

Review of the 2008 Typhoon Season
Annual publications
(Item 6)

FROM JAPAN

I. Overview of tropical cyclones which have affected/impacted Member's area since the last Typhoon Committee Session

1. Meteorological Assessment (highlighting forecasting issues/impacts)

In 2008, nine tropical cyclones (TCs) of tropical storm (TS) intensity or higher had come within 300 km of the Japanese islands as of the end of October. Three of these nine TCs affected Japan, but none made landfall. The details of the three that affected Japan are given below, and their tracks are shown in Figure 1.

(1) TY Kalmaegi (0807)

Kalmaegi formed as a tropical depression (TD) over the sea northeast of the Philippines at 06 UTC on 13 July 2008. Moving southwestward, it was upgraded to tropical storm (TS) intensity over the same waters at 06 UTC on 15 July. After turning northward, it was upgraded to typhoon (TY) intensity over the sea east of Taiwan at 06 UTC on 17 July and reached its peak intensity with maximum sustained winds of 65 kt and a central pressure of 970 hPa. Then turning northwestward, it crossed Taiwan Island with TS intensity and transformed into a tropical depression over southeastern China at 18 UTC on 18 July. It turned northeastward, crossed the Yellow Sea and transformed into an extratropical cyclone at 12 UTC on 20 July before crossing the Korean peninsula. Kalmaegi dissipated over the Sea of Okhotsk at 12 UTC on 24 July. A peak gust of 27.3 m/s was observed at Yonagunijima (47912). Power outages and flight cancellations were reported in Okinawa Prefecture.

(2) TY Sinlaku (0813)

Sinlaku formed as a tropical depression (TD) over the sea east of Luzon Island at 00 UTC on 8 September 2008. Moving to the north-northwest, it was upgraded to tropical storm (TS) intensity over the same waters at 18 UTC that day. Keeping its north-northwestward track, Sinlaku was upgraded to typhoon (TY) intensity and reached its peak intensity with maximum sustained winds of 100 kt and a central pressure of 935 hPa over the sea northeast of Luzon Island at 12 UTC on 10 September. Weakening in intensity and turning to the northwest, it was downgraded to severe tropical storm (STS) intensity around northern Taiwan at 06 UTC on 14 September. After the recurvature, it was upgraded to TY intensity again off the southern coast of Shikoku Island at 00 UTC on 19 September. Keeping its east-northeastward track, Sinlaku transformed into an extratropical cyclone east of Japan at 00 UTC on 21 September and then dissipated far east of Japan at 18 UTC on 23 September. A peak gust of 62.8 m/s and a daily rainfall total of 769.5 mm were observed at Yonagunijima (47912). Extremely heavy rainfall of 759.0 mm in 24 hours was also observed in mainland Japan at Owase (47663). Damage to houses and farm products as well as flight cancellations were reported in Okinawa Prefecture.

(3) TY Jangmi (0815)

Jangmi formed as a tropical depression (TD) over the sea north of Yap Island at 00 UTC on 24

September 2008. Moving west-northwestward, it was upgraded to tropical storm (TS) intensity and typhoon (TY) intensity east of the Philippines at 12 UTC on 24 September and 06 UTC on 25 September, respectively. Jangmi turned northwestward and then reached its peak intensity with maximum sustained winds of 115 kt and a central pressure of 905 hPa over the sea southeast of Taiwan at 12 UTC on 27 September. It turned sharply to the north and weakened rapidly in intensity when it hit Taiwan on 28 September. Turning gradually eastward over the East China Sea, Jangmi was transformed into an extratropical cyclone south of Kyushu Island at 00 UTC on 1 October. It continued to move eastward until it turned southward and decelerated late on 2 October. It dissipated over the sea close to the Ogasawara Islands at 06 UTC on 5 October. A peak gust of 49.2 m/s at Yonagunijima (47912) and a daily rainfall total of 207.0 mm at Kagoshima (47827) were observed. Damage to houses as well as landslides and flight/train cancellations were reported in southern Kyushu.

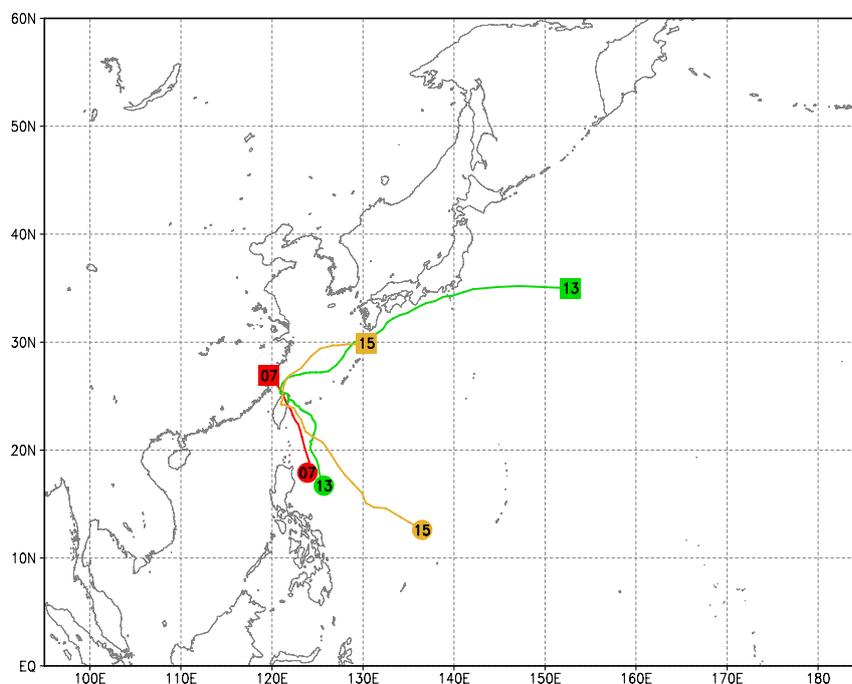


Figure 1 Tracks of the three named TCs that affected Japan in 2008
The numbered circles represent the genesis point of each named TC, while the squares show the dissipation point. The numbers indicate the last two digits of the identification number for each named TC.

