



**THE FUTURE OF  
GLOBAL  
DISASTER  
RISK REDUCTION**

# Water-related Disaster 水害

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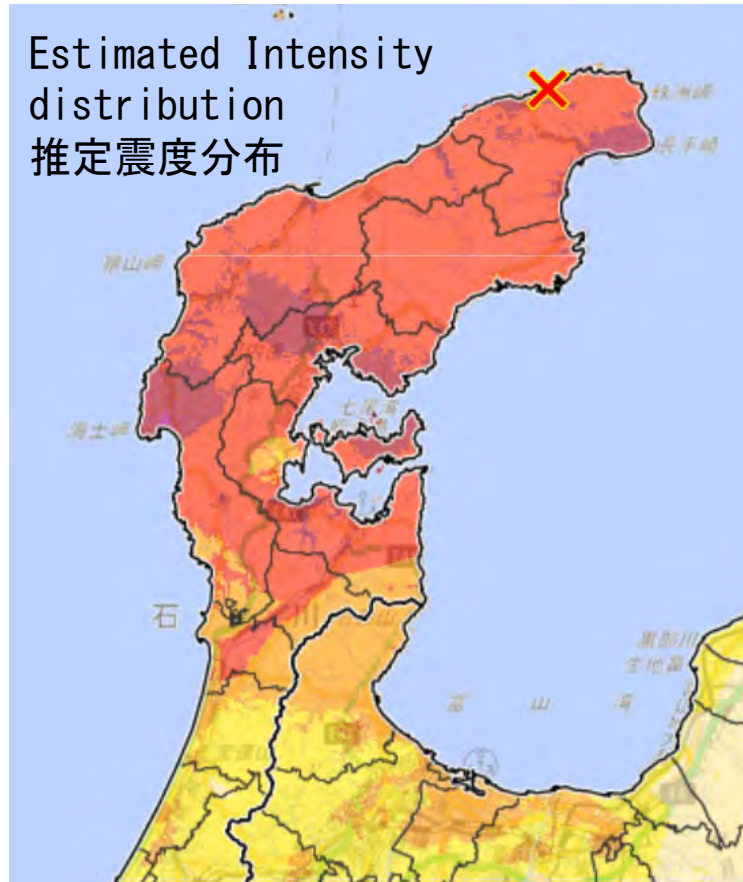
STRENGTHENING THE RESILIENCE of MEGACITIES THROUGH SCIENCE, TECHNOLOGY & INNOVATION

# Earthquake and Torrential Rainfall in Noto Peninsula area

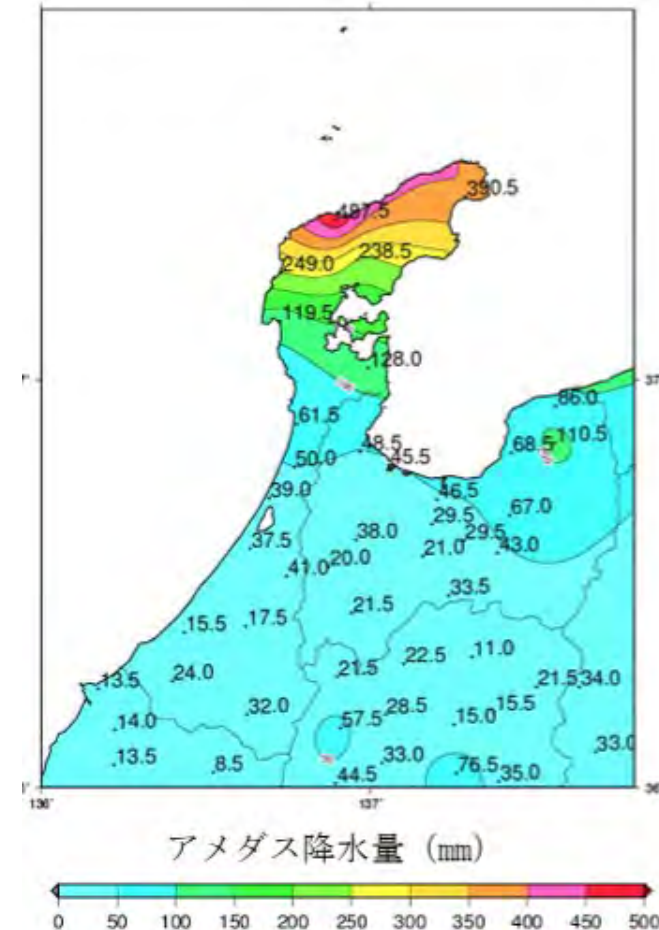
## 能登半島での地震・豪雨災害

Time: 16:10, Jan 1, 2024、Depth: 16km  
Max. Intensity: 7 (Wajima City, Shika Town, Ishikawa Prefecture)

