



**Asia-Pacific
Economic Cooperation**

2025/SOM3/EPWG/SDMOF/007

Agenda Item: S3.1.2

Pin-Point Alert System to Fill in A Gap of Early Warning System

Purpose: Information

Submitted by: Japan



**18th Senior Disaster Management
Officials' Forum
Incheon, Korea
31 July 2025**

Pin-point Alert System to fill in a gap of Early Warning System

A solution to the challenges of the early warning system: leaving no one behind

Who drafted the original concept of 'Early Warning for All'?

It was done by the UNISDR (renamed as UNDRR) Bonn Office in 2006
Outcomes of the three International Conference on EWS supported by the Government of Germany



Reid Basher, former head of UNISDR
Bonn Office (Platform for People-
Centred Early Warning System)

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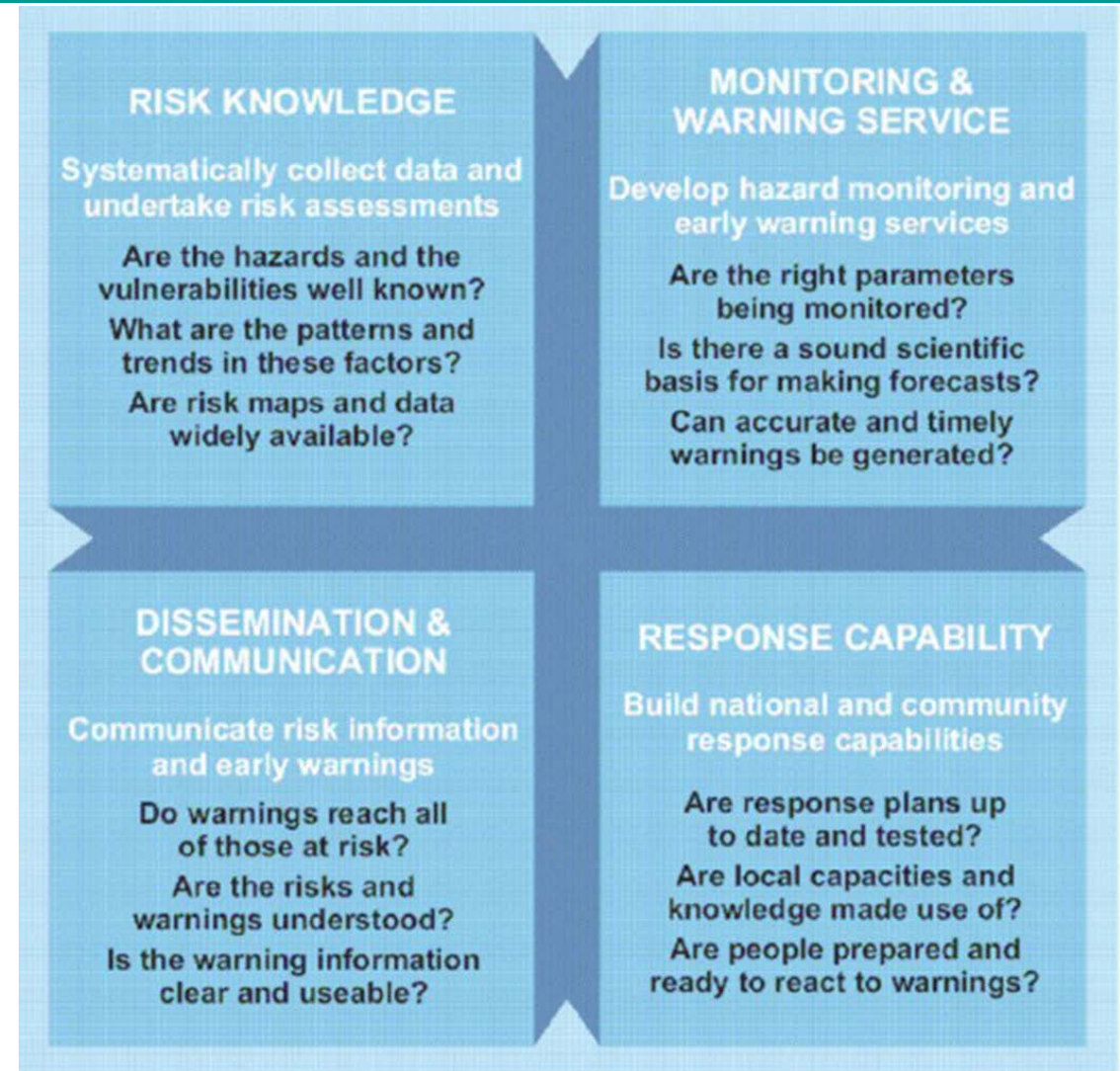
Yuichi Ono (39-years-young then)
Programme Officer

