

Implementation of disaster risk reduction management of Visayas state university, Tolosa, province of Leyte-Philippines

Implementación de la gestión de reducción del riesgo de desastres de la Universidad Estatal de Visayas, Tolosa, Leyte-Filipinas

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Abstract

In Leyte, one of the Philippines' disaster-prone provinces, effective Disaster Risk Reduction Management (DRRM) is crucial for safeguarding lives and properties. This research explored gaps in DRRM implementation at Visayas State University Tolosa for 2022 using a qualitative case study approach. Focusing on the university's Disaster Risk Reduction and Management Committee, comprising seven members, semi-structured interviews were conducted to discuss policy and standard requirements for academic institutions, observing ethical research principles. Four themes emerged: Institutional Preparedness, Disaster Risk Prevention and Awareness, Lifesaving and Protective Equipment, and Budget for Resilient Building Reconstruction. Key findings highlighted the importance of enhancing the university's disaster policies, strategies, and building infrastructure. Adherence to the Philippine Building Code and a specific emergency plan, coupled with increased awareness campaigns, were deemed essential for improved safety. Notably, gaps were identified in the provision of rapid communication technology, solar lighting, powerful generators, and emergency vehicles. The study also underscored the necessity for dedicated funding to foster resilient building infrastructure, ensuring a safe environment for the university community.

Key words: Implementations; Disaster Risk Reduction Management; School.

Resumen

En Leyte, una de las provincias de Filipinas propensa a desastres, la eficaz Gestión de Reducción del Riesgo de Desastres (DRRM, por sus siglas en inglés) es crucial para proteger vidas y propiedades. Esta investigación exploró las brechas en la implementación de DRRM en la Universidad Estatal de Visayas en Tolosa para 2022 utilizando un enfoque cualitativo de estudio de caso. Centrándose en el Comité de Reducción y Gestión del Riesgo de Desastres de la universidad, compuesto por siete miembros, se llevaron a cabo entrevistas semi-estructuradas para discutir los requisitos de políticas y estándares para instituciones académicas, observando principios éticos de investigación. Emergieron cuatro temas: Preparación Institucional, Prevención del Riesgo de Desastres y Conciencia, Equipamiento de Salvamento y Protección, y Presupuesto para la Reconstrucción de Edificaciones Resilientes. Los hallazgos clave resaltaron la importancia de mejorar las políticas, estrategias e infraestructura de edificación de la universidad. La adherencia al Código de Construcción de Filipinas y un plan de emergencia específico, junto con campañas de sensibilización ampliadas, fueron considerados esenciales para mejorar la seguridad. Notablemente, se identificaron brechas en la provisión de tecnología de comunicación rápida, iluminación solar, generadores potentes y vehículos de emergencia. El estudio también subrayó la necesidad de financiamiento dedicado para promover una infraestructura de edificación resiliente, asegurando un entorno seguro para la comunidad universitaria.

Palabras clave: Implementaciones; Gestión de Reducción del Riesgo de Desastres; Escuela.

INTRODUCTION

The Philippines is renowned as one of the countries most susceptible to tropical natural disasters due to its geographical location, experiencing numerous devastating typhoons, earthquakes, volcanic eruptions, and other calamities (Domingo & Manejar, 2018). Alayna et al. (2016) further note that the well-being of its inhabitants, especially those living in poverty, is frequently jeopardized, classifying the Philippines as one of the nations most vulnerable to climate-related events. Recognizing these challenges, the Philippine government has prioritized disaster risk by investing heavily in disaster preparedness and initiatives aimed at reducing population exposure and vulnerability at both national and local levels.

The Philippines, an archipelagic nation, consists of over 7,100 islands spanning a land area of approximately 300,000 km². The country is segmented into three primary island groups: (a) the Luzon group, encompassing Luzon, Mindoro, and Palawan in the north and west; (b) the Visayas group, which includes Bohol, Cebu, Leyte, Masbate, Negros, Panay, and Samar located centrally; and (c) Mindanao to the south. The National Capital Region (NCR or Metro Manila) is home to Manila and the densely populated Quezon City, both situated on the main island of Luzon (Cullinane, 2019, as cited in Status Report 2019).