時間：2024年1月1日16時10分  
震源深さ：16km  
最大深度7（輪島市・志賀町、  
石川県）



Source: JMA／出典：気象庁

Cumulative rainfall from Sep 21-23  
2024年9月21-23日の累積雨量

Source: JMA  
／出典：気象庁



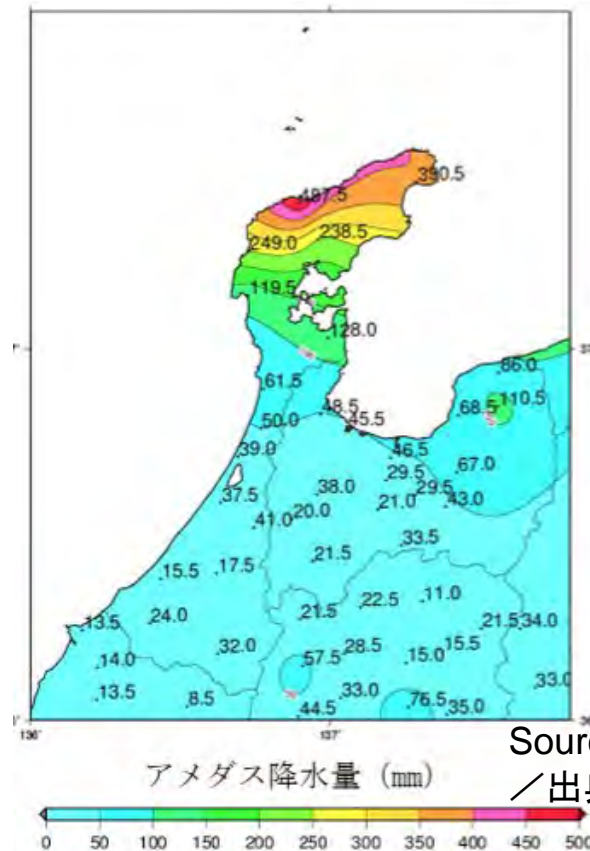
# Earthquake and Torrential Rainfall in Noto Peninsula area

## 能登半島での地震・豪雨災害

Cumulative rainfall from Sep 21-23  
2024年9月21-23日の累積雨量

Sediment disaster  
土砂災害

Bridge damage  
橋梁被害



Source: JMA  
／出典：気象庁

アメダス積算降水量分布図  
(9月21日00時から9月23日24時)

