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Analysis of Schools' Disaster and Risk Reduction Management in Aurora Province

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ABSTRACT

This study aimed to assess school-based Disaster Risk Reduction and Management (DRRM) implementation in Aurora Province, determine compliance with Department of Education policies, examine differences according to school profiles, identify implementation challenges, and develop a corresponding action plan. A convergent parallel mixed-method design was employed involving 105 public schools during the school year 2024–2025. Data were gathered from school heads and School DRRM Coordinators using validated questionnaires, interviews, and document analysis. Descriptive statistics, analysis of variance, and thematic analysis were used to examine and integrate the findings. Results revealed moderate overall DRRM compliance ($M = 3.02$, $SD = 0.39$) across six dimensions. Enrollment size showed a significant difference in compliance ($F = 4.30$, $p = 0.016$), with smaller schools recording lower ratings, while other school profile variables showed no significant differences. Major challenges included inadequate resources, limited technical training, administrative workloads, weak stakeholder participation, coordination delays, and insufficient psychosocial support. The findings indicate that established DRRM policies and procedures have not consistently translated into comprehensive implementation. Strengthening localized operating procedures, capacity-building, resource allocation, and stakeholder collaboration is recommended, particularly for smaller schools. The study's geographical scope and assessment period limit broader applicability and evaluation of long-term changes. Its findings provide an evidence-based foundation for a context-specific DRRM action plan supporting institutional preparedness, school safety, and educational continuity.

Keywords: *Aurora Province, Disaster Preparedness, Disaster Risk Reduction, Educational Resilience, Mixed Methods, Policy Compliance, School Safety*

1. INTRODUCTION

Disaster Risk Reduction and Management (DRRM) is essential for protecting learners, school personnel, and educational facilities while ensuring learning continuity during disasters. Globally, schools have shifted toward proactive disaster preparedness, mitigation, response, and recovery (UNICEF, 2025). In the Philippines, Republic Act No. 10121 (2010) and Department of Education (DepEd) policies institutionalize school-based DRRM. However, implementation gaps persist, particularly in coordination, psychosocial support, and recovery planning (Lavilles & Hordista, 2024; Balanggoy, 2024). Aurora Province is highly vulnerable to typhoons, floods, landslides, and earthquakes. Despite existing DRRM programs, schools face limited resources, inadequate training, and inconsistent implementation (Acierto et al., 2023; Lavilles & Hordista, 2024). This study employed a mixed-method approach to assess schools' compliance with DepEd DRRM guidelines, identify implementation challenges, and develop an action plan to strengthen disaster resilience and educational continuity.

Research Problem

Despite established DRRM policies, schools experience difficulties in planning, coordination, prevention, preparedness, response, and recovery (Department of Education, 2024; Lavilles & Hordista, 2024). Resource limitations, inadequate infrastructure, and insufficient technical capacity further affect implementation (Acierto et al., 2023). In Aurora Province, geographical vulnerability and differences in school size, personnel, and resources influence disaster preparedness (Department of Education, 2015b; Aurora Provincial DRRM Office, 2024). Although school heads and SDRRM Coordinators oversee implementation, limited training and overlapping responsibilities create operational challenges (Alcayna et al., 2016; Department of Education, 2011; Dollentas, 2025). Weak stakeholder coordination and inadequate psychosocial recovery also affect school resilience (UNESCO, 2025; Department of Education, 2012a). Thus, the study examined schools' DRRM compliance, differences according to institutional profiles, and implementation challenges to formulate an appropriate action plan.

Assumptions of the Study

The study assumed that school characteristics, geographical exposure, institutional resources, and leadership capacity influence DRRM implementation (UNESCO, 2024; UNICEF, 2025). Differences in location and potential hazards require contextualized disaster management strategies (United Nations Office for Disaster Risk Reduction [UNDRR], 2015). Effective implementation also depends on collaboration between school heads, SDRRM Coordinators, and stakeholders (World Bank, 2024; Morcilla, 2023; Dollentas, 2025). However, limited resources and administrative responsibilities may constrain preparedness (EPRAJ, 2024). The study tested the null hypothesis that there are no significant differences in schools' compliance with DepEd DRRM policies and guidelines when grouped according to their profile variables.

