

Flood Disaster Preparedness and Practices of the Public Elementary Schools in Selected Flood - Prone Areas in Zambales, Philippines

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Abstract: This study aimed to determine the flood disaster management practices of teachers and pupils in public elementary schools from selected flood-prone areas of Zambales during the School Year 2015-2016.

This research is quantitative in nature which utilized a descriptive research design with survey questionnaire as the primary method used in gathering data and information from seventeen (17) teachers and two hundred thirty two (232) pupils sourced from public elementary schools situated in flood-prone areas in Zambales, Philippines.

The pupil-respondents indicate that the most important practice during disasters is to see to it that each members of the family has a bag pack to be used for personal and individual belongings in case of emergency. The teacher-respondents indicate that the most important practice is participating in disaster risk reduction training and orientation in school as conducted by local Disaster Risk Reduction Management Council / institution / barangay to avoid bad effects of calamity, participating in actual drill and encourage all family members to participate, planning and familiarizing all possible routes to “safe areas” or evacuation centers” during calamity, becoming aware and updating oneself of the first-aid procedures and search and rescue trainings, installing electrical outlet if possible at higher level of walls, securing flood materials such as raincoat, pair of boots, life-vest, life-saver or raft, ropes, first aid kits, flashlights, batteries, radio, etc., securing emergency money or cash and making plan on flood management to prevent severe effects of the disaster. This study found out that teachers always practiced keeping oneself calm while waiting for relief and rescue and assistance and eating only well cooked foods and securing leftovers from contamination during flood while pupil-respondents indicate that during floods, crossing or submerging into flood waters should be avoided and eating only well-cooked food and protect leftovers against contamination were always practiced by the students. There is a significant difference on the practices of the pupil-respondents on adaptation and mitigation before the flood when grouped according to family monthly income profile variable of which pupils who belong to families with low income are mostly affected and sex profile variable on adaptation and mitigation during the flood. However, between the general emergency preparedness, and the adaptation and mitigation management practices before, during and after the flood, the pupil-respondents practiced with moderate relationship while teacher-respondents exhibited very high relationship in terms of practice. Based on the summary of the investigations conducted and the conclusions arrived at, the researcher offers to conduct risk reduction trainings, seminars and orientations in the school that would educate and disseminate vital knowledge and awareness.

Keywords: Determine The Flood Disaster Management Practices, Pair Of Boots, Life-Vest, Life-Saver Or Raft, Ropes.

1. INTRODUCTION

The Philippines, located near the Pacific Ocean, is among the most disaster-prone and at-risk countries, with many areas being regularly affected by a number of natural disasters, ranging from typhoons, heavy monsoon rains, flooding, earthquakes, landslides, volcanic eruptions, public health emergencies and other forms of natural devastation (Miranda, 2014). The aftermath of floods brought about by heavy rains and typhoons is worse as it has been. Wageningen University

& Research (2014) cited that, “the impact of conflicts and disasters on people’s security, livelihood, and future prospects is often dramatic, and disproportionately hits those that are already poor and marginalized. Despite efforts to address these problems, these are likely to continue to mark global development in the decades to come. Disasters have become more frequent and intense, due to the increasing social vulnerability for instance through the formation of slum areas on steep slopes, environmental degradation and human-induced climate change.”

Teachers are affected by natural disasters such as floods, earthquakes, and strong winds therefore it has not been an easy task to deal with disaster leaving teachers in a helpless situation. This has been a recurring problem hence; there is a need to find an amicable solution (Ocholla et al., 2010). There is an urgent need to create awareness and preparedness of teachers in this kind of situation. The UNISDR (2007) states that it should be a concern for everybody including teachers to build a culture of safety by being prepared before a disaster happens. In this proposition, the disaster preparedness should also be taught to teachers as they handle and oversee their learners as well. In China, 120 million people were greatly affected by floods where 5 million people lost their homes and many of whom are missing. Disasters, of any kind greatly affect schools and most often cause disruptions in school. With that said, trainings regarding disaster preparedness are of great need among teachers.

Floods elicit concerns amidst destruction year in year out but if drastic measures toward flood disaster preparedness are put in place then the damage will be reduced (Ocholla et al., 2010). There is a need for countries to comply with the requirements of Millenium Development Goal (MDG), specifically Priority 2 which is related to teaching basic education to primary children. It is common knowledge that education is disrupted when there is disaster outbreak. There is a need to integrate risk reduction education in all primary schools as part of the national curriculum to ascertain that children and teachers can protect themselves from natural hazards or disasters by knowing exactly what to do when there is an outbreak as discussed by UNISDR (2010:18). The integration of disaster risk reduction in the curriculum is considered to be of high importance due to phenomenal climate change.

