

## Disaster Risk Reduction and Management in Flood-Prone Municipalities in Pangasinan

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This study aimed to examine the flood-risk reduction and management strategies implemented by selected Local Government Units (LGUs) in the Province of Pangasinan. Specifically, it focused on: (1) the profile of the Municipal Disaster Risk Reduction and Management Office (MDRRMO); (2) the level of flood-risk reduction and management; (3) the budget allocation and utilization of the MDRRMO across the four thematic areas—Disaster Prevention and Mitigation, Preparedness, Response, and Rehabilitation and Recovery; and (4) the trend in budget allocation and utilization of the MDRRMOs of selected LGUs from fiscal years 2016 to 2021.

The study utilized a mixed-methods approach, combining both qualitative and quantitative research methods. Data were gathered through the purposive sampling technique, a non-probability sampling strategy that involves selecting participants based on their roles and expertise related to disaster risk reduction and management. This approach was deemed appropriate since it enabled the researchers to obtain relevant insights from individuals directly involved in managing flood-related risks in highly affected municipalities of Pangasinan.

The research was conducted in three selected LGUs—Calasiao, Sta. Barbara, and Mangatarem—identified as flood-prone areas based on data from the Provincial Disaster Risk Reduction and Management Office (PDRRMO) flood susceptibility map. A total of 36 respondents participated in the study, consisting of three (3) MDRRM Officers and eleven (11) members each from the Barangay Disaster Risk Reduction and Management Councils (BDRRMC). Each barangay group included one (1) Barangay Captain, seven (7) Barangay Kagawads, one (1) Barangay Secretary, one (1) Barangay Treasurer, and one (1) Sangguniang Kabataan Chairperson. These barangays were selected upon the recommendation of the MDRRM Officers, as they were identified as the most flood-affected areas in their municipalities.

To collect data, the researchers used survey questionnaires and document analysis. The survey aimed to determine the factors influencing flood-risk management and the level of implementation of DRRM activities within barangays. The questionnaire was validated by faculty members from the College of Business and Public Administration, AB English Language, General Education Department, and a representative from the Provincial Disaster Risk Reduction and Management Office, ensuring the reliability and appropriateness of the research instrument. A pre-survey was conducted to refine the questionnaire and ensure its accuracy and relevance to the respondents' experiences.

The data collected were tabulated and analyzed using frequency, percentage, and mean to answer the first two research problems, while documentary analysis was applied to assess budget allocation and utilization from 2016 to 2021.

Findings revealed that the level of flood-risk reduction and management in the selected LGUs was very highly managed. The activities conducted by the MDRRMO and BDRRMCs were consistent with the four thematic areas of DRRM: Prevention and Mitigation, Preparedness, Response, and Rehabilitation and Recovery. The study also noted that budget allocation and utilization were efficiently implemented and aligned with disaster management objectives.

Based on the findings and conclusions, the following recommendations were proposed: (1) Strengthen collaboration between LGUs and barangay officials to enhance disaster management activities and ensure coordinated efforts during emergencies, (2) Expand partnerships with national agencies such as the Department of the Interior and Local Government (DILG), Department of Social Welfare and Development (DSWD), Department of Public Works and Highways (DPWH), Bureau of Fire Protection (BFP), and Philippine National Police (PNP) to ensure coherent goals and strategies in disaster risk reduction, (3) The Municipal Disaster Risk Reduction and Management Offices (MDRRMOs) should

intensify their participation in the programs and guidelines set by the National Disaster Risk Reduction and Management Council (NDRRMC) to strengthen local implementation, (4) LGUs are encouraged to collaborate with technology providers to improve data access, enhance communication systems, and increase the efficiency of disaster response and early warning mechanisms, (5) Lastly, community education programs on Individual Home Preparedness should be promoted to build local resilience and ensure that residents are well-equipped to respond during flood events.

Through these measures, LGUs in Pangasinan can continue to strengthen their disaster preparedness and response mechanisms, ensuring the safety and well-being of communities in flood-prone areas.