

Enhancing Preparedness of Local Governments by Using "a Collection of Critical Situations during Flood Emergency Response under COVID-19"

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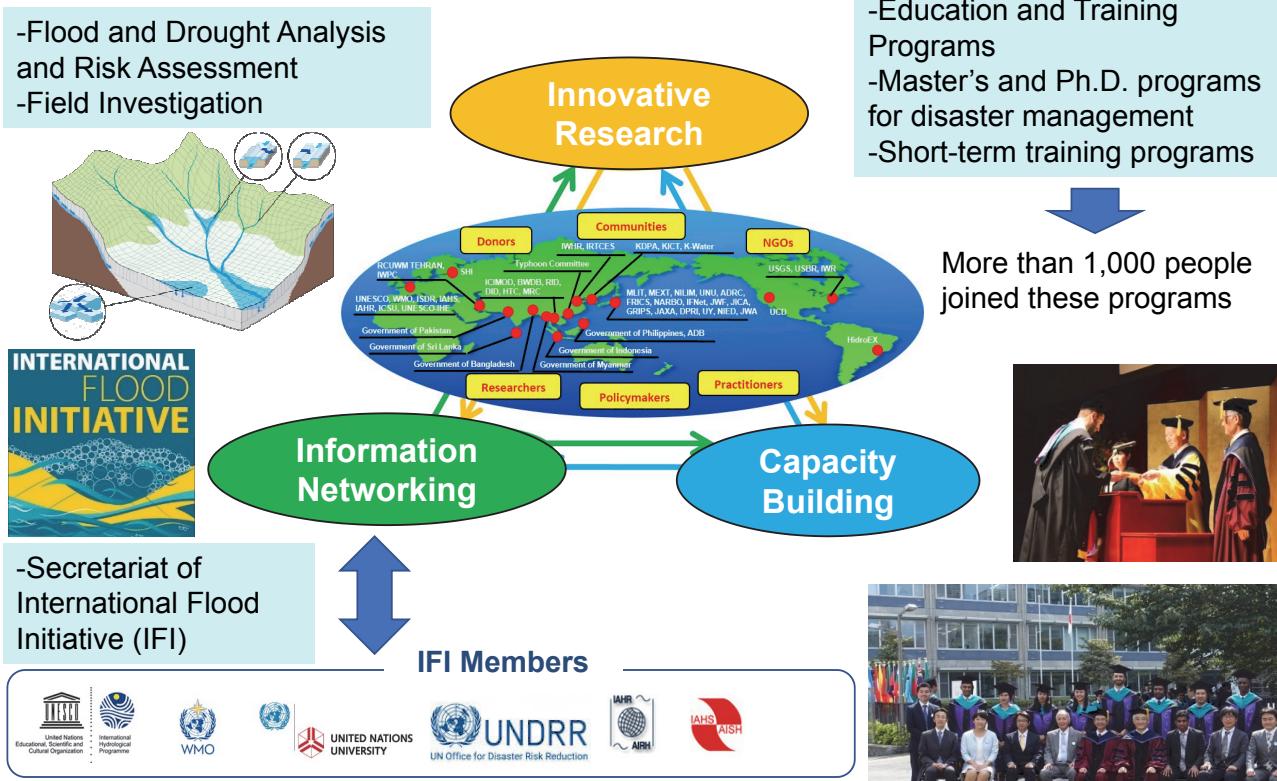
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under the auspices of UNESCO,
Public Works Research Institute, Japan



International Centre for Water Hazard and Risk Management (ICHARM)

ICHARM was established as a UNESCO Category II center and part of the Public Works Research Institute (PWRI) of Japan in March 2006.



Flood disasters in Japan

During the 10-year period from 2009 to 2018,

-Approximately 97% of the municipalities were flooded at least once.

-More than half (56.6%) of the municipalities were flooded more than 10 times.

-Only 2.8% of the municipalities were never flooded.

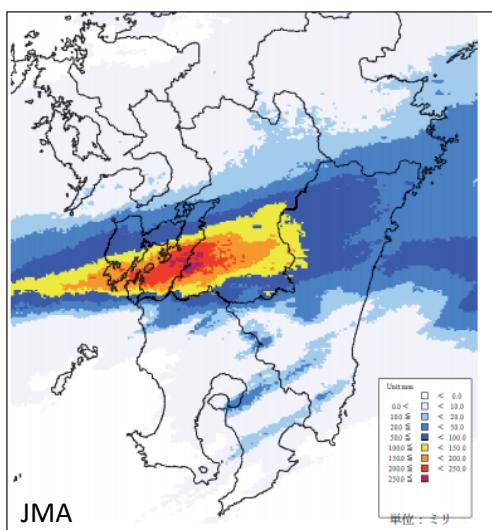
(by flood damage statistics in Japan)



Water-related disaster risk reduction considering the prevention of COVID-19 infection is the key issue for all the municipalities in Japan.