According to Ambuchi (2001), there is a need to develop awareness on the prevention and management of flood disasters. This should be practiced and adopted as school culture where specialist and teachers are involved. This would in turn immensely help the teachers prepare and curb wastages in the educational programmes. Head teachers and teachers should be adequately prepared for disaster prevention control and mitigation (Mutugi & Maingi (2011). Disaster risk reduction should be developed and implemented in all public schools located in flood prone areas. These should include early warning signs, practicing evacuation activities, develop communication, buildings of schools is raised grounds and capacity building for teachers and head teachers. Being trained on issues of disaster risk reduction will go a long way in enhancing teachers’ teaching and learning.

Zambales is one of the provinces prone to flooding. In August 2013, Masinloc, town in Zambales province was placed under a state of calamity due to flooding caused by Labuyo (with international name Utor). Most barangays experienced landslides and flash floods because of the strong currents of water brought by the deluge of the typhoon on its first day. The typhoon Labuyo not only displaced residents but also destroyed roads and bridges. During these times, the most affected are those who live in low-lying areas, poor families with small houses. However, well-off families were neither spared. Based on the report, seven barangays in Masinloc town were flooded, with waters reaching two to five feet high before and after the typhoon’s landfall. The town areas affected were North Poblacion, South Poblacion, Inhobol, Sto. Rosario, Tapuac, Sta. Rita, and Collat and left at least 4,200 families or 25,229 people displaced and relocated in evacuation centers. Meanwhile, a part of the highway in Palauig town was washed-away, leaving only one lane passable (GMA News, 2013).

The occurrence of floods is sometimes unpredictable as it is transient in nature. It may happen anytime and anywhere. Basically, flood threat is expected to flood-prone areas and poses injurious impacts to the community, local funds and resources, and most of all, the families, individuals, their resources, and the schooling of their children. To these affected areas, this is a major problem and a concern that the local and national government should look into.

The study focused on collecting data from teachers and pupils as recipients for DRRM programs. The study assessed their flood disaster management practices particularly during the onset of floods in their respective schools and areas.

2. METHODOLOGY

The research study utilized a descriptive research design which enabled the researcher to collect information that best describe the existing problem by asking respondents of their perceptions with regard to their flood disaster management and practices.

The participants of the study were the two hundred thirty two (232) pupil-respondents and seventeen (17) teacher-respondents respondents from the four (4) selected municipalities of Zambales of which there are identified barrios or barangays as prone to flooding. These areas have public elementary schools under the Department of Education (DepEd), Division of Zambales, Region 3.

Locale of the Study:

This study was conducted at selected elementary schools within the division of Zambales which are flood-prone areas. The Province of Zambales is located in the Central Luzon. It is one of the seven provinces in Region III. Its land area is 3,830.8 km². The major dialects are Iloko, Tagalog and Zambal. The capital town is Iba. It is topographically lies on the western part of Region III along the West Philippine Sea. It is said to be the outlet of typhoons originated from the Pacific Ocean at the Eastern part of the country. The province of Zambales consists of 13 municipalities with a total number of 247 barangays. The following municipalities are Botolan with 31 barangays, Cabangang with 22 barangays, Candelaria with 16 barangays, Castillejos with 14 barangays, Iba with 14 barangays, Masinloc with 13 barangays, Olongapo City with 17, Palauig with 19, 14 in San Antonio, 11 in San Felipe, 18 in San Marcelino, 17 in San Narciso, 25 in Sta. Cruz, and 16 barangays in Subic, Total of 247 barangays. Schools situated in different towns are combinations of rural, sub-urban and urban institutions.

Questionnaires were distributed to the teachers and students of the Department of Education in the four (4) selected towns of Zambales which are usually flooded during rainy season. These towns are the following: Iba, Palauig, Masinloc and Botolan. The specific areas which experienced recurring floods in Iba are as follows: (1)Tuaque, Tambac, Sinamboangan and Marangla of San Agustin, Lipay-Dingin, and some areas in Tambac,Palanginan; (2) Tapuac, Collat and Sta. Rita of Masinloc; (3) Some places in Palauig such as Macarang and Sto. Tomas; (4) Taugtog, Oaudpod, San Juan, Carael, and Batonlapoc of Botolan.

The map showing the map of Zambales as the locale of the study is presented in Figure 1.

