Online ISSN: 3082-5121
Aloysian Interdisciplinary Journal of Social Sciences, Education, and Allied Fields
https://journals.aloysianpublications.com
Volume 1 Issue 4 (2025)

Disaster Risk Reduction Management (DRRM) Program Implementation and Students' Preparedness Knowledge and Readiness Among Public Secondary Schools in SOCCSKSARGEN Region

Agnes S. Morante [1], Ernie C. Cerado [1]
1 − Graduate School, Sultan Kudarat State University, EJC Montilla, Tacurong City

Publication Date: April 27, 2025 DOI: 10.5281/zenodo.15797773

Abstract

Educational institutions play a crucial role in equipping students with the knowledge and skills to respond effectively to disasters. This study investigates the relationship between the Disaster Risk Reduction and Management (DRRM) Program Implementation and Disaster Preparedness Knowledge and Readiness of High School Students in the SOCCSKSARGEN Region. Grounded in the Social-Ecological Systems Framework and Rogers' Diffusion of Innovations Theory, the research employs a descriptive-correlational design, collecting data from school administrators, teachers, DRRM coordinators, and students. Results indicate that the implementation of the Disaster Risk Reduction and Management (DRRM) program in the SOCCSKSARGEN region, highlighting its effectiveness in fostering risk-informed strategies, is rated as "Very High." While students demonstrated an "Average" level of preparedness knowledge, they excelled in practical application, resulting in a "Very Satisfactory" disaster readiness rating. However, there were notable weaknesses in first aid skills and risk assessment, alongside weak correlations between DRRM implementation and preparedness knowledge, and a slight positive link with disaster readiness, indicating practical benefits from the program, though not statistically significant. While the DRRM program in SOCCSKSARGEN is robust, student disaster preparedness knowledge is only average, with notable effectiveness in practical readiness. The correlation between DRRM implementation and disaster knowledge is weak but present for readiness. In enhancing and strengthening disaster risk reduction management (DRRM) in schools, it is recommended to adopt research-driven approaches that include hands-on learning and case studies. Collaboration with health institutions for first aid and CPR training and engaging families and communities in preparedness training are essential. Ongoing feedback mechanisms should assess DRRM effectiveness, and additional support should be provided to schools with lower preparedness ratings to ensure equity. Future research should examine qualitative factors like student engagement and infrastructure to deepen understanding of DRRM effectiveness.

Online ISSN: 3082-5121
Aloysian Interdisciplinary Journal of Social Sciences, Education, and Allied Fields
https://journals.aloysianpublications.com
Volume 1 Issue 4 (2025)

Keywords: *Disaster Risk Reduction and Management, Disaster Preparedness, School Resilience, High School Students, Emergency Readiness, SOCCSKSARGEN*

INTRODUCTION

The Philippine Government mandated all National Government Agencies (NGAs) to institutionalize policies, structures, coordination mechanisms, and programs with continuing budget appropriations for Disaster Risk Reduction and Management (DRRM) at national and local levels, as provided in RA No. 10121. This aimed to strengthen disaster resilience across sectors, including education. The Department of Education (DepEd) responded by issuing Memorandum Order No. 50 s. 2011, which established the Disaster Risk Reduction and Management Office (DRRMO). This office was tasked with institutionalizing a safety culture in schools, protecting educational investments, and ensuring the continued delivery of quality education in the face of disasters. The effort is to prepare students and academic institutions for potential challenges, including disasters.

According to the United Nations Office for Disaster Risk Reduction (UNDRR, 2015), disasters would not only cause destruction and loss of life but also disrupt socio-economic development and lead to crucial challenges faced by affected communities. This emphasized the relevance of implementing comprehensive DRR strategies that promoted resilience, enhanced preparedness, and facilitated rapid recovery amidst disasters, ensuring that vulnerable populations were better equipped to cope with future threats.

Moreover, according to the Atmospheric Geophysical and Astronomical Services Administration (PAGASA), the Philippines had an average of 20 or more typhoons and heavy downpours due to Low Pressure, which brought hazards such as flooding, landslides, and storm surges.

In addition, there was a pressing need for effective disaster preparedness and risk management. Through RA No. 10121, the Philippine government established the Disaster Risk Reduction and Management Office (DRRMO). The office was tasked with institutionalizing a safety culture in schools, protecting educational investments, and ensuring the continued delivery of quality education amidst disaster.

Further, the Department of Education (DepEd) took significant steps by issuing Memorandum Order No. 50 in 2011, which led to the creation of the Disaster Risk Reduction and Management Office (DRRMO). The mentioned office was tasked with promoting a safety culture in educational institutions, safeguarding educational investments, and ensuring the uninterrupted delivery of quality education even in the face of disasters.

Moreover, to strengthen disaster preparedness, the Department of Education (DepEd) issued Memorandum No. 21, s. 2015, which aimed to establish a protocol for Disaster Risk Reduction and Management (DRRM) coordination in schools and offices. This memorandum defined the roles of DepEd field offices, schools, and DRRM coordinators, ensuring effective information flow and prompt responses during emergencies.

Consequently, Cruz (2016) supported the idea, noting that effective disaster management strategies were critical in minimizing the impacts of calamities on educational systems and enhancing the ability to respond and recover if faced with such challenges. Recognizing the vital role of schools in disaster response, the Department of Education (DepEd) integrated DRRM into the Secondary School Curriculum by making disaster preparedness a core educational component. The initiative was significant in Region XII, which oftentimes faced natural disasters such as floods, landslides, earthquakes, and typhoons, damaging school facilities (Cruz & Mendoza, 2018; Reyes, 2020). Hence, the study on the Disaster Risk Reduction Management Program Implementation and Preparedness Knowledge and Readiness Among Public Secondary Schools in the SOCCSKSARGEN Region was conducted.

Online ISSN: 3082-5121
Aloysian Interdisciplinary Journal of Social Sciences, Education, and Allied Fields
https://journals.aloysianpublications.com
Volume 1 Issue 4 (2025)

Objectives of the Study

This investigated the relationship between the DRRM Program Implementation and preparedness knowledge, and readiness of secondary schools in the SOCCSKSARGEN Region. It answered the following questions: 1. To what extent is the implementation of the DRRM Program in the SOCCSKSARGEN Region in these key result areas:1.1Risk-Informed Plans, Policies, and Standards; 1.2 Partnerships for Strengthening Resilience;1.3 DRRM Information System (DRRMIS) and Research; 1.4 Resilience Education; 1.5 Information, Education, Communication (IEC) and Advocacy for Resilience; 1.6Learning Continuity and Resilience; and 1.7 Monitoring and Evaluation of DRRMS Comprehensive School Safety Initiatives? 2. What is the level of Disaster Preparedness Knowledge of High School students?3. What is the level of Disaster Readiness of High School students? 4. Is the implementation of the DRRM Program significantly related to the Disaster Preparedness Knowledge of High School students? 5. Is the implementation of the DRRM Program significantly related to the Disaster Readiness of High School students?
6. Are there significant differences in the perceptions of school heads, teachers, and Coordinators in the DRRM?

