

APRU-IRIDES MULTI-HAZARDS VIRTUAL SUMMER SCHOOL JULY 22

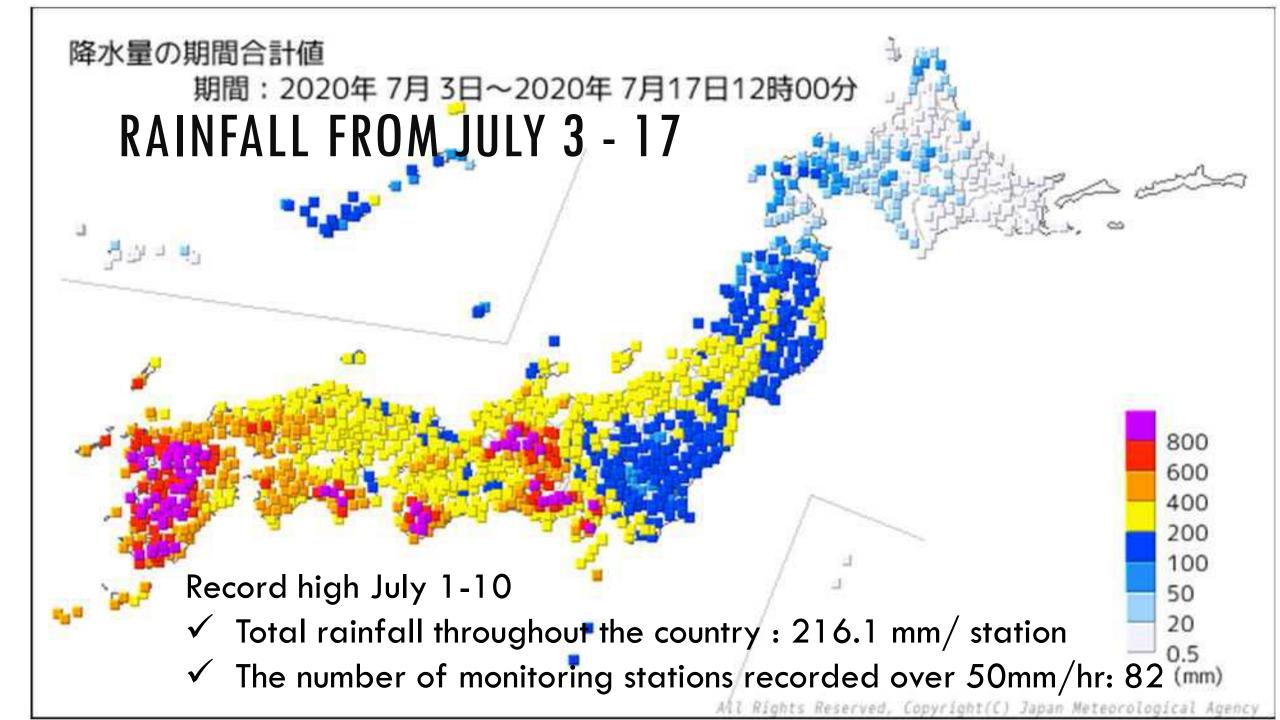
Mikio Ishiwatari, PhD Visiting Professor The University of Tokyo

KEY MESSAGE

Japan is fighting against flooding and use such experience to support other countries.

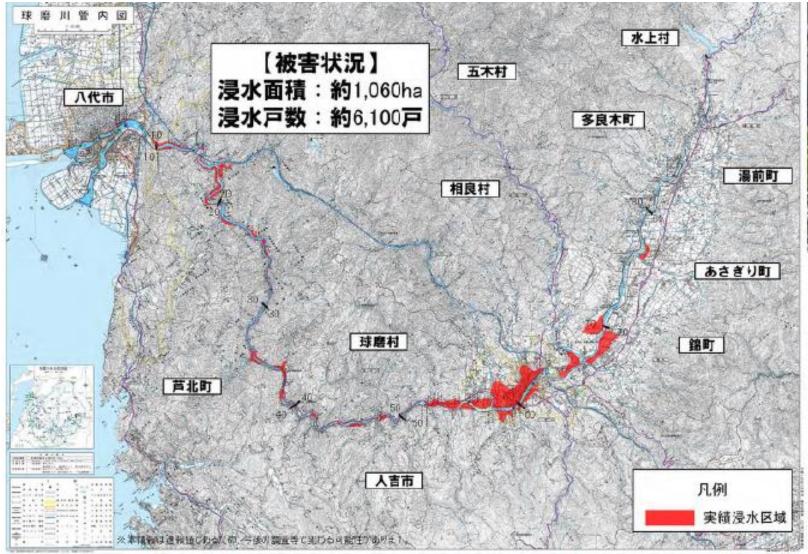
1. TORRENTIAL RAINFALL IN JULY 2020 ON-GOING 梅雨





KUMAGAWA RIVER, KUMAMOTO PREFECTURE

Inundated area: 2060Ha Flooded houses: 6,100



TORRENTIAL RAINFALL IN JULY 2020 ON-GOING

- As of July 18
- ✓ Death 77
- ✓ Missing 7
- Damaged houses over 15,000
- \checkmark 2,277 people at evacuation centers



