APPENDIX

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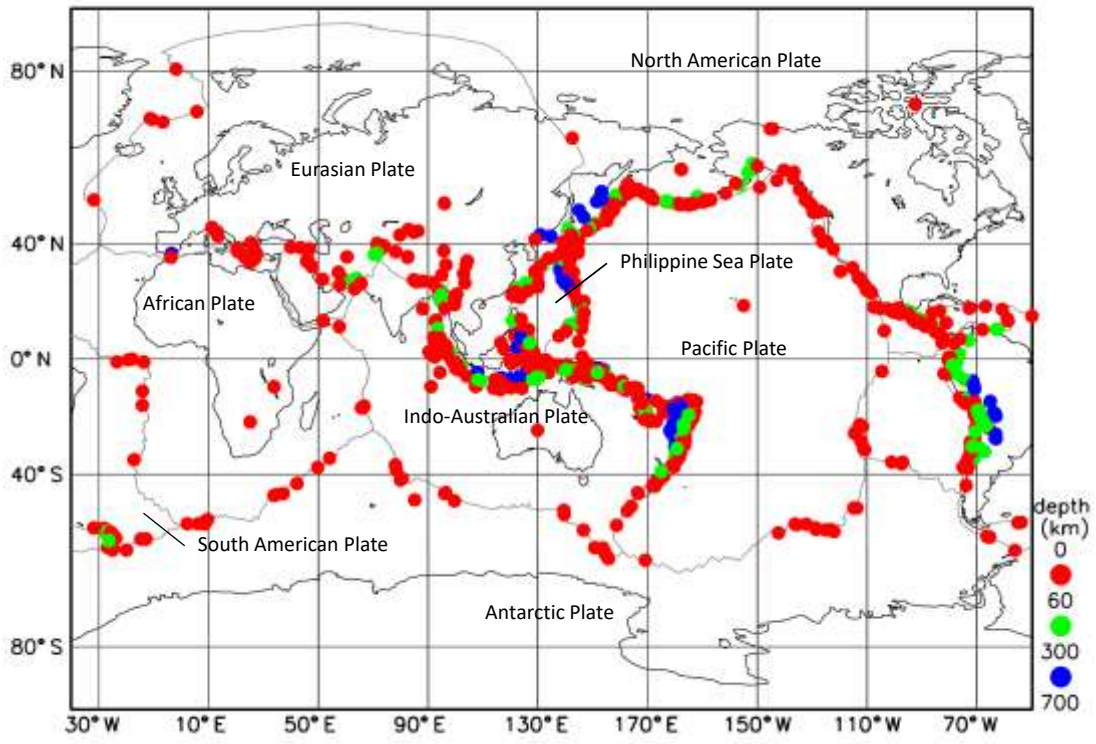
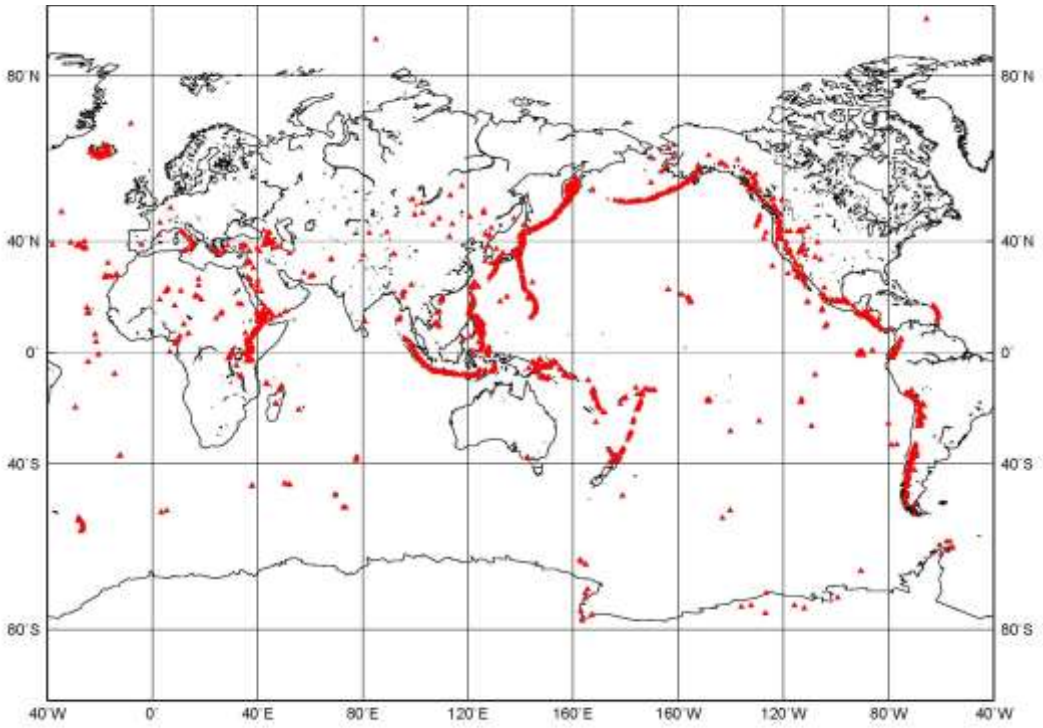
1. Overview of Japan's National Land

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



Note: 2010–2019
Source: Formulated by the Japan Meteorological Agency based on earthquake data from the U.S. Geological Survey

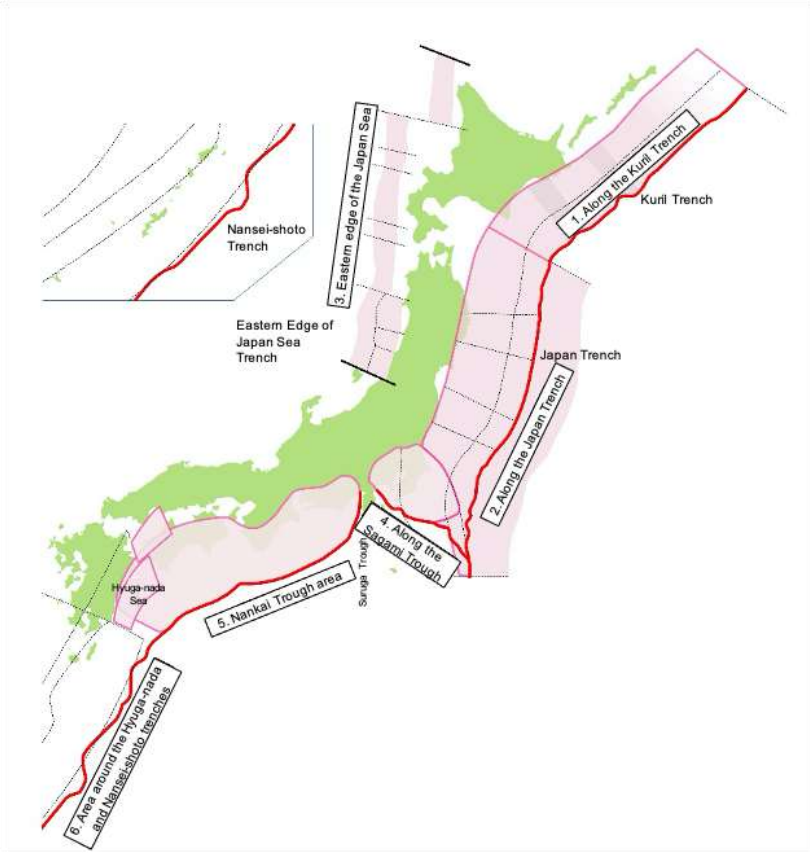
Fig. A-2 **Distribution of Volcanoes Worldwide**



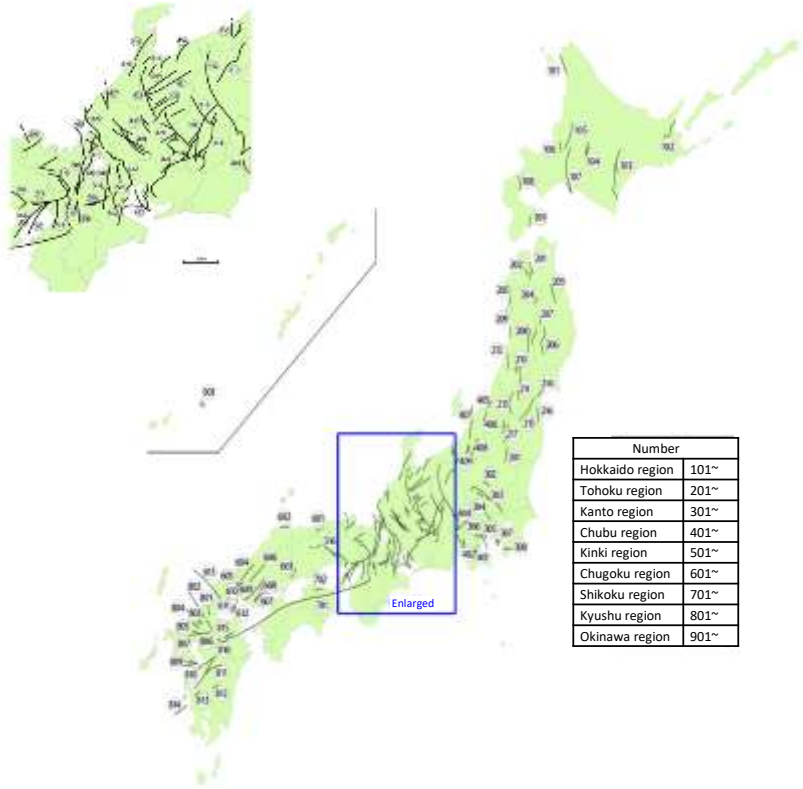
Source: Japan Meteorological Agency

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

Subduction Zone Earthquake Areas



Major Active Faults



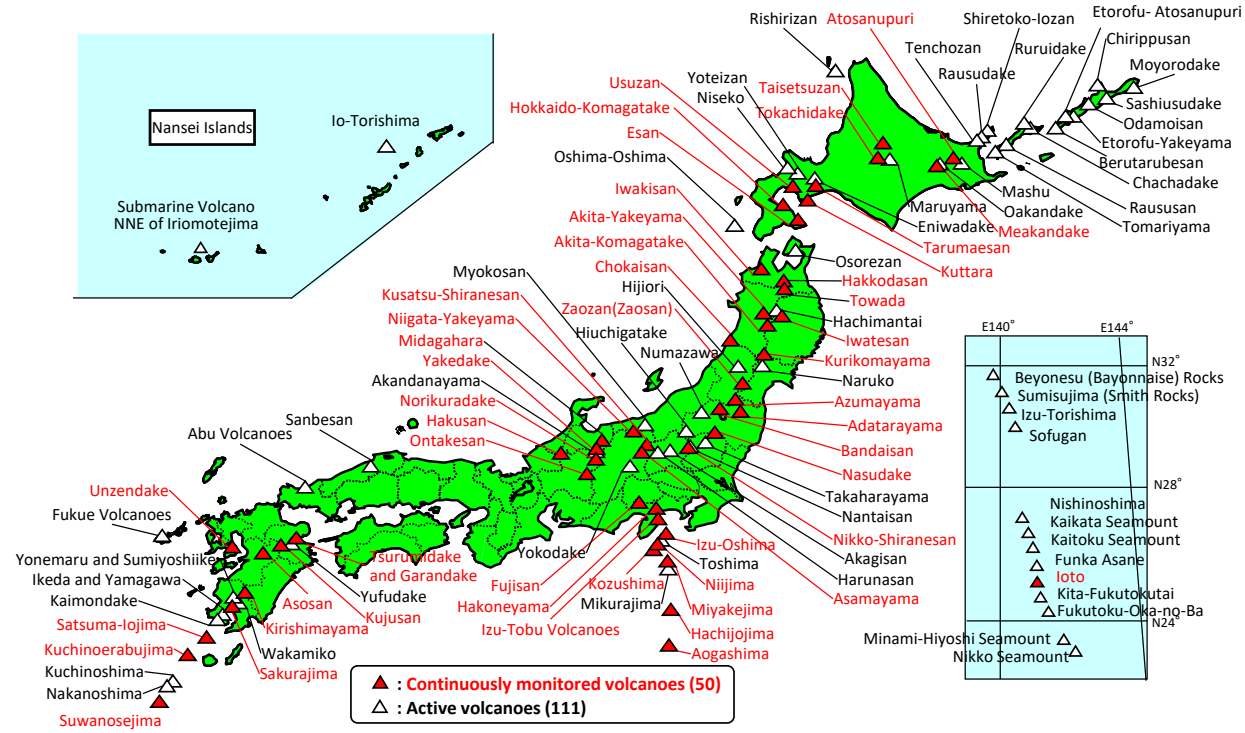
Number	
Hokkaido region	101~
Tohoku region	201~
Kanto region	301~
Chubu region	401~
Kinki region	501~
Chugoku region	601~
Shikoku region	701~
Kyushu region	801~
Okinawa region	901~

Source: Headquarters for Earthquake Research Promotion

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: Headquarters for Earthquake Research Promotion

Fig. A-4 Distribution of Active Volcanoes in Japan



Source: Formulated by the Cabinet Office from the Japan Meteorological Agency website (As of March 2018)

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	22,288
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	Mt. 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)	22,288
August 30 - September 5, 2011	Typhoon TALAS (1112)	Kinki, Shikoku	98

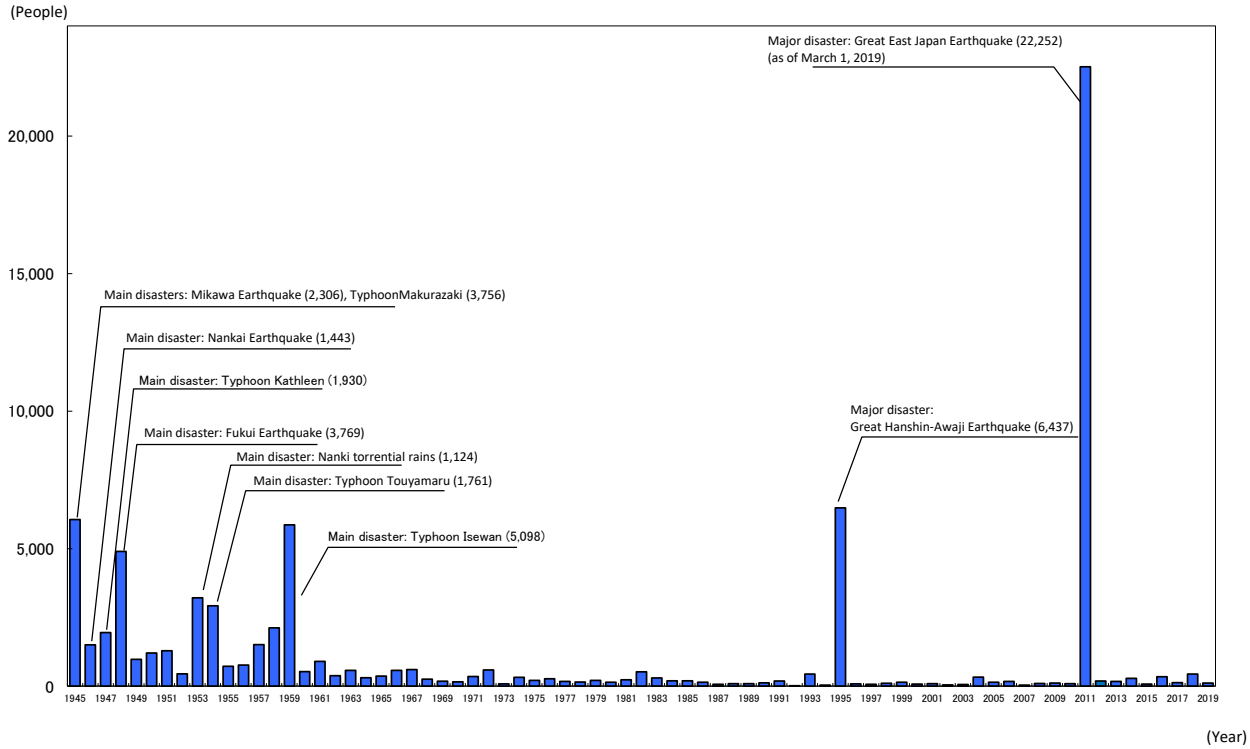
Date	Disaster	Main Affected Areas	Number of Fatalities and Missing
November 2011 - March 2012	Heavy Snow in 2011	From Northern Japan through into West Japan on the Japan Sea Coast	133
November 2012 - March 2013	Heavy Snow in 2012	From Northern Japan through into West Japan on the Japan Sea Coast	104
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 (1919)	Kanto, Tohoku Area	94

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 2019 Typhoon Hagibis, which affected wide areas chiefly in eastern Japan are as of April 10, 2020

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	114
1952	449	1969	183	1986	148	2003	62		
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	22,515		
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 2019 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	22,288	0	125	2	22,551
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	114	0	0	0	0	114

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 April 10, 2020)

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.	22,288	6,233	121,996	282,941	1,628	・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, landslides 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 landslides 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	・Cabinet 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	—	・Cabinet 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	379	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	・Cabinet 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	・Cabinet 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
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	・Dispatchment of government investigation team ・Invocation of Disaster Relief Act
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

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		Fatalities/ Missing Persons	Injured	Completely Destroyed	Half Destroyed	Above-floor Flooding	
Volcanic activity at Sakurajima [Volcanic Alert Level 4] (August 15, 2015)	・At around 07:00 on August 15, a series of volcanic earthquakes centered on the island occurred. Rapid crustal movement indicative of inflation of the volcanic edifice was also observed. ・At 10:15 that day, the JMA raised the volcanic alert level from 3 to 4 (Prepare to evacuate) (caution required in Arimura-cho and Furusato-cho, within 3km of the Showa crater and the Minamidake summit crater). ・At 16:50 that day, Kagoshima City issued evacuation advisories to the residents of the Arimura district of Arimura-cho, the Furusato district of Furusato-cho (areas within 3km of the crater), and the Shioyagamoto district of Kurokami-cho. ・At 18:10 that day, evacuation of all residents (77 people from 51 households) in the areas subject to evacuation was completed.	0	0	0	0	0	・Site inspection by Parliamentary Vice Minister ・Deployment of a Cabinet Office liaison team
Typhoon GONI (1515) (August 22-26, 2015)	・The typhoon that made landfall near Arao City in Kumamoto Prefecture after 06:00 on the 25th moved northward to northern Kyushu, maintaining its strong intensity, and reached the Sea of Japan during the daylight hours of the 25th. ・A maximum instantaneous wind speed of 71.0m was observed at 21:16 on the 23rd on Ishigaki Island, Okinawa Prefecture. In addition, the typhoon and warm, moist air flowing in from the south resulted in heavy rain over the Ryukyu Islands, West Japan, and the Tokai region, with more than 500mm of rain falling on Mie Prefecture in a single day on the 25th.	1	147	12	138	53	・Designation as an extremely severe disaster
Torrential Rain of September 2015 in the Kanto and Tohoku Regions [Including Typhoon ETAU (1518)] (September 9-11, 2015)	・After making landfall near Nishio City, Aichi Prefecture at around 09:30 on September 9, 2015 Typhoon ETAU (1518) moved on to the Sea of Japan and transformed into an extra-tropical cyclone at 15:00 that day. ・As a result of Typhoon ETAU (1518) and weather fronts, heavy rain fell over a wide area from western to northern Japan. In particular, between the 9th and the 11th, a southerly wind flowing into the extra-tropical cyclone into which Typhoon ETAU (1518) transformed and, subsequently, a southeasterly wind from the vicinity of Typhoon KILO (1517) supplied flows of moist air that triggered a succession of line-shaped precipitation systems, causing record-breaking rainfall in the Kanto and Tohoku regions and prompting the issue of emergency heavy rain warnings for Tochigi, Ibaraki, and Miyagi prefectures.	20	82	81	7,090	2,523	・Minister of State for Disaster Management issues a list of requests to relevant ministries and agencies ・Deployment of a Cabinet Office advance information-gathering team ・Dispatchment of government investigation team ・Cabinet 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
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
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

Name of Disaster	Major Events	Human Casualties (persons)		Houses Damaged (houses)			Remarks
		Fatalities/ Missing Persons	Injured	Completely Destroyed	Half Destroyed	Above-floor Flooding	
Heavy Rains from 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
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 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
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

Name of Disaster	Major Events	Human Casualties (persons)		Houses Damaged (houses)			Remarks
		Fatalities/ Missing Persons	Injured	Completely Destroyed	Half Destroyed	Above-floor Flooding	
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	・Cabinet 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
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	—

Name of Disaster	Major Events	Human Casualties (persons)		Houses Damaged (houses)			Remarks
		Fatalities/ Missing Persons	Injured	Completely Destroyed	Half Destroyed	Above-floor Flooding	
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 ・Cabinet 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
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 ・Cabinet 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 3 - 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	・Cabinet 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 ・Cabinet 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 28 – 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	—	—

Name of Disaster	Major Events	Human Casualties (persons)		Houses Damaged (houses)			Remarks
		Fatalities/ Missing Persons	Injured	Completely Destroyed	Half Destroyed	Above-floor Flooding	
Earthquake centered offshore of Yamagata Prefecture (June 18, 2019)	Maximum seismic intensity of Upper 6	0	43	0	35	—	・Cabinet meeting (two times) ・Dispatchment of government investigation team
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	・Cabinet 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	2	216	・Cabinet meeting (once) ・Dispatchment of government investigation team ・Designation as an extremely severe disaster
Typhoon Krosa (1910) (August 12 – 16, 2019)	Typhoon Krosa (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	・Cabinet meeting (two times) ・Designation as an extremely severe disaster
Heavy rainfall related to Seasonal Rain Front in August 2019 (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	2	95	882	905	・Cabinet 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 (1915) (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.	3	150	391	4,204	121	・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
Typhoon Hagibis (1919) (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.	94	376	3,273	28,306	7,666	・Establishment of Major Disaster Management Headquarters ・Cabinet 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

*1 Established by a Cabinet 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.
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 31, 2020

	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 (1919) Major Disaster Management Headquarters	Oct. 13, 2019 – Mar. 31, 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 Cabinet 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 31, 2020

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

Year	Name of Disaster	Deployment Dates	Prefecture Surveyed	Team Leader
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 Rain Event of August 2019 related to the rain front	Aug. 31	Saga	Minister of State for Disaster Management
	Typhoon Hagibis (1919)	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 February 1, 2020

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	Aforementioned
			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 Rain Event of August 2019 related to the rain front	Aug. 28	Saga	20
	Disasters caused by Typhoon FAXAI (1915)	Sep. 8	Tokyo	1
	Electrical blackout due to the influence of 2019 Typhoon FAXAI (1915)	Sep. 9	Chiba	41
	Disasters caused by Typhoon HAGIBIS (1919)	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)

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	—	●	●							●	

*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 2019

14-1 Earthquake centered offshore of Yamagata Prefecture a seismic intensity [seismic intensity Upper 6]

(1) Damage

At around 10:22 p.m. on June 18, 2019, a magnitude 6.7 earthquake centered offshore of Yamagata Prefecture occurred. The earthquake registered a seismic intensity of Upper 6 in Murakami City, Niigata Prefecture and Lower 6 in Tsuruoka City, Yamagata Prefecture. As of February 2, 2020, casualties of this earthquake included 9 seriously injured and 34 lightly injured, while damage to homes included 35 half-destroyed and 1,619 partially damaged.

