

Integration of Risk Management Practices in School Improvement Plan (SIP) and Preparedness Level among Elementary Schools in Surallah Central District

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ABSTRACT

This study examined the integration of risk management practices in School Improvement Plans (SIPs) and the preparedness of public elementary schools in Surallah Central District, Schools Division of South Cotabato. A quantitative descriptive-correlational design and complete enumeration were used, involving 12 school heads and 167 teachers from 12 schools ($N = 179$). Data were collected through a researcher-developed, expert-validated, and pilot-tested questionnaire and analyzed using mean, standard deviation, frequency, percentage, and Pearson product-moment correlation. According to the study's stated scale, risk management integration was High overall ($M = 3.82$, $SD = 0.77$). Communication and consultation ranked highest ($M = 4.08$), whereas monitoring and review ranked lowest ($M = 3.72$). School preparedness was also High ($M = 3.70$, $SD = 0.92$), led by school safety and educational continuity

management ($M = 3.78$), followed by safer learning facilities ($M = 3.68$) and risk reduction and resilience education ($M = 3.65$). Risk management integration had a significant moderate positive relationship with school preparedness ($r = .583$, $p < .001$). The strongest specific association was between risk assessment and risk reduction and resilience education ($r = .662$, $p < .001$). The most frequently reported concerns were technology and equipment (93%), financial resources (88%), and technical knowledge and understanding (58%). The findings indicate that schools possess functional risk-management and preparedness systems, but stronger monitoring, resources, technical capacity, and sustained resilience education are needed to institutionalize risk-informed school improvement.

Keywords: *risk management, School Improvement Plan, school preparedness, disaster risk reduction, resilience education, educational continuity*

INTRODUCTION

Schools operate in environments where natural hazards, public-health emergencies, technological disruption, resource shortages, and organizational weaknesses can interrupt teaching and threaten learner safety. Risk-informed school governance therefore requires more than emergency response. It requires risks to be identified, assessed, treated, monitored, documented, and integrated into the planning systems that guide school priorities and resource decisions. The Sendai Framework emphasizes that disaster risk reduction should be embedded in institutional governance and development planning rather than treated as a separate activity (United Nations Office for Disaster Risk Reduction, 2015).

In the Philippine basic education system, the School Improvement Plan is the principal medium-term mechanism for identifying school needs, setting targets, allocating resources, and organizing stakeholder action. Integrating risk management into the SIP can connect safety concerns with school programs, infrastructure projects, continuity arrangements, teacher development, and community partnerships. Department of Education

policies on disaster risk reduction and quality management reinforce this direction by requiring schools to maintain risk-informed procedures and preparedness systems (Department of Education, 2015, 2022).

Surallah Central District includes urban and rural public elementary schools exposed to flooding, landslides, earthquakes, logistical limitations, and uneven access to resources. These conditions make preparedness a continuing governance concern. The district context also illustrates a broader challenge: schools may conduct drills, maintain plans, and communicate safety information, yet still struggle to institutionalize monitoring, secure equipment, finance interventions, and sustain resilience education.

Organizational Resilience Theory explains preparedness as the capacity to anticipate threats, absorb disruption, adapt operations, and recover while maintaining essential functions (Duchek, 2020). The Theory of Planned Behavior further suggests that sustained safety practices depend on positive attitudes, institutional expectations, and stakeholders perceived ability to act (Ajzen, 1991). Together, these perspectives imply that formal policies must be supported by resources, skills, participation, and continuous learning.

This study determined the level of integration of six risk management practices in SIPs, assessed school preparedness in three domains, examined the relationship between the two variables, and identified issues encountered by the participating schools. The evidence was intended to support more coherent, resource-responsive, and sustainable school risk management in Surallah Central District.

Literature Review

Risk-Informed School Improvement Planning

Risk management is a structured process for establishing context, identifying and analyzing risks, selecting treatments, and continuously monitoring results. ISO 31000 emphasizes that risk management should be integrated into governance, strategy, planning, reporting, and organizational culture rather than implemented as an isolated compliance activity (International Organization for Standardization, 2018). Risk-assessment techniques likewise need to match the nature of the hazard, available evidence, and decision context (International Organization for Standardization & International Electrotechnical Commission, 2019).