2. TYPHOON HAGIBIS 2019

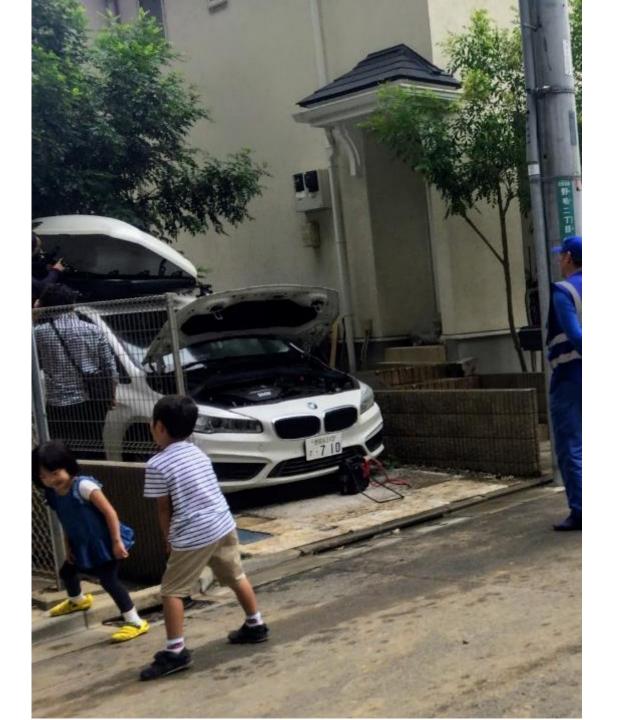
1. TYPHOON HAGIBIS 2019 TAMAGAWA RIVER, BETWEEN TOKYO AND KAWASAKI, OCT 12 SAT FROM TOKYO SOUTHERN BOARDER