METHODS

The study applied a descriptive-correlational design to examine the correlation between the implementation of the Disaster Risk Reduction Management (DRRM) program and the disaster preparedness knowledge and readiness of high school students in public secondary schools within the SOCCSKSARGEN region during the S.Y. 2024-2025 and conducted in the SOCCSKSARGEN Region consisting of the provinces of South Cotabato, Cotabato, Sarangani, and Sultan Kudarat and cities of General Santos, Kidapawan, Koronadal and Tacurong specifically, the Mines and Geosciences Bureau (MGB) validated high-risk disaster identified municipalities with secondary schools from each of the school divisions was selected, hence, making a total of eight schools. These schools had direct experience and were in areas identified as high risk for natural and environmental hazards such as earthquakes, flash floods, landslides, monsoon rains, and extreme temperatures.

For Sampling Technique, the Yamane and proportional allocation formulas were used accordingly to determine their total number and distribution per school.

Two primary research instruments: a survey questionnaire and student assessment tools. The survey questionnaire was developed based on the seven Key Result Areas (KRAs) identified by the DepEd's Disaster Risk Reduction and Management (DRRM) Services. These KRAs include: (1) Risk-Informed Plans, Policies, and Standards; (2) Partnerships for Strengthening Resilience; (3) DRRM Information System (DRRMIS) and Research; (4) Resilience Education; (5) Information, Education, and Communication (IEC) and Advocacy for Resilience; (6) Learning Continuity and Resilience; and (7) Monitoring and Evaluation on DRRMS Comprehensive School Safety Initiatives. Using a 5-point Likert scale, the questionnaire assessed the implementation of these areas in disaster-prone schools, as perceived by school administrators, DRRM coordinators, and teachers. Responses to indicators are as follows: 5 – strongly agree, 4 – agree, 3- moderately agree, 2 – disagree, and 5 – strongly disagree. Questionnaire was adopted from the Disaster Risk Reduction Management Service (DRRMS) Strategic Plan 2020-2022.Two tools were prepared to assess the students' disaster preparedness knowledge. A multiple-choice questionnaire (MCQ) was crafted and aligned with the competencies outlined in the DepEd Senior High School curriculum for the Disaster Readiness and Risk Reduction (DRR) course. This MCQ test evaluated their theoretical understanding of disaster preparedness.

Furthermore, a practical assessment was designed to measure disaster readiness, wherein students were engaged in disaster simulations to demonstrate their ability to respond effectively to emergencies. The MCQ and the practical assessment undergo rigorous validation and reliability testing. The reliability of the MCQ

Online ISSN: 3082-5121
Aloysian Interdisciplinary Journal of Social Sciences, Education, and Allied Fields
https://journals.aloysianpublications.com
Volume 1 Issue 4 (2025)

was evaluated using the Kuder-Richardson Formula 21 (KR-21), which was appropriate for dichotomous data. In contrast, Cronbach's alpha is used to determine the reliability of the practical test. Only after ensuring the instruments' validity and reliability were they administered to the respondents.

For Statistical Treatment employed descriptive and inferential statistical methods to analyze the data and answer the research questions.

For research question 1. To what extent is the implementation of the Disaster Risk Reduction and Management (DRRM) Program in the SOCCSKSARGEN Region in these key result areas: Risk-Informed Plans, Policies, and Standards; Partnerships for Strengthening Resilience; DRRM Information System (DRRMIS) and Research; Resilience Education; Information, Education, Communication (IEC) and Advocacy for Resilience; Learning Continuity and Resilience; and Monitoring and Evaluation of DRRMS Comprehensive School Safety Initiatives?

The mean and standard deviation were used to assess the extent of Disaster Risk Reduction Management (DRRM) Program implementation across the seven key result areas.

For research question 2. What is the level of Disaster Preparedness Knowledge of High School students? and research question 3. What is the level of Disaster Readiness of High School students? Descriptive statistics were applied. Students' disaster preparedness knowledge and readiness were evaluated using DepEd's established standards for interpreting test results: Disaster Preparedness Knowledge (measured through a multiple-choice test) was scored, and DepEd Order No. 8 s.2015 known as Policy Guidelines on Classroom Assessment for the K12 Basic Education Program (BEP) rating scale was applied. Disaster Readiness (measured through a practical test), High School student respondents were asked to perform the skills across five indicators. They were rated according to their performance in the specified skill For research questions 4 and 5, inferential statistics were utilized. Multiple regression analysis examined the relationships between the DRRM Program implementation (independent variable) and students' disaster preparedness knowledge and disaster readiness (dependent variables). This method determined whether each of the seven key result areas significantly predicts students' knowledge and readiness levels. For research question 6, are there significant differences in the perceptions of school heads, teachers, and Coordinators in the DRRM? One-way ANOVA through Kruskal-Wallis was employed.

RESULTS AND DISCUSSION

Schools' future generations to navigate and mitigate the impacts of disasters, aside from effective policies, plans, and procedures, are essential for successfully implementing disaster risk reduction management programs in public secondary schools. In the Philippines, the Department of Education (DepEd) has developed guidelines and frameworks for integrating disaster risk reduction into the school curriculum (DepEd Order No. 37 s. 2015).

These policies provide a roadmap for schools to incorporate disaster risk reduction into their plans and procedures. The Disaster Risk Reduction and Management Service (DRRMS) empowers the DepEd personnel, offices, schools, and learners to ensure safety and learning continuity and institutionalize Disaster Risk Reduction and Management (DRRM).

Table 1 below illustrates the respondents' views about implementing the Disaster Risk Reduction Management Program in the SOCCSKSARGEN Region. The table demonstrates the strong implementation of Disaster Risk Reduction and Management (DRRM) programs in SOCCSKSARGEN schools, with all indicators rated as "Very High" and an overall mean of 4.33 (SD = 0.513). Schools have effectively developed and implemented risk-informed policies (M = 4.59, SD = 0.551) in line with the Department of Education's (DepEd) guidelines on DRRM integration.

