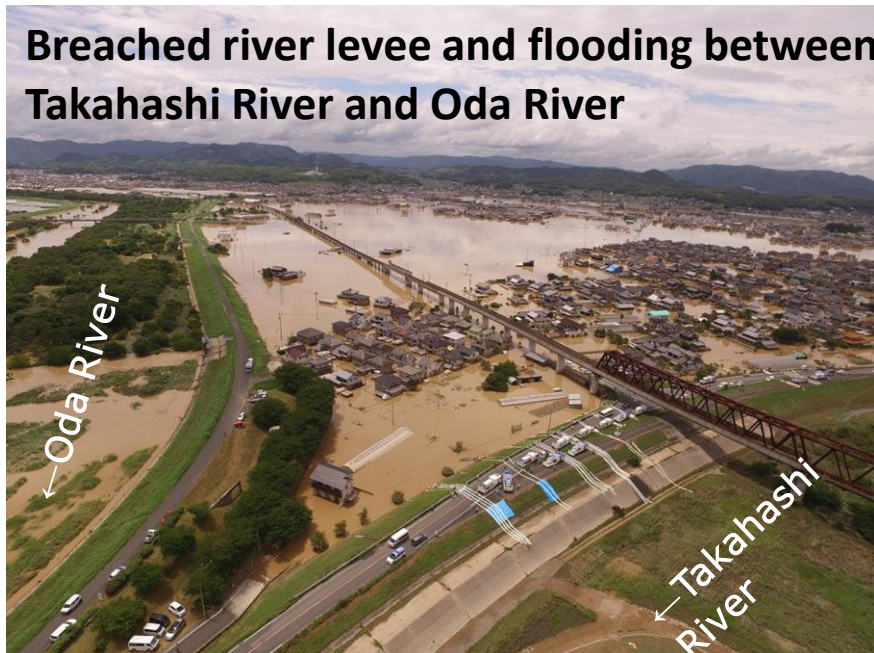


Lessons and Messages for the International Community from Heavy Rain Disaster in West Japan in July, 2018

