

## Development of Risk-Based Dam Safety Framework in Climate Change Condition for Batu Dam, Malaysia

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**Abstract :** Dam safety management is the crucial infrastructure as dam failure has a catastrophic effect on the community. Dam safety management is the effective framework of key actions and activities for the dam owner to manage the safety of the dam for its entire life cycle. However, maintaining dam safety is a challenging task as there are changes in current dam states. These changes introduce new risks to the dam's safety, which had not been considered when the dam was designed. A new framework has to be developed to adapt to the changes in the dam risk and make the dams resilient. This study proposes a risk-based decision-making adaptation framework for dam safety management. The research focuses on climate change's impact on hydrological situations as it causes floods and damages the dam structure. The risk analysis framework is adopted to improve the dam management strategies. The proposed study encompasses four phases. To start with, measuring the effect by assessing the impact of climate change on embankment dam, the second phase is to analyze the potential embankment dam failures. The third is analyzing the different components of risks related to the dam and, finally, developing a robust decision-making framework.

**Keywords :** climate change, embankment dam, failure, risk-informed decision making

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