



## COMMUNITY-BASED DISASTER PREPAREDNESS OF VALENZUELA CITY AND IRIGA CITY

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### ABSTRACT

*The Philippines is a disaster-prone spot in the Asian continent, which calls for proactive response vital in disaster mitigation and adaptation. For a program to be successful, it must involve the citizens from the national to the barangay level. This descriptive study investigated the perceptions of community residents of San Francisco, Iriga City, and Karuhatan, Valenzuela City, towards Disaster Risk Reduction and Management (DRRM) programs as proactive measures in promoting a culture of safety and community resilience in times of disaster or emergency. Thirty residents from each community answered a community survey. The responses underwent frequencies, and the percentage calculation. The study results showed a generally affirmative perception of both groups on the city-wide disaster preparedness campaign through DRRM programs. However, the community responses on four categories: (1) Disaster Legislation, (2) Vulnerability to Disaster, (3) Disaster or Emergency Awareness, and (4) Disaster or Emergency Preparedness were relatively high in the Iriga group, which indicated a relatively high level of involvement in DRRM programs and a high level of preparedness for disasters. The Valenzuela group turned out to be high in disaster legislation and moderate in the other three areas, which indicated a moderately high level of involvement and preparedness. Thus, more efforts were needed to increase community understanding and resiliency.*

*Keywords: DRRM, legislation, awareness, preparedness, Philippines*

### INTRODUCTION

Every Filipino may have experienced or at least witnessed a disastrous incident at different levels of severity within the Philippine territory bounds. The catastrophe's breadth varies from local to national, the intensity from moderate to severe, the period from short-ranged to long-term, and the frequency from once to several times in a year. The categories of disasters that usually beset the country vary from tropical cyclones, earthquakes, landslides, storm surge, flash floods, to a combination of these calamities. These catastrophes make the Philippines known to be a disaster-prone spot in the Asian continent.

Equally making the country known for disasters is the resiliency of the Filipino people when these calamities strike. Broadly, a part of being a resilient nation when misfortunes befall the Filipinos, the Philippine government builds on a precautionary program rather than remedial in nature. As a proactive response to disasters, the government ratified Republic Act 10121 or the "Philippine Disaster Risk Reduction and Management Act of 2010." It aims to strengthen the disaster risk reduction and management system of the government. It lays down the national agenda for institutionalizing DRRM plans and programs, such as disaster mitigation, preparedness, prevention, risk reduction, and management, including allocating funds for the same purposes. The government even made a



long-term plan for disaster risk reduction and management revolving on the framework that envisions the country as a "safer, adaptive, and disaster-resilient Filipino community toward sustainable development" (NDRRM, 2011-2028, 2011). Hence, the National Disaster Risk Reduction and Management Council (NDRRMC), formerly known as the National Disaster Coordinating Council (NDCC), instigated the DRRM programs from the national down to the local government units.

The NDRRMC continues to fortify the DRRM programs and takes advantage of the advancing technology whose application includes coordinating with local government units (LGU) and disseminating information to the public. Only upon continuous involvement and active participation of the community people themselves are the DRRM programs likely to succeed (Usman *et al.*, 2013). It takes a participatory development for DRRM programs to grow and make our communities resilient (Pongan, 2015).

Consequently, the Republic Act 10639, also known as Free Mobile Disaster Alert Act, is approved in 2014, an "act mandating the telecommunications service providers to send free mobile alerts in the event of natural and man-made disasters and calamities" (Republic Act No. 10639, 2014). The act is the NDRRMC's way of publicizing pertinent information even before the impending disasters come. Perhaps the latest form of information technology NDRRMC takes on is a mobile rescue app to alert and keep people disaster-ready (Santos, 2017). Valenzuela City launched a mobile application for such purpose. In 2014, the Valenzuela City government inaugurated three disaster response agencies: Valenzuela CDRRMO, the Valenzuela City Command and Coordinating Office, and the Relief Operations Unit of the City Social Welfare and Development Office (De Guzman and Canete, 2016). It is the local government's effort to provide a better, coordinated response to Valenzuela residents during disasters. Valenzuela City is a recipient of Best in Government Emergency Management (GEM) - Urban Search and Rescue Category in 2016 during the 18th Gawad KALASAG for the

National Capital Region's (NCR). It is an award given in maintaining an excellent system of disaster-related operations and facilities (Villanueva, 2016).