Schwab (2018) highlighted that the Philippines ranked third globally in terms of disaster risk, posting an index score of 25.14%. Luz (2017) asserted in their article that while the global community, and the Philippines in particular, has made strides in disaster preparedness — with these efforts translating to lives spared — economic and asset losses remain a pressing concern due to the absence of relevant strategies. Even though lives are preserved, disaster survivors and the marginalized face profound challenges. A testament to the country's vulnerability was the super typhoon "Yolanda" (internationally known as Haiyan), which struck the provinces of Samar and Leyte in November 2013. Recorded as the most potent storm ever to make landfall, Yolanda brought winds of up to 315 km/h and a storm surge ranging from 4.6 to 7.0 meters, causing damages estimated at \$3 billion, claiming 6,340 lives and leaving 1,058 individuals unaccounted for. Early warnings for the typhoon were disseminated, but

the sheer scale of fatalities and damages arose from a general complacency towards these alerts and an overarching lack of preparedness. The experience underscores the imperative for areas like Leyte Province to prioritize disaster preparedness.

Research indicates that local governments are highly susceptible to tropical cyclones, floods, earthquakes, droughts, and landslides. Although all exhibited a moderate level of preparedness, coastal regions, middle-income areas, and the most populous, those with fewer villages and mid-sized territories displayed the highest preparedness levels. There was full anticipation for earthquakes and forest fires, while floods, storm surges, droughts, tropical cyclones, tornadoes, tsunamis, and landslides were only partially anticipated. Primary obstacles in implementing preventive measures included differing stakeholder opinions, a staff shortage, and inadequate database management (Dariagan et al., 2021). Bollettino et al. (2020) emphasized that Philippine policymakers and politicians will grapple with the repercussions of climate change for years to come.

Collaboration in disaster mitigation and preparedness is gaining momentum, with certain organizations forming effective partnerships with local governments. However, many non-governmental organizations (NGOs) still occupy pivotal roles. These entities are often more proactive in defending communities threatened by upcoming development projects and environmental degradation, typically through advocacy and legal measures. A myriad of approaches are adopted for disaster preparedness and mitigation. Development-centric entities become embroiled in these challenges when the communities they support face calamities. Even humanitarian groups recognize the significance of community engagement, and as a result, they are inspired to participate in development initiatives (Luna, 2001).

This study primarily focuses on the disaster preparedness of Visayas State University (VSU) Tolosa, seeking evidence of rigorous implementation of the Disaster Risk Reduction Management Protocol (DRRM) within this academic institution. Furthermore, this research aims to determine whether the school's DRRM committee has established plans to mitigate potential damages during or after a disaster. It is also anticipated that this study will provide

insights into the commitment of both the academic institutions and the entire municipality of Tolosa towards disaster preparedness. Through this research, there is an expectation to enhance knowledge and awareness of precautionary and preventive measures among the students and all stakeholders at VSU Tolosa.

Statement of the Problem and Hypotheses

This study centres on the implementation of Disaster Risk Reduction Management (DRRM) at Visayas State University Tolosa, Leyte. Specifically, it seeks to address the following objectives:

1. What safety and precautionary measures require enhancement to reduce or prevent injuries during natural or artificial disasters?

What are the gaps in the implementation of the DRRM that compromise the safety of all stakeholders at Visayas State University Tolosa?

METHODOLOGY

This study utilizes a qualitative approach, enabling the researcher to delve into the complex issues underpinning this research. De Vos et al. (2005) characterized qualitative research as an avenue to gain a deeper understanding of people's responses to specific events. Additionally, a qualitative case study is a method that facilitates the exploration of a phenomenon within its natural context, revealing its multifaceted characteristics through multiple data sources and perspectives (Baxter & Jack, 2008).

