

# Reconfiguration Of Disaster Risk Reduction Management in Public Schools

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*Abstract* — This study focused on the Disaster Preparedness of DepEd Secondary Schools in the 3rd congressional district, division of Camarines Sur this school year 2018-2019. The respondents were the seven districts in the 3rd congressional district, namely: Bombon, Camaligan, Canaman, Calabanga, Magarao, Pili, and Ocampo, categorized as small, medium, and big schools. Each school was provided a survey questionnaire to suffice the problems of the study. The school head, science teachers, and DRR coordinator were the ones to answer the questionnaire. The researcher used the descriptive-evaluative and development methods. Data was collected with survey questionnaires, personal interviews, and secondary data gathering.

Findings revealed that the small schools, along with their extent of awareness on disaster risk reduction policies, were interpreted as highly aware. The medium schools are highly aware in developing and recommending policy standards and actions to DepEd management on DRRM and CCA, as well as developing and recommending policy actions to enhance DepEd resilience to disasters at the community level, but they rated them lowest in developing and recommending policy actions to enhance DepEd resilience to disasters at the community level, which they interpreted only as aware. The medium schools along the extent of awareness of school in DRR policies were verbally interpreted as aware. The big schools were the highest in developing and recommending policy standards and actions to DepEd management on DRRM and CCA, which were interpreted as highly aware, but they rated the DRR school policy lowest in developing and recommending policy actions to enhance the DepEd resilience to disasters at the community level, which were interpreted only as moderately aware. Thus, the average weighted mean of the school heads' perception on the extent of awareness of the school on DRR policies was verbally interpreted as aware.

*Keywords* — *Readiness; HUMSS Students; Ex-post-Facto; Performance; Career Goal; Potential Challenges*

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## I. Introduction

Disaster preparedness has been an issue around the world. Every day we experience different changes in our environment. Disaster is a natural calamity that we cannot control, but we can have some safety measures. Disaster can strike anywhere and anytime. It can cause damage to the people that will destroy lives and properties. We can survive every disaster as long as we are aware of different safety measures that could help us surpass any disaster. DepEd is one government entity that plays a major role in implementing disaster preparedness in our nation. Pupils can help to promote disaster preparedness in our country. That is why everyone believes

that disaster preparedness should start in school. The study is deemed important to assess the school's preparedness for disaster risk. The findings of this research would be valuable to the different stakeholders, especially to the Department of Education. The importance of having disaster preparedness plans in schools may help create programs on disaster preparation. For DepEd schools, they may intensify the integration of disaster education and climate change adaptation in the lessons/curriculum. And for the Teachers, the result of this study provides a framework that shall define the effective integration of disaster preparedness in classroom discussions and activities.

### **Research Questions**

This study determined the disaster preparedness of DepEd Secondary Schools in the 3rd congressional district this school year 2018-2019.

Specifically, this sought answers to the following questions:

1. What are the perceived awareness and preparedness of the schools on Disaster Risk Reduction and Management?
2. What are the initiatives that schools undertake or implement along with Disaster Risk Reduction?
3. What developmental program or intervention can be proposed to raise the school's awareness on disaster?

### **Scope and Delimitation**

The study focused on the Disaster Preparedness of DepEd Secondary Schools in the 3rd congressional district, division of Camarines Sur this school year 2018-2019.

### **Conceptual Framework**

Several concepts were used as groundwork for the present study. The framework shows the input-process-output approach that best explains the disaster preparedness of secondary schools in DepEd Camarines Sur. In this context, we must assess the level of school awareness on disaster risk reduction, identify school disaster preparedness initiatives, and then determine the level of disaster preparedness in schools through documentary analysis and questionnaire surveys.

## **II. Methodology**

### **Research Design**

The descriptive-evaluative and developmental methods were employed in the study. The descriptive-evaluative method was used to describe the schools' perceived awareness and

preparedness for Disaster Risk Reduction and Management, as well as the disaster risk reduction initiatives that schools undertake or implement. The developmental method was used to design programs and interventions to integrate DRR across grade levels and stakeholders.