Torrential Rainfall in Kumamoto Prefecture in July, 2020

Torrential rainfall from July 3 to July 31 caused wide area inundation due to dyke breaches along Kuma River in Kumamoto Prefecture in Kyusyu islands. 84 people died and 17,679 houses were damaged as of October 1.



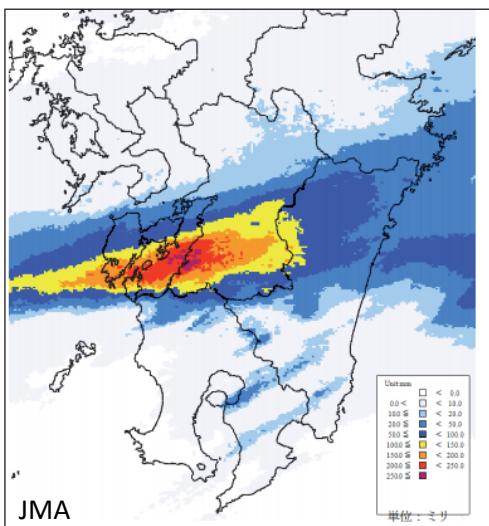
3-hrs rainfall in Kyusyu islands on July 4



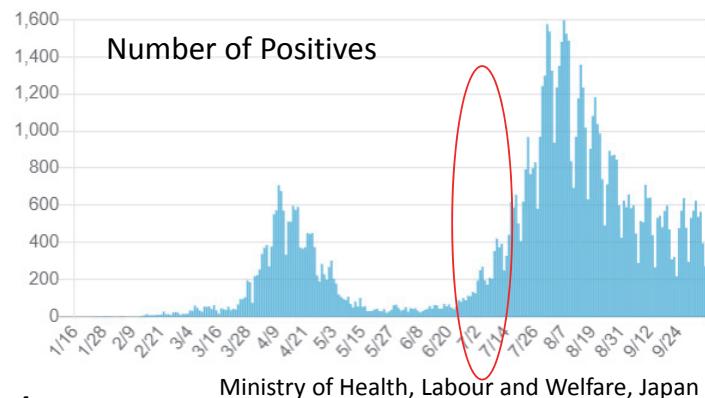
Photo by ICHARM

Torrential Rainfall in Kumamoto Prefecture in July, 2020

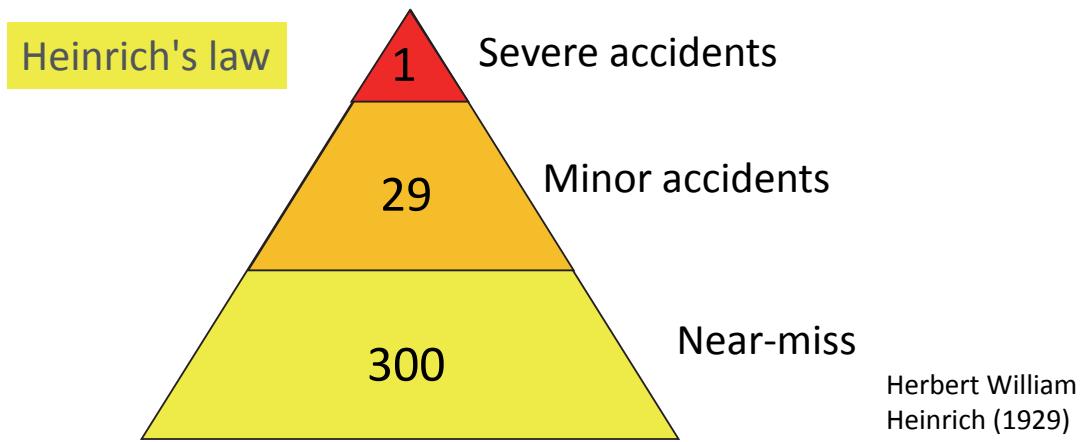
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3-hrs rainfall in Kyusyu islands on July 4



Approaches to collect “Near-miss cases” in the field of industrial accidents or in safety engineering



Existing approaches

In the fields of industrial accidents or in safety engineering, it is encouraged to collect the cases of “near-miss” before real accidents occur and to make efforts to prevent accidents from occurring again. (Hatamura, 2002)