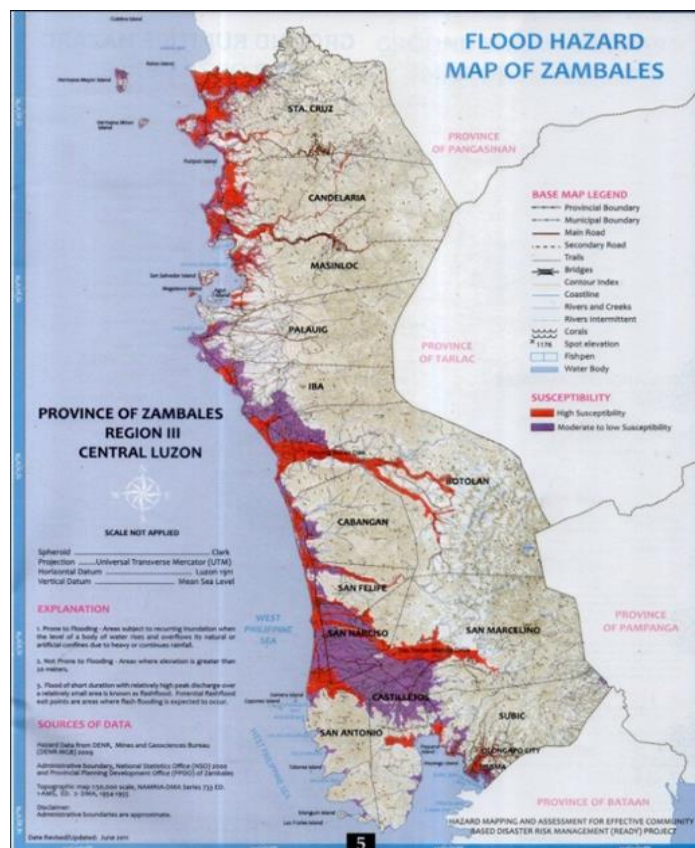


Figure 1. Map of Zambales

The respondents of the study included Grade VI teachers and pupils from selected elementary schools located in the municipalities of Iba, Palauig, Masinloc and Botolan. The Grade VI teachers are purposively chosen as advisers of the Grade VI learners. The Grade VI pupils are considered the most receptive and responsible prospective respondents as they can clearly understand the questions in questionnaire better than lower grade levels.

The selections of respondents are according to the severity of the flood during rainy season in identified flood-prone areas. In Iba, there are only few affected areas/barangays such as Tuaque, Marangla, Sinamboangan and Marangla in San Agustin, Tambac, Palanginan, and few from Lipay-Dingin which have experienced flooding caused by typhoons and heavy rains in the previous years. In Palauig, there are two barangays which experienced floods in the previous years such as Macarang and Sto.Tomas. The schools of schooling children are located in Bato Elementary School and Palauig Central Elementary Schools. In Masinloc, among the highly affected areas are Collat, Sta. Rita and Tapuac; and the fourth one is the Municipality of Botolan with most of the respondents from the selected flood-prone areas such as Crael, Batonlapoc, Paudpod, and San Juan.

This study was conducted at selected elementary schools within the division of Zambales of which areas are prone to flooding.

The survey questionnaire which was used as the main tool for data gathering was adopted from Klinefelter (2014), FEMA (2014), and CLSU, Institute for Climate Change and Environmental Management (2011).

3. RESULTS AND DISCUSSION

Preparedness of Students during Flood Disaster:

Table 1 shows the level of preparedness of the students during flood disaster.

The respondents indicated that they were often prepared in all the activities in times of calamities such as flood during rainy season. However, the students indicated that they are sometimes prepared by posting on the wall the contact numbers of Local Disaster Risk Reduction & management Council, and of relatives.

Table 1 Preparedness of Students during Flood Disaster

	Items	Weighted Mean	Qualitative Interpretation
1	Participates in disaster risk reduction training and orientation in school as conducted by local DRRMC / institution / barangay to avoid bad effects of calamity.	3.43	Often Prepared
2	Participates in actual drill and encourage all family members to participate	3.81	Often Prepared
3	Posts on the wall the contact numbers of Local Disaster Risk Reduction & management Council, and of relatives.	2.66	Sometimes Prepared
4	Plan and familiarizes all possible routes to "safe areas" or evacuation centers" during calamity.	3.94	Often Prepared
5	Aware and updates oneself of the first-aid procedures and search and rescue trainings.	3.65	Often Prepared
6	Install electrical outlet if possible at higher level of walls.	3.99	Often Prepared
7	Each members of the family has a bag pack to be used for personal and individual belongings in case of emergency and evacuation.	4.56	Always Prepared
8	The family secures flood materials such as raincoat, pair of boots, life-vest, life-saver or raft, ropes, first aid kits, flashlights, batteries, radio etc.	3.88	Often Prepared
9	Secure emergency money or cash.	4.53	Always Prepared
10	Makes plan on flood management to prevent severe effects of the disaster.	4.20	Always Prepared
	Overall Weighted Mean	3.86	Often Prepared

The computed overall weighted mean on the perception was 3.86 with qualitative interpretation of "often practiced".