EVACUATION CENTER

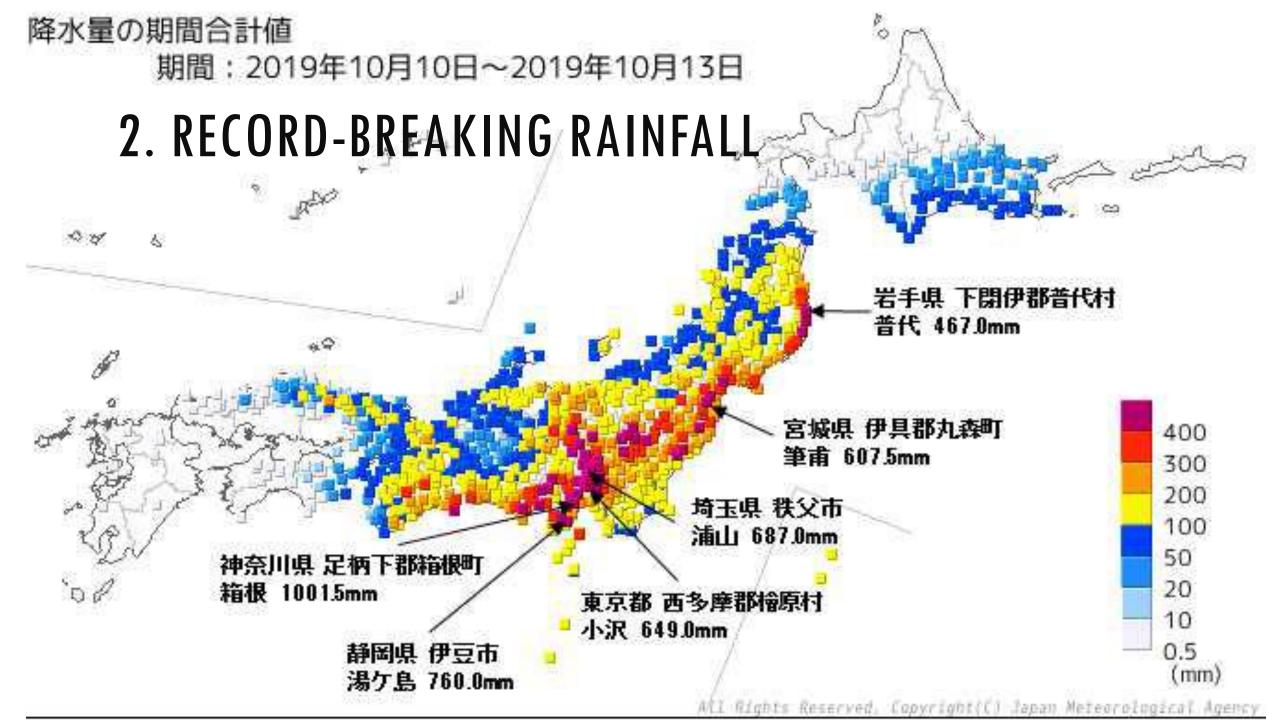
FLOODING FORM TAMAGAWA RIVER



ILAND URBAN FLOODING IN DENENCHOFU

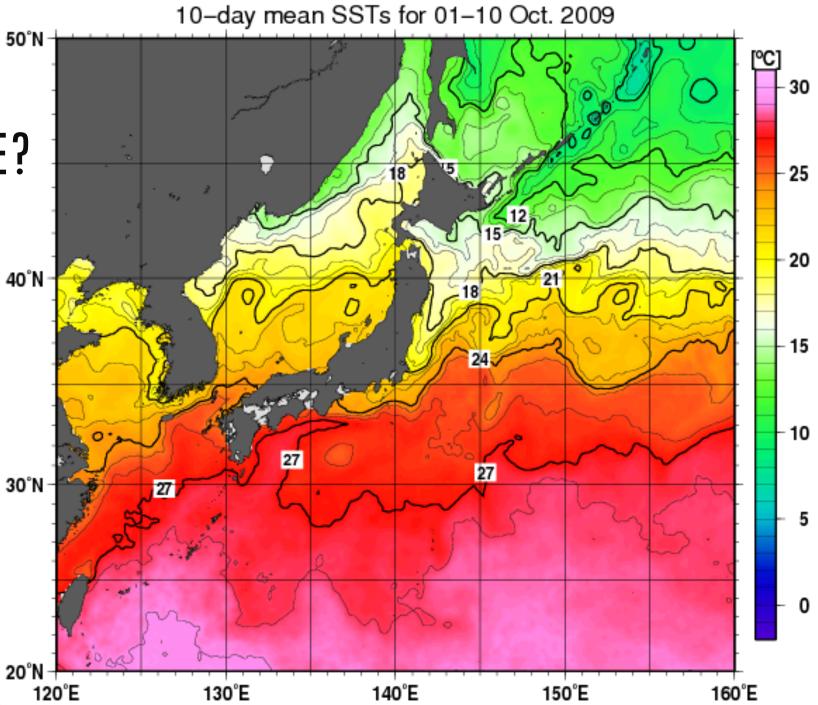






EFFECT OF CLIMATE CHANGE?

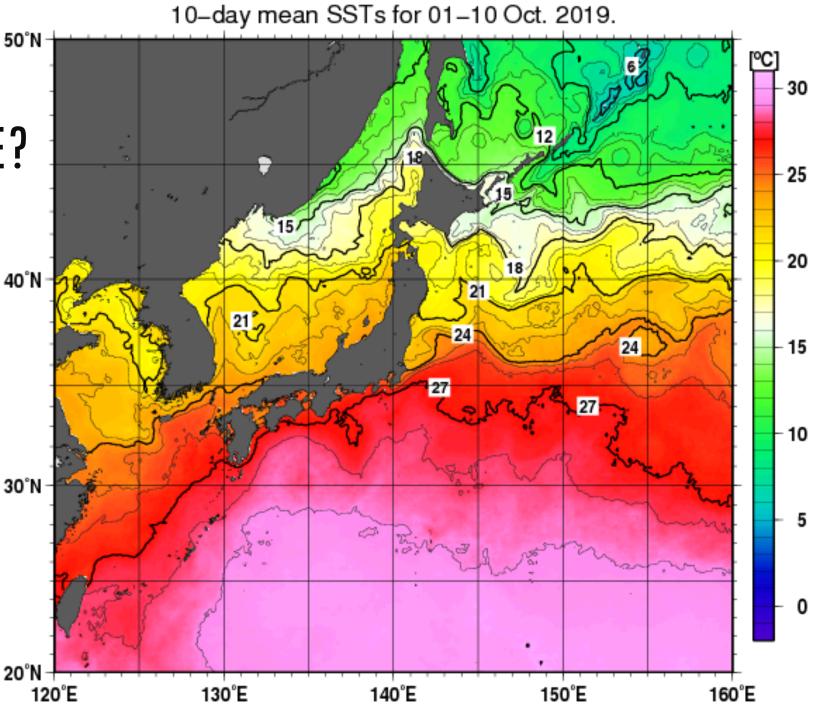
10 years ago



EFFECT OF CLIMATE CHANGE?