The Third UN World Conference in 2015 in Sendai, Japan, adopted the Sendai Framework for Disaster Risk Reduction 2015-2030, with four priority areas of action such as (1) understanding disaster risk, (2) strengthening disaster risk governance, (3) investing in disaster risk reduction for resilience, and (4) enhancing disaster preparedness for an effective response towards recovery, rehabilitation, and reconstruction. The framework concerns addressing natural and human-made hazards, environmental, technological, and biological hazards, and promoting health resistance (Sendai Framework, 2015). This framework is adopted and implemented by the Iriga City Local Government, the other locale of this study. The DRRM office implements activities and programs to advance all community members' skills in preparing, adapting, mitigating, and responding to the destructive effects of disasters (Mamon MA, Suba RA, Son IL, 2018). Further, Iriga City DRRM office utilizes social media, postings of information, early warning devices such as flood warning and flood alarm systems installed in riverbanks, and the Bureau of Fire Protection (BFP) station. This actions on DRRM programs made Iriga City acknowledged as Top 4 in Disaster Resiliency in the 2018 Cities and Municipalities Competitive Index. (Cities and Municipalities Competitive Index)

## OBJECTIVES

Although existing literature provides information on how DRRM operates at the national, regional, provincial, municipal, and community level, the monitoring aspect seems to be inadequate, and information on the success rate of implementation is scarce. In this tone, the researchers investigated the perceptions of the community of a disaster-prone area, San Francisco, Iriga City, and Karuhatan, Valenzuela City, respectively, on the programs of the local DRRM units. The researchers believed that a thriving local DRRM program can be and should



be assessed not after the disaster has beset the Filipinos, but before the calamity assails. Specifically, this study intended:

1. To determine the community's level of perceptions of DRRM programs' legislation in their localities.

2. To identify the hazards the cities are exposed to, and related problems experienced.

3. To determine the level of people's participation in disaster preparedness programs.

4. To describe the status of the community's personal preparedness in disasters.

This study will contribute to the existing literature on DRRM and how such a program impacts the community. This study will serve as a guide for DRRM program implementation at the local level. It will also serve as indicators of the level of consciousness, participation, and involvement among community residents in the practice of DRRM on the regional scale.

## METHODOLOGY

This research used the descriptive survey research design to gather information about the communities' understanding of the proactive measures being implemented by their local DRRM units to mitigate and adapt to disasters or emergencies.

The researchers used a survey questionnaire adapted from Strathcona County in their 2016 Emergency Management and Preparedness Survey in coordination with Banister Research and Consulting Inc. and Pan American Health Organization (PAHO) in 2013. These surveys evaluated the services and maximized use of resources in increasing public knowledge on disaster legislation, vulnerability, awareness, and mitigation strategies to prevent damages to lives and properties brought about by emergencies and disasters. The survey underwent peer review, checked, and approved by the Research and Planning Division Officer of Iriga City, who also endorsed the research's conduct.

The questionnaire comprises 20 close-ended questions and two open-ended questions

to determine residents' knowledge of proactive actions, prevention, and preparation in handling emergency or disaster. The researchers categorized the questions into disaster legislation: the laws, policies, and practices implemented by the community and government to anticipate disasters or emergencies. Vulnerability to disaster refers to the knowledge of disasters brought about by disasters to vulnerable groups. Disaster awareness includes respondents' experience about disasters or emergencies, information gathered from different sources and training, and measures implemented in mitigating disasters or emergencies, including using resources in disseminating data. Disaster or emergency preparedness refers to the ability of a person in disaster prevention, mitigation, and adaptation.

Thirty respondents from each city were selected to describe the community's perception of disaster legislation, vulnerability, awareness, and preparedness. San Francisco, Iriga City was identified as a disaster-prone barangay hence a pilot-barangay recipient of the 2018 Alistong Pamayanan Program of the Local Government of Iriga (Bongalos, 2018). The said program started in 2014, also called Operation Listo, is initiated by the DILG for disaster preparedness with Listong Pamahalaang Lokal institutionalizing LGUs to implement policies and regulations for disaster preparedness and management (Flora, 2016).