**Prof. Kenzo Hiroki
National Graduate Institute for
Policy Studies (GRIPS)**

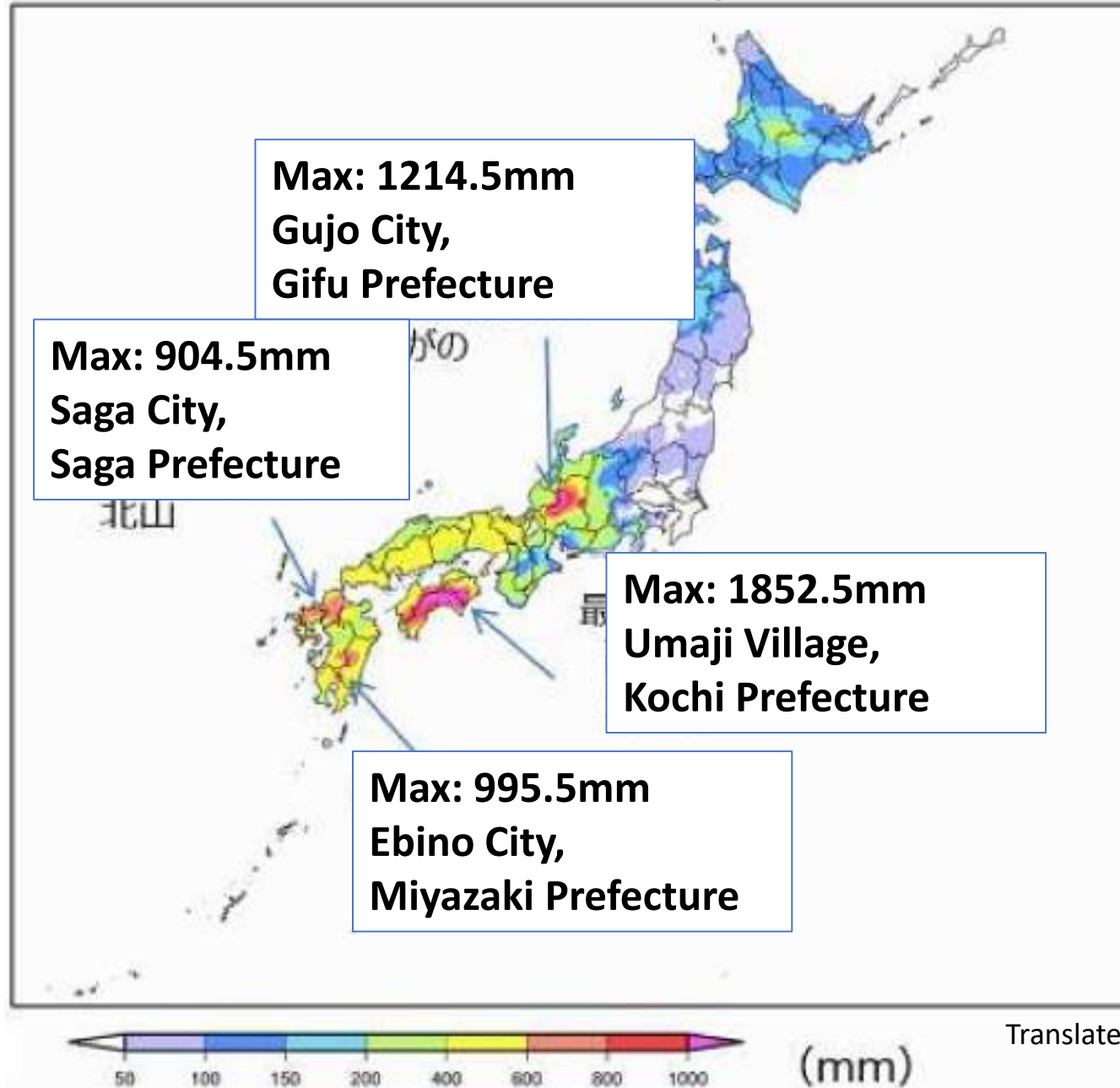
Headline Facts of Heavy Rain Disaster in West Japan in July, 2018

- Heavy rainfall hit West Japan on June 28th through July 8th, 2018
- 220 people were dead and 9 are missing (the worst as rain disaster since 1982); 9,786 Houses were totally or severely destroyed; 36,038 houses were immersed.
- Evacuation Directives were given to 916,000 people, and Evacuation Advisory to 2.3 million people were announced.
- Key infrastructures were damaged. E.g, Water supply to 262,322 households were suspended