### **Methods and Procedures**

The interview methods as well as documentary analysis were employed to formulate the research instrument. The instrument was developed and composed of several parts and was used as the primary means of gathering data. The key informants of this study are the disaster coordinators, science teachers, and school heads in every school.

### **Respondents and population of the Study**

The respondents of the study are school coordinators on disaster, science teachers, and school heads in the public secondary schools in the third congressional district namely Canaman, Camaligan, Magarao, Bombon, Calabanga, Pili and Ocampo Districts. Total enumeration was used for teacher respondents. Schools in the third congressional districts were composed of 1 science coordinator, DRR coordinators and school head in charge.

### **Data Analysis Techniques**

The data was treated statistically using the following statistical tools: Summation, frequency, percentage, and weighted mean were used in assessing the extent of preparedness and awareness of school on disaster risk reduction. Weighted mean was used to assess the level of awareness and preparedness of schools in disaster preparation. Rank was used to determine initiatives, interventions, and disasters encountered by the teachers.

### III. Results and Discussion

**Table 1A. Extent of School Awareness and Preparedness along Disaster Risk Reduction Policies**

PARAMETERS	ST	Rank	Inter	SC	Rank	Inter	SH	Rank	Inter	AWM	Rank	Inter
1. Develop and recommend policy standards	4.80	1	HA	4.60	1	HA	4.44	1	HA	4.60	1	HA
2. Initiate collaborative activities	4.30	9	HA	3.90	8	A	3.01	9	A	3.70	9	A
3. Develop and recommend policy actions	4.80	3	HA	4.60	2	HA	3.80	5	A	4.11	3	HA
4. Create and operate an Emergency Operations Center	4.50	7	HA	4.10	5	A	3.51	7.5	A	4.10	6	A
5. Serve as the clearing house for all DRRM/CCA	4.80	2	HA	4.50	3	HA	4.20	2	HA	4.51	2	HA
6. Convene the members of the DRR teams	4.85	4	HA	4.20	4	HA	4.01	4	A	4.32	4	HA
7. Facilitate capacity development.	4.30	8	HA	4.10	6	A	4.21	3	A	4.20	5	HA
8. Develop and recommend policy standards and actions to DepEd management on DRRM and CCA.	4.50	6	HA	3.91	9	A	3.60	6	A	4.01	7.5	A
9. Initiate and coordinate cooperation and collaborative activities local groups along DRR policies	4.50	5	HA	4.01	7	A	3.50	7	A	4.02	7.5	A
10. Enhance the DepEd's resilience to disasters at Community level	4.00	10	HA	3.63	10	A	2.67	10	MA	3.40	10	A
<b>AWM</b>	<b>4.55</b>			<b>4.16</b>			<b>3.73</b>			<b>4.12</b>		
<b>Interpretation</b>			<b>HA</b>			<b>A</b>			<b>A</b>			<b>A</b>

Legend: Legend: ST-Science Teachers, SC- Science Coordinators, SH-School Heads, Inter-Interpretation

**Range Interpretation**

4.20 – 5.00 (HA) Highly Aware

3.40 – 4.19 (A) Aware

2.60 – 3.39 (MA) Moderately Aware

1.80 – 2.59 (LA) Less Aware

1.00 – 1.79 (NA) Not Aware

Table 1 presents the respondent's assessment on the extent of awareness on DRR long policies. The data show that over-all, the extent of awareness of school along Disaster Risk Reduction Policy obtained an average weighted mean of (AWM= 4.1) which means that this aspect is being observed by the school stakeholders. It can be gleaned further that science teachers rating (AWM=4.55) was the highest while the school heads' rating (AWM= 3.73) was the lowest. The findings revealed that teachers were fully aware of their participation in disaster risk reduction policies in school.