Objectives of the Study

The study aimed to analyze school-based Disaster Risk Reduction and Management (DRRM) implementation in Aurora Province and develop an action plan to strengthen disaster resilience. Specifically, it sought to describe schools according to respondent roles, school name and type, geographical classification, enrollment, personnel, location, category, and potential hazards; assess compliance with DepEd DRRM guidelines in planning, coordination and information, prevention and mitigation, preparedness, response, and recovery; determine overall compliance levels using computed mean scores; identify significant differences in compliance based on school profiles; and examine challenges encountered across the six DRRM dimensions. The findings served as the basis for the proposed action plan, Intensification of DRRM Dimensions: Strengthening School-Based Disaster Risk Reduction and Management in Aurora Province. These objectives emphasize institutional compliance, leadership, resource availability, and

stakeholder participation as essential components of school disaster resilience (Acierto et al., 2023; Lavilles & Hordista, 2024; Department of Education, 2024).

Conceptual and Theoretical Framework

The study was anchored on the Sendai Framework for Disaster Risk Reduction (2015–2030) (United Nations Office for Disaster Risk Reduction, 2015), which emphasizes understanding disaster risks, strengthening governance, investing in resilience, and improving preparedness and recovery. These principles are supported by Republic Act No. 10121 (2010) and the DepEd Comprehensive DRRM Framework, which institutionalize prevention and mitigation, preparedness, response, and recovery in schools (Department of Education, 2011, 2015b). The Comprehensive School Safety Framework further emphasizes safe learning environments, school disaster management, and risk reduction education. Effective implementation requires institutional leadership, community participation, and coordination among schools and government agencies (UNESCO, 2025; Morcilla, 2023; Dollentas, 2025). Conceptually, the study examined the relationship between school profiles and six DRRM implementation dimensions. Through mixed-method analysis, quantitative compliance assessments and qualitative implementation challenges informed the proposed action plan. School heads and SDRRM Coordinators were recognized as essential implementers of institutional disaster management policies (Department of Education, 2015a, 2015b; Dollentas, 2025).

Sustainable Development Goal and Multidisciplinary Sustainability Relevance

The study aligns with several Sustainable Development Goals (SDGs), particularly SDG 4 (Quality Education), by promoting school safety, disaster preparedness, and learning continuity; SDG 3 (Good Health and Well-Being), by emphasizing physical safety and psychosocial recovery among learners and school personnel (Acierto et al., 2023); and SDG 11 (Sustainable Cities and Communities), by strengthening school resilience and community coordination in disaster-prone areas (UNESCO, 2024). Furthermore, the study supports SDG 13 (Climate Action) by promoting disaster preparedness, hazard mitigation, and climate change adaptation; SDG 16 (Peace, Justice, and Strong Institutions) by strengthening policy compliance, institutional accountability, and effective school governance through the implementation of established disaster risk reduction and management policies and institutional frameworks (Department of Education, 2015a, 2015b, 2021); and SDG 17 (Partnerships for the Goals) by encouraging collaboration among schools, local government units, and community stakeholders (World Bank, 2024). Overall, the study contributes to educational, public health, environmental, community, and institutional sustainability by addressing gaps in DRRM implementation and proposing strategies to strengthen school safety, disaster resilience, and educational continuity in Aurora Province.

2. METHODOLOGY

Research Design

The study utilized a convergent parallel mixed-method design, integrating quantitative surveys with qualitative interviews and document analysis. Quantitative data measured school compliance with DRRM policies, while qualitative data explored respondents' experiences, challenges, and perceptions. Both datasets were integrated through triangulation to provide a comprehensive understanding of school disaster preparedness, response, and recovery practices.

Research Locale or Study Setting

The study was conducted in the Schools Division of Aurora, Central Luzon, Philippines, during the school year 2024–2025. The province comprises eight municipalities: Baler, Maria Aurora, San Luis, Dipaculao, Dinalungan, Dilasag, Casiguran, and Dingalan. Its coastal and mountainous

geography exposes schools to typhoons, floods, landslides, earthquakes, and storm surges. The study involved 105 participating public schools in Aurora Province during the school year 2024–2025, comprising 71 elementary schools, 27 high schools, and seven integrated schools. These schools were located in geographical areas with varying exposure to natural and environmental hazards. Differences in geographical exposure and school concentration provided relevant contexts for evaluating DRRM implementation. The province's educational and socioeconomic setting was also considered, with institutional information obtained from the official website of the Department of Education, Schools Division of Aurora (Department of Education, Schools Division of Aurora, n.d.).

