

International Conference on Flood Management  
Webinar No.2

"The Flood Challenge to Resilience"

# 2020 Kyushu (Japan) floods

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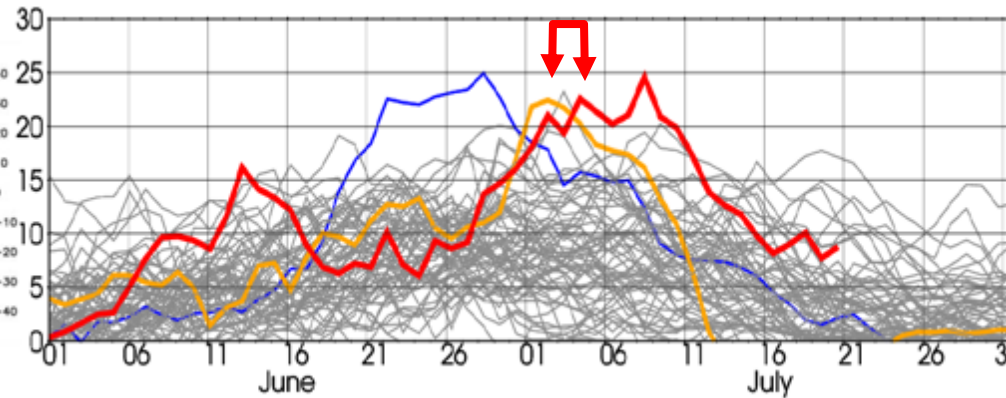
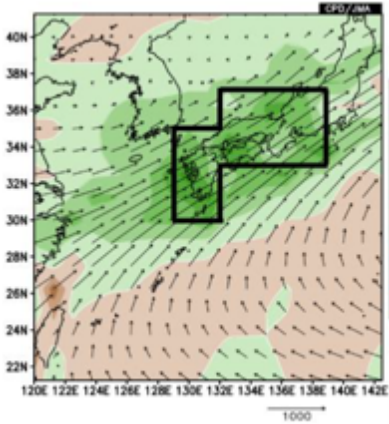
Council Member, Science Council of Japan (SCJ), Cabinet Office of Japan

Chair, Japan National Committee on Earth Observation, MEXT

Chair, River Council of Japan, MLIT

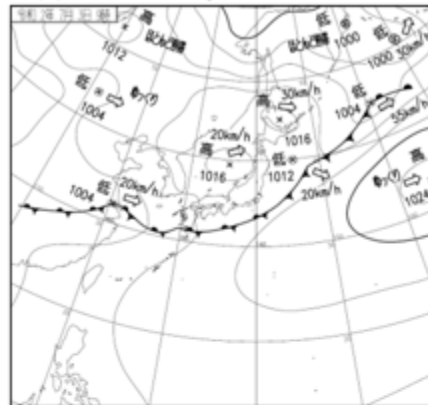


# (1) what is happening in your region - source/s of flooding

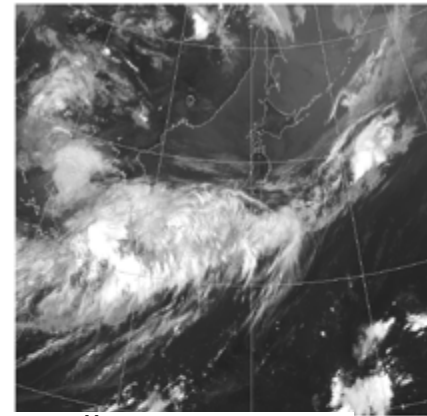


Water Vapor  
Convergence  
to Western Japan  
since 1958 by JRA55  
**2020 Kyusyu Floods**  
**2018 W-Japan Floods**  
**1985 Typhoon &  
Frontal Rainfall**

