervising construction at the end of the project.
Bangladesh	2016-2022	Technical Development to Upgrade Structural Integrity of Buildings in Densely Populated Urban Areas and its Strategic Implementation towards Resilient Cities (SATREPS)	Focusing on buildings in Dhaka that are primarily built from reinforced concrete, this project involves research into diagnostic techniques and reinforcement methods suitable to local components and structural styles, and the presentation of recommendations for strategies for applying them. Through this, it aims to increase the structural resilience of buildings, and encourage technology development and its effective implementation, thereby contributing to reducing the structural vulnerability of buildings in Bangladesh, and increasing safety against urban earthquakes.
Bangladesh	2020-2024	Project for Planning Capacity Enhancement and Establishment of a Technology Adaptation Cycle on Comprehensive Nodi (River) Management	In the target rivers (large rivers such as the Jamuna River and small and medium rivers including the Matamuhuri River), a knowledge tool is being developed for the installation and maintenance of structures according to characteristics each river in Bangladesh. In addition, by acquiring knowledge and know-how through the knowledge tool, and by introducing methods for formulating comprehensive river development and management plans, systematic control and planning management methods for diverse rivers are to be established.

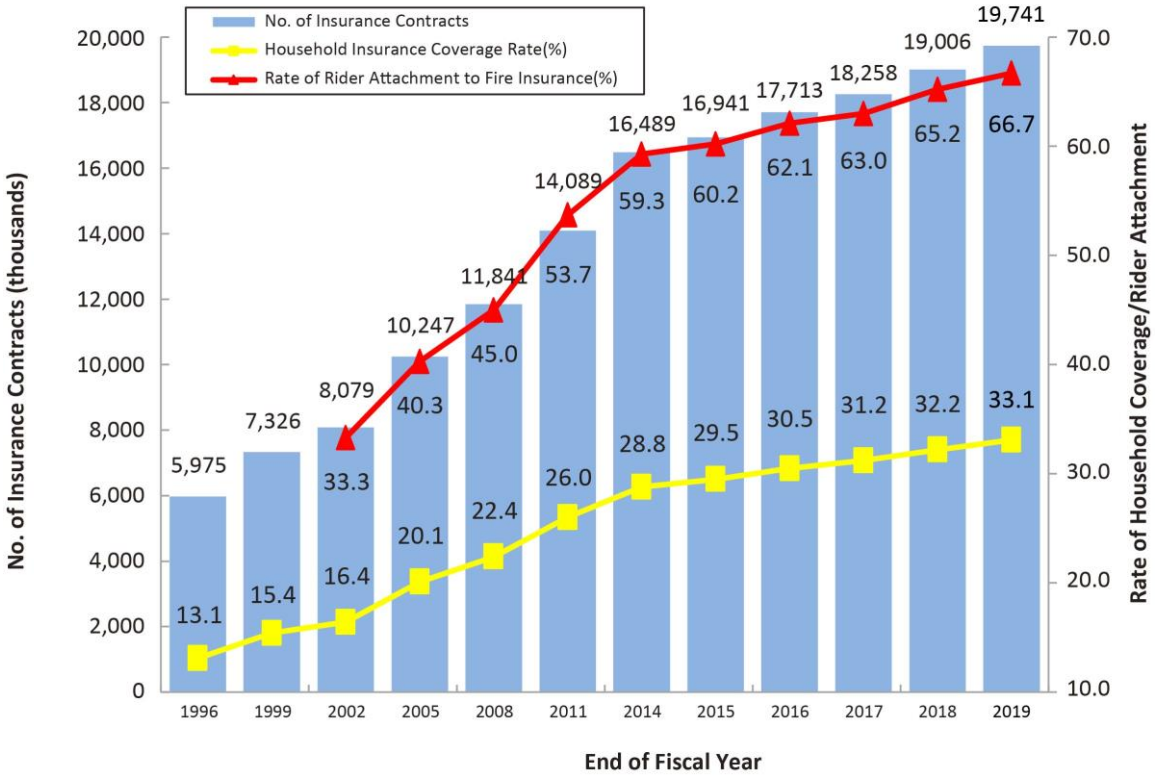
Country	Cooperation Period	Project Name	Description
Bangladesh	2020-2024 (plans)	Project for Strengthening Abilities to Formulate and Conduct Local Disaster Plans	The project provides support to formulate local disaster management plans for weather-related disasters in two Upazilas of Cox's Bazar, Shunamganj and Kurigram Districts as pilot activity sites and obtains budget for the implementation of the planned projects, and develops local management plans throughout the country to strengthen the implemented system.
Nepal	2016-2021	The project for Integrated Research on Great Earthquakes and Disaster Mitigation in Nepal Himalaya (SATREPS)	The goal of this project is to strengthen remote monitoring systems and develop human resources in the earthquake field by estimating future earthquakes that could occur in the Himalayan seismic gap, thoroughly examining the ground properties of the Kathmandu basin, and enhancing the seismographic network.
Pakistan	2016-2021	Project for Capacity Development of Disaster Management	Via the National Institute of Disaster Management (NIDM), an NDMA training institution established in 2007 to develop capacity at the National Disaster Management Authority (NDMA), this project will support efforts to strengthen human resource development implementation systems in the field of disaster management and contribute to increasing the knowledge concerning disaster management held by personnel belonging to the country's disaster management administration bodies.
Sri Lanka	2018-2021	Project for capacity strengthening regarding non-structural measures for landslide risk reduction	This program aims to improve Sri Lanka's capabilities concerning intangible measures by establishing an early sediment disaster alert system using risk assessment, and introducing the concept of land use planning.
