



Meeting in northern Osaka Prefecture



Meeting for the Hokkaido Eastern Iburi Earthquake

Section 2 Future Challenges Concerning Evacuation

After the torrential rains in July 1983, there had been no major heavy rain disaster that caused more than 100 deaths until the Heavy Rain Event of July 2018, which caused more than 200 people to die or go. The direct cause of this major disaster was the record-breaking rainfalls that hit over a wide area from western Japan to the Tokai region, leading to river floods and sediment disasters in many areas, especially in Okayama, Hiroshima, and Ehime Prefectures. It was reported that the damage was further extended because appropriate evacuation actions were not taken in spite of the announcement urging residents to evacuate.

Section 2 reflects evacuation during the Heavy Rain Event of July 2018 and discusses challenges for the future and how the government tackles these challenges.

2-1 Review of Government's Evacuation Measures after the Heavy Rain Event of July 2018

Before the start of the Heavy Rain Event of July 2018, the government proactively disseminated forecasts for the upcoming weather event through mass media, by holding emergency press conferences and announcing the possibility of the issuance of an emergency heavy rain warning. The JMA issued an emergency heavy rain warning for 11 prefectures (Gifu, Kyoto, Hyogo, Okayama, Tottori, Hiroshima, Ehime, Kochi, Fukuoka, Saga, and Nagasaki Prefectures) for the period from July 6 to 8, calling for maximum alert. An emergency warning is the most serious warning when there is a risk of a serious disaster that happens only once in a few decades. 11 prefectures was the largest number ever for which an emergency heavy rain warning was issued.

The local governments in Okayama, Hiroshima, and Ehime Prefectures, which was severely affected from the rainfalls, also issued evacuation recommendations before the disaster as the weather condition became worse, urging local residents to evacuate from the area.

Criteria for Meteorological Emergency Warnings

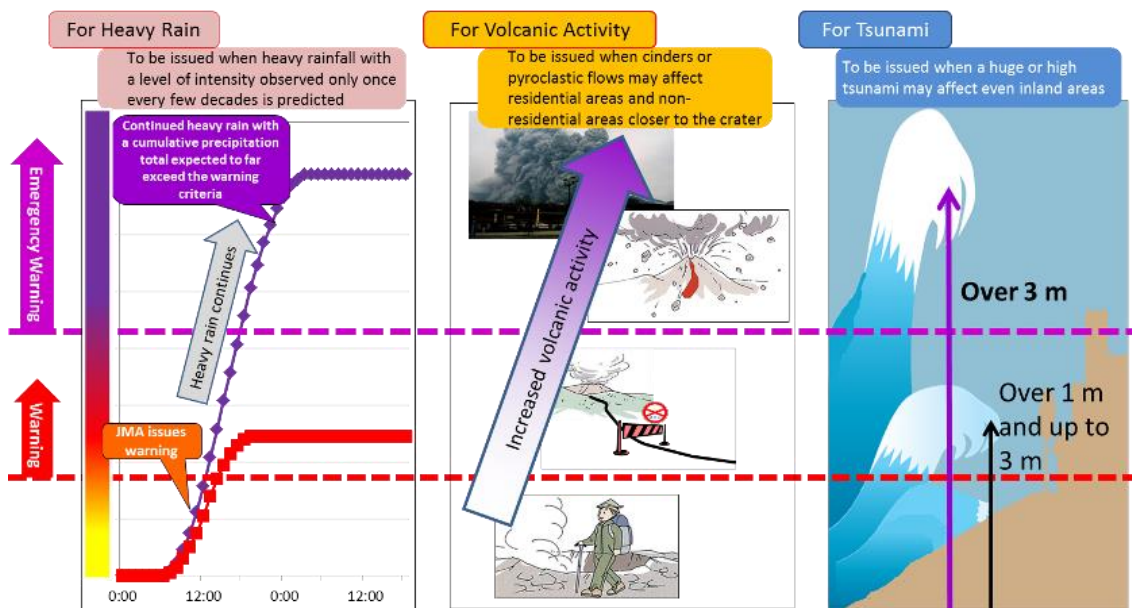
Phenomenon	Criteria
Heavy rain	<ul style="list-style-type: none"> Heavy rainfall with a level of intensity observed only once every few decades is predicted in association with a typhoon or similar. Or: <ul style="list-style-type: none"> Heavy rainfall is predicted in association with a typhoon expected to have a level of intensity observed only once every few decades or an extratropical cyclone with comparable intensity.
Storm	A Storm is predicted
Storm surge	A storm surge is predicted
High waves	High waves are predicted
Snowstorm	A snowstorm is predicted in association with an extratropical cyclone expected to have a level of intensity observed only once every few decades.
Heavy snow	Heavy snowfall with a level of intensity observed only once every few decades is predicted.