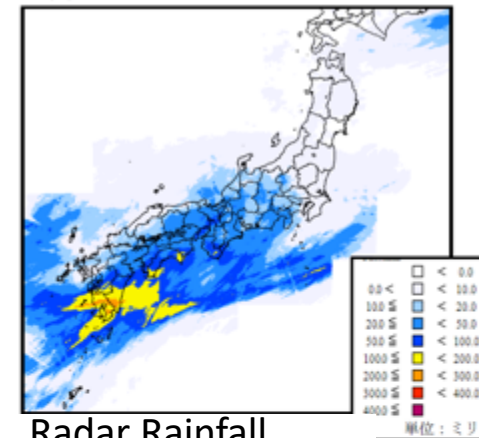
9:00am 3<sup>rd</sup> July



Weather Map

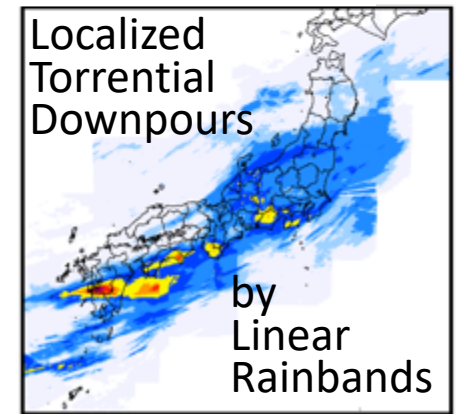
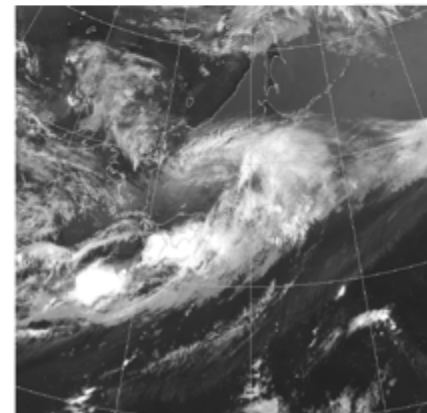
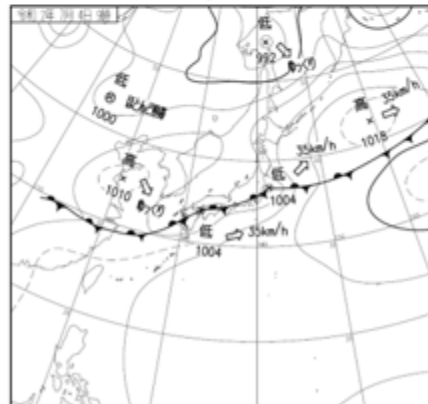