Translated and modified from MLIT Document in July, 2018

400 mm – 1800 mm of heavy rain over West Japan

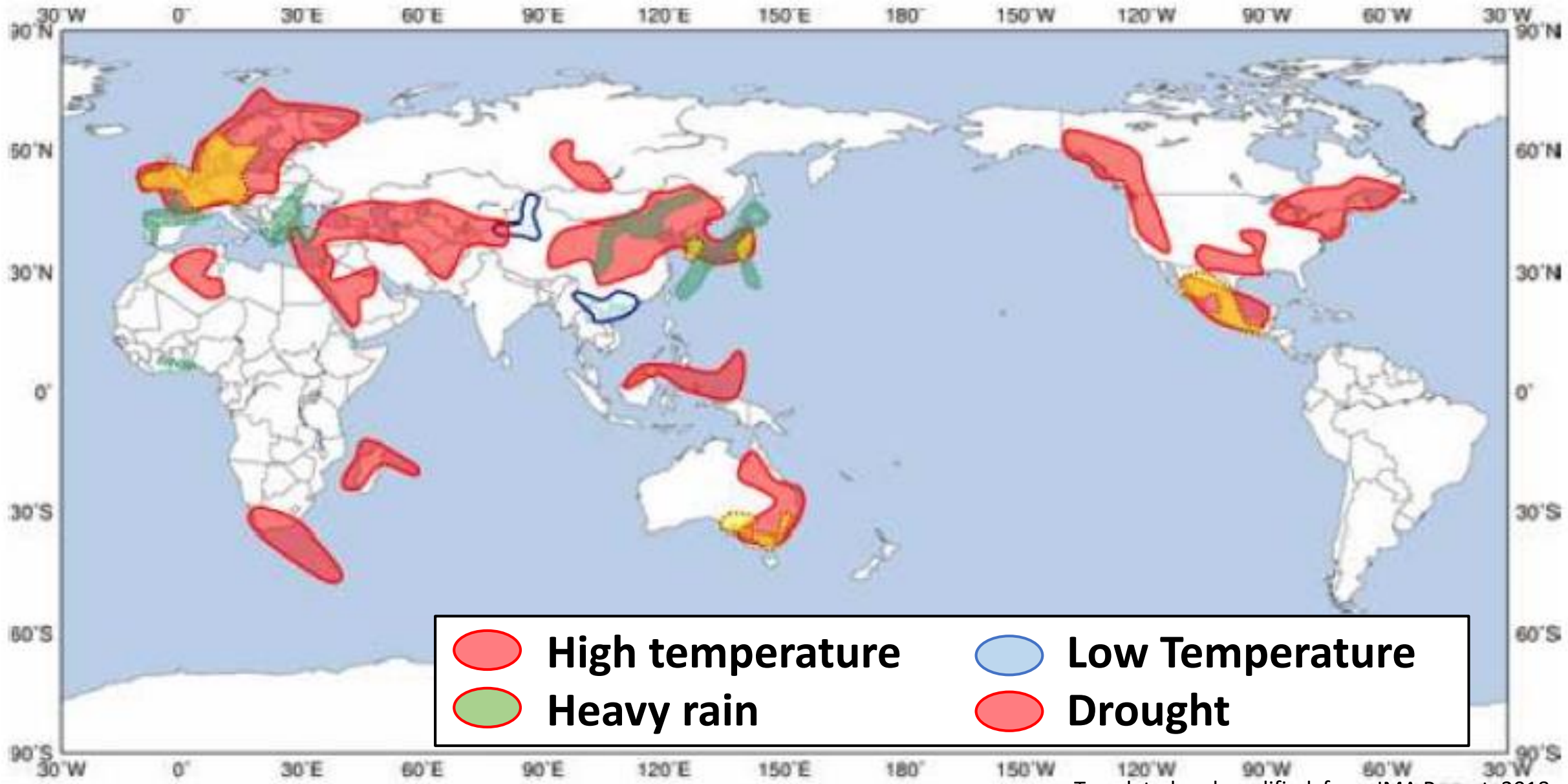


Translated and modified from JMA Report, 2018

Lesson 1.

**We have to address Climate Change locally
and globally NOW**

-From weather chart on West Japan Heavy Rain -



Translated and modified from JMA Report, 2018

Unusual Climatic Events events in July, 2018

Japan Meteorological Agency concluded that the heavy rain is due to, inter alias, global warming. The global warming caused temperature rise and increased vapor in the atmosphere over West Japan, which contributed to the record-breaking heavy rain .



Lesson 1

- **Heavy Rain Disaster in Japan is a part of global-scale climatic phenomena due to, inter alias, climate change.**
- **What happened in West Japan in July can happen anywhere in the world.**

Lesson 2.

