

An aerial photograph of Kumamoto City, Japan, showing a wide river flowing through the urban landscape. Several bridges cross the river, including a prominent white arch bridge. The city is densely packed with buildings of various heights and colors, interspersed with green trees and parks. The sky is overcast with grey clouds.

**Kumamoto City Initiatives for a
Sound Water Cycle and River
Basin Disaster Management
Creating a New Water Culture**

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4th Asia-Pacific Water Summit Kumamoto Japan 2022

The UN 2023 Water Conference

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I. APPEAL AND UNIQUE CHARACTERISTICS OF KUMAMOTO CITY

1. Water Cycle in Kumamoto

Geological strata formed by volcanic activity is easy for water to penetrate and creates abundant groundwater



I. APPEAL AND UNIQUE CHARACTERISTICS OF KUMAMOTO CITY

2. Water Fosters Nature and Culture

Groundwater is the basis of our economic activities and life in Kumamoto, and it continues to shape Kumamoto Culture

Suizenji Jojuen Garden
(Kumamoto City)



Lake Ezu
(Kumamoto City)

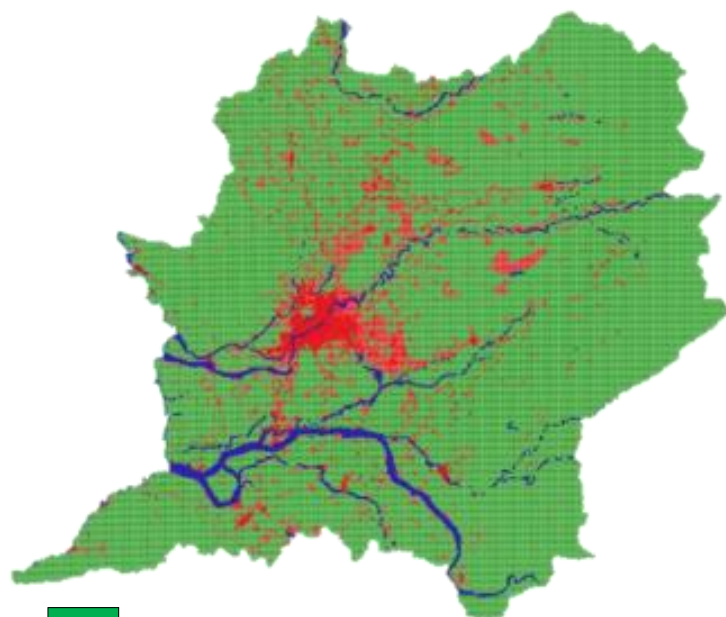


II. ISSUES

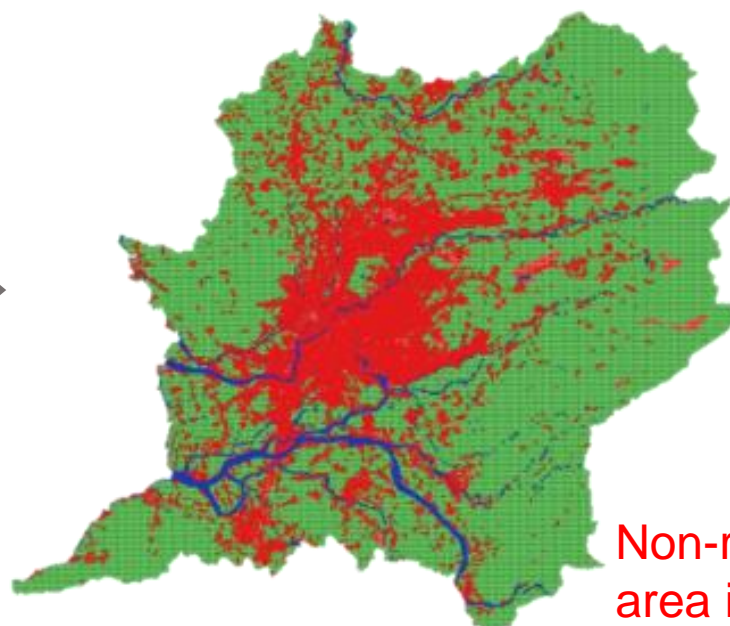
1. Groundwater Depletion



The decrease in paddy fields due to urbanization has led to a decrease in groundwater recharge