Satellite Image



Radar Rainfall

9:00am 4<sup>th</sup> July





# (1) what is happening in your region - source/s of flooding

## Historical Floods

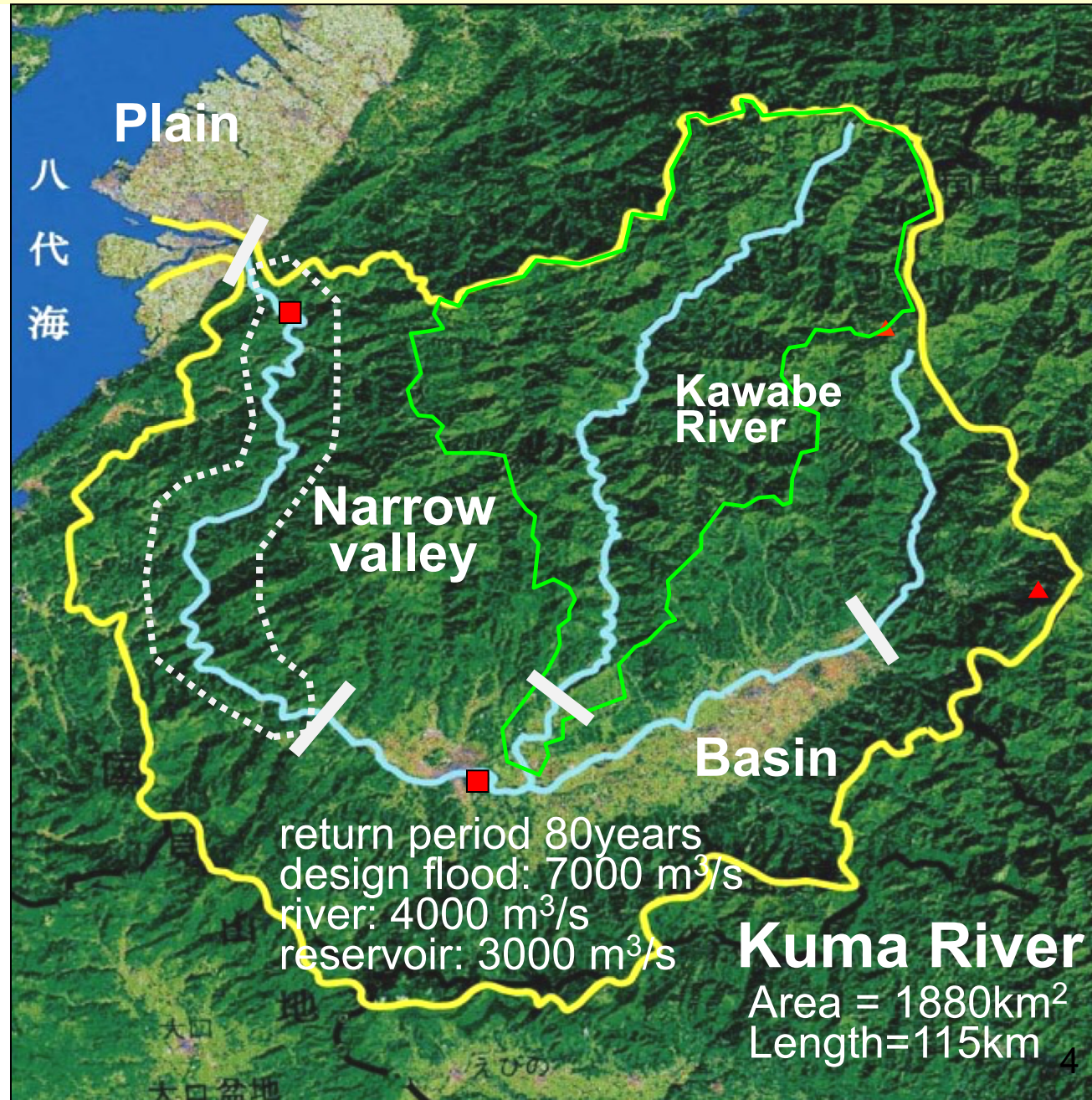
July 1965 5700 m<sup>3</sup>/s



July 1982 5500 m<sup>3</sup>/s



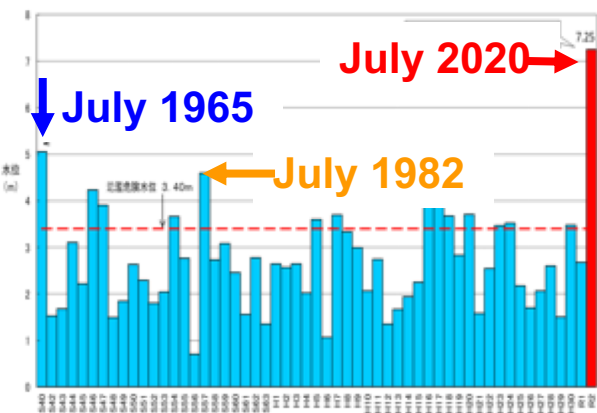
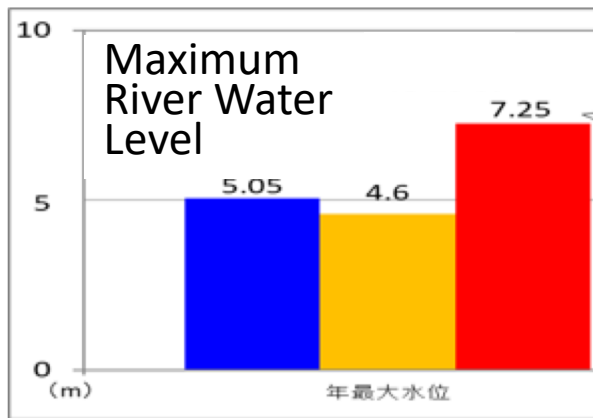
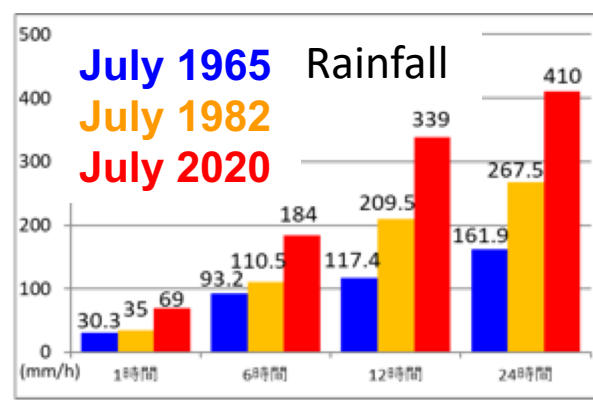
1669