Sri Lanka	2020-2024 (plans)	Project to Promote the Mainstreaming Disaster Risk Reduction through the Development of Local Disaster Management Plans Based on Watershed Strategies	The project will support the development of a system to promote the mainstreaming of disaster risk management (DRM) in Sri Lanka through the development of local disaster management plans and improvement of items on the introduction of a disaster risk management perspective in the applications for the projects of the central government agencies in the Kelani River Basin, including Colombo City, a major city in Sri Lanka, as a pilot area.
Sri Lanka	2018-2022	Project for Storm Water Drainage Plan in selected areas in Colombo Metropolitan Region	This project aims to plan urban drainage and inland flood control measures in Colombo and its surrounding areas, while also selecting priority programs and conducting investigations.
Fiji	2020-2024	Project to Promote Mainstreaming of Disaster Risk Reduction	The project aims to strengthen the capacities of the National Disaster Management. Office (NDMO) to implement and facilitate disaster risk management activities through the improvement of hazard evaluation abilities, the formulation and dissemination of the local disaster management, and the development of a system to implement and facilitate disaster management projects of the central government in Fiji, which is highly susceptible to natural disasters.
Vanuatu	2018-2021	Project for Enhancing the Capacity of Issuing Earthquake, Tsunami and Storm Surge Information	This project aims to develop a system for the timely and accurate communication of earthquake, tsunami, and storm surge information from the Vanuatu Meteorology and Geohazards Department and the National Disaster Management Office (NDMO) to relevant institutions and residents, by strengthening earthquake and tide monitoring networks (including the observation networks developed under the Grand Aid program), improving data analysis capabilities, and enhancing disaster information communication and alert issuing capabilities.
Mexico	2016-2022	Hazard Assessment of Large Earthquakes and Tsunamis in the Mexican Pacific Coast for Disaster Mitigation (SATREPS)	In collaboration with a Mexican research institute, this project involves installing measuring instruments on the earth's surface and sea floor in the coastal region of Guerrero state in southern Mexico, and gathering and analyzing earthquake data. This will be used to develop scenarios for major earthquake and tsunami disasters that could occur in future and to prepare a hazard map and evacuation signs. In addition, the project will develop and disseminate a disaster mitigation education program that takes local sociocultural attributes into account.
Honduras	2018-2022	Project for Control and Mitigation of Landslide in Tegucigalpa Metropolitan Area	This project aims to improve landslide management capabilities by strengthening the following skills: (1) detailed investigation and analysis to understand landslide phenomenon; (2) design, construction, construction management, and maintenance skills concerning small and medium-scale landslide control measure; (3) formulation of landslide hazard maps and risk maps; and (4) land use regulation related to landslide disasters.