YES

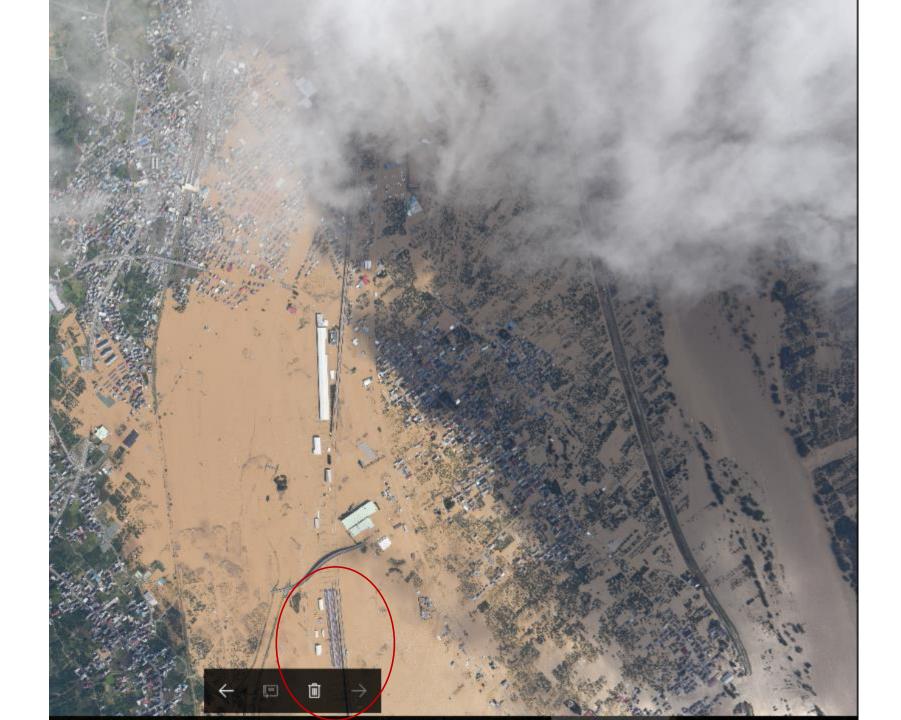
Sea temperature



DAMAGE THROUGHOUT THE CENTRAL AND EAST JAPAN

- 140 areas in 71 rivers
- 12 areas in 7 rivers (National)
- 128 areas in 67 rivers (Pref.)





DAMAGE

104 died, 3 missing 70-80% are the elderly 30% in vehicle Inundated houses: > 100,000Dyke broken 12 sites in 7 rivers managed by national gov. 127 sites managed by pref. gov.

