Proceedings of the 10th World Congress on New Technologies (NewTech'24)
Barcelona, Spain - August 25-27, 2024
Paper No. ICCEIA 111
DOI: 10.11159/icceia24.111

Decisions Supporting System for Safety Management of Agricultural Dam in Korea Peninsula

Byoung-Han Choi[1], Baeg Lee[2], Seok-Man Kang[3]
[1]Rural Research Institute/KRC
Haeanro 870, Ansan, South Korea
han1020@ekr.or.kr
[2]Rural Research Institute/KRC
Haeanro 870, Ansan, South Korea
blee@ekr.or.kr
[3]Rural Research Institute/KRC
Haeanro 870, Ansan, South Korea
smkang@ekr.or.kr

Extended Abstract

The increase of the days with extreme rainfall due to severe weather changes on the Korean Peninsula, coupled with the escalating aging of water infrastructures, is now approaching as a new crisis for rural areas. Furthermore, the absence of systematic disaster measures by local governments is worsening the situation.

To establish a systematic and efficient safety management plan for agricultural dams, in this study, approximately 14,000 agricultural dams located throughout country for which location information and attribute details can me verified are analysed.

In this analysis, based on the aging of dam and estimated human and properties damages in the event of dam collapse, the types of risks and the priority of dam safety management are evaluated.

Among the analysed dams, 69% require maintenance and safety management, 46% need structural measures for the damage reduction in downstream, and 26% are identified as requiring urgent development of emergency action plans.

According to the results, the priority of safety management and the safety measures can be determined for the local government's agricultural dam safety policies and plans.

Acknowledgment

This research was supported by a grant (320079-3) from Agricultural Infrastructure and disaster prevention project funded by Korean Ministry of Agricultural, food and rural Affairs

References

[1] BH. Choi and B. Lee, "Applicability analysis of emergency discharge technology based on case study of reservoir failure," Symposium on Management for safe dams in ICOLD 2023, Gothenburg, 2023.

[2] BH. Choi. "Evaluation Technology of Reservoirs Maintenance Priority based on Risk Analysis" 2018, Ministry of the Interior and Safety, Korea Republic of.