**Table 2A. Level of Preparedness of the Schools Common Occurrence of Disaster along Earthquake**

PARAMETERS	ST	R a n k	I n t e r	SC	R a n k	I n t e r	SH	R a n k	I n t e r	AW M	R a n k	I n t e r
1. Promotion of earthquake awareness among students and teachers.	4.71	1	HP	4.24	1	HP	4.23	3	HP	4.40	1	HP
2. Capacity building within teachers	4.12	2	P	4.23	2	HP	4.22	4.5	HP	4.20	2	HP
3. Technical assistance to strengthen national or local monitoring networks;	3.20	7.5	MP	3.67	5	P	4.22	4.5	HP	3.70	4.5	P
4. Public awareness and education on seismic hazards	3.25	6	MP	3.44	7	P	4.45	1	HP	3.71	4.5	P
5. Enhance early warning systems to at-risk communities.	3.58	3	LP	4.10	3	P	4.44	2	HP	4.01	3	P
6. Provide earthquake hazard assessments	3.01	9	MP	3.85	4	P	3.23	9	MP	3.40	7	P
7. Provide training program for emergency responders	2.58	10	P	3.45	6	P	3.01	10	MP	3.01	10	MP
8. Has methods and schedule for exercising emergency response plans	3.21	7.5	MP	3.43	8	P	3.44	7	P	3.42	8	P
9. Has relief and rescue rather than warning and evacuation	3.55	4	P	3.23	9	MP	4.01	6	P	3.67	6	P
10. Has current preparedness plan in school	3.40	5	P	3.01	10	MP	3.34	8	MP	3.30	9	MP
<b>AWM</b>	<b>3.46</b>			<b>3.67</b>			<b>3.86</b>			<b>3.71</b>		
<b>Interpretation</b>	<b>P</b>			<b>P</b>			<b>P</b>			<b>P</b>		

Legend: ST-Science Teachers, SC- Science Coordinators, SH-School Heads,

**Range Interpretation**

4.20 – 5.00 (HP) Highly Prepared

3.40 – 4.19 (P) Prepared

2.60 – 3.39 (MP) Moderately Prepared

1.80 - 2.59 (LP) Less Prepared

1.0 - 1.79 (NP) Not Prepared

The data on the level of preparedness of the schools in the 3<sup>rd</sup> congressional district following the earthquake is shown in Table 2A. The average weighted mean of school coordinators along the extent of preparedness of the school’s common occurrence of Disaster Risk Reduction along earthquakes was (AWM 3.86) with a qualitative description of prepared along these areas. The consolidated ratings of the three groups of respondents revealed promotion of earthquake awareness among students and teachers was rated highly prepared obtaining an overall weighted average of 3.71.

**Table 2b. Level of Preparedness of the Schools Common Occurrence of Disaster along Fire**

PARAMETERS	ST	R a n k	I n t e r	SC	R a n k	I n t e r	SH	R a n k	I n t e r	AW M	R a n k	I n t e r
1.In place hazard-based sites and settlements planning	1.79	10	NP	1.80	10	NP	2.05	10	LP	1.90	10	LP
2. Technical assistance and rapid capacity building	2.61	6	MP	2.64	8	MP	2.67	6	MP	2.61	8	MP
3. Public awareness and capacity building activities among stakeholders	3.40	2	P	3.45	2	P	3.46	2	P	3.40	2	P
4.Has prepared outline of emergency notification procedures	2.67	5	MP	2.67	6	MP	2.67	6	MP	2.71	6	MP
5.School has local emergency equipment and facilities and the persons responsible for them	1.84	9	LP	1.85	9	LP	2.55	9	LP	2.11	9	LP
6.Has set of evacuation plans	2.60	8	MP	2.70	5	MP	2.90	5	MP	2.70	5	MP
7.Have attended training program for emergency responders	3.08	3	MP	3.29	3	MP	3.31	3	MP	3.20	3	MP