Source: Japan Meteorological Agency website

Reference: <https://www.jma.go.jp/jma/kishou/known/tokubetsu-keiho/kizyun.html>

<Refer to Fig. A-59 Emergency Warning Issuance Criteria (A-88)>

Emergency Warning Overview



Source: Japan Meteorological Agency website

(Reference: <https://www.jma.go.jp/jma/kishou/known/tokubetsu-keiho/index.html>)

Evacuation include moving to shelters or safe places nearby and assuring indoor safety. While it is difficult to know the number of people who evacuated, the local government has confirmed that the proportion of people who evacuated to shelters was about 0.5% of those who lived in the areas for which evacuation recommendations were issued.

Based on the lessons learned from the Heavy Rain Event of July 2018, on August 31, 2018, the government established the Working Group on the Review of Evacuation from Flood and Sediment Disasters Caused by the Heavy Rain Event of July 2018 under the Disaster Management Implementation Committee (a committee established under the National Disaster Management Council to promote the implementation of various DRR

measures of ministries and agencies), in order to strengthen evacuation measures given the recent climate and social conditions. At the Director-General-Level Meeting held in September, it was agreed that “the Cabinet Office serves as the secretariat, while ministries and agencies work together on matters to be referred to the Working Group” and that “ministries and agencies cooperate with each other to carry out measures for the next flood season.” The Working Group started discussion on these matters in September (Reference: http://www.bousai.go.jp/fusuigai/suigai_dosyaworking/index.html). The Working Group held three meetings by December 2018. It worked together with an expert panel and relevant ministries and agencies to identify issues that needed a review based on the on-site investigations concerning the Heavy Rain Event of July 2018. The Working Group submitted a report describing the challenges and measures to implement in the future.

2-2 Report (Proposal) by the Working Group on the Review of Evacuation from Flood and Sediment Disasters Caused by the Heavy Rain Event of July 2018

(1) Overview of the Report

Based on the discussion of the Working Group, on December 26, 2018, the Cabinet Office published the Report on Evacuation from Flood and Sediment Disasters Reflecting the Heavy Rain Event of July 2018, which described challenges and measures to implement in the future.

Reference: http://www.bousai.go.jp/fusuigai/suigai_dosyaworking/index.html

Concerning future measures, the Report pointed out the need for DRR education and evacuation drills at all elementary and junior high schools that are at the risk of flood or sediment disasters as well as the capacity building of local DRR leaders across Japan. The government also classified warning levels into five levels to clearly define the timing of evacuation and actions that local residents need to take in each stage.

Evacuation Strategy: Practical Examples

Foster an awareness that only residents themselves can protect their own lives and promote education on regional disaster risks and required evacuation actions

Continuously conduct disaster prevention education and evacuation drills for residents of all generations living in areas with disaster risks

Children

- Conduct **disaster prevention education and evacuation drills** every year before the rainy and typhoon seasons come at **all elementary and junior high schools*** with flood and sediment disaster risks.
- Foster an awareness to protect one's own life** by learning practical actions to protect life (evacuation)

*Schools located in a flood hazard area or sediment disaster alert area, which are included in the regional disaster management plan and which have an evacuation operation/implementation plan (target year for formulating an evacuation operation/implementation plan: FY2021)

Region

- Foster “**regional disaster prevention leaders**” with basic knowledge in disaster prevention across Japan
- Continuously conduct proper **self-help and mutual-help initiatives in various areas**

Older people

- Promote understanding of evacuation actions for the elderly** under **coordination** between disaster prevention and mitigation organizations [the **disaster prevention sector**] and Community Comprehensive Support Centers and care managers [the **welfare sector**]

Expert support for the above measures

- Develop a system to provide support by experts** specialized in flood and sediment disasters in individual regions across Japan

Provision of disaster prevention information to support residents' evacuation

Provide information in an easy-to-understand manner so that residents can quickly take evacuation actions

- Divide actions** residents should take **into five stages** and **clarify the relationship between announced information and actions to be taken**
- Make the relationship between announced information and **actions to be taken intuitive and easy to understand** in order to **support residents' voluntary evacuation**

[Clarifying the timing of evacuation]

