"Disaster prevention support system for irrigation pond" to predict flood risk and share disaster information

Production ⟩ Implementation ⟩ Item: Disaster prevention   Climate disaster mitigation

Outline

We developed a system that visualizes the risk of irrigation pond failure in the event of an earthquake or heavy rain and enables sharing of the state of pond damage for people involved in disaster prevention. This system enables alleviation of human damage caused by irrigation pond failure and ensures the reach of rapid support to the disaster responders.

Background/effect/note

During the Great East Japan Earthquake in March 2011 and the heavy rainfall in July 2018, several irrigation ponds collapsed, resulting in severe secondary disaster in the downstream areas. To prevent secondary disaster, the measures to predict the pond failure and communicate the hazard information was needed.

The "Disaster prevention support system for irrigation pond" (Fig. 1) is useful for predicting the real-time risk of pond damage during disasters and sharing information and photographs of the damage with personnel involved in disaster prevention, such as national and municipal governments (Fig. 2). This enables the implementation of rapid emergency measures and disaster response.
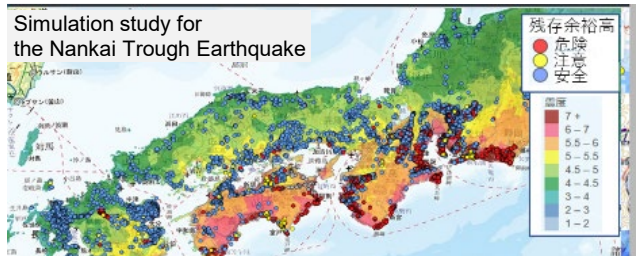
Hazard prediction in the event of an earthquake

Fig. 2. Irrigation Pond Management App
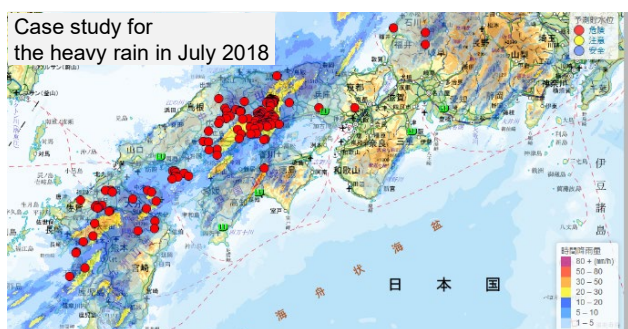
Hazard prediction in the event of heavy rain

Irrigation pond hazards labeled "Dangerous (red)," " Alert (yellow)", and "Safe (blue)"

Fig. 1. Disaster prevention support system for irrigation pond

Technical Details:

https://www.naro.go.jp/english/laboratory/nkk/press_release/smartphone/index.html
https://www.naro.go.jp/english/laboratory/nkk/press_release/pondapp/index.html

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