The quake caused considerable damage to tiled roofs in Murakami City, Niigata Prefecture and Tsuruoka City, Yamagata Prefecture, which were close to the epicenter and at 10:24 p.m. the same day, a tsunami warning was issued for some parts of Yamagata, Niigata and Ishikawa Prefectures and an 11 cm tsunami was recorded at Nezugaseki, Tsuruoka City, Yamagata Prefecture and an 8 cm tsunami at Akita in Akita Prefecture, Niigata in Niigata Prefecture and at Wajima Port in Ishikawa Prefecture.

(2) Response from Government Ministries and Agencies

Immediately after the earthquake, the government summoned an Emergency Meeting Team at the Cabinet Intensive Information Center. Following instructions of Mr. Abe, Prime Minister, the government held a ministerial meeting the next day to in order to ascertain the extent of the damage and share and confirm the government's response. Subsequently, a government investigation team led by Mr. Yamamoto, then Minister of State for Disaster Management was dispatched to Niigata and Yamagata Prefectures to directly assess damage to Yamakita Junior High School in Murakami City and the Nezugaseki Port in Tsuruoka City, as well as the problems faced by the affected areas and implement disaster response measures.

With the start of the rainy and typhoon seasons as well as a full tourism season, the government took measures to provide financial support to the affected municipalities to repair the roofs of houses and other structures damaged by disaster, countermeasures following reputational damage to the tourism industry after harmful rumors, restoration of roads, ports and harbors, fishing ports and school facilities, support for small- and medium-sized companies and small-scale businesses and financial support for related local governments.

14-2 Heavy Rain Event of August 2019 related to the rain front

(1) Damage

The front and humid air resulted in record-breaking heavy rainfall, exceeding 600 mm in northern Kyushu and elsewhere since August 26. In particular, as the threat of serious disasters intensified, with record-breaking heavy rainfall of at least 100 mm per hour recorded at dawn on August 28, an emergency heavy rain warning was issued for Saga, Fukuoka and Nagasaki prefectures at 5:50 a.m. the same day.

As of February 4, 2020, casualties of this heavy rainfall included 4 fatalities and 1 seriously injured person, while damage to homes included 95 completely destroyed, 882 half-destroyed and 905 inundations above floor level. In addition, this heavy rainfall caused oil to spill from an iron factory (in Omachi Town), damaging houses and others and flooding the Rokkaku River and Ushizu River areas.

(2) Response from Government Ministries and Agencies

Under the direction of Mr. Abe, Prime Minister, the government immediately took various emergency disaster control measures, including convening an Emergency Meeting Team and holding a Cabinet meeting and an Inter-Agency Disaster Management Meeting as well as deploying a Cabinet Office advance information-gathering team to the Saga Prefectural Office to support local offices in their disaster response measures and work with the affected local governments to implement disaster response measures.

In the affected areas, units of the Self-Defense Forces, in response to a request from the Saga Prefectural Governor, supported the daily lives of those affected, such as bathing and food service assistance, set up oil fences and set up and collected oil absorption mats in response to oil spills from ironworks, installed and collected oil absorption mats by boat at the mouth of the Rokkaku River to prevent oil spills into the Ariake Sea and the Ministry of Land, Infrastructure, Transport and Tourism (MLIT) mobilized drainage pump vehicles and others from regional development bureaus across Japan to drain water from the Rokkaku River to cope with flooding damage.

In addition, given that many people, mainly in Saga Prefecture, were forced to live in evacuation centers, we implemented a “push-mode goods support” program to procure and transport goods without awaiting requests

from the affected areas and proceeded to improve the living environment at the evacuation centers by procuring and shipping vital daily necessities such as beverages and food.

Due to this heavy rain, the Disaster Relief Act was invoked in respect of 10 cities and 10 towns while the Act on Support for Reconstructing Livelihoods of the Affected due to Disaster was invoked in respect of 2 cities and 1 town in Saga Prefecture.

[Invocation of the Disaster Relief Act]
[Saga Prefecture] Saga City, Karatsu City, Tosu City, Taku City, Imari City, Takeo City, Kashima City, Ogi City, Ureshino City, Kanzaki City, Yoshinogari Town in Kanzaki-gun, Kiyama Town in Miyaki-gun, Kamimine Town in Miyaki-gun, Miyaki Town in Miyaki-gun, Genkai Town in Higashi Matsuura-gun, Arita Town in Nishimatsuura-gun, Omachi Town in Kishima-gun, Kouhoku Town in Kishima-gun, Shiraishi Town in Kishima-gun, Tara Town in Fujitsu-gun (Date of invocation: August 28)

[Invocation of the Act on Support for Reconstructing Livelihoods of the Affected due to Disaster]
[Saga Prefecture] Saga City, Takeo City, and Omachi Town in Kishima-gun (Date of occurrence: August 28)

The status of the extremely severe disaster designation for this disaster is as follows:

Disasters caused by rainstorms and torrential rains from August 13 to September 24, 2019 (*Heavy rains from fronts starting from August to September 2019 (including rainstorms from Typhoons Krosa, Lingling, Faxai, and Tapah)).

Announcement of potential designation on September 6 and 20, approved by the Cabinet on October 11

Partial revisions of the Cabinet Order approved by the Cabinet on March 13, 2020(*)

Area	Applicable Measures
Nationwide	Special measures on subsidies for disaster recovery projects for agricultural land Special cases of subsidies for disaster recovery projects for agricultural, forestry, and fisheries shared-used facilities Inclusion of funds for the redemption of principal and interest related to small disaster bonds in the standard budget request
<u>Niimi City, Okayama Prefecture</u> Taku City and Omachi Town, Saga Prefecture Tsushima City, Nagasaki Prefecture	Special financial support for disaster recovery projects for public works facilities Inclusion of funds for the redemption of principal and interest related to small disaster bonds in the standard budget request
Kyonan Town, Chiba Prefecture Takeo City and Omachi Town, Saga Prefecture	Special provision concerning disaster-related credit guarantees under the Small and Medium-sized Enterprise Credit Insurance Act

(Areas added by the Cabinet Order for partial revisions (*) are underlined)

14-3 Typhoon Faxai (1915)

(1) Damage

From September 7 to 8, Typhoon Faxai (1915) moved northward from the ocean surrounding the Ogasawara Islands to the Izu Islands, Typhoon Faxai passed near the Miura Peninsula before 3:00 a.m. on September 9 and made powerful landfall near Chiba City before 5:00 a.m. Subsequently, the typhoon blew out offshore of Ibaraki Prefecture on the morning of the same day, but as the typhoon approached and passed Japan, fierce wind and rain hit the Izu Islands, the southern Kanto region and elsewhere. The storm was record-breaking, with many points recording the highest ever maximum wind speeds and maximum instantaneous wind speeds recorded in Japan. In particular, a maximum wind velocity of 35.9 m and maximum instantaneous wind speed of 57.5 m were observed in Chiba City.

In this typhoon, as of December 23, 2019, earthquake victims included 3 fatalities and 13 seriously injured as well as 391 completely destroyed, 4,204 half-destroyed and 72,279 partially destroyed homes. Power outages and water cuts occurred one after another, mainly in Chiba Prefecture, comprising a peak of around 930,000 power outages in households and 140,000 water cuts (maximum) and significantly damaging lifelines, including prolonged restoration work due to the time required to assess damage and dispose of fallen trees at the scene.

(2) Response from Government Ministries and Agencies

On September 6, before the typhoon made landfall, an Inter-Agency Disaster Alert Meeting was held to ensure evacuation/warning arrangements by the government and on September 8, the Japan Meteorological Agency (JMA) held a special press conference to strongly urge people to take action to protect their own lives and those of their loved ones. Since September 9, the national government dispatched liaison officers to the Chiba Prefectural Government and municipalities to establish a liaison system and on 10, in the presence of Mr. Yamamoto, then Minister of State for Disaster Management, an Inter-Agency Disaster Management Meeting was held (15 meetings were held in total since then). In addition, the same day, a Cabinet Office investigation team was dispatched to Chiba Prefecture and Mr. Takeda, Minister of State for Disaster Management visited Chiba Prefecture and Tokyo Metropolitan Government (on 12: Chiba Prefecture Government Office, Katori City and Tako Town; on 15: Oshima and Niijima in Tokyo; on 16: Tateyama City, Kyonan Town and Kimitsu City in Chiba Prefecture) and Ms. Imai, Parliamentary Vice-Minister of Cabinet Officevisited Chiba Prefecture (on 19: Chiba Prefecture Government Office, Kimitsu City and Futtsu City; on 27: Tateyama City and Sodegaura City) to directly confirm damage and identify needs in affected areas. The entire government assisted the victims.

Given that many people were forced to live in shelters due to power outages and suspension of water supply, etc., the Cabinet approved the use of about 1.32 billion yen in reserve funds on September 17, assisted the victims by procuring and shipping water, food, cardboard beds and other supplies necessary for the living environment and the lives of evacuees in shelters. In addition, the Japanese government made concerted efforts to assist victims; the Self-Defense Forces units provided water and bathing assistance, the Japan Coast Guard used patrol vessels and craft for bathing and water supply assistance and the Japan Tourism Agency met requests from lodging organizations in Chiba Prefecture to provide bathing and cooking assistance.

Besides, in response to Typhoon Faxai (1915), support staff were deployed to affected municipalities based on a “staff allocation system to support local governments in affected areas”, which started operation in March 2018 and saw around 310 staff in the General Adviser Team sent from 9 prefectures and municipalities to nine affected municipalities to support the operations of the disaster management headquarters in the affected areas. In addition, supporting counterparts to 9 affected municipalities were determined and a total of approximately 3,500 support employees were deployed from 16 prefectures and municipalities for building investigation to issue Disaster-Affected Certificates and shelter management.

This typhoon damaged the roofs of quite a few homes and many were also flooded due to rainfall with immediate strong winds, significantly disrupting the daily lives of local people. This was an opportunity to expand the scope of the emergency repair system under the Disaster Relief Law, reflecting the need to ensure stability in the lives of the affected. Specifically, based on the percentage of damage to roofs and walls, etc. of a house (the damage percentage), destroyed houses were formerly classified into four categories: “completely destroyed,” “largely destroyed,” “half-destroyed,” and "less than half-destroyed." This time, “less than half-destroyed” was subdivided into two categories and destruction was subdivided into five categories: where the damage percentage was 10% or more and less than 20%, namely close to half-destroyed, it was redefined as “partial destruction” (quasi-half-destroyed) (the standard amount is 300,000 yen or less) and five new categories of emergency repairs were included. This system, which came into effect on August 28, 2019 and has been supported since heavy rainfall associated with the front in Saga Prefecture in August the same year, covered damage caused by the series of disasters from Typhoons Faxai (1915) to Hagibis (1919) (including the heavy rainfall from October 24 to 26) as well as other disasters to which the Disaster Relief Act was applied.

On February 19, the Japan Meteorological Agency named Typhoon Faxai (1915) in 2019 “2019 Boso Peninsula Typhoon” as a natural disaster that caused remarkable damage.

Due to the typhoon disaster, the Disaster Relief Act was invoked in respect of 2 prefectures and 42 municipalities, while the Act on Support for Reconstructing Livelihoods of the Affected due to Disaster was invoked in respect of 4 prefectures and 101 municipalities.

[Invocation of the Disaster Relief Act]

[Chiba Prefecture]	Chuo-ku, Hanamigawa-ku, Inage-ku, Wakaba-ku, and Midori-ku in Chiba City; Choshi City, Tateyama City, Kisarazu City, Mobara City, Narita City, Sakura City, Togane City, Asahi City, Katsuura City, Ichihara City, Kamogawa City, Kimitsu City, Futtsu City, Yotsukaido City, Sodegaura City, Yachimata City, Inzai City, Tomisato City, Minamiboso City, Sosa City, Katori City, Sammu City, Isumi City, Oamishirasato City, Shisui Town in Inba-gun, Sakae Town in Inba-gun, Kozaki Town in Katori-gun, Tako Town in Katori-gun, Tonosho Town in Katori-gun, Kujukuri Town in Sanbu-gun, Shibayama Town in Sanbu-gun, Yokoshibahikari Town in Sanbu-gun, Ichinomiya Town in Chosei-gun, Mutsuzawa Town in Chosei-gun, Chosei Village in Chosei-gun, Shirako Town in Chosei-gun, Nagara Town in Chosei-gun, Chonan Town in Chosei-gun, Otaki Town in Isumi-gun, and Kyonan Town in Awa-gun (Date of Invocation: September 9)
[Tokyo Metropolis]	Tosho Oshima Town (Date of invocation: September 8)

[Invocation of the Act on Support for Reconstructing Livelihoods of the Affected due to Disaster]
[Ibaraki Prefecture] All areas in the prefecture (Date of occurrence: September 9)
[Chiba Prefecture] All areas in the prefecture (Date of occurrence: September 9)
[Tokyo Metropolis] Oshima Town and Niijima Village (Date of occurrence: September 8)
[Kanagawa Prefecture] Yokohama City (Date of occurrence: September 9)
(*1) Ibaraki Prefecture experienced a series of disasters from Typhoons Faxai (1915) to Hagibis (1919)
(*2) Chiba Prefecture experienced a series of disasters from Typhoons Faxai (1915) to heavy rain on October 25

The status of the extremely severe disaster designation for this disaster is as follows:

Disasters caused by rainstorms and torrential rains from August 13 to September 24, 2019 (*Heavy rains from fronts starting from August to September 2019 (including rainstorms from Typhoons Krosa (1910), Lingling (1913), Faxai (1915), and Tapah (1917))).

Announcement of potential designation on September 6 and 20, approved by the Cabinet on October 11

Partial revisions of the Cabinet Order approved by the Cabinet on March 13, 2020(*)

Area	Applicable Measures
Nationwide	Special measures on subsidies for disaster recovery projects for agricultural land Special cases of subsidies for disaster recovery projects for agricultural, forestry, and fisheries shared-used facilities Inclusion of funds for the redemption of principal and interest related to small disaster bonds in the standard budget request
Niimi City, Okayama Prefecture Taku City and Omachi Town, Saga Prefecture Tsushima City, Nagasaki Prefecture	Special financial support for disaster recovery projects for public works facilities Inclusion of funds for the redemption of principal and interest related to small disaster bonds in the standard budget request
Kyonan Town, Chiba Prefecture Takeo City and Omachi Town, Saga Prefecture	Special provision concerning disaster-related credit guarantees under the Small and Medium-sized Enterprise Credit Insurance Act

(Areas added by the Cabinet Order for partial revisions (*) are underlined)

14-4 Typhoon Hagibis (1919)

(1) Damage

After making landfall on the Izu Peninsula before 7 p.m. on October 12 with great intensity, Typhoon Hagibis traversed the Kanto region and the East Sea in the Tohoku region before dawn on 13. The rain clouds having developed in the typhoon and the moist air around it caused record rainfall over a wide area in Shizuoka and Niigata Prefectures, as well as in the Kanto-Koshin and Tohoku regions (The total rainfall from 10 to 13 reached 1,000 mm in Hakone Town, Kanagawa Prefecture and exceeded 500 mm at 17 locations, mainly in eastern Japan). This record rainfall meant emergency heavy rain warnings were issued at 3:30 p.m. on 12 for seven prefectures (Shizuoka, Kanagawa, Tokyo, Saitama, Gunma, Yamanashi and Nagano), at 7:50 p.m. on 12 for five prefectures (Ibaraki, Tochigi, Niigata, Fukushima and Miyagi) and at 0:40 a.m. on 13 for Iwate.

Casualties of this typhoon included 94 fatalities/missing and 42 seriously injured as well as damage to houses, including 3,273 completely destroyed, 28,306 half-destroyed, 35.437 partially damaged, and 7,666 with above-floor flooding as of April 10, 2020. In addition, a series of power outages and water cuts occurred in the Kanto-Koshinetsu region, Tohoku region and elsewhere, comprising a maximum of 520,000 power outages in households and about 168,000 water cuts and significantly damaging lifelines.

Many rivers burst: 14 points at seven government-administered rivers of six riverine systems and 128 points in 20 prefectural government-administered rivers of 67 riverine systems. For Nagano City in Nagano Prefecture, the levee breach in the Chikuma River of the Shinano River System resulted in considerable damage and the bridge abutment on the left bank of the Chikuma River bridge on the Ueda Dentetsu Bessho Line, which runs over the Chikuma River, fell over, and in the Abukuma River of the Abukuma River System, sediment and flood inundation occurred in the watershed, and large amounts of sediment flooded the river channel in a slow-gradient section of the Gofukudani River and other tributary rivers and caused wide-spread damages to many houses.

(2) Response from Government Ministries and Agencies

The government held a series of Inter-Agency Disaster Alert Meetings on October 8, 2019, before the typhoon approached and on 11 before the typhoon hit Japan to prepare for emergencies. At the same time, Mr. Takeda, Minister of State for Disaster Management appealed for early evacuation and securing safety. In addition, on 11, the

government held a Ministerial Meeting and Mr. Abe, Prime Minister reaffirmed instructions to make sufficient preparations as well as fully collect information on damage with a sense of tension and to spare no effort in implementing measures to ensure public safety and security. On 13, immediately after the typhoon had passed, the government established the "Major Disaster Management Headquarters for Typhoon Hagibis in 2019," which held a total of 18 meetings and on 14, the "Team to Support the Daily Lives of Affected People", comprising administrative vice-minister-class officials of ministries and agencies to determine the extent of damage, the overall coordination of response measures and provide life support activities, etc. based on the problems and needs in the affected areas. On 13, the Cabinet dispatched an investigative team to 6 Prefecture Government Offices in Fukushima, Nagano, Saitama, Miyagi, Tochigi and Ibaraki Prefectures. Government ministries and agencies also dispatched employees to the affected areas to directly coordinate with the heads and executives of local governments for quick decision-making and cross-ministry support. Besides, the government implemented emergency disaster response measures after directly confirming the extent of damage: the deployment of a government investigation team led by Mr. Takeda, Minister of State for Disaster Management (14: Fukushima Prefecture), the visit by Mr. Abe, Prime Minister and Mr. Takeda, Minister of State for Disaster Management to the affected sites (17: Fukushima and Miyagi Prefectures and 20: Nagano Prefecture)(*). Furthermore, on October 18, the government made all possible efforts to promote emergency disaster control measures, e.g. designating Typhoon Hagibis in 2019 a Specified Disaster and taking special measures to protect rights of the affected.

* Mr. Takeda, Minister of State for Disaster Management visited Nagano Prefecture on October 13, Ibaraki, Tochigi and Fukushima Prefectures on 21, Kanagawa Prefecture on 24, Chiba Prefecture on 26 and Iwate Prefecture on 28, Shizuoka Prefecture on November 9 while Ms. Imai, Parliamentary Vice-Minister of Cabinet Office visited Chiba Prefecture on October 13, Chiba Prefecture on 14, Nagano Prefecture on 20, Ibaraki, Tochigi and Fukushima Prefectures on 21 and Chiba Prefecture on 26.

The police, Fire and Disaster Management Agency, SDF and the Ministry of Land, Infrastructure, Transport and Tourism (MLIT) dispatched units from across Japan to the affected areas immediately after the disasters to conduct rescue and search operations as well as efforts to prevent secondary damage and provide life support. The scale was as follows: the Police Disaster Response Unit conducted around 4,400 operations; the Emergency Fire Rescue Team a total of around 3,000; the Self-Defense Forces mustered around 79,000 personnel and the Technical Emergency Control Force (TEC-FORCE), a total of around 31,000.

In response to Typhoon Hagibis, support staff were deployed to affected municipalities under the "staff allocation system to support local governments in affected areas": a total of approximately 570 staff in the General Adviser Team were sent from 10 prefectures and municipalities to 10 affected municipalities to support operations of the Disaster Management Headquarters. In addition, supporting counterparts to 27 affected municipalities were determined and a total of approximately 9,300 support employees were deployed from 34 prefectures and municipalities for building investigation to issue Disaster-Affected Certificates and shelter management.