Chile	2018-2021	Institutional Strengthening of ONEMI for Capacity Development in Disaster Risk Reduction Project	Under the Sendai Framework for Disaster Risk Reduction, this project aims to contribute to disaster prevention measures taken by ONEMI (Chile's national disaster control institution) by improving capabilities required for the promotion of disaster prevention and reduction measures, development of a disaster knowledge management system, and formulation of regional disaster management plans and developing disaster-prevention human resources.
Colombia	2015-2021	Project for Application of State of the Art Technologies to Strengthen Research and Response to Seismic, Volcanic and Tsunami Events, and Enhance Risk Management (SATREPS)	Colombia experiences frequent disasters due to earthquakes, tsunami, and volcanic eruptions. This project involves promoting partnerships between research institutes and relevant disaster management organizations, along with research and practical activities aimed at strengthening measures to mitigate the damage due to disaster through capacity building in such areas as earthquake, tsunami, and volcanic activity monitoring, modeling, damage forecasting, and the transmission of information. In addition, it will contribute to advances in disaster research in South America through collaboration with neighboring countries.
Ecuador	2017-2021	Project for Safe and Resilient Cities for Earthquake and Tsunami Disaster	Initiatives for developing "disaster resilient cities" will be deployed nationwide to mitigate damage caused by earthquakes and tsunamis by formulating tsunami evacuation plans, updating the disaster management agenda and strengthening the operational structure of building system in three pilot cities (Atacames, Portoviejo and Salinas).
Mauritius	2019-2022	Project for Enhancing Meteorological Observation, Weather Forecasting and Warning Capabilities	This project aims to ensure the timely provision of accurate meteorological information to Mauritian disaster management institutions and residents through technological cooperation aimed at improving the Mauritius Meteorological Services' forecasting and alert issuing capabilities, while also utilizing weather radars introduced under the Grand Aid program.
Philippines	2019-2024	Disaster Risk Reduction and Management Capacity Enhancement Project Phase 2	This project supports the planning, implementation and monitoring of disaster prevention measures to reduce human and economic damages caused by natural disasters with technical support of the national disaster management system in the regional and local governments (provinces, cities and towns).
Bhutan	2019-2022 (plans)	Project on Strengthening Weather Observation, Forecasting and Flood Warning Capacities for Disaster Preparedness and Responses in the Thimphu and Paro River Basins	This project will enhance the capacities of the National Centre for Hydrology and Meteorology (NCHM) for weather observation and forecasting, and flood risk assessment, forecasting and warning in the Thimphu and the Paro River basins as well as strengthen the capacities of the Department of Disaster Management (DDM) and the provinces and cities in the basins for preparedness of and respond to flood disasters.