1976



2016

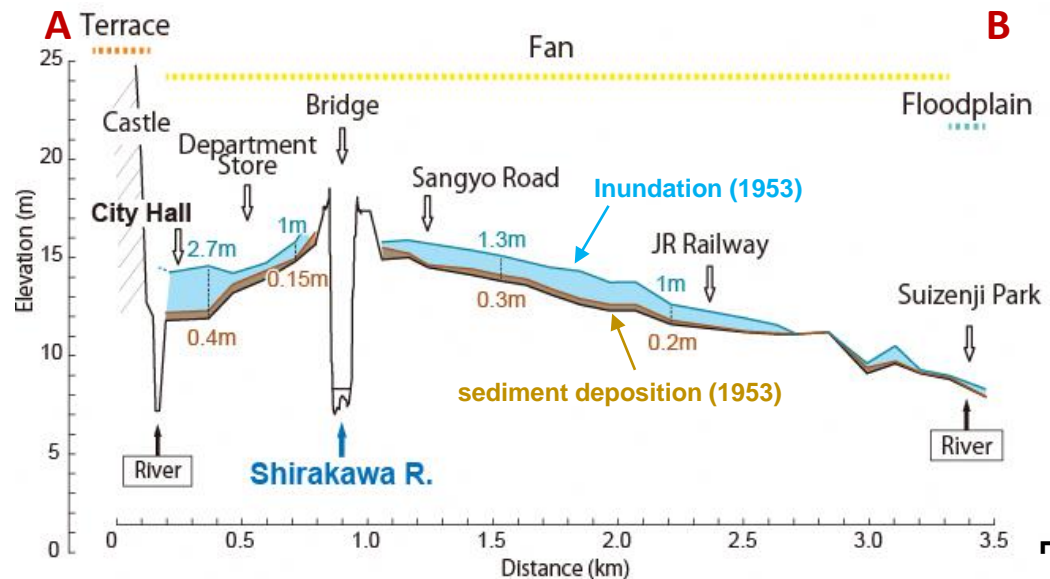
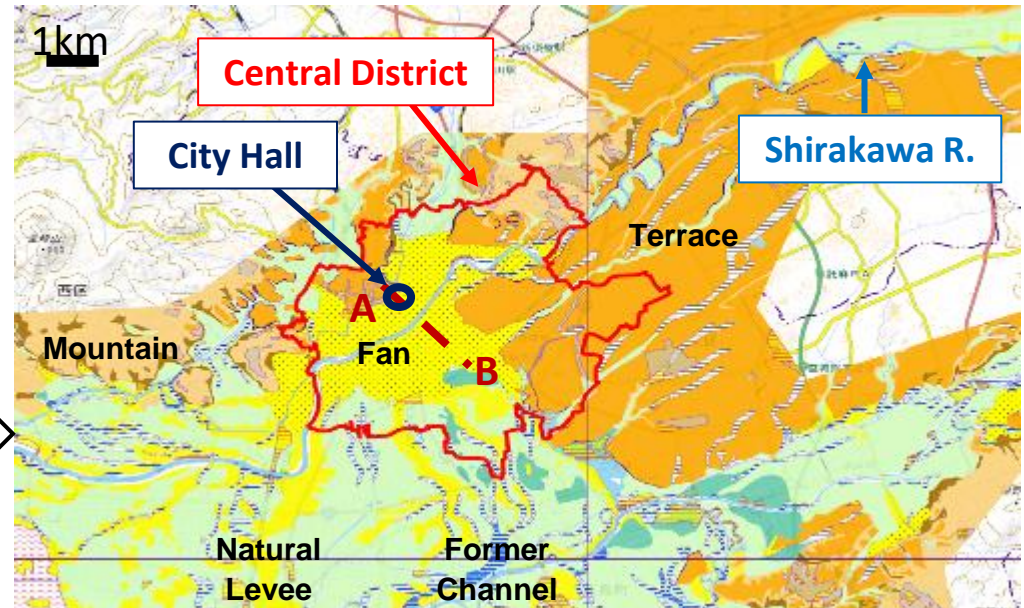
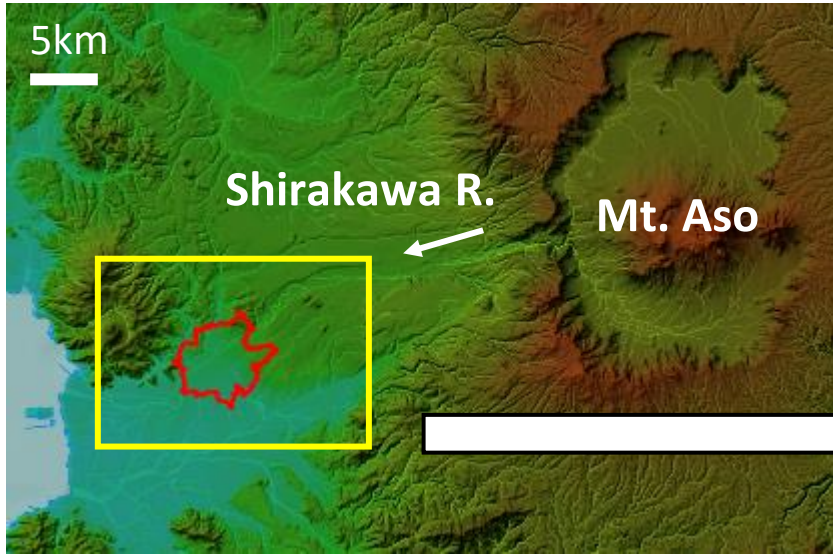