8.Has methods and schedule for exercising emergency response plans	3.01	4	MP	3.05	4	MP	3.23	4	MP	3.11	4	MP
9.Has relief and rescue rather than warning and evacuation	2.61	6	MP	2.67	6	MP	2.67	6	MP	2.70	7	MP
10.Has current preparedness plan in school	3.41	1	P	4.23	1	HP	4.34	1	HP	4.01	1	HP
<b>AWM</b>	<b>2.71</b>			<b>2.84</b>			<b>2.99</b>			<b>2.80</b>		
<b>Interpretation</b>	<b>MP</b>			<b>MP</b>			<b>MP</b>					<b>MP</b>

*Legend: ST-Science Teachers, SC- Science Coordinators, SH- School Head, Inter - Interpretation Range Interpretation*

*4.20 – 5.00 (HP) Highly Prepared      2.60 – 3.39 (MP) Moderately Prepared*

*3.40 – 4.19 (P) Prepared                      1.80 – 2.59 (LP) Less Prepared*

*1.0 – 1.79 (NP) Not Prepared*

The data on the level of preparedness of the schools in the 3<sup>rd</sup> congressional district along fire is shown in Table 2B. The consolidated ratings of the three groups of respondents revealed having current preparedness plan in school are very needed in times disaster and this was rated prepared obtaining an overall weighted average of 2.80, The data show that over-all, the level of preparedness of the school's common occurrence of disaster along fire obtained an average weighted mean of (AWM= 2.80) which means that schools are moderately prepared along with DRR preparedness.

**TABLE 2C. Level of Preparedness of the Schools Common Occurrence of Disaster along Flooding**

PARAMETERS	ST	R a n k	I n t e r	SC	R a n k	I n t e r	SH	R a n k	I n t e r	A W M	R a n k	I N T E R
1.Promotion of flood-resistant	1.20	10	NP	1.33	10	NP	1.21	10	NP	1.20	10	NP
2.Introduction of agriculture technique	4.44	1	HP	4.45	1	HP	4.47	1	HP	4.51	1	HP
3.Development of and planning disease surveillance	3.44	2	P	3.51	3	P	3.52	3	P	3.50	2.5	P
4.Contingency planning for stakeholders.	1.82	9	LP	2.1	9	LP	2.2	9	LP	2.01	9	LP
5.Health education campaign	2.51	7	LP	2.44	8	LP	2.67	5	MP	2.51	7	LP
6.Coordination with other stakeholders	3.41	3	P	3.42	4	P	3.42	4	P	3.40	4	P
7.Capacity building on preparedness	2.67	5	MP	2.66	5	MP	2.67	5	MP	2.71	5	MP
8.Flood and associated hazard early warning systems	2.44	8	LP	2.45	7	LP	2.44	8	LP	2.40	8	LP
9.Development of guidelines, plans, laws, rules	2.61	6	MP	2.64	6	MP	2.67	5	MP	2.61	6	MP
10.Community-based activities	3.41	3	P	3.56	2	P	3.61	2	P	3.50	2.5	P
<b>AWM</b>	<b>2.8</b>			<b>2.86</b>			<b>2.89</b>			<b>2.8</b>		<b>MP</b>
<b>Interpretation</b>	<b>MP</b>			<b>MP</b>			<b>MP</b>			<b>MP</b>		

Legend: ST-Science Teachers, SC- Science Coordinators, SH- School Head, Interpretation

Range      Interpretation  
 4.20 – 5.00 (HP) Highly Prepared  
 3.40 – 4.19 (P) Prepared  
 2.60 – 3.39 (MP) Moderately Prepared  
 1.80 – 2.59 (LP) Less Prepared  
 1.0 – 1.79 (NP) Not Prepared

The data on the level of preparedness of the schools in the 3<sup>rd</sup> congressional district along fire is shown in Table 2C. The data show that over-all, the level of preparedness of the school's common occurrence of disaster along flooding obtained an average weighted mean of (AWM= 2.8) which means that school are moderately prepared along with DRR preparedness.