Social change is a new challenge for

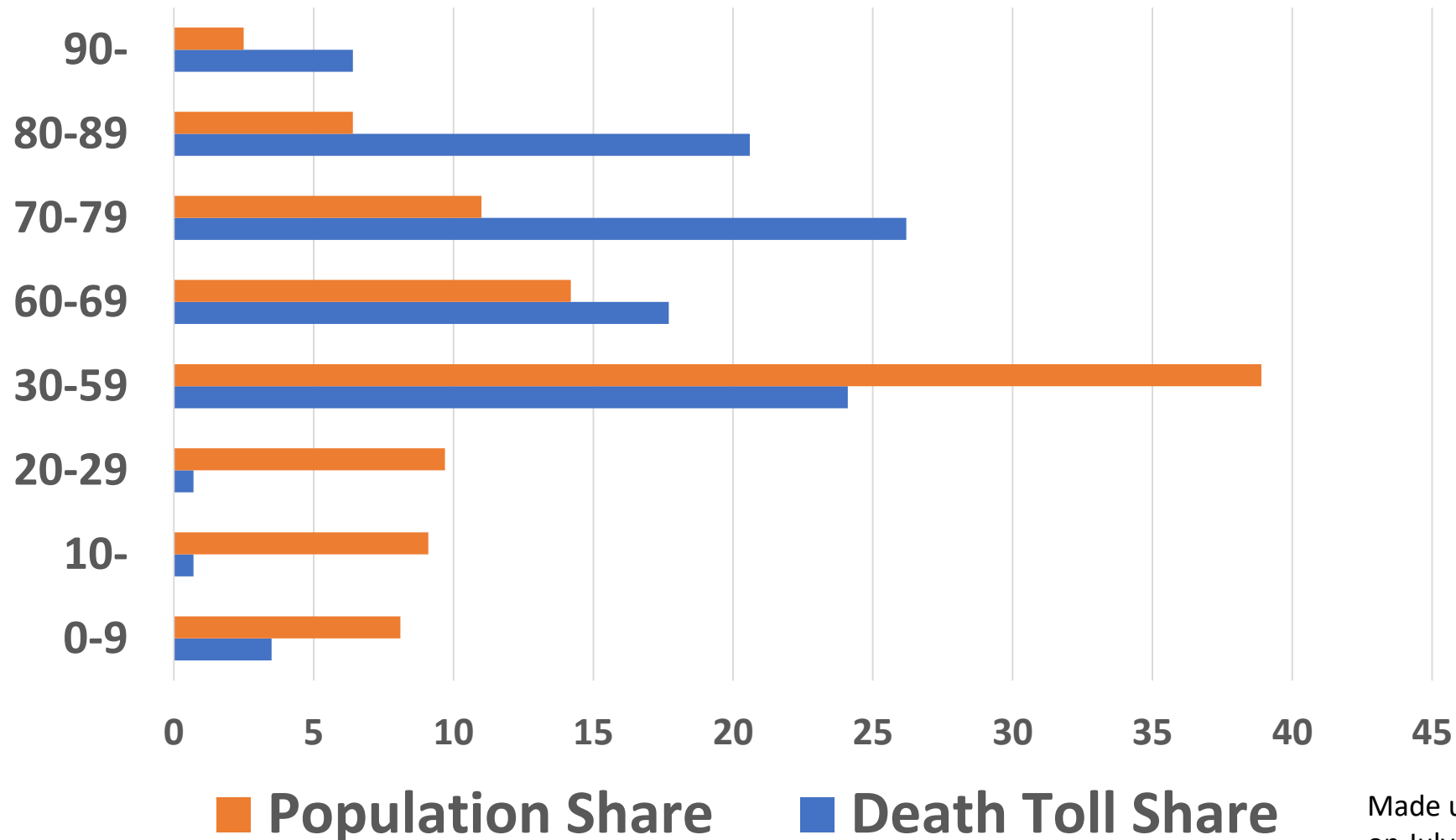
Disaster Risk Reduction

- The role of community is the key -

Death toll of senior people was disproportionately high

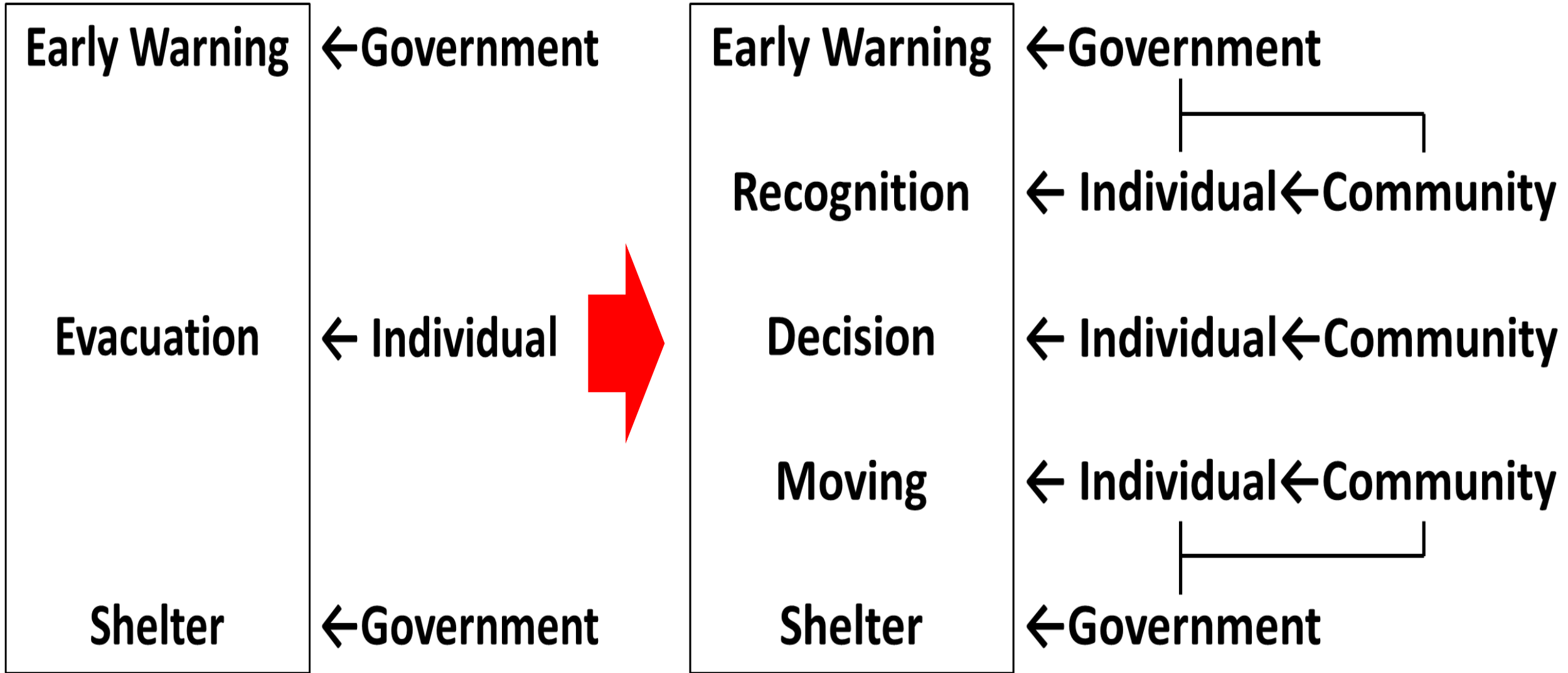
- 70% of the death were 60 years old or older -

Comparison of disaster death toll share and population share



- Death toll share by age group is according to an article by Asahi Shimbun as of July 12th, 2018