Research across educational and organizational settings shows that risk management becomes more useful when it is connected to institutional objectives and routine decision-making. Educational institutions frequently recognize risk but vary in their capacity to prioritize, document, and monitor it systematically (Al Harthi et al., 2024). School improvement planning can address this fragmentation by linking risk information with targets, budgets, infrastructure, instructional continuity, and stakeholder responsibilities.

Local implementation is also shaped by the availability of accurate hazard information and the capacity to translate assessment results into specific actions. Tarun (2024) found that school personnel may understand disaster risk management concepts but still experience difficulty integrating them systematically into school planning. This gap justifies examining each stage of risk management rather than relying only on a general preparedness rating.

Communication, Assessment, Treatment, and Monitoring

Communication and consultation enable school personnel, learners, parents, local officials, and emergency agencies to develop a shared understanding of risk. They improve the quality of risk identification and strengthen ownership of planned actions. However, information dissemination alone is insufficient when stakeholder feedback is not incorporated into decision-making. Risk communication must therefore be reciprocal, documented, and connected to planning revisions.

Risk assessment involves identifying hazards, analyzing likelihood and consequences, and determining priorities. Systematic assessment helps schools decide which facilities, learning processes, and vulnerable groups require immediate attention. Studies of risk identification emphasize that weak classification and prioritization limit the usefulness of risk registers and mitigation plans (Sharma & Gupta, 2019; Siraj & Fayek, 2019). Environmental and risk literacy also influence how individuals recognize and evaluate hazards (Carmi & Alkaher, 2019).

Risk treatment and monitoring convert assessment into sustained practice. Treatments may include avoiding, reducing, sharing, or accepting risk, but their effectiveness depends on feasibility, resources, and continued review. Organizational studies show that risk systems often become fragmented when technical knowledge, formal procedures, and monitoring mechanisms are limited (Mouras & Badri, 2020). Schools therefore need regular evidence-based review, documented lessons from drills and incidents, and clear reporting responsibilities.

Comprehensive School Safety and Educational Continuity

The Comprehensive School Safety Framework organizes preparedness around safer learning facilities, school safety and educational continuity management, and risk reduction and resilience education (Global Alliance for Disaster Risk Reduction and Resilience in the Education Sector, 2022). Safer facilities involve structural and nonstructural measures, accessible emergency equipment, maintenance, and hazard-sensitive improvements. Continuity management includes contingency plans, assigned roles, communication systems, alternative learning modalities, and coordination with local responders.

Preparedness research indicates that awareness and basic response mechanisms may exist even when sustained institutional readiness is incomplete. Baldomar (2024) documented learner awareness of suspension protocols while emphasizing the importance of clearer and more specific procedures. Malonecio (2023) similarly highlighted the relationship among awareness, preparedness, and resilience. These findings support the assessment of both formal plans and the practical conditions that allow plans to function.

Risk reduction and resilience education extends preparedness into the curriculum and daily school culture. It equips teachers and learners with hazard knowledge, response skills, problem-solving capacity, and adaptive attitudes. Shiwaku and Shaw (2020) argue that education can build resilient societies when disaster risk reduction is embedded in learning processes rather than limited to occasional drills.

Resilience, Behavioral Adoption, and Resource Capacity

Resilience is not a fixed trait but an organizational capability developed through anticipation, coping, learning, and adaptation (Duchek, 2020). In schools, this capability depends on leadership, stakeholder participation, information systems, financial and material resources, and the capacity to learn from disruptions. The relationship between risk management and preparedness is therefore expected to be positive, but it may be constrained by implementation conditions.

The Theory of Planned Behavior explains why policies do not automatically produce consistent action. School leaders and teachers are more likely to adopt and sustain risk-management practices when they believe the practices are valuable, perceive support from institutional norms, and feel capable of implementing them (Ajzen, 1991). Technical training, practical tools, adequate manpower, and access to equipment strengthen perceived behavioral control.

Recent reviews identify resource and capacity gaps as recurring barriers to preparedness. Albuero (2025) emphasizes that institutional readiness depends on coordinated systems, while Department of Education disaster-risk-reduction programs require schools to maintain risk information, preparedness measures, and stakeholder participation (Department of Education, n.d.). These concerns frame the present study's analysis of technology, funding, technical knowledge, coordination, and manpower.

