International Journal of Research in Interdisciplinary Studies
Volume 3, Issue 12, December 2025
https://www.ijris.com | ISSN (Online): 2584-1017

Assessing the Implementation of DRRM Programs Among Public Secondary Schools in the Second District of Northern Samar

Rowel C. Acebuche*
Teacher II, Department of Education, Division of Northern Samar, Philippines

Abstract—This descriptive-correlational study evaluated how well public secondary schools in the second district of Northern Samar had implemented a school disaster risk reduction management system. The respondents were the SBM committee members and others in-charge in the school DRRM operations. A complete enumeration of the respondents was utilized and have employed a survey questionnaire as a primary tool in the data collection, which parts were adopted from the National Disaster Risk Reduction and Management (NDRRM) Plan, Hyogo Framework for Action. The public secondary schools in the second district of Northern Samar were situated in the coastal area, school risk maps were not displayed, and with small student population. Although funds allotment was observed, the school DRRM organizational structure was not in place. Furthermore, the public secondary schools in the second district of Northern Samar had implemented the DRRM program. Concluding that the profile of the schools and the status of implementation are significantly related. Lastly, the difference in the status of implementation of the DRRM Program based on topographic location was not significant. The findings suggest that despite the variation in topographical features and characteristics, public secondary schools in the second congressional district of Northern Samar are generally implementing DRRM programs to a similar extent across topographic locations.

***Index Terms*—DepEd school DRRM, capability, implementation, preparedness, response.**

1. Introduction

Disaster is inevitable. The Philippines as a government whose primary role is to protect its people, developed plans and designs that aim to strategize and counterbalance the effects of both natural and human induced disasters. The main goals of drafting laws and policies are to lessen and alleviate property damage and loss, as well as to strengthen and raise the degree of practice and resilience among vulnerable groups and the nation as a whole against natural or human-induced disasters.

The Philippines' archipelagic nature and geographical location make it particularly vulnerable to natural and human induced calamities and hazards, as this was evident in the devastation caused by an earthquake, a 6.9 magnitude in September 30, 2025, which leveled the city of Bogo in Cebu, other areas of Leyte, Samar, and other Visayan islands, causing major damage to well-built schools and other educational buildings, churches and other establishments (GMA News). So as the widespread and severe damage that typhoon Odette in 2021 caused when it struck and devastated almost the entire country particularly the regions of Visayas and Mindanao (Philippine Daily Inquirer).

This scenario needs serious attention so disaster capacity and mitigation efforts can be formulated to reduce population exposure and vulnerability in international and local settings. Indeed, disasters are inevitable, and their scope and magnitude are often magnified due to unsustainable development that has not taken into account the possible hazard impacts in a particular location. The consequences of such events can be mitigated if the populace has a better grasp of locally encountered dangers and implements appropriate preventive or mitigating actions.

In this regard, R.A. 10121 of 2010, also known as the Philippine Disaster Risk Reduction and Management Act, paved the door for new strategies and regulations to be implemented in all aspects of DRRM. This act established the National Disaster Risk Reduction and Management Framework (NDRRMF) and National Disaster Risk Reduction and Management Plan (NDRRMP) both envision a country with "safer, adaptive, and disaster-resilient Filipino communities geared toward sustainable development." (NDRRMP, 2011).

The Department of Education's comprehensive DRRM was upgraded, and DRRM was integrated in the basic education system by DepEd Order Number 50 series of 2011 and DepEd Memorandum Number 11 series of 2015. Damage Assessment and Head Analysis, Disaster Management and Relief Services, Early Warning Team, SDRRM Chairman, SDRRM Co-Chairman, Recovery and Rehabilitation, and Disaster Management and Relief Services make up this group. Disaster Risk Reduction Management (DRRM) is being implemented in the school by the SDRRM team.