Because of the awareness of people in the Philippines during the tragic misfortunes of many “Yolanda” typhoon victims which wreaked havoc in Visayas region and in Metro Manila during “Ondoy”, the respondents have made preparations of having bags and personal bags packed for emergency cases. Orientation from teachers, religious leaders and as advertised in the radio and television, on the importance of having bags where important items such as flashlights, clothing, batteries, canned goods, medicines, money and water should be carried. According to the student-respondents, they used their old school bags and kept them always ready in case of emergency and calls for preventive or force evacuation. Miranda (2014) reported that, “the Philippines, located near the Pacific Ocean, is among the most disaster-prone and at-risk countries, with many areas being regularly affected by a number of natural disasters, ranging from typhoons, heavy monsoon rains, flooding, earthquakes, landslides, volcanic eruptions, public health emergencies and other forms of natural devastation.”

Teachers:

Table 2 shows the level of preparedness of teachers towards emergency disaster.

Teachers indicated that they are often prepared in participating disaster risk reduction training and orientation in school as conducted by local DRRMC/institution/barangay to avoid bad effects of calamity, actual drill, and even encouraging all family members to participate, planning, and familiarizing all possible routes to “safe areas” or evacuation centers” during calamity including awareness and updating oneself of the first-aid procedures and search and rescue trainings, installing electrical outlets if possible at higher level of walls and securing flood materials such as raincoat, pair of boots, life-vest, life-saver or raft, ropes, first aid kits, flashlights, batteries, radio etc, securing emergency money or cash and making plan on flood management to prevent severe effects of the disaster.

Table 2 Preparedness of Teachers during Flood Disaster

	Items	Weighted Mean	Qualitative Interpretation
1	Participates in disaster risk reduction training and orientation in school as conducted by local DRRMC / institution / barangay to avoid bad effects of calamity.	4.06	Often Prepared
2	Participates in actual drill and encourage all family members to participate	3.65	Often Prepared
3	Posts on the wall the contact numbers of Local Disaster Risk Reduction & management Council, and of relatives.	2.94	Sometimes Prepared
4	Plan and familiarizes all possible routes to “safe areas” or evacuation centers” during calamity.	3.82	Often Prepared
5	Aware and updates oneself of the first-aid procedures and search and rescue trainings.	3.88	Often Prepared
6	Install electrical outlet if possible at higher level of walls.	3.71	Often Prepared
7	Each members of the family has a bag pack to be used for personal and individual belongings in case of emergency and evacuation.	3.29	Sometimes Prepared
8	The family secures flood materials such as raincoat, pair of boots, life-vest, life-saver or raft, ropes, first aid kits, flashlights, batteries, radio etc.	3.53	Often Prepared
9	Secure emergency money or cash.	3.53	Often Prepared
10	Makes plan on flood management to prevent severe effects of the disaster.	3.47	Often Prepared
	Overall Weighted Mean	3.59	Often Prepared

The local government have conducted several training and simulation activities on fire, earthquake, and flood disasters. Teachers were encouraged to participate and guide the school children during the simulation activity. This activity provides awareness and wakening call and prepare for events where knowledge imparted can be used to avoid massive destruction of life and property. Participation is not only for school children activity but also for personal and family preparation for nobody is excused and spared from the natural phenomena. Anybody could be a victim of the disaster but it can be prevented and alleviate any damages.

The disaster management and practices are measures put in place so as to prepare for flood disasters. The disaster preparedness include early warning systems, drilling of dikes, training of teachers on how to handle emergencies, investing in strong school building structures before disasters take place in order to reduce the damages brought about by floods (Ocholla et al., 2010). Flood as a disaster is associated with absenteeism due to inaccessible to roads, illnesses such as leptospirosis, diarrhea, dysentery, and flood-related health problems or water-borne diseases, and disruption of school activities and classes.

Practices of the Pupil-Respondents towards Adaptation and Mitigation:

Before the Flood:

Table 3 shows the practices of the students towards adaptation and mitigation before the flood.