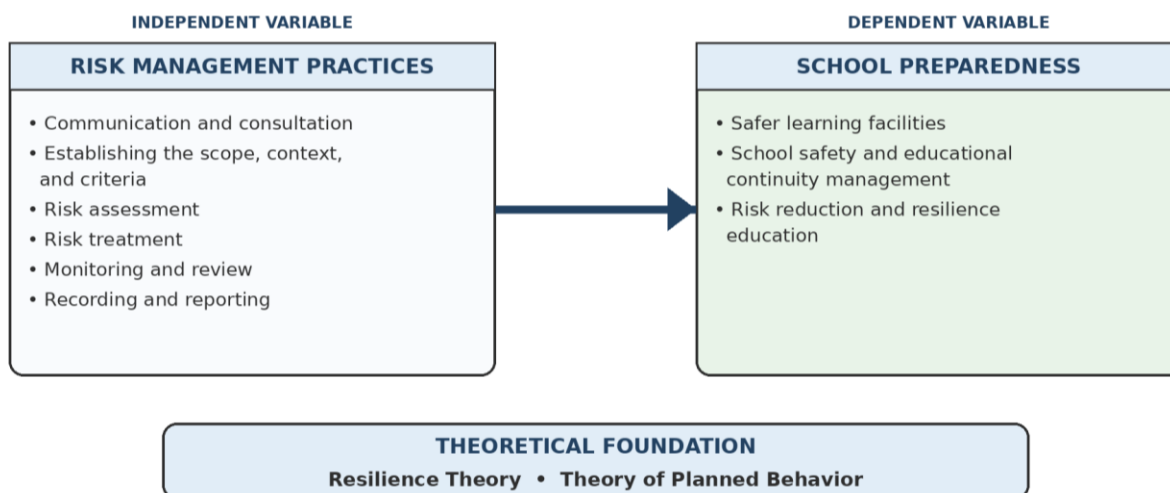


Figure 1. *Conceptual framework linking risk management integration and school preparedness*

METHODS

Research Design

The study used a quantitative descriptive-correlational design. The descriptive component measured the integration of risk management practices in SIPs, the level of school preparedness, and the frequency of implementation concerns. The correlational component determined the direction and strength of the association between risk management integration and school preparedness without manipulating the variables (Creswell & Creswell, 2023).

Research Locale

The study was conducted in 12 public elementary schools in Surallah Central District, Schools Division of South Cotabato: B. Magan Elementary School, Centrala Central Elementary School, Colombasinong Elementary School, Colongulo Elementary School, Defensor Elementary School, Godwino Integrated School, Lambusong Elementary School, Lemluma Extension Elementary School, Little Baguio Elementary School, L. T. Morales Elementary School, New Buenavista Elementary School, and Tubi-Allah Elementary School. The district includes urban and rural settings with differing resource conditions and hazard exposure.