The SDRRM Team was directed by DepEd Order Number.23, series of 2015, "Student-Led School Watching and Hazzard Mapping," to assist students in recognizing various threats and weaknesses in the school environment. In a similar vein, the Department of Education's DepEd Order Number 27, series of 2015, "Promoting Family Earthquake Preparedness,"

*Corresponding author: rowel.acebuche29@gmail.com

directed the SDRRM Team to carry out DRRM exercises, use the Early Warning System (EWS), and cooperate with MDRRM for technical assistance. The SDRRM Team has been assigned the responsibility of conducting an advocacy campaign with similar goals, highlighting the significance of DRRM in schools and preserving relationships with local, national, and other sponsors through the "Brigada Eskwela" campaign, DO 41. S. 2015.

However, the school sector has paid little attention to DRRM programs and activities for students, particularly those who are more susceptible to harm, suffering, injuries, a decline in academic performance, or even death. For the SDRRM Team, the research gap in terms of greater knowledge and comprehension of disaster risk reduction (DRR) continues to be a major obstacle. In this context, the study evaluated the degree of SDRRM implementation in Region VIII public elementary schools as well as the characteristics of the SDRRM Team, which were found to be associated with the degree of SDRRM implementation.

In the Philippines, Department of Education (DepEd) started to integrate disaster risk reduction (DRR) in schools since 2007. Programs and projects in DRR are implemented in the basic education sector through the DRR and Management Office (DRRMO). The school DRRMO plans, implement, coordinate, and monitor activities related to all the programs indicated in RA 10121 such as Disaster Risk Reduction and Management (DRRM), Education in Emergencies (EiE), and Climate Change Adaptation (CCA).

In 2015, to focus on the objectives of the Sendai Framework in DRR, DepEd implemented the Comprehensive DRRM in Basic Education Framework. This framework follows the purpose, goals, three pillars, and key responsibilities stated in the global Comprehensive School Safety Framework and the four thematic areas of RA 10121. Aside from developing and implementing the Comprehensive DRRM in Basic Education Framework and establishing DRRMO from national to school-based level, DepEd integrates DRR and CCA in the basic education curriculum, which is from Kinder to Senior High School (SHS) (Lim et al., 2016).

Lastly, the DRRM Act serves as the legal foundation for disaster risk reduction directives. The Department of Education (DepEd) issued DepEd Order No. 37, s. 2015 also known as The Comprehensive Disaster Risk Reduction and Management in Basic Education Framework as the foundation, together with a more comprehensive Disaster Risk Reduction Management. In this framework, the offices and schools must have DRRM structures, processes, protocols, and practices embedded in the curriculum, particularly in the senior high school program since the impact of calamities always makes its way into schools through violent typhoons and massive flooding that destroys school properties. As a result, the Philippines' vulnerability to disaster necessitates a thorough examination of its current disaster-related policies (Catanus, 2018). Hence, this study aimed to assess the status of implementation of DRRM programs among public secondary schools in the second congressional district of Northern Samar by looking into the school's profile assumed to be predictors of the status of DRRM implementation.

2. Materials and Methods

This descriptive-correlational study investigated the status of implementation of the DRRM program on four (4) thematic areas among public secondary schools in the second congressional district of Northern Samar. The respondents were the SBM committee members and others in-charge in the school DRRM operations. A complete enumeration of the respondents was utilized and have employed a survey questionnaire as a primary tool in the data collection, which parts were adopted from the National Disaster Risk Reduction and Management (NDRRM) Plan, Hyogo Framework for Action, and Comighud (2020). The researcher sought the approval of the Schools Division Superintendent in the division of Northern Samar to administer the survey instrument. Copies of the instrument were distributed to the target respondents who are part of the school DRRM team headed by the school heads.

The study employed a 5-point Likert scale to interpret the data. The descriptive statistics was used to describe the status of implementation of the DRRM program while inferential statistics was employed to determine whether significant relationship exist between the variables used.