Participants or Data Sources

The respondents were School Heads and School Disaster Risk Reduction and Management (SDRRM) Coordinators from public schools in Aurora Province. Participants were selected through referral or recommended enumeration based on the endorsement of the SDO-DRRMO Aurora. Only schools with designated DRRM focal persons and documented hazard exposure were included. The respondents were directly involved in planning, implementing, and monitoring school disaster management activities, providing relevant information on institutional preparedness, compliance, and implementation challenges. The selection process was aligned with the Department of Education's Comprehensive Disaster Risk Reduction and Management in Basic Education Framework (Department of Education, 2015b).

Research Instruments or Materials

The study utilized a researcher-made questionnaire validated by experts in education and disaster management. The instrument was adapted from the Comprehensive School Safety Framework, government-issued DRRM guidelines, and Gawad KALASAG assessment criteria (National Disaster Risk Reduction and Management Council [NDRRMC], 2023, 2024). It assessed school DRRM implementation in prevention and mitigation, preparedness, response, and recovery and rehabilitation. Responses were measured using a four-point Likert scale ranging from 1 (Strongly Disagree) to 4 (Strongly Agree). Open-ended questions and interview prompts were also included to identify implementation challenges and gather qualitative insights from respondents.

Data Gathering Procedure

Data were collected through questionnaires distributed to School Heads and SDRRM Coordinators in the Schools Division of Aurora. Google Forms were used for schools with internet access, while printed questionnaires were provided in areas with limited connectivity. The researcher coordinated with the Schools Division Superintendent, school principals, and SDRRM Coordinators to facilitate questionnaire distribution and data collection. Quantitative responses were supplemented by interviews and document analysis to obtain information on school DRRM practices, compliance, and implementation challenges.

Data Analysis

Quantitative data were encoded, cleaned, and analyzed using the Statistical Package for the Social Sciences (SPSS). Frequencies and percentages described school profiles, while means and standard deviations assessed compliance across six DRRM dimensions: SDRRM Plan and DepEd Compliance, Coordination and Information, Prevention and Mitigation, Preparedness, Response, and Recovery. Instrument reliability was assessed using Cronbach's alpha (Tavakol & Dennick, 2011). Analysis of Variance (ANOVA) determined significant differences among school groups, with the Tukey-HSD Post Hoc Test identifying specific differences. Independent samples t-tests, chi-square tests, Pearson correlation, and multiple regression were also employed to examine differences, associations, and predictive relationships among variables. Qualitative

responses were analyzed through thematic analysis based on Braun and Clarke (2006), following the six-phase process of familiarization, coding, theme identification, review, definition, and reporting. Content analysis identified recurring concerns involving resources, coordination, training, and educational continuity (Schreier, 2012). Quantitative and qualitative findings were integrated through triangulation and joint display analysis to strengthen interpretation and identify converging patterns (Fetters et al., 2013). Research rigor was supported through data validation, expert review, and procedures intended to promote credibility, reliability, and trustworthiness.

Ethical Consideration

The study observed ethical principles concerning informed participation, confidentiality, privacy, and fair treatment of respondents. Participants were informed about the research objectives, procedures, and potential risks and benefits before participation. Personal information and responses were protected from unauthorized disclosure, with research-related information accessible only to the researchers, research adviser, and designated experts. The researchers also emphasized transparency, avoidance of plagiarism, and responsible data handling to maintain the integrity and credibility of the study.