At the 10th meeting of the Major Disaster Management Headquarters held on October 20, Mr. Abe, Prime Minister instructed the government to develop a package to restore the lives and livelihoods of those affected. In responding to his instructions, the government set out measures to meet the needs of disaster victims such as housing reconstruction, support for small- and medium-sized businesses and agricultural, forestry and fishery industries, disaster recovery and smooth disposal of disaster waste and on November 8, the Cabinet approved the use of approximately ¥131.6 billion in reserve funds so that disaster-affected local governments could tackle the issue without worrying about financial resources. On October 29, the Cabinet approved the designation of Typhoon Hagibis as an emergency disaster under the "Act on Reconstruction from Large-Scale Disasters." It was the second designation since the 2016 Kumamoto Earthquake. Disaster recovery projects on six roads, which were requested by the affected local governments, promptly started under their direct representative authority.

Furthermore, on January 30, 2019, the (1st) supplementary budget for FY2019 general account was enacted, which included a budget of approximately 2,308.6 billion yen needed for post-disaster recovery and reconstruction and ensuring safety and security.

On February 19, the Japan Meteorological Agency named Typhoon Hagibis in 2019 as the "2019 Eastern Japan Typhoon."

Due to the typhoon disaster, the Disaster Relief Act was invoked in respect of 390 municipalities in 14 prefectures while the Act on Support for Reconstructing Livelihoods of the Affected due to Disaster was invoked in respect of 359 municipalities (*) in 14 prefectures.

[Invocation of the Disaster Relief Act]

[Iwate Prefecture] Miyako City, Ofunato City, Kuji City, Ichinoseki City, Rikuzentakata City, Kamaishi City, Sumita Town in Kesen-gun, Otsuchi Town in Kamihei-gun, Yamada Town in Shimohei-gun, Iwaizumi Town in Shimohei-gun, Tanohata Village in Shimohei-gun, Fudai Village in Shimohei-gun, Noda Village in Kunohe-gun, and Hirono Town in Kunohe-gun(Date of invocation: October 12)

[Miyagi Prefecture] Sendai City, Ishinomaki City, Shiogama City, Kesennuma City, Shiraishi City, Natori City, Kakuda City, Tagajo City, Iwanuma City, Tome City, Kurihara City, Higashimatsushima City, Osaki City, Tomiya City, Zao Town in Katta-gun, Shichikashuku Town in Katta-gun, Ogawara Town in Shibata-gun, Murata Town in Shibata-gun, Shibata Town in Shibata-gun, Kawasaki Town in Shibata-gun, Marumori Town in Igu-gun, Watari Town in Watari-gun, Yamamoto Town in Watari-gun, Matsushima Town in Miyagi-gun, Shichigahama Town in Miyagi-gun, Rifu Town in Miyagi-gun, Taiwa Town in Kurokawa-gun, Osato Town in Kurokawa-gun, Ohira Village in Kurokawa-gun, Shikama Town in Kami-gun, Kami Town in Kami-gun, Wakuya Town in Toda-gun, Misato Town in Toda-gun, Onagawa Town in Oshika-gun, Minamisanriku Town in Motoyoshi-gun (Date of invocation: October 12)

[Fukushima Prefecture] Fukushima City, Aizu-Wakamatsu City, Koriyama City, Iwaki City, Shirakawa City, Sukagawa City, Kitakata City, Soma City, Nihonmatsu City, Tamura City, Minamisoma City, Date City, Motomiya City, Kori Town in Date-gun, Kunimi Town in Date-gun, Kawamata Town in Date-gun, Otama Village in Adachi-gun, Kagamiishi Town in Iwase-gun, Ten-ei Village in Iwase-gun, Shimogo Town in Minamiaizu-gun, Hinoemata Village in Minamiaizu-gun, Tadami Town in Minamiaizu-gun, Minamiaizu Town in Minamiaizu-gun, Bandai Town in Yama-gun, Inawashiro Town in Yama-gun, Aizubange Town in Kawanuma-gun, Yanaizu Town in Kawanuma-gun, Mishima Town in Onuma-gun, Kaneyama Town in Onuma-gun, Aizumisato Town in Onuma-gun, Nishigo village in Nishishirakawa-gun, Izumizaki Village in Nishishirakawa-gun, Nakajima Village in Nishishirakawa-gun, Yabuki Town in Nishishirakawa-gun, Tanagura Town in Higashishirakawa-gun, Yamatsuri Town in Higashishirakawa-gun, Hanawa Town in Higashishirakawa-gun, Samegawa Village in Higashishirakawa-gun, Ishikawa Town in Ishikawa-gun, Tamakawa Village in Ishikawa-gun, Hirata Village in Ishikawa-gun, Asakawa Town in Ishikawa-gun, Furudono Town in Ishikawa-gun, Miharu Town in Tamura-gun, Ono Town in Tamura-gun, Hirono Town in Futaba-gun, Naraha Town in Futaba-gun, Tomioka Town in Futaba-gun, Kawauchi Village in Futaba-gun, Okuma Town in Futaba-gun, Futaba Town in Futaba-gun, Namie Town in Futaba-gun, Katsurao Village in Futaba-gun, Shinchi Town in Soma-gun, and Iitate Village in Soma-gun. (Date of invocation: October 12)

[Ibaraki Prefecture] Mito City, Hitachi City, Tsuchiura City, Furukawa City, Ishioka City, Yuki City, Shimotsuma City, Joso City, Hitachiota City, Takahagi City, Kitaibaraki City, Kasama City, Tsukuba City, Hitachinaka City, Moriya City, Hitachiomiya City, Naka City, Chikusei City, Bando City, Kasumigaura City, Sakuragawa City, Kamisu City, Hokota City, Tsukubamirai City, Ibaraki Town in Higashiibaraki-gun, Oarai Town in Higashiibaraki-gun, Shirosato Town in Higashiibaraki-gun, Daigo Town in Kuji-gun, Yachiyo Town in Yuki-gun, Sakai Town in Sashima-gun (Date of invocation: October 12)

[Tochigi Prefecture] Utsunomiya City, Ashikaga City, Tochigi City, Sano City, Kanuma City, Nikko City, Ohtawara City, Yaita City, Nasushiobara City, Sakura City, Shimotsuke City, Kaminokawa Town in Kawachi-gun, Motegi Town in Haga-gun, Ichikai Town in Haga-gun, Mibu Town in Shimotsuga-gun, Nasukarasuyama City, Oyama City, Shioya Town in Shioya-gun, Takanezawa Town in Shioya-gun, Nasu Town in Nasu-gun, Nakagawa Town in Nasu-gun (Date of invocation: October 12)

[Gunma Prefecture] Maebashi City, Takasaki City, Kiryu City, Isesaki City, Ota City, Numata City, Tatebayashi City, Shibukawa City, Fujioka City, Tomioka City, Annaka City, Midori City, Shinto Village in Kitagunma-gun, Yoshioka Town Kitagunma-gun, Ueno Village in Tano-gun, Kanna Town in Tano-gun, Shimonita Town in Kanra-gun, Nanmoku Village in Kanra-gun, Kanra Town in Kanra-gun, Nakanojo Town in Agatsuma-gun, Naganohara Town in Agatsuma-gun, Tsumagoi Village in Agatsuma-gun, Kusatsu Town in Agatsuma-gun, Takayama Village in Agatsuma-gun, Higashiagatsuma Town in Agatsuma-gun, Minakami Town in Tone-gun, Tamamura Town in Sawa-gun, Chiyoda Town in Oura-gun, Oizumi Town in Oura-gun, Ora Town in Oura-gun (Date of invocation: October 12)

[Saitama Prefecture] Saitama City, Kawagoe City, Kumagaya City, Kawaguchi City, Gyoda City, Chichibu City, Tokorozawa City, Hanno City, Honjo City, Higashimatsuyama City, Kasukabe City, Sayama City, Fukaya City, Ageo City, Koshigaya City, Warabi City, Toda City, Iruma City, Asaka City, Fujimino City, Shiki City, Wako City, Niiza City, Okegawa City, Yashio City, Fujimi City, Sakado City, Tsurugashima City, Hidaka City, Miyoshi Town in Iruma-gun, Moroyama Town in Iruma-gun, Ogose Town in Iruma-gun, Namekawa Town in Hiki-gun, Arashiyama Town in Hiki-gun, Ogawa Town in Hiki-gun, Kawajima Town in Hiki-gun, Yoshimi Town in Hiki-gun, Hatoyama Town in Hiki-gun, Tokigawa Town in Hiki-gun, Yokose Town in Chichibu-gun, Minano Town in Chichibu-gun, Nagatoro Town in Chichibu-gun, Ogano Town in Chichibu-gun, Higashichichibu

Village in Chichibu-gun, Misato Town in Kodama-gun, Kamikawa Town in Kodama-gun, Kamisato Town in Kodama-gun, Yorii Town in Osato-gun (Date of invocation: October 12)

[Tokyo Metropolis] Sumida-ku, Ota-ku, Setagaya-ku, Toshima-ku, Kita-ku, Itabashi-ku, Nerima-ku, Hachioji City, Tachikawa City, Ome City, Fuchu City, Akishima City, Chofu City, Machida City, Koganei City, Hino City, Fussa City, Komae City, Higashiyamato City, Musashimurayama City, Tama City, Inagi City, Hamura City, Akiruno City, Mizuho Town in Nishitama-gun, Hinode Town in Nishitama-gun, Hinohara Village in Nishitama-gun, Okutama Town in Nishitama-gun (Date of invocation: October 12)

[Kanagawa Prefecture] Kawasaki City, Sagamihara City, Hiratsuka City, Odawara City, Chigasaki City, Hadano City, Atsugi City, Isehara City, Ebina City, Zama City, Minamiashigara City, Samukawa Town in Koza-gun, Oi Town in Ashigarakami-gun, Matsuda Town in Ashigarakami-gun, Yamakita Town in Ashigarakami-gun, Hakone Town in Ashigarashimo-gun, Yugawara Town in Ashigarashimo-gun, Aikawa Town in Aiko-gun, and Kiyokawa Village in Aiko-gun (Date of invocation: October 12)

[Niigata Prefecture] Joetsu City, Itoigawa City, and Myoko City (Date of invocation: October 12)

[Yamanashi Prefecture] Fujiyoshida City, Tsuru City, Yamanashi City, Otsuki City, Nirasaki City, Minami-Alps City, Hokuto City, Fuefuki City, Uenohara City, Ichikawamisato Town in Nishiyatsushiro-gun, Hayakawa Town in Minamikoma-gun, Minobu Town in Minamikoma-gun, Nanbu Town in Minamikoma-gun , Fujikawa Town in Minamikoma-gun ,Doshi Village in Minamitsuru-gun, Narusawa Village in Minamitsuru-gun, , Fujikawaguchiko Town in Minamitsuru-gun, Kosuge Village in Kitatsuru-gun and Tabayama Village in Kitatsuru-gun (Date of invocation: October 12)

[Nagano Prefecture] Nagano City, Matsumoto City, Ueda City, Okaya City, Suwa City, Suzaka City, Komoro City, Ina City, Nakano City, Iiyama City, Chino City, Shiojiri City, Saku City, Chikuma City, Tomi City, Azumino City, Koumi Town in Minamisaku-gun, Kawakami Village in Minamisaku-gun, Nanmoku Village in Minamisaku-gun, Minamiaiki Village in Minamisaku-gun, Kitiaiki Village in Minamisaku-gun, Sakuho Town in Minamisaku-gun, Karuizawa Town in Kitasaku-gun, Miyota Town in Kitasaku-gun, Tateshina Town in Kitasaku-gun, Aoki Village in Chiisagata-gun, Nagawa Town in Chiisagata-gun, Fujimi Town in Suwa-gun, Hara Village in Suwa-gun, Tatsuno Town in Kamiina-gun, Miyata Village in Kamiina-gun, Kiso Town in Kiso-gun, Omi Village in Higashichikuma-gun, Ikusaka Village in Higashichikuma-gun, Chikuhoku Village in Higashichikuma-gun, Sakaki Town in Hanishina-gun, Obuse Town in Kamitakai-gun, Takayama Village in Kamitakai-gun, Yamanouchi Town in Shimotakai-gun, Kijimadaira Village in Shimotakai-gun, Nozawaonsen Village in Shimotakai-gun, Iizuna Town in Kamiminochi-gun, and Sakae village in Shimominochi-gun (Date of invocation: October 12)

[Shizuoka Prefecture] Izunokuni City, Kannami Town in Tagata-gun (Date of invocation: October 12)

(*) In the municipalities of Chiba Prefecture and Tokyo Metropolis* where the Disaster Relief Act was applied in Typhoon Faxai, the Disaster Relief Act is also applied to Typhoon Hagibis as the lives and bodies of many people were threatened or might be harmed due to the disaster caused by Typhoon Hagibis in 2019 and are in need of continuous rescue.

[Chiba Prefecture] Chuo-ku, Hanamigawa-ku, Inage-ku, Wakaba-ku, and Midori-ku in Chiba City; Choshi City, Tateyama City, Kisarazu City, Mobara City, Narita City, Sakura City, Togane City, Asahi City, Katsuura City, Ichihara City, Kamogawa City, Kimitsu City, Futtsu City, Yotsukaido City, Sodegaura City, Yachimata City, Inzai City, Tomisato City, Minamiboso City, Sosa City, Katori City, Sammu City, Isumi City, Oamishirasato City, Shisui Town in Inba-gun, Sakae Town in Inba-gun, Kozaki Town in Katori-gun, Tako Town in Katori-gun, Tonosho Town in Katori-gun, Kujukuri Town in Sanbu-gun, Shibayama Town in Sanbu-gun, Yokoshibahikari Town in Sanbu-gun, Ichinomiya Town in Chosei-gun, Mutsuzawa Town in Chosei-gun, Chosei Village in Chosei-gun, Shirako Town in Chosei-gun, Nagara Town in Chosei-gun, Chonan Town in Chosei-gun, Otaki Town in Isumi-gun, and Kyonan Town in Awa-gun

[Tokyo Metropolis] Tosho Oshima Town

[Invocation of the Act on Support for Reconstructing Livelihoods of the Affected due to Disaster]
[Iwate Prefecture] Yamada Town, Miyako City, Kamaishi City, and Kuji City (Date of occurrence: October 12)
[Miyagi Prefecture] All areas in the prefecture (Date of occurrence: October 12)
[Fukushima Prefecture] All areas in the prefecture (Date of occurrence: October 12)
[Ibaraki Prefecture] All areas in the prefecture (Date of occurrence: October 12) (*1)
[Tochigi Prefecture] Utsunomiya City, Ashikaga City, Tochigi City, Sano City, Kanuma City, Oyama City, Nasukarasuyama City, Motegi Town (Date of occurrence: October 12)
[Gunma Prefecture] Tomioka City and Tsumagoi Village (Date of occurrence: October 12)
[Saitama Prefecture] All areas in the prefecture (Date of occurrence: October 12)
[Chiba Prefecture] All areas in the prefecture (Date of occurrence: September 9) (*2)
[Tokyo Metropolis] Akiruno City, Hinode Town, Hinohara Village, Ota-ku, Hachioji City and Setagaya-ku (Date of occurrence: October 12)
[Kanagawa Prefecture] Kawasaki City and Sagamihara City (Date of occurrence: October 12)
[Niigata Prefecture] Aga Town (Date of occurrence: October 12)
[Yamanashi Prefecture] Uenohara City (Date of occurrence: October 12)
[Nagano Prefecture] All areas in the prefecture (Date of occurrence: October 12)
[Shizuoka Prefecture] Izunokuni City, Kannami Town in Tagata-gun, and Izu City (Date of occurrence: October 12)
(*1) Ibaraki Prefecture experienced a series of disasters from Typhoons Faxai to Hagibis
(*2) Chiba Prefecture experienced a series of disasters from Typhoons Faxai to heavy rain on October 25

The status of the extremely severe disaster designation for this disaster is as follows:

Disasters caused by rainstorms and torrential rains from October 11 to 26, 2019 (*Disasters causing rain storms from Typhoons Hagibis, Neoguri, and Bualoi).

Announcement of potential designation on October 18 and 21, approved by the Cabinet on October 29

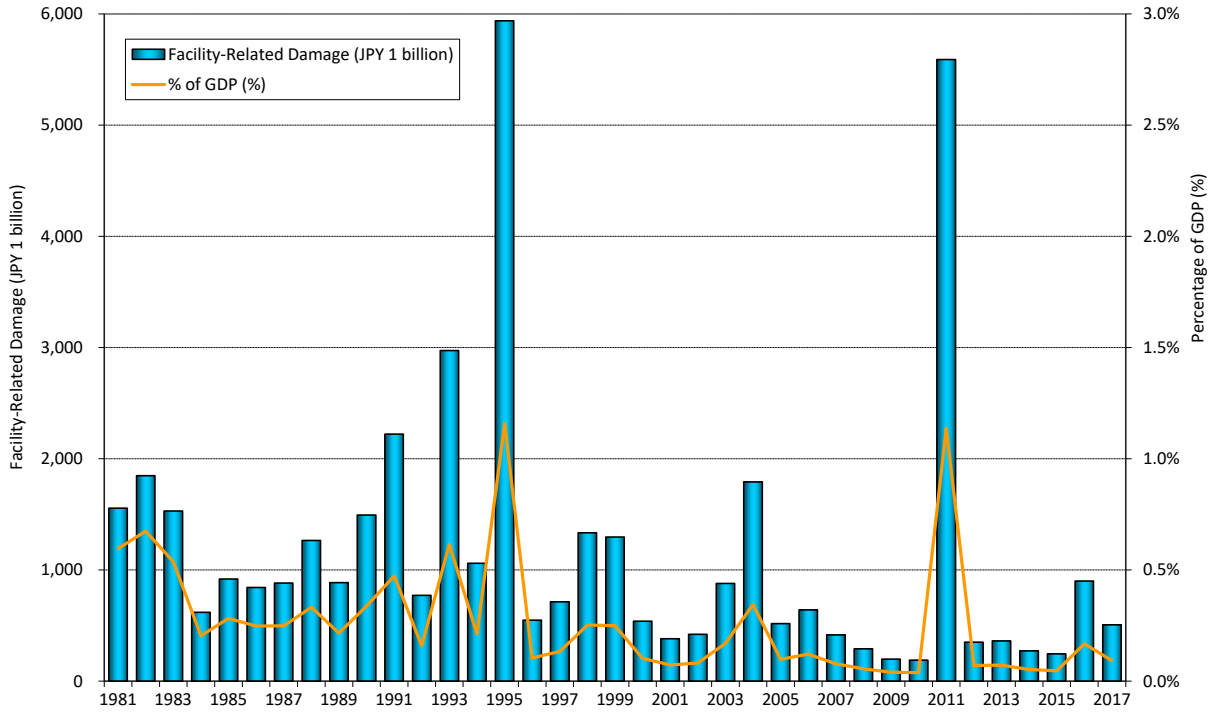
Additional announcement of potential designation on November 19

Partial revisions of the Cabinet Order approved by the Cabinet on November 29, 2019 (*1) and April 30, 2020 (*2)

Area	Applicable Measures
Nationwide	Special financial support for disaster recovery projects for public works facilities Special measures on subsidies for disaster recovery projects for agricultural land Special cases of subsidies for disaster recovery projects for agricultural, forestry, and fisheries shared-used facilities Subsidies for waterlogging removal projects conducted by land improvement districts, etc. Special provision concerning disaster-related credit guarantees under the Small and Medium-sized Enterprise Credit Insurance Act (The cabinet order for partial revision (*2) extends the special provision application period.) Subsidies for disaster recovery projects of facilities including business cooperatives Subsidies for disaster recovery projects for public social and educational facilities Subsidies for disaster recovery projects for private school facilities Special cases of cost coverage for projects implemented by municipalities to prevent infectious diseases Special cases of government loans based on the Act for the Welfare of Fatherless Families, motherless families and Widows Special cases of subsidies for public housing construction projects for victims Inclusion of funds for the redemption of principal and interest related to small disaster bonds in the standard budget request Special cases of paying job seeker benefits based on the Employment Insurance Act

(Applicable measures added by the Cabinet Order for partial revisions (*1) are underlined.)