Online ISSN: 3082-5121
Aloysian Interdisciplinary Journal of Social Sciences, Education, and Allied Fields
https://journals.aloysianpublications.com
Volume 1 Issue 4 (2025)

Table 1. Extent of DRRM Program Implementation in the SOCCSKSARGEN Region in terms of Risk-Informed Plans, Policies, and Standards

Indicators	Mean Ratings	SD	Qualitative Description
1. The school has developed and implemented risk-informed DRRM policies and standards to support learning continuity.	4.59	0.551	Very High
2. DRRM policies are regularly reviewed and updated based on the school's needs.	4.31	0.725	Very High
3. The safety and security measures are clearly outlined in the DRRM plans and effectively communicated to staff and students.	4.35	0.668	Very High
4. The school has received needs-based support from external partners to enhance the DRRM initiatives.	4.16	0.713	High
5. The risk-informed plans and standards are accessible to all relevant stakeholders in the school.	4.23	0.699	Very High
Mean	4.33	0.513	Very High

Regular policy reviews (M = 4.31, SD = 0.725) align with the Sendai Framework for Disaster Risk Reduction (UNDRR, 2015), emphasizing continuous adaptation. The clear communication of safety measures (M = 4.35, SD = 0.668) supports the findings by Shaw et al. (2019) on the role of education in disaster preparedness. The external support (M = 4.16, SD = 0.713) reflects the significance of multi-sector collaboration. The accessibility of DRRM plans (M = 4.23, SD = 0.699) aligns with UNESCO (2017) recommendations on inclusive disaster risk education.

However, gaps in external support and accessibility indicate areas for improvement, reinforcing the need for strengthened partnerships and continuous policy evaluation (Baguio & Maranan, 2020). These findings emphasize the importance of sustained DRRM integration to enhance school resilience against disasters.

Table 2. Extent of DRRM Program Implementation in the SOCCSKSARGEN Region in Terms of Partnerships for Strengthening Resilience

Indicators	Mean Ratings	SD	Qualitative Description
1. The school actively identifies opportunities for partnerships with local government and external partners on DRRM programs.	4.42	0.62	Very High
2. The school participates in municipal or barangay-level DRRM events and conferences.	4.22	0.779	Very High
3. There is a coordination mechanism in place for organizing, sharing, and tracking DRRM information with partners.	4.24	0.668	Very High

Online ISSN: 3082-5121
Aloysian Interdisciplinary Journal of Social Sciences, Education, and Allied Fields
https://journals.aloysianpublications.com
Volume 1 Issue 4 (2025)

4. The school has protocols for pre-positioning materials and interventions for disaster preparedness and response.	4.31	0.693	Very High
5. The school collaborates with relevant DepEd offices to strengthen the DRRM program.	4.46	0.671	Very High
Mean	4.34	0.522	Very High

The findings indicate that SOCCSKSARGEN schools strongly implement Preparedness, Safety, and Response (PSR) measures in their Disaster Risk Reduction and Management (DRRM) programs, with an overall mean rating of 4.34 (SD = 0.522). Schools proactively identify partnership opportunities (M = 4.42, SD = 0.62) and collaborate with relevant DepEd offices (M = 4.46, SD = 0.671), aligning with best practices outlined in DepEd Order No. 50, series 2011, which emphasizes multi-stakeholder engagement in DRRM. Participation in local DRRM events (M = 4.22, SD = 0.779) and the presence of coordination mechanisms (M = 4.24, SD = 0.668) reflect alignment with the Sendai Framework (UNDRR, 2015), which stresses information-sharing and governance in disaster preparedness.

Additionally, protocols for pre-positioning materials (M = 4.31, SD = 0.693) support findings by Cruz et al. (2020), highlighting the importance of logistical readiness in school-based DRRM efforts. While all indicators received "Very High" ratings, variations in standard deviations suggest differing levels of implementation, indicating a need for continuous monitoring and enhancement of collaboration mechanisms.

Table 3. Extent of DRRM Program Implementation in the SOCCSKSARGEN Region in terms of DRRM Information System (DRRMIS) and Research

Indicators	Mean Ratings	SD	Qualitative Description
1. The school collects and manages DRRM data using a uniform template aligned with DepEd standards.	4.22	0.69	Very High
2.The Data related to hazards and vulnerabilities are systematically archived for easy access and future reference.	4.13	0.68	High
3. The DRRM research is conducted to inform school policies and program implementation.	4.06	0.80	High
4. The Historical hazard data are analyzed to identify trends and inform risk mitigation strategies.	4.25	0.68	Very High
5. The school regularly uses DRRM data for decision-making and planning purposes.	4.20	0.73	Very High
Mean	4.17	0.54	High

The findings indicate a high level of DRRM program implementation in SOCCSKSARGEN schools, with an overall mean of 4.17 (SD = 0.54). The highest-rated aspect was analyzing historical hazard data for risk mitigation (M = 4.25, SD = 0.68), reflecting proactive risk assessment, consistent with Abenojar and Adlaon (2020).

Schools also excel in structured DRRM data management (M = 4.22, SD = 0.69) and decision-making (M = 4.20, SD = 0.73), aligning with DepEd (2019) guidelines. However, slightly lower ratings in systematic

Online ISSN: 3082-5121
Aloysian Interdisciplinary Journal of Social Sciences, Education, and Allied Fields
https://journals.aloysianpublications.com
Volume 1 Issue 4 (2025)

hazard data archiving (M = 4.13, SD = 0.68) and research-based policy implementation (M = 4.06, SD = 0.80) suggest areas for improvement, supporting Tuladhar et al. (2015). The results highlight strong DRRM integration; future efforts shall enhance research utilization and data accessibility to strengthen disaster preparedness.

Table 4. Extent of DRRM Program Implementation in the SOCCSKSARGEN Region in Terms of Resilience Education

Indicators	Mean Ratings	SD	Qualitative Description
1. The DRRM training manuals for teachers and students are available and standardized across levels.	3.98	0.84	High
2. The school conducts regular DRRM training for Teachers, personnel, and students to enhance preparedness.	4.10	0.83	High
3. The DRRM Coordinators are well-supported with platforms to share challenges and best practices.	4.15	0.76	High
4. The DRRM principles are effectively integrated into the K-12 curriculum	4.31	0.72	Very High
5. The school participates in national and local DRRM events to promote awareness and preparedness.	4.40	0.69	Very High
Mean	4.19	0.56	High

The findings suggest a strong implementation of Resilience Education in the DRRM programs of schools in SOCCSKSARGEN, with an overall mean rating of 4.17 (SD = 0.56), qualitatively described as "High". Schools effectively integrate DRRM principles into the K-12 curriculum (M = 4.31, SD = 0.72) and actively participate in national and local DRRM events (M = 4.40, SD = 0.69), supporting the objectives of the Comprehensive DRRM in Basic Education Framework (DepEd, 2017).