3. RESULTS AND DISCUSSION

3.1 School Profiles and DRRM Compliance

3.1.1 Profile of Respondent Schools

The study covered 105 schools, comprising 71 elementary schools (67.62%), 27 high schools (25.71%), and seven integrated schools (6.67%). Most were inland or lowland schools (90.48%), while 7.62% were coastal and 1.90% upland. More than half had fewer than 300 learners (53.33%), and 70.48% employed 15 or fewer personnel. Small and medium schools each accounted for 48.57%, while large schools represented 2.86%. Maria Aurora had the highest number of participating schools (28.57%), followed by Dilasag and Dipaculao (14.29% each). Natural hazards were the most frequently reported threats (73.33%), followed by environmental or climate-related hazards (9.52%), and human-induced and biological hazards (8.57% each). These findings indicate that DRRM implementation in Aurora Province largely involves small, community-based schools with limited personnel and varying hazard exposure. The predominance of natural hazards emphasizes the importance of localized risk assessment, age-appropriate preparedness activities, and sustained coordination with communities. School capacity and geographical conditions must therefore be considered when strengthening disaster preparedness and educational continuity.

3.1.2 SDRRM Plan and DepEd Compliance

Schools recorded a grand mean of 3.01 (SD = 0.44), interpreted as "Agree," for SDRRM planning and compliance. Alignment of school DRRM plans with local government and Division DRRM priorities received the highest rating (M = 3.25), followed by established DRRM policies and protocols (M = 3.20). Integration into the School Improvement Plan (SIP) and Annual Implementation Plan (AIP) received the lowest rating (M = 2.75), followed by annual plan review and stakeholder consultation (M = 2.87). Interviews confirmed that schools maintained DRRM plans but experienced difficulties sustaining regular reviews and participatory planning. The results indicate stronger compliance with institutional requirements than with continuous, collaborative implementation. Coordination with local authorities supports disaster readiness, consistent with DepEd Order No. 50, s. 2011 (Department of Education, 2011), Dollentas (2025), and Balanggoy (2024). However, limited plan integration and stakeholder involvement reflect

concerns identified by Lavilles and Hordista (2024), UNICEF (2025), Ecija et al. (2024), UNESCO (2025), UNESCO (2024), and Morcilla (2023). The findings also reinforce World Bank's (2024) emphasis on shared institutional responsibility.

3.1.3 Coordination and Information

Coordination and information-sharing obtained a grand mean of 3.01 (SD = 0.38), interpreted as "Agree." Submission of DRRM reports to the Division Office received the highest rating (M = 3.24), followed by regular coordination with the Division DRRM Coordinator (M = 3.15). The lowest ratings concerned the accessibility of posted hazard maps and emergency information (M = 2.77) and stakeholder orientation activities (M = 2.79). Stakeholder accounts indicated that communication with higher offices was generally functional, but information dissemination and community participation were less consistent. These findings suggest that administrative reporting and formal coordination are more established than inclusive risk communication, consistent with the DRRM coordination and information management protocol (Department of Education, 2015a). Balanggoy (2024) and Dollentas (2025) emphasized the value of institutional coordination, while Lavilles and Hordista (2024) and UNICEF (2025) identified continuing limitations in stakeholder awareness and access to disaster information. Improving communication requires more consistent dissemination, accessible materials, and regular involvement of learners, parents, and community partners.

3.1.4 Prevention and Mitigation

Prevention and mitigation were included among the six assessed DRRM dimensions, with the chapter's overall compliance summary reporting a mean of 3.02. Qualitative findings identified insufficient funding, unsafe or aging school facilities, limited technical expertise in hazard assessment, weak community participation, and delayed coordination with external agencies as recurring implementation difficulties. These findings indicate that preventive measures are constrained by both institutional resources and technical capacity. These concerns are consistent with the school DRRM implementation challenges discussed by Acierto et al. (2023) and Ecija et al. (2024). The Comprehensive School Safety Framework (GADRRRES, 2021) also provides a basis for considering safer facilities, school disaster management, and risk reduction education, while Morcilla (2023) addresses stakeholder participation.

3.1.5 Preparedness

Preparedness obtained a grand mean of 3.02 (SD = 0.38), interpreted as "Agree." Updated emergency communication protocols received the highest rating (M = 3.24), followed by comprehensive evacuation plans (M = 3.19). Basic Life Support and first-aid training received the lowest rating (M = 2.77), followed by the regular conduct of emergency drills (M = 2.79). Interviews indicated that schools maintained emergency procedures but encountered difficulties conducting regular drills and providing practical training. The results show that preparedness systems are more established than hands-on emergency competencies. This reflects DepEd Order No. 37, s. 2015 (Department of Education, 2015b), which establishes the comprehensive DRRM framework for basic education. Similar gaps between written plans and practical implementation were discussed by Lavilles and Hordista (2024) and UNICEF (2025). Ecija et al. (2024) likewise identified competing academic responsibilities as obstacles to regular preparedness activities.