-  Recharge area (e.g., paddy fields, farmland, forests, etc.)
-  Non-recharge area (e.g., urban area)

Non-recharge
area increased
by 120%

II. ISSUES

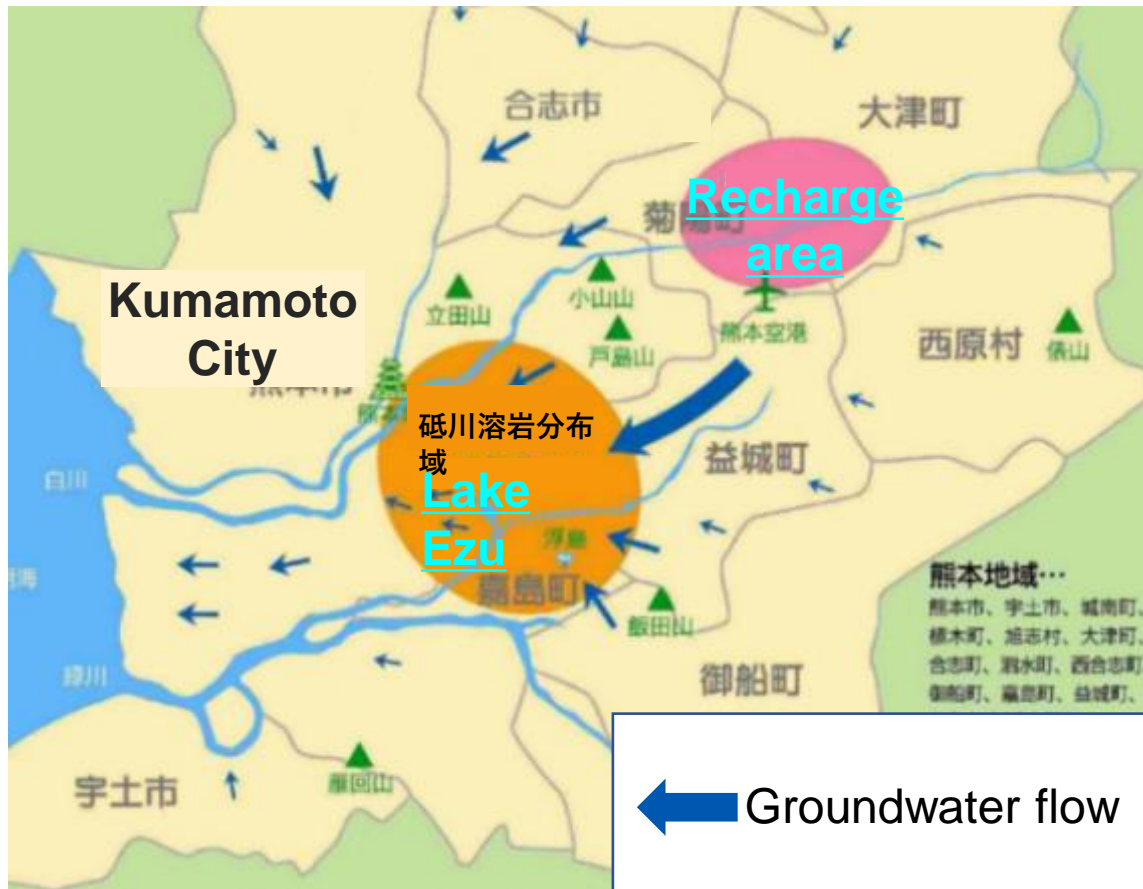
2. Flood-Prone Landforms & Recurring Water-Related Disasters