The selected area in Karuhatan, Valenzuela City, is also a flood-prone barangay.

Through purposive sampling, residents, employers, and employees from establishments who received lectures and demonstrations from the City Disaster Risk and Reduction Management Office in anticipation of natural and human-made disasters that may occur in the locality were identified. Available employed respondents answered the survey since customers in the establishments come and go. Respondents received a copy of the informed consent after the purpose of the research was explained.

Results from responses were analyzed and compared using cross-tabulation, frequency, and percentage distribution. Data analysis



excludes age, sex, and position in the community or employment. Detailed data tables, figures, and responses to open-ended questions were given. Note that inconsistencies of data in tables and descriptions were due to rounding off of numbers.

## RESULTS AND DISCUSSION

One factor to consider in DRRM operations is identifying the vulnerable areas to disasters at the local level, depending on the topographical factors; such is the focal point of a study conducted by Bracamonte et al. (2015). The study used a vulnerability framework to investigate communities' awareness and preparedness in Iligan City to mitigate disasters and manage disaster risk. Identifying vulnerable areas can provide DRRM coordinators guidelines where the materials and human resources may be enforced and prioritized. In his conference paper, Doroteo (2015) described the Philippines' disaster risk profile and the various natural disasters that bring hazards to the country. It described the urgency of a DRRM program in every local government unit. It presented how DRRM can be optimized and upgraded from being a reactive response for alleviating the aftermath of a disaster to a proactive preparedness for an impending calamity.

Similarly, Alcayna et al. (2016) discussed the policy and programs for DRRM currently implemented and practiced in the Philippines at the national and local levels. Furthermore, the Commission on Audit (COA, 2014) reported how DRRM programs were assessed in local government units (LGU). The report summarized the critical COA assessment findings regarding disaster prevention, mitigation, and preparedness among selected cities and municipalities. It also tackled several issues associated with the implementation of DRRM programs.

In addition, the Swiss National Government Organization Disaster Risk Reduction Platform (Swiss NGO DRR, 2014), shortly after the severely devastating Typhoon Haiyan, or super typhoon Yolanda, made a

comprehensive multi-risk assessment in the affected area. The study included an inventory of legal frameworks, institutional capacity, access to hazard information, and approaches operational in the Philippines at the national level. A study at the provincial level (Pongan, 2015) assessed the extent of DRRM programs practiced, particularly in Albay Province, Philippines. The author attributed the success of a local DRRM program to participatory acts and involvements of residents. This participatory DRRM model spells out the efficacy of preventive and precautionary measures, mitigation, and rescue operations of the whole program of DRRM.

Napere and Canencia (2013) examined teachers' disaster preparedness in managing natural and human-made disasters and assess pupils' knowledge, attitudes, and behavior about disaster management. Despite the lack of training, teachers were able to handle the identified disasters while the pupils' knowledge, attitudes, and action about disaster management registered good results. Both teacher and student groups were proactive about the lessons learned by the people in Iligan City from the powerful typhoons Sendong (Tropical Storm Washi) and Pablo (Tropical Storm Bopha), respectively.

In the same manner, this study, through direct observations and interviews of DRRM professionals from the selected Iriga City and Valenzuela community, and reviews of existing literature on DRRM programs and projects, assessed local DRRM programs associated with disaster preparedness, mitigation, and resilience.

### Community-Based Disaster Preparedness of Iriga City and Valenzuela City

The data were obtained from 30 respondents from each participating community with ages from 15 - 80. Although most of the respondents answered all the 22 questions, some respondents in both cities did not fully answer all the survey questions, having skipped at least one of the 22 items as shown in Table 1:



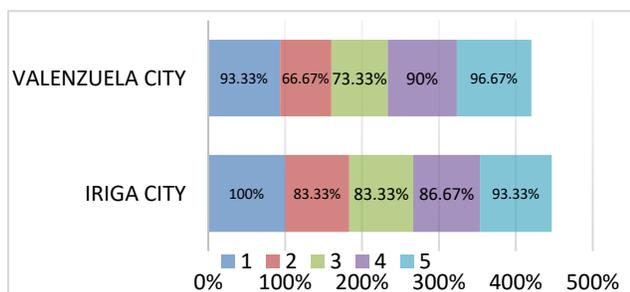
**Table 1. Responses**

COMMUNITY	SURVEYED	RESPONSES	
		Complete (All 22 items completed and legible)	Partial (At least one of the 22 items left blank)
San Francisco, Iriga City	30	25	5
Karuhatan, Valenzuela City	30	21	9