3. HOW COULD BE TOKYO PROTECTED?



A. WHAT ARE RISKS IN TOKYO? TYPHOON KATHLEEN (1947) KILLED >1,100, FLOODED > 300,000 HOUSES

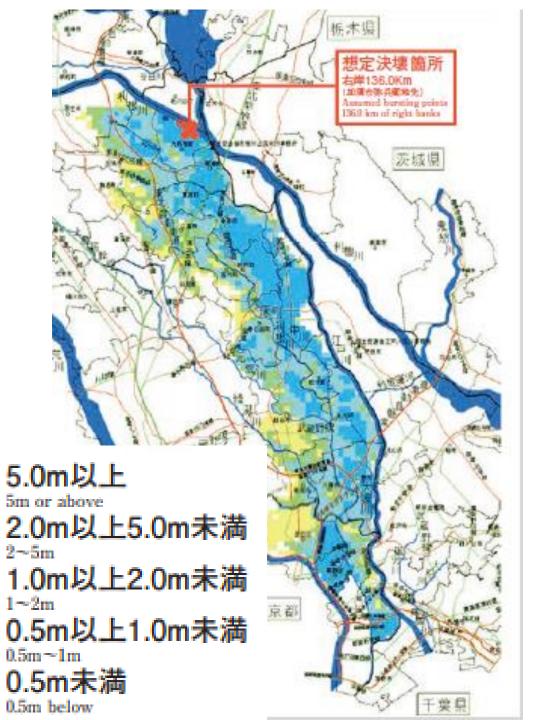
FLOODING RISK FROM TONEGAWA RIVER

Death toll: 2,600

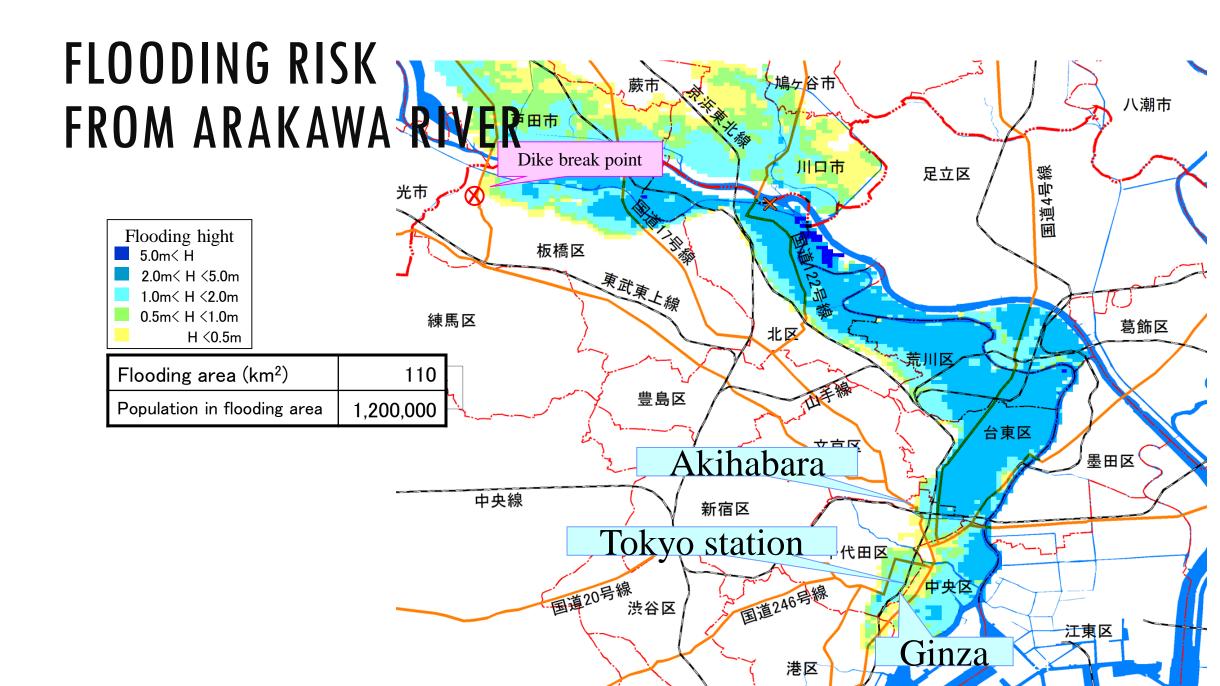
Isolated: 1.1 million