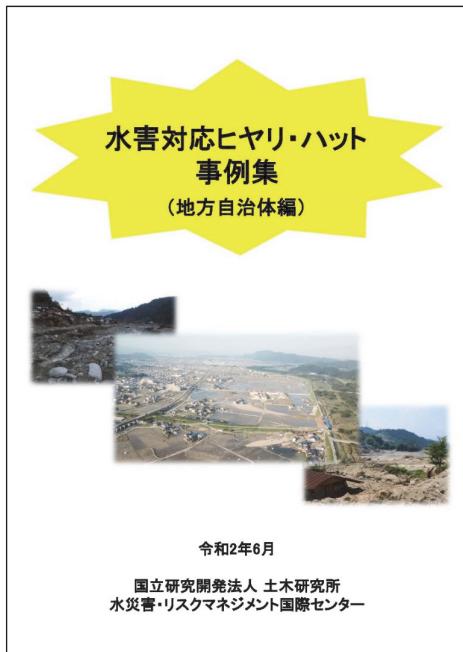
Ministry of Land, Infrastructure, Transport and Tourism (MLIT) published a manual of collecting “near-miss” related to traffic accidents and marine accidents. (MLIT (Ministry of Land, Infrastructure, Transport and Tourism), 2009)

Collection of Critical Situations during Flood Emergency Response

Critical Situations during flood emergency response

Situations in which local government officers panic, don't know what to do, cannot make decisions, are confused or in dilemma, etc., during an emergency response effort.

Main Content: local government response



令和2年6月

国立研究開発法人 土木研究所
水災害・リスクマネジメント国際センター

Appendix: local government
response under COVID-19
(別冊)



令和2年6月

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From
June 25,
2020

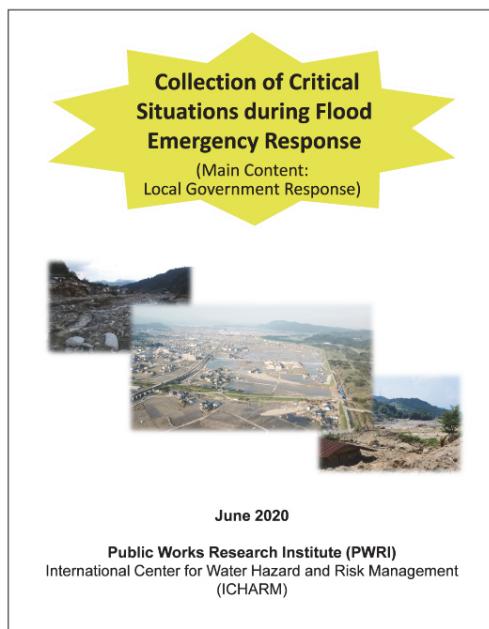
https://www.pwri.go.jp/icharm/special_topic/20200625_flood_response_collection_j.html

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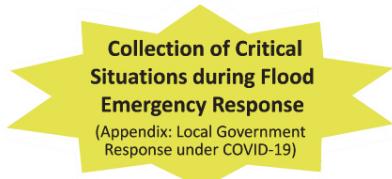


June 2020

Public Works Research Institute (PWRI)
International Center for Water Hazard and Risk Management
(ICHARM)

Appendix: local government
response under COVID-19

(Appendix)