Table 3 Adaptation and Mitigation Practices of the Students before the Flood

	Adaptation and Mitigation before the Flood	Weighted Mean	Qualitative Interpretation
1	Familiarizes the flood hazards in your place or area.	4.42	Always Practiced
2	Makes evacuation plan.	4.22	Always Practiced
3	Orients family members on what to do.	4.15	Often Practiced
4	Reads information about measures if there is a threat of flooding caused by heavy rains.	4.14	Often Practiced
5	Makes regular repair to buildings / structures / houses to cope with anticipated risk of flooding.	4.01	Often Practiced
6	Checks and updates the PAGASA / DRRMC / Barangay cell phones and contact numbers posted on the walls.	3.49	Often Practiced
7	Checks important stuffs and appliances whether these are places on the higher level of the house or building.	4.45	Always Practiced
8	Gives heed to the warnings and advisories of the local DRRMC or barangay.	4.49	Always Practiced
9	Secures the important documents and keeps them in a resealable plastic bags or container.	4.64	Always Practiced
10	Prepares emergency 72 our kit which includes easy to prepare and ready to eat foods, drinking water on covered containers, medicines, candles, lighters etc.	4.14	OP
	Overall Weighted Mean	4.22	Always Practiced

The pupil-respondents indicated that the mitigation and adaptation activities were often to always practiced obtaining a rating of 3.49 to 4.64. The computed overall weighted mean on the practices towards adaptation and mitigation before the flood was 4.22 interpreted as “always practiced”. The high ratings given imply that all are important practices.

Waters and mud flows are considered to be destructive of property including important papers and documents. According to the respondents, before the flood, they make sure to secure important documents as transcript of records, land titles, passports, visas, diplomas, birth, marriage and death certificates, affidavits and other pertinent papers. Some had made several duplicate and authenticated copies to assure the documents are kept and secured in a resealable plastic bag or envelope. The barangay officials and workers are roaming around to give warnings and reminders for possible evacuation to high places, evacuation centers, schools, and gymnasium or in church buildings. Every barangay provide orientations

among the constituents to make sure cell phones are fully charged, and should be ready and understand the tone of alarm for first warning, second warning or force evacuation.

Table 4 shows the practices of the pupil-respondents towards adaptation and mitigation during the flood.

The pupil-respondents' practices during floods include avoiding crossing or submerging into flood waters and eating only well-cooked food and protect leftovers against contamination with a rating of 4.22 and 4.25 respectively. Other practices were keeping oneself calm, staying at home, moving to evacuation areas and others with ratings ranging from 3.25 to 4.13. The computed overall weighted mean on the practices towards adaptation and mitigation during the flood was 3.77 interpreted as "often practiced".

Table 4 Adaptation and Mitigation Practices of the Teachers during the Flood

	Adaptation and Mitigation during the Flood	Weighted Mean	Qualitative Interpretation
1	Uses life vest, life saver or raft	3.25	Sometimes Practiced
2	Uses rope while crossing flood waters.	3.53	Often Practiced
3	Asks for help and rescue from Disaster Risk Reduction and Management Council.	3.51	Often Practiced
4	Stays at home.	3.59	Often Practiced
5	Climbs up or settles at the higher level of the house.	3.97	Often Practiced
6	Avoid crossing or submerging into flood waters.	4.22	Always Practiced
7	Keep oneself calmed while waiting for relief and rescue from others.	4.13	Often Practiced
8	Relocates to relatives not affected by floods.	3.73	Often Practiced
9	Moves immediately to evacuation centers or areas.	3.56	Often Practiced
10	Eats only well-cooked food and protect leftovers against contamination.	4.25	Always Practiced
	Overall Weighted Mean	3.77	Often Practiced

During typhoon and flood, the respondents are aware on the different kinds of diseases that may cause infections like diarrhea and amoebiasis. These can be prevented if an individual is careful in eating leftovers and uncooked foods. During the flood, they were oriented and instructed not to cross or traverse the flood waters especially when the water current is too strong and heavy.

According to them, they have seen on televisions live coverages when there is flood particularly during the "Ondoy" typhoon where number of houses, lives, and other properties were destroyed because of the flood and high waters. This poses imminent danger when during flood, the person insists to submerge into the water without help and support of other rescuers and volunteers. They also learned that during the flood, they should be very careful not to submerge into water and avoid the possibility of leptospirosis, a dreadful disease contracted from the urine and waste of rats.

Table 5 shows the practices of the pupil-respondents towards adaptation and mitigation after the flood.