Regular training sessions for teachers, personnel, and students (M = 4.10, SD = 0.83) and well-supported DRRM coordinators (M = 4.15, SD = 0.76) align with the Sendai Framework (UNDRR, 2015), which highlights capacity-building as a key factor in disaster resilience. However, the availability and standardization of DRRM training manuals (M = 3.98, SD = 0.84) received the lowest rating, indicating a potential area for improvement. These results emphasize the need for continuous investment in structured learning materials to enhance school DRRM education.

Table 5. Extent of DRRM Program Implementation in SOCCSKSARGEN Region in terms of Information, Education, Communication (IEC)and Advocacy for Resilience

Indicators	Mean Ratings	SD	Qualitative Description
1. The school has reviewed and developed DRRM-related IEC materials to promote safety and resilience.	4.18	0.70	High
2. A comprehensive communication campaign on DRRM is implemented in the school.	4.23	0.71	Very High
3. The school's DRRM library, both hard and digital, is accessible to staff and students.	3.74	1.08	High

Online ISSN: 3082-5121
Aloysian Interdisciplinary Journal of Social Sciences, Education, and Allied Fields
https://journals.aloysianpublications.com
Volume 1 Issue 4 (2025)

4. The IEC materials on DRRM are needs-based and tailored to the specific vulnerabilities of the school.	3.89	0.87	High
5. The school provides inputs and feedback to government agencies concerning the DRRM needs of the education sector.	4.09	0.74	High
Mean	**4.03**	**0.65**	**High**

The findings suggest that schools in SOCCSKSARGEN effectively implement Information, Education, and Communication (IEC) strategies for Disaster Risk Reduction and Management (DRRM), with an overall mean rating of 4.03 (SD = 0.65), categorized as "High." Schools have reviewed and developed DRRM-related IEC materials (M = 4.18, SD = 0.70) and implemented comprehensive communication campaigns (M = 4.23, SD = 0.71), aligning with DepEd's policies on integrating DRRM into education (DepEd, 2013, 2017).

The accessibility of DRRM libraries (M = 3.74, SD = 1.08) and the needs-based development of IEC materials (M = 3.89, SD = 0.87) reflect the emphasis of the Sendai Framework (UNDRR, 2015) on risk communication and public awareness. However, the relatively lower ratings for these indicators suggest a need for improved access to DRRM resources. Schools also actively provide feedback to government agencies regarding DRRM needs (M = 4.09, SD = 0.74), reinforcing the collaborative approach highlighted by Ardalan and Pourhosseini (2013).

The findings indicate that schools in SOCCSKSARGEN effectively implement Learning Continuity and Resilience Education (LCR) strategies, with an overall mean rating of 4.23 (SD = 0.52), categorized as "Very High." Schools provide timely post-disaster interventions for students and personnel (M = 4.24, SD = 0.59) and have established support mechanisms to ensure a swift return to normal operations (M = 4.24, SD = 0.65).

Table 6. Extent of DRRM Program Implementation in SOCCSKSARGEN Region in Terms of Learning
Continuity and Resilience

Indicators	Mean Ratings	SD	Qualitative Description
1. The school provides timely interventions to support affected personnel's and students' well-being post-disaster.	4.24	0.59	Very High
2. The support mechanisms are in place to ensure the early return to normal operations after a disaster.	4.24	0.65	Very High
3. The resilience initiatives are in place to enable the school to recover and continue operations after a disaster.	4.22	0.66	Very High
4. The school has an established framework for local management of response, recovery, and rehabilitation needs.	4.25	0.68	Very High
5. The recovery interventions are aligned with long-term resilient development strategies.	4.20	0.70	Very High
Mean	**4.23**	**0.52**	**Very High**

Online ISSN: 3082-5121
Aloysian Interdisciplinary Journal of Social Sciences, Education, and Allied Fields
https://journals.aloysianpublications.com
Volume 1 Issue 4 (2025)

These results align with the Department of Education's (DepEd) Learning Continuity Plan (2020), highlighting the importance of ensuring the uninterrupted delivery of education during crises.

Resilience initiatives (M = 4.22, SD = 0.66) and established frameworks for local disaster response, recovery, and rehabilitation (M = 4.25, SD = 0.68) reflect international frameworks such as the Sendai Framework for Disaster Risk Reduction (UNDRR, 2015), emphasizing preparedness and adaptive capacity in education. The alignment of recovery interventions with long-term resilient development strategies (M = 4.20, SD = 0.70) suggests a forward-looking approach, consistent with studies by Reyes and Lu (2016), which stress the significance of integrating resilience-building into educational institutions.

These findings highlight the region's commitment to strengthening school-based disaster preparedness and ensuring the continuity of learning amidst disruptions.

Table 7. Extent of DRRM Program Implementation in the SOCCSKSARGEN Region in Terms of Monitoring and Evaluation of DRRMS Comprehensive School Safety Initiatives

Indicators	Mean Ratings	SD	Qualitative Description
1. The school regularly monitors the progress of its DRRM Comprehensive School Safety initiatives.	4.24	0.64	Very High
2. An evaluation system is in place to assess the effectiveness and impact of DRRM safety initiatives.	4.19	0.70	High
3.The DRRM-related policies are reviewed and enhanced based on the outcomes of the monitoring and evaluation process.	4.17	0.70	High
4. The school involves relevant stakeholders in the monitoring and evaluation of DRRM initiatives.	4.27	0.67	Very High
5. The feedback from DRRM monitoring and evaluation is used to improve school safety measures.	4.35	0.66	Very High
Mean	**4.24**	**0.54**	**Very High**

The findings indicate that schools in SOCCSKSARGEN demonstrate a strong commitment to monitoring and evaluating Disaster Risk Reduction and Management (DRRM) initiatives, with an overall mean rating of 4.24 (SD = 0.54), categorized as "Very High." Schools regularly monitor the progress of DRRM safety initiatives (M = 4.24, SD = 0.64) and have established evaluation systems to assess their effectiveness (M = 4.19, SD = 0.70). These results align with UNESCO's (2017) Comprehensive School Safety Framework, which emphasizes the role of continuous assessment in disaster resilience.

DRRM policies are reviewed and enhanced based on evaluation outcomes (M = 4.17, SD = 0.70), supporting the findings of Fernan & Lorenzo (2020), which highlight the importance of evidence-based policy adjustments in disaster risk reduction. The active involvement of stakeholders in monitoring (M = 4.27, SD = 0.67) aligns with the Sendai Framework for Disaster Risk Reduction (UNDRR, 2015), which underscores community participation in disaster preparedness.