Inundated: 530km²

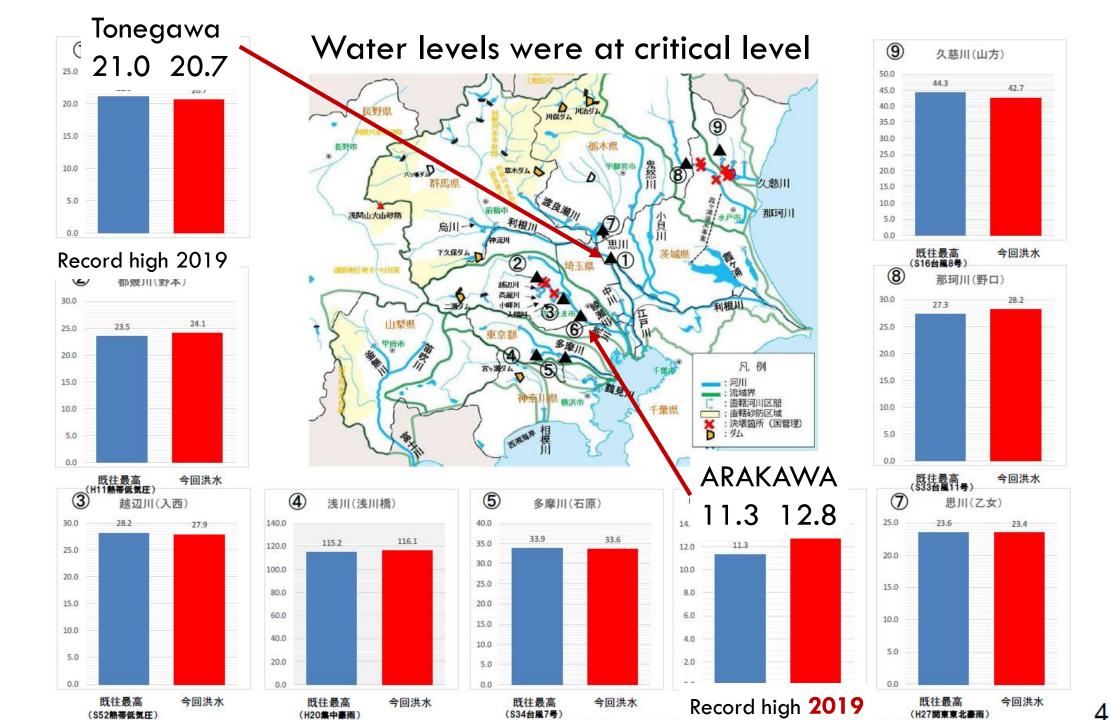
Flooded houses : 680,000



日本の災害対策 [2019/3/5閲覧] http://www.bousai.go.jp/1info/pdf/saigaipamphlet_je.pdf



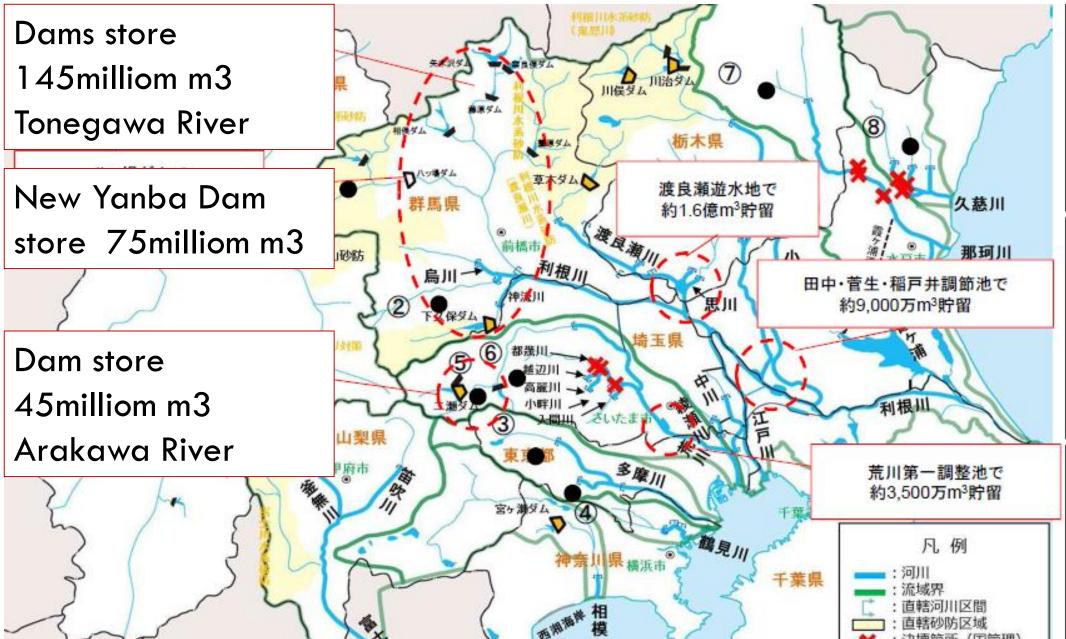




RISK IN TOKYO METROPOLITAN TYPHOON KATHLEEN (1947) KILLED >1,100, FLOODED > 300,000 HOUSES