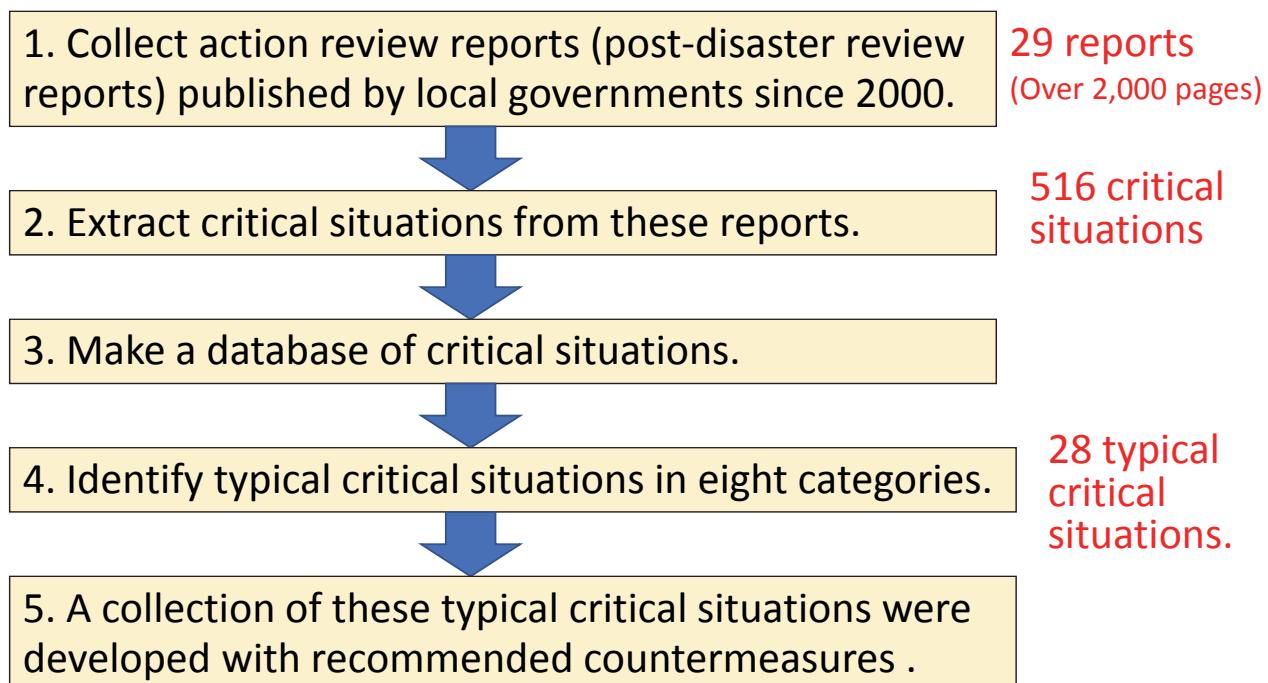


June 2020

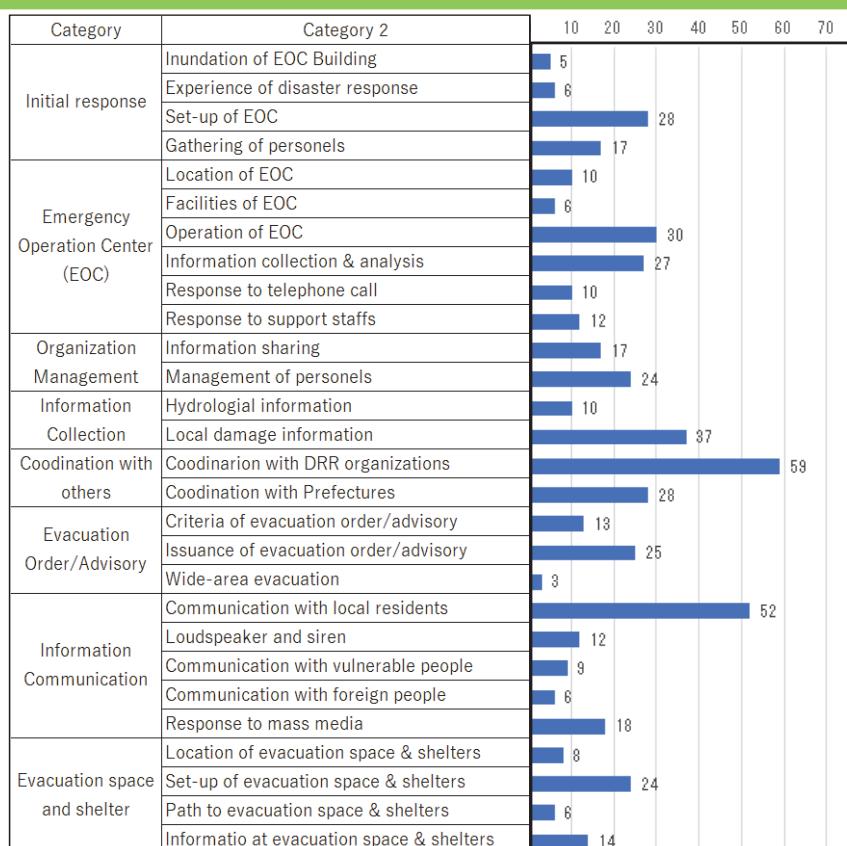
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https://www.pwri.go.jp/icharm/special_topic/20200625_flood_response_collection_e.html

Methodology



Collected 516 critical situations in 8 categories



Officers frequently experienced critical situations in Coordination with DRR organizations, communication with local residents, local damage information collection, operation of EOC, etc.

Example of the Pages of Main Contents

Outline

Result ➡

Similar cases

Lesson related to facilities

Lesson related to procedures

Lesson related to officers' skill

16
17

Diagram showing personnel gathering status
Text: Hardly any personnel members are gathering even though a disaster looks imminent!