Population and Locale of the Study

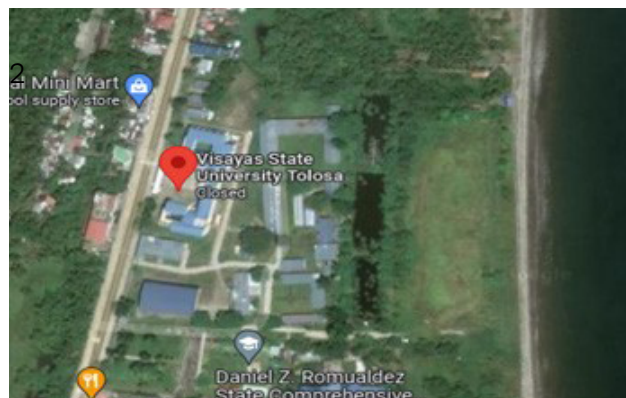
The participants for this study were purposefully selected. They comprised the Chairman and members of the Disaster Risk Reduction Management Committee of Visayas State University Tolosa. A total of seven personnel were considered for this research. The researcher believes that these individuals are best positioned to provide accurate and pertinent responses to the prepared questions. Each participant will be invited to partake voluntarily in a Focus Group Discussion (FGD) and must give their consent by signing a form before participating.

As depicted in Figure 1, the research site for this study is one of the Higher Education Institutions (HEIs) in Eastern Visayas (EV). Eastern Visayas, or Region VIII, encompasses two primary islands. The study's specific location, Visayas State University-Tolosa, is situated in Barangay Tanghas, Tolosa, Leyte, spanning 18 hectares of land. This particular institution faces the Pacific Ocean (Wikipedia, 2021). Given the current threats posed by the COVID-19 pandemic, it is paramount that this institution maintains robust school-based safety and disaster preparedness plans. The heightened risk of natural calamities in Eastern Visayas further underscores this need. Recent reports have even labelled Eastern Visayas (specifically Leyte) as the 'disaster capital' of the Philippines (Philippine Star, 12/22/2013).

Moreover, the Department of Public Works and Highways (DPWH) has identified the region's infrastructure as vulnerable, particularly in the event of significant seismic activity. Currently, 31 public schools, 22 municipal buildings, and various other structures either show signs of degradation or potential collapse, with indications such as hairline fractures in ceilings, walls, and floors. Most of these structures were built in the 1950s.

Figure 1.

A photograph of the research location



(Source: Google Maps)

The region hosting this institution has recurrently been affected by flooding due to typhoons. This underlines the pressing need to incorporate disaster preparedness and risk reduction education in public schools. The primary objective of this study is to assess the risk exposure and make recommendations for schools, aiming to create a stable and predictable environment where students and staff can navigate with confidence and safety.

Data Gathering Tool

To delve deeper into the implementation of Disaster Risk Reduction Management, data was collected through semi-structured interviews featuring open-ended questions. Such interviews often resemble one-on-one conversations centred on a specific, in-depth topic. While these in-depth interviews typically last around an hour, they can sometimes extend beyond that duration. Though they might seem like casual conversations between two individuals, there are distinct dynamics and objectives at play. As the renowned sociologist Burgess (2002) aptly described, they are “conversations with a purpose.”

Data Gathering Procedure

Permission for this study was formally sought from the Chancellor of the Campus. Data collection entailed an intensive single session of gathering detailed information. All interviews were recorded for accuracy. These discussions followed a conversational approach, using both focus group discussions (FGD) and open-ended questions. Beyond the recorded interviews, the researcher took additional notes from participants' responses during the transcription process and while reflecting upon individual interviews. Moreover, to bolster the data collection, feedback from both administrative and instructional colleagues was sought. The researcher also reviewed pertinent documents, materials, and relevant literature throughout the study.

Treatment of Data

An analytical approach was employed to evaluate the qualitative data obtained from the FGD and interviews. The following procedures were used to analyze the data:

- a. Transcripts were created from the audio-visual recordings during the data collection phase. A concurrent description of events was compiled using the researcher's diary.
- b. The gathered data was then segmented into coherent patterns to aid in analysis.

- c. Themes and concepts were identified from the transcripts via a coding process. Each phrase was treated as a unique unit, and line-by-line coding was executed. Open coding, among other coding techniques, was particularly employed to determine the labels for conceptual terms.