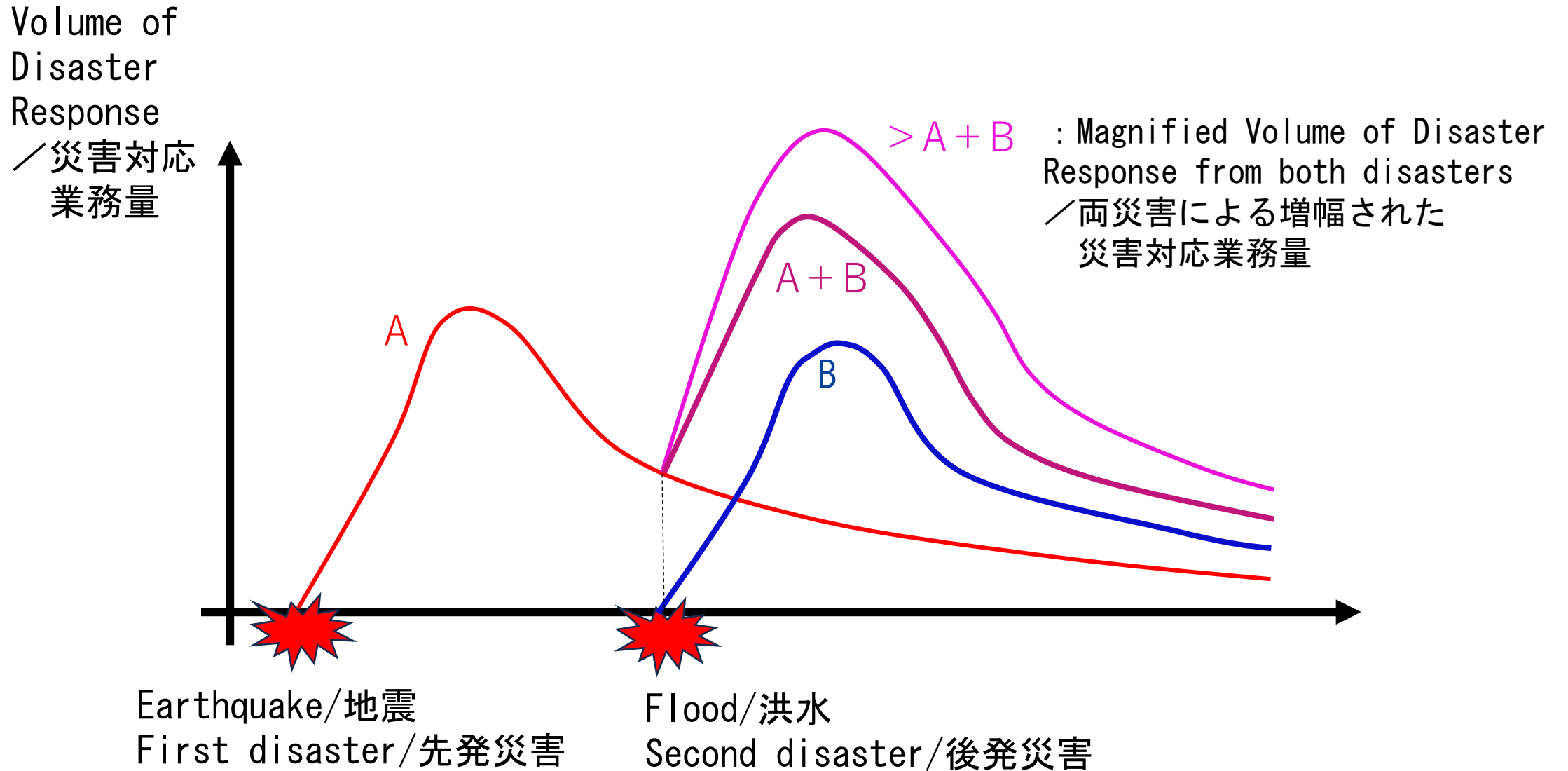


Inundation at  
temporary houses  
仮設住宅の浸水



# Disaster Response due to Two Disasters

## 2つの災害による災害対応





## Precipitation [Projections]



文部科学省

MINISTRY OF EDUCATION,  
CULTURE, SPORTS,  
SCIENCE AND TECHNOLOGY-JAPAN



気象庁  
Japan Meteorological Agency

- **Heavy rainfall events:** Under both scenarios, the national average frequency is projected to increase.

➤ Annual maximum daily precipitation is also projected to increase.

This means that extreme rainfall is projected to increase in both frequency and intensity.

- **Annual precipitation:** No statistically significant change is projected.
- The Baiu rain band is projected to intensify in early summer (June).

	2°C Warming Scenario Potential conditions with achievement of the Paris Agreement's 2°C goal	4°C Warming Scenario Potential conditions with no future additional mitigation measures
Annual number of events with precipitation $\geq 50$ mm/h	Approx. x1.8 increase	Approx. x3.0 increase
Annual number of days with precipitation $\geq 100$ mm	Approx. x1.2 increase	Approx. x1.4 increase
Annual maximum daily precipitation	Approx. +12% (+13 mm)	Approx. +27% (+28 mm)
Annual number of days with precipitation $< 1.0$ mm	No statistically significant change	Approx. +9.1 days

New !

### Projected changes in centennial extreme precipitation\*

- Centennial extreme precipitation (daily) with pre-industrial conditions is projected to occur approximately 5.3 times in conditions with a 4°C rise.
- Centennial daily precipitation amounts with a 4°C rise are projected to increase by approximately 32% compared to that with pre-industrial conditions.

\* Calculations here are based on daily precipitation.

Unless otherwise specified, the term "projections" on this slide refers to those for all of Japan at the end of the 21st century compared to the end of the 20th century.

Source: MEXT & JMA / 出典: 文部科学省・気象庁

**Possibility of Complex Disaster occurrence will increase in the future.**

**将来、複合災害のリスクが増加する可能性**