Case: Local government, Kani, Gifu pref.
1. Initial Response > 1.4 Assembling local personnel members

Disaster Outline: Rain started to fall from around 16:00 on 15 July, turning into a thunderstorm that recorded 200mm of rain in a ten minute period on the city's half-mile rain gauge from 16:20. Thereafter, rain continued to fall intermittently, recording rainfall unmatched in recent years. The style of rainfall varied greatly by area. Kanigawa River burst its banks. Roads were flooded in various areas, properties inundated with water and damage caused by landslides.
Diagram showing rainfall amount over time at gauge locations

Process and Cause: There were no instruction to be on standby or precautionary heads up made across entire local government office, and, as rain stopped at 23:00, the personnel in some departments were dismissed at 24:00.
Image: A scene from in the city

Similar cases at other local government offices: Some personnel members could not assemble because of family or transport issues. Some personnel members also waited at home in readiness for work the following day.
Text: Result Some 20 minutes were needed for the 1st unit of support personnel to assemble in response to the instruction to open community center shelters. In one case, a liaison chief had to run a shelter single-handedly until support personnel arrived.

Text: *Sources: After action review report on damage of torrential rain on 7.15 (9), p40, 4 November 2010
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Diagram showing critical situation points
Text: Hardly any personnel members are gathering even though a disaster looks imminent!

Diagram showing critical situation points
Text: Assembly rules and multiple forms of communication need to be implemented thoroughly to enable nighttime and holiday assembly.

Facilities: Ensure multiple forms of communication
Text: Countermeasure: Assembly rules and multiple forms of communication need to be implemented thoroughly to enable nighttime and holiday assembly.

Lessons to be learned: Make definite contact to personnel to request assembly by using diverse forms of communication, such as a local government wireless system and email functions on mobile phones. (5)
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Procedure: Produce a plan that reflects the premise that personnel members will be late or absent.
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Procedure: Ensure leeway in staffing
Text: Consider the time required for personnel members to assemble, and establish a system for enabling personnel to assemble quickly by making a deployment organization chart and setting rules to cope with situations where people cannot be reached by phone, and then making all personnel members aware of the deployment organization chart and other measures for assembly. (2)

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Procedure: Produce an assembly criteria manual
Text: Establish a communication system that enables mass broadcast of info, making use of a disaster prevention information broadcast system. (26)

Text: Produce a clear-cut assembly criteria manual and make all personnel members fully aware of its contents. (27)
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Skill: Foster risk awareness among unit members
Text: Rules should be laid down for responses when there is an emergency warning, such as automatic assembly of pre-nominated personnel members, and personnel must be made aware of those rules. (19)

Related guidelines: Guide for municipality flood response (Disaster Management, Cabinet Office, Japan, July 2019)
Image: Illustration of a person pointing

Text: Guide for creating business continuity plan for municipalities (Disaster Management, Cabinet Office, May 2015) (In particular, Chapter 5-1: Clear substitute hierarchy to cope with times when leader is absent and assembly system for personnel, etc.)
Text: Business continuity guideline for local public bodies at times of large-scale disaster (Disaster Management, Cabinet Office, Japan, February 2016) (In particular, Chapter 2.4.3: Establishing assembly system for personnel, etc.)

Example of the Pages of Appendix: local government response under COVID-19

Outline

Target

Process and Cause

Result

Necessary Measures

Critical Situations during Flood Emergency Response ➡ **8 Shelters (designated emergency evacuation shelters and sites, etc.)**

Too many evacuees in shelters, so we're in the 3Cs (Closed spaces, Crowded places, Close-contact settings!)

Crowded shelters ~

Target: Managers of designated emergency evacuation sites/shelters and evacuees

Critical Situation: Too many evacuees are crowding into designated emergency evacuation sites/shelters, which is encouraging the 3Cs (Closed spaces, Crowded places, Close-contact settings). Among the evacuees, there are all sorts of people, including the elderly and people with underlying conditions, so there is a worry about COVID-19 infections.

Result: Risk of infections among evacuees increases.

Measures

Procedure: Seek out designated emergency evacuation sites/shelters that look vulnerable to 3Cs

- Taking into consideration the predictable numbers of people who will evacuate to designated emergency evacuation sites/shelters, the proportion of elderly in areas scheduled for evacuation, floor space sizes and width of access roads, etc., seek out the designated emergency evacuation sites/shelters that, in particular, will be vulnerable to the 3Cs and greater risk of spreading COVID-19.

