

# ADRC Disaster Report

## 2019 Typhoon Hagibis (No.1)

21 November 2019

### 1. Overview

On 12 October 2019, a large and powerful typhoon, Hagibis, locally named as Typhoon No.19 made a landfall in Shizuoka Prefecture, about 100 km southwest of Tokyo, passing through eastern and north-eastern regions until early morning of 13 October. Central and northern parts of the country were severely affected by strong winds and heavy rainfall and subsequent floods and geohazards.

From 24 to 25 October 2019, low pressure passed through western, eastern and northern regions along the Pacific coast, bringing another heavy rainfall in the Pacific coast of Kanto and Tohoku regions, especially Chiba and Fukushima Prefectures. The rainfall resulted in floods and geohazards again, causing human and physical damages to the typhoon-hit areas.

According to the report of the Cabinet Office, as of 20 November 2019, 101 persons were killed or went missing while 481 persons were injured. About 2,400 houses were totally collapsed and over 33,000 houses were damaged. Furthermore, some 50,000 houses were inundated<sup>1</sup>.

### 2. Outline of Typhoon Hagibis

Typhoon Hagibis was formed on 6 October in the south of Minamitori Island, developing into large and strong typhoon, with its central pressure at 915hPa and maximum sustained

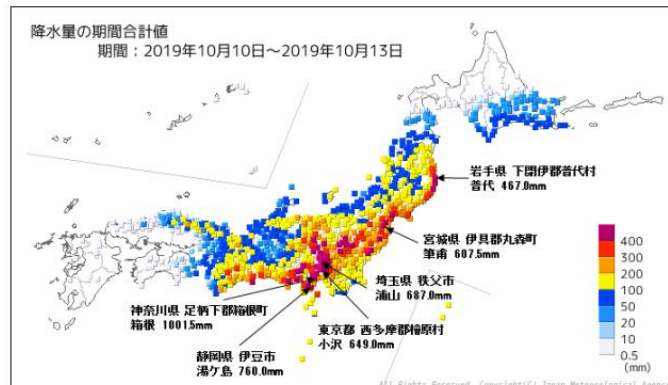


Figure 1. Total Precipitation from 10 – 13 October (Source: Japan Meteorological Agency)

winds at 55m/s. When it landed on Izu Peninsula, Shizuoka Prefecture on 12 October with the strength of 955hPa, maximum 40m/s, categorized as strong in the country, the area within its 600km-radius from the typhoon center was forecast as strong wind.

The typhoon brought about heavy rainfalls in wide areas of Kanto (eastern) and Tohoku (north-eastern) regions of the country, where rainfalls exceeded past records in hourly, daily and total precipitation in more than 120 areas. For example, in Hakone, Kanagawa Prefecture, total precipitation reached 1001.5 mm.

Also, record high waves and storm surges were observed mainly in the Pacific coast.

### 3. Early Warning:

With the typhoon approaching, Japan Meteorological Agency (JMA) started to issue

<sup>1</sup> The figures include data of the impact of heavy rain on

24-26 October 2019.

Tropical Cyclone Information, forecast and warning and advisory, as well as information on landslide, inundation, flood etc. Heavy Rain Emergency Warning, its highest alert level was issued to Shizuoka, Kanagawa, Tokyo, Saitama, Gunma, Yamanashi, Nagano, Ibaraki, Tochigi, Niigata, Fukushima, Miyagi and Iwate prefectures on 12 and 13 October.

#### 4. Evacuation

Followed by JMA's information, municipalities issued Evacuation Order to over 2.1 million people in 11 prefectures and Evacuation Advisory to over 4.3 million people in 16 prefectures.

Table 1. Issued Evacuation Order and Evacuees

Prefecture	Evacuation Order (Urgent)	Evacuated
Iwate	185,918	9,930
Miyagi	983,136	10,104
Fukushima	302,853	3,590
Ibaraki	204,910	19,595
Tochigi	TBC	19,822
Gunma	11,750	5,213
Saitama	TBC	30,147
Chiba		25,195
Tokyo	196,545	76,235
Kanagawa	0	6,648
Niigata	39,087	3,878
Nagano	134,260	7,435
Shizuoka	47,494	85
Others <sup>2</sup>		1,006
<b>TOTAL</b>	<b>2,105,953</b>	<b>218,883</b>

(Source: CAO, as at 13:00, 13 October 2019)

<sup>2</sup> Others include Aomori (91), Akita (77), Yamagata (300), Ishikawa (4), Yamanashi (343), Gifu (29), Aichi

It is reported that some 219,000 people actually evacuated to evacuation shelters.