- d. Hierarchical categorization was developed, and redundancies were recognized.

- e. Reflective notes were composed to understand the intricate relationships that emerged from the data analysis.

Ethical Consideration

The guiding principles of research ethics were paramount in this study. Key considerations included voluntary participation, informed consent, confidentiality, and the safety of both the researcher and participants.

Participants were neither coerced nor subjected to any form of pressure to participate. They retained the right to abstain from responding to any question and could verbally express their desire to withdraw from the study at any time. While no monetary compensation was provided to the participants, tokens of appreciation were considered a gesture of gratitude.

RESULTS AND DISCUSSION

The researcher was able to develop the following emergent themes based on the responses of the participants;

I. Safety and Precautionary Measures.

- * Institutional Preparedness
 - Compliant to the Building Code of the Philippines
 - Creation of DRRM Emergency Plan *Disaster Risk Prevention and Awareness
 - Information dissemination and safety awareness

II. Gap in the implementation of Disaster Risk Reduction Management that deters the safety of all stake holder's of Visayas State University Tolosa.

*** Lifesaving and Protective Equipment**

- Technology for speedy broadcast
- Solar Lightning and powerful generator
- Lifesaving vehicle

***Source of Budget for resilient building reconstruction**

- Resilient Building structure with fire safety equipment

To more evocatively explain the emerging themes, the researcher selected key responses from participants and extracted significant statements.

a. Part I. Safety and precautionary measures.

Safety and precautionary measures serve as the primary step towards receptivity. When dangers arise, they are often anticipated to lead to remedial actions and ongoing improvements to mitigate the adverse effects of climate change, such as intensified typhoons (Abante, 2018). The Visayas State University Tolosa, being directly exposed to the Pacific Ocean and consequently more susceptible to disasters, coupled with its large population, must always be prepared for any potential emergency or disaster.

Institutional Preparedness

The National Disaster Risk Reduction and Management Plan (NDRRMP), spanning 2011 to 2028, discusses one of the four key areas for disaster preparedness. It emphasizes that communities must develop and reinforce their capacity to prepare for, manage, and recover from the adverse impacts of emergencies and catastrophes.

Compliant with the Building Code of the Philippines.

The Philippine National Building Code (RA 6541) aims to ensure that contractors utilize contemporary technical expertise in building design,

construction, occupancy, maintenance, and use. Participant Number Six stated: "The Building structure of VSU Tolosa must be compliant with the building code of the Philippines. Aside from this, Fire exits, and other safety measures are also important to lessen injuries in times of disasters" (p. 6).

Another interviewed participant added, which somehow adheres to the answer of Participant 6, states that:

In order to lessen injuries in times of disasters, electrical hazards must be checked thoroughly, the foundation of the building must also be evaluated if it has shifted or has been dilapidated, and to provide an evacuation area that is safe for everyone (p. 7).

Participant number four also added as he shared his response on the safety and precautionary measures of VSU Tolosa that needs improvement: "The installation of suitable warning signs and alert signals, an emergency exits and emergency survival kits" (p. 4).

Some participants from VSU Tolosa believe that among the safety and precautionary measures that need improvement during natural or man-made disasters is ensuring buildings comply with the Building Code of the Philippines. The building structures should adhere to Philippine building regulations. Additionally, the administration should inspect electrical installations, ensure safe evacuation areas, and have safety equipment readily available. The presence of adequate warning signs, alert signals, emergency exits, and survival kits is also essential.

Lamundi (2022) emphasized that when constructing a building, applicants must adhere to approved standard requirements. These include guidelines for lines and slopes, zoning and land-use restrictions, sanitary and sewage systems, environmental health, structural design, electrical and mechanical safety, as well as other specifications outlined in the code.

Creation of DRRM Emergency Plan.

An emergency plan details the procedures to follow in unexpected or critical situations. Through preparedness, we can prevent fatalities and injuries, minimize damage to inventory, machinery, and structures, and safeguard the environment and local ecology. Participants' perspectives on this concept were as follows: "Create an emergency management safety plan, conduct earthquake Drills and fire drills" (p. 1).