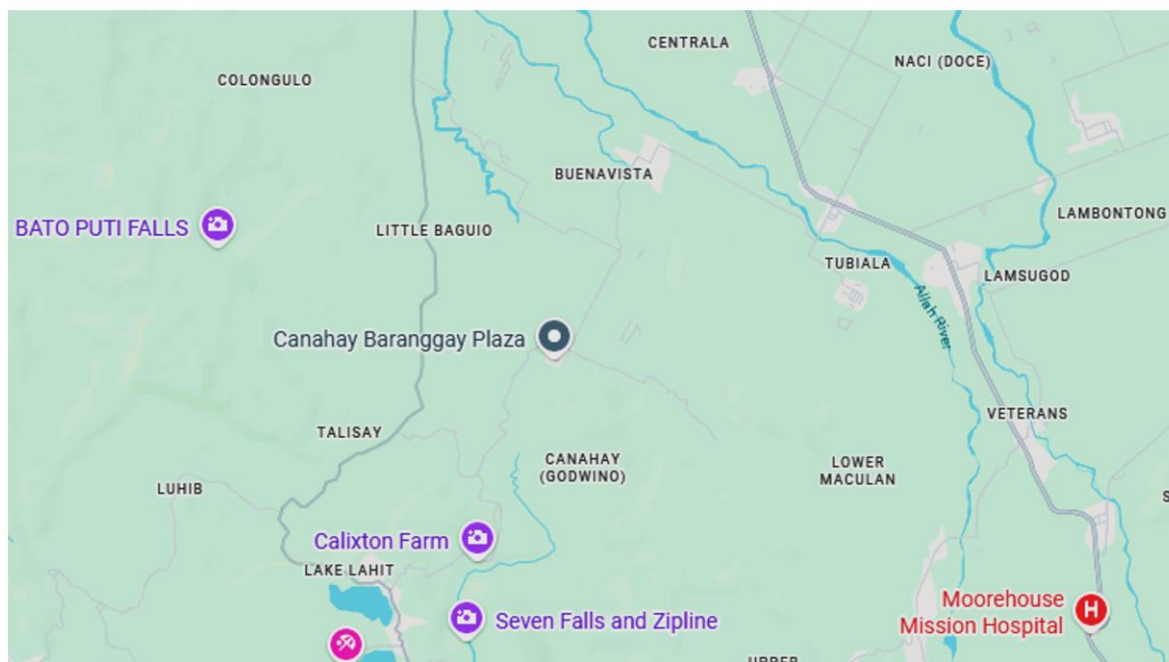


Figure 2. Map of Surallah, South Cotabato, reproduced from the source manuscript

Participants and Sampling Technique

Complete enumeration was used because the population was manageable and accessible. All 12 school heads and 167 teachers who met the inclusion criteria participated, producing a total of 179 respondents. School heads contributed governance, planning, resource-allocation, and coordination perspectives, while teachers contributed classroom-level observations on drills, continuity measures, and resilience education.

Table 1. Distribution of respondents by school

School	School Head	Teachers	Total
B. Magan ES	1	10	11
Centrala Central ES	1	32	33
Colombasinong ES	1	8	9
Colongulo ES	1	25	26
Defensor ES	1	5	6
Godwino IS	1	14	15
Lambusong ES	1	10	11
Lemluma Extension ES	1	6	7
Little Baguio ES	1	13	14
L.T Morales ES	1	14	15
New Buenavista ES	1	8	9
Tubi-Allah ES	1	22	23
Overall	12	167	179

Research Instrument

A researcher-developed structured questionnaire contained three parts. Part I assessed six dimensions of risk management integration: communication and consultation; establishing the scope, context, and criteria; risk assessment; risk treatment; monitoring and review; and recording and reporting. Part II assessed safer learning

facilities, school safety and educational continuity management, and risk reduction and resilience education. Part III asked respondents to identify major implementation issues. All scaled items used a five-point response format. The source methods section reports 30 Part I items, whereas the result tables contain 35 indicators; this item-count discrepancy should be verified against the final questionnaire before submission.

Validation and Reliability

Six experts in disaster risk reduction, school leadership, and educational planning reviewed the instrument for clarity, relevance, and alignment. A pilot test was conducted with a comparable group outside the study locale, and internal consistency was assessed using Cronbach's alpha. The source manuscript does not report the numerical reliability coefficients; therefore, no coefficient is asserted in this article.

Data Gathering Procedure

Approval was obtained from the Graduate School Dean, followed by permission from the Schools Division Office and coordination with participating schools. Questionnaires were administered face-to-face and online according to accessibility. Respondents were given sufficient time to complete the instrument, after which responses were retrieved, checked, encoded, and prepared for analysis.

Data Analysis

Mean and standard deviation described risk-management integration and school preparedness. Frequency and percentage summarized the reported issues. Pearson product-moment correlation determined the relationship between the two principal variables and the associations between the six risk-management dimensions and the three preparedness dimensions. Statistical significance was evaluated at the .05 level.

Ethical Consideration

Administrative permissions were secured before data collection, and findings were presented in aggregate form. The source manuscript does not provide a formal research-ethics approval number or a detailed account of informed-consent, confidentiality, data-retention, and withdrawal procedures. These details should be added to the final submission when available; no unreported ethics approval is claimed in this article.

RESULTS AND DISCUSSION

Integration of Risk Management Practices in the SIP

Table 2. *Summary of risk management integration*

Risk Management Dimension	Mean	SD	Interpretation	Rank
Communication and consultation	4.08	0.67	High	1
Establishing scope/context/criteria	3.82	0.74	High	2
Risk assessment	3.80	0.81	High	3
Recording and reporting	3.75	0.82	High	4
Risk treatment	3.74	0.79	High	5
Monitoring and review	3.72	0.80	High	6
Overall	3.82	0.77	High	

Risk management practices were integrated at a High level overall ($M = 3.82$, $SD = 0.77$) under the source scale, where 3.40–4.19 corresponds to High. Communication and consultation ranked first ($M = 4.08$), indicating that schools had relatively strong systems for preparedness briefings, safety information, coordination, and consultation. The highest item was clear and timely communication about drills, orientations, and safety briefings ($M = 4.21$), whereas the collection and use of stakeholder feedback received the lowest communication rating ($M = 3.95$).