The use of feedback from monitoring to improve school safety measures (M = 4.35, SD = 0.66) reflects best practices outlined by DepEd's DRRM Manual (2020). These results affirm that schools in the region are effectively implementing a structured and adaptive DRRM monitoring and evaluation system to ensure safety and resilience.

Online ISSN: 3082-5121
Aloysian Interdisciplinary Journal of Social Sciences, Education, and Allied Fields
https://journals.aloysianpublications.com
Volume 1 Issue 4 (2025)

The table presents the extent of DRRM program implementation across Key Result Areas (KRAs) in the SOCCSKSARGEN region, revealing an overall mean of 4.22 (SD = 0.47), categorized as "Very High." This suggests a high level of DRRM integration in schools.

Table 8. Extent of Disaster Risk Reduction Management (DRRM) Program Implementation in the SOCCSKSARGEN Region across KRAs

KRAs	N	Means	SD	Qualitative Description
KRA 1: Risk-Informed Plans, Policies, and Standards	259	4.33	0.51	Very High
KRA 2: Partnership in Strengthening Resilience	259	4.34	0.52	Very High
KRA 3: DRRM Information System (DRRMIS) and Research	259	4.17	0.54	High
KRA 4: Resilience Education	259	4.19	0.56	High
KRA 5: Information, Education, Communication (IEC) and Advocacy for Resilience	259	4.03	0.65	High
KRA 6: Learning Continuity and Resilience Interventions	259	4.23	0.52	Very High
KRA 7. Monitoring and Evaluation on DRRMS Comprehensive School Safety Initiatives	259	4.24	0.54	Very High
Overall Mean	**259**	**4.22**	**0.47**	**Very High**

Among the KRAs, "Partnership in Strengthening Resilience" (M = 4.34, SD = 0.52) and "Risk-Informed Plans, Policies, and Standards" (M = 4.33, SD = 0.51) received the highest ratings, indicating strong collaboration efforts and well-established policies. These findings align with the Sendai Framework for Disaster Risk Reduction (UNDRR, 2015) emphasizing risk-informed planning and multi-stakeholder collaboration.

The "DRRM Information System (DRRMIS) and Research" (M = 4.17, SD = 0.54) and "Resilience Education" (M = 4.19, SD = 0.56) also scored high, reflecting schools' commitment to data-driven DRRM strategies and the integration of resilience education in the curriculum. Meanwhile, "Information, Education, and Communication (IEC) and Advocacy for Resilience" received the lowest mean (M = 4.03, SD = 0.65), indicating a potential area for improvement in awareness campaigns and DRRM-related communication strategies.

These results suggest that schools in the region have a well-established DRRM framework, but continuous efforts are needed to enhance communication and advocacy initiatives. For additional information about DRRM Implementation in the SOCCSKSARGEN REGION by the Schools Division (refer to Appendix G).

The findings indicate that while DRRM programs in the SOCCSKSARGEN region are effectively implemented, continuous monitoring, evaluation, and resource allocation are necessary to ensure that all school divisions maintain high levels of disaster preparedness and resilience.

Online ISSN: 3082-5121
Aloysian Interdisciplinary Journal of Social Sciences, Education, and Allied Fields
https://journals.aloysianpublications.com
Volume 1 Issue 4 (2025)

Table 9. Level of High School Students' Disaster Preparedness Knowledge in the SOCCSARGEN Region

Dimensions	MPS	SD	Qualitative Description
1. Understanding Hazard Types and Risks	81.00	14.60	Moving towards Mastery
2. Disaster Risk Assessment	56.50	23.20	Average
3. Prepared Strategies and Mitigation Measures	57.70	18.80	Average
4. Early Warning Systems	64.10	18.70	Average
5. Emergency Plans and Protocols	53.50	19.60	Average
Overall Mean	**57.90**	**14.70**	**Average**

The findings indicate that students in the SOCCSKSARGEN region have an average level of disaster preparedness knowledge, with an overall mean percentage score (MPS) of 57.90 and a standard deviation (SD) of 14.70. Among the five assessed dimensions, the highest-rated was Understanding Hazard Types and Risks (MPS = 81.00, SD = 14.60), categorized as Moving Towards Mastery. This suggests that students are relatively knowledgeable about identifying hazards and understanding their potential risks, which is a crucial foundation for disaster preparedness. However, the other dimensions Disaster Risk Assessment (MPS = 56.50, SD = 23.20), Prepared Strategies and Mitigation Measures (MPS = 57.70, SD = 18.80), Early Warning Systems (MPS = 64.10, SD = 18.70), and Emergency Plans and Protocols (MPS = 53.50, SD = 19.60) were all rated as Average. These scores highlight potential gaps in students' practical application of disaster preparedness knowledge, such as assessing risks, implementing mitigation measures, and responding effectively to early warnings and emergencies.

The results align with previous studies, such as Tuladhar et al. (2015), emphasizing that students may possess theoretical knowledge of disaster preparedness. However, their ability to assess risks, develop strategies, and respond to emergencies effectively remains limited without sufficient hands-on training and drills. The relatively low emergency plan and protocol scores indicate that students may not be fully equipped to act decisively during disaster events. Refer to Appendix- H High School Students' Preparedness Knowledge in SOCCSKS REGION by Schools Division.

Table 10. Level of High School Students' Disaster Readiness in SOCCSKSARGEN Region

Dimensions	Mean	SD	Qualitative Description
1.Practical Application of Evacuation Procedure	4.14	0.83	Very Satisfactory
2. First Aid and basic life support	3.96	1.16	Satisfactory
3. Crisis Communication Skills	4.25	0.79	Very Satisfactory
4. Resource Management and Coordination	4.29	0.76	Very Satisfactory
5. Participation in Preparedness Drills	4.48	0.68	Very Satisfactory
Overall Mean	**4.22**	**0.64**	**Very Satisfactory**

The findings indicate that high school students in SOCCSKSARGEN exhibit a high level of disaster readiness, with an overall mean of 4.22, described as "Very Satisfactory." Among the dimensions assessed,

Online ISSN: 3082-5121
Aloysian Interdisciplinary Journal of Social Sciences, Education, and Allied Fields
https://journals.aloysianpublications.com
Volume 1 Issue 4 (2025)

participation in preparedness drills received the highest mean (4.48), while first aid and basic life support had the lowest (3.96), categorized as "Satisfactory." These results align with previous studies highlighting the importance of disaster education and preparedness in schools (Baguio & Maranan, 2020; Shaw et al., 2019).

Further support to the findings above is provided in the appendices. The study reinforces the role of schools in disaster risk reduction (DRR). According to Campilla (2016), school managers are crucial in ensuring disaster preparedness through properly planning and implementing DRR programs. Similarly, the Department of Education (DepEd, 2019) emphasizes integrating DRR concepts into the K to 12 curricula to enhance students' resilience. However, the relatively lower rating in first aid and basic life support suggests a need for enhanced training programs, as echoed by Tuladhar et al. (2015), who stressed that teacher and student preparedness directly impacts emergency response effectiveness.