**Kuma River**  
Area = 1880km<sup>2</sup>  
Length=115km



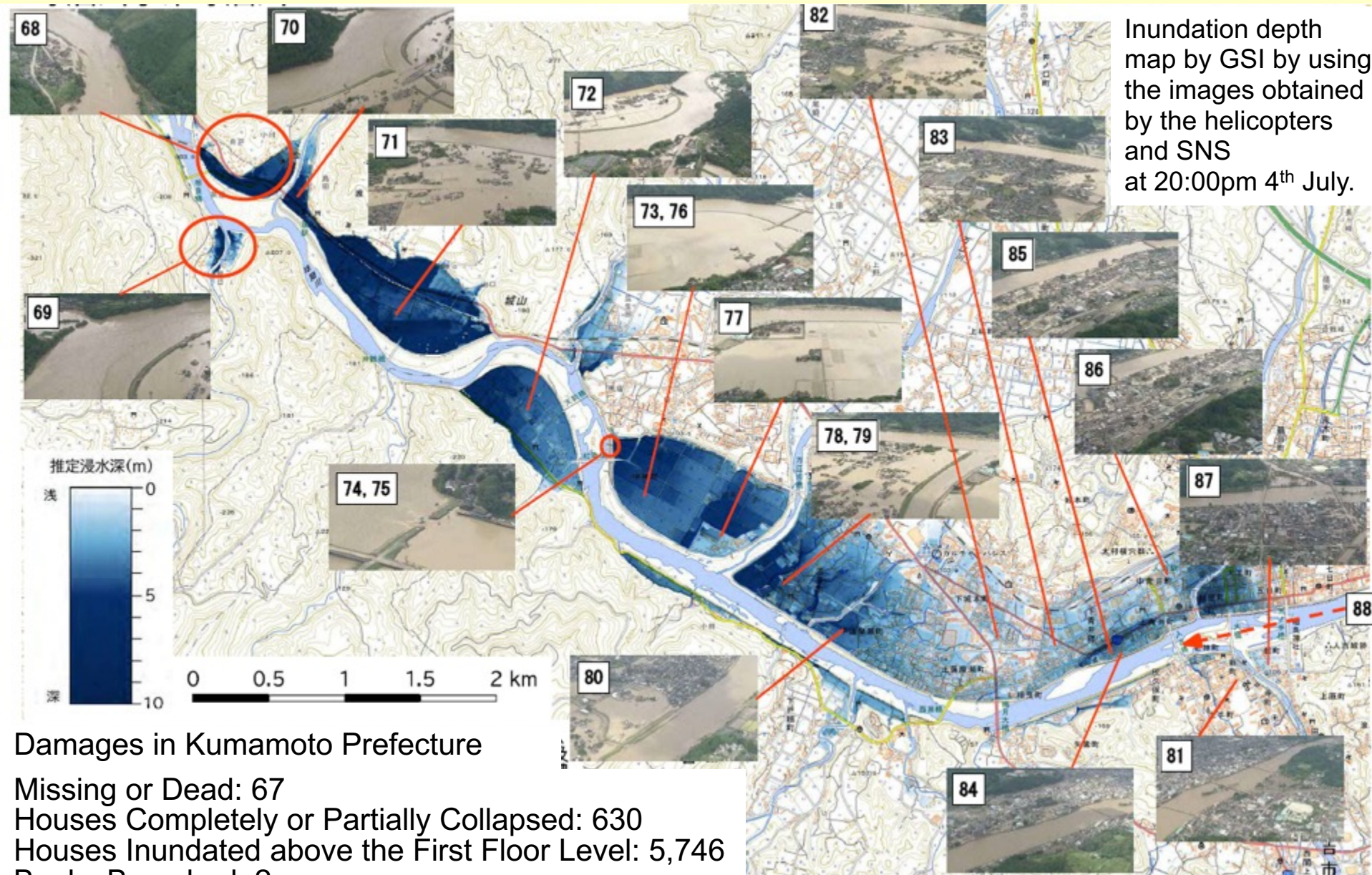
# (1) what is happening in your region - source/s of flooding