Country	Cooperation Period	Project Name	Description
Nepal	2020-2024	Project for Planning Capacity Enhancement to make the Kathmandu Valley resiliente	This project contributes to strengthening the maximum resilience of the Kathmandu Valley and promote pre-investment in disaster management, focusing on strengthening the administrative capacity of the National Disaster Reduction and Mitigation Agency (NDRRMA), which is Nepal's central disaster management agency, for disaster risk reduction (DRR), development of a mechanism for implementing DRR projects in the Kathmandu Basin, and supporting local governments in mainstreaming disaster reduction.

Source: Japan International Cooperation Agency (JICA)

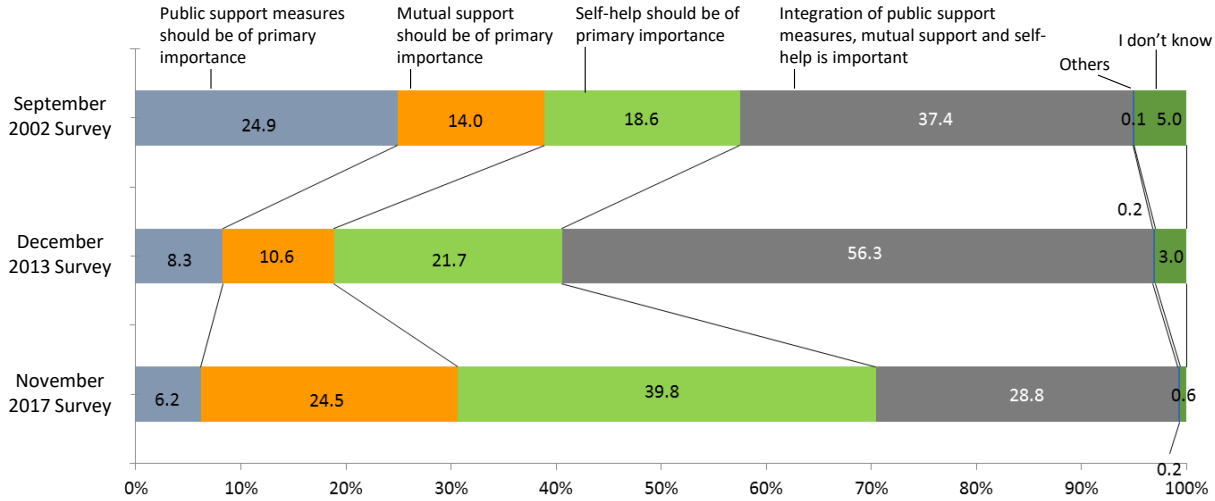
10. Others

Fig. A-56 Number of Earthquake Insurance Contracts



Source: Formulated by the Cabinet Office based on materials from the General Insurance Rating Organization of Japan

Fig. A-57 Awareness of Self-Help, Mutual Support, and Public Support Measures



Source: Formulated by Cabinet Office on basis of "Public Opinion Poll regarding Disaster Risk Reduction" conducted by the Public Relations Office, Cabinet Office

Fig. A-58 Tables Explaining the Japan Meteorological Agency Seismic Intensity Scale

Notes:

(1) As a rule, seismic intensities announced by JMA are values observed using seismic intensity meters installed on the ground or on the first floor of low-rise buildings. This document describes the phenomena and damage that may be observed for individual seismic intensity levels. Seismic intensities are not determined from the observed phenomena described here.

(2) Seismic ground motion is significantly influenced by underground conditions and topography. Seismic intensity is the value observed at a site where a seismic intensity meter is installed, and may vary even within the same city. In addition, the amplitude of seismic motion generally differs by floor and location within the same building, as shaking on upper floors of middle-to-high-rise buildings may be considerably amplified.

(3) Sites with the same level of seismic intensity will not necessarily suffer the same degree of damage, as the effect of tremors depends on the nature of the seismic motion (such as amplitude, period and duration), the type of construction and underground conditions.

(4) This document describes typical phenomena that may be seen at individual seismic intensity levels. In some cases, the level of damage may be greater or less than specified. Not all phenomena described for each intensity level may necessarily occur.

(5) The information outlined here is made by experiences of recent earthquake disasters and regularly checked at intervals of about five years. This information will be updated in line with actual phenomena observed in new cases or improvements in the earthquake resistance of buildings and structures.

(6) In the case that the extent of damage cannot be shown in round numbers, the following adverbs and adjectives have been used as a tentative guide.

Term	Definition
Rarely A few/little Majority Almost all	Extremely limited. Hardly ever. Number/extent is extremely small. Just a little bit. Half or more. Less than “almost all.” Not all but close to all.
There are (also), there may be	Used to express something that typically starts to appear at this seismic intensity level, where the quantity is not great, but it is hard to quantify the number/extent.
Increases	It is difficult to specify the quantity, but it is more than would be the case for a lower level of intensity.
Increases further	Same meaning as “increases” above. Used in relation to lower levels of intensity, just like “increases” above.

