

# BACKGROUND AND ISSUES

## Exposure to Natural Disasters

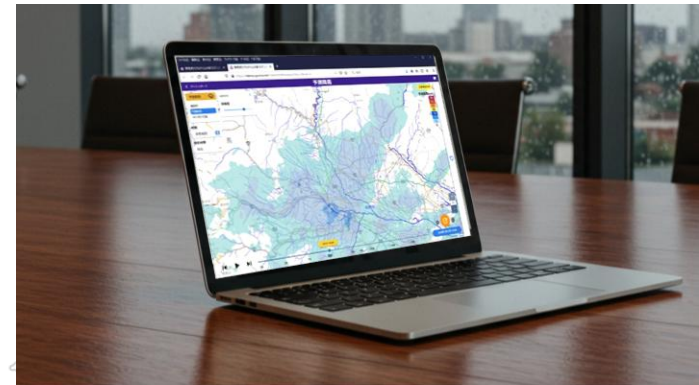
- According to the Malaysian government, the flood damage costs in 2024 to 933.4 million ringgit (approximately 31.5 billion yen), a 23.6% increase from the previous year, accounting for 0.05% of GDP.

## Lack of Integrated and Easily Accessible Data

- Leads to delayed decisions and late evacuation warnings.
- Brings challenge to access input data for flood modelling.

## Poor Dissemination of Hazards Warnings

- Reports of delayed warning signals have resulted in public uncertainty and confusion.
- This leads to delayed evacuations during floods, increasing the risk of human casualties.
- Correct understanding of disaster information and swift decision-making are essential.





# OUR SOLUTION - Climate Change Adaptation -



**Riskma**

***An information system that integrates observation data and forecast information***



## Display rainfall data

- ✓ Real-time radar observed rainfall (C-band radar)
- ✓ High-resolution precipitation nowcast and short-term precipitation forecast
- ✓ Mesoscale numerical weather prediction model GPV (MSM)



## Display observation data

- ✓ Observation data from water level, rainfall, wind direction, and wind speed observation stations
- ✓ Capability to install new water level gauges and sensors



## River water levels, pluvial and fluvial flood forecasts

- ✓ Using in-house developed analysis models, predict future river water level trends, flood areas, and inundation depths
- ✓ Supports inland flooding and river (external) flooding



## Send Notification via alert email

- ✓ Predict areas at risk of pluvial flooding
- ✓ Predict areas at risk of inundation due to fluvial flooding



## Provide Information by the Meteorological Agency

- ✓ Various advisories and warnings
- ✓ Rainfall, flooding and inundation, landslide