## (2) what are the consequences of these events





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morning July 4<sup>th</sup>



afternoon, July 4<sup>th</sup>



Floodmark, 1669  
Floodmark, 1965  
July 2020



Floodmark





# (3) how are these events being managed under the current situation of coronavirus pandemic

## The contents of “A guideline for the creation of countermeasures against flood disasters during a pandemic situation (COVID-19)”

1. Characteristics of COVID-19 and general measures
2. COVID-19: What has already happened and what is likely to happen in the future
3. Things likely to happen in the event of a natural disaster can occur during the COVID-19 pandemic
4. Basic guidelines for disaster response during the COVID-19 pandemic
5. For individuals
6. For communities
7. For local governments
8. Basic approaches to planning evacuation
9. Basic approaches to evacuation shelter administration
10. Things to be aware of concerning evacuation destinations other than shelters
11. Challenges people will face when seeking to rebuild their lives

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# (3) how are these events being managed under the current situation of coronavirus pandemic

Collection of **Critical Situations** in which **local government officers** are confused or in dilemma during an emergency response.

(Appendix)

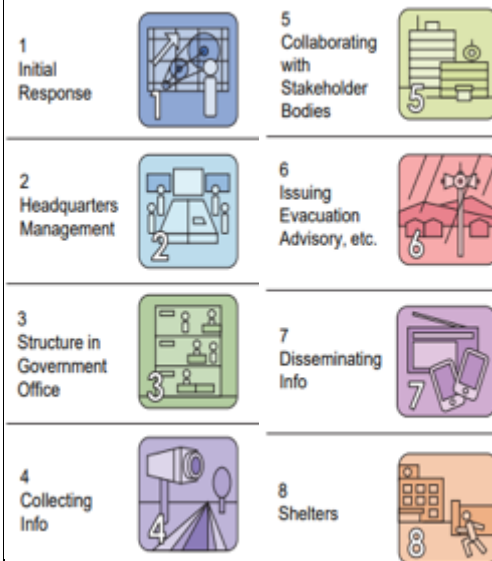
## Collection of Critical Situations during Flood Emergency Response

(Appendix: Local Government Response under COVID-19)



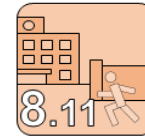
June 2020

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



Critical Situations in Flood Damage Response

8 Shelters (designated evacuation space and shelters, etc)



It seems there was an infected person among the evacuees, but we don't know who the high-risk contacts are!

~ Difficulty in grasping who are high-risk contacts ~

Target

● Managers of designated evacuation space and shelters, etc.

Critical Situation



The public health center informed us that a person who had temporarily evacuated at our shelter later went on to test positive for COVID-19 at the health center. However, we have no record of an evacuee by the name given to us, so we do not know the space allocated to that person.

Result The high-risk contacts of the infected person are unknown, so evacuees become worried. Also, as the used shelter space is also unclear, the entire shelter has to be disinfected.

Measures

Management

Prepare a reception sheet for listing names of evacuees

- Prepare a reception sheet for recording names of evacuees in readiness for tracing people if it emerges that an evacuee tests positive at a later date, making sure that evacuees write down their names and contact details, and that you record their state of health at time of evacuation, in order to make tracing easier.