The succeeding figures show the frequencies and the corresponding percentages of responses to 22 questions, categorized into four areas: (1) Disaster Legislation, (2) Vulnerability to Disaster, (3) Disaster or Emergency Awareness, and (4) Disaster or Emergency Preparedness.

### 1. Community's Level of Perceptions of DRRM Programs' Legislation in their Localities

**1.1 On disaster legislation.** Figure 1 presents the percentage of responses of the 30 respondents from each city on the local government's disaster legislation. As shown, 100 percent of Iriga City respondents knew that someone was responsible for disaster preparedness or response. Many of the respondents knew that the community has its policies, laws, or regulations on disaster preparedness and response (83.33%). A high percentage of the respondents knew of the community's disaster plan (83.33%) like enough numbers of evacuation areas in the city (86.67 who said it is enough).



*Fig. 1 Percentage of Responses on Disaster Legislation*

Ninety-three percent of respondents from Valenzuela City recognized that someone was responsible for disaster preparedness or response. They knew that the community has its policies, laws, or regulations on disaster preparedness and response (66.67%), and a high percentage who knew of the community's disaster plan (73.33%) like enough numbers of evacuation areas in the city (90.00%).

When asked about emergency use facilities, respondents from both cities identified ambulances, 93.33 percent from Iriga City, and 96.67 percent from Valenzuela City, respectively (Table 2).

**Table 2**  
*Facilities Available in the Community*

Available Facilities	Iriga City	Valenzuela City
Ambulance	93.33	96.67
Life jackets	53.33	46.67
Boats / rafts	56.57	50
Firetruck	83.33	90
Others, please specify: Mobile; Full rescue materials/kit	3.33	3.33

Iriga City's responses indicate that the people were well-informed of the local government provision of laws, regulations, and comprehensive ordinances on disaster preparedness. Their high rating on this category also indicates a robust implementation of these policies and rules on disaster preparedness and the community's overall positive response to these ordinances. On the other hand, Valenzuela City's responses indicate a reasonably high level of awareness among the residents regarding how their local government instigates disaster preparedness.

For facilities available in the community, both groups of respondents cited ambulance and firetrucks as the top two facilities available for emergency use. These two were probably the most conspicuous facilities in the community accounting for the high rates of responses.

### 2. Hazards the Cities are Exposed to, and Related Problem-experience



**On disaster vulnerability.** This section reflects the percentages of vulnerability responses, including natural hazards the communities were exposed to, their related problems, and whom the people perceived as the most affected groups when the disaster strikes.

Though identified as flood-prone cities, the top two identified natural hazards in Iriga City were flooding (86.67%) during heavy rains or typhoons and fire (83.33%) that can occur any time of the year. In contrast, 100 percent of Valenzuela City respondents identified flood as the community's principal hazard over 66.67 percent who identified fire as the next hazard in the community (Figure 2).