3.1.6 Response

Response obtained a grand mean of 3.02 (SD = 0.38), interpreted as "Agree." Procedures for early dismissal, class suspension, and school closure received the highest rating (M = 3.24), followed by the establishment of an Incident Command System or crisis management structure (M = 3.19). First-aid and emergency medical services received the lowest rating (M = 2.77), followed by updated emergency contact lists (M = 2.79). Stakeholders confirmed familiarity with emergency procedures but reported limitations in medical supplies, training, and communication during actual emergencies. These findings indicate stronger procedural readiness than immediate medical response capacity. The established emergency protocols reflect DepEd Order No. 21, s. 2015 (Department of Education, 2015a), while the gaps in first-aid provision and information accessibility are consistent with concerns raised by Lavilles and Hordista (2024). Balanggoy (2024) similarly emphasized the importance of established response procedures in improving safety and coordination during disasters.

3.1.7 Recovery

Recovery recorded a grand mean of 3.02 (SD = 0.38), interpreted as "Agree." Integration of recovery activities into the SIP and AIP received the highest rating (M = 3.24), followed by the existence of strategic recovery and continuity plans (M = 3.19). Psychosocial support services received the lowest rating (M = 2.77), followed by damage documentation and reporting procedures (M = 2.79). Interviews revealed that schools prioritized classroom rehabilitation and educational continuity but often lacked resources and trained personnel for psychosocial recovery. The results suggest that formal recovery planning is more developed than the provision of emotional and psychosocial support. This pattern reflects the structured planning requirements of DepEd Order No. 37, s. 2015 (Department of Education, 2015b), which establishes the Comprehensive DRRM in Basic Education Framework. Lavilles and Hordista (2024) similarly observed that schools often prioritize physical reconstruction, while Balanggoy (2024) associated DRRM integration with stronger institutional resilience. The findings also reflect the broader recovery principles emphasized by World Bank (2024).

3.1.8 Overall DRRM Compliance

The consolidated assessment classified schools as "Moderately Compliant" across the six DRRM dimensions, with reported mean scores ranging from 3.01 to 3.02. Schools demonstrated established policies, communication procedures, evacuation arrangements, and recovery plans. However, interviews revealed inconsistent stakeholder participation, limited technical training, inadequate emergency resources, and weaknesses in psychosocial recovery. The findings indicate that formal compliance has not consistently translated into comprehensive implementation. This pattern is consistent with DepEd Order No. 37, s. 2015 (Department of Education, 2015b), Cahapay (2023), and Balanggoy (2024), which emphasize the importance of sustaining DRRM beyond procedural requirements. Ecija et al. (2024), UNESCO (2025), Lavilles and Hordista (2024), UNICEF (2025), and UNESCO (2024) further support the need for continuous preparedness, learner participation, psychosocial support, and school-community collaboration.

3.2 Differences in DRRM Compliance According to School Profiles

3.2.1 School Type and Geographical Classification

DRRM compliance did not differ significantly by school type ($F = 0.23$, $p = 0.794$). Elementary schools obtained a mean of 3.03, followed by high schools (M = 3.00) and integrated schools (M = 2.95). Geographical classification likewise showed no significant difference ($F = 1.09$, $p =$

0.341), although upland schools recorded a higher mean (M = 3.34) than coastal (M = 3.07) and inland schools (M = 3.01). Stakeholder interviews indicated that schools followed common DepEd procedures while adapting preparedness activities to local conditions. These findings suggest that standardized DRRM requirements contribute to relatively consistent implementation across school types and geographical settings. Lavilles and Hordista (2024) and Ecija et al. (2024) provide relevant context for school-level preparedness and implementation challenges. The need to adapt disaster management to local risks is also consistent with the Sendai Framework (United Nations Office for Disaster Risk Reduction, 2015) and UNESCO (2024).