3. Results

Table 1
Profile of the school as assessed by the DRRM committee members

Profile	Status	f	%
Topographic location	Coastal	17	34%
School's Risk Map	Not displayed	37	74%
School size	Small	31	62%
School's Organization Structure	Organized	39	78%
Monthly Allocation for DRRM	1-2 percent	42	84%

Table 2
Status of implementation of DRRM program

Indicators	WM	Interpretations
Disaster prevention and mitigation	3.02	Implemented
Disaster preparedness	3.04	Implemented
Disaster Response	2.99	Implemented
Disaster Rehabilitation and Recover	2.93	Implemented
Total Weighted Mean Score	**3.00**	**Implemented**

4. Discussion

Table 1. Distribution of the Profile of the school as assessed by the respondents.

Most of the public secondary schools in the second district of Northern Samar are situated in the coastal area, and school risk maps are not displayed, with a small student population. Although funds allotted was observed, the school DRRM organizational structure was not commonly displayed. This implies that some of school DRRM provisions were not complied.

Table 2. Distribution of the Status of Implementation of the school DRRM program

The DRRM programs of the public secondary schools in the second congressional district of Northern Samar are implemented. The four thematic areas in terms of disaster prevention and mitigation with mean score average of 3.02

Table 3
Multiple regression analysis of the relationship between profile and status of implementation of DRRM program of the public secondary schools in the second congressional district of Northern Samar

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.58[a]	.334	.259	.46717

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.824	5	.965	4.420	.002[b]
	Residual	9.603	44	.218		
	Total	14.427	49			

Coefficients[a]

Model	B	t	Sig.	Interpretation
(Constant)	1.914	4.782	.000	
School's Topographical Location	.036	.598	.553	Not Significant
School Risk Map	.099	.547	.587	Not Significant
School Size	.206	2.965	.005	Significant
SDRRM Structure	.313	1.808	.077	Not Significant
Monthly Allocation for DRRM	-.043	-.208	.836	Not Significant

a. Dependent Variable: Status of Implementation of School DRRM Program
b. Predictors: (Constant), Monthly Allocation for DRRM, SDRRM Structure, School's Topographical Location, School Size, School Risk Map

Table 4
Test of difference in the status of implementation of the school DRRM program based on topographical location

ANOVA

Level of Implementation	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.798	3	.599	2.183	.103
Within Groups	12.629	46	.275		
Total	**14.427**	**49**			

Sheffe Multiple Comparison

(I) School's Topographical Location	(J) School's Topographical Location	Mean Difference (I-J)	Sig.	Interpretation
Coastal	Plain	.17856	.836	Not Significant
Coastal	Plateau	.31673	.493	Not Significant
Coastal	River	-.24477	.734	Not Significant
Plain	Plateau	.13817	.937	Not Significant
Plain	River	-.42333	.336	Not Significant
Plateau	River	-.56150	.144	Not Significant

interpreted as "implemented" means that schools as assessed by the respondents foster a safer and a more resilient educational environment. This further supports DepEd order 21 series of 2015 otherwise known as Disaster Risk Reduction and Management (DRRM) Coordination and Information Management Protocol which provides guidelines on the roles, responsibilities, and basis for response and information processes Regional, Division, and School DRRM. Consequently, in terms of disaster preparedness interpreted as "implemented" with mean average score of 3.04 means that the public secondary schools' disaster preparedness plan, policies, and system are in place and are being implemented. This finding is also supported by Brooks and Cutter (2012), both argued that when it comes to disaster preparedness and response, taking responsibility requires a top-down and bottom-up approach that includes everyone from the national level down to the grassroots setting. Furthermore, in terms of disaster response, the finding revealed that the schools "implement" the program with a total mean score of 2.99. This means that the status of implementation of the school DRRM program of the public secondary school in the second congressional district of Northern Samar in terms of disaster response provide support to speed up normal situations in the affected areas thus, shows that in terms of providing basic life preservation and meeting the basic substance needs during or immediately after a disaster, the SDRRM team members have successfully provided those needs through partnership mechanisms with utility providers and key stakeholders. Lastly, in terms of disaster rehabilitation and recovery the finding revealed that the program is "implemented" by the schools with a total weighted mean average of 2.93. This means that the SDRRM Team conducts post-disaster needs assessment or the accounting of damages, losses, and needs which will be the basis for identifying programs, projects, and activities for the disaster-affected areas and settings.