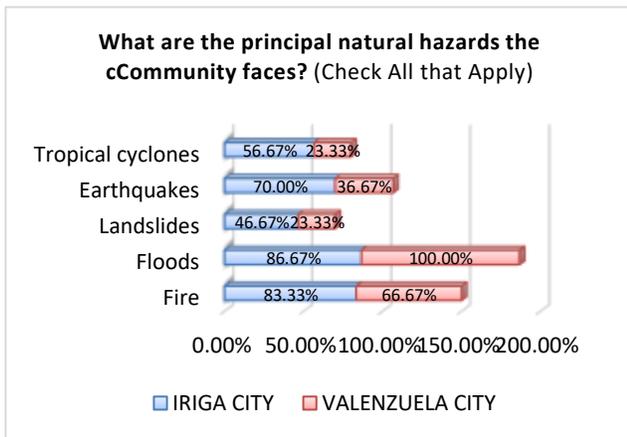


Fig. 2. Percentage of Responses on Natural Hazards the Community Faces

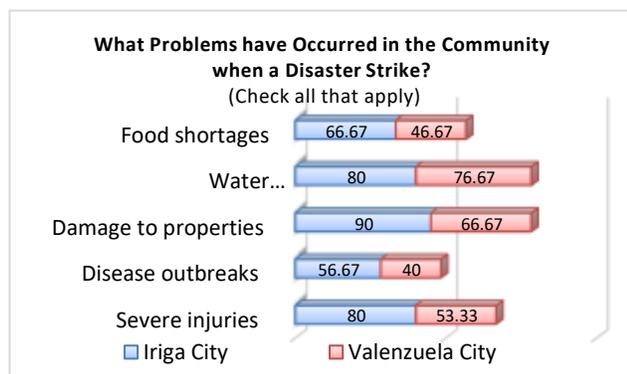


Fig. 3. Percentage of Responses on Problems in the Community when a Disaster strike

When asked about the problems (Figure 3) brought about by disasters (flood and fire), Iriga City respondents identified: damage to properties (90.00%), severe injuries (80.00%), and water shortages/ contamination (80.00%). In contrast, Valenzuela City identified high water shortages/contamination (76.67%), damage to properties (66.67%), and severe injuries (53.33%).

Respondents who identified flood which cause damage to properties and water shortages/contamination recognized that disabled persons (86.67%), older persons, and children (80%) in Iriga City. In comparison, older persons (80.00%) and children (73.33%) in Valenzuela City were the most affected groups in the community during disasters or emergencies (Figure 4).

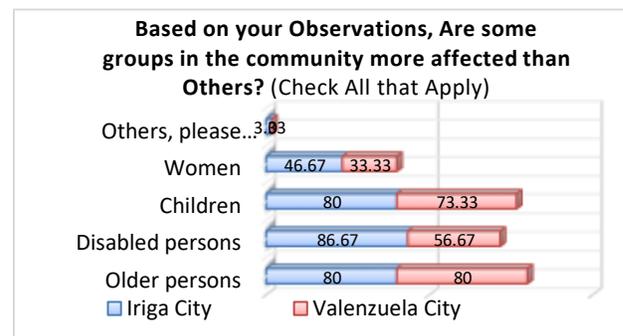


Figure 4. Percentage of Responses on Affected Groups in the Community

Responses on the community's vulnerability to disaster showed how people perceived natural and human-made hazards they were exposed to and the most common problems they experience when calamity strikes. The two groups of respondents perceived similar risks their community faces, citing floods as the primary hazard (100%) and fire (67%) the next threat. Two factors accounted for the vulnerability of the two locales of study to floods. One was the congested drainage system that is true for both areas, slow drawing off of water from heavy or prolonged downpours. The other was that both sites' physical features, being lower than the ground level of the rest in the city. These make the areas converging zones where rainwater flows during heavy downpours.



Karuhatan, for instance, is one in the list of flood-prone areas in Valenzuela City, from the areas of McArthur Highway to Karuhatan Market. It has been declared as one of the 25 barangays in Valenzuela City under the state of calamity, for instance, during the heavy rains brought by Typhoon Maring (International Name: Trami), enhanced by the Southwest monsoon. The news report described that "Typhoon Maring dumped one of the heaviest rains in Metro Manila and nearby provinces, causing floods comparable to typhoon Ondoy in 2009 and the 'Habagat' in 2012, which submerged the barangays as mentioned above," one of which is Karuhatan (Caiña, 2013).

### 3. Level of People's Participation in Disaster Preparedness Programs

#### On disaster or emergency awareness.

On awareness (Figure 5), 90 percent from Iriga City have received information or training regarding emergency preparedness and have seen or heard messages encouraging people in the city to prepare for emergencies in the past 12 months (96.67%). They found the information or statements helpful to prepare for and respond to disasters (93.3%). Eighty-seven percent (86.67%) were also aware of emergency plans at their child's school. Eighty-seven percent (86.67%) answered that Iriga City has a public emergency alert system where 73.33 percent signed up for the alert system. The respondents who also received information or training, seen or heard messages in the past 12 months, know the term "fire