* The JMA sometimes publishes earthquake intensities obtained from questionnaire surveys, but these are expressed as “corresponding to seismic intensity xx” and are distinguished from seismic intensity levels observed by seismic intensity meters.

●Human perception and reaction, indoor situation, outdoor situation

Seismic intensity	Human perception and reaction	Indoor situation	Outdoor situation
0	Imperceptible to people, but recorded by seismometers.	—	—
1	Felt slightly by some people keeping quiet in buildings.	—	—
2	Felt by many people keeping quiet in buildings. Some people may be awoken.	Hanging objects such as lamps swing slightly.	—
3	Felt by most people in buildings. Felt by some people walking. Many people are awoken.	Dishes in cupboards may rattle.	Electric wires swing slightly.
4	Most people are startled. Felt by most people walking. Most people are awoken.	Hanging objects such as lamps swing significantly, and dishes in cupboards rattle. Unstable ornaments may fall.	Electric wires swing significantly. Those driving vehicles may notice the tremor.
5 Lower	Many people are frightened and feel the need to hold onto something stable.	Hanging objects such as lamps swing violently. Dishes in cupboards and items on bookshelves may fall. Many unstable ornaments fall. Unsecured furniture may move, and unstable furniture may topple over.	In some cases, windows may break and fall. People notice electricity poles moving. Roads may sustain damaged.
5 Upper	Many people find it hard to move; walking is difficult without holding onto something stable.	Dishes in cupboards and items on bookshelves are more likely to fall. TVs may fall from their stands, and unsecured furniture may topple over.	Windows may break and fall, unreinforced concrete-block walls may collapse, poorly installed vending machines may topple over, and automobiles may stop due to the difficulty of continued movement.
6 Lower	It is difficult to remain standing.	Many unsecured furniture moves and may topple over. Doors may become wedged shut.	Wall tiles and windows may sustain damage and fall.
6 Upper	It is impossible to remain standing or move without crawling. People may be thrown through the air.	Most unsecured furniture moves, and is more likely to topple over.	Wall tiles and windows are more likely to break and fall. Most unreinforced concrete-block walls collapse.
7		Most unsecured furniture moves and topples over, or may even be thrown through the air.	Wall tiles and windows are even more likely to break and fall. Reinforced concrete-block walls may collapse.

●Wooden houses

Seismic intensity	Wooden houses	
	High earthquake resistance	Low earthquake resistance
5 Lower	—	Slight cracks may form in walls.
5 Upper	—	Cracks may form in walls.
6 Lower	Slight cracks may form in walls.	Cracks are more likely to form in walls. Large cracks may form in walls. Tiles may fall, and buildings may lean or collapse.
6 Upper	Crazing or cracks may be seen in walls.	Large cracks are more likely to form in walls. Buildings are more likely to lean or collapse.
7	Cracks are more likely to form in walls. Buildings may lean in some cases.	Buildings are even more likely to lean or collapse.

Notes:

(1) Wooden houses are classified into two categories according to their earthquake resistance, which tends to be higher for newer foundations. Earthquake resistance tends to be low for structures built up to 1981, and high for those built since 1982. However, to maintain a certain range of earthquake resistance according to differences in structure and wall arrangement, resistance is not necessarily determined only by foundation age. The earthquake resistance of existing buildings can be ascertained through quakeproofing diagnosis.

(2) The walls in this table are assumed to be made of mud and/or mortar. Mortar in a wall with a weak base can easily break off and fall, even under conditions of low deformation.

(3) Damage to wooden houses depends on the period and duration of seismic waves. In some cases (such as the Iwate-Miyagi Nairiku Earthquake in 2008), few buildings sustain damage in relation to the level of seismic intensity observed.