People-Centred Early Warning System



Conference delegates were presented with key recommendations from the **Global Survey of Early Warning Systems**, a report requested by the United Nations Secretary-General at the time, Kofi Annan.

This Survey stressed the importance of filling gaps and improving early warning capabilities worldwide, with a focus on **people-centred systems**.



Elements of the people-centred EWS (ISDR 2006)

Yes, Early Warning System is, but through experiencing the Great East Japan Earthquake and Tsunami + a series of typhoon-related disasters in recent years, one of the key missing pieces of puzzle to reduce disaster risk and save lives is to improve people's actions upon the receipts of warning and evacuation orders

Yes, Early Warning System saves lives, but there is a challenge in an aging society

Yes, Early Warning System saves lives, but it is not effective for reducing property damage

Damage caused by the Typhoon Hagibis in 2019

- Special Warning issued by JMA for 13 prefectures
- East Japan had as much as 500-1000 mm of rainfall within 24 hours
- Orographic effects: Heavy precipitation in a SE facing slope
- More than 100 deaths in Japan (mostly by flooding), which was the largest number of death since 1979
- 20+ deaths in Miyagi Pref. where I live
- Several hours of rainfall around 50 mm/hour in my private observatory in Sendai



Local Governments issued Evacuation Orders

Mass evacuation

More than 600,000 Sendai citizens (total population is 1 million) were under evacuation order

Where to accommodate such a large number of evacuees? Impossible!

Not everyone really needed to evacuate – only for those people whose house is at high disaster risk

Yet, government officials do not want to miss anyone just in case --- leading to issue evacuation orders to wider community



Government of Japan modified the law

Basic Act on Disaster Management (Act No. 223 of 1961) modified in May 2021

The solution was to encourage **municipalities to help develop an individual evacuation plan**

This was because more aged and disabled people became disaster victims in Japan recent years

2011 Tsunami: 65% of victims was over 60 years old

2019 Typhoon: 65% of victims was over 60 years old

2020 July Torrential Rain: 79% of victims was over 60 years old

Note: In 2024, nearly 30% of Japanese population is over 65 years old

One solution: A pinpoint alert system

1. Pinpoint-assessment = household level disaster risk assessment

Do you know if your house is safe from disasters?

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2. A smart-phone based Pinpoint Alert System which should have a two-way communication function.