2. Hydrological Assessment (highlighting water-related issues/impact)

3. Socio-Economic Assessment (highlighting socio-economic and DPP issues/impacts)

See page 7 to 33.

4. Regional Cooperation Assessment (highlighting regional cooperation successes and challenges)

REPORT ON DAMAGE CAUSED BY CYCLONES, FLOODS AND DROUGHT

COUNTRY: Japan

PERIOD COVERED BY THIS REPORT:

from: 1 September 2007 to: 30 September 2008
(date, month, year) (date, month, year)

PREPARED AND SUBMITTED BY:

Japan Meteorological AgencyDATE PREPARED: 11 November 2008
(date, month, year)

INTRODUCTION

1. It was decided at the fourteenth session of the Typhoon Committee (Manila, November 1981) that information on damage caused by typhoons and floods should be compiled and sent to the Typhoon Committee Secretariat (TCS) before each annual session of the Typhoon Committee. This information shall consist of statistics on loss of human life, damage to houses, public facilities, agricultural products, etc.

2. At the fifth session of Management Board of the Typhoon Operational Experiment (TOPEX) (Tokyo, February 1982) UNDRO and LRCS were asked to co-operate in the preparation of a simple standard format for the region and make proposals for consideration by the Board at its sixth session.

3. The Board considered the proposed format at its sixth session (Bangkok, November 1982) and requested ESCAP and WMO in consultation with UNDRO and LRCS to revise the format with a view to incorporating more elaborately ESCAP's long experience in flood statistics and to avoiding duplication with the ongoing efforts of ESCAP to improve disaster statistics.

4. Accordingly this format was prepared for consideration at the third Planning Meeting for TOPEX (Tokyo, February 1983). The revised format was considered and adopted by the Meeting after some minor editorial amendments.

REPORT

1. This report should cover the total damage caused by typhoons and heavy rainfall, and associated storm-surges, floods, landslides etc.

2. This report should be prepared by an official of the agency responsible for the disaster preparedness and relief in consultation with other agencies concerned.

* Such official should be designated by each member and reported to TCS beforehand.

FORMAT

1. This format is designed to aid compilation of data and information which are already collected in each country. In other words, it does not propose any change in the existing systems of disaster damage survey in the various countries.

2. If final official figures for the reporting period are not available, it is recommended that tentative data be reported with appropriate notations.

3. Although this format covers broad aspects of disasters and detailed data, if the country is not prepared to provide data on some of the items, those may be left blank. However, it is recommended that the country report provides data at least on vital items marked with an asterisk and enclosed thick lines, which are regarded as basic elements in disaster statistics on typhoon damage.

4. Data processing involved in the estimation of damage costs require much time, therefore, if the data are still being processed at the time of reporting, it should be noted when such data will become available.

* = Applicable for the members of Typhoon Committee.

Note

Format 2/6

For consistency, please use the following where necessary:

... data are not available or not separately reported
 amount is negligible or nil
 N/A item is not applicable

□. GENERAL	Sequence No.	1	2	3	4
1. Type of disaster* Sequence number/code name of the typhoon and/or type of disaster caused by it or by a combination of weather disturbances such as rainfall, strong winds, storm-surges, floods and landslides		Typhoon 0709 (Fitow)	STS 0710 (Danas)	Typhoon 0711 (Nari)	Flood due to heavy rainfall
2. Date or period of occurrence*		5-9 September 2007	9 September 2007	13-17 September 2007	15-18 September 2007
3. Name of regions/areas seriously affected*		Hokkaido to Kinki District	Kanto District	Kyushu to Okinawa District	Tohoku District

□. HUMAN DAMAGE	UNIT				
4. Dead and missing*	persons	3	0	3	4
5. Injured	persons	87	2	3	5
6. Homeless*	persons families	Data are not available			
7. Affected ¹⁾	persons families	Data are not available			
8. Total	persons families	90	2	6	9

1) Please specify other categories of disaster victims covered here e.g. assisted by emergency relief activities, those whose normal activities are seriously disrupted.

Remarks:

Note

Format 2/6

For consistency, please use the following where necessary:

... data are not available or not separately reported
 amount is negligible or nil
 N/A item is not applicable

□. GENERAL	Sequence No.	5	6	7	8
1. Type of disaster* Sequence number/code name of the typhoon and/or type of disaster caused by it or by a combination of weather disturbances such as rainfall, strong winds, storm-surges, floods and landslides		Typhoon 0712 (Wipha)	Typhoon 0715 (Krosa)	STS 0717 (Podul)	STS 0720 (Faxai)
2. Date or period of occurrence*		16–20 September 2007	5–7 October 2007	7 October 2007	26–28 October 2007
3. Name of regions/areas seriously affected*		Kyushu to Okinawa District	Okinawa, Kanto District	Kanto District	Tohoku to Kyushu District

□. HUMAN DAMAGE	UNIT				
4. Dead and missing*	persons	1	1	1	1
5. Injured	persons	6	7	0	3
6. Homeless*	persons families	Data are not available			
7. Affected ¹⁾	persons families	Data are not available			
8. Total	persons families	7	8	1	4

1) Please specify other categories of disaster victims covered here e.g. assisted by emergency relief activities, those whose normal activities are seriously disrupted.