The study also supports the findings of Ardalan & Pourhosseini (2013), who underscored the necessity of coordination among organizations responsible for disaster management. Community engagement and school-based interventions are vital, as noted by Chmutina et al. (2020), who argued that collaborative approaches strengthen disaster preparedness. Furthermore, Lizada et al. (2021) highlighted the need for targeted interventions in rural areas to address educational disparities in DRR readiness.

The emphasis on infrastructure improvements aligns with the study by Abenojar and Adlaon (2020), which found that school facilities significantly influence disaster preparedness. While the study confirms a commendable level of disaster readiness among students, it also highlights areas for improvement, particularly in first aid training and community collaboration.

Table 11. Correlation Analysis between the DRRM Program Implementation and the HS Students' Disaster Preparedness Knowledge

KRAs	Disaster Preparedness Knowledge	
	Spearman's rho	p-value
1. Risk-Informed Plans, Policies, and Standards	-0.26	0.528
2. Partnerships for Strengthening Resilience	-0.29	0.501
3. DRRM Information System and (DRRMIS)	-0.48	0.230
4. Resilience Education	-0.19	0.665
5. Information, Education, Communication (IEC) and Advocacy for Resilience	-0.21	0.619
6. Learning Continuity and Resilience Interventions	-0.62	0.115
7. Monitoring and Evaluation on DRRMS Comprehensive School Safety Initiative	-0.33	0.428
Overall Mean	-0.38	0.360

The correlation analysis between the implementation of Disaster Risk Reduction and Management (DRRM) programs and high school students' disaster preparedness knowledge reveals negative but varying relationships across key result areas (KRAs). The overall mean correlation coefficient (-0.38, p = 0.360) suggests a weak negative association, indicating that implementation of A. DRRM programs do not necessarily correspond to increased disaster preparedness knowledge among students. The result shows no

Online ISSN: 3082-5121
Aloysian Interdisciplinary Journal of Social Sciences, Education, and Allied Fields
https://journals.aloysianpublications.com
Volume 1 Issue 4 (2025)

significant difference in the relationship. This aligns with the findings of Ardalan and Pourhosseini (2013), who emphasized that effective DRRM implementation requires robust coordination between educational institutions and local authorities to enhance preparedness outcomes.

Among the KRAs, Learning Continuity and Resilience Interventions demonstrated the strongest negative correlation (-0.62, p = 0.115), suggesting that despite the emphasis on continuity programs, students' knowledge may not significantly improve without complementary interventions such as hands-on training or participatory learning. This supports the argument of Chmutina et al. (2020), who advocated for more community-based engagement in DRRM education to ensure meaningful knowledge retention.

Risk-Informed Plans, Policies, and Standards (-0.26, p = 0.528) and Partnerships for Strengthening Resilience (-0.29) show weak negative correlations. The weak associations suggest that while policy frameworks exist, their implementation may not effectively enhance student preparedness. This finding echoes the concerns raised by Lizada et al. (2021), who highlighted the need for localized and targeted interventions, especially in rural schools, where access to resources remains challenging.

The RM Information System (DRRMIS) and Research KRA exhibit a moderate negative correlation (-0.48, p = 0.230), indicating that while data-driven approaches to DRR are implemented, they may not directly impact students' knowledge levels. This finding aligns with Baguio and Maranan (2020), who stressed that DRR education must be integrated into experiential learning to bridge the gap between theoretical knowledge and practical application. Resilience Education (-0.19, p = 0.665) and Information, Education, and Communication (-0.21, p = 0.619) show the weakest correlations, reinforcing the argument by Shaw et al. (2019) that education alone, without active drills and real-life applications, may not significantly improve disaster preparedness.

The study underscores the importance of evaluating the implementation of DRRM programs and their effectiveness in enhancing preparedness. As Tuladhar et al. (2015) highlighted, the success of DRR education hinges on the preparedness of both students and teachers.

Table 12. Correlation Analysis Between the DRRM Program Implementation and the High School Students' Disaster Readiness

KRAs	Disaster Readiness		
	Spearman's rho	df	p-value
1. Risk-Informed Plans, Policies, and Standards	0.30	6	0.471
2. Partnerships for Strengthening Resilience	0.33	6	0.428
3. DRRM Information System and (DRRMIS)	0.14	6	0.734
4. Resilience Education	0.17	6	0.703
5. Information, Education, Communication (IEC) and Advocacy for Resilience	0.29	6	0.501
6. Learning Continuity and Resilience Interventions	0.02	6	0.977
7. Monitoring and Evaluation on DRRMS Comprehensive School Safety Initiative	0.31	6	0.462
Overall Mean	0.19		0.665

Online ISSN: 3082-5121
Aloysian Interdisciplinary Journal of Social Sciences, Education, and Allied Fields
https://journals.aloysianpublications.com
Volume 1 Issue 4 (2025)

The correlation analysis between DRRM program implementation and high school students' disaster readiness reveals weak to moderate positive correlations across key result areas (KRAs), with an overall mean correlation coefficient of 0.19 ($p = 0.665$). This suggests that while DRRM initiatives contribute to disaster readiness, their impact is not statistically significant. This finding aligns with previous research (Baguio & Maranan, 2020; Shaw et al., 2019), emphasizing the need for practical applications of disaster education rather than relying solely on policy implementation.

Among the KRAs, Partnerships for Strengthening Resilience (0.33, $p = 0.428$) and Monitoring and Evaluation on DRRMS Comprehensive School Safety Initiatives (0.31, $p = 0.462$) show the highest positive correlations, indicating that collaborative approaches and continuous assessment of DRRM programs may have a modest influence on student readiness. These results support Chmutina et al. (2020), who advocate for multi-stakeholder engagement in disaster preparedness programs to enhance effectiveness.

Learning Continuity and Resilience Interventions (0.02, $p = 0.977$) exhibit the weakest correlation, suggesting that these measures, as currently implemented, may not significantly contribute to students' disaster readiness. This finding is consistent with Tuladhar et al. (2015), who emphasize that preparedness programs must be reinforced with hands-on training and real-world simulations to achieve meaningful impact.

The Risk-Informed Plans, Policies, and Standards KRA (0.30, $p = 0.471$) and Information, Education, and Communication (IEC) and Advocacy for Resilience (0.29, $p = 0.501$) display moderate correlations, highlighting the importance of policy-driven initiatives and awareness campaigns in fostering disaster readiness. However, as Lizada et al. (2021) noted, mere policy implementation without community engagement and contextual adaptation may limit the effectiveness of DRRM education.