Participant number three also responded: "The safety and precautionary measures that this institution needs improvement is the updating and implementation of the emergency plan" (p. 3).

VSU Tolosa employees also deliberate that the institution must have a concise and specific safety and emergency plan, and often drills for fires and earthquakes must also be noticeable.

Disaster Risk Prevention and Awareness

To ensure the safety and effective response of VSU Tolosa's stakeholders, equal emphasis must be placed on disaster preparedness and awareness during the planning process.

Information dissemination and safety awareness

Disaster Risk Reduction Management information and awareness campaigns seek to transform comprehensive human knowledge into specific regional actions to mitigate disaster risks. By utilizing accurate information, these campaigns effectively mobilize individuals through clear communication. Participant number five from VSU Tolosa states: "There is a need for improvement in the communication, training and awareness of DRRM for faculty and staff" (p. 5).

Participant number 2 also emphasized, "The school should conduct seminars for the community on prevention and mitigation processes" (p. 2).

The research participants expressed concerns about information dissemination and safety awareness. They strongly requested seminars on communication, training, and awareness

for academic personnel, as well as community lectures on preventive and mitigation approaches. A similar sentiment was echoed in a study by Aboy (n.d.), which suggested that school administrators should continually strengthen ties with other community groups to garner support for their initiatives aimed at reducing school-related disaster risks.

Participants' perceptions regarding the safety and precautionary measures that need enhancement to reduce or prevent injuries during natural or artificial disasters can be categorized into two main areas: (I-1) Institutional Preparedness and (I-2) Disaster Risk Prevention and Awareness. Within the category of Institutional Preparedness, participants raised two specific concerns, which are:

(I.1.1) Through an in-depth interview with the Chairman of the DRRM Committee, Mr Harvey G. Tabunan, the researcher discovered that 40% of the classrooms were constructed when the school was established on June 21, 1971, and officially opened on September 11, 1971. This establishment was under the provisions of RA No. 5784, an Act that founded a School of Fisheries in the Municipality of Tolosa, Province of Leyte. However, it is noteworthy that RA 6541, commonly known as the National Building Code of the Philippines, was not promulgated until 1977. This indicates a six-year gap between the school's establishment and the implementation of the Building Code. Despite this, stakeholders observed that when Typhoon Yolanda struck the school in 2013, the foundational integrity of these older structures remained. Even amidst a storm surge almost reaching the height of the buildings, the structures—with the exception of their roofs—stood firm and are still in use as classrooms today. A notable deviation from the Building Code is the lack of a fire alarm system in these structures. Mr. Catalino Lelius Apostol, the former facilities in charge, commented on this, stating that "there is no need for a fire alarm system, as the building is only one story and is used solely as a lecture classroom." And:

(I-1.2) Creation of a DRRM Emergency Plan: This emerged as the second concept during the interviews conducted by the researcher. Upon verification with the DRRM Chairman, he confirmed that while the school has protocols in place for typhoons and fires, they have yet to establish procedures for other emergencies, such as earthquakes.

Another theme identified by participants under safety and precautionary measures is (2) Disaster Risk Prevention and Awareness, with a specific focus on (2.1) Information Dissemination and Safety Awareness. A subsequent interview with the Chairman of the DRRM Committee highlighted concerns from several participants. He mentioned that only a minority of the VSU Tolosa community has attended seminars or trainings related to Disaster Preparedness. As of the current moment, no 'echo seminar' has been relayed to the broader stakeholder group.

Support for this observation can be found in a study by Firmo (2022). The research indicated that while the majority of respondents had not received training in areas like disaster risk reduction, climate change adaptation, or emergency education, they still held a positive view of the program's existence. Interestingly, the study revealed no significant statistical difference in respondents' evaluations of the implementation extents of disaster risk reduction, climate change adaptation, or emergency education. Furthermore, the respondents' implementation levels in these areas were not influenced by their respective specialities.

In a study by Novabos & Po (2012), the researchers elucidated that RA 6541 outlines guidelines for designing spaces and buildings, ensuring their stability, safety, and appropriateness for Filipinos.