Remarks:

Note

Format 2/6

For consistency, please use the following where necessary:

... data are not available or not separately reported
 amount is negligible or nil
 N/A item is not applicable

□. GENERAL	Sequence No.	9	10	11	12
1. Type of disaster* Sequence number/code name of the typhoon and/or type of disaster caused by it or by a combination of weather disturbances such as rainfall, strong winds, storm-surges, floods and landslides		Typhoon 0723 (Mitag)	Typhoon 0802 (Rammason)	STS 0804 (Halong)	Typhoon 0805 (Nakri)
2. Date or period of occurrence*		26—28 November 2007	12—13 May 2008	20 May 2008	2—3 June 2008
3. Name of regions/areas seriously affected*		Okinawa District	Kanto, Chugoku District	Okinawa District	Kanto District

□. HUMAN DAMAGE	UNIT				
4. Dead and missing*	persons	0	0	0	0
5. Injured	persons	0	0	1	0
6. Homeless*	persons families	Data are not available			
7. Affected ¹⁾	persons families	Data are not available			
8. Total	persons families	0	0	1	0

1) Please specify other categories of disaster victims covered here e.g. assisted by emergency relief activities, those whose normal activities are seriously disrupted.

Remarks:

Note

Format 2/6

For consistency, please use the following where necessary:

... data are not available or not separately reported
 amount is negligible or nil
 N/A item is not applicable

□. GENERAL	Sequence No.	13	14	15	16
1. Type of disaster* Sequence number/code name of the typhoon and/or type of disaster caused by it or by a combination of weather disturbances such as rainfall, strong winds, storm-surges, floods and landslides		Flood due to heavy rainfall	Flood due to heavy rainfall	STS 0811 (Vongfong)	Flood due to heavy rainfall
2. Date or period of occurrence*		27-29 July 2008	4-9 August 2008	14-17 August 2008	26-31 August 2008
3. Name of regions/areas seriously affected*		Tohoku to Chugoku, Shikoku District	Kanto to Kyushu District	Tohoku to Kyushu District	Hokkaido to Chugoku, Shikoku District

□. HUMAN DAMAGE	UNIT				
4. Dead and missing*	persons	8	3	1	0
5. Injured	persons	31	3	0	2
6. Homeless*	persons families	Data are not available			
7. Affected ¹⁾	persons families	Data are not available			
8. Total	persons families	39	6	1	2

1) Please specify other categories of disaster victims covered here e.g. assisted by emergency relief activities, those whose normal activities are seriously disrupted.

Remarks:

Note

Format 2/6

For consistency, please use the following where necessary:

... data are not available or not separately reported
 amount is negligible or nil
 N/A item is not applicable

□. GENERAL	Sequence No.	17	18	19	
1. Type of disaster* Sequence number/code name of the typhoon and/or type of disaster caused by it or by a combination of weather disturbances such as rainfall, strong winds, storm-surges, floods and landslides		Typhoon 0813 (Sinlaku)	Typhoon 0814 (Hagupit)	Typhoon 0815 (Jangmi)	
2. Date or period of occurrence*		12—20 September 2008	22 September 2008	27 September — 1 October 2008	
3. Name of regions/areas seriously affected*		Kanto to Okinawa District	Kyushu District	Kyushu to Okinawa District	

□. HUMAN DAMAGE	UNIT				
4. Dead and missing*	persons	0	1	0	
5. Injured	persons	4	0	2	
6. Homeless*	persons families	Data are not available			
7. Affected ¹⁾	persons families	Data are not available			
8. Total	persons families	4	1	2	

1) Please specify other categories of disaster victims covered here e.g. assisted by emergency relief activities, those whose normal activities are seriously disrupted.

Remarks:

□. MATERIAL DAMAGE IN PHYSICAL TERMS

A. Houses and buildings ²⁾	Sequence No. Unit	1	2	3	4
9. Destroyed*	Units	14	0	14	6
10. Damaged*	Units	62	0	22	226
11. Affected* ³⁾ please specify: inundated etc.	Units	1,941	0	117	1,402
12. Total*	Units	2,017	0	153	1,634

B. Farmland⁴⁾

13. Farmland*	hectares	17,037	0	1,247	14,201
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C. Agricultural Products

14. Crops*	tons	Data are not available			
15. Livestock	heads	Data are not available			
16. Fruit plants	number hectares	Data are not available			
17. Others ⁵⁾ please specify:		None			

2) Houses and buildings affected includes public buildings and are classified into three groups: Those not able to be used without reconstruction enter into “Destroyed”; those which can be repaired enter into “Damaged” and others which were inundated, damaged in minor parts or whose fixtures and furniture were damaged enter into “Affected”.

3) Please specify other types of damage e.g. inundated, marooned, evacuated.

4) Farmland affected are those buried, washed away, inundated and/or whose products were damaged.

5) If data are available for other products such as vegetables, marine products, forest products, please use this column.