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 2017, by Hazard

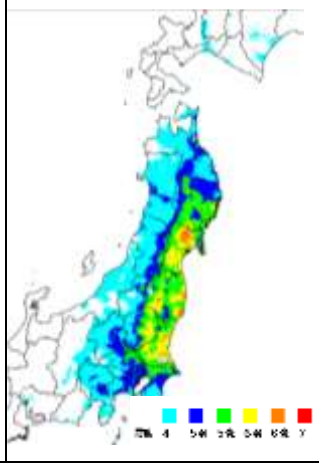
(Unit: JPY 1 million)

Facility type	Typhoon	Torrential rain	Earthquake	Heavy snowfall	Other	Total	Notes
Public works	403,887	39,371	52,729	0	16,919	512,907	Rivers, forestry conservation facilities, ports, etc.
Agriculture, forest, and fisheries industry	42,594	319,377	61,487	169	8,508	432,135	Farmland, agricultural facilities, forestry roads, fishing facilities, etc.
Educational facilities	6,938	18,999	9,449	68	442	35,895	School facilities, cultural heritages, etc.
Public welfare facilities	2,498	37,274	8,713	0	48	48,533	Social welfare facilities, waterworks facilities, etc.
Other facilities	8,6055	6,699	2,324	0	0	17,629	Nature parks, telegraph/telephone, urban facilities, etc.
Total	464,522	421,721	134,702	236	25,916	1,047,098	

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: 19,729 Missing persons: 2,559 (as of March 1, 2020)	Fatalities: 126,732 Missing persons: 93,662 (as of March 30, 2005)
Homes damaged (totally destroyed)	104,906	121,995 (as of March 1, 2019)	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

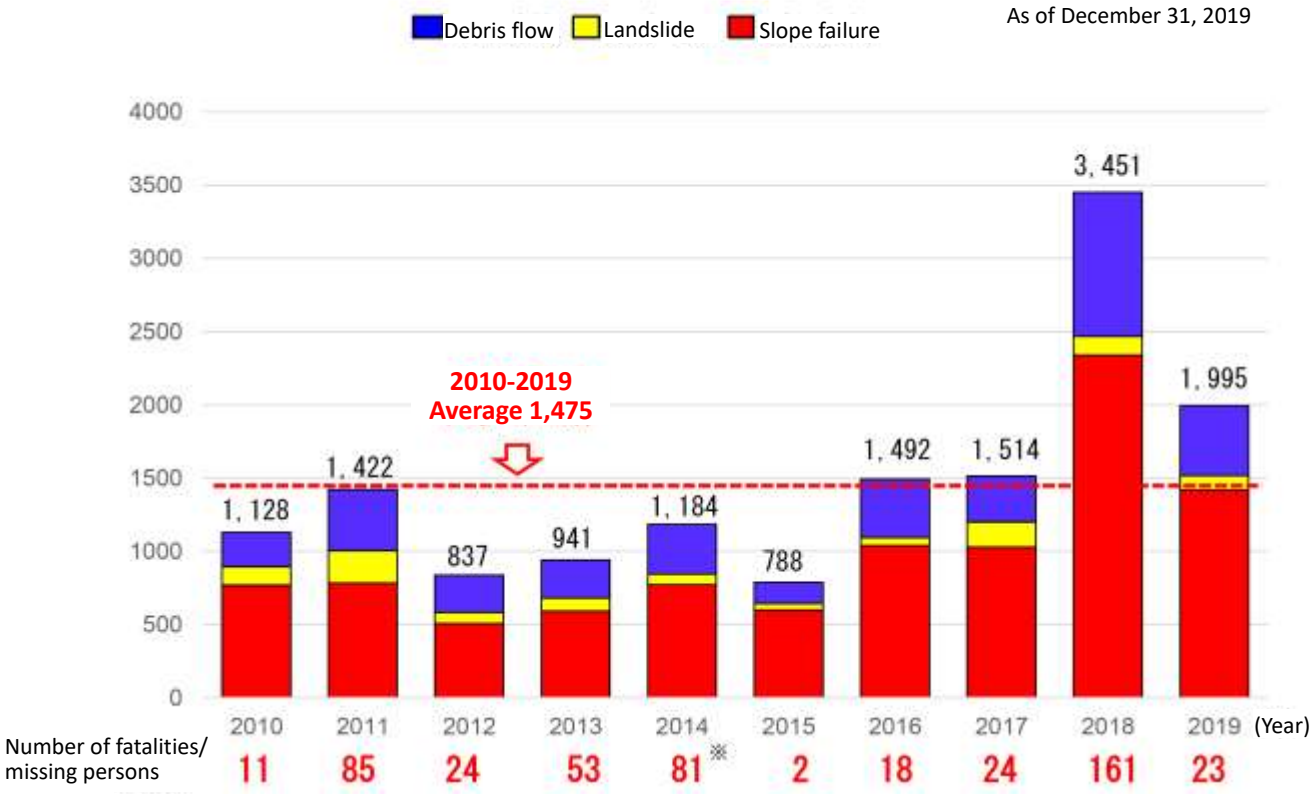
Year of Eruption	Name of Volcano	No. of Victims	Eruption and Damage Characteristics
1640	Hokkaido-Komagatake*	At least 700	Sector collapse, debris flow, tsunami, large amount of falling ash, pyroclastic flow
1663	Usuzan*	5	Nearby homes disappeared or were buried
1664	Unzendake	At least 30	Lava flow, 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	58	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"

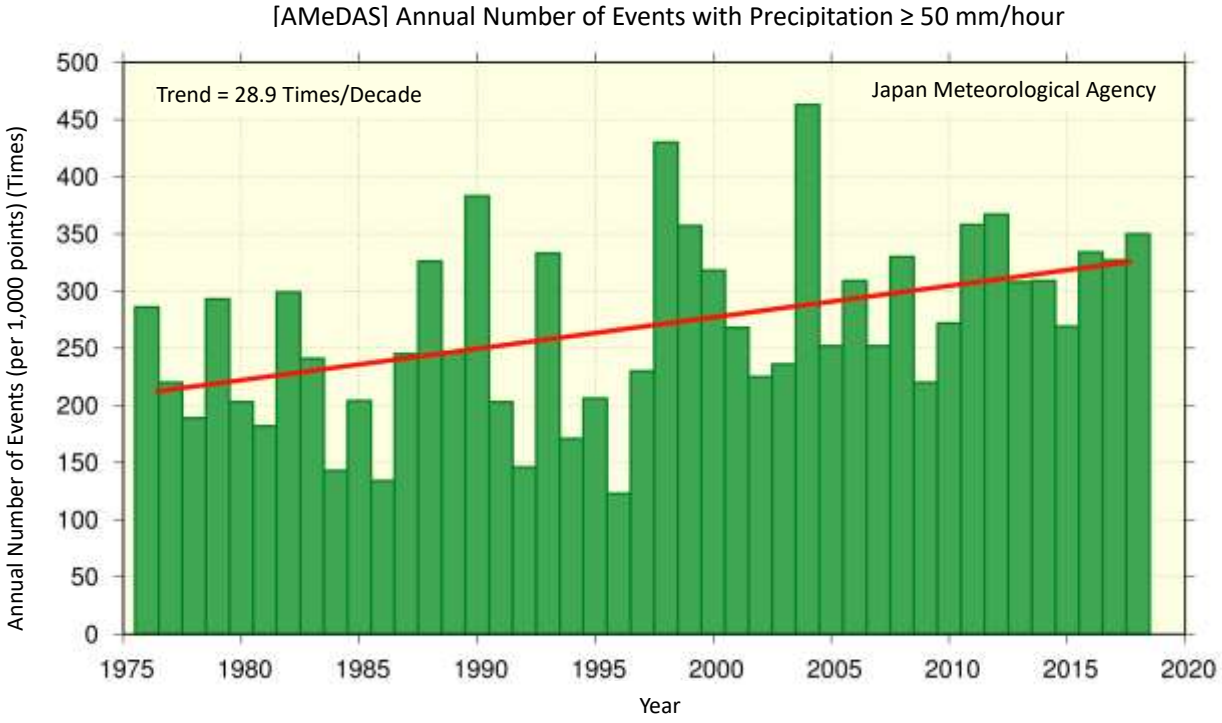
Source: Formulated by the Cabinet Office based on the National Catalogue of the Active Volcanoes in Japan (4th Edition) (edited by the Japan Meteorological Agency, 2013).

Fig. A-20 Number of Sediment Disasters



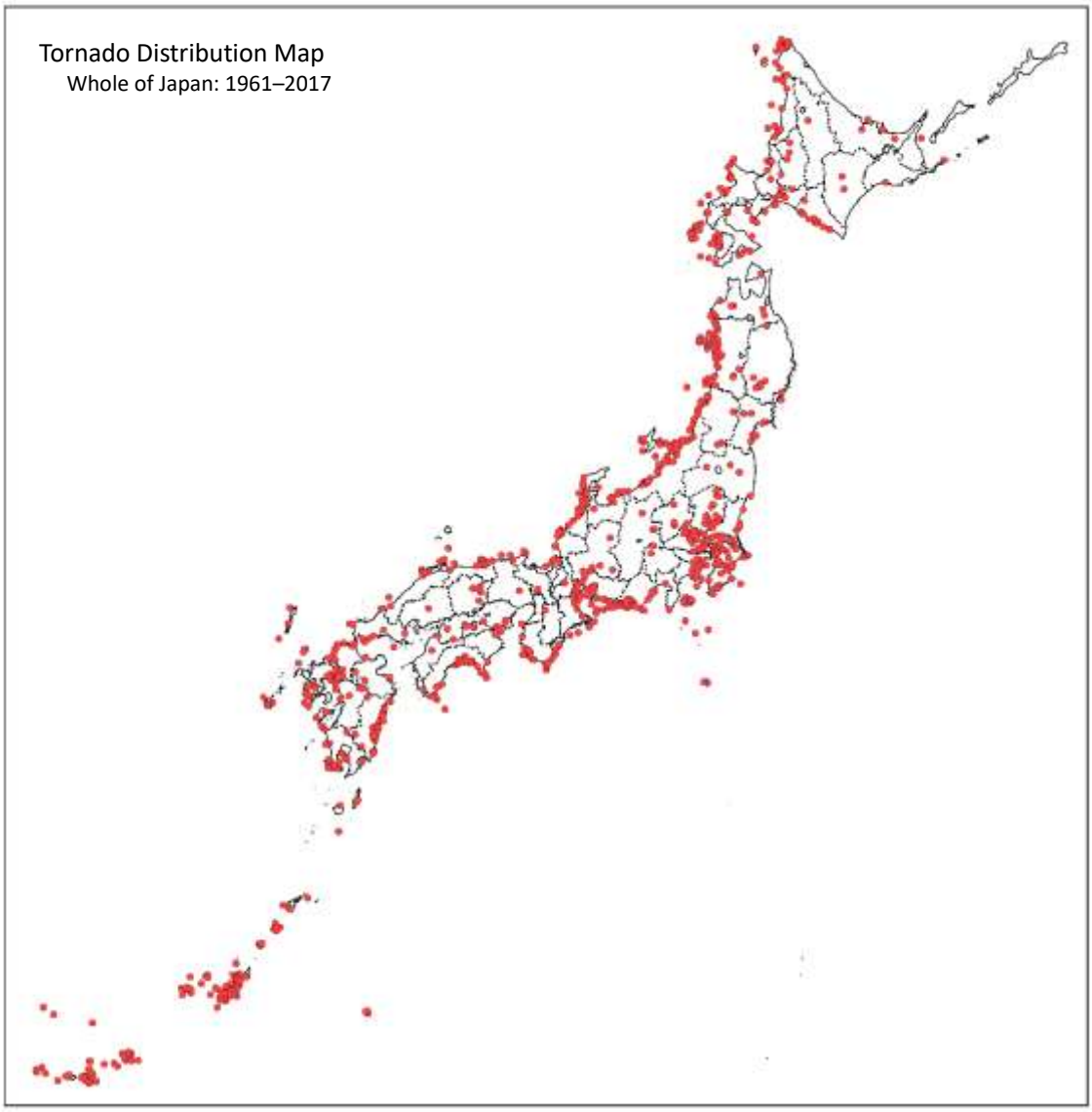
Source: Ministry of Land, Infrastructure, Transport and Tourism

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

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 February 19, 2020)

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 (2011 Great East Japan 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 2011 Great East Japan Earthquake is based on materials from JMA.

Source: US Geological Survey

Fig. A-25 Major Natural Disasters Since 2019

Date	Country	Disaster Type	Fatalities	Affected People	Direct Damages (USD 1,000)
Jan.-Feb. 2019	Pakistan	Drought	77	4,680,912	0
Jan.-Feb. 2019	North Korea	Drought	0	10,100,000	0
Jan.-Sep. 2019	Kenya	Drought	0	2,600,000	0
Jan. 1-Dec 31, 2019	South Africa	Drought	0	750,000	135,000
Jan. 4, 2019	Thailand	Tropical cyclone	7	720,885	0
Jan. 11-24, 2019	Algeria	Cold wave	8	125,025	0
Jan. 18-21, 2019	USA	Rainstorms	10	0	100,000
Jan. 27-Feb. 9, 2019	Australia	Flood	3	9,900	2,000,000
Feb.-Dec. 2019	Zimbabwe	Drought	0	7,600,000	0
Feb.-Oct. 2019	Somalia	Drought	0	1,500,000	0
Feb. 24-Apr. 10, 2019	Bolivia	Flood	60	335,540	0
Mar. 15, 2019	Mozambique	Rainstorms	603	1,501,500	2,000,000
Mar. 2, 2019	Afghanistan	Flood	63	129,100	0
Mar. 3-4, 2019	USA	Rainstorms	28	90	190,000
Mar. 4-10, 2019	Malawi	Flood	60	975,672	0
Mar. 12-28, 2019	USA	Flood	5	2,000	10,000,000
Mar. 14, 2019	Zimbabwe	Rainstorms	628	270,086	0
Mar. 16-18, 2019	Indonesia	Flood	206	59,540	103,000
Mar. 19-Apr. 10, 2019	Iran	Flood	70	10,001,076	2,500,000
Mar. 30-Apr. 3, 2019	Syria	Flood	2	235,000	0
Apr. 1-May 13, 2019	Paraguay	Flood	16	310,595	0
Apr. 12-15, 2019	USA	Rainstorms	8	177	925,000
Apr. 24-25, 2019	Comoros	Tropical cyclone	8	345,311	0
Apr. 25, 2019	Mozambique	Tropical cyclone	45	400,094	230,000
Apr. 26, 2019	Tanzania	Tropical cyclone	0	2,000,000	0
Apr. 27-May. 5, 2019	Canada	Flood	1	19,500	800,000
May-Dec. 2019	Namibia	Drought	0	289,644	0
May 2019	Paraguay	Flood	0	310,595	0
May 3, 2019	India	Tropical cyclone	50	20,000,000	1,810,000
Jun. 16-Jul. 1, 2019	China	Flood	300	4,500,000	6,200,000
Jun. 4-8, 2019	Uganda	Landslide	61	129,953	0

Date	Country	Disaster Type	Fatalities	Affected People	Direct Damages (USD 1,000)
Jun. 5-7, 2019	South Sudan	Flood	3	234,800	0
Jun. 17, 2019	China	Earthquake	13	244,220	1,300,000
Jun. 21-Jul. 1, 2019	Belgium	Heat wave	128	0	0
Jun. 24-Jul. 7, 2019	France	Heat wave	567	0	0
Jul.-Aug. 2019	Russia	Forest fire	0	0	106,000
Jul.-Sep. 6, 2019	Sudan	Flood	78	346,300	0
Jul. 3, 2019	China	Rainstorms	6	45,120	145,000
Jul. 5, 2019	USA	Earthquake	0	150	200,000
Jul. 7-28, 2019	Bangladesh	Flood	119	4,000,000	75,000
Jul. 8-29, 2019	Nepal	Flood	119	82,541	204,000
Jul. 14-Sep. 30, 2019	India	Flood	1,900	3,000,000	10,000,000
Jul. 15, 2019	China	Flood	17	360,000	0
Jul. 19-27, 2019	Belgium	Heat wave	400	0	0
Jul. 21-27, 2019	France	Heat wave	868	0	0
Jul. 22-27, 2019	Netherlands	Heat wave	400	0	0
Aug. 8-16, 2019	Myanmar	Flood	115	1,875	0
Aug. 10-12, 2019	China	Tropical cyclone	72	108,000	10,000,000
Aug. 19-20, 2019	China	Landslide	38	6,606	200,000
Aug. 23-29, 2019	Belgium	Heat wave	188	0	0
Aug. 27-29, 2019	Japan	Flood	1	302	100,000
Sep. 1-4, 2019	Bahamas	Tropical cyclone	370	15,000	7,000,000
Sep. 1-15, 2019	Niger	Flood	52	200,000	0
Sep. 4-6, 2019	USA	Tropical cyclone	9	0	1,200,000
Sep. 5-8, 2019	China	Tropical cyclone	0	0	131,000
Sep. 7-9, 2019	Japan	Tropical cyclone	3	120,150	9,100,000
Sep. 10-11, 2019	Laos	Flood	16	309,176	0
Sep. 11-20, 2019	Cambodia	Flood	12	435,000	0
Sep. 11, 2019	Thailand	Flood	19	158,000	0
Sep. 11-16, 2019	Spain	Flood	7	3,500	2,500,000
Sep. 18-24, 2019	USA	Tropical cyclone	5	1,000	3,500,000
Sep. 23-27, 2019	Sri Lanka	Flood	1	136,607	0
Sep. 26, 2019	Indonesia	Earthquake	31	247,418	0
Oct., 2019	Somalia	Flood	17	500,000	0
Oct. 1-13, 2019	Ethiopia	Flood	0	200,000	0
Oct. 2, 2019	China	Tropical cyclone	3	0	263,000
Oct. 2, 2019	Korea	Tropical cyclone	15	1,411	553,000
Oct. 10-Dec. 13, 2019	Kenya	Flood	132	144,000	0
Oct. 10-17, 2019	USA	Forest fire	3	603	25,000,000
Oct. 12-17, 2019	Japan	Tropical cyclone	99	390,470	17,000,000
Oct. 20-21, 2019	USA	Rainstorms	4	0	2,600,000
Oct. 26-31, 2019	USA	Forest fire	0	662	825,000
Oct. 31, 2019	Philippines	Earthquake	23	260,703	0
Oct. 31-Nov. 2, 2019	Canada	Rainstorms	1	0	275,000
Nov. 9-10, 2019	Bangladesh	Tropical cyclone	40	251,506	5,785
Nov. 9-10, 2019	India	Tropical cyclone	12	130,000	0
Nov. 19-26, 2019	Congo	Flood	43	399,894	0
Nov. 23-24, 2019	France	Rainstorms	5	625	315,000
Nov. 25, 2019	Djibouti	Flood	9	150,000	0
Nov. 25, 2019	Djibouti	Flood (flash flood)	0	250,000	0
Nov. 25-26, 2019	Congo	Flood	41	125,000	0
Nov. 29-Dec. 10, 2019	Sri Lanka	Flood	12	155,009	0
Dec. 2-3, 2019	Philippines	Tropical cyclone	4	1,993,898	109,151
Dec. 15, 2019	Philippines	Earthquake	10	108,582	0
Dec. 12-17, 2019	France	Rainstorms	2	613	100,000
Dec. 16-18, 2019	USA	Rainstorms	18	0	235,000

Date	Country	Disaster Type	Fatalities	Affected People	Direct Damages (USD 1,000)
Dec. 31, 2019-Jan. 3, 2020	Indonesia	Flood	66	501,000	1,200,000
Dec. 24-28, 2019	Philippines	Rainstorms	69	2,656,862	28,000
Dec., 2019	Lesotho	Drought	0	433,000	0
Dec., 2019	Eswatini	Drought	0	232,000	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) Mozambique Cyclone Idai (T C-2019-000021-MOZ)

On March 14 and 15, 2019, Cyclone Idai made landfall near Beira in Sofala Province in the central region of Mozambique with sustained winds of 160 km/h. The cyclone hit Sofala, Zambezia, Manica and Inhambane Provinces with heavy rainfall and strong winds. Mozambique's National Disaster Management Agency (INGC) said the cyclone displaced nearly 400,000 people, with many huddled in 139 shelters in the immediate aftermath of the disaster. EMDAT said the number of the dead is 603 and the number of victims is 1.5 million or more. After the disaster, the spread of infectious diseases was confirmed, and on April 25, Cyclone Kenneth made landfall, thereby further expanding the damage.

The Government of Japan, through the JICA, delivered emergency relief supplies through the JICA as well as dispatched the Japan Disaster Relief (JDR) Team and medical teams. Besides, in response to the Government of Mozambique's request to support the recovery plan, the GOJ has been implementing the “Project on Strengthening Resilience in Cyclone IDAI-Affected Areas” in the severely damaged city of Beira in Sofala Province for 3 years since September 6, 2019 to support the development of an action plan in the recovery plan for Beira with the aim of realizing "Build Back Better" and creating a disaster-resilient society.

2) India Flood (FL-2019-000084-IND)

India is prone to torrential rains and flooding from June to September every year under the influence of the southwest monsoon. The 2019 monsoon season saw more rainfall and a longer time, resulting in more damage than usual. It caused severe flood damage across 14 states including Maharashtra, West Bengal, Kerala, Madhya Pradesh, Gujarat, Bihar, Karnakata and Assam. EM-DAT shows that the 2019 monsoon season resulted in 1,900 fatalities and 3 million affected people and the economic damage rose to US$10 billion.

The Indian government said the 2019 monsoon season saw the highest rainfall in statistics since 1994, the highest total rainfall in August and September since 1983 and the second highest rainfall in September since 1917, among many other records.

3) Bahamas Hurricane Dorian (TC-2019-000099-BHS)

Category 5 Hurricane "Dorian" made landfall in Elbow Cay in the Abaco Islands of the Bahamas with the maximum wind speed of 295 km/h (185 mile/h) on September 1, 2019. The cyclone lingered over Abaco and Grand Bahama Islands for almost two days, causing severe damage. The Abaco Islands were the most severely affected. The hurricane caused not only human casualties but also damages to many structures including houses, communications, wells, roads and water supplies.