The DRRM Information System (DRRMIS) and Research KRA (0.14, $p = 0.734$) and Resilience Education (0.17, $p = 0.703$) show weak correlations, implying that while information systems and educational components are crucial, they may need better integration into experiential learning strategies to enhance their impact. This supports the study by Abenojar and Adlaon (2020), which highlights the importance of infrastructure and institutional support in DRR education.

Table 13. One-way ANOVA through Kruskal-Wallis Test of the Respondents on the DRRM Program Implementation

Type	N	Mean	SD	χ^2	df	p
DRRMC Coordinator	8	4.30	0.43	0.239	2	0.887
Principal	8	4.27	0.53			
Teacher	243	4.21	0.47			

The Kruskal-Wallis test is conducted to determine whether there are statistically significant differences in the perceptions of different stakeholders, such as DRRM coordinators, principals, and teachers, regarding the implementation of the Disaster Risk Reduction and Management (DRRM) program. The results indicate no significant difference among the groups, as evidenced by a chi-square (χ^2) value of 0.239 and a p-value of 0.887, well above the conventional significance threshold of 0.05.

This means the perceptions are the same or comparable regardless of the types of respondents. All respondent groups, with DRRM coordinators reporting the highest mean (4.3, SD = 0.43), followed by principals (4.27, SD = 0.53), and teachers (4.21, SD = 0.47). These findings suggest a consensus among stakeholders that the DRRM program is implemented satisfactorily. The similarity in perceptions aligns with previous studies (Campilla, 2016; DepEd, 2019), emphasizing the uniformity of DRRM integration in educational institutions due to standardized policies and training programs.

Online ISSN: 3082-5121
Aloysian Interdisciplinary Journal of Social Sciences, Education, and Allied Fields
https://journals.aloysianpublications.com
Volume 1 Issue 4 (2025)

The absence of significant differences might indicate that the roles and responsibilities of these stakeholders in DRRM implementation are well-
communicated and coordinated. However, as Lizada et al. (2021) pointed out, while overall perceptions may be positive, there could still be gaps in execution, particularly in resource allocation and practical disaster response training.

The findings align with those of Chmutina et al. (2020), who highlighted the importance of collaborative approaches in DRRM efforts. The relatively homogenous perceptions among stakeholders suggest that DRRM initiatives are fairly integrated into the school system. Qualitative analysis may be necessary to explore whether the quantitative scores do not capture underlying concerns.

Conclusions

The study concludes the following:

The implementation of the DRRM program in the SOCCSKSARGEN region is well-established, particularly in policy formulation, partnerships, and monitoring. However, research-based initiatives and resilience education require improvement to enhance disaster preparedness at the student level.

Despite a strong DRRM program, students' disaster preparedness knowledge remains at an "Average" level, suggesting gaps in translating policies into student learning outcomes.

Students demonstrate a "Very Satisfactory" level of disaster readiness, particularly in practical applications such as drills and resource management. However, gaps remain in first aid training and CPR application, which are critical to emergency response effectiveness.

The DRRM program in SOCCSKSARGEN effectively fosters disaster readiness among high school students, although it is not statistically significant. Students are actively engaged in drills and resource management. Enhancing experiential learning and real-life simulation exercises helps bridge this gap and improve student readiness.

The correlation analysis suggests that while DRRM implementation influences disaster readiness to some extent, it did not significantly impact disaster preparedness knowledge.

The hypothesis stating that implementing the Disaster Risk Reduction Management Program is not significantly related to the Disaster Preparedness Knowledge of High School Students is not fully supported, as the correlation is present but weak. However, the hypothesis that the Disaster Risk Reduction Management Program Implementation and Students' Disaster Readiness are accepted. Therefore, both alternative hypotheses were accepted.

Recommendations

Schools may incorporate more research-driven approaches in DRRM implementation, including hands-on learning experiences and case studies to bridge the gap between policy implementation and student preparedness.

Schools may collaborate with health institutions and emergency response organizations to provide students with comprehensive first aid and CPR training.

Disaster preparedness training may extend beyond schools to involve families and communities, ensuring students can apply their knowledge in real-life situations. Strengthening collaboration between schools, households, and local communities will create a more holistic approach to disaster readiness and improve students' ability to respond effectively during emergencies. Further improvements are needed to ensure disaster readiness strategies translate into more practical and applicable skills.

There is a need for enhanced disaster risk reduction and management (DRRM) education that focuses on practical skill development, risk assessment training, and emergency response exercises. Strengthening these areas can help bridge the gap between knowledge and action, ensuring that students are aware of disaster risks and capable of responding effectively when faced with real-life emergencies. Integrating

simulation exercises, school-wide drills, and interactive learning overall disaster preparedness and real-life disaster readiness.

Future studies may explore qualitative factors affecting DRRM effectiveness, such as student engagement levels, school infrastructure, and government support, to provide a more comprehensive understanding of school disaster preparedness and readiness. This will help ensure that DRRM implementation is effective in disaster readiness and improves students' theoretical preparedness knowledge and long-term readiness skills.

Future research may examine whether specific challenges are experienced differently by various stakeholders in practice. This could involve a mixed-methods approach, incorporating qualitative data to supplement the numerical findings.

REFERENCES

Abenojar, J. R., & Adlaon, E. M. (2020). School disaster risk reduction: enhancing resilience through infrastructure: Improvement *Journal of Disaster Risk Studies, 12*(1), 1-10.

Agrawal, A. (2010). Adaptation to climate change: from resilience to transformation. *Environment, 52*(6), 9–21.

Alexander, D.E. (2010). The L' Aquila Earthquake of 6 April 2009 and Italian Government policy on disaster response. *Journal of Natural Resources Policy Researc*h, 2:4, 325-342.

Ardalan R., & Pourhosseini (2013). Assessment of coordination function among responsible organizations of natural disaster management in Iran. *Hakin, Res J. 16:107- 117.*

Baguio, J. A., & Maranan, M. M. (2020). Integrating disaster risk reduction education in Philippine schools: Options and prospects. *International Journal of Disaster Risk Reduction, 50,* 101764

Brooks, J. (2012). Be safe & have a plan. *Inside Homeland Security, 11*(1),

M. (2014). *The role of LGUs, local councils during disaster*. http://www.rapller.com/ newsbreak/ 44026-role-lgu-localcouncils-disaster.

Campilla, M. (2016). Disaster risk reduction management practices of school managers. *Third Asia Pacific Conference on Advanced Research* (APCAR, Melbourne, July 2016) ISBN: 978 0 9943656 20.