Santos et al. (2016) highlighted the Philippines' vulnerability to climate change and natural disasters. To address this, they suggested risk reduction methods that diminish exposure, such as hazard-based zoning, climate-resilient construction codes, retrofitting, and innovative financial incentives. These CCA and DRR initiatives should

be integrated into local government plans through the CLUP and subsequently executed effectively. However, a significant challenge faced by local decision-makers in areas affected by Typhoon Haiyan is how to incorporate a variety of vulnerabilities influenced by evolving socio-economic conditions, infrastructure, and natural landscapes into land use planning.

From this, it is inferred that there are gaps in VSU Tolosa's safety and precautionary measures aimed at mitigating and preventing injuries during natural or artificial disasters. These gaps lie in:

1. Institutional Preparedness, specifically:

- (I-1.1) Compliance with the Building Code of the Philippines,
 - (I-1.2) Creation of a DRRM Emergency Plan.
2. Disaster Risk Prevention and Awareness, particularly:
- (2.1) Information dissemination and safety awareness.

b. Part II. Gap in the implementation of Disaster Risk Reduction Management that deters the safety of all stakeholder's of Visayas State University Tolosa.

• Lifesaving and Protective Equipment

The primary objective of emergency preparedness is to reduce injuries, protect the community, and ensure the safety of all stakeholders. An effective emergency plan should be comprehensive, equipped with lifesaving tools and protective gear, and should clearly outline roles, responsibilities, and procedures during crises. This plan should also coordinate with local emergency response and recovery organizations.

Technology for speedy broadcast

Recently, technology has been utilized to speed up disaster relief efforts. For example, robots and drones have been used to guide rescue teams and discover survivors. Participant 5 of VSU Tolosa shared a response to this concept: "The school also need a communication device for easy dissemination of information" (p. 5).

Meanwhile, aside from the communication devices, as attested by Participant Number 1, also stated: “Communication equipment, firefighting apparatus, protective Equipment and rescue vehicles” (p. 1).

In addition, Participant Number 3 also shared a response to the perceived gap in the implementation of DRRM in the school: “The need to install an early warning device or communication system is desired for the school to have” (p. 3).

Solar lighting and powerful generators.

Solar energy is particularly suited to the Philippines, not only because the technology can capitalize on rising fuel costs but also due to its resilience against falling oil prices. With such equipment in place, the community can maintain a degree of normalcy during and after disasters: “Visayas State University Tolosa needs heavy solar lights and high calibre generators” (p. 7).

Lifesaving Vehicle

Owning a vehicle provides individuals with independence and freedom to navigate increasing distances between homes, workplaces, educational institutions, shopping centres, and recreational areas. In emergencies, having a dedicated vehicle for response and lifesaving purposes is crucial for every institution: “The academic institution must have its ambulance with a readymade apparatus therein such as oxygen, first aid kit, etc.” (p. 2).

Source of budget for resilient building reconstruction

The “Higher Education Modernization Act of 1997,” “CHED Memorandum Order No. 20,” and the “Public Higher Education Reform Framework” have empowered state universities and colleges (SUCs) to corporatize and manage their finances. Given these legislative changes, it is crucial to assess the efficiency of SUCs in utilizing and generating funds.

Reconstruction of Building Structure with fire safety equipment

The government’s budget for climate change adaptation and mitigation, as proposed in the National Expenditure Program (NEP) for 2023, is set at a figure 56.4 per cent higher than the P289.73 trillion allocated this year. Of this, a significant P453 billion, predominantly from the P265 billion pool, will be dedicated to water sufficiency initiatives. Embracing resilient design is crucial. It not only enables more effective planning, response, and recovery from disasters but can also expedite the resettlement process for individuals into their homes and workplaces post-disaster. Both participants number six and number four echoed this perspective, stating: “A resilient building equipped with Fire safety devices must be installed in all buildings inside the campus” (p. 6; p. 4).