●Reinforced-concrete buildings

Seismic intensity	Reinforced-concrete buildings	
	High earthquake resistance	Low earthquake resistance
5 Upper	—	Cracks may form in walls, crossbeams and pillars.
6 Lower	Cracks may form in walls, crossbeams and pillars.	Cracks are more likely to form in walls, crossbeams and pillars.
6 Upper	Cracks are more likely to form in walls, crossbeams and pillars.	Slippage and X-shaped cracks may be seen in walls, crossbeams and pillars. Pillars at ground level or intermediate floors may disintegrate, and buildings may collapse.
7	Cracks are even more likely to form in walls, crossbeams and pillars. Ground level or intermediate floors may sustain significant damage. Buildings may lean in some cases.	Slippage and X-shaped cracks are more likely to be seen in walls, crossbeams and pillars. Pillars at ground level or on intermediate floors crumble are more likely to disintegrate, and buildings are more likely to collapse.

Notes:

(1) Earthquake resistance tends to be higher for newer foundations. The value tends to be low for structures built up to 1981, and high for those built since 1982. However, to maintain a certain range of earthquake resistance according to differences in structure and 2D/3D arrangement of reinforced walls, resistance is not necessarily determined only by foundation age. The earthquake resistance of existing buildings can be ascertained through quakeproofing diagnosis.

(2) Slight cracks may form in reinforced-concrete buildings without their core structure being affected.

●Situation of ground and slopes, etc.

Seismic intensity	Situation of ground	Situation of slopes, etc.
5 Lower	Small cracks*1 may form and liquefaction*2 may occur.	Rock falls and landslips may occur.
5 Upper		
6 Lower	Cracks may form.	Landslips and landslides may occur.
6 Upper	Large cracks may form.	Landslips are more likely to occur; large landslides and massif collapses may be seen.*3
7		

Notes:

*1 A crack is the same phenomenon as a fissure, but the expression is used here to refer to a small fissure or opening in the ground.

*2 Liquefaction may be seen in areas with a high groundwater level and loose sand deposits. Damage observed as a result of liquefaction includes spouts of muddy water from the ground, outbreaks of subsidence in riverbanks and quays, elevation of sewage pipes and manholes, and leaning or destruction of building foundations.

*3 When large landslides and massif collapse occurs, dams may form depending on geographical features, and debris flow may occur due to the large quantities of sediment produced.

●Influence on utilities and infrastructure, etc.

Suspension of gas supply	In the event of shaking with a seismic intensity of about 5 Lower or more, gas meters with safety devices are tripped, stopping the supply of gas. In the event of stronger shaking, the gas may stop for entire local blocks.*
Suspension of water supply, electrical blackouts	Suspension of water supply and electrical blackouts may occur in regions experiencing shaking with a seismic intensity of about 5 Lower or more.*
Suspension of railroad services, regulation of highways, etc.	In the event of shaking with a seismic intensity of about 4 or more, services on railroads or highways may be stopped for safety confirmation. Speed control and traffic regulations are performed according the judgment of the relevant bodies. (Standards for safety confirmation differ by organization and area).
Disruption to lines of communication such as telephones	In the event of an earthquake, communication network congestion may occur due to increased calls related to safety confirmation and inquiries around regions experiencing strong shaking. To combat this, telecommunications providers offer Disaster Emergency Message Dial and Message Board services if a disaster such as an earthquake with a seismic intensity of about 6 Lower or greater occurs.
Suspension of elevator service	In the event of shaking with a seismic intensity of about 5 Lower or more, elevators with earthquake control devices will stop automatically for safety reasons. Resumption of service may be delayed until safety is confirmed.

*In the event of shaking with a seismic intensity of 6 Upper or more, gas, water, and electric supplies may stop over wide areas.

