



ASSESSING THE PROFILE AND DISASTER PREPAREDNESS OF ANGAT, BUSTOS, AND IPO DAM IN BULACAN

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ABSTRACT

Dams are the cornerstone of a river's basin's growth and management of water resources. Bulacan province has three dams namely Angat, Bustos and Ipo. Bulakenyos greatly fear dam break and failure. It would bring catastrophic damages and worse, it can kill lives. Dam failure can occur with little warning. The effect of this unfortunate case can be lessened if the owner, management of the dam, as well as the provincial and local government have prepared a disaster preparedness program or Emergency Action Plan. A regular comprehensive engineering assessment like structural stability can also be done to avoid dam failure. This research determined the profile and disaster preparedness of various stakeholders in the three dams: Angat, Bustos, and Ipo. Preparation among these, sub-problems of infrastructure occur (1) Assessment of the dam's structural stability and (2) Review of the dam's disaster preparedness plan. An assessment of the profile, current structural stability status of Angat, Bustos, and Ipo Dam in Bulacan, Philippines in relation to the possible earthquake or "the Big One" since the West Valley Fault runs 200 meters East of the Main Dyke of Angat Dam that may affect the local fault in the area. This research also highlights the role and significance of each dam, as well as the disaster preparedness plan of the different stakeholders like the National Power Corporation (NPC), National Irrigation Administration (NIA), Philippine Atmospheric Geophysical Services Administrations (PAGASA), and the Provincial Disaster Risk Reduction Management Council (PDRRMC). The gathering of data was conducted by file review and on-site investigation. The study showed the importance of dams as a dependable source of water supply for domestic and irrigation use, generation of electricity, and flood mitigation. It also revealed that the Angat dam satisfies the current structural stability criteria, can withstand, and has a low probability of dam breach. NPC has an effective emergency action plan, efficient flood forecasting and warning systems, and competent personnel in the field. Bustos and Ipo dam also meet the current stability criteria current structural stability. The possible effects of 7.2 earthquakes in the three dams would be minimal and no loss of life is expected. The study also revealed the reactive approach of PDRRMC and MDRRMC in preparedness and response in case of dam break. The result of the study is vital for the awareness of the public, particularly the community near the dam and those affected by the release of water, and the provincial government. It can be a great Information, Education, and Communication (IEC) material for schools, communities, and use in any disaster risk reduction and management programs within the province of Bulacan.

Keywords: Dam, Earthquake, Structural stability, Disaster preparedness