Remarks:

□. MATERIAL DAMAGE IN PHYSICAL TERMS

A. Houses and buildings ²⁾	Sequence No. Unit	5	6	7	8
9. Destroyed*	Units	7	0	0	0
10. Damaged*	Units	4	2	0	0
11. Affected* ³⁾ please specify: inundated etc.	Units	39	51	0	1
12. Total*	Units	50	53	0	1

B. Farmland⁴⁾

13. Farmland*	hectares	3,931	3,968	0	2
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C. Agricultural Products

14. Crops*	tons	Data are not available			
15. Livestock	heads	Data are not available			
16. Fruit plants	number hectares	Data are not available			
17. Others ⁵⁾ please specify:		None			

2) Houses and buildings affected includes public buildings and are classified into three groups: Those not able to be used without reconstruction enter into “Destroyed”; those which can be repaired enter into “Damaged” and others which were inundated, damaged in minor parts or whose fixtures and furniture were damaged enter into “Affected”.

3) Please specify other types of damage e.g. inundated, marooned, evacuated.

4) Farmland affected are those buried, washed away, inundated and/or whose products were damaged.

5) If data are available for other products such as vegetables, marine products, forest products, please use this column.

Remarks:

□. MATERIAL DAMAGE IN PHYSICAL TERMS

A. Houses and buildings ²⁾	Sequence No. Unit	9	10	11	12
9. Destroyed*	Units	0	0	0	0
10. Damaged*	Units	0	0	0	0
11. Affected* ³⁾ please specify: inundated etc.	Units	0	0	0	0
12. Total*	Units	0	0	0	0

B. Farmland⁴⁾

13. Farmland*	hectares	0	10	0	0
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C. Agricultural Products

14. Crops*	tons	Data are not available			
15. Livestock	heads	Data are not available			
16. Fruit plants	number hectares	Data are not available			
17. Others ⁵⁾ please specify:		None			

2) Houses and buildings affected includes public buildings and are classified into three groups: Those not able to be used without reconstruction enter into “Destroyed”; those which can be repaired enter into “Damaged” and others which were inundated, damaged in minor parts or whose fixtures and furniture were damaged enter into “Affected”.

3) Please specify other types of damage e.g. inundated, marooned, evacuated.

4) Farmland affected are those buried, washed away, inundated and/or whose products were damaged.

5) If data are available for other products such as vegetables, marine products, forest products, please use this column.

Remarks:

□. MATERIAL DAMAGE IN PHYSICAL TERMS

A. Houses and buildings ²⁾	Sequence No. Unit	13	14	15	16
9. Destroyed*	Units	4	0	0	0
10. Damaged*	Units	9	0	0	5
11. Affected* ³⁾ please specify: inundated etc.	Units	2,840	3,808	523	5,229
12. Total*	Units	2,853	3,808	523	5,234

B. Farmland⁴⁾

13. Farmland*	hectares	149	257	39	2,737
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C. Agricultural Products

14. Crops*	tons	Data are not available			
15. Livestock	heads	Data are not available			
16. Fruit plants	number hectares	Data are not available			
17. Others ⁵⁾ please specify:		None			

2) Houses and buildings affected includes public buildings and are classified into three groups: Those not able to be used without reconstruction enter into “Destroyed”; those which can be repaired enter into “Damaged” and others which were inundated, damaged in minor parts or whose fixtures and furniture were damaged enter into “Affected”.

3) Please specify other types of damage e.g. inundated, marooned, evacuated.

4) Farmland affected are those buried, washed away, inundated and/or whose products were damaged.

5) If data are available for other products such as vegetables, marine products, forest products, please use this column.

Remarks:

□. MATERIAL DAMAGE IN PHYSICAL TERMS

A. Houses and buildings ²⁾	Sequence No. Unit	17	18	19	
9. Destroyed*	Units	4	0	0	
10. Damaged*	Units	8	0	0	
11. Affected* ³⁾ please specify: inundated etc.	Units	364	0	12	
12. Total*	Units	376	0	12	

B. Farmland⁴⁾

13. Farmland*	hectares	0	0	334	
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C. Agricultural Products

14. Crops*	tons	Data are not available			
15. Livestock	heads	Data are not available			
16. Fruit plants	number hectares	Data are not available			
17. Others ⁵⁾ please specify:		None			

2) Houses and buildings affected includes public buildings and are classified into three groups: Those not able to be used without reconstruction enter into "Destroyed"; those which can be repaired enter into "Damaged" and others which were inundated, damaged in minor parts or whose fixtures and furniture were damaged enter into "Affected".

3) Please specify other types of damage e.g. inundated, marooned, evacuated.

4) Farmland affected are those buried, washed away, inundated and/or whose products were damaged.

5) If data are available for other products such as vegetables, marine products, forest products, please use this column.

Remarks:

D. Public works facilities		Sequence No. Unit	1	2	3	4
18. Road*	Km sites		1,113	0	1	274
19. Bridge*	sites		7	0	0	4
20. River embankment	sites		6	0	0	0
21. Irrigation facilities	hectares sites	Data are not available				
22. Reservoir and dam	number	Data are not available				
23. Harbour and port	number sites		14	0	0	0
24. Other please specify:		None				

E. Public utilities ⁷⁾		km sites	1	0	0	1
25. Railway	km sites		1	0	0	1
26. Electric supply	affected families sites		229,916	0	4,800	2,464
27. Water supply	affected families sites		4,010	0	3,700	195
28. Telecommunication	circuits sites		48	0	160	1
29. Other please specify:		None				

F. Others		Number	19	0	0	3
30. Ships lost or damaged	Number		19	0	0	3
31. Landslides & collapse of slope	sites		527	0	0	85

- 6) There are two types of classification methods in the public works facilities:
- classification in accordance with the nature of the service provided;
 - classification in accordance with the administrative structure of the Government.
- Although the format was prepared according to the former classification, if necessary, appropriate changes might be allowed.
- 7) Public utilities include both private owned and state owned facilities. Column of "Other" can be used for the damage in airport, gas supply etc.