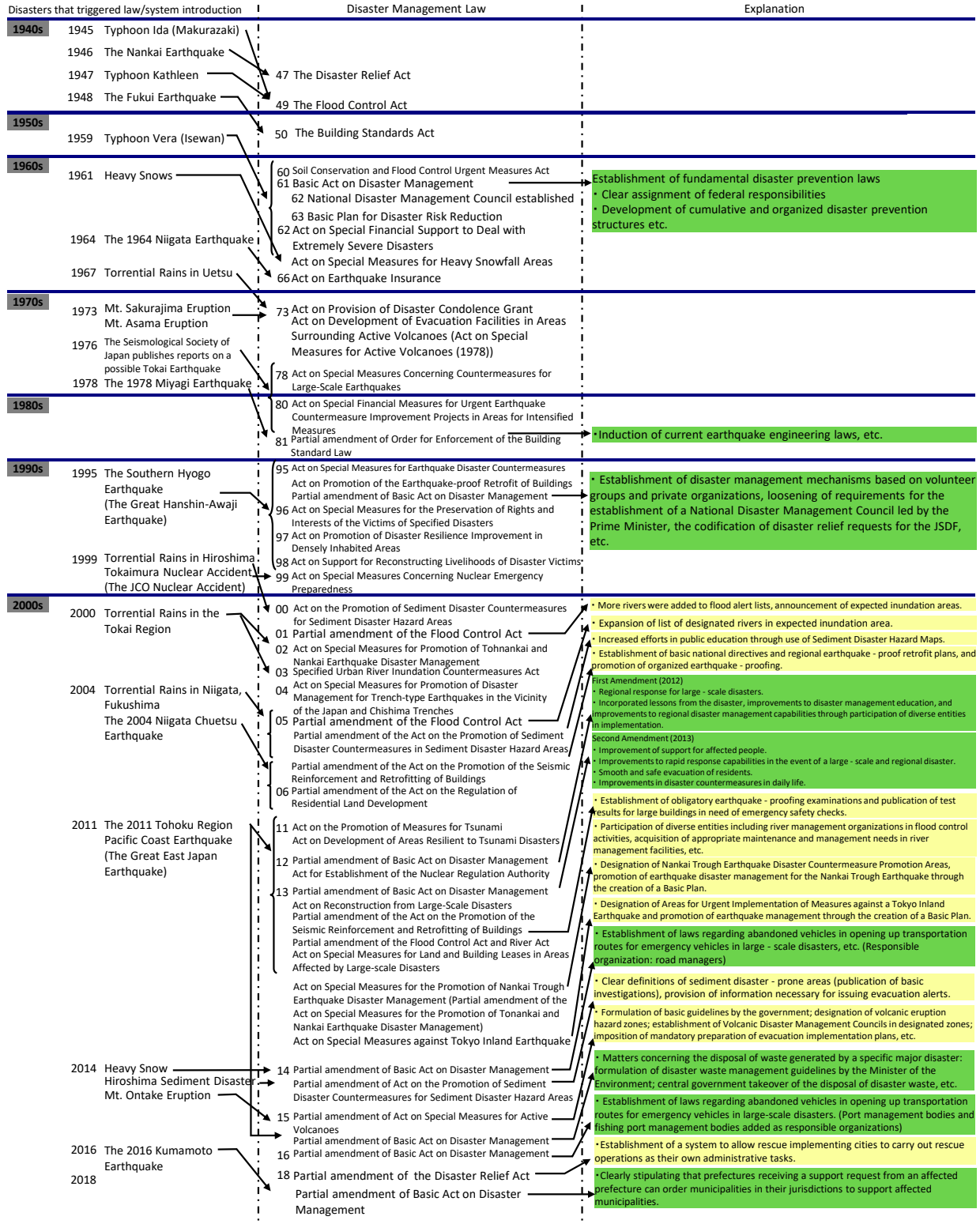
EM-DAT shows that the hurricane resulted in 370 fatalities and about 15,000 affected people and the economic damage rose to about US$7 billion.

Emergency relief operations were led by the National Disaster Management Agency and the Caribbean Disaster Emergency Management Agency (CDERA) and the United Nations Office for the Coordination of Humanitarian Affairs (OCHA) under the Government of the Bahamas.

The GOJ provided emergency relief goods (tents, blankets, etc.) for the damages caused by the disaster through JICA in response to a request from the Government of Indonesia.

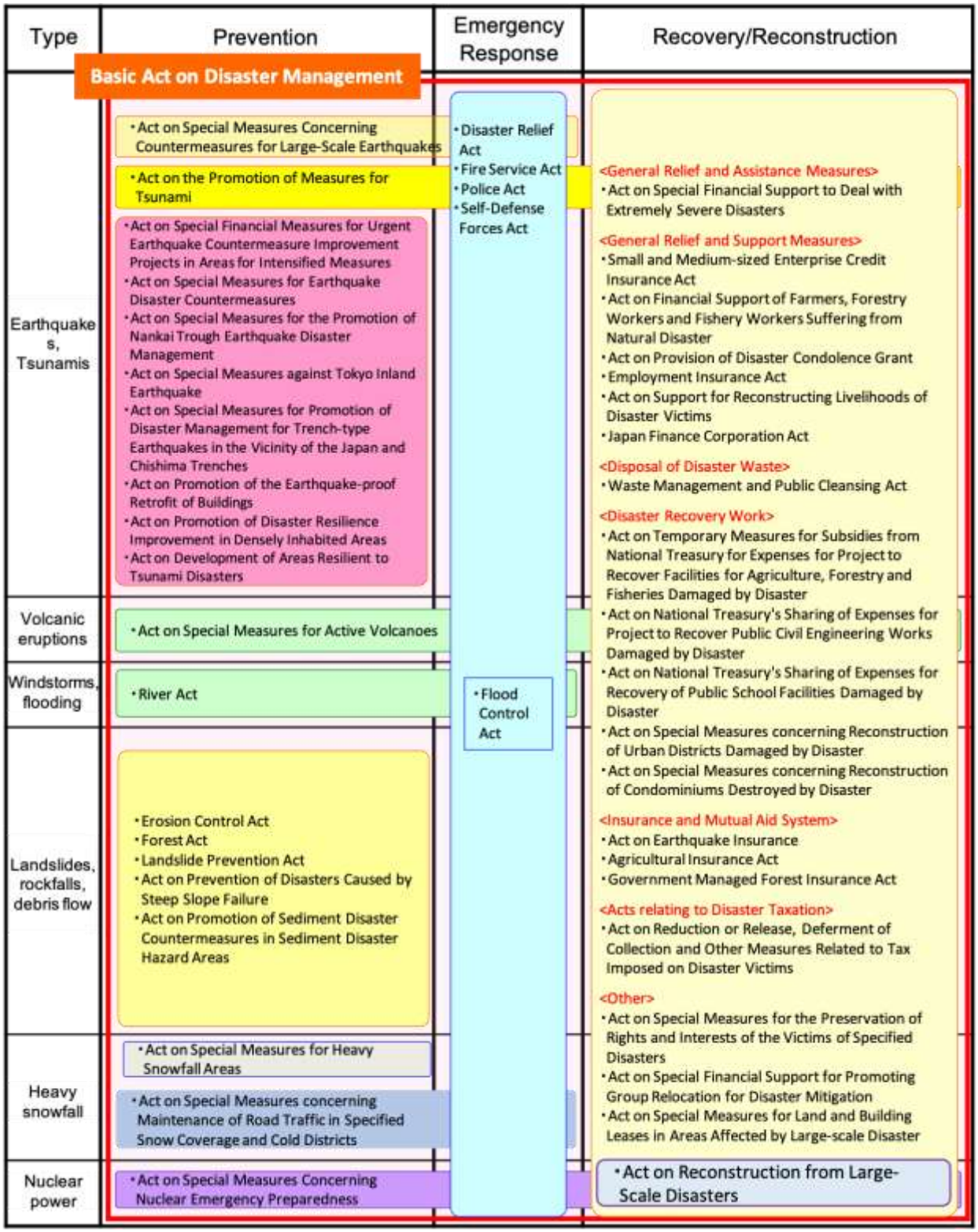
3. Laws and Systems

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



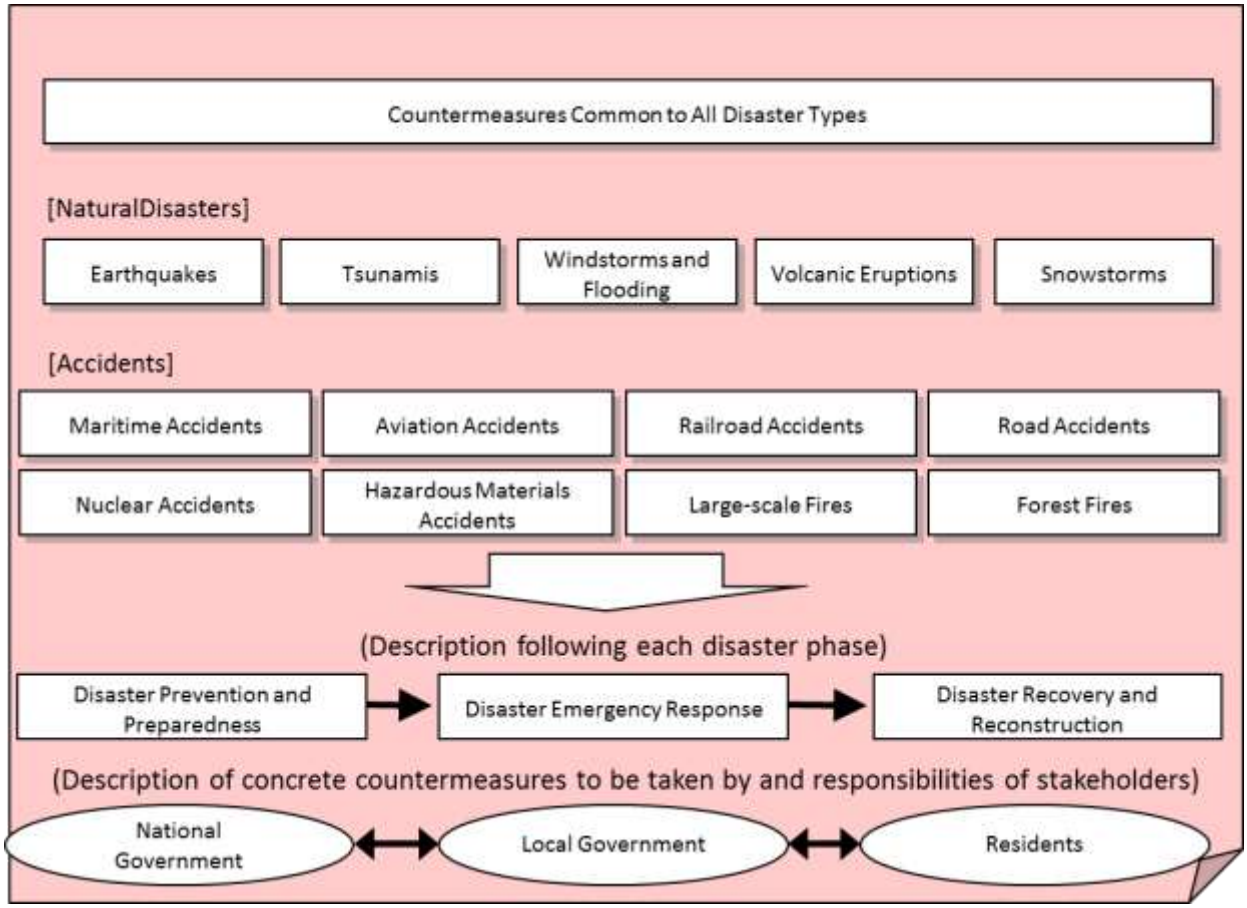
Source: Cabinet Office

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



Source: Cabinet Office

Fig. A-28 Structure of the Basic Plan for Disaster Risk Reduction



Source: Cabinet Office

Fig. A-29 Revisions to the Basic Plan for Disaster Risk Reduction

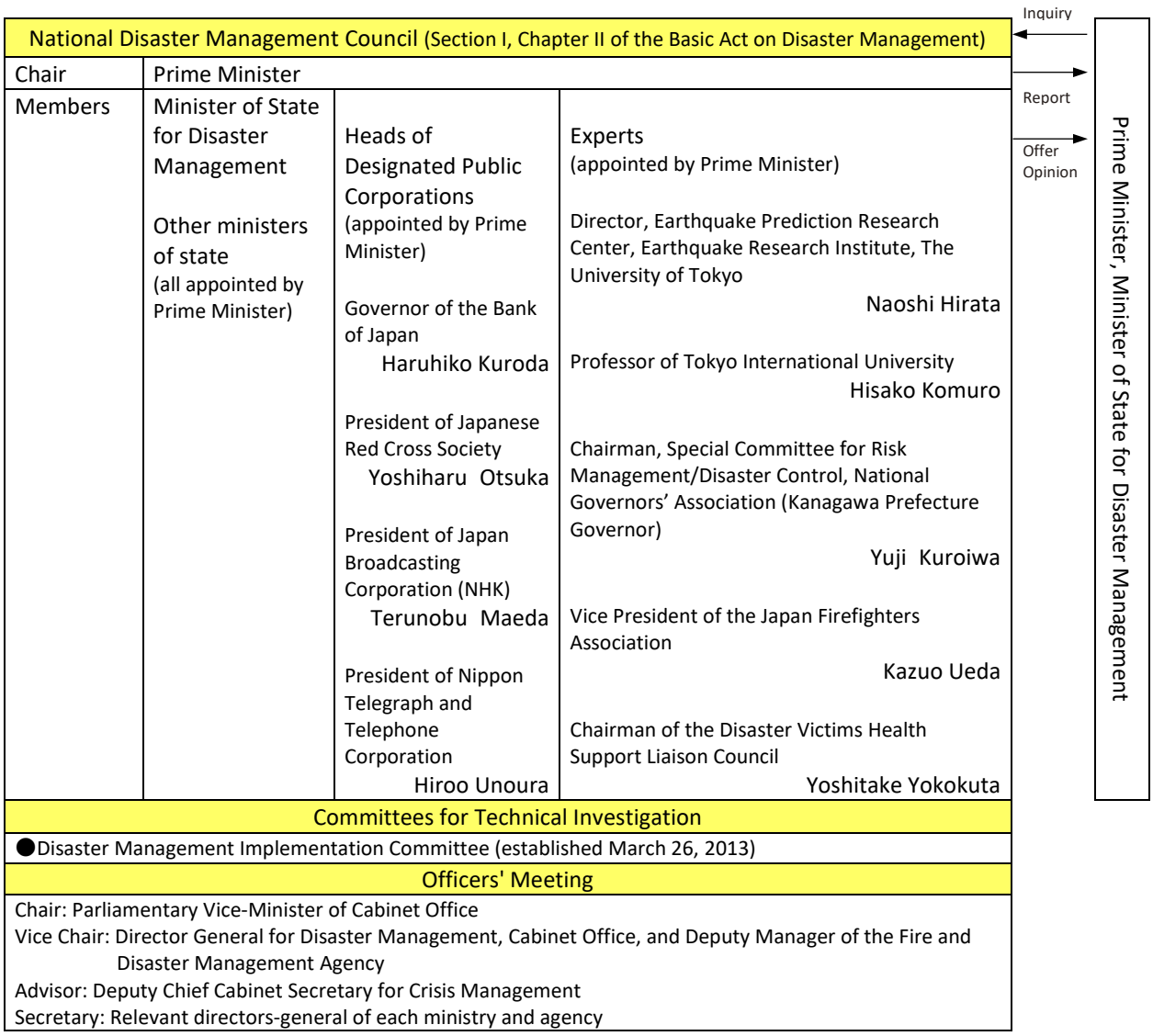
Revision Date	Outline of Revision	Background
June 1963	- The Basic Plan for Disaster Risk Reduction formulated based on the Basic Act on Disaster Management - Stipulations regarding various measures to prevent natural disasters, mitigate damage, and promote disaster reconstruction	Sep. 26, 1959: Typhoon 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 Plan for Disaster Risk Reduction, 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 disaster risk reduction 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 Disaster Management 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

Source: Cabinet Office

4. Organizations

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



National Disaster Management Council (Section I, Chapter II of the Basic Act on Disaster Management)			
Chair	Prime Minister		
Members	Minister of State for Disaster Management Other ministers of state (all appointed by Prime Minister)	Heads of Designated Public Corporations (appointed by Prime Minister) Governor of the Bank of Japan Haruhiko Kuroda President of Japanese Red Cross Society Yoshiharu Otsuka President of Japan Broadcasting Corporation (NHK) Terunobu Maeda President of Nippon Telegraph and Telephone Corporation Hiroo Unoura	Experts (appointed by Prime Minister) Director, Earthquake Prediction Research Center, Earthquake Research Institute, The University of Tokyo Naoshi Hirata Professor of Tokyo International University Hisako Komuro Chairman, Special Committee for Risk Management/Disaster Control, National Governors' Association (Kanagawa Prefecture Governor) Yuji Kuroiwa Vice President of the Japan Firefighters Association Kazuo Ueda Chairman of the Disaster Victims Health Support Liaison Council Yoshitake Yokokuta
Committees for Technical Investigation			
●Disaster Management Implementation Committee (established March 26, 2013)			
Officers' Meeting			
Chair: Parliamentary Vice-Minister of Cabinet Office Vice Chair: Director General for Disaster Management, Cabinet Office, and Deputy Manager of the Fire and Disaster Management Agency Advisor: Deputy Chief Cabinet Secretary for Crisis Management Secretary: Relevant directors-general of each ministry and agency			

[Role]

- ○ Formulate a Basic Plan for Disaster Risk Reduction 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

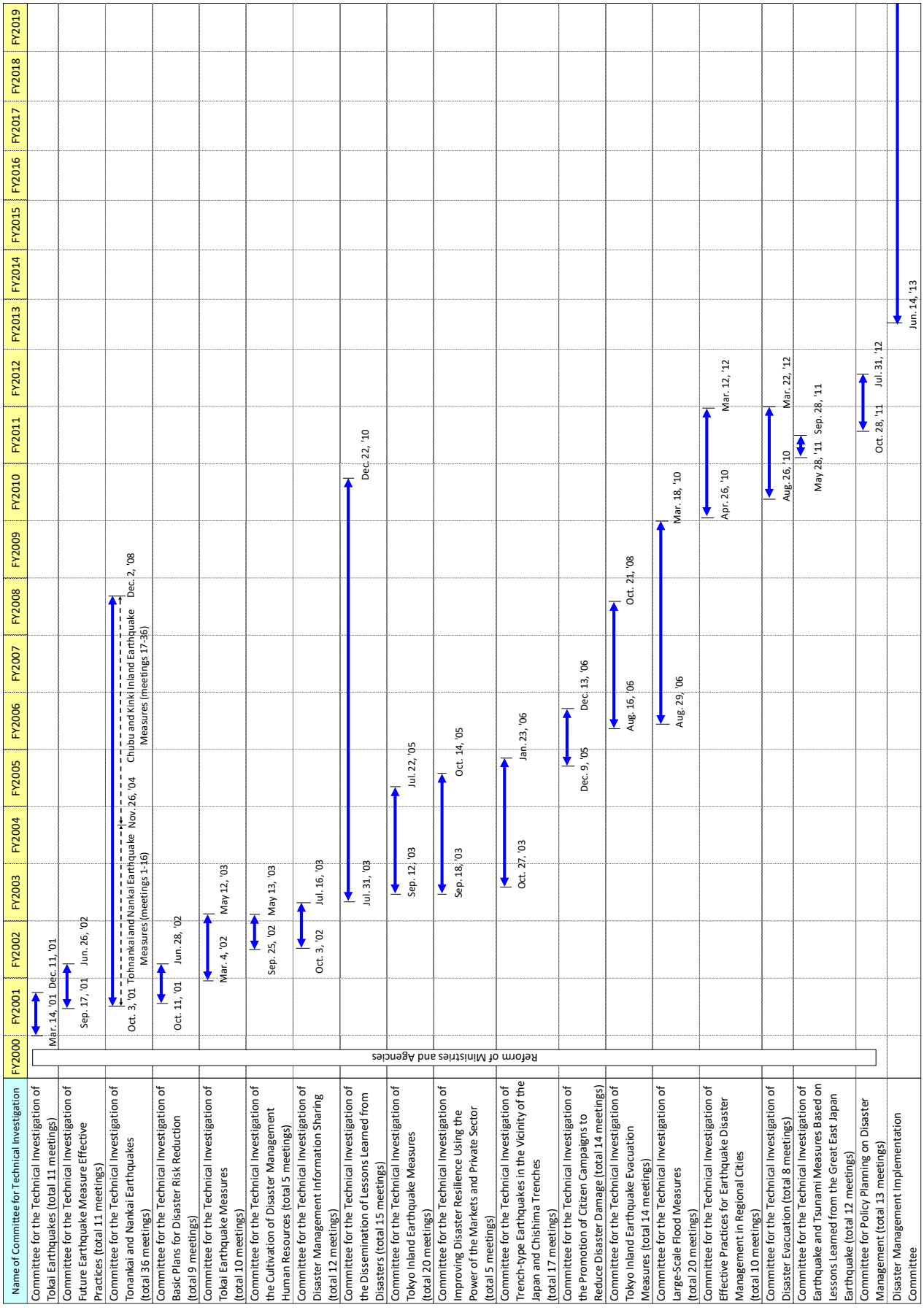
Source: Cabinet Office

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 Plan for Disaster Risk Reduction • 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 Plan for Disaster Risk Reduction • 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 Plan for Disaster Risk Reduction • 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 Plan for Disaster Risk Reduction
Mar. 31, 2015	• Revisions to the Basic Plan for Disaster Risk Reduction • FY2015 Comprehensive Disaster Management Drill Framework • Earthquake Disaster Risk Reduction Strategy for a Tokyo Inland Earthquake
FY2015	
Jul. 7, 2015	• Revisions to the Basic Plan for Disaster Risk Reduction
Feb. 16, 2016	• Basic Guidelines on the Comprehensive Promotion of Measures for Active Volcanoes • Designation of volcanic eruption hazard areas • Revisions to the Basic Plan for Disaster Risk Reduction
FY2016	
May 31, 2016	• FY2016 Comprehensive Disaster Management Drill Framework • Revisions to the Basic Plan for Disaster Risk Reduction
FY2017	
Apr. 11, 2017	• Revisions to the Basic Plan for Disaster Risk Reduction • FY2017 Comprehensive Disaster Management Drill Framework
FY2018	
Jun. 29, 2018	• Revisions to the Basic Plan for Disaster Risk Reduction • Partial amendment of the Disaster Relief Act
FY2019	
May 31, 2019	• Revisions to the Basic Plan for Disaster Risk Reduction • 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)