Establishing scope, context, and criteria obtained $M = 3.82$. Schools were strongest in defining internal and external conditions and aligning risk-management targets with Department of Education policies (both $M = 3.88$), but the use of barangay or local DRRM hazard data was lower ($M = 3.74$). Risk assessment obtained $M = 3.80$; regular drills ranked highest ($M = 3.91$), while using assessment results to guide school activities and infrastructure decisions ranked lowest ($M = 3.72$). These patterns show that schools were more consistent in visible preparedness activities than in integrating local evidence into strategic decisions.

Recording and reporting ($M = 3.75$) and risk treatment ($M = 3.74$) were also High, but resource allocation for treatment received the lowest treatment rating ($M = 3.65$). Monitoring and review ranked last ($M = 3.72$), particularly in the use of stakeholder feedback to revise DRRM plans ($M = 3.68$). The results support the literature that risk systems often weaken at the stages where assessment must be converted into resourced action, institutional monitoring, and continuous improvement (Al Harthi et al., 2024; Mouras & Badri, 2020).

The preliminary abstract describes the overall mean of 3.82 as moderate, whereas the manuscript's stated scale and summary table classify it as High. This article follows the numerical scale printed in the methods and results tables and flags the discrepancy for editorial verification.

Level of School Preparedness

Table 3. *Summary of school preparedness*

Preparedness Dimension	Mean	SD	Interpretation	Rank
School safety and educational continuity management	3.78	0.93	High	1
Safer learning facilities	3.68	0.93	High	2
Risk reduction and resilience education	3.65	0.90	High	3
Overall	3.70	0.92	High	

School preparedness was High overall ($M = 3.70$, $SD = 0.92$). School safety and educational continuity management ranked first ($M = 3.78$), indicating that schools generally maintained communication mechanisms, policies, contingency plans, assigned roles, alternative learning arrangements, and external coordination. Emergency communication was the strongest item ($M = 3.87$), while the regular evaluation and improvement of continuity measures was lowest ($M = 3.65$).

Safer learning facilities obtained $M = 3.68$. Clear and marked evacuation routes received the highest rating ($M = 3.90$), while the availability and functionality of fire extinguishers, first-aid kits, emergency lighting, and related equipment received the lowest rating ($M = 3.33$). This result demonstrates that procedural readiness may exceed material readiness, a pattern consistent with the reported equipment and funding constraints.

Risk reduction and resilience education ranked last ($M = 3.65$). Community-based initiatives were rated highest ($M = 3.75$), while regular student training and teacher training both received $M = 3.55$. The result suggests that schools conduct preparedness activities but require more systematic curriculum integration, instructional resources, and continuing professional development. Resilience education is more sustainable when it is embedded in routine learning rather than limited to isolated activities (Shiwaku & Shaw, 2020).

As with risk-management integration, the preliminary abstract labels the preparedness mean of 3.70 as moderate, but the stated scale classifies it as High. The numerical result and published scale were used in this article.

Relationship between Risk Management Integration and School Preparedness

Table 4. *Correlations between risk management dimensions and preparedness dimensions*

Risk Management Dimension	Safer Facilities	Safety and Continuity	Risk Reduction and Resilience
Communication and consultation	.485	.477	.484
Establishing scope/context/criteria	.489	.508	.529
Risk assessment	.562	.605	.662

Risk treatment	.576	.592	.609
Monitoring and review	.496	.507	.565
Recording and reporting	.541	.561	.563

Overall risk management integration had a significant moderate positive relationship with school preparedness ($r = .583$, $p < .001$). Thus, schools reporting more systematic communication, scoping, assessment, treatment, monitoring, and reporting also reported stronger preparedness. The null hypothesis was rejected.

All dimension-level correlations were positive and statistically significant at $p < .001$. The strongest association was between risk assessment and risk reduction and resilience education ($r = .662$), followed by risk treatment and risk reduction and resilience education ($r = .609$) and risk assessment and school safety and educational continuity management ($r = .605$). These results indicate that resilience education and continuity systems become stronger when hazards are systematically assessed and treatment decisions are linked to identified priorities.