Remarks:

D. Public works facilities		Sequence No.	5	6	7	8
18. Road*	Km sites	Unit	7	8	0	2
19. Bridge*	sites		0	0	0	0
20. River embankment	sites		0	0	0	0
21. Irrigation facilities	hectares sites		Data are not available			
22. Reservoir and dam	number		Data are not available			
23. Harbour and port	number sites		3	1	0	0
24. Other please specify:			None			

E. Public utilities ⁷⁾		Sequence No.	5	6	7	8
25. Railway	Km sites	Unit	0	0	0	0
26. Electric supply	affected families sites		10,800	14,988	0	9,605
27. Water supply	affected families sites		0	0	0	0
28. Telecommunication	circuits sites		1,200	1,000	0	0
29. Other please specify:			None			

F. Others		Sequence No.	5	6	7	8
30. Ships lost or damaged	Number	Unit	10	3	0	1
31. Landslides & collapse of slope	sites		1	3	0	7

- 6) There are two types of classification methods in the public works facilities:
- c) classification in accordance with the nature of the service provided;
 - d) classification in accordance with the administrative structure of the Government.
- Although the format was prepared according to the former classification, if necessary, appropriate changes might be allowed.
- 7) Public utilities include both private owned and state owned facilities. Column of "Other" can be used for the damage in airport, gas supply etc.

Remarks:

D. Public works facilities		Sequence No.	9	10	11	12
18. Road*	Km sites		3	0	0	1
19. Bridge*	sites		0	0	0	0
20. River embankment	sites		0	0	0	0
21. Irrigation facilities	hectares sites		Data are not available			
22. Reservoir and dam	number		Data are not available			
23. Harbour and port	number sites		0	0	0	0
24. Other please specify:			None			

E. Public utilities ⁷⁾		Sequence No.	9	10	11	12
25. Railway	Km sites		0	0	0	0
26. Electric supply	affected families sites		0	0	0	0
27. Water supply	affected families sites		0	0	0	0
28. Telecommunication	circuits sites		0	0	0	0
29. Other please specify:			None			

F. Others		Sequence No.	9	10	11	12
30. Ships lost or damaged	Number		0	0	0	0
31. Landslides & collapse of slope	sites		1	0	0	1

- 6) There are two types of classification methods in the public works facilities:
- e) classification in accordance with the nature of the service provided;
 - f) classification in accordance with the administrative structure of the Government.
- Although the format was prepared according to the former classification, if necessary, appropriate changes might be allowed.

- 7) Public utilities include both private owned and state owned facilities. Column of "Other" can be used for the damage in airport, gas supply etc.

Remarks:

D. Public works facilities		Sequence No. Unit	13	14	15	16
18. Road*	Km sites		458	144	139	670
19. Bridge*	sites		3	0	0	1
20. River embankment	sites		0	0	2	0
21. Irrigation facilities	hectares sites	Data are not available				
22. Reservoir and dam	number	Data are not available				
23. Harbour and port	number sites		0	0	0	0
24. Other please specify:		None				

E. Public utilities ⁷⁾		Km sites	17	13	0	0
25. Railway	Km sites		17	13	0	0
26. Electric supply	affected families sites		182,829	2,463,670	15,520	229,895
27. Water supply	affected families sites		0	0	0	12
28. Telecommunication	circuits sites		124	13,829	0	1
29. Other please specify:		None				

F. Others		Number	1	0	0	0
30. Ships lost or damaged	Number		1	0	0	0
31. Landslides & collapse of slope	sites		163	33	54	163

- 6) There are two types of classification methods in the public works facilities:
- g) classification in accordance with the nature of the service provided;
 - h) classification in accordance with the administrative structure of the Government.
- Although the format was prepared according to the former classification, if necessary, appropriate changes might be allowed.

- 7) Public utilities include both private owned and state owned facilities. Column of "Other" can be used for the damage in airport, gas supply etc.

Remarks:

D. Public works facilities		Sequence No. Unit	17	18	19	
18. Road*	Km sites		4	0	17	
19. Bridge*	sites		1	0	0	
20. River embankment	sites		0	0	0	
21. Irrigation facilities	hectares sites	Data are not available				
22. Reservoir and dam	number	Data are not available				
23. Harbour and port	number sites		0	0	0	
24. Other please specify:		None				

E. Public utilities ⁷⁾		Sequence No. Unit	17	18	19	
25. Railway	Km sites		0	0	0	
26. Electric supply	affected families sites		1,920	0	0	
27. Water supply	affected families sites		409	0	0	
28. Telecommunication	circuits sites		0	0	0	
29. Other please specify:		None				

F. Others		Sequence No. Unit	17	18	19	
30. Ships lost or damaged	Number		0	1	0	
31. Landslides & collapse of slope	sites		92	0	42	

- 6) There are two types of classification methods in the public works facilities:
- i) classification in accordance with the nature of the service provided;
 - j) classification in accordance with the administrative structure of the Government.
- Although the format was prepared according to the former classification, if necessary, appropriate changes might be allowed.
- 7) Public utilities include both private owned and state owned facilities. Column of "Other" can be used for the damage in airport, gas supply etc.