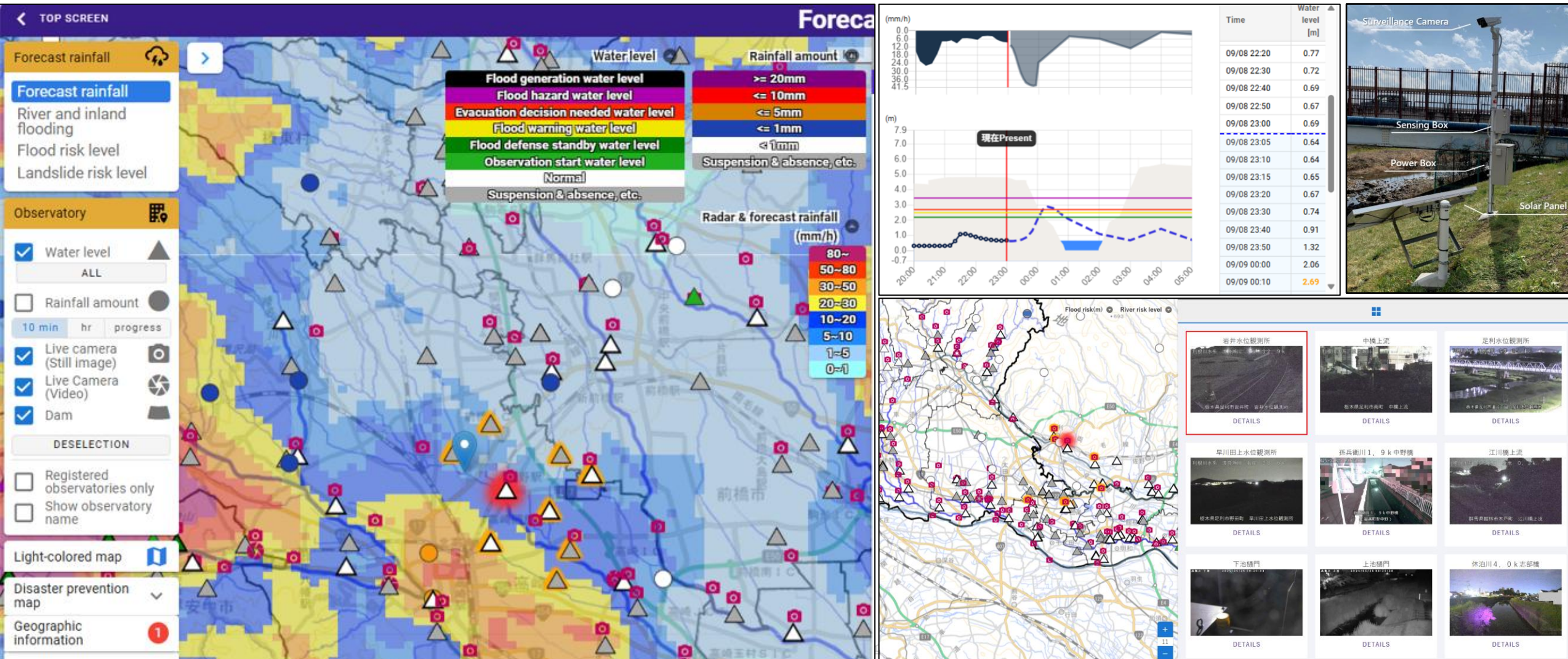


## Display real-time images and videos from monitoring devices

- ✓ Display of CCTV camera images and footage
- ✓ Support for installation and construction of new camera equipment

# WHAT'S POSSIBLE

***Effective information collection before/during/after disaster.  
Supporting decision making for early evacuation & DRR activities.***



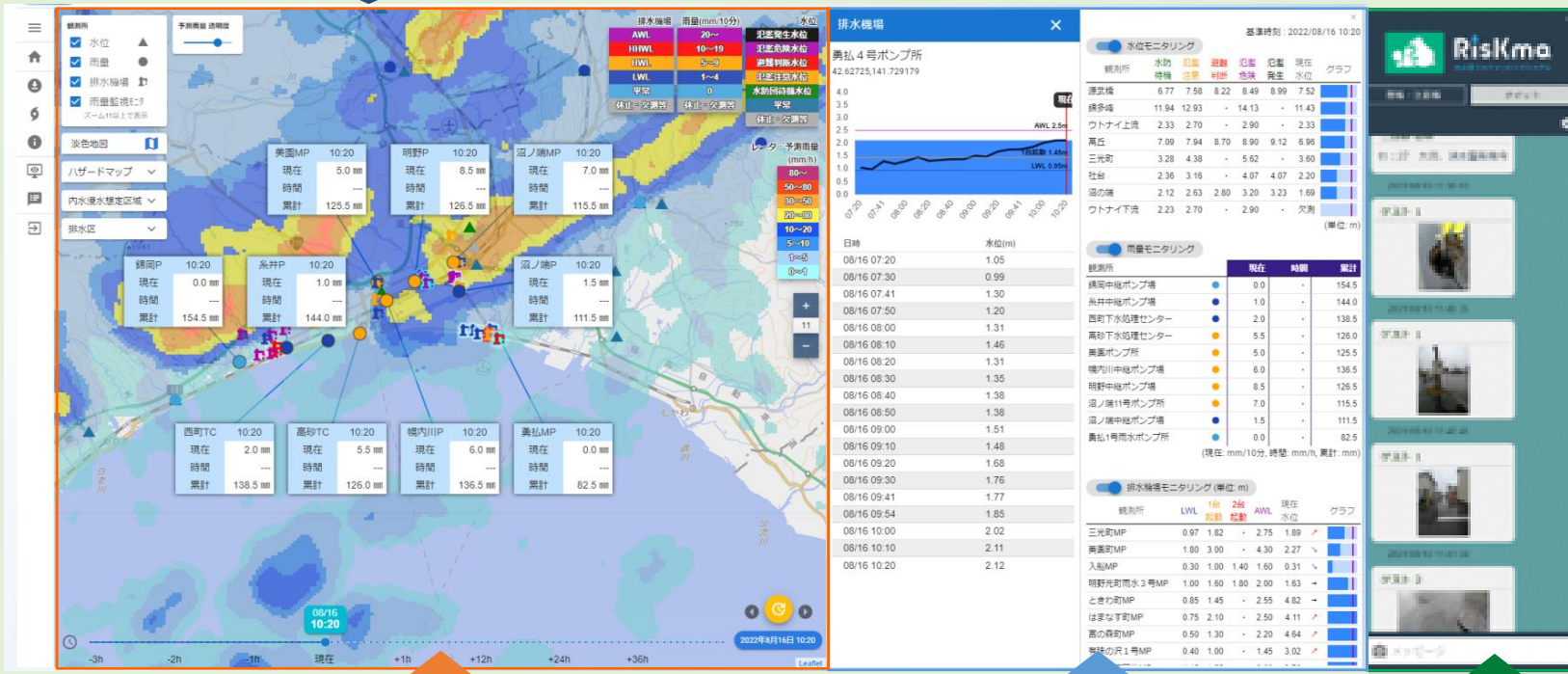


# GOOD PRACTICE - Sewer and drainage system management -



**A cloud-based information system that monitors rainfall and river/sewer water levels in real-time, with automated data collection and sharing.**

- ✓ **Rapid Response:** Real-time data monitoring enables quick and accurate responses.
- ✓ **Efficiency Improvement:** Automatic data integration reduce the workload on staff.
- ✓ **Enhanced Collaboration:** Chat functions facilitate smooth information sharing.
- ✓ **Cost Savings:** Utilizing a cloud system allows for low-cost operation.



Mapping rainclouds and rainfall

Listing sewer and river water levels

Information sharing via chat