Furthermore, Antonio and Antonio (2017) provided details that after calamity strikes, a systematic process of preparing for rehabilitation and recovery should be done. This involves post-damage needs assessment (PDNA), restoration activities, and a recovery plan to abide by the build-back better principle of the NDRRMP and prevent another disaster from happening. This area involves a multi-sectoral and multi-disciplinary approach as it covers the estimation and valuation of losses, damages, and needs in agriculture, services, trade, etc. This finding parallels the study of Dela Cruz, who put forward that public schools should develop systems for appropriate risk reduction protection measures through monitoring structural safety maintenance in the building codes and school infrastructures.

Table 3. Test of Relationship between Profile of the school and the Status of Implementation of school DRRM program.

The multiple regression analysis of the relationship between the profile and the status of the implementation of the DRRM program of the public secondary school in the second congressional district of Northern Samar and the Analysis of Variance (ANOVA) table reveals an F value of 4.420 and a significance value of 0.002 which is less than the 0.05 alpha level which means that there exists a significant relationship between the profile in terms of schools' topographic location, school risk map, school size, SDRRM Structure, monthly allocation for DRRM; and the level of capability of public secondary schools in the second congressional district of Northern Samar. Therefore, the null hypothesis is rejected. Further, the R-square value of 0.334 shown in the model summary means that there is about 33.40 percent of the status of implementation of the DRRM program is attributed to the profile in terms of schools' topographic location, school risk map, school size, school DRRM structure, and monthly allocation for DRRM from MOOE. These findings mean that the status of the implementation of the DRRM program in public secondary schools is affected by its profile. Moreover, the magnitude of the effects of each identified profile as shown in the beta coefficient values indicates that among the five (5) identified profiles, the school DRRM structure has the highest impact on the status of implementation of the school DRRM program, with a beta coefficient of 0.313 and a significance value of 0.077(not significant); followed by school size, with beta coefficient of 0.206 and significance value of 0.005(significant); school risk map, with a beta coefficient value of 0.099 and a significance value of 0.587(not significant); monthly allocation for DRRM, with beta coefficient value of -0.043 and significance value of 0.836; and school's topographic location, with a beta coefficient value of 0.036 and a significance value of 0.553. This finding indicates that school profiles such as schools' organizational structure are determinants of how schools implement the DRRM program.

This finding corroborates the findings of Canales (2021). He claimed that the disaster risk reduction in the Balicuatro Area is widespread however, it is not implemented systematically.

Furthermore, Rico (2019) believed that school profiles such as type of school, school population, and school location are gaps and needs in disaster preparedness that need to be determined.

Table 4. Test of Difference in the status of implementation of the school DRRM program based on Topographical location.

The analysis of variance to determine if there exists a significant difference in the status of implementation of the School DRRM Program among the public secondary schools in the second congressional district of Northern Samar based on the school's topographic location. The Analysis of Variance (ANOVA) table reveals an F value of 2.183 and a significance value of 0.103 which is greater than the 0.05 alpha level which means that there is no significant difference in the status of implementation of the School DRRM Program among the public secondary schools in the second congressional district of Northern Samar based on school's topographic location. Likewise, the Sheffe Multiple Comparisons table shows that none among comparisons, taken two (2) at a time, has a significant difference. Coastal vs. plain, with a significance value of 0.836(not significant); coastal vs. plateau, with a significance value of 0.493(not significant); coastal vs. river, with a significance value of 0.734(not significant); plain vs. plateau, with a significance value of 0.937(not significant); plain vs. river, with a significance value of 0.336(not significant); and plateau vs river, with significance value of 0.114.