Remarks:

□. MATERIAL DAMAGE IN MONETARY TERMS

UNIT:* 100 million JPYEXCHANGE RATE:* ONE \$US = 115 JPY

	Sequence No.	1	2	3	4
32. Damage of houses & loss of private property* ⁸⁾ includes: • Houses and buildings for residential use, • Household furniture, appliances and possessions, • Stored goods & other assets of farmers' & fishermen's households, • Other:		Data are not available			
33. Loss of agriculture production* ⁹⁾ includes: • Crops, Vegetables, Fruits, etc. • Livestock, • Other:		13,405.1	0	314.6	3,196.8
34. Loss of industry* ¹⁰⁾		Data are not available			

8) Damage of houses and loss of private property includes damage to: a) houses and buildings for residential use, b) household furniture, appliances and possessions, c) stored goods and other assets of farmers' and fishermen's households. Damage to shops and manufactories could be classified under item "34. loss of industry", however, if such separation was not possible for small shops and home-industries, such damage could be included in this item with an appropriate note.

Damage costs can be estimated by means of surveys listing the number of houses and buildings, their floor area and extent of damage, priced according to the value of the building or per unit area of floor space. Damage to household articles and personal effects such as clothing, furniture, electric appliances, cars, etc. are included in this category. If information on the household articles of an average family is available, loss may be calculated by multiplying the number of affected families by their total properties and an assessed percentage of damage. Damage to stored goods and other assets of farmers' and fishermen's households can be assessed in a similar manner.

9) Loss of agricultural production includes damage to: a) crops, vegetables, fruits, etc., b) livestock, c) marine products, d) forest products. Damage to agricultural products which had been stored in farmers' houses or warehouses should be counted under item "32. Damage of houses and loss of private property".

Crop damage can be estimated by multiplying the damaged crop area by the average loss per hectare and unit price of the crop, after considering the extent of damage to crops inundated and buried under debris. Loss of livestock can be estimated in the same manner by multiplying the head of stock lost by unit market price.

10) Loss of industry includes damage to buildings, factories, warehouses, machinery, stored goods and other assets in factories and wholesale, retail and other service industries, but excludes agriculture, fishing and public utilities. Indirect losses due to suspension of routine activities are excluded here and if such data is available, please use column "V. OTHER ADDITIONAL INFORMATION AND DATA AVAILABLE".

Estimates of the damage incurred can be sought from the industries concerned.

Remarks:

Remarks:

□. MATERIAL DAMAGE IN MONETARY TERMS

UNIT:* 100 million JPYEXCHANGE RATE:* ONE \$US = 115 JPY

	Sequence No.	5	6	7	8
32. Damage of houses & loss of private property* ⁸⁾ includes: • Houses and buildings for residential use, • Household furniture, appliances and possessions, • Stored goods & other assets of farmers' & fishermen's households, • Other:		Data are not available			
33. Loss of agriculture production* ⁹⁾ includes: • Crops, Vegetables, Fruits, etc. • Livestock, • Other:		283.2	295.4	0	1.5
34. Loss of industry* ¹⁰⁾		Data are not available			

8) Damage of houses and loss of private property includes damage to: a) houses and buildings for residential use, b) household furniture, appliances and possessions, c) stored goods and other assets of farmers' and fishermen's households. Damage to shops and manufactories could be classified under item "34. loss of industry", however, if such separation was not possible for small shops and home-industries, such damage could be included in this item with an appropriate note.

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9) Loss of agricultural production includes damage to: a) crops, vegetables, fruits, etc., b) livestock, c) marine products, d) forest products. Damage to agricultural products which had been stored in farmers' houses or warehouses should be counted under item "32. Damage of houses and loss of private property".

Crop damage can be estimated by multiplying the damaged crop area by the average loss per hectare and unit price of the crop, after considering the extent of damage to crops inundated and buried under debris. Loss of livestock can be estimated in the same manner by multiplying the head of stock lost by unit market price.

10) Loss of industry includes damage to buildings, factories, warehouses, machinery, stored goods and other assets in factories and wholesale, retail and other service industries, but excludes agriculture, fishing and public utilities. Indirect losses due to suspension of routine activities are excluded here and if such data is available, please use column "V. OTHER ADDITIONAL INFORMATION AND DATA AVAILABLE".

Estimates of the damage incurred can be sought from the industries concerned.

Remarks:

Remarks:

□. MATERIAL DAMAGE IN MONETARY TERMS

UNIT:* 100 million JPYEXCHANGE RATE:* ONE \$US = 115 JPY

	Sequence No.	9	10	11	12
32. Damage of houses & loss of private property* ⁸⁾ includes: • Houses and buildings for residential use, • Household furniture, appliances and possessions, • Stored goods & other assets of farmers' & fishermen's households, • Other:		Data are not available			
33. Loss of agriculture production* ⁹⁾ includes: • Crops, Vegetables, Fruits, etc. • Livestock, • Other:		0	7.7	0	0
34. Loss of industry* ¹⁰⁾		Data are not available			

8) Damage of houses and loss of private property includes damage to: a) houses and buildings for residential use, b) household furniture, appliances and possessions, c) stored goods and other assets of farmers' and fishermen's households. Damage to shops and manufacturies could be classified under item "34. loss of industry", however, if such separation was not possible for small shops and home-industries, such damage could be included in this item with an appropriate note.

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9) Loss of agricultural production includes damage to: a) crops, vegetables, fruits, etc., b) livestock, c) marine products, d) forest products. Damage to agricultural products which had been stored in farmers' houses or warehouses should be counted under item "32. Damage of houses and loss of private property".