●Effect on large-scale structures

Shaking of skyscrapers from long-period ground motion*	Due to their longer characteristic period, skyscrapers react less to earthquakes than general reinforced-concrete buildings, which have a shorter characteristic period. However, they exhibit slow shaking over a long time in response to long-period ground motion. If motion is strong, poorly fixed office appliances may move significantly, and people may have to hold onto stable objects to maintain their position.
Sloshing of oil tanks	Sloshing of oil tanks occurs in response to long-period ground motion. As a result, oil outflows or fires may occur.
Damage or collapse of ceilings etc. at institutions covering large spaces	In institutions covering large spaces such as gymnasiums or indoor pools, ceilings may shake significantly and sustain damage or collapse, even in cases where ground motion is not severe enough to cause other structural damage.

*Occasionally, when a large earthquake occurs, long-period seismic waves reach locations far from the hypocenter; such waves may be amplified over plains depending on the characteristic period of the ground, thus extending their duration.

Source: Japan Meteorological Agency

Fig. A-59 Emergency Warning Issuance Criteria

■Criteria for Meteorological Emergency Warnings

<table>
<tr><th>Phenomenon</th><th colspan="2">Criteria</th></tr>
<tr><td>Heavy rain</td><td colspan="2">Heavy rainfall with a level of intensity observed only once every few decades is predicted in association with a typhoon or similar.
Or:
Heavy rainfall is predicted in association with a typhoon expected to have a level of intensity observed only once every few decades or an extratropical cyclone with comparable intensity.</td></tr>
<tr><td>Storm</td><td>A storm is predicted…</td><td rowspan="3">…in association with a typhoon expected to have a level of intensity observed only once every few decades or an extratropical cyclone with comparable intensity.</td></tr>
<tr><td>Storm surge</td><td>A storm surge is predicted…</td></tr>
<tr><td>High waves</td><td>High waves are predicted…</td></tr>
<tr><td>Snowstorm</td><td colspan="2">A snowstorm is predicted in association with an extratropical cyclone expected to have a level of intensity observed only once every few decades.</td></tr>
<tr><td>Heavy snow</td><td colspan="2">Heavy snowfall with a level of intensity observed only once every few decades is predicted.</td></tr>
</table>

■Emergency Warning Criteria for Tsunami, Volcanic eruptions, and Earthquake

Phenomenon	Criteria
Tsunami	Tsunami height is expected to be greater than 3 meters. (Major Tsunami Warnings are issued in the classification of Emergency Warnings.)
Volcanic eruption	Eruption or possibility of eruption that may cause serious damage in residential areas and non-residential areas nearer the crater. (Volcanic Warning (Level 4 and 5) and Volcanic Warning (residential areas)* are issued in the classification of Emergency Warnings.)
Earthquake	Seismic intensity of 6-lower or more is expected. (Earthquake Early Warnings incorporating prediction of tremors measuring 6-lower or more on JMA's seismic intensity scale are issued in the classification of Emergency Warnings.)

Source: Japan Meteorological Agency

Fig. A-60 Evacuation Information Using Five Warning Levels of Warning (Flood and Landslide Disasters)

Things to Know About Evacuation Information for Typhoons and Torrential Rain

Check During Emergency

Evacuation Information Points

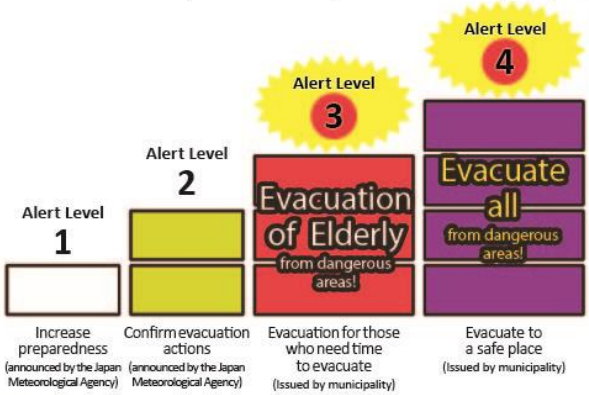
Be in the know!

Evacuation Information Issued by Municipalities (Alert Level)

"Evacuation" means to "evade" disasters.
People who are in a safe place do not need to go to a shelter.

Alert Level 3 = <Evacuation of Elderly from Dangerous Areas>,
Alert Level 4 = <Evacuation of All*1>.