Emergency Response

Distinguish people suspected of being infected at receptions of designated emergency evacuation sites/shelters

- In disaster response, if a suspected COVID-19 case comes to the designated emergency evacuation site/shelter to evacuate regardless of advance guidance, get that person to make a self-declaration about his/her condition at the entrance reception.
- If implementing space division, record the space to be used by that evacuee and his/her state of health in the reception sheet, so that any people coming into close contact with that evacuee can be traced if necessary.

Facilities

Stockpile clinical thermometers

- If evacuation at designated emergency evacuation sites/shelters becomes prolonged, the health of evacuees may change. Therefore, stock up on clinical thermometers in order to distinguish changes in the health of evacuees. As contact from a clinical thermometer may spread the infection, it is best to use a non-contact thermometer.

Emergency Response

Make evacuees aware of the need to record their health changes

- Make evacuees aware that they should notify the shelter reception at anytime if their health changes, such as running a high temperature.





# (4) what are the main lessons learned from the situation

Oct., 2013

Izu Ōshima Island (Sediment)

- 824mm/24hrs (Typhoon)
- Human Loss: 39
- *evacuation warning*

Aug., 2014

Hiroshima City (Sediment)

- 121mm/hr (Typhoon, Frontal Line)
- Human Loss: 74
- *evacuation warning, land use*

Sep., 2015

Kanto & Tohoku (Bank Breach)

- 551mm/24hrs (Typhoons)
- Human Loss: 8
- *evacuated by helicopter: 1339  
and by boat: 2919*

Aug., 2016

Hokkaido & Tohoku (Bank Breach and Sediment)

- 251mm/72hrs (Typhoons)
- Human Loss: 27
- *evacuation of physical handicaps*
- *local socio-economic impact*

June, 2017

Northern Kyushu (Sediment)

- 299mm/6hrs (Frontal Line)
- Human Loss: 42
- *sediment and flood complex*



Nov., 2014

Amendment: Sediment Disasters Prevention Act

Jan., 2015:

Policy Vision: Disaster Prevention and Mitigation against a New Stage

May, 2015

Amendment: Flood Risk Management Act

- **Probable Maximum Rainfall for Life-Saving**

Dec., 2015

Policy Vision: **Rebuilding Flood-Conscious Societies: Class A Rivers**

- Raising public awareness
- Structural measures for crisis management

Jan., 2017

Policy Vision: **Rebuilding Flood-Conscious Societies: Class B Rivers**

- Life-saving of physical handicaps
- Local socio-economical continuity

May, 2017

Amendment: Flood Risk Management Act

- **Mega-Flood Management Committee**
- **Evacuation planning and drilling for handicap-accessible facilities**
- **Recovery by the national government**