According to research by Cadavos (2019), high-rise school buildings that are also earthquake- and typhoon-resistant must be constructed in order to protect both the community and the pupils. With all these at hand, the participant’s perceptions which can be identified as GAP in the implementation of Disaster Risk Reduction Management that deters the safety of all stakeholders of Visayas State University Tolosa, the researcher was able to extract two main conceptions (II-1) Lifesaving and protective equipment and (II-2) Source of budget for resilient building reconstruction. Under the first perception, Lifesaving and protective equipment were three sub-concepts: (II.1-1) Technology for speedy broadcast, (II.1.2) Solar lighting and powerful generator, and (II.1.3) Lifesaving Vehicle.

During the conduct of the following interview with the selected participants about the discovered theme, Technology for speedy broadcast, the school chancellor, Dr Quenstein D. Lauzon, responded, “The school is really in need of such Technology that will allow the administration

of the school send real-time information dissemination especially before, during and after the emergencies thru this measure all stakeholders will be given real-time information about the status or updates of the emergency, with regards of the second concept Solar lighting and powerful generator, the school has an existing generator but limited only to two buildings the Administration Building and the Dormitory building and the rest of the classrooms and other offices does not have a backup power supply if there are issues of power supply outage in the area. Moreover, Life-saving vehicle at present, there are a total of three school vehicles, but only one is in good running condition and used as the all-around vehicle of the employees. Most of the time, it always has its itinerary daily and leaves the campus with no vehicle to be used during emergencies. Moreover, lastly, (II-1) Source of Budget for resilient building reconstruction; (II-1.1) Resilient Building Structure with fire safety equipment, according to the in-charge of Physical Plant and Facilities Officers Mr. Arnel Agrava stating; “there are really school buildings that were built before the promulgation of the National Building Code of the country and at present the reconstruction of these buildings were not the priority of the current budget but hoping that soon a budget will be allocated for this concern”.

Kapur *et al.* (2016) observed, “Understanding how individuals genuinely communicate after a tragedy, and how various communication strategies can be most effectively employed, is vital. In a disaster context, communication is paramount for both response and recovery during the incident and in its immediate aftermath. Through effective communication, communities and those affected by the disaster are connected with first responders, support systems, and loved ones. For a community to demonstrate resilience, its communication must be reliable.”

Similarly, a study by Joshi (n.d) asserted, “‘Communication’ stands out as one of the most essential needs among the myriad facets of disaster management. The term ‘communicate’ connotes the conveyance of thoughts, ideas, alerts, directives, orders, commands, knowledge, and informa-

tion. Within the ambit of disaster management, fail-safe communication becomes indispensable for various activities, notably in the pivotal ‘preparedness’ stage for disseminating knowledge and information (encompassing mass education and public awareness), alerting about an impending disaster, marshalling resources, notifying authorities, and generally orchestrating disaster management.

In a study by Medford-Davis and Kapur (2016), the importance of proactive communication strategies prior to a disaster was highlighted. The authors emphasized the value of prioritizing the development of multilingual public service announcements (PSAs) that address common concerns arising during disasters. Furthermore, they suggested the establishment of message boards for staff and the maintenance of contacts from international media outlets, as well as contacts from both governmental and non-governmental entities. Enhancing communication capacity can also be achieved by keeping a comprehensive database detailing statistics relevant to various types of disasters and their specific geographic regions. The authors also advocated for the compilation of lists that highlight reliable local information sources for countries and regions frequently affected by disasters, in addition to maintaining rosters of local contacts encompassing both government and non-government entities.

Palttala *et al.* (2012) emphasize that despite advances in the discipline, there remains a pressing need to bolster communication as an essential element of disaster management decision-making. Concurrently, Abunyewah *et al.* (2018) argue that simply raising awareness and educating individuals about disaster risks might not necessarily translate into preparedness actions. There is a crucial need to persuasively motivate those at risk, ensuring that hazard awareness and education translate effectively into disaster preparedness.

The constituents of VSU Tolosa have consistently highlighted the importance of Solar Lighting and Powerful Generators. After every disaster,

the university faces the challenge of power outages. Quazi (2016) and Wang et al. (2010) both emphasize the pivotal role of solar energy. Their research collectively indicates that “with support from federal and municipal governments, solar energy has been increasingly harnessed in recent years and will continue to contribute to the electric supply in future decades significantly.”