Table 5 Adaptation and Mitigation Practices of the Students before the Flood (N=232)

	Adaptation and Mitigation before the Flood	Weighted Mean WM	Qualitative Interpretation QI	
1	Familiarizes the flood hazards in your place or area.	4.42	Always Practiced	
2	Makes evacuation plan.	4.22	Always Practiced	
3	Orients family members on what to do.	4.15	Often Practiced	
4	Reads information about measures if there is a threat of flooding caused by heavy rains.	4.14	Often Practiced	

5	Makes regular repair to buildings / structures / houses to cope with anticipated risk of flooding.	4.01	Often Practiced	
6	Checks and updates the PAGASA / DRRMC / Barangay cell phones and contact numbers posted on the walls.	3.49	Often Practiced	
7	Checks important stuffs and appliances whether these are places on the higher level of the house or building.	4.45	Always Practiced	
8	Gives heed to the warnings and advisories of the local DRRMC or barangay.	4.49	Always Practiced	
9	Secures the important documents and keeps them in a resealable plastic bags or container.	4.64	Always Practiced	
10	Prepares emergency 72 our kit which includes easy to prepare and ready to eat foods, drinking water on covered containers, medicines, candles, lighters etc.	4.14	Often Practiced	
	Overall Weighted Mean	4.22	Always Practiced	

Table 6 Adaptation and Mitigation Practices of the Students after the Flood

	Items	Weighted Mean	Qualitative Interpretation
1	Uses flashlights, lanterns or torches when entering houses or buildings.	4.53	Always Practiced
2	Cautious with harmful animals such as snakes inside the house or building.	4.19	Always Practiced
3	Checks if there are no presence of live wires submerged or soaked in water.	4.49	Always Practiced
4	Keep oneself alert to fire hazards such as damaged electrical outlets and other appliances.	4.54	Always Practiced
5	Discards the water that were stored in rubber tires, tin cans, containers, etc.	4.11	Often Practiced
6	Reports broken utility line (electricity, water, gas and telephone) to appropriate agencies or authorities.	3.90	Often Practiced
7	Avoids turning on the main switches or use appliances and other equipment unless they are checked by a competent electrician.	4.15	Often Practiced
8	Keep one-self updated from the news and advisories of the local DRRMC or barangay, and PAGASA	3.80	Often Practiced
9	Provides report to local DRRMC	3.44	Often Practiced
10	Leaves messages to relative about the present condition or situation.	4.27	Always Practiced
	Overall Weighted Mean	4.14	Often Practiced

Majority of the pupil-respondents often practiced the use of flashlights, lanterns or torches when entering houses or buildings, checking if there are no presence of live wires submerged or soaked in water, keep oneself alert to fire hazards such as damaged electrical outlets and other appliances and leaving messages to relative about the present condition or situation” with weighted means of 4.53, 4.49, 4.54 and 4.27 respectively. Among the things which were often practiced include cautious with harmful animals such as snakes inside the house or building , discarding the water that were stored in rubber tires, tin cans, containers, etc., reporting broken utility line (electricity, water, gas and telephone) to appropriate agencies or authorities, avoiding the turning on the main switches or use appliances and other equipment unless they are checked by a competent electrician and keeping one-self updated from the news and advisories of the local DRRMC or

barangay, and PAGASA and providing report to local DRRMC” with weighted mean of 4.19, 4.11, 3.90, 4.15, 3.80 and 3.44 respectively. The computed overall weighted mean on the practices towards adaptation and mitigation during the flood was 4.14 interpreted as “often practiced”.

The province of Zambales had been affected with several strong typhoons and subsequent floods where the respondents had actual experiences on disasters. There had been deaths accounted for because of electric shocks. Because of these fatal incidents, the respondents became aware that after the flood, it is of utter importance to check if there are unstable electric posts, and live wires submerged in the water. In most cases, if the PAGASA made a pronouncement of a typhoon approaching, the electric company has to cut off the power source to residences and establishments in order to avoid hazards. The announcement should be an opportunity for everyone to make preparations such as making sure that flashlights have batteries or are fully charged. This could be used in checking harmful animals like snakes, damaged electrical outlets, and broken electrical lines.

The respondents were also aware on their duties to make immediate reports to proper authorities for proper action and disposal.

Adaptation and Mitigation Practices of the Teachers before the Flood:

Table 7 shows the practices of the teacher-respondents towards adaptation and mitigation before the flood.