- Population share is that of national share and may differ from the disaster area

Breaking down and strengthening the role of community in Early Warning-Evacuation Process



Lesson 3.

Prevention pays off

Prevention Pays Off

速報版

- Diversion Channel was completed in Asahi River in Okayama City
- Around 30% of Flood Water was released to the Diversion Channel
- No flood damage compared with the expected flooding of over 5,000 households

旭川放水路(百間川) 分流部

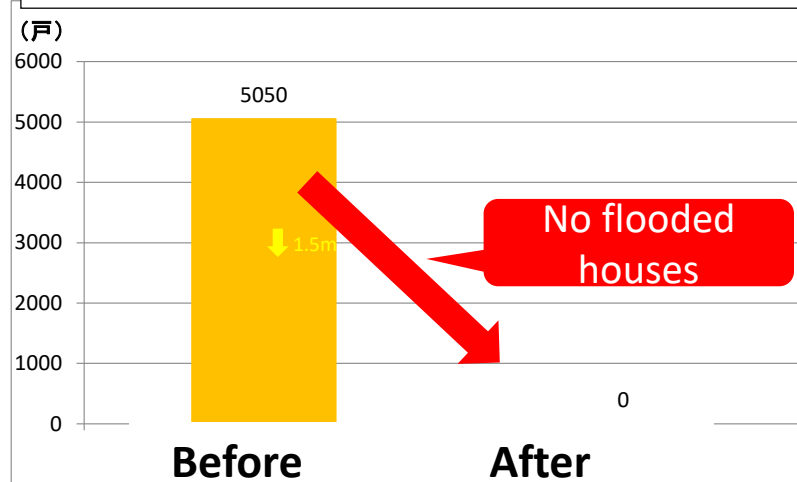


旭川放水路(百間川) 分流状況(7月6日(金))