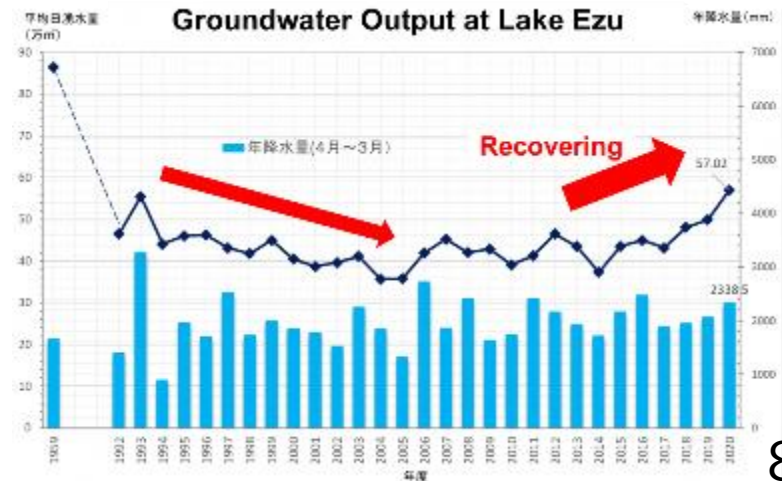
III. INITIATIVES

1. Regional Groundwater Conservation

Promotion of cross-sectoral and trans-municipal groundwater conservation activities in the middle reaches of the Shirakawa River



Flooded paddy field



III. INITIATIVES

2. Water-Related Disaster Risk Reduction

River Basin Disaster Resilience and Sustainability by All
Comprehensive and multi-level water-related disaster prevention

Prevent Floods & Reduce Hazards

e.g. Channel modification, stormwater storage facilities, forest conservation, paddy field water storage

Reduce Exposure to Disaster

e.g. Promotion of redevelopment of decrepit buildings in the city center

Increase Disaster Resilience

e.g. Create hazard maps and raise citizen awareness of water-related disasters



▲ Modified Section of the Shirakawa River

III. INITIATIVES

3. Strengthen Flood Evacuation Plan

Never underestimate future disasters and
conduct training courses to protect lives

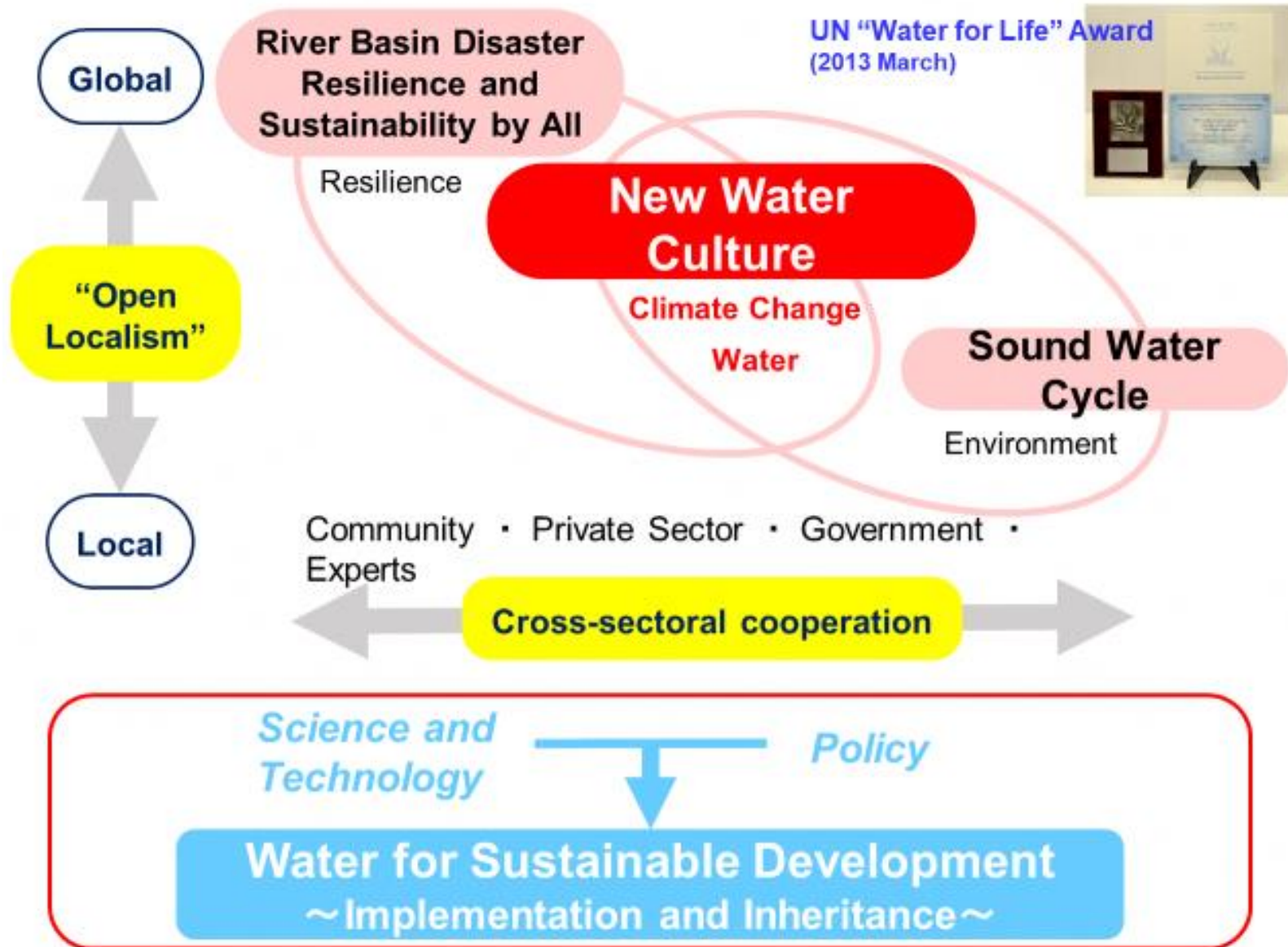
■ Training city workers for disaster response during the pandemic

Training on how to respond to various unexpected situations during disaster response while being cautious of the spread of COVID-19.

■ Training citizens for flood evacuation using VR (Virtual Reality)



IV. TOWARDS A RESILIENT AND SUSTAINABLE SOCIETY





Thank You for Listening