Source: Cabinet Office

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



Source: Cabinet Office

Fig. A-33 Disaster Risk Management Budgets by Year

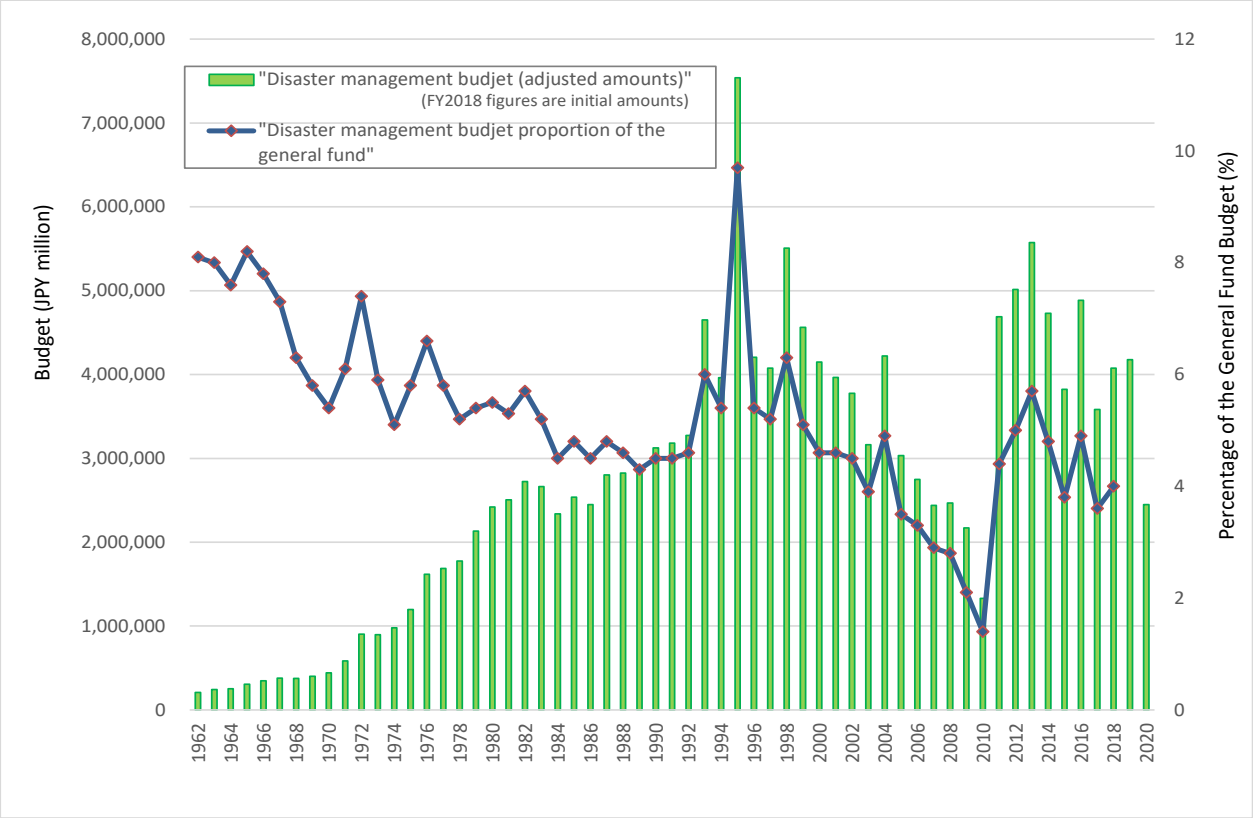
Fiscal Year	Science and Technology Research		Disaster Prevention		Land Conservation		Disaster Reconstruction		Total
	(JPY million)	Share (%)	(JPY million)	Share (%)	(JPY million)	Share (%)	(JPY million)	Share (%)	(JPY million)
1962	751	0.4	8,864	4.3	97,929	47.1	100,642	48.3	208,006
1963	1,021	0.4	8,906	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	13,897	0.6	621,729	25.4	125,064	5.1	1,688,055	68.9	2,448,745

Notes:

1. These are adjusted budget (national expenditures) amounts. However, the FY2020 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 FY2018; Unit: JPY million)

Category	FY1980 - FY2019		
	Planned Amount (a)	Implemented Amount (b)	Rate of Progress (b)/(a)
1 Evacuation sites	177,539	173,573	97.8%
2 Evacuation roads	93,983	86,485	92.0%
3 Firefighting facilities	141,238	128,727	91.1%
4 Emergency transport routes	951,107	909,748	95.7%
4-1 Emergency transport routes	840,671	804,323	95.7%
4-2 Emergency transport ports	59,631	57,851	97.0%
4-3 Emergency transport fishing ports	50,805	47,574	93.6%
5 Telecommunications facilities	17,514	16,545	94.5%
6 Public medical institutions	54,012	50,900	94.2%
7 Social welfare facilities	55,586	55,586	100.0%
8 Public elementary and junior high schools	442,781	428,827	96.8%
9 Tsunami countermeasures	272,080	199,006	73.1%
9-1 River management facilities	104,233	63,174	60.6%
9-2 Coastal preservation facilities	167,847	135,832	80.9%
10 Landslide prevention	540,734	537,456	99.4%
10-1 Erosion control facilities	102,887	114,128	110.9%
10-2 Security facilities	171,243	163,282	95.4%
10-3 Landslide facilities	84,622	80,900	95.6%
10-4 Steep slope facilities	160,352	161,630	100.8%
10-5 Ponds	21,630	17,516	81.0%
Total	2,746,574	2,586,853	94.2%

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

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

Based on lessons learned from the Great Hanshin-Awaji Earthquake, the Act on Special Measures for Earthquake Disaster Countermeasures was enacted in July 1995 to protect citizens' lives, 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 involved, and the consent of the Prime Minister must be obtained. Project budgets for these plans over fifth terms are shown in the table below.

(All prefectures, as of FY2017. 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. (a)	Actual Amt. (b)	% Complete (b)/(a)	Project Scope (Unit) (c)	Planned Amt. (d)	Actual Amt. (e)	% Complete (e)/(d)	Project Scope (Unit) (f)	Planned Amt. (g)	Actual Amt. (h)	% Complete (h)/(g)	Project Scope (Unit) (i)	Planned Amt. (j)	Actual Amt. (k)	% Complete (k)/(j)	Project Scope (Unit) (l)	Planned Amt. (m)	Actual Amt. (n)	% Complete (n)/(m)
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	304,027	156,238	51.4%
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%	603 km	829,188	374,517	45.2%
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%	18,358 sites	428,205	191,817	44.8%
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	23,848	11,537	48.4%
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%		2,737,385	1,605,198	58.6%
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%	2,186 km	2,619,036	1,550,385	59.2%
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	21,870	8,348	38.2%
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	24,625	32.6%
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%	26 sites	20,868	7,009	33.6%
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%	483 km	263,382	153,730	58.4%
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%	71 facilities	243,703	166,114	68.2%
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%	255 facilities	46,339	22,403	48.3%
8-2. Public kindergartens	-	-	-	-	-	-	-	995 schools	35,198	7,074	20.1%	1,159 schools	54,480	27,203	49.9%	270 schools	24,429	8,266	33.8%
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%	1,169 schools	367,915	196,997	53.5%
10. Public special education schools	84,577	29,685	35.1%	114 schools	32,094	12,070	37.6%	264 schools	56,834	23,262	40.9%	199 schools	43,173	29,955	69.4%	5 schools	5,293	3,893	73.5%
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%	735 facilities	253,320	126,074	49.8%
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%	802 sites	643,750	376,073	58.4%
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%	571 sites	350,755	194,348	55.4%
12-2. River management facilities	94,821	77,809	82.1%	119 sites	76,248	78,899	103.5%	68 sites	50,380	36,867	73.2%	162 sites	115,601	117,594	101.7%	231 sites	292,975	181,725	62.0%
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%	9,031 sites	905,455	538,784	59.5%
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%	1,840 sites	270,783	168,343	62.2%
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%	2,738 sites	163,700	100,144	61.2%
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	95,681	60,778	63.5%
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%	1,902 sites	197,267	125,604	63.7%
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%	1,384 sites	178,024	83,915	47.1%
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%	122 sites	92,889	58,298	62.8%
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%	9,022 sites	171,017	58,628	34.3%
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%	449 sites	125,098	70,375	56.3%
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	11,012	3,805	34.6%
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	38	25.3%
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	438,361	154,939	35.3%
	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%		7,914,766	4,277,725	54.0%

Notes:

1. The content of the Fifth Five-Year Plan (FY2016-2020) is current as of the end of FY 2018.
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.

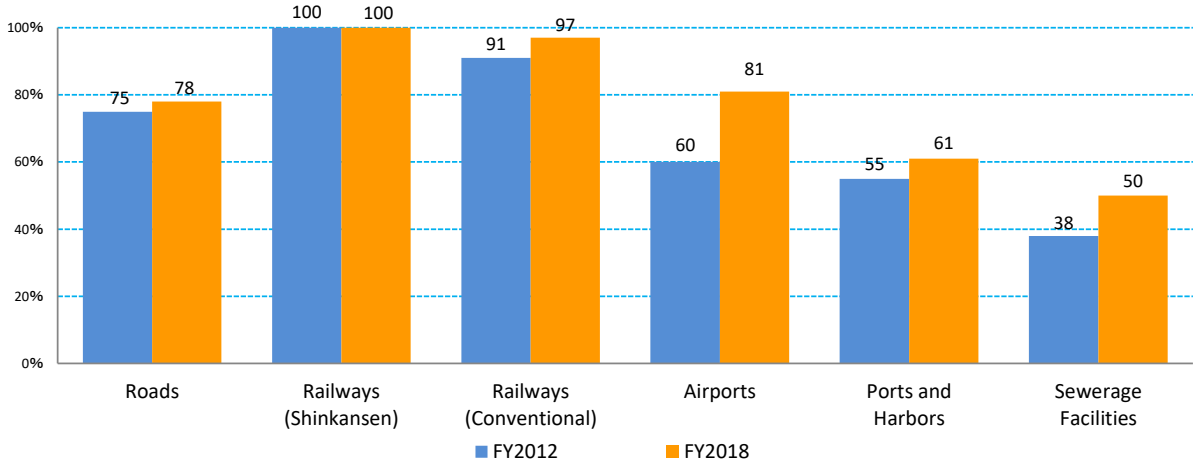
6. Disaster Management Facilities and Equipment

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	10
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	85	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	14
Nagano	6	7	10	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	16	Total	96	291	749

Source: Red Cross Hospital information was formulated by the Cabinet Office based on the website of the Japanese Red Cross Society (as of March 2020).
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 2020).

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 end of FY2018)

Railway (Shinkansen): Elevated bridges. (Left: As of end of FY2012. Right: As of end of FY2018.)

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 FY2012. Right: As of end of FY2018.)

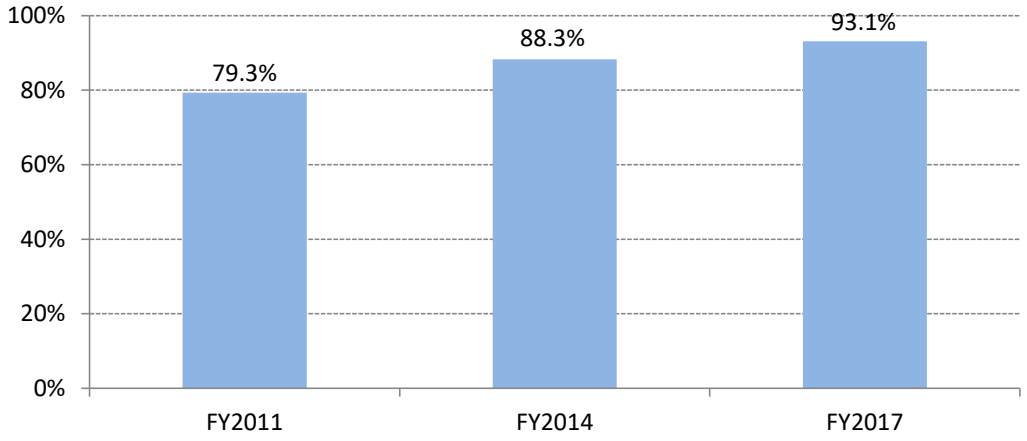
Airports: Percentage of population in a 100 km area around an airport that could be used for emergency transport.

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 FY2012. Right: As of end of FY2018.)

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 FY2012. Right: As of end of FY2018.)

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

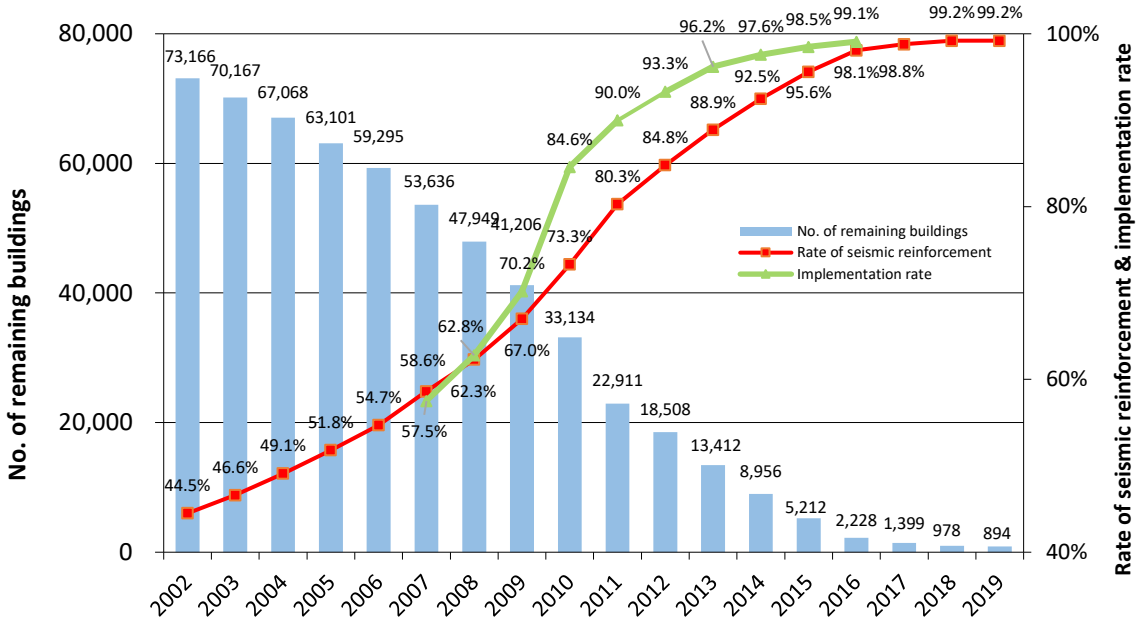


Note) Of all the public facilities owned or managed by local governments (buildings for public or public-private use: non-wooden structures built two stories or taller or buildings with a floor area of 200 m^2 or more), the facilities that could serve as disaster management bases for implementing disaster 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 (November 2018)

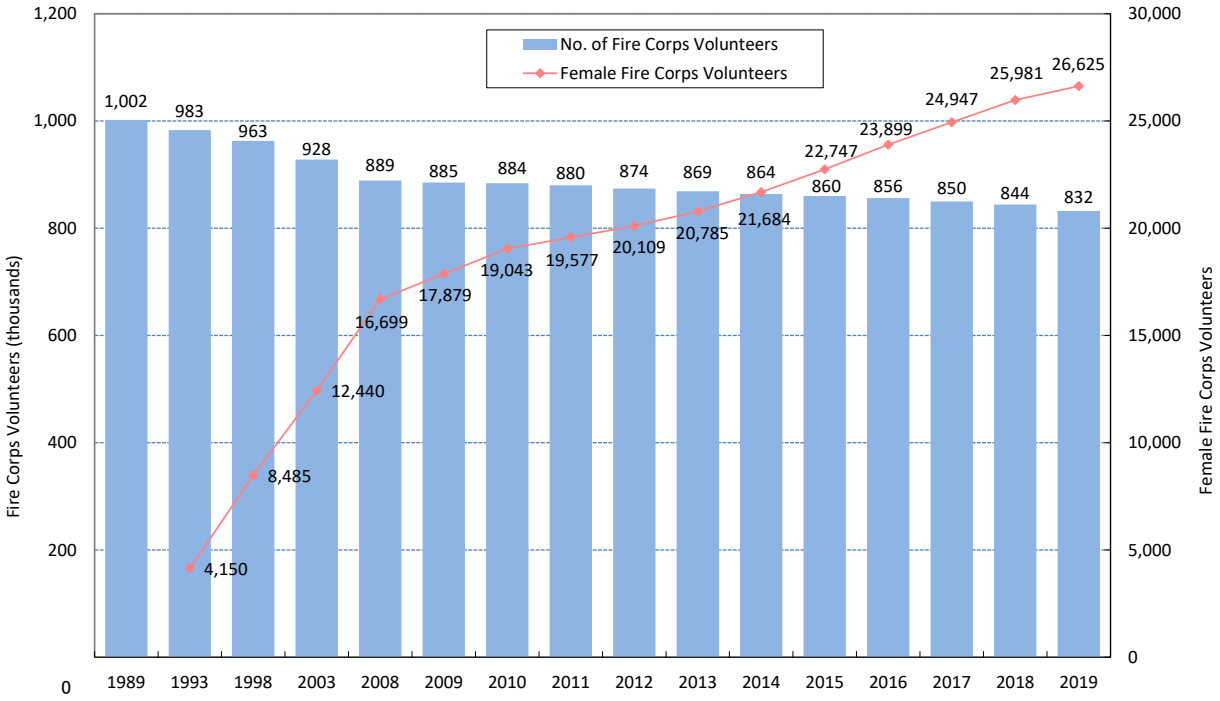
Fig. A-39 Seismic Reinforcement of Public Elementary and Junior High Schools



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 2019)

7. Trends in Numbers of Workers in Disaster Management

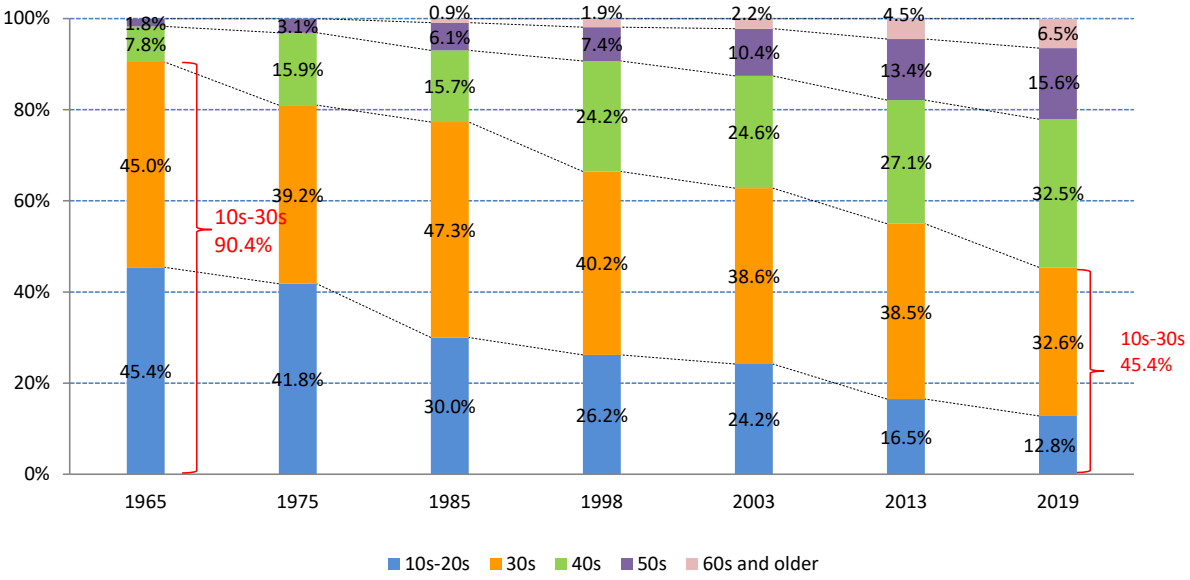
Fig. A-40 Numbers of Fire Corps Volunteers



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)

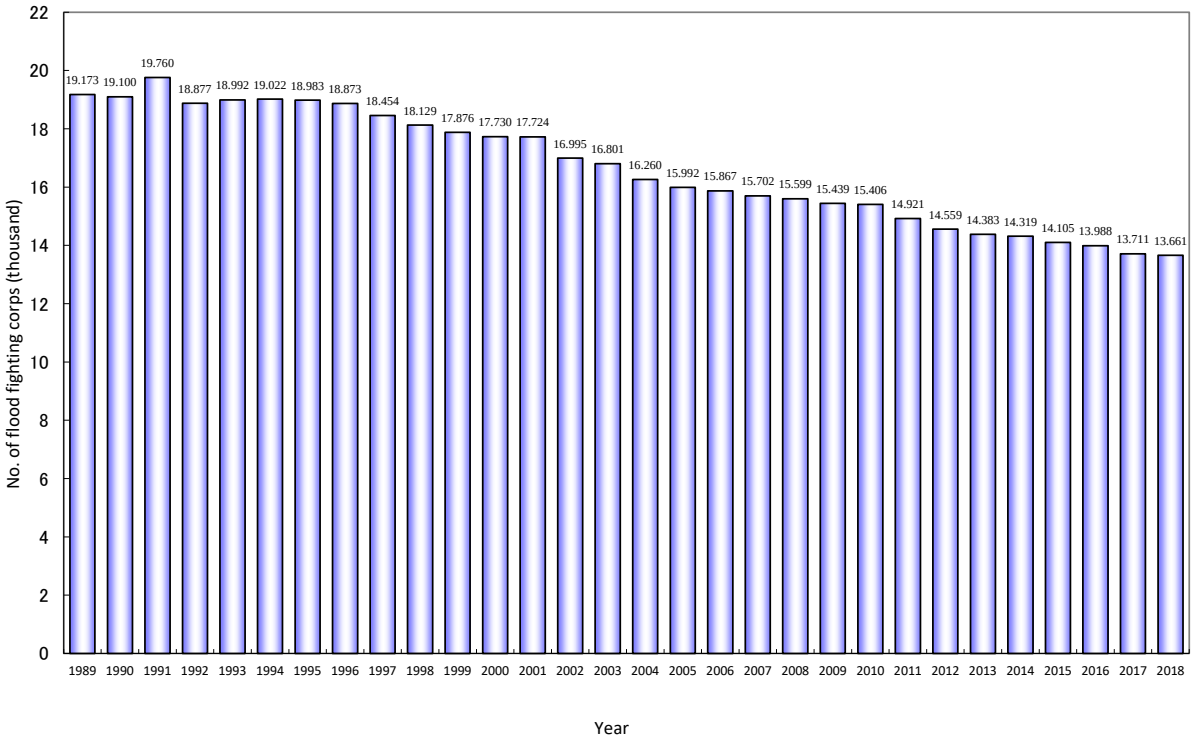
Source: Formulated by the Cabinet Office based on the Survey on the Current Status of Fire and Earthquake Disaster Management Measures of the Fire and Disaster Management Agency