#### 5. Impacts

##### Flooding:

River overflows and damages to embankments and river facilities occurred, causing floods in many areas causing human and physical damages. According to Ministry of Land, Infrastructure, Transport and Tourism (MLIT), river embankments collapsed at 140 areas in 71 rivers. Total inundation area reached 25,000 ha.

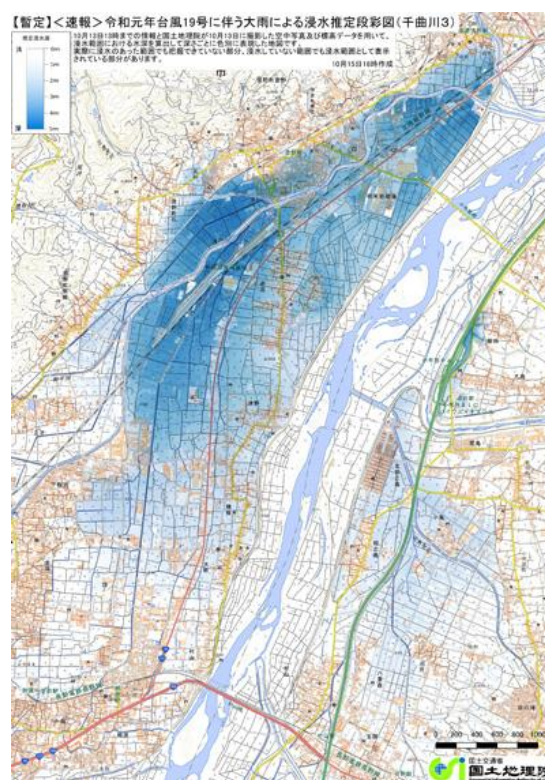


Figure 2. Estimated inundation area of the Chikuma River  
(Source: Geospatial Information Authority of Japan)

(75), Mie (83), Osaka (2) and Yamaguchi (2).

Sediment disaster:

Many sediment disasters occurred triggered by heavy rainfall. According to MLIT, 954 cases were reported including 423 debris flows, 44 landslides and 487 slope failures in Iwate, Miyagi, Fukushima, Tochigi, Gunma, Saitama, Chiba, Ibaraki, Tokyo, Kanagawa, Yamanashi, Nagano, Niigata, Shizuoka, Ishikawa, Akita, Aomori, Mie and Wakayama prefectures.

## 6. Damages

Typhoon Hagibis and subsequent low pressure caused tremendous damages to human and properties.

-Damages to Human and Houses:

Due to the typhoon 98 persons lost lives and 3 went missing. 40 persons were seriously injured and 441 persons were slightly injured.

As for houses, 2,419 houses were totally collapsed while 16,331 were halfly damaged and another 17,414 were partially damaged.

-Damages to Properties:

Due to the typhoon, many critical infrastructures and lifelines suffered serious damages, causing suspension of services such as loss of electricity in maximum 521,540 houses and suspension of water supply to maximum 167,986 houses.

## 7. Government Response

At the onset of the disaster, Emergency Disaster Management Headquarters was established on 13 October 2019. Due to the severity of the disaster, Disaster Relief Act was applied to 390 municipalities in 14 prefectures. Also it was designated as disaster of extreme severity under the Act on Special Financial

Support to Deal with Designated Disaster of Extreme Severity on 29 October 2019.

## References

Cabinet Office of Japan (Japanese), Situation of 2019 Typhoon Hagibis

<http://www.bousai.go.jp/updates/r1typhoon19/index.html>

Japan Meteorological Agency

The Heavy Rain Event by Typhoon Hagibis in October 2019 -Portal-

[http://www.jma.go.jp/jma/en/201910\\_Heavy\\_rain/2019\\_Heavyrain.html](http://www.jma.go.jp/jma/en/201910_Heavy_rain/2019_Heavyrain.html)

Geospatial Information Authority of Japan

Aerial photos and estimated inundation area

<https://www.gsi.go.jp/BOUSAI/R1.taihuu19gou.html>

Ministry of Land, Infrastructure, Transport and Tourism

About Situations by 2019 Typhoon Hagibis

[http://www.mlit.go.jp/saigai/saigai\\_191012.html](http://www.mlit.go.jp/saigai/saigai_191012.html)

## Asian Disaster Reduction Center

<https://www.adrc.asia/>

Disaster Information

[https://www.adrc.asia/view\\_disaster\\_en.php?NationCode=392&Lang=en&Key=2357](https://www.adrc.asia/view_disaster_en.php?NationCode=392&Lang=en&Key=2357)