*1 At Alert Level 4, "Evacuation of All," is a time when all people, not just the elderly, should evacuate from dangerous areas.



An Alert Level 4 = 〈evacuation recommendation〉 means to evacuate from dangerous areas

The Alert Levels are classified into five levels to inform residents of the actions they should take in preparation for floods and sediment disasters, and are issued by municipalities in conjunction with evacuation information.

Alert level 5 is where a disaster has already occurred.

- If you are still not able to evacuate when the alert level 5 is issued, please take the best action to save your life by moving to a slightly safer room in your house or to a safe building if there is one nearby.
- Information on the occurrence of a disaster at Alert Level 5 is issued when the municipality is aware of the occurrence of a disaster, to the extent possible, but may not be given in some circumstances.

It is dangerous to evacuate outdoors during torrential rain.
Please refrain from transfer by car as well.

Alert Level 4 includes evacuation recommendations and evacuation instructions (emergency)*2, but in any case, evacuate at Alert Level 4.

- The Alert Level 4 evacuation recommendation is issued in consideration of the time required for evacuation and the time of sunset, so it is necessary to evacuate dangerous areas at this time.

*2 The evacuation instruction (emergency) at Alert Level 4 is not always issued, but may be issued in case of an emergency or to encourage evacuations repeatedly depending on the situation in the area.

List of Acronyms

ACDR	Asian Conference on Disaster Reduction
ADRC	Asian Disaster Reduction Center
AMCDRR	Asia Ministerial Conference on Disaster Risk Reduction
APEC	Asia-Pacific Economic Cooperation
ASAP	as soon as possible
BCM	Business Continuity Management
BCP	Business Continuity Plan
DOE	Department of Energy
DRR	Disaster Risk Reduction
ECCS	emergency core cooling system
EMWG	Emergency Management Working Group
EPReSC	Emergency Preparedness and Response Standards Committee
ERC	Emergency Response Center
FEMA	Federal Emergency Management Agency
HA/DR	humanitarian assistance and disaster relief
IAEA	International Atomic Energy Agency
ICHARM	International Centre for Water Hazard and Risk Management
ICT	information and communication technology
IRP	International Recovery Platform
ISO	International Organization for Standardization
ISUT	Information Support Team
JANDR	Japan Academic Network for Disaster Reduction
JBP	Japan Bosai Platform
JICA	Japan International Cooperation Agency
JIS	Japanese Industrial Standards
JMA	Japan Meteorological Agency
JVOAD	Japan Voluntary Organizations Active in Disaster
MAFF	Ministry of Agriculture, Forestry and Fisheries
MEXT	Ministry of Education, Culture, Sports, Science and Technology
MHLW	Ministry of Health, Labour and Welfare
MIC	Ministry of Internal Affairs and Communications
MLIT	Ministry of Land, Infrastructure, Transport and Tourism
MOC	Memorandum of Cooperation
NIED	National Research Institute for Earth Science and Disaster Resilience
NPO	Non-Profit Organization
NRA	Nuclear Regulation Authority
NRC	Nuclear Regulatory Commission
OECD/NEA	Nuclear Energy Agency of the Organization for Economic Cooperation and Development
OEIWG	Open-Ended Intergovernmental Expert Working Group
PAZ	Precautionary Action Zone
SCJ	Science Council of Japan
SDF	Self-Defense Forces
SDGs	Sustainable Development Goals
SDMOF	Senior Disaster Management Officials Forum
SFDRR	Sendai Framework for Disaster Risk Reduction 2015-2030
SIP4D	Shared Information Platform for Disaster Management
SMEs	Small and Medium-sized Enterprises
SRSG	Special Representative of the UN Secretary-General
TEC-FORCE	Technical Emergency Control FORCE
TMG	Tokyo Metropolitan Government
UNISDR	United Nations Office for Disaster Risk Reduction
UPZ	Urgent Protective Action Planning Zone
VC	volunteer center