Table 7 Adaptation and Mitigation Practices before the Flood (N=17)

	Adaptation and Mitigation before the Flood	WM	Qualitative Interpretation
1	Familiarizes the flood hazards in your place or area.	4.35	Always Practiced
2	Makes evacuation plan.	4.00	Often Practiced
3	Orients family members on what to do.	3.82	Often Practiced
4	Reads information about measures if there is a threat of flooding caused by heavy rains.	4.53	Always Practiced
5	Makes regular repair to buildings / structures / houses to cope with anticipated risk of flooding.	4.00	Often Practiced
6	Checks and updates the PAGASA / DRRMC / Barangay cell phones and contact numbers posted on the walls.	3.82	Often Practiced
7	Checks important stuffs and appliances whether these are places on the higher level of the house or building.	4.41	Always Practiced
8	Gives heed to the warnings and advisories of the local DRRMC or barangay.	4.06	Often Practiced
9	Secures the important documents and keeps them in a resealable plastic bags or container.	4.59	Always Practiced
10	Prepares emergency kit which includes easy to prepare and ready to eat foods, drinking water on covered containers, medicines, candles, lighters etc.	3.71	Often Practiced
	Overall Weighted Mean	4.13	Often Practiced

Before the flood, majority of the teacher-respondents indicate the following as most important practices which are familiarizing the flood hazards in the place or area, reading information about measures if there is a threat of flood caused by heavy rains, checking important stuffs and appliances whether these are placed on the higher level of the house or building and securing the important documents and keeps them in a resealable plastic bags or container with weighted mean of 4.35, 4.53, 4.41 and 4.59 respectively. In the same vein, other activities which were often practiced such as making evacuation plan, orienting family members on what to do, making regular repair to buildings / structures / houses to cope with anticipated risk of flooding, checking and updating the PAGASA/DRRMC/Barangay cell phones and contact numbers posted on the walls, giving heed to the warnings and advisories of the local DRRMC or barangay, preparing emergency 72 hour kit which includes easy to prepare and ready to eat foods, drinking water on covered containers, medicines, candles, lighters etc” with weighted means of 4.00, 3.82, 4.00, 3.82, 4.06, and 3.71 respectively.

The computed overall weighted mean on the practices towards adaptation and mitigation before the flood was 4.13 interpreted as “often practiced”.

The teacher-respondents grasped the importance and value of paper documents like their class records, lesson plans, grading sheets, monthly reports, and other pertinent papers like marriage contracts, transcript of records, birth certificates of children, land titles, bank accounts, passports, visa and other important school papers. According to the teacher-respondents, some had availed of water proof attaché case where important documents are kept for safekeeping. To keep abreast of imminent threat posed by the coming of the typhoon, teachers are in-tune with radio and television for updates on severe mud flows and floods. Appliances in school and home are placed in high and elevated places to avoid electrocution and fire damages. Schoolchildren were given instructions, reminders, and guidance on what to do during instances of flood. Noted on the least among often practiced on having an emergency 72- hour kit or equivalent to 3 days emergency preparation where the individual or family should prepare in a box or bag ready to eat food, canned goods, water, medicine, candle, flashlight and lighters. A 3-day kit is enough to survive before the arrival of anticipated rescuers. According to them, there are teachers who are members of a religious sect where they are commanded and instructed by their church leaders to have the 72 hour-kit in their respective homes. These practices are considered very effective in times of flood, typhoons, earthquake, and fire.

Table 8 shows the practices of the teachers towards adaptation and mitigation during the flood.

Keeping oneself calm while waiting for relief and rescue and assistance and eating only well cooked foods and protecting leftovers from contamination were considered by the teacher respondents as always practiced by giving ratings of 4.65 and 4.29, respectively. The teacher-respondents were given proper orientation and training and served as role models to be calm during the catastrophe. There is no need to panic and show too much anxiety where school children will also be troubled and disturbed during the flood. Teachers must be alert, vigilant, and watchful during the calamity. Additionally, teachers were also aware and oriented to be very careful in eating left over foods that may pose detrimental effects such as severe stomach pains and the digestive system. The use of life saver or life vest was noted sometime practice, according to the respondents, it is not during flood but when they travel using boat going to other islands of San Salvador and Panglit in Masinloc, Potipot in Candelaria and Pundakit in San Antonio, Zambales.

Table 8 Practices of the Teacher-Respondents towards Adaptation and Mitigation during the Flood (N=17)

	Adaptation and Mitigation during the Flood	Weighted Mean	Qualitative Interpretation
1	Uses life vest, life saver or raft	2.82	Sometimes Practiced
2	Uses rope while crossing flood waters.	3.06	Sometimes Practiced
3	Asks for help and rescue from Disaster Risk Reduction and Management Council.	3.29	Sometimes Practiced
4	Stays at home.	4.06	Often Practiced
5	Climbs up or settles at the higher level of the house/building.	2.94	Sometimes Practiced
6	Avoid crossing or submerging into flood waters.	3.88	Often Practiced
7	Keep oneself calm while waiting for relief and rescue from others.	4.65	Always Practiced
8	Relocates to relatives not affected by floods.	3.71	Often Practiced
9	Moves immediately to evacuation centers or areas.	3.88	Often Practiced
10	Eats only well-cooked food and protect leftovers against contamination.	4.29	Always Practiced
	Overall Weighted Mean	3.66	Often Practiced

The teacher-respondents sometimes practiced the use of life vest, life saver or raft, using rope while crossing flood waters, asking for help and rescue from Disaster Risk Reduction and Management Council, and climbing up or settling at the higher level of the house”, with weighted mean of 2.82, 3.06, 3.39 and 2.94 respectively.