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



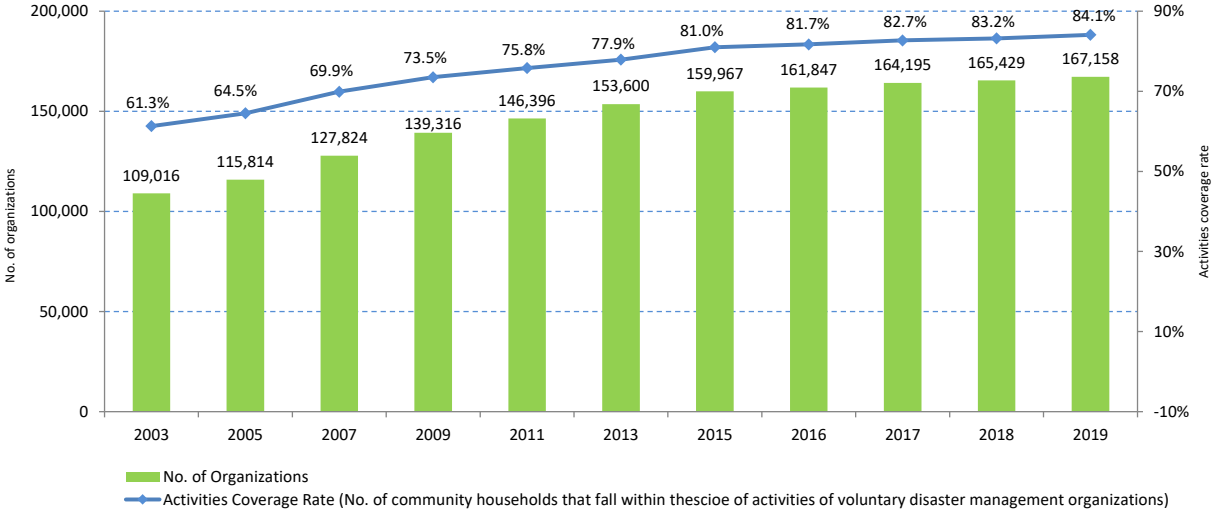
Source: Formulated by the Cabinet Office based on the Survey on the Current Status of Fire and Earthquake Disaster Management Measures of the Fire and Disaster Management Agency

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, 2019)

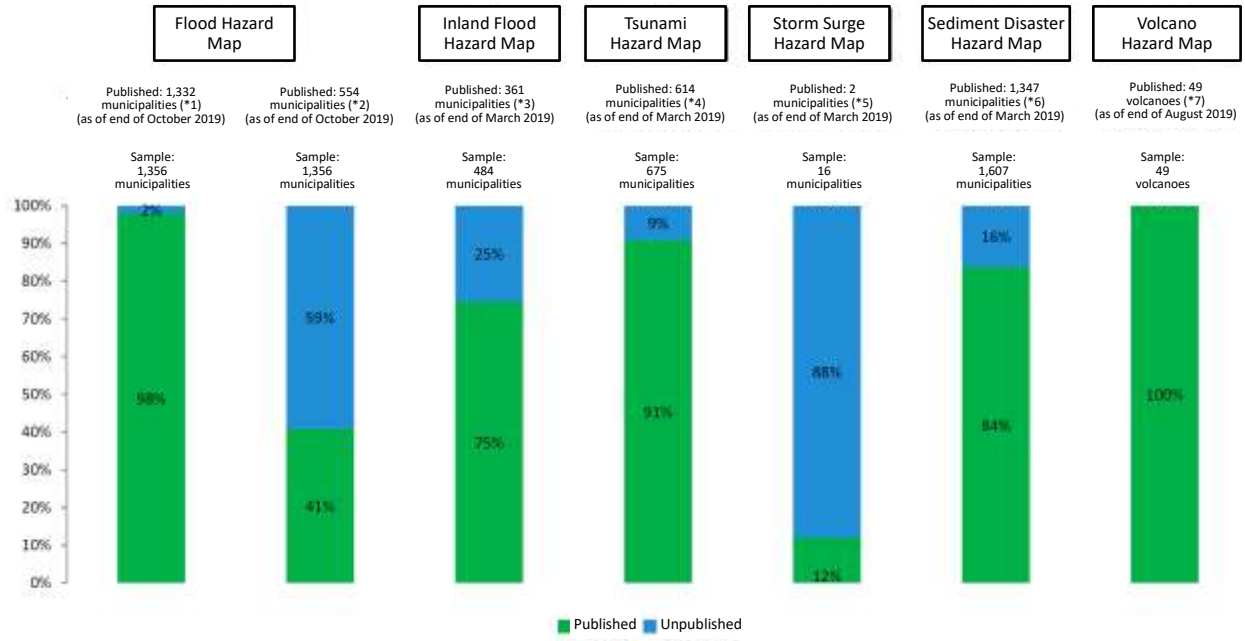
	Prefectural Disaster Management Council			Municipal Disaster Management Council		
	Total Members	Of which, Female Members	Proportion of Women (%)	Total Members	Of which, Female Members	Proportion of Women (%)
Hokkaido	68	5	7.4	3,911	128	3.3
Aomori	59	10	16.9	773	40	5.2
Iwate	76	14	18.4	1,144	97	8.5
Miyagi	58	9	15.5	833	61	7.3
Akita	60	4	6.7	719	78	10.8
Yamagata	62	8	12.9	995	60	6.0
Fukushima	54	8	14.8	1,003	53	5.3
Ibaraki	51	6	11.8	1,240	107	8.6
Tochigi	52	10	19.2	586	67	11.4
Gunma	47	6	12.8	989	86	8.7
Saitama	69	12	17.4	2,138	240	11.2
Chiba	52	8	15.4	1,550	171	11.0
Tokyo	73	11	15.1	2,207	243	11.0
Kanagawa	57	13	22.8	1,005	128	12.7
Niigata	72	16	22.2	876	50	5.7
Toyama	67	11	16.4	515	32	6.2
Ishikawa	70	7	10.0	461	28	6.1
Fukui	56	3	5.4	501	49	9.8
Yamanashi	64	6	9.4	578	54	9.3
Nagano	77	15	19.5	1,939	141	7.3
Gifu	61	10	16.4	913	77	8.4
Shizuoka	58	5	8.6	1,053	97	9.2
Aichi	68	5	7.4	1,482	167	11.3
Mie	60	5	8.3	915	91	9.9
Shiga	59	12	20.3	490	48	9.8
Kyoto	66	14	21.2	757	61	8.1
Osaka	58	5	8.6	1,315	139	10.6
Hyogo	56	8	14.3	1,294	128	9.9
Nara	61	7	11.5	853	77	9.0
Wakayama	55	7	12.7	610	49	8.0
Tottori	65	28	43.1	407	57	14.0
Shimane	73	34	46.6	607	52	8.6
Okayama	58	9	15.5	508	83	16.3
Hiroshima	59	4	6.8	822	55	6.7
Yamaguchi	60	7	11.7	615	62	10.1
Tokushima	81	39	48.1	557	37	6.6
Kagawa	60	8	13.3	441	53	12.0
Ehime	61	5	8.2	487	32	6.6
Kochi	58	7	12.1	754	73	9.7
Fukuoka	61	4	6.6	1,199	196	16.3
Saga	70	18	25.7	378	41	10.8
Nagasaki	68	13	19.1	671	45	6.7
Kumamoto	56	6	10.7	1,635	109	6.7
Oita	58	6	10.3	548	48	8.8
Miyazaki	53	4	7.5	709	47	6.6
Kagoshima	63	7	11.1	1,124	65	5.8
Okinawa	54	7	13.0	632	57	9.0
Total	2,904	466	16.0	45,739	3,959	8.7

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” (FY2019)
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 that need to promptly develop a hazard map as they suffered significant damage from past floods, which have already published a hazard map.

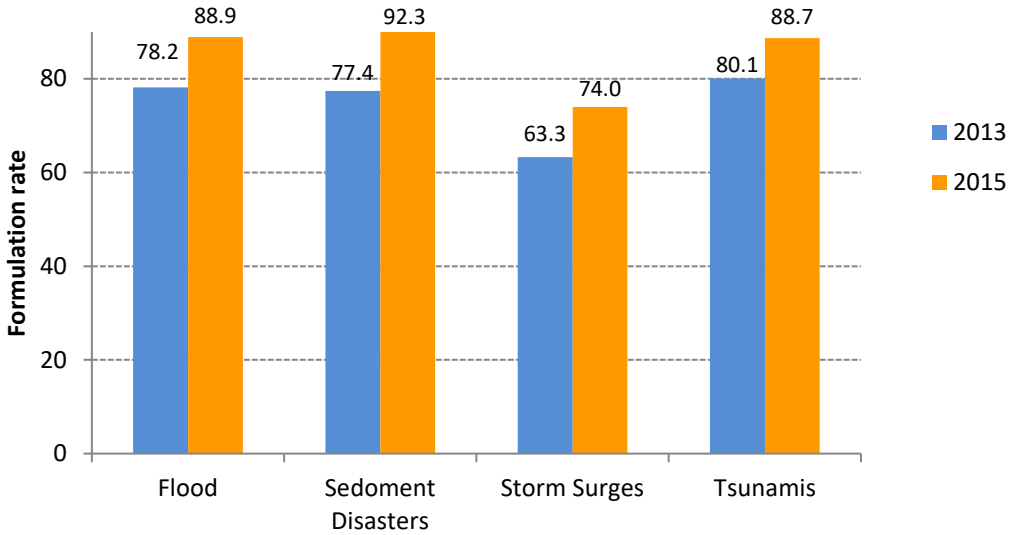
*4 Municipalities located in coastal areas or the tsunami hazard areas under Article 8 of the Act on Regional Development for Tsunami Disaster Prevention, which have already published a tsunami hazard map

*5 Since hazard coastal areas were first designated in FY2018, 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.

*6 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 Sediment Disasters Prevention Act

*7 Volcanoes for which Volcanic Disaster Management Councils were established in accordance with Article 4 of the Act on Special Measures for Active Volcanoes, which have already published a volcano hazard map (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%

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

Fig. A-48 Assistance based on Mutual Support Agreements between Prefectures and 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

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

Fig. A-49 Mutual Support Agreements in Municipalities

Year	No. of Municipalities	No. of mutual support agreements concluded between municipalities in the same the 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%

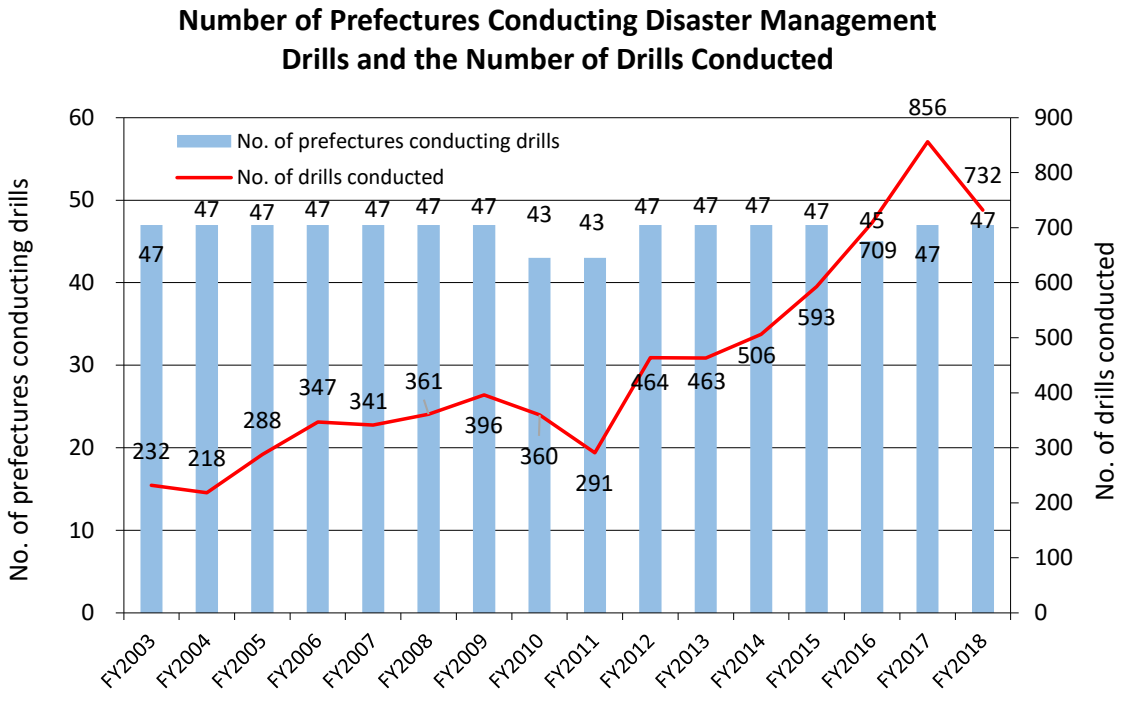
Source: Formulated by the Cabinet Office based on the Fire and Disaster Management Agency report “Status of Regional Disaster Management Administration”

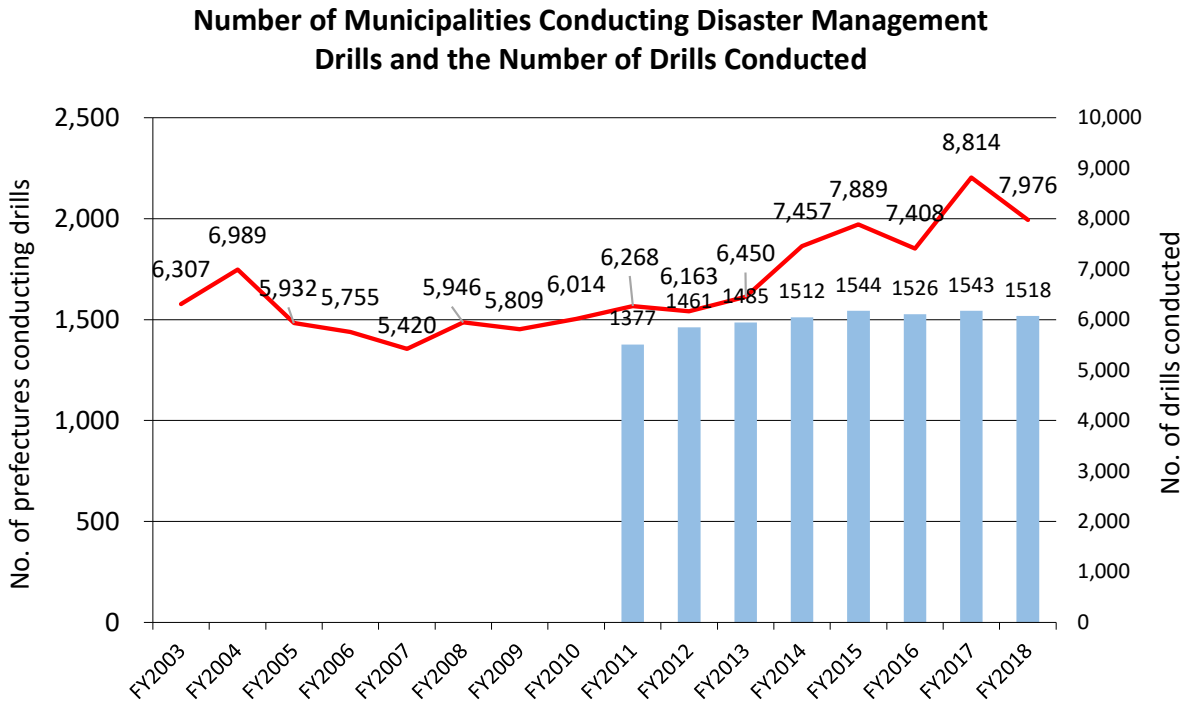
Fig. A-50 Municipalities' Support Agreements with Private-Sector Institutions

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

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

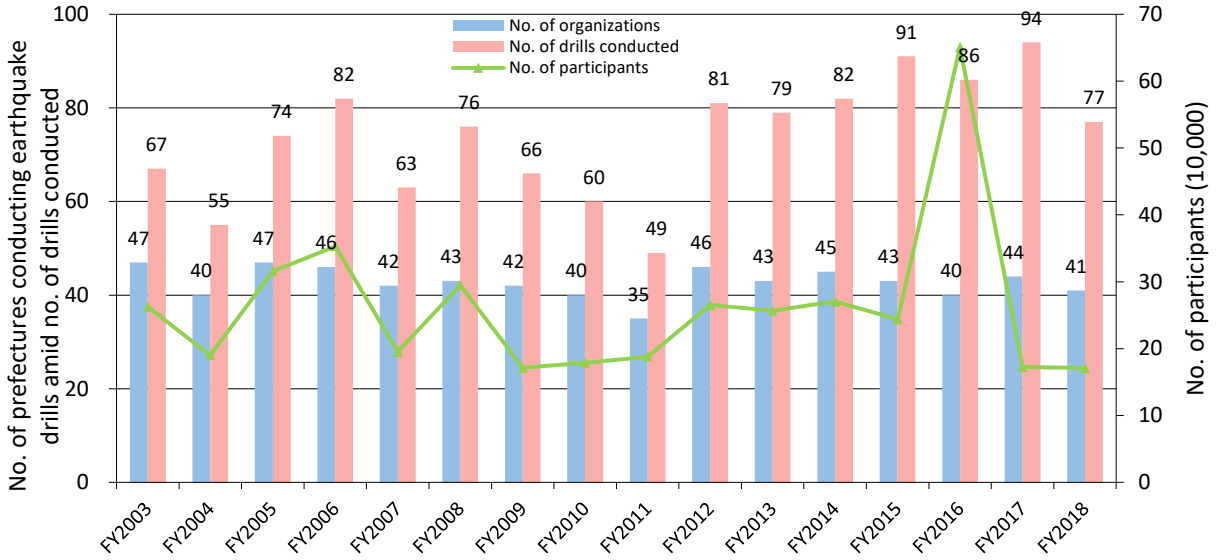




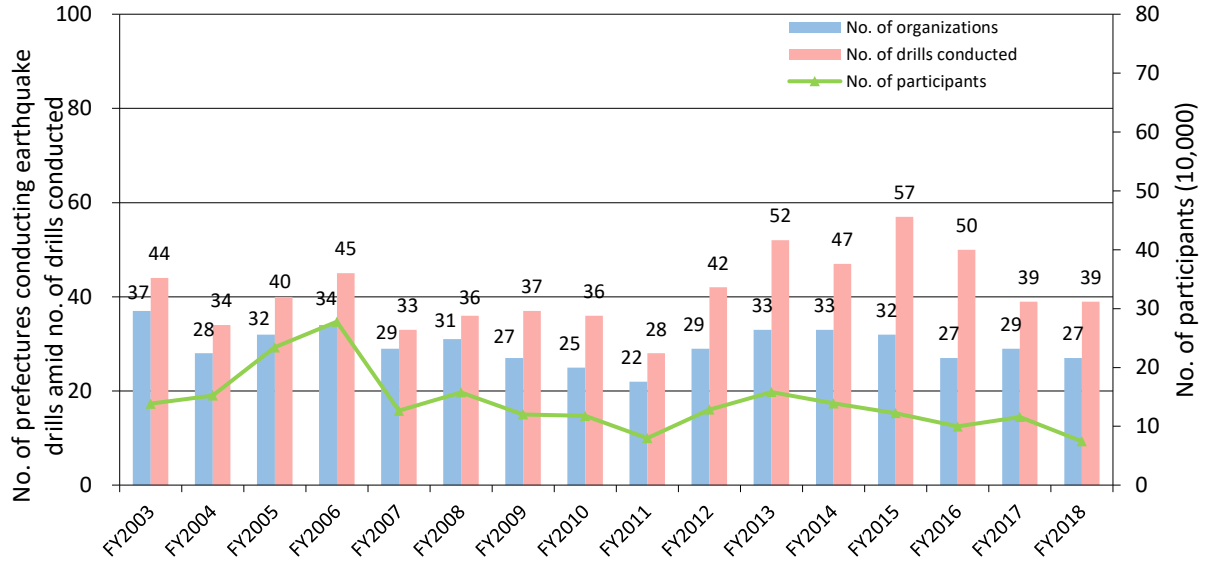
Source: Formulated by the Cabinet Office based on the Fire and Disaster Management Agency report "Status of Regional Disaster Management Administration"