Level 3: The elderly should evacuate

Level 4: All residents must evacuate

Warning level (for flood and sediment disasters)	Required Action	Information to call for actions	Information for severe weather preparedness
Warning Level 5	Survive yourself	Disaster occurrence (announced as much as possible)	Flood Warnings and Advisories for designated river Sediment disaster alert information Warning Real-time risk map Others
Warning Level 4	Evacuation now!	• Evacuation advisory • Evacuation warning (emergency)	
Warning Level 3	Evacuation now if you need time	Prepared for evacuation/ Evacuation advisory for the elderly and those needing special care	
Warning Level 2	Check where to evacuate	Advisory	
Warning Level 1	Stay alert	Possibility of a warning	

- Review, clarify and announce the relationship between information for severe weather preparedness (including emergency warnings) and each warning level

Source: Material provided at the 13th meeting of the Disaster Management Implementation Committee, National Disaster Management Council
(Reference: <http://www.bousai.go.jp/kaigirep/chuobou/jikkoukaigi/13/index.html>)

Based on the above Report and the lessons learned from the Heavy Rain Event of July 2018, the government published the Guidelines on Evacuation Advisory (Revised Version) on March 29, 2019. It describes a new five-level warning evacuation system that supports voluntary evacuation by ensuring that residents can intuitively understand required actions.

Reference: http://www.bousai.go.jp/oukyu/hinankankoku/h30_hinankankoku_guideline/index.html

In the future, the government intends to disseminate the Guidelines to local governments and the public, promote their understanding, and ensure the provision of DRR information in an easy-to-understand manner using the five-level evacuation warning system.

(March 2019) Major changes to the Guidelines on Evacuation Recommendations

- During the Heavy Rain Event of July 2018, residents were not able to utilize announced DRR information due to various kinds of difficult-to-understand information.
- Based on this lesson, **DRR information will be provided to the public in five stages so that residents can intuitively understand the meaning of information** and take appropriate evacuation actions.

Communication of DRR information using warning levels

(1) Classify **actions that residents need to take into five stages** according to the level of the risk of a disaster, and **clarify the relationship between information and required actions**.

- Clarify the timing of evacuation (**[Warning Level 3] Evacuation of the elderly; [Warning Level 4] Evacuation of all residents**)
 - Warning Level 3 is issued to urge the elderly to evacuate and other residents to prepare for evacuation.
 - Warning Level 4 is issued when all residents must evacuate.
 - An evacuation warning (emergency) is not always issued. It is used when there is an extremely high risk of a disaster and there is a need to urgently or repeatedly urge residents to evacuate. This is a Level 4 warning that urges all residents to evacuate.
- **Warning Level 5 is the announcement of the occurrence of a disaster. It urges all residents to take the best possible actions to protect their lives.**
 - Information on the occurrence of a disaster is extremely useful in urging actions to protect life. When the occurrence of a disaster is confirmed, the government will issue Warning Level 5 as much as possible to communicate the fact that a disaster has occurred and urge residents to take best possible actions to protect their lives.

(2) When issuing an evacuation advisory, the government clarifies the corresponding warning level in a way that **residents of each category can understand required evacuation actions** according to the warning level.

(3) **Support residents' voluntary evacuation** by clarifying corresponding relationships between various information for severe weather preparedness and the **five-level evacuation warnings**.

Warning level	Actions residents should take	Information to urge residents to take actions
Warning Level 5	A disaster has occurred. Take the best possible actions to protect life	Information on the occurrence of a disaster* *Issued as far as possible when the occurrence of a disaster is confirmed.
Warning Level 4	<ul style="list-style-type: none"> • Evacuation to designated shelters • If the resident him/herself determines that it is more risky to go outside and evacuate to the designated shelter as there is an extremely high risk of a disaster, he/she must urgently evacuate to a safer place nearby or a safer room in the building. 	Evacuation advisory Evacuation warning (emergency)* *Issued when there is a need to urgently or repeatedly urge residents to evacuate.
Warning Level 3	People who need special care, such as the elderly who need more time to evacuate, should start to evacuate to shelters . Other people should prepare for evacuation or start evacuation voluntarily.	Prepared for evacuation/ Evacuation advisory for the elderly and those needing special care
Warning Level 2	Review evacuation processes , i.e. check disaster risks using the hazard map, locations of shelters and routes, and the timing of evacuation, review means to obtain evacuation information, and stay alert	Advisory
Warning Level 1	Stay alert for a possible disaster and pay attention to updates on disaster prevention and meteorological information.	Possibility of a warning

Issued by municipalities
Announced by the JMA

Source: Cabinet Office website (Revision of the Guidelines on Evacuation Advisories (FY2018))

Reference: http://www.bousai.go.jp/oukyu/hinankankoku/h30_hinankankoku_guideline/index.html