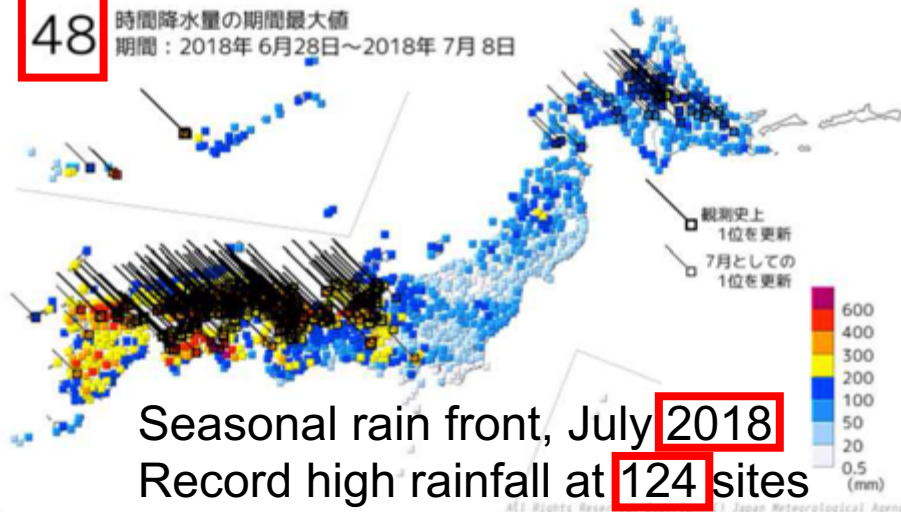


# Recurrent Water-related Disasters in Japan

## Events and Countermeasures

48

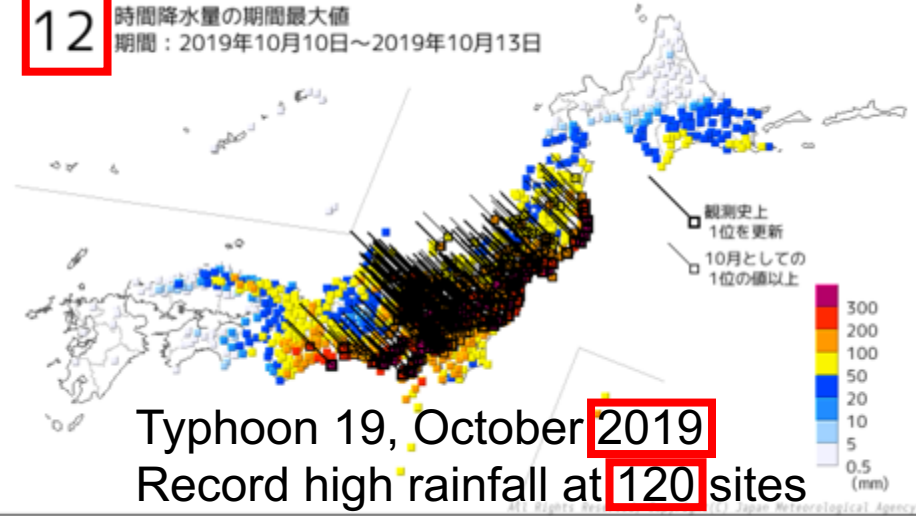
時間降水量の期間最大値  
期間：2018年6月28日～2018年7月8日



Seasonal rain front, July 2018  
Record high rainfall at 124 sites

12

時間降水量の期間最大値  
期間：2019年10月10日～2019年10月13日



Typhoon 19, October 2019  
Record high rainfall at 120 sites

2,581

Sediment Disasters

935

18,010

Houses Completely  
or Partially Collapsed

13,945

47

Banks Breached

140

7,100

Houses Inundated  
above the First Floor Level

32,563

245

Missing or Dead

101

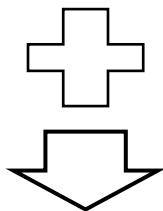
## (4) what are the main lessons learned from the situation

### River Council of Japan, Panel on Infrastructure Development Committee on Water-related Disaster Risk Reduction under Climate Change



The Kick-off Meeting with the Minister, Nov. 13, 2019

“Rebuilding Flood-Conscious Societies”



“Flood design by coupling with  
climate models”  
“Basin-wide Flood Management”

Strengthening  
water-related disaster  
resilience  
and  
enabling  
sustainable development  
through inclusive ways



A new basin-wide flood management policy  
was proposed to the Minister  
July 9, 2020

# “Flood design by coupling with climate models”

Climate Change Projection by MEXT, JMA, and ME



	scenarios	resolution	ensemble	Targeted Area	Product Name
ME, JMA	RCP 2.6~8.5	20km		nationwide	NHRCM20
MEXT	RCP8.5	20km	○	nationwide	d4PDF(20km)
		5km		nationwide	NHRCM05
		2km		nationwide	NHRCM02
MEXT	RCP2.6	5km		nationwide	NHRCM05
		2km		nationwide	NHRCM02
MEXT	RCP8.5	5km	○	nationwide	d4PDF (5km,SI-CAT)
		5km	○	Hokkaido Kyushu	d4PDF (5km,yamada)
	RCP8.5 (2d increae)	20km	○	nationwide	d2PDF(20km,SI-CAT)