Procedure: Consider space division at designated emergency evacuation sites/shelters

- In designated emergency evacuation sites/shelters, consider with facility (shelter) managers the feasibility of accommodating suspected infection cases, the elderly, the pregnant and people with underlying conditions in spaces separated from the big main shelter area, including changing rooms and classrooms that exist in the shelter facility. If utilization is possible, consider specific usage methods.

Facilities: Organize partitions for space division and consider layouts

- Avoid the 3Cs, organize partitions for space division, dividing space with infection risks in mind.

Public Relations: Call on evacuees to bring their own infection prevention shelter goods

- Make residents of areas where evacuation might be necessary thoroughly aware that they should bring their own infection prevention goods when evacuating.

Procedure: Consider methods for redistributing evacuees if, for whatever reason, 3Cs circumstances become excessive

- If, for whatever reason, the 3Cs circumstances become excessive, consider ways of redistributing evacuees, including sending some of them to less crowded shelters by bus, etc.

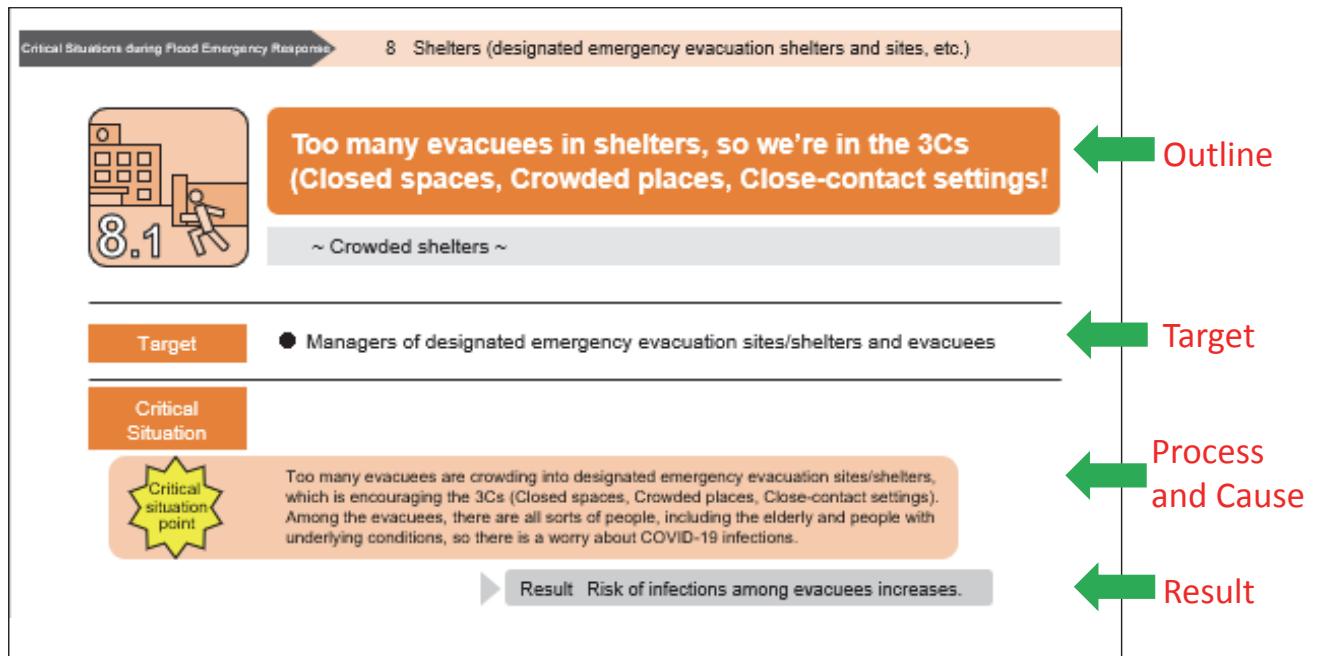
During Disaster Response: Control flow of people at receptions of designated emergency evacuation sites/shelters, etc.

- In responding to disasters, thoroughly implement shelter reception guidance, counting evacuees as they arrive at the entrance of designated emergency evacuation sites/shelters, and allocating them sites in the space-divided shelter to prevent space-taking confusion.