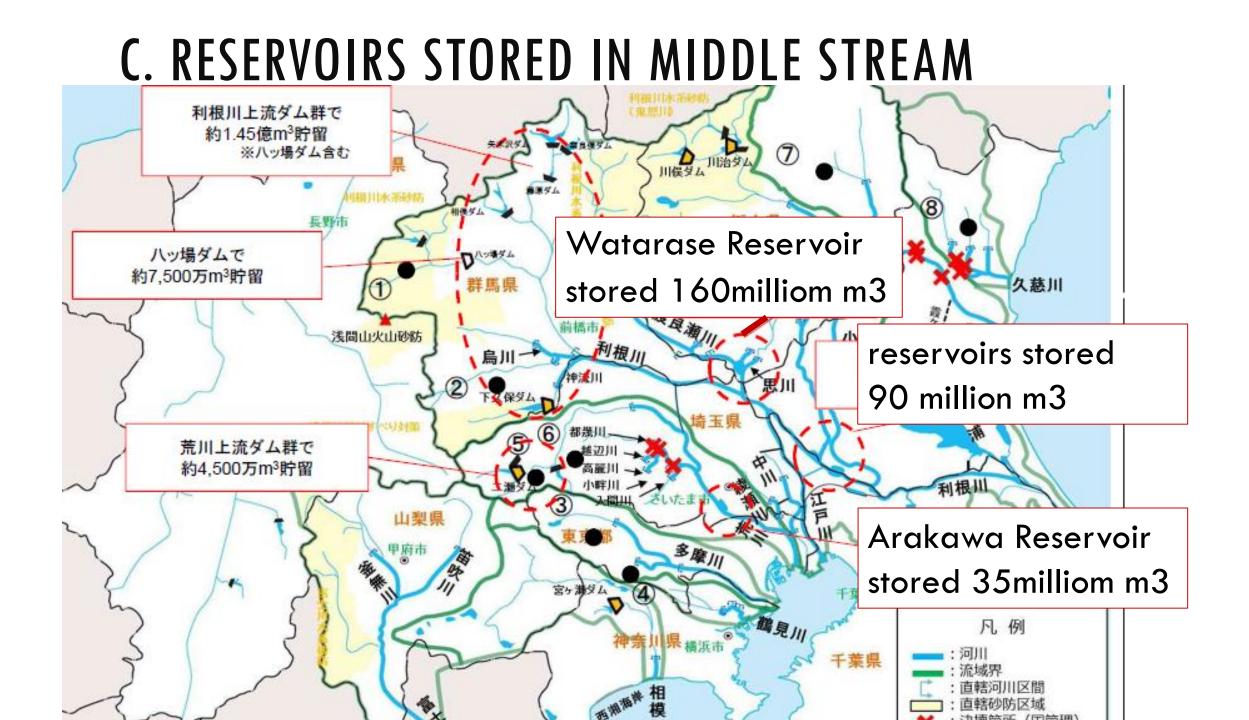


B. DAMS STORED FLOODS IN UPSTREAM



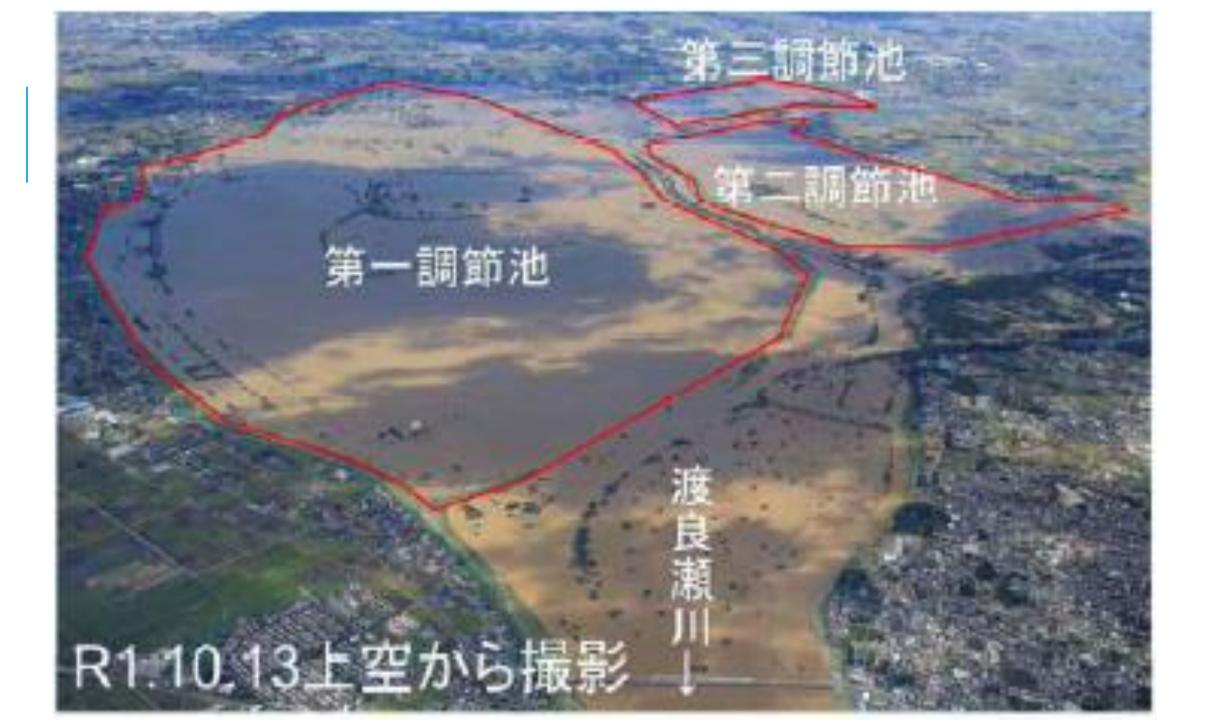
YANBA DAM TRIAL OPERATION Store 75 Million M3

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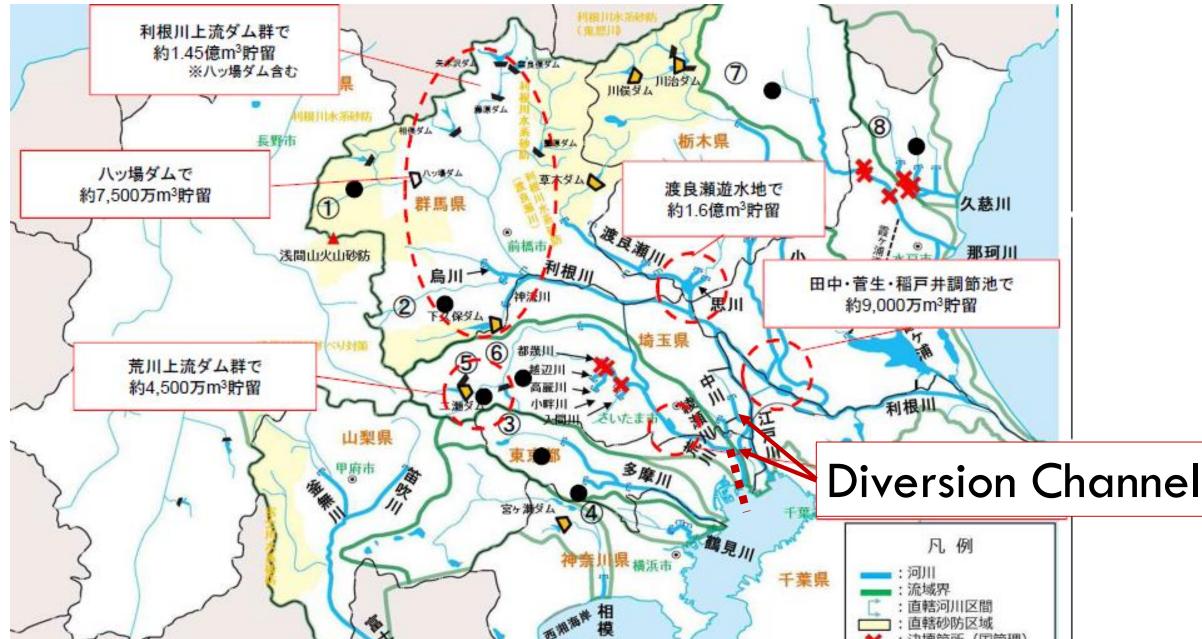