Crop damage can be estimated by multiplying the damaged crop area by the average loss per hectare and unit price of the crop, after considering the extent of damage to crops inundated and buried under debris. Loss of livestock can be estimated in the same manner by multiplying the head of stock lost by unit market price.

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Estimates of the damage incurred can be sought from the industries concerned.

Remarks:

Remarks:

□. MATERIAL DAMAGE IN MONETARY TERMS

UNIT:* 100 million JPYEXCHANGE RATE:* ONE \$US = 115 JPY

	Sequence No.	13	14	15	16
32. Damage of houses & loss of private property* ⁸⁾ includes: • Houses and buildings for residential use, • Household furniture, appliances and possessions, • Stored goods & other assets of farmers' & fishermen's households, • Other:		Data are not available			
33. Loss of agriculture production* ⁹⁾ includes: • Crops, Vegetables, Fruits, etc. • Livestock, • Other:		105.4	246.6	0	1,014.3
34. Loss of industry* ¹⁰⁾		Data are not available			

8) Damage of houses and loss of private property includes damage to: a) houses and buildings for residential use, b) household furniture, appliances and possessions, c) stored goods and other assets of farmers' and fishermen's households. Damage to shops and manufacturies could be classified under item "34. loss of industry", however, if such separation was not possible for small shops and home-industries, such damage could be included in this item with an appropriate note.

Damage costs can be estimated by means of surveys listing the number of houses and buildings, their floor area and extent of damage, priced according to the value of the building or per unit area of floor space. Damage to household articles and personal effects such as clothing, furniture, electric appliances, cars, etc. are included in this category. If information on the household articles of an average family is available, loss may be calculated by multiplying the number of affected families by their total properties and an assessed percentage of damage. Damage to stored goods and other assets of farmers' and fishermen's households can be assessed in a similar manner.

9) Loss of agricultural production includes damage to: a) crops, vegetables, fruits, etc., b) livestock, c) marine products, d) forest products. Damage to agricultural products which had been stored in farmers' houses or warehouses should be counted under item "32. Damage of houses and loss of private property".

Crop damage can be estimated by multiplying the damaged crop area by the average loss per hectare and unit price of the crop, after considering the extent of damage to crops inundated and buried under debris. Loss of livestock can be estimated in the same manner by multiplying the head of stock lost by unit market price.

10) Loss of industry includes damage to buildings, factories, warehouses, machinery, stored goods and other assets in factories and wholesale, retail and other service industries, but excludes agriculture, fishing and public utilities. Indirect losses due to suspension of routine activities are excluded here and if such data is available, please use column "V. OTHER ADDITIONAL INFORMATION AND DATA AVAILABLE".

Estimates of the damage incurred can be sought from the industries concerned.

Remarks:

Remarks:

□. MATERIAL DAMAGE IN MONETARY TERMS

UNIT:* 100 million JPYEXCHANGE RATE:* ONE \$US = 115 JPY

	Sequence No.	17	18	19	
32. Damage of houses & loss of private property* ⁸⁾ includes: • Houses and buildings for residential use, • Household furniture, appliances and possessions, • Stored goods & other assets of farmers' & fishermen's households, • Other:		Data are not available			
33. Loss of agriculture production* ⁹⁾ includes: • Crops, Vegetables, Fruits, etc. • Livestock, • Other:		0.6	0	203.4	
34. Loss of industry* ¹⁰⁾		Data are not available			

8) Damage of houses and loss of private property includes damage to: a) houses and buildings for residential use, b) household furniture, appliances and possessions, c) stored goods and other assets of farmers' and fishermen's households. Damage to shops and manufacturies could be classified under item "34. loss of industry", however, if such separation was not possible for small shops and home-industries, such damage could be included in this item with an appropriate note.

Damage costs can be estimated by means of surveys listing the number of houses and buildings, their floor area and extent of damage, priced according to the value of the building or per unit area of floor space. Damage to household articles and personal effects such as clothing, furniture, electric appliances, cars, etc. are included in this category. If information on the household articles of an average family is available, loss may be calculated by multiplying the number of affected families by their total properties and an assessed percentage of damage. Damage to stored goods and other assets of farmers' and fishermen's households can be assessed in a similar manner.

9) Loss of agricultural production includes damage to: a) crops, vegetables, fruits, etc., b) livestock, c) marine products, d) forest products. Damage to agricultural products which had been stored in farmers' houses or warehouses should be counted under item "32. Damage of houses and loss of private property".

Crop damage can be estimated by multiplying the damaged crop area by the average loss per hectare and unit price of the crop, after considering the extent of damage to crops inundated and buried under debris. Loss of livestock can be estimated in the same manner by multiplying the head of stock lost by unit market price.

10) Loss of industry includes damage to buildings, factories, warehouses, machinery, stored goods and other assets in factories and wholesale, retail and other service industries, but excludes agriculture, fishing and public utilities. Indirect losses due to suspension of routine activities are excluded here and if such data is available, please use column "V. OTHER ADDITIONAL INFORMATION AND DATA AVAILABLE".

Estimates of the damage incurred can be sought from the industries concerned.