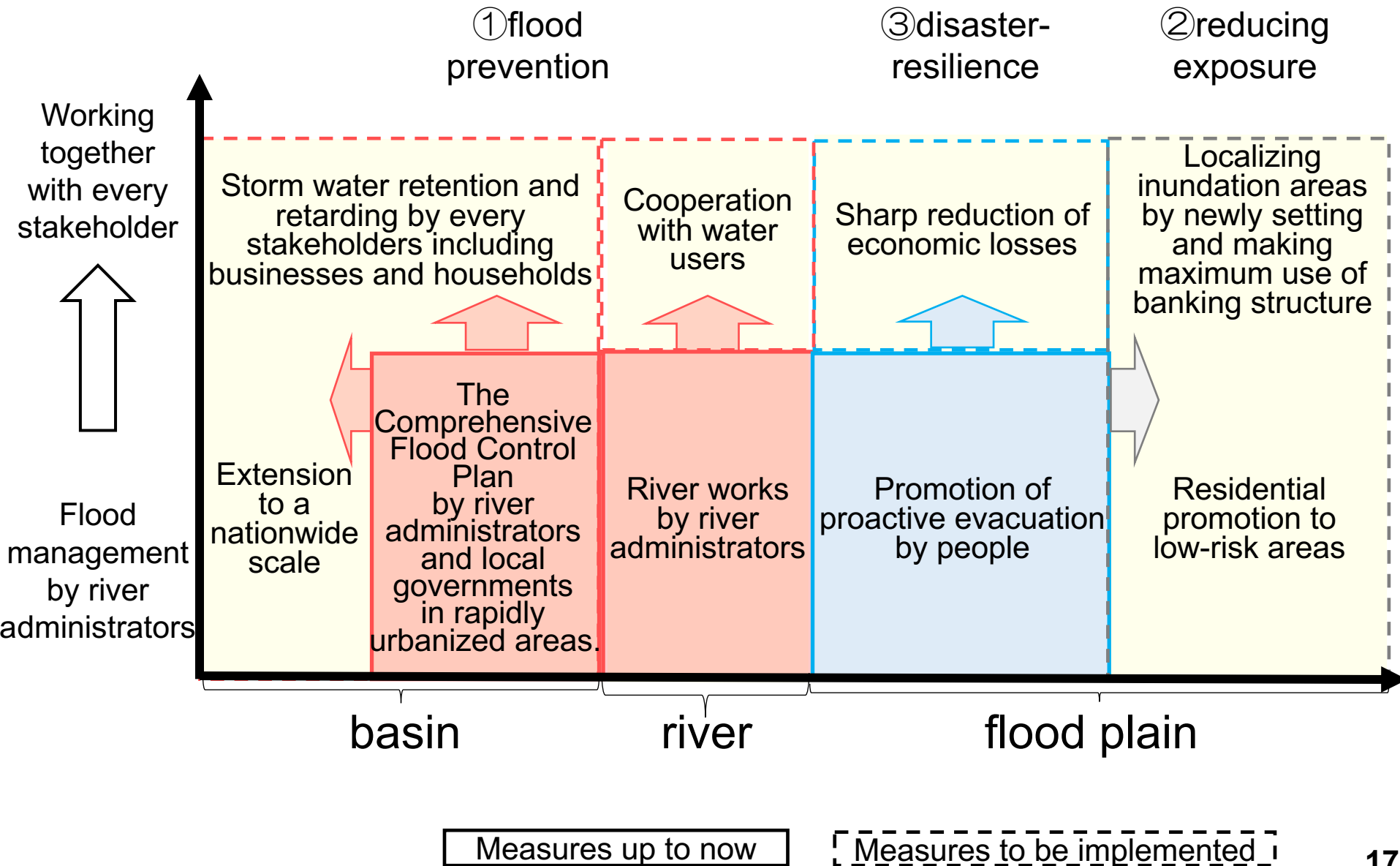
Flood Management Plan Revised by MLIT



	2degree increase	4degree increase	Short event
Hokkaido, NW-Kyusyu	1.15	1.4	1.5
The Other	1.1	1.2	1.3
National Average	1.1	1.3	1.4



# “Basin-wide Flood Management”



# Strengthening Disaster Resilience