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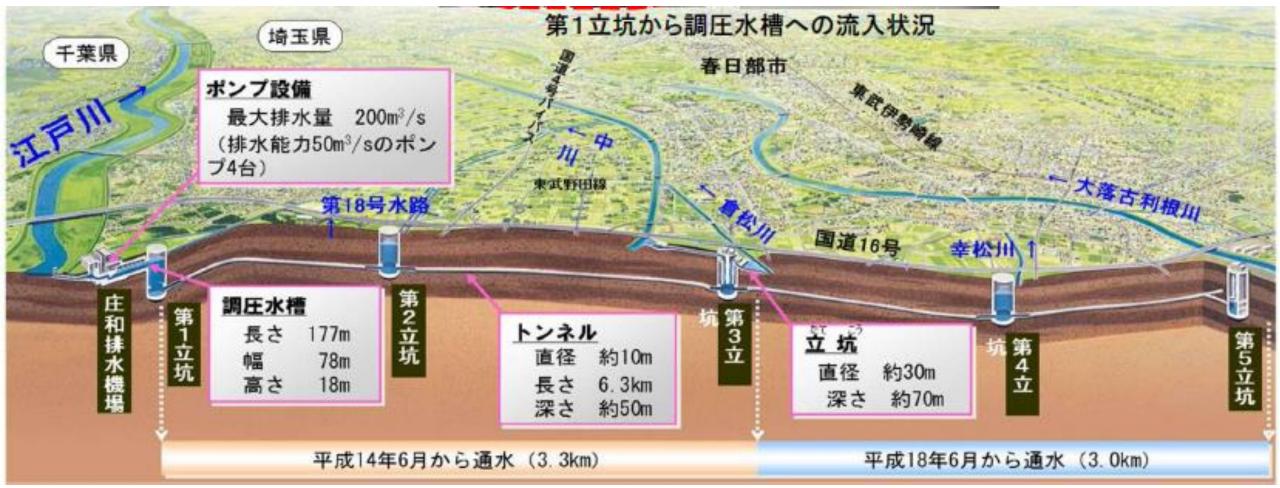
IRANYA:



D. CHANNELS DIVERTED FLOODS IN LOW STREAM

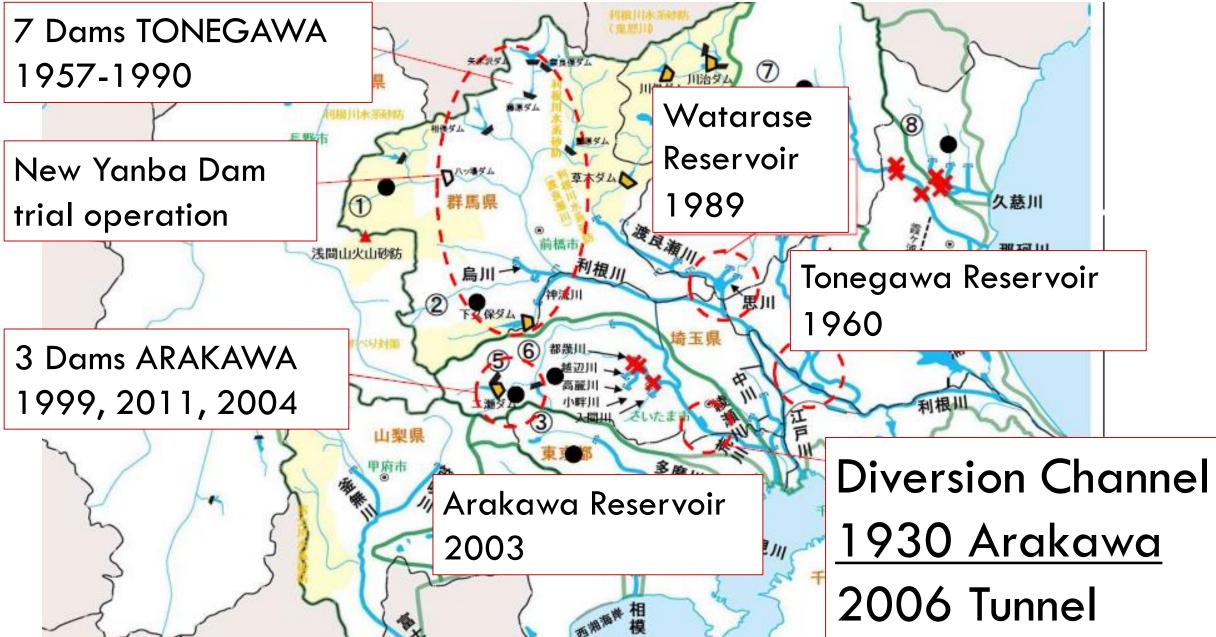


UNDERGROUND TUNNEL 12MILLION M³





EFFORTS FOR THE PAST CENTURY





3. JICA PROJECTS USING JAPANESE EXPERIENCE

A. VIETNAM MAKING RESILIENT SOCIETY IN CENTRAL REGION

Purpose : to establish disaster management system focusing on community-based activities

- 1. Strengthening capacities of local governments
- 2. Formulating manuals of community-based DM
- 3. Developing measures to protect river banks from erosion
- 4. Strengthening capacities of central government



RIVERBANK EROSION

1 COMMUNITY BASED ACTIVATES

Participants

- ✓ local gov.
- ✓ Women, Youth, Fishermen, Farmers
- Hazardmapping





EVACUATION DRILL



EVACUATION

ITAT



2 COUNTERMEASURES AGAINST BANK EROSION

PRACTICES

a) Technical capabilityb) Material availabilityb) Financial reasonability

3 CAPACITY BUILDING

Hazard mapping CBDRM Bank erosion





B. Metro Manila









KEY MESSAGE

Japan is fighting against flooding and use such experience to support other countries.

THANK YOU ISHIWATARI.MIKIO@JICA.GO.JP