Many of the teacher-respondents often practiced some activities such as staying at home, avoiding crossing or submerging into flood waters, relocating to relatives not affected by floods and moving immediately to evacuation centers or areas”, with weighted mean of 4.06, 3.88, 3.71 and 3.88 respectively. The computed overall weighted mean on the practices towards adaptation and mitigation during the flood was 3.66 interpreted as “often practiced”.

Table 9 shows the practices of the teacher-respondents towards adaptation and mitigation after the flood.

Majority of the teacher-respondents had indicated that after the flood they the use of flashlights, lanterns or torches when entering houses or buildings, being cautious with harmful animals such as snakes inside the house or building, checking if there are no presence of live wires submerged or soaked in water, keeping oneself alert to fire hazards such as damaged electrical outlets and other appliances, discarding the water that were stored in rubber tires, tin cans, containers, and others, reporting broken utility line, (electricity, water, gas and telephone) to appropriate agencies or authorities, avoiding turning on the main switches or use appliances and other equipment unless they are checked by a competent electrician, keeping one-self updated from the news and advisories of the local DRRMC or barangay, and PAGASA” had been highly practiced with weighted means of 4.53, 4.29, 4.53, 4.41, 4.88, 4.41, 4.65, and 4.71 respectively. For indicator 9, “Provides reports to the local DRRMC” and indicator 10, “Leaves messages to relatives about the present condition or situation”, with weighted mean 3.47 and 4.12 interpreted as “often practiced” respectively.

Because of several experiences with floods in the past particularly during the time of “Onyok” and “Yolanda”, the teachers acted immediately on discarding or throwing rubber tires, tin cans, and containers with stagnant waters to avoid dengue

Table 9 Adaptation and Mitigation Practices of the Teachers after the Flood

	Adaptation and Mitigation after the Flood	Weighted Mean WM	Qualitative Interpretation QI
1	Uses flashlights, lanterns or torches when entering houses or buildings.	4.53	Always Practiced
2	Cautious with harmful animals such as snakes inside the house or building.	4.29	Always Practiced
3	Checks if there are no presence of live wires submerged or soaked in water.	4.53	Always Practiced
4	Keep oneself alert to fire hazards such as damaged electrical outlets and other appliances.	4.41	Always Practiced
5	Discards the water that were stored in rubber tires, tin cans, containers, etc.	4.88	Always Practiced
6	Reports broken utility line (electricity, water, gas and telephone) to appropriate agencies or authorities.	4.41	Always Practiced
7	Avoids turning on the main switches or use appliances and other equipment unless they are checked by a competent electrician.	4.65	Always Practiced
8	Keep one-self updated from the news and advisories of the local DRRMC or barangay, and PAGASA	4.71	Always Practiced
9	Provides reports to the local DRRMC.	3.47	Often Practiced
10	Leaves messages to relatives about the present condition or situation.	4.12	Often Practiced
	Overall Weighted Mean	4.40	Always Practiced

and malaria outbreak. The mosquitoes breed on still waters. According to the teacher-respondents, after the flood, they keep abreast on the news and advisories from local leaders and media for safety before going out. Usually, electric companies, and fire department workers are working 24 hour to assure broken electrical utility lines are rehabilitated and repaired before making announcement to the public that they are safe going out of their houses.

The aftermath of floods brought about by heavy rains and typhoons is worse as it has been. Wageningen University & Research (2014) cited that, “the impact of conflicts and disasters on people’s security, livelihood, and future prospects is often dramatic, and disproportionately hits those that are already poor and marginalized. Despite efforts to address these problems, these are likely to continue to mark global development in the decades to come. Disasters have become more frequent and intense due to the increasing social vulnerability for instance through the formation of slum areas on steep slopes, environmental degradation and human-induced climate change.”

4. CONCLUSIONS

Based on the findings of the study, the researcher concludes that:

1. Both the students and teachers exhibit high degree of preparedness in terms of emergency.
2. Both the students and teacher respondents often practiced flood disaster management.
3. The students always practiced adaptation and mitigation activities before the flood.
4. The teachers often practiced the adaptation and mitigation practices before, during and after the flood.

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