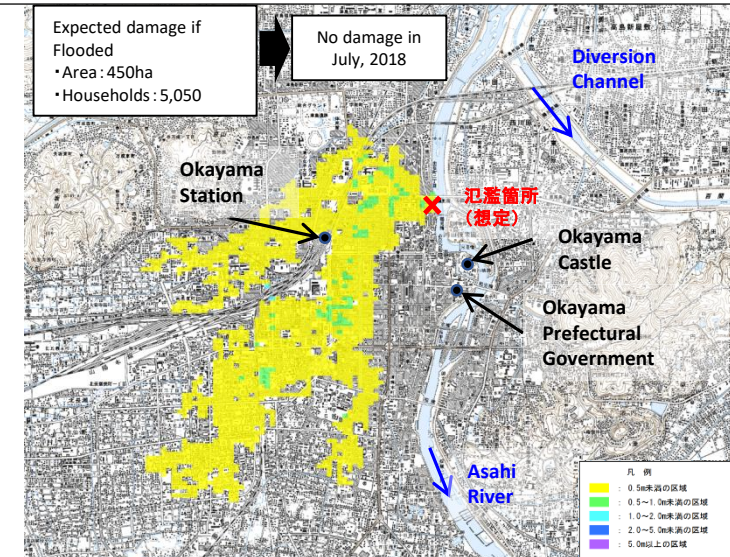


今回、最大で分流前4,500m³/sのうち、1,300m³/sを放水路へ分流

Simulated comparison of flood damage



Expected flooding areas without the Diversion Channel

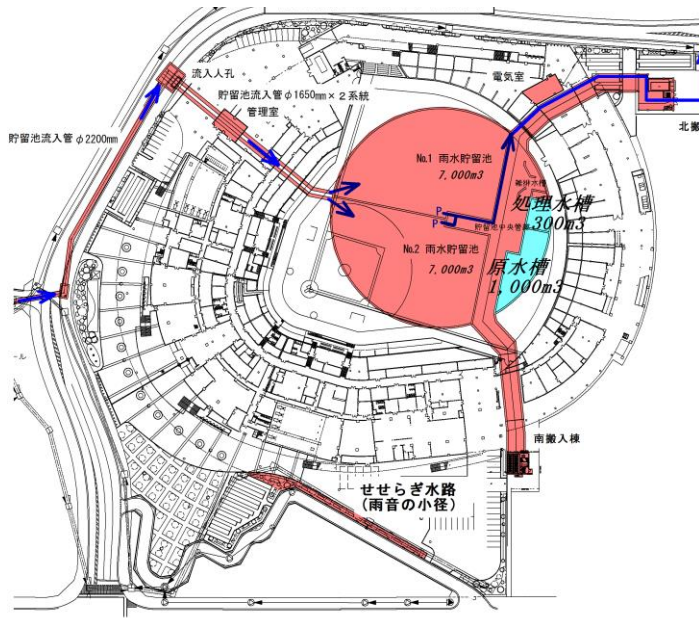


※本資料の数値等は速報値であるため、今後の調査で変わる可能性があります。

Storm storage facility under a newly built ballpark

- Hiroshima Station Area has been flooded by even small rainfalls.
- Storm storage was constructed under newly built Hiroshima Ballpark.
- There was no significant flooding damage in West Japan Heavy Rain Disaster in which total of 391 mm of rain fell on the area.

Layout of Ohzu Storm Storage



Max storage capacity : 14,000m³
13,100m³ was stored in July Rain.
(Hourly max. 46mm; Total:391mm)

Ohzu Storm Storage under New Hiroshima Ballpark

Thank you