The finding means that in the second congressional district of Northern Samar, the public secondary schools have almost the same status of implementation of the school DRRM program regardless of the topographic location of the school. The danger is that schools whose topographic location has high disaster risk, like coastal areas or along rivers may lack preparedness for high possible risk, like flooding, compared to those schools whose topographic location is plateau.

Furthermore, the findings suggest that despite the variation in topographical features and characteristics, public secondary schools in the second congressional district of Northern Samar are generally implementing DRRM programs to a similar extent across topographic locations. This indicates that the schools are adopting similar strategies and approaches to DRRM program implementation regardless of their topographic location.

5. Conclusions and Recommendations

In the profile pf the school, it can be concluded that most of the public secondary schools in the second district of Northern Samar are situated in the coastal area, and school risk maps are not displayed, with a small student population. Although funds allotted was observed, the school DRRM organizational structure was not commonly displayed. This implies that some of school DRRM provisions were not complied.

The status of implementation on four thematic areas of the DRRM program are implemented which are disaster prevention and mitigation, disaster preparedness, disaster response, and disaster rehabilitation and recovery. This implies that schools have established strategies, policies, and interventions to support the rehabilitation and recovery process.

The profile of the school and the status of implementation of the DRRM program are not significantly related. This implies that the effectiveness of the school's DRRM program implementation may not be directly tied to its profile.

Therefore, it is recommended that regular meetings and monitoring in schools for disaster mitigation measures may be prioritized for school heads, DRRM coordinators, and team members who are part of the core group; a comprehensive approach to creating a disaster-resilient school may be developed for schools situated in coastal, plains, mountains, and river valleys; schools may tap policymakers and stakeholders to assist the schools in enhancing resilience in economic activities, development projects, and human settlements in their quest to reduce the impact of disasters and promote sustainable growth; and for future research studies, it is recommended to assess the financial health of the schools and its implications for effective DRRM initiatives.

References

[1] National Disaster Risk Reduction and Management Council (NDRRMC), *National Disaster Risk Reduction and Management Plan (NDRRMP) 2011–2028*. Quezon City, Philippines: NDRRMC, 2011.

[2] R. J. Catanus, *Disaster Risk Reduction Management in Elementary Schools*. Dumaguete City, Philippines: Foundation University, 2018.

[3] T. S. Aisha, S. Wok, A. M. A. Manaf, and R. Ismail, "Exploring the use of social media during the 2014 flood in Malaysia," in *Proc. 2nd Global Conf. Business and Social Science (GCBSS 2015)*, Bali, Indonesia, Sept. 17–18, 2015. [Online]. Available: https://tinyurl.com/y4n3y46f

[4] E. N. Mendoza, A. G. Toledo-Bruno, and A. S. Olpenda, "Local government unit capacity for disaster risk reduction and management: From disaster to resilience," *AES Bioflux*, vol. 8, no. 2, pp. 148–156, 2016.

[5] J. Brooks, "Be safe and have a plan," *Inside Homeland Security*, vol. 11, no. 1, p. 26, 2012.

[6] K. Mamhot, *Extent of Implementation of Disaster Risk Reduction Management and Stakeholders' Participation*. Dumaguete City, Philippines: Foundation University, 2019.

[7] S. L. Cutter, "Building disaster resilience: Steps toward sustainability," *Challenges in Sustainability*, vol. 1, no. 2, p. 72, 2013.

[8] T. King and R. Tarrant, "Children's knowledge, cognitions, and emotions surrounding natural disasters: An investigation of Year 5 students in Wellington, New Zealand," *Australasian Journal of Disaster and Trauma Studies*, vol. 2013, no. 1, pp. 19–32, 2013.