Remarks:

Remarks:

	Sequence No.	1	2	3	4
35. Loss of public works facilities* ¹¹⁾ includes items under III. MATERIAL DAMAGE IN PHYSICAL TERMS: • Road, • Bridge, • River embankment etc., • Irrigation facility • Reservoir and dam, • Harbour and port, and • Public buildings, • Rehabilitation cost of farmland at Government expense, • Other:		Data are not available			
36. Loss of public utilities* ¹²⁾ includes items under III. MATERIAL DAMAGE IN PHYSICAL TERMS: • Railway, • Electric supply, • Water supply, • Telecommunication, • Other:		Data are not available			
37. Total estimated/counted damage cost* sum of items: • 32, • 33, • 34, • 35, • 36		13,405.1	0	314.6	3,196.8

11) Loss of public works facilities is the cost required for the following facilities at Government expense:

a) road and bridge, b) flood control installations, c) agricultural land, d) irrigation and drainage installations, e) reservoirs and dams, f) harbour, fishing port and airport installations, g) erosion control and landslide structures, h) streets, urban sewerage systems and other public works facilities.

12) Public utilities include both private owned and state owned facilities.

Remarks:

OTHER INFORMATION AND DATA AVAILABLE

	Sequence No.	5	6	7	8
35. Loss of public works facilities* ¹¹⁾ includes items under III. MATERIAL DAMAGE IN PHYSICAL TERMS: • Road, • Bridge, • River embankment etc., • Irrigation facility • Reservoir and dam, • Harbour and port, and • Public buildings, • Rehabilitation cost of farmland at Government expense, • Other:		Data are not available			
36. Loss of public utilities* ¹²⁾ includes items under III. MATERIAL DAMAGE IN PHYSICAL TERMS: • Railway, • Electric supply, • Water supply, • Telecommunication, • Other:		Data are not available			
37. Total estimated/counted damage cost* sum of items: • 32, • 33, • 34, • 35, • 36		283.2	295.4	0	1.5

11) Loss of public works facilities is the cost required for the following facilities at Government expense:

a) road and bridge, b) flood control installations, c) agricultural land, d) irrigation and drainage installations, e) reservoirs and dams, f) harbour, fishing port and airport installations, g) erosion control and landslide structures, h) streets, urban sewerage systems and other public works facilities.

12) Public utilities include both private owned and state owned facilities.

Remarks:

OTHER INFORMATION AND DATA AVAILABLE

	Sequence No.	9	10	11	12
35. Loss of public works facilities* ¹¹⁾ includes items under III. MATERIAL DAMAGE IN PHYSICAL TERMS: • Road, • Bridge, • River embankment etc., • Irrigation facility • Reservoir and dam, • Harbour and port, and • Public buildings, • Rehabilitation cost of farmland at Government expense, • Other:		Data are not available			
36. Loss of public utilities* ¹²⁾ includes items under III. MATERIAL DAMAGE IN PHYSICAL TERMS: • Railway, • Electric supply, • Water supply, • Telecommunication, • Other:		Data are not available			
37. Total estimated/counted damage cost* sum of items: • 32, • 33, • 34, • 35, • 36		0	7.7	0	0

11) Loss of public works facilities is the cost required for the following facilities at Government expense:

a) road and bridge, b) flood control installations, c) agricultural land, d) irrigation and drainage installations, e) reservoirs and dams, f) harbour, fishing port and airport installations, g) erosion control and landslide structures, h) streets, urban sewerage systems and other public works facilities.

12) Public utilities include both private owned and state owned facilities.

Remarks:

OTHER INFORMATION AND DATA AVAILABLE

	Sequence No.	13	14	15	16
35. Loss of public works facilities* ¹¹⁾ includes items under III. MATERIAL DAMAGE IN PHYSICAL TERMS: • Road, • Bridge, • River embankment etc., • Irrigation facility • Reservoir and dam, • Harbour and port, and • Public buildings, • Rehabilitation cost of farmland at Government expense, • Other:		Data are not available			
36. Loss of public utilities* ¹²⁾ includes items under III. MATERIAL DAMAGE IN PHYSICAL TERMS: • Railway, • Electric supply, • Water supply, • Telecommunication, • Other:		Data are not available			
37. Total estimated/counted damage cost* sum of items: • 32, • 33, • 34, • 35, • 36		105.4	246.6	0	1,014.3

11) Loss of public works facilities is the cost required for the following facilities at Government expense:

a) road and bridge, b) flood control installations, c) agricultural land, d) irrigation and drainage installations, e) reservoirs and dams, f) harbour, fishing port and airport installations, g) erosion control and landslide structures, h) streets, urban sewerage systems and other public works facilities.

12) Public utilities include both private owned and state owned facilities.

Remarks:

OTHER INFORMATION AND DATA AVAILABLE

	Sequence No.	17	18	19	
35. Loss of public works facilities* ¹¹⁾ includes items under III. MATERIAL DAMAGE IN PHYSICAL TERMS: • Road, • Bridge, • River embankment etc., • Irrigation facility • Reservoir and dam, • Harbour and port, and • Public buildings, • Rehabilitation cost of farmland at Government expense, • Other:		Data are not available			
36. Loss of public utilities* ¹²⁾ includes items under III. MATERIAL DAMAGE IN PHYSICAL TERMS: • Railway, • Electric supply, • Water supply, • Telecommunication, • Other:		Data are not available			
37. Total estimated/counted damage cost* sum of items: • 32, • 33, • 34, • 35, • 36		0.6	0	203.4	

11) Loss of public works facilities is the cost required for the following facilities at Government expense:

a) road and bridge, b) flood control installations, c) agricultural land, d) irrigation and drainage installations, e) reservoirs and dams, f) harbour, fishing port and airport installations, g) erosion control and landslide structures, h) streets, urban sewerage systems and other public works facilities.

12) Public utilities include both private owned and state owned facilities.

Remarks:

OTHER INFORMATION AND DATA AVAILABLE