**Table 2D. Level of Preparedness of the Schools Common Occurrence of Disaster along Diseases**

PARAMETERS	ST	R a n k	I n t e r	SC	R a n k	I n t e r	SH	R a n k	I n t e r	A W M	R a n k	I n t e r
1. Support vaccination	1.82	7	LP	1.83	7	LP	2.01	7	LP	1.89	7	LP
2.Capacity building and training	1.67	9	NP	1.77	8	NP	1.76	8	NP	1.73	8	NP
3.Training for disease recognition and reporting	1.66	10	NP	1.65	10	NP	1.65	10	NP	1.65	10	NP
4.Development of and planning disease surveillance	1.71	8	NP	1.69	9	NP	1.71	9	NP	1.70	9	NP
5.A concentration on contingency planning for health services and commodities	2.44	4	LP	2.61	5	LP	2.64	4	LP	2.56	5	LP
6.Health education	2.33	6	LP	2.54	6	LP	2.61	5	LP	2.49	6	LP
7.Coordination towards resilience to evaluate structural needs	3.41	2	MP	3.45	2	MP	2.44	6	LP	3.10	3	MP
8.Hygiene promotion programs to reduce fecal-oral disease transmission	3.51	1	P	3.6	1	P	3.78	2	P	3.63	1	P
9.Protecting water sources to prevent contamination	3.10	3	MP	3.34	3	MP	3.45	3	P	3.30	2	MP
10.Preparedness training with community, local, national	2.34	5	LP	2.76	4	MP	3.87	1	P	2.99	4	MP
<b>AWM</b>	<b>2.40</b>		<b>LP</b>	<b>2.52</b>		<b>LP</b>	<b>2.59</b>		<b>LP</b>	<b>2.51</b>		<b>LP</b>
<b>Interpretation</b>	<b>LP</b>			<b>LP</b>			<b>LP</b>					

Legend: ST-Science Teachers, SC- Science Coordinators, SH- School Head, Interpretation

Range

Interpretation

4.20 – 5.00 (HP) Highly Prepared

3.40 – 4.19 (P) Prepared

2.60 – 3.39 (MP) Moderately Prepared

1.80 – 2.59 (LP) Less Prepared

1.0 – 1.79 (NP) Not Prepared

The data on the level of preparedness of the schools in the 3<sup>rd</sup> congressional district along fire is shown in Table 2D. The data show that over-all, the level of preparedness of the school's common occurrence of disaster along with diseases obtained an average weighted mean of (AWM= 2.51) which means that schools are less prepared along with DRR preparedness.

**Table 3. Disaster Risk Reduction along Prevention and Management**

PARAMETERS												
	ST	Rank	Inter	SC	Rank	Inter	SH	Rank	Inter	AWM	Rank	INTER
1. Designate a permanent focal person	4.7	1	HA	4.5	2	HA	4.34	3	HA	4.6	1.5	HA
2. Ensure integration of DRRM CCA in School	4.2	2	HA	4.6	1	HA	4.78	1	HA	4.6	1.5	HA
3. Increased level of awareness	3.2	7	MA	3.6		A	4.01	5	A	3.6	5	A
4. Developed comprehensive preparedness and response	4.1	3	A	3.7	4	A	4.45	2	HA	4.1	3.5	A
5. Strengthened partnership	3.7	4	A	4.1	3	A	4.23	4	HA	4.1	4	A
6. Prompt assessment of needs and damages at all levels	2.7	8	MA	2.8	9	MA	3.2	8	MA	3.0	10	MA
7. Enhanced and effective community-assessment	2.5	9	LA	3.4	7	A	2.89	10	MA	3.0	9	MA
8. Monitoring forecasting and early warning systems improved	3.4	5	A	3.6	5	A	3.32	7	MA	3.5	6	A
9. Increased resiliency of infrastructure system	2.5	9	LA	3.2	8	MA	3.12	9	MA	3.0	8	MA
10. Increased level of awareness	3.4	5	A	2.7	10	MA	3.34	6	MA	3.2	7	MA
<b>AWM</b>	<b>3.4</b>			<b>3.6</b>			<b>3.77</b>			<b>3.6</b>		
<b>INTERPRETATION</b>			<b>A</b>			<b>A</b>			<b>A</b>			<b>A</b>