Catanus, R. J. (2018). *Disaster risk reduction management in elementary schools,* Foundation University, Dumaguete City, Philippines.

Chmutina, K., et al. (2020). Community resilience and education: engaging stakeholders for effective disaster preparedness. *International Journal of Disaster Risk Reduction.*

Department of Education (DepEd). (2013). DepEd Order No. 56, s. 2013: Policy Guidelines on the Implementation of the Climate Change and Disaster Risk Reduction and Management (CCDRRM) Education in the K to 12 Basic Education Curriculum. https://www.deped.gov.ph/wpcontent/uploads/2013/07/DO_s2013_056.pdf

Department of Education (DepEd). (2015). *Implementing guidelines on the integration of disaster risk reduction and management (DRRM) Concepts in the K to 12 Curriculum.* https://www.deped.gov.ph/wp-content/uploads/2016/06/DO_s2016_019.pdf

Department of Education (DepEd). (2016). *Implementing guidelines on the integration of climate change education in the K to 12 Curriculum.* https://www.deped.gov.ph/wp-content/uploads/2017/08/DO_s2017_038.pdf

Department of Education (DepEd). (2017*). K to 12 disaster risk reduction and management curriculum guide.* https://www.deped.gov.ph/wp-content/uploads/2017/06/K-to-12-DRRM-Curriculum-Guide.pdf

Department of Education. (2019). *DepEd Order No. 48, s. 2019 - Policy guidelines on the national disaster risk reduction and management in basic education*. Manila: Department of Education.

DiMaggio, P. J., & Powell, W. W. (1983). The iron cage revisited: institutional isomorphism and collective rationality in organizational fields. *American Sociological Review, 48*(2), 147–160.

Glantz, M. H. (2016). Education and Disaster Risk Reduction: A review of the evidence. *Journal of Risk Research.*

Global Facility for Disaster Reduction and Recovery (GFDRR). (2019). *Resilient infrastructure for a sustainable future*. https://www.gfdrr.org/sites/default/files/2019-12/GFDRR_Resilient_Infrastructure_for_a_Sustainable_Future.pdf.

King, T., and Tarrant, R. (2013). Children's knowledge, cognitions, and emotions surrounding natural disasters: An investigation of year 5 students, Wellington, New Zealand. *Australasian Journal of Disaster and Trauma Studies*, *201.*

Komino, T. (2014). Community resilience: Why it matters and what we can do. *The Ecumenical Review*, 66(3), 324. [17]

Mamhot, K. (2019). *Extent of implementation of disaster risk reduction management and stakeholders' participation*, Foundation University, Dumaguete City, Philippines.

Lizada, M. O., Ramos, S. M., & Alcantara, D. B. (2021). Bridging the gap in disaster resilience: Addressing educational disparities in rural areas of the Philippines. (1), 75-94.

Manyena, S., O'Brien, G., O'Keefe, P., & Rose, J. (2011). Disaster resilience: A bounce back or a bounce forward ability. *Local Environment*, 16(5), 417-424.

Mastrorillo, M., et al. (2016). The role of education in building resilience: Evidence from the global south. *International Journal of Disaster Risk Reduction.*

National Disaster Risk Reduction and Management Plan (NDRRMP), 2011-2028.

Ostrom, E. (2009). A *general framework for analyzing sustainability of social-ecological systems*. *Science, 325*(5939), 419–422.

Philippines Climate Change Commission. (2016). *National climate change action plan 2011-2028*. https://climate.gov.ph/sites/default/files/ncp/2011-2028/20112028%20NCCAP.pdf

Republic Act 10121. *The Philippine disaster risk reduction and management act of 2010.*

Republic of the Philippines. (2010). *Republic Act No. 10121: Philippine disaster risk reduction and management act of 2010*. https://www.officialgazette.gov.ph/2010/05/27/republic-act-no-10121

Rogers, E. M. (2003). *Diffusion of innovations* (5th ed.). New York: Free Press.

Sala, M. (2019). *Functionality of DRRM in the Local Government Units", Foundation University,* Dumaguete City, Philippines.

Sarmiento, C., et al. (2019). *Integrating Disaster Risk Reduction into Education: Lessons from the Philippines*. *Journal of Education and Disaster Risk Reduction.*

Teachers' Guide to Protecting Children, London: Continuum. [14] Kenny, C. (2012). Disaster risk reduction in developing countries: costs, benefits, and institutions. *Disasters, 36* (4), 559-588.doi:10.1111/j.1467- 7717.2012.01275

Tuladhar, G., Yatabe, R., Dahal, R., andBhandary, N. (2015). Assessment of disaster risk reduction knowledge of schoolteachers in Nepal. *International Journal of Health System and Disaster Management*, 3(1), 20.

UNESCO. (2018). E*ducation for sustainable development goals: learning objectives.* Paris: UNESCO

UNISDR (2016) *What is disaster risk reduction? the united nations office for disaster risk reduction.* https://www.unisdr.org/who-we-are/what-is-drr

United Nations Development Programme (UNDP). (n.d.). *Disaster risk reduction and recovery.* https://www.undp.org/content/undp/en/home/ourwork/environmentandenergy/focus_areas/crisis_prevention_and_recovery/disaster-risk-reduction-and-recovery.html

United Nations Educational, Scientific and Cultural Organization (UNESCO). (2017). *Sendai framework for disaster risk reduction 2015-2030: implementation guide for education sector*. https://unesdoc.unesco.org/ark:/48223/pf0000247596

United Nations International Strategy for Disaster Reduction (2015c; 2016). Sendai Framework for Disaster Risk Reduction 2015-2030.

United Nations International Strategy for Disaster Reduction (UNISDR). (2015). *Hyogo framework for action 2005-2015: building the resilience of nations and communities to disasters*. https://www.preventionweb.net/files/1037_Hyogo%20Framework%20for%20Action%202005-2015.pdf

United Nations International Strategy for Disaster Reduction (UNISDR). (2013). *Global education and training strategy for disaster risk reduction*. https://www.preventionweb.net/files/31763_glocaleducationtrainingstrategy.pdf

United Nations International Strategy for Disaster Reduction (UNISDR). (2005). *Hyogo framework for action 2005-2015: building the resilience of nations and communities to disasters.*

United Nations Office for Disaster Risk Reduction (UNDRR). (2015). Sendai *framework for disaster risk reduction 2015-2030.* https://www.preventionweb.net/files/43291_sendaiframeworkfordrren.pdf

United Nations Office for Disaster Risk Reduction (UNDRR). (2017). *Making schools safe from disasters: a global perspective*. https://www.preventiAonweb.net/files/52621_makingschoolssafeendf.pdf