Another noteworthy concern in assessing the gaps in the Disaster Risk Reduction Management at VSU Tolosa is the emphasis on a Lifesaving vehicle. This concept resonates with the findings from Matveev et al. (2018), who examined the relationship between the technical condition and accessibility of emergency rescue vehicles and the effectiveness of emergency response during transportation accidents. Their study introduced an approach to evaluate the effectiveness of procuring and maintaining emergency rescue vehicles. The goal of their research was to propose optimal solutions for the procurement and upkeep of these vehicles, emphasizing formalized criteria like operability and vehicle availability during emergencies.

Lastly, another identified gap pertains to the source of the budget for resilient building reconstruction, with a specific emphasis on structures that integrate fire safety equipment. This has been underscored in the research of Ahmad and Afzal (2019). Their study highlighted the profound significance of collaboration between local and provincial disaster management authorities. By fostering heightened awareness, prioritizing capacity-building training for structures, and strategizing to reduce flood costs, these bodies can substantially diminish vulnerability while bolstering the resilience of populations in flood-prone areas.

In a similar vein, Shah et al. (2018) underscored the pressing need to enhance multiple dimensions of resilience: social, physical, economic, and institutional. This can be achieved through capacity-building initiatives, preparedness training, and promoting a deeper understanding of strategies for flood damage prevention and mitigation. The role of municipal and provincial

disaster management authorities is paramount in this context; their proactive interventions can significantly reduce associated risks.

In essence, the feedback from the VSU Tolosa community points to a clear gap in the disaster risk reduction management practices. The specific areas of concern for the stakeholders of Visayas State University Tolosa revolve around Lifesaving and Protective Equipment. This encompasses the Technology for swift communication, Solar Lighting, Powerful generators, and lifesaving vehicles. Furthermore, there is an evident need for a dedicated budget allocation for the reconstruction of resilient buildings, especially those that are equipped with advanced fire safety features.

CONCLUSIONS

The research has illuminated crucial areas of concern related to disaster risk management at the Visayas State University in Tolosa. Firstly, it is evident that the structural integrity of the university buildings is paramount. To ensure safety, these structures should adhere to RA 6541, also known as the National Building Code of the Philippines, which encompasses all stipulations of the Act, including electrical wiring. Secondly, there is an imperative need to revise, update, and implement the available Disaster Risk Reduction Management Emergency Plan. The institution should also establish plans for other potential disasters. Finally, the emphasis on disaster prevention and awareness must be considered. Effective information dissemination and fostering a culture of safety awareness are pivotal for effective disaster risk reduction management.

It is strongly recommended that Visayas State University in Tolosa adopt a communication system or innovative technology that facilitates the rapid dissemination of information in emergencies. Moreover, integrating high-capacity solar lighting and powerful generators is essential to ensure an uninterrupted power source during

crises. The university would significantly benefit from having a dedicated ambulance, fully equipped with first aid and emergency response tools. Lastly, there is a paramount need to emphasize building resilient structures that are not only robust but also equipped with fire safety equipment.

Contribution to Scientific Knowledge

This study offers a valuable contribution to the academic and scientific realm concerning disaster risk management in educational institutions. Focusing on the Visayas State University in Tolosa provides a nuanced and specific analysis of existing needs and shortcomings in terms of infrastructure and safety protocols. By identifying critical areas for improvement and proposing tangible solutions, this research stands as a reference for other institutions aiming to enhance their disaster management practices. This work not only underlines the importance of adhering to national regulations but goes beyond advocating for a preventive culture and resilient infrastructure that prioritizes the safety and well-being of the educational community.

Limitations

While this study illuminates' aspects of disaster risk management at Visayas State University in Tolosa, certain limitations should be noted. While we identified critical areas needing improvement, subsequent research would gain from exploring the root causes of these gaps and assessing potential obstacles to implementing the suggested remedies.

Authors' Contributions: Not applicable

Conflicts of Interest

The author declares that there are no conflicts of interest

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