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

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 FY2019 (in JPY million; if applicable)	Department Responsible
Cabinet Office (CAO)	Partnership between the Cabinet Office and FEMA	US	Based on the Memorandum of Cooperation signed by the Cabinet Office and FEMA in December 2014, MOC was revised in December 2019 because 5 years had passed since the conclusion.	—	Disaster Preparedness, Public Relations and International Cooperation Division, Disaster Management Bureau, CAO
	Partnership between the Cabinet Office and Indian Ministry of Home Affairs	India	Based on the Memorandum of Cooperation signed by the Cabinet Office and the Ministry of Home Affairs in India in September 2017, aiming to develop a disaster management partnership and strengthen the relationship between the two counties, the Cabinet Office and the Ministry of Home Affairs held the Follow-up Meeting for the 3rd round of the Japan-India Disaster Management Cooperation Meeting in Delhi in June 2019.	—	Disaster Preparedness, Public Relations and International Cooperation Division, Disaster Management Bureau, CAO
	Cooperation in disaster risk reduction through the Japan International Public-Private Association for Disaster Risk Reduction (JIPAD) for overseas deployment of the disaster prevention technologies	Countries	The Cabinet Office has established the "Japan International Public-Private Association for Disaster Risk Reduction (JIPAD)" in August 2019 with the aim of promoting the deployment of Japanese disaster risk reduction technology abroad under the framework of public- private collaboration and leading the improvement of disaster risk reduction capabilities worldwide including two public-private sector liaison meetings, bringing together related ministries and agencies, private companies, and ambassadors in Tokyo; three public-private sector disaster prevention seminars overseas (Turkey, Ecuador, and Colombia) and 11 seminars in Japan to introduce the technologies for DRR/ DRM of Japanese companies.	—	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. The 12th EMWG was held in the United States in September 2019 to discuss the outcome of the cooperation and the action plan for the next 3 years. Prior to the meeting, participants participated in seminars and tabletop exercises on nuclear emergencies in the United States.	—	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. In October 2019, the Cabinet Office held the first meeting of the "Committee for Cooperation in the Field of Emergency Situation and Management in the Event of a Nuclear Accident," introducing the efforts of the two countries to enhance the emergency response plan and discussing areas of future cooperation. In January 2020, Cabinet Office officials visited French related organizations.	—	Director General for Nuclear Disaster Management, CAO
	Hosting observers of a comprehensive nuclear emergency response exercise	Eight countries and regions and one international organization	With the objective of sharing information and exchanging views concerning nuclear emergency preparedness in each country, a total of 21 foreign* personnel inspected the Comprehensive Nuclear Emergency Response Exercise held at the Shimane Nuclear Power Station in November 2019. After touring the national base on the day following the training, an international workshop was held to exchange views on trainings and exercises and the system for emergencies between visitors and staffs in charge who planned the training. *The US, France, the United Kingdom, Finland, UAE, Korea, Singapore, Taiwan, and the International Atomic Energy Agency (IAEA)	—	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)	Promotion of International Cooperation of ICT Systems for Disaster Management	ASEAN	The Ministry of Internal Affairs and Communications (MIC) encourages countries in the ASEAN region prone to natural disasters to collaborate with the private sector through policy dialogs, demonstration tests, workshops and others to promote the overseas deployment of the ICT system for disaster management, which have been cultivated based on Japan's experience and expertise.	Included as a part of packaged assistance projects for strengthening international competitiveness in the field of ICT, FY2019 (JPY 377m)	International Cooperation Division, Global Strategy Bureau, MIC
	Support to AHA Center (ASEAN Coordinating Centre for Humanitarian Assistance on disaster management)	AHA Center (ASEAN)	ASEAN Integration Fund (JAIF) to support the AHA Center, which is the disaster management information hub for the ASEAN region. The center not only shares disaster information with the ASEAN nations and coordinates emergency responses in the event of a natural disaster or emergency, but also monitors the ASEAN region, supports disaster drills in the region and holds workshops to consolidate the partnership with disaster response organizations in normal times.	—	International Cooperation Division, Global Strategy Bureau, MIC Regional Policy Division, Asian and Oceanian Affairs Bureau, MOFA

Ministry/ Agency	Project	Partner/ Target Country (Target Institution)	Description	Budget for FY2019 (in JPY million; if applicable)	Department Responsible
Fire and Disaster Management Agency (FDMA)	International Forum on Fire and Disaster Management	Asian countries	The International Forum on Fire and Disaster Management has been held since 2007 to mainly enable Asian countries to improve 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	In the wake of the Year of Japan-Republic of Korea National Exchange and the joint hosting of the 2002 FIFA World Cup by the two countries, the Japan-ROK Firefighting Administration Seminar started to take place – which aimed at promoting the two countries' communication, partnership and cooperation in fire service and disaster management through sharing information and exchanging ideas . The seminar has been held on the delegation's mutual visit.	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)	Science and Technology Research Partnership for Sustainable Development (SATREPS)	134 countries that are the object of ODA (Public offering in 2020)	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; in FY2019, 25 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
	Japan-Turkey Disaster Management Cooperation	Turkey	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 institutes in Japan and developing countries cooperate in the international research on solutions to global issues, tapping into the power of leading science and technology and Official Development Assistance (ODA). On December 10, 2019, the first annual conference was held in Tokyo.	—	First Middle East Division, Middle Eastern and African Affairs 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 FY2019, 10 cases of such assistance were carried out. One example is the provision of tents, blankets, and other supplies to hurricane damage victims in the Bahamas in September. *As of the end of February 2020.	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 response to the outbreak of measles in the Independent State of Samoa, which began to worsen around November. * As of the end of February 2020.	Included in JICA Management Expenses Grant	Humanitarian Assistance and Emergency Relief Division International Cooperation Bureau, 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.	37.5	International Nuclear Energy Cooperation Division, Disarmament, Non-proliferation and Science Department, MOFA

Ministry/ Agency	Project	Partner/ Target Country (Target Institution)	Description	Budget for FY2019 (in JPY million; if applicable)	Department Responsible
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/ 16 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 16 international institutions (as of February 2020).	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)	Developing Countries and Others Targeted for ODA Technical Cooperation	Through Japanese leading science and technology and Official Development Assistance (ODA), SATREPS has been set up in order to promote joint international research on solutions to global issues that occur in developing countries, including DRR.	Included in JST Management Expenses Grant	International Science and Technology Affairs Division, Science and Technology Policy Bureau, MEXT
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.	32	River Planning Division, Water and Disaster Management Bureau, MLIT / Overseas Projects Division, Policy Bureau, MLIT
	Initiatives on Tsunami Preparedness in Partnership with Chile	Chile	On the assumption that a tsunami caused by an earthquake in Chile propagated the Pacific Ocean, communication drills, etc. were conducted with Chile (Date of Drill: October 31, 2019)	—	Risk Management Office, Coastal Administration and Disaster Management Division, Ports and Harbors Bureau, 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 October 29, 2019, Professor Tomoya Shibayama of Waseda University/Professor Emeritus of Yokohama National University and Professor Ahmet Cevdet Yalciner of Middle East Technical University (Turkey) received the prize.	—	Port and Airport Research Institute, National Institute of Maritime, Port and Aviation Technology
	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 2020 (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
	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
	Discussion with India on DRR Technology Through a Bilateral Conference	Ministry of Road Transport and Highways in India	In accordance with the cooperation framework concluded in September 2014, the 6th meeting of the Japan–India Joint Working Group on Roads and Road Transport was held in Tokyo. At the meeting, the Japanese side presented slope protection measures and the disaster recovery measures implemented in FY2018.	—	International Affairs Office, Planning Division, Road Bureau, MLIT

Ministry/ Agency	Project	Partner/ Target Country (Target Institution)	Description	Budget for FY2019 (in JPY million; if applicable)	Department Responsible
Japan Metrological Agency (JMA)	International Cooperation through WMO	WMO member countries	The JMA, as a constituent member of the WMO (one of the specialized institutions of the UN to facilitate harmonious development of meteorological services around the world), sends experts to international conferences and is responsible for international centers.	—	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
	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.	2.1	Protection of Marine Environment Division, Guard & Rescue Department, JCG
Ministry of Defense (MOD)	HA/DR Multinational Exercise (Equator 19) Hosted by the French Armed Forces in New Caledonia	France, Australia, Canada, Fiji, Indonesia, New Zealand, Papua New Guinea, Solomon Islands, Tonga, United Kingdom, United States, Vanuatu	A multilateral joint training hosted by the French Armed Forces in New Caledonia Navy. Japan joined the drills related to disaster relief and humanitarian aid activities.	—	Training Division, Bureau of Defense Policy, MOD
	US-Philippines Joint Training Exercise (Kamandag 2019)	US, Philippines	A joint training hosted by the U.S. and the Philippines. Japan joined the drills related to humanitarian aid and disaster relief activities as part of international disaster relief activities.	—	Training Division, Bureau of Defense Policy, MOD
	Training for Humanitarian Assistance and Disaster Relief in the Federated States of Micronesia and other Countries (Christmas Drop)	USA, Australia, New Zealand	A joint training among Japan, the U.S., and Australia. The drills related to humanitarian aid and disaster relief activities were implemented.	—	Training Division, Bureau of Defense Policy, MOD
	Exercise Cobra Gold 2020	Thailand, US, Indonesia, Singapore, Malaysia, Republic of Korea, Malaysia, India, China	A multilateral joint training hosted by the U.S. and Thailand. Japan joined the drills related to humanitarian aid and civilian assistance activities.	—	Training Division, Bureau of Defense Policy, MOD
	Japan-U.S.-Australia Joint Training and Japan-U.S.-Australia Humanitarian Assistance and Disaster Relief 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 (FY2019)

Country	Cooperation Period	Project Name	Description
Indonesia	2013-2019	Project for Assessing and Integrating Climate Change Impacts into the Water Resources Management Plans for Brantas and Musi River Basins	Supports the implementation by Indonesia of water resources management that takes into account the effects of climate change, by providing advice on the formulation of water resource management plans in Indonesia's Brantas and Musi River Basins that take such effects into consideration, and by drafting guidelines that can also be applied to other river basins.
Indonesia	2019-2023	Earthquake and Tsunami Observation and Information Dissemination Capacity Improvement Project	In Indonesia, where earthquakes and tsunamis frequently occur, the project aims at disseminating timely and accurate seismic information and tsunami warnings to disaster management agencies and residents by enhancing a series of capacities of Badan Meteorologi, Klimatologi, dan Geofisika (BMKG)(Indonesian Agency for Meteorology, Climatology and Geophysics) from observing earthquake and tsunami to information dissemination.
Philippines	2016-2019	Project for Strengthening Capacity of Integrated Data Management of Flood Forecasting and Warning	This project aims to enhance the capacity of PAGASA (Philippine Atmospheric, Geophysical and Astronomical Service Administration) on integrated data management and utilization for river flood forecasting and warning. The project gives focus on the operation in Cagayan de Oro/Tagoloan River Flood Forecasting and Waning Center.
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	2018-2020	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.
Thailand	2016-2019	Project for Strengthening the ASEAN Regional Capacity on Disaster Health Management (ARCH Project)	Thailand's National Institute for Emergency Medicine (NIEM) serves as the implementing agency for this project, which aims to strengthen collaborative frameworks for disaster health management in the ASEAN region through collaborative intraregional disaster health management drills, the development of collaboration tools, and training courses, thereby enhancing disaster response capabilities within the region. ASEAN has endorsed this project as an official ASEAN project.
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.
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.
Mongolia	2016-2019	Project for Strengthening the National Capacity of Earthquake Disaster Protection and Prevention in Mongolia	This project seeks to strengthen capacity at the Mongolian national government's disaster prevention body (National Emergency Management Agency: NEMA) by strengthening preventive measures in respect of earthquake-related disaster preparedness. In addition to increasing NEMA's capacity to formulate its own disaster prevention plans, this project will improve NEMA's capacity through the engagement in the initiatives such as the formulation and updating of disaster prevention plans by regional governments and earthquake-resistant construction and disaster preparedness education by other ministries and agencies.
Kyrgyz	2016-2019	Project for Capacity Development for Road Disaster Prevention Management	This road disaster prevention project involving Kyrgyzstan's Ministry of Transport and Roads seeks to (1) summarize the roles of relevant departments; (2) improve road disaster prevention inspection and analysis capabilities; (3) build and operate a road disaster prevention database management system; and (4) promote cooperation in improving capabilities in the area of preparing road disaster prevention management plans. Through this, it aims to develop capacity for road disaster prevention management within the Ministry of Transport and Roads, and thereby increase the safety of road traffic against slope or snow disasters in the area under the jurisdiction of the road maintenance management office targeted by the project.
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	2019-2021	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.

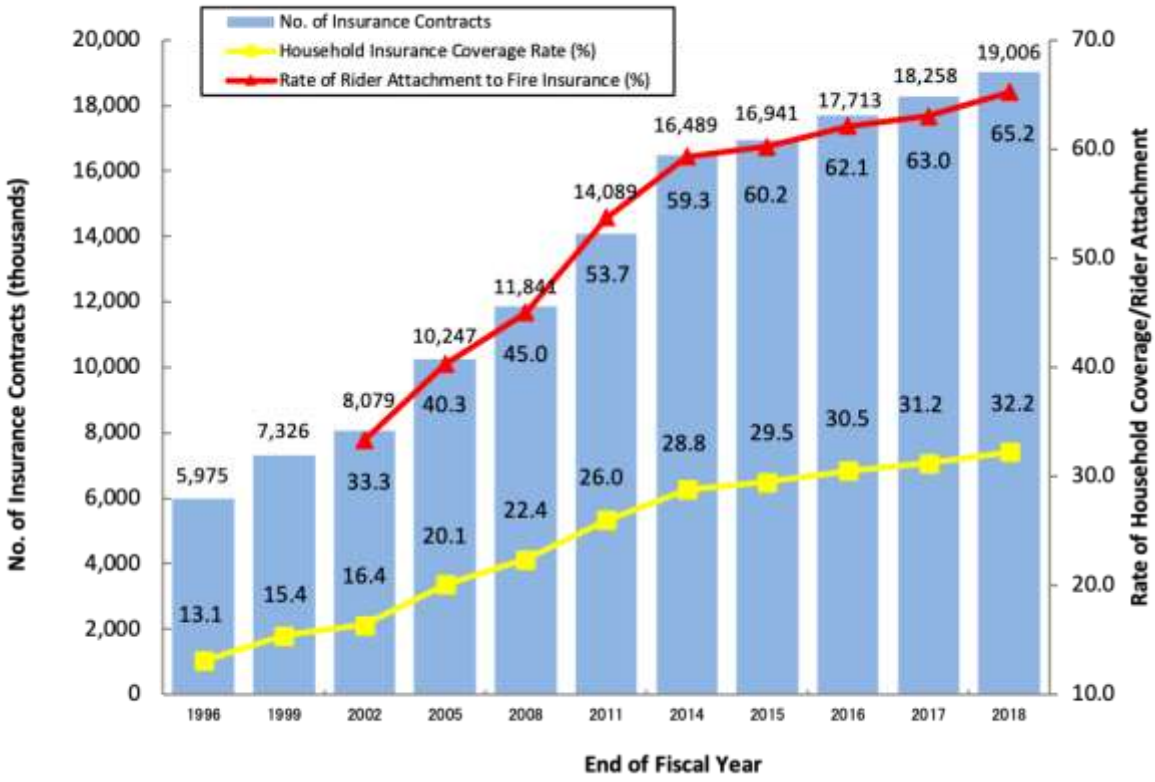
Country	Cooperation Period	Project Name	Description
Bangladesh	2014-2018	Research Project on Disaster Prevention/Mitigation Measures against Floods and Storm Surges (SATREPS)	This project proposes prevention and mitigation measures for storm surge and flood damage including the creation of flood risk maps and storm surge risk maps, measures to address river bank erosion and river levee collapse, and measures to prevent toxic substance diffusion at times of flooding, and experimentally conducts such measures.
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	2016-2021	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 (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	2014-2018	Technical Cooperation for Landslide Mitigation Project	This project supports the enhancement of sediment disaster management capacity in Sri Lanka through conducting surveys and assessments of sediment disaster countermeasures, development of designs to prevent landslide, slope failures and rocks fall, design and construction supervision and monitoring, and accumulation of knowledge and know-how on sediment disasters mitigation measures.
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	2018-2020	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	2014-2018	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.
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.
Mexico	2016-2021	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.

Country	Cooperation Period	Project Name	Description
Nicaragua	2016-2019	Project for Strengthening of Capacity of the Central American Tsunami Advisory Center (CATAC)	Focusing on the Instituto Nicaraguense de Estudios Territoriales (INETER) (Nicaraguan Institute of Territorial Studies) which implemented a 24-hour earthquake and tsunami monitoring system for the first time in the Central America and the Central American Tsunami Advisory Center (CATAC) in Nicaragua, the goal of this project is to improve the quantitative tsunami forecasting capabilities required for CATAC's tsunami advisory information so that the information can be used in the tsunami warnings of Central American countries. It will involve increasing CATAC's ability to analyze earthquake parameters and forecast tsunami using observation data from Central American countries; putting in place facilities and infrastructure for conducting human resource development in Central American countries; and conducting human resource development among core personnel. This has been implemented.
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	2014-2019	Disaster Risk Reduction Training Program for Latin America and the Caribbean	With a view to contributing to the improvement of disaster risk reduction measures in Latin America and the Caribbean, this project will support the development of mechanisms to establish Chile as a base for human resource development in the field of disaster risk reduction. These mechanisms will cover such matters as cooperation policy, budget planning, needs surveys in countries receiving assistance, the coordination and investment of cooperation resources appropriate to those needs, and capacity building for implementation of each training course, etc.
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	2015-2020	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.

Source: Japan International Cooperation Agency (JICA)

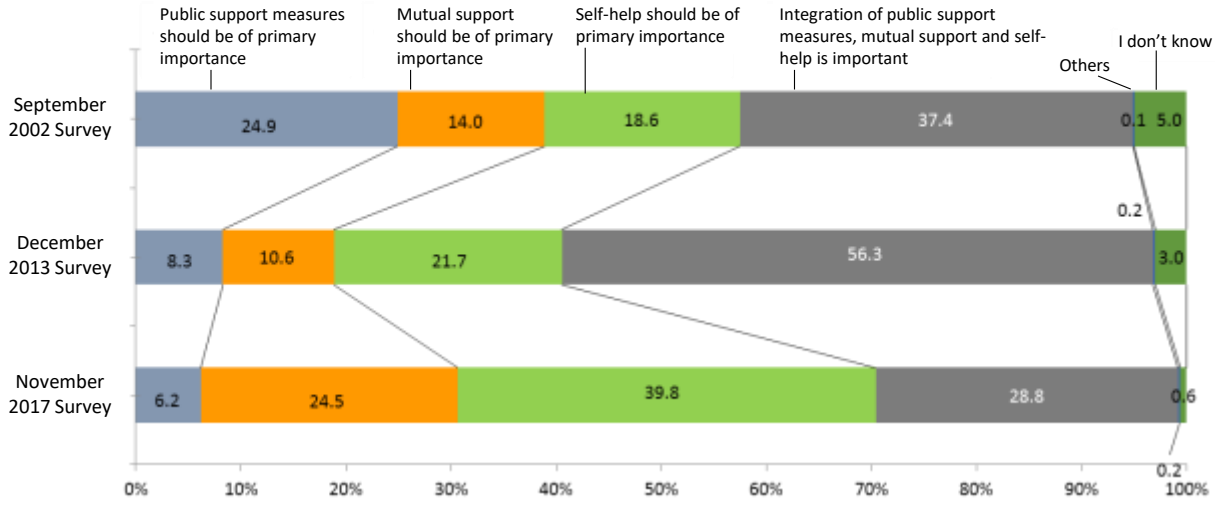
10. Others

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, 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 of 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)

Check the key evacuation information and evacuate during a typhoon and/or heavy rain

Check during emergencies

Key evacuation information

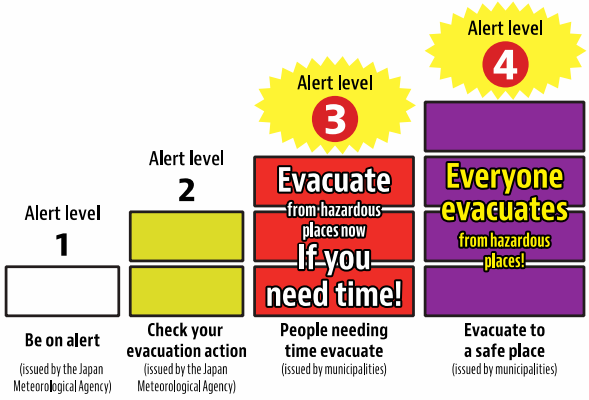
! ▪▪▪▪▪ Make sure to check this ▪▪▪▪▪ !

Evacuation information issued by municipalities (alert levels)

! Evacuate means to escape danger, in other words, to ensure your safety. If you are in a safe place, you do not need to evacuate.

! If you are in a hazardous place, at alert level 3 <the elderly and people with special needs evacuate>, and at alert level 4 <everyone evacuates*1>

*1 Alert level 4 <everyone evacuates> is when everyone, not just the elderly and people with special needs, evacuates from hazardous places.



Alert level 4 is an evacuation *advisory* to evacuate from hazardous places.

The alert levels are separated into five levels to inform residents of the action they should take in preparation for a water or landslide, so this information is issued by municipalities together with evacuation information.

! Alert level 5 means that a disaster is already occurring.

- If a alert level 5 is issued and you have not yet evacuated, take the best action you can to protect your life, such as moving to a safer location in your home, or moving to a safer building if there is one nearby.
- Alert level 5 disaster occurrence information provides information within the scope available when municipalities have been able to get a picture of the disaster. This information is not always issued.

! Evacuating outdoors is dangerous during heavy rains. Please also avoid car travel during heavy rains.

! Alert level 4 is an evacuation advisory or evacuation warning (emergency)*2. In either case, you should always evacuate at alert level 4.

- Alert level 4 evacuation advisories are issued taking into account factors such as the time needed to evacuate and the time of sunset, so it is necessary to evacuate from hazardous places when the advisory is issued.

*2 Alert level 4 evacuation warnings (emergency) are not always issued, and are sometimes issued urgently according to local conditions or to repeatedly urge people to evacuate.

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