Legend: ST-Science Teachers, SC-Science Coordinators, SH- School Head, Interpretation

Range Interpretation

4.20 – 5.00 (HA) Highly aware

3.40 – 4.19 (A) Aware

2.60 – 3.39 (MA) Moderately Aware

1.80 – 2.59 (LA) Less Aware

1.0 – 1.79 (NA) Not Aware

The respondent's assessment on the extent of awareness on Disaster Risk Reduction along disaster prevention and management is shown in Table 3. The consolidated ratings of the three groups of respondents revealed that ensuring the integration of DRRM, CCA and Peace Education in School-Based Management System, School Improvement Plan, and other measures and initiatives of school effectiveness was rated highly aware obtaining an over-all weighted average of 4.57,

**Table 4. Development Program Integration of Disaster Risk Reduction across grade level and stakeholders**

Priority Areas	Long Term Goals	Objectives
Disaster Preparedness	Establish and strengthen capacities of communities to anticipate, cope and recover from the negative impacts of emergency occurrences and disasters	1. Increase the level of awareness of the community to the threats and impacts of all hazards, risks and vulnerabilities 2. Equip the community with the necessary skills to cope with the negative impacts of a disaster 3. Increase the capacity of institutions 4. Develop and implement comprehensive national and local disaster preparedness policies, plans and systems
Prevention and Mitigation	Avoid hazards and mitigate their potential impacts by reducing vulnerabilities and exposure and enhancing capacities of communities	1. Reduce vulnerability and exposure of communities to all hazards 2. Enhance capacities of communities to reduce their own risks and cope with the impacts of all hazards
Disaster Response	Provide life preservation and meet the basic subsistence needs of affected population based on acceptable standards during or immediately after a disaster	1. To decrease the number of preventable deaths and injuries 2. To provide basic subsistence needs of affected population 3. To immediately restore basic social services
Rehabilitation and Recovery	Restore and improve facilities, livelihood and living conditions and organizational capacities of affected communities, and reduced disaster risks in accordance with the "building back better" principle	1. To restore people's means of livelihood and continuity of economic activities and business 2. To restore shelter and other buildings/installation 3. To reconstruct infrastructure and other public utilities; 4. To assist in the physical and psychological rehabilitation of persons

The development program integration of disaster risk reduction across grade level and stakeholders in the third congressional district in the Division of Camarines and anchored to DepEd circulars and memorandums is shown in Table 4. The NDRRMP outlines the activities aimed at strengthening the capacity of the national government and the local government units (LGUs) together with partner stakeholders, to build the disaster resilience of communities and to institutionalize arrangements and measures for reducing disaster risks, including projected climate risks and enhancing disaster preparedness and response capabilities at all levels.

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#### **Memorandums/Deped Orders and Guidelines on DRRM**

- [37] Disaster Preparedness Measures for Schools (DO 83, s. 2011)
- [38] Guidelines on the Use of the Quick Response Fund (DM 104, s. 2011) – that can be used by disaster-affected schools; Enforcement of support to grant calamity loans to teaching and non-teaching staff in areas affected by calamities (DO 10, s. 2011)
- [39] Quarterly conduct of the National School-based Earthquake and Fire Drills (DO 48, s. 2012)
- [40] Continuing Fire Safety and Awareness Program (FSAP) in Schools (DO 72, s. 2012)
- [41] Integration of disaster risk reduction in the data collection forms incorporated in the Enhanced Basic Education Information System (EBEIS) (DO 23, s. 2014)
- [42] Guidelines on Student-Led School Watching and Hazard Mapping (DO 23, s. 2015)
- [43] Promoting Family Earthquake Preparedness to all elementary and secondary schools with instruction and guidance (DO 27, s. 2015)
- [44] Comprehensive Disaster Risk Reduction and Management in Basic Education Framework (DO 37, s. 2015).