The correlation supports the conceptual relationship between risk-informed planning and preparedness, but it does not demonstrate causation. Self-reported data, one district, and a cross-sectional design limit generalization. Even so, the pattern is consistent with organizational resilience: anticipatory assessment, resourced treatment, documented learning, and adaptive review strengthen the capacity to sustain school operations during disruption (Duchek, 2020).

Issues and Concerns

Table 5. *Issues encountered in integrating risk management and ensuring preparedness*

Issue or concern	Frequency	Percentage	Rank
Technology and Equipment	157	93%	1
Financial Resources	148	88%	2
Technical Knowledge and Understanding	98	58%	3
Fragmented Coordination	83	49%	4
Manpower	76	45%	5

Technology and equipment were the most frequently reported concern (157 respondents, 93%), followed by financial resources (148, 88%) and technical knowledge and understanding (98, 58%). Fragmented coordination (83, 49%) and manpower (76, 45%) were also reported. The pattern shows that implementation barriers were primarily related to material capacity, funding, technical competence, and organizational coordination rather than to the absence of formal plans.

These concerns explain the lower ratings for emergency equipment, resource allocation, stakeholder-informed monitoring, teacher training, and continuous evaluation. Strengthening preparedness therefore requires coordinated investment in equipment and digital tools, protected budget lines, technical training, clear interagency responsibilities, and sufficient personnel. Policy expectations without these enabling conditions may produce compliance-oriented planning rather than sustained resilience.

CONCLUSION

Public elementary schools in Surallah Central District had functional risk-management and preparedness systems. Communication and consultation were the strongest aspect of SIP integration; while monitoring and review were the weakest. Schools were most prepared in safety and educational continuity management and least prepared in risk reduction and resilience education. The findings show that schools have established important foundations, but these systems require deeper institutionalization.

The significant moderate positive relationship between risk-management integration and school preparedness demonstrates that stronger risk-informed planning is associated with safer facilities, more reliable

continuity systems, and better resilience education. Risk assessment and treatment were especially connected with preparedness outcomes, showing the importance of translating hazard evidence into prioritized and resourced action.

Technology and equipment, financial resources, technical knowledge, coordination, and manpower remain the principal obstacles. Schools are therefore neither unprepared nor fully resilient. Their progress depends on moving from periodic activities and documented plans toward sustained monitoring, adequate resources, technical capability, stakeholder feedback, and continuous organizational learning.

Recommendations

School administrators should institutionalize scheduled SIP risk reviews, maintain updated risk registers, document lessons from drills and incidents, and use monitoring results and stakeholder feedback to revise priorities. Risk assessment findings should directly inform infrastructure projects, learning-continuity arrangements, resource allocation, and annual implementation plans.

The Department of Education and local government partners should provide sustained funding, functional emergency and communication equipment, technical assistance, and capacity-building programs. Schools should establish clear coordination protocols with local DRRM offices, fire and police services, health units, parents, and community organizations.

Teachers should receive continuing professional development on hazard assessment, emergency response, educational continuity, and the integration of resilience concepts across learning areas. Learners should participate in regular drills, simulations, community-based preparedness activities, and reflective learning that develops practical risk-reduction skills.

Future studies should include other districts and school levels, compare school heads' and teachers' assessments, examine actual SIP documents and preparedness facilities, and use longitudinal or mixed-methods designs. The final manuscript should also verify the Part I item count, report the instrument's Cronbach's alpha coefficients, and reconcile the moderate-versus-High verbal descriptions in the preliminary abstract and result tables.

Table 6. *Priority actions for strengthening risk-informed school improvement*

Priority Area	Core Actions	Expected Result
Monitoring and review	Quarterly SIP risk review, updated risk register, stakeholder feedback log, and after-action review	Institutionalized continuous improvement
Equipment and facilities	Inventory, maintenance, replacement, and accessible emergency equipment	Stronger material readiness
Financial support	Protected DRRM allocations and resource-mobilization partnerships	Implementable risk-treatment measures
Technical capacity	Training on assessment, continuity planning, reporting, and resilience education	Improved stakeholder competence
Coordination and manpower	Defined roles, interagency protocols, focal-person backups, and joint exercises	More reliable implementation and continuity

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