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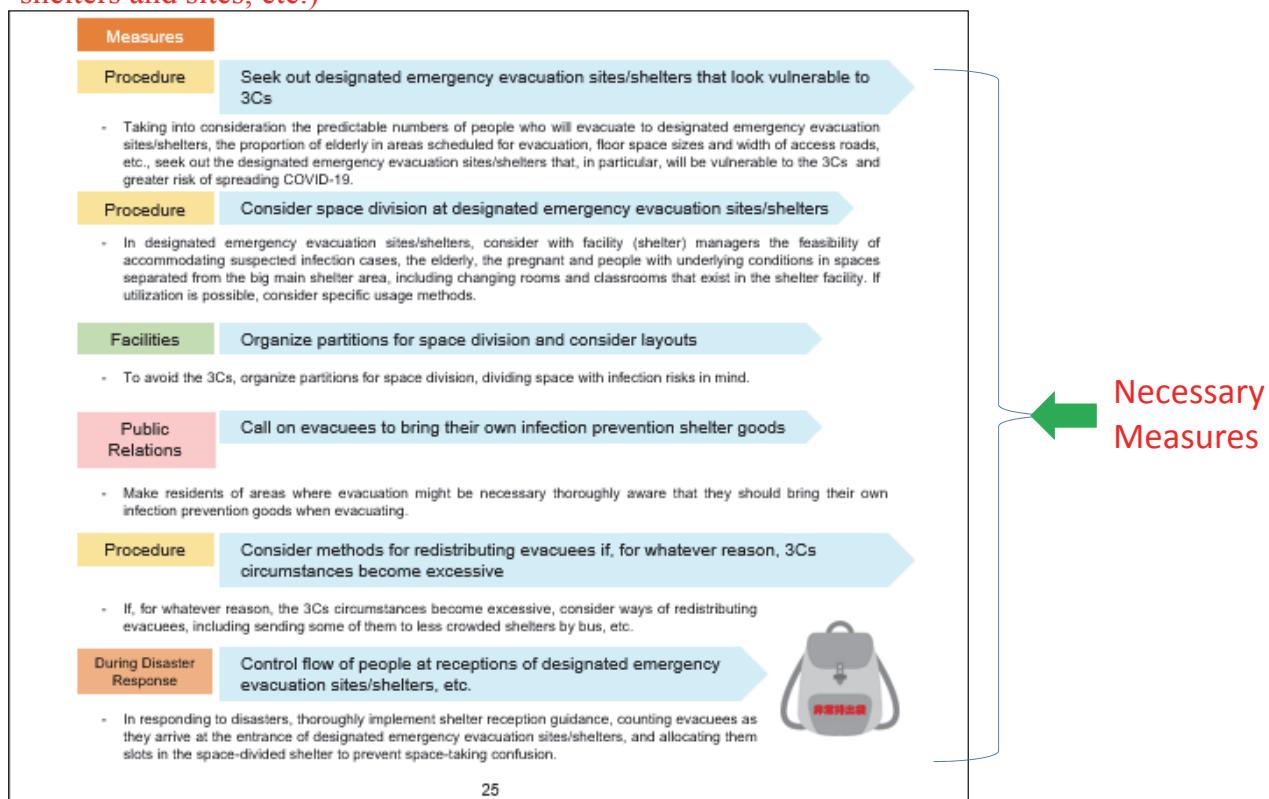
Example 1: Crowded Shelters

Example of a critical situation in “Chapter 8: Shelters (designated emergency evacuation shelters and sites, etc.)”



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Torrential Rainfall in Kumamoto Prefecture in July, 2020

Torrential rainfall from July 3 to July 31 caused wide area inundation due to dyke breaches along Kuma River in Kumamoto Prefecture in Kyusyu islands.

For social distancing among evacuees, affected municipalities organized partitions for space division at evacuation shelters.