3.2.2 Enrollment and Number of School Personnel

Enrollment size showed a statistically significant difference in DRRM compliance ($F = 4.30$, $p = 0.016$). Schools with fewer than 300 learners recorded the lowest mean (M = 2.93), compared with schools enrolling 300–499 learners (M = 3.11) and at least 500 learners (M = 3.19). In contrast, the number of school personnel did not significantly affect compliance ($F = 0.57$, $p = 0.566$), although schools with more personnel recorded slightly higher means. Interviews indicated that larger schools generally had greater capacity to distribute DRRM responsibilities, while smaller schools relied on multitasking and community assistance. The findings suggest that enrollment-related institutional capacity influences DRRM implementation, whereas personnel numbers alone do not guarantee stronger compliance. Balanggoy (2024) and Pandapatan (2024) provide related discussions of school-based DRRM implementation and institutional circumstances. Ecija et al. (2024) and Morcilla (2023) also offer relevant context for preparedness challenges and stakeholder participation.

3.2.3 School Location, Category, and Potential Hazards

Compliance did not differ significantly across districts ($F = 1.60$, $p = 0.145$), school categories ($F = 1.32$, $p = 0.272$), or types of potential hazards ($F = 2.11$, $p = 0.104$). Schools exposed to human-induced hazards recorded a mean of 3.21, compared with 3.13 for environmental or climate-related hazards, 3.10 for biological hazards, and 2.97 for natural hazards. Stakeholder responses indicated that schools emphasized different preparedness activities according to their prevailing risks. The results suggest that hazard exposure influences the focus of preparedness activities without producing statistically significant differences in overall compliance. The Sendai Framework (United Nations Office for Disaster Risk Reduction, 2015) and UNESCO (2024) provide a basis for considering disaster risks in local contexts. These perspectives support maintaining common DRRM standards while adapting implementation to local hazards and available resources.

3.3 Challenges in School-Based DRRM Implementation

3.3.1 SDRRM Planning and Policy Compliance

School heads and SDRRM Coordinators identified insufficient financial and material resources, inadequate technical training, heavy administrative workloads, delayed inter-agency coordination, and frequent changes in policy requirements as major challenges. These conditions affected the preparation, updating, documentation, and implementation of school DRRM plans. The findings indicate that planning difficulties arise from resource limitations, technical demands, and competing institutional responsibilities. Related school DRRM research identifies implementation challenges and preparedness concerns (Acierto et al., 2023; Ecija et al., 2024; Lavilles & Hordista, 2024). Department of Education (2011, 2015a, 2015b) policies

provide an institutional basis for DRRM responsibilities and coordination, while Dollentas (2025) examines the knowledge and skills of school DRRM coordinators.

3.3.2 Coordination and Information Challenges

Respondents reported delayed communication among schools, local government units, and DepEd offices; limited stakeholder engagement; inadequate communication materials; conflicting schedules; and insufficient awareness of DRRM programs. These difficulties reduced the consistency and reach of disaster information and coordination activities. The findings indicate that communication effectiveness depends on accessible information systems and sustained stakeholder participation. Morcilla (2023) examines internal stakeholder participation in school DRRM programs, while Lavilles and Hordista (2024) and Ecija et al. (2024) discuss implementation and preparedness challenges. Department of Education (2015a) provides a relevant policy context for school-level DRRM coordination and information management.

3.3.3 Prevention and Mitigation Challenges

The major prevention and mitigation challenges involved inadequate funding, deteriorating school infrastructure, limited technical knowledge of hazard assessment, insufficient community participation, and delayed assistance from external agencies. Respondents indicated that these difficulties restricted the implementation of safety improvements, preventive activities, and hazard-reduction measures. These findings underscore the importance of infrastructure safety, technical capacity, and inter-agency cooperation. The Comprehensive School Safety Framework (GADRRRES, 2021) provides a relevant framework for safer learning facilities and school disaster management. Acierto et al. (2023) and Ecija et al. (2024) discuss school DRRM implementation and challenges, while Morcilla (2023) addresses stakeholder participation.