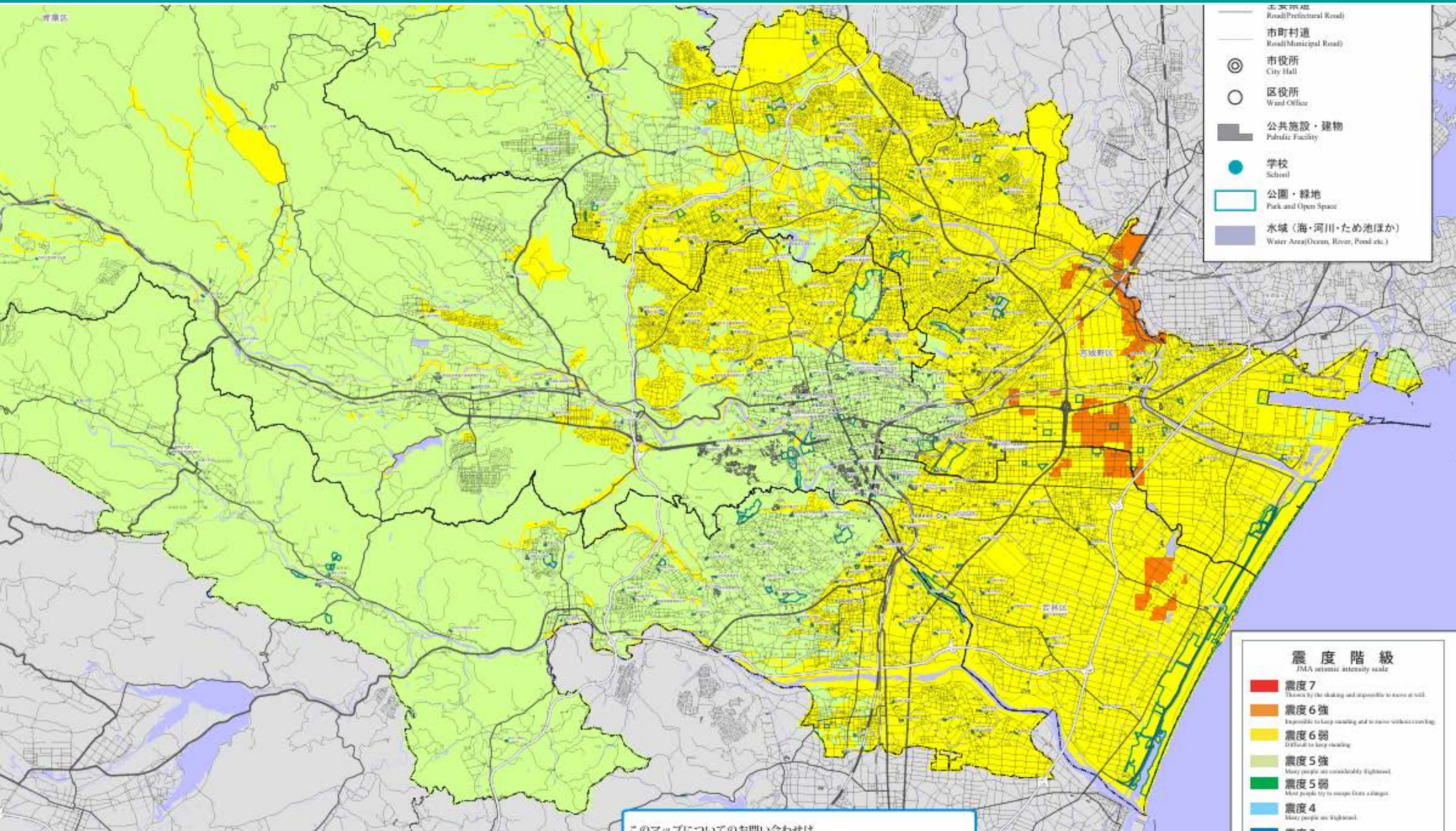
People who need help can ask help.

Fujitsu Research Institute and Tohoku University joined to develop the current project approved and funded by Japan Science and Technology Agency



Know your risk at the household level

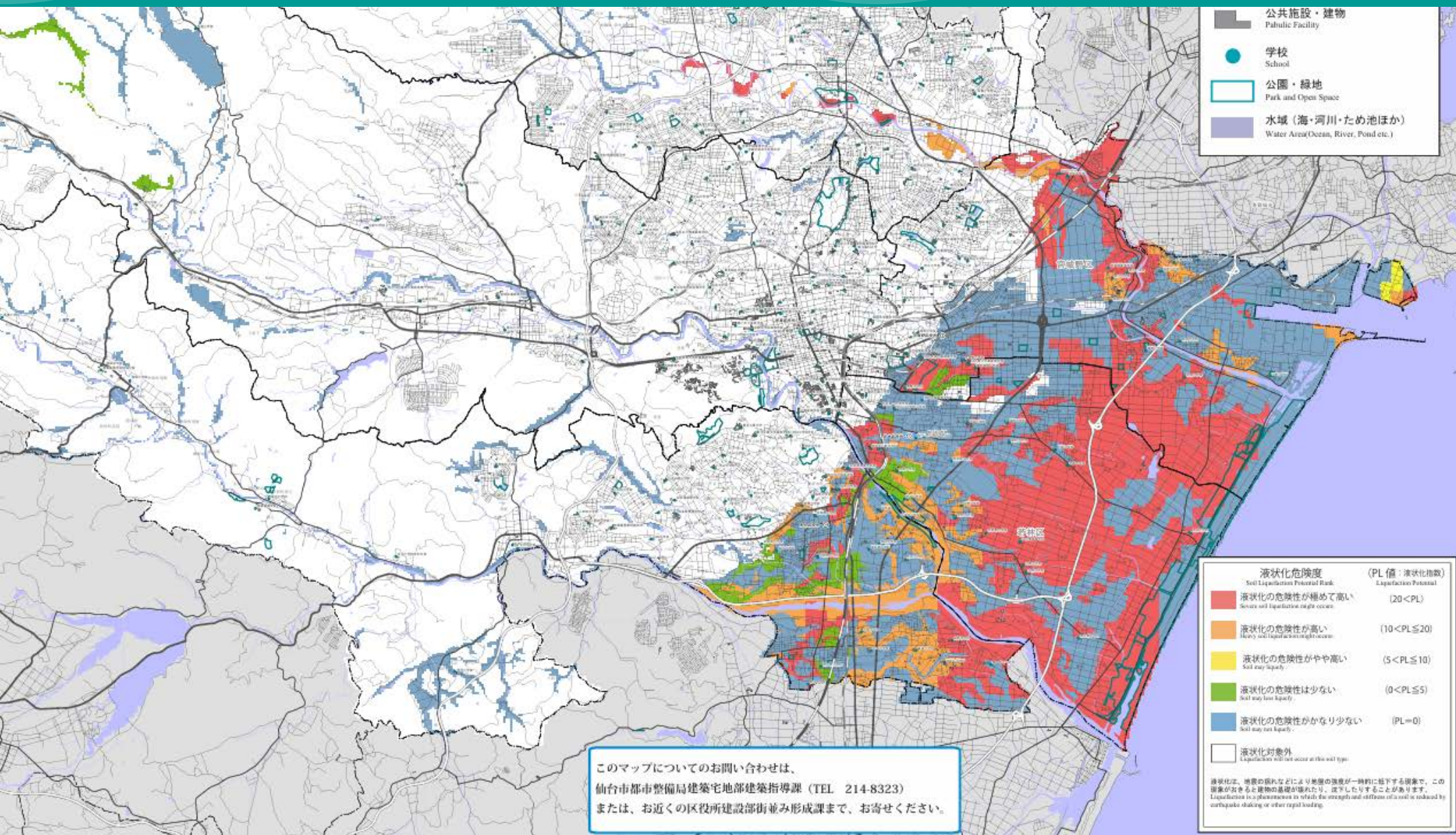
Varies hazard maps



Seismic Intensity

City of Sendai

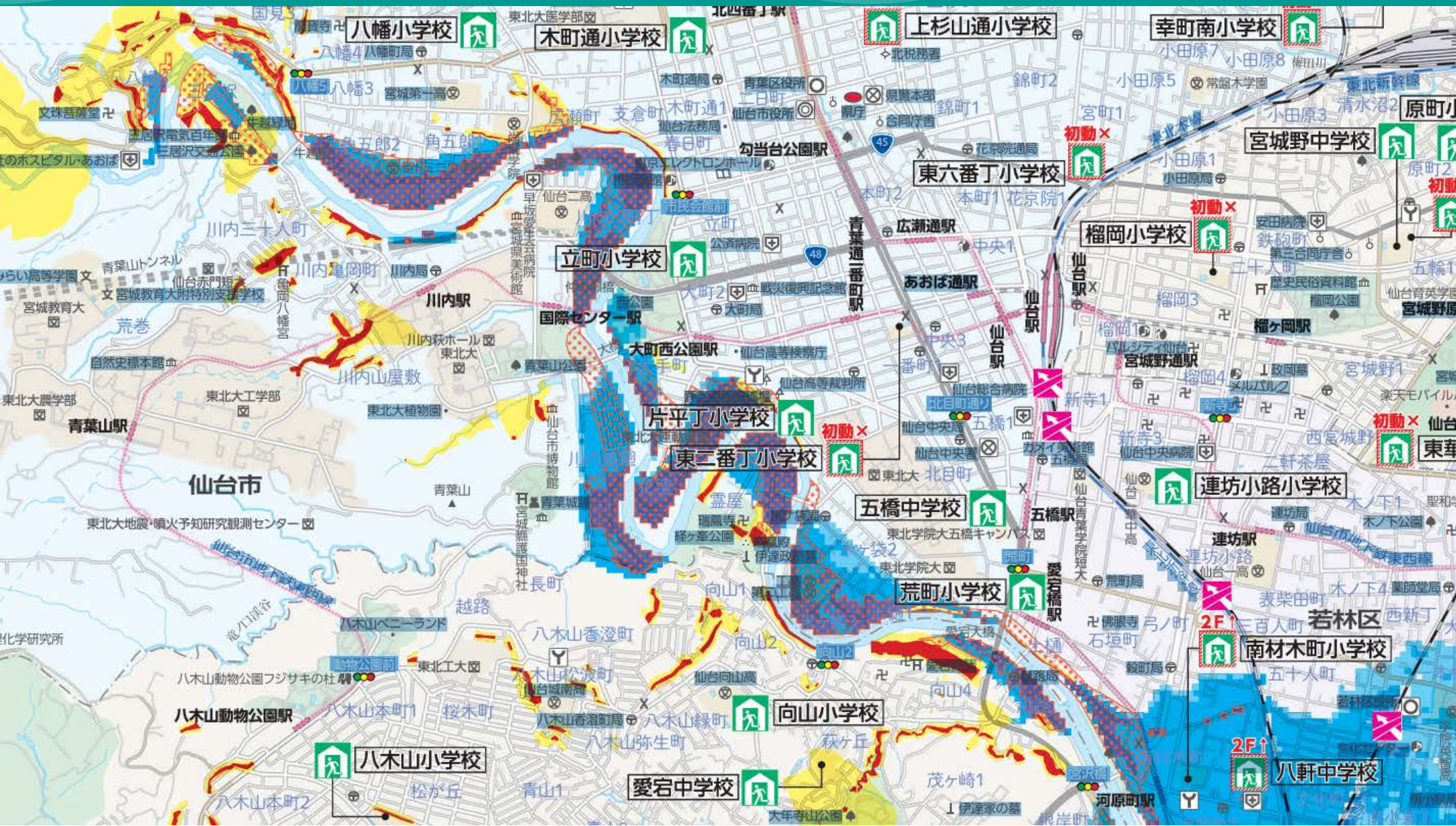
Liquefaction risk



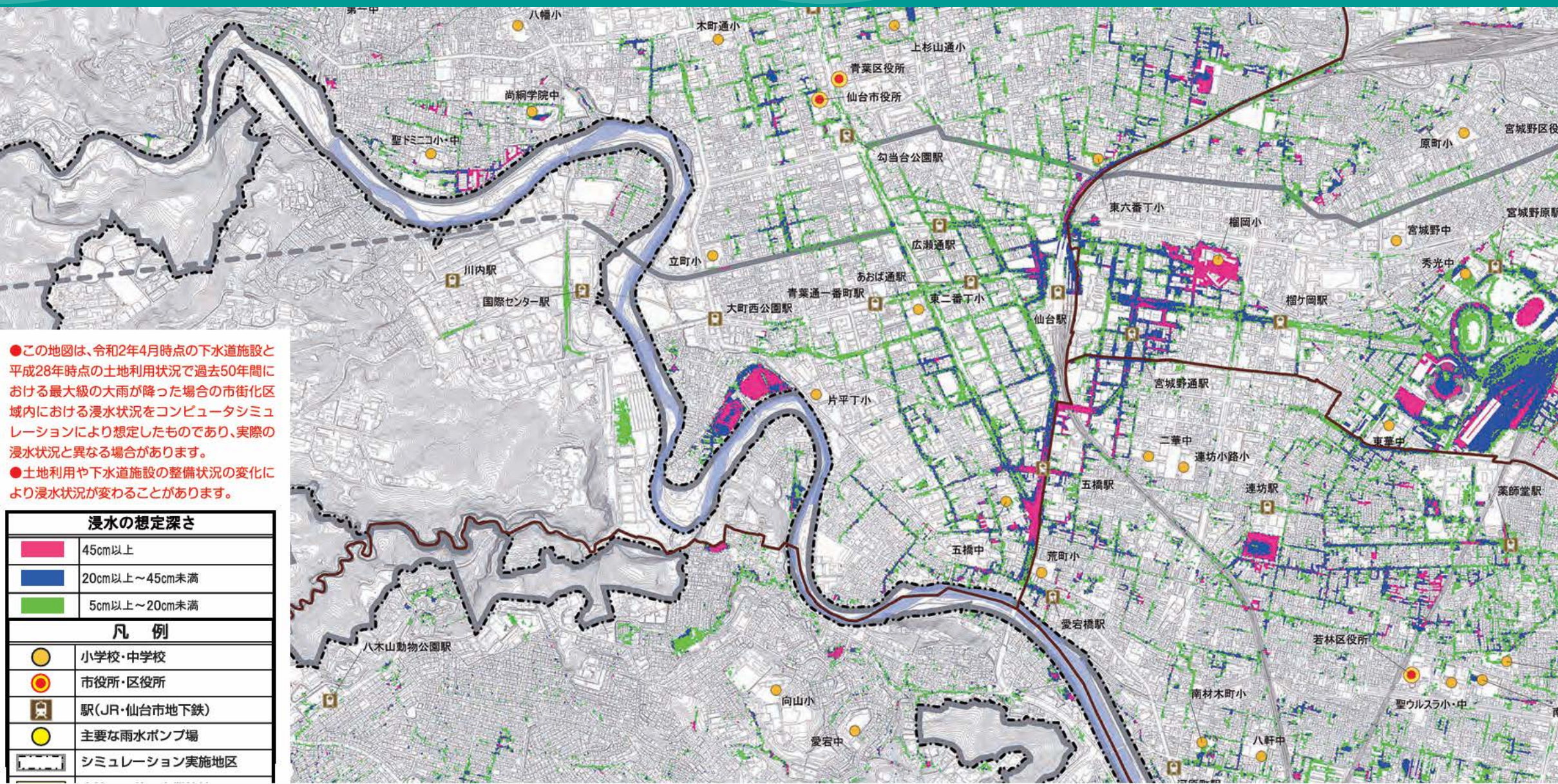
Flood and landslide risk



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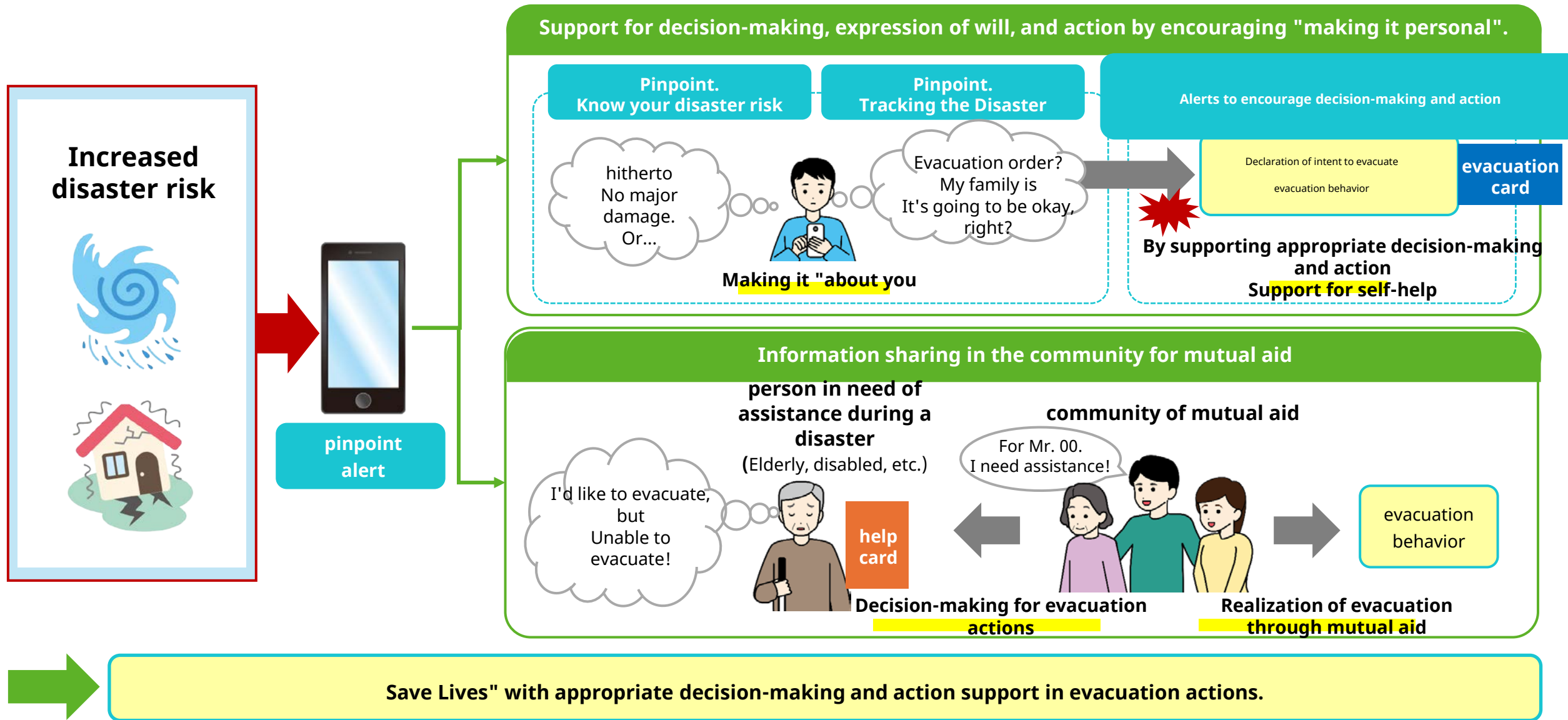
Inland flooding risk



Enlarged map can identify risk at the house level



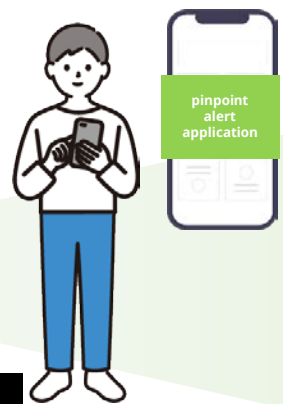
A smart-phone based two-way communication app



Community Alert App: How the app is used

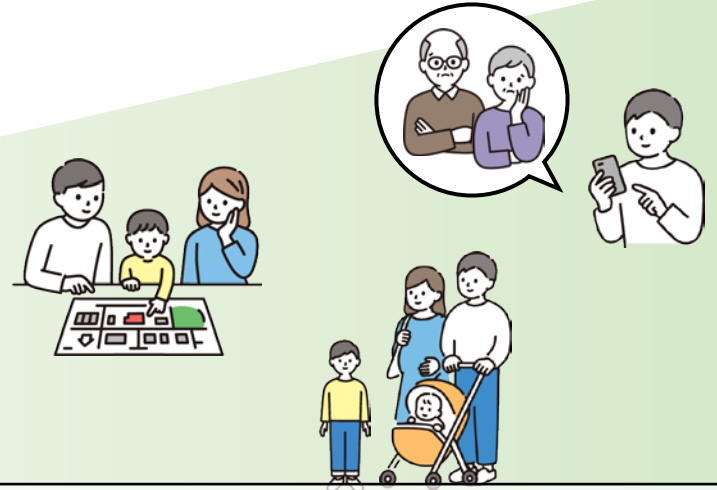
self-help

Use to protect yourself



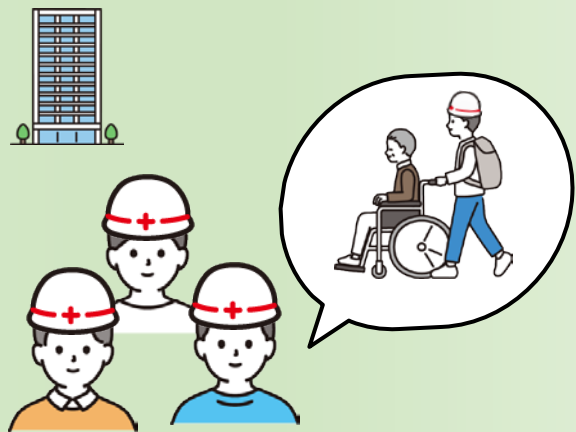
benefit

Your own family and Acquaintances and Neighbors.
Use to protect



cooperation

Mutual Aid Community Members
Used for mutual aid as



How the application is used			
Normal times	- Know your disaster risk - develop knowledge of disaster prevention	- Know your family and those close to you and their disaster risk. - Teach disaster risk to those close to you who cannot use the app. - Share disaster prevention knowledge with those close to you	- Raise community awareness of disaster preparedness - disaster drill
time of disaster	Evacuate at the appropriate time.	- Evacuate at the appropriate time with your family - Share disaster prevention information with those close to you who cannot use the app and encourage them to evacuate as soon as possible.	Evacuation support for those in need of assistance

Evacuation does not mean to get out of your house and seek shelter at an evacuation center

- It could be staying where you are if the location is safe enough
- It could be a vertical or horizontal evacuation within your house

The best way is to live where you do not have to evacuate!

- Crucial to know disaster risk exactly where you are
- Local governments to provide detailed hazard maps
- A Pinpoint EWS is effective for a person/people to take appropriate actions during warning
- It will help narrow down warning areas as small as at the household level
- It will allow a two-way communication – people need of help and helpers for evacuation during warning and after the disaster as well
- It requires: a smart phone, a software application to download, a broadband connectivity, electric power, hazard maps, warning and evacuation orders from authorities such as Met Office and Emergency Offices, training/drills, and community to help each other

Ideally, we should build our house and community where disaster risk is low



In the long run, governments' policies should lead to this happening

Ideally, you should not have to evacuate, even in the event of a special warning

Yet, until then, a pin-point alert system would be a good tool to protect lives, including those who need help

청취 해주셔서 감사합니다!