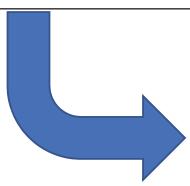
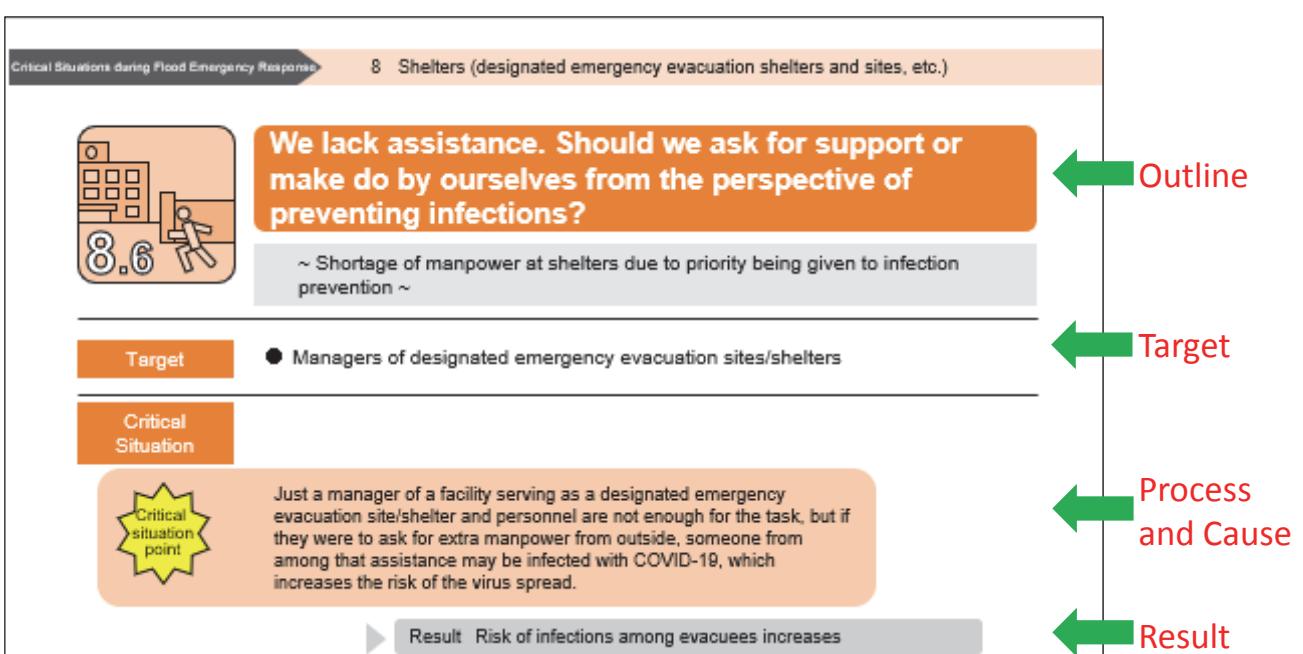


From Manual by the Cabinet Office



Photo by ICHARM

Example 2: Shortage of manpower at shelters



In Kumamoto Prefecture, a support staff was dispatched from other Prefecture for supporting the management of evacuation shelters, but this staff was infected with COVID-19. As a result, a total of 383 evacuees, including municipal staffs, took PCR test and were confirmed to be negative.

Example 2: Shortage of manpower at shelters

Example of a critical situation in “Chapter 8: Shelters (designated emergency evacuation shelters and sites, etc.)”

Measures	Necessary Measures
Procedure	Review plan to respond with limited manpower
	<ul style="list-style-type: none">In usual times of disaster, just a manager and personnel are not enough to run a designated emergency evacuation site/shelter, but, under the risk of infection, asking for manpower support for other areas, may easily increase the risk of infection. Therefore, the response plan must be reviewed on the assumption that the shelter concerned will be run by a limited number of personnel without any envisaged assistance provided.
Procedure	Consider running shelters in collaboration with local communities
	<ul style="list-style-type: none">When responding with just limited manpower, it is necessary to establish and run shelters with the cooperation of local citizens and volunteers. The shelter facility's manager should work with local citizens, etc., to specifically consider what kind of duties can be performed by local citizens and volunteers.
Procedure	Review shelter operation manual
	<ul style="list-style-type: none">Taking into consideration the need to prevent COVID-19 infections, consideration should be given to how shelters can be established and run with the cooperation of local citizens and volunteers. And, the shelter operation manual should be reviewed to clarify the methods needed for such collaboration.
Public Relations	Make the public aware of the collaboration with local community to run shelters
	<ul style="list-style-type: none">In advance, given that there is a need to prevent infections from COVID-19, make the public aware that shelters will be established and run with the cooperation of local citizens and volunteers, and look to unearth even more people who are eager to help.
Facilities	Stockpile infection prevention goods for local citizens, etc. involved in running shelters
	<ul style="list-style-type: none">If local residents, volunteers and others are asked to cooperate in the establishing and running of shelters, infection prevention measures must be taken for those people.

30



Conclusions

- For efficient emergency response, it is essential to anticipate difficulties during emergency response and implement countermeasures and capacity building of related officers before a disaster.
- We selected **28 cases of critical situations** in which local government officers panic, don't know what to do, cannot make decisions, are confused or in dilemma, etc., during flood emergency response in general flood disasters and flood disasters with the risk of COVID-19.
- Some of the critical situations collected in the booklet “Collection of Critical Situations during Flood Emergency Response” actually occurred in the affected area due to the torrential rainfall in July 2020 in Japan.
- We hope that this publication could provide some hints for local government officers to plan necessary countermeasures while considering local needs and situations, including the risk of COVID-19.

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