3.3.4 Preparedness Challenges

Respondents identified difficulty scheduling emergency drills, insufficient resources for training and simulations, limited stakeholder participation, delayed coordination with local DRRM offices, and inadequate technical competencies among school personnel. These challenges affected the regularity of preparedness activities and the development of practical emergency-response skills. The results indicate that preparedness is constrained by competing academic demands, limited funding, and insufficient capacity-building opportunities. Ecija et al. (2024) and Lavilles and Hordista (2024) discuss school preparedness and DRRM implementation challenges. Department of Education (2012b) provides policy context for the conduct of quarterly earthquake and fire drills, while Dollentas (2025) examines competencies of school DRRM coordinators and Morcilla (2023) addresses stakeholder participation.

3.4 Proposed DRRM Action Plan

3.4.1 Intensification of DRRM Dimensions

The findings provided the basis for the proposed action plan, Intensification of DRRM Dimensions: Strengthening School-Based Disaster Risk Reduction and Management in Aurora Province. The plan addresses identified gaps in DRRM planning, coordination, prevention and mitigation, preparedness, response, and recovery. Its principal components include developing localized Standard Operating Procedures (SOPs), strengthening personnel competencies through training and technical assistance, and improving stakeholder engagement and inter-agency collaboration. The proposed interventions respond to the study's finding of moderate

DRRM compliance and persistent institutional challenges. They are aligned with the Comprehensive Disaster Risk Reduction and Management in Basic Education Framework (Department of Education, 2015b) and the Philippine Development Plan 2023–2028 (National Economic and Development Authority, 2023). By emphasizing context-specific procedures, capacity development, and coordinated implementation, the action plan seeks to strengthen school safety, institutional preparedness, and educational continuity in Aurora Province.

4. CONCLUSIONS AND RECOMMENDATIONS

The study revealed that the 105 participating public schools in Aurora Province were generally moderately compliant with the Department of Education's Disaster Risk Reduction and Management (DRRM) policies across six dimensions: SDRRM planning and compliance, coordination and information, prevention and mitigation, preparedness, response, and recovery. Schools demonstrated established DRRM plans, organizational structures, communication protocols, and emergency procedures, but implementation remained inconsistent, particularly in stakeholder participation, technical preparedness, medical readiness, and psychosocial recovery. Among the school profile variables examined, only enrollment size showed a statistically significant difference in overall compliance, with schools having fewer learners generally recording lower ratings. School type, geographical classification, personnel numbers, district, school category, and hazard exposure showed no significant differences. Qualitative findings further identified resource shortages, inadequate training, administrative demands, and coordination delays as recurring challenges. Collectively, the findings provide an empirical basis for strengthening context-specific DRRM implementation and developing the proposed school-based action plan.

The Department of Education, Schools Division of Aurora, and local government units should prioritize strengthening DRRM implementation, particularly in smaller and resource-constrained schools. School heads and SDRRM Coordinators should develop and regularly review school-specific Standard Operating Procedures covering planning, coordination, prevention, preparedness, response, and recovery, integrating these procedures into School Improvement Plans and Annual Implementation Plans. DepEd and partner agencies should provide sustained technical assistance, hazard assessment training, emergency response exercises, first-aid instruction, and psychosocial support capacity-building. Resource allocation should prioritize essential emergency equipment, communication materials, and improvements to vulnerable school facilities. Schools should establish regular coordination meetings, accessible information-sharing systems, and participatory planning activities involving teachers, learners, parents, barangay officials, and local DRRM offices. The proposed Intensification of DRRM Dimensions action plan should guide these interventions, supported by periodic compliance assessments, stakeholder feedback, and monitoring to evaluate implementation progress and address persistent gaps.

The study was confined to 105 participating public schools in Aurora Province, limiting the direct transferability of findings to schools in other geographical and institutional settings. Its mixed-method design combined questionnaire-based compliance assessments with interviews and stakeholder perspectives, providing information on reported practices and implementation challenges rather than establishing causal relationships. The analysis focused on selected school profile variables and six DRRM dimensions within the study period; consequently, it did not establish changes in compliance over time. Future studies may examine schools in other divisions, include additional institutional characteristics, and conduct longitudinal assessments to determine whether identified implementation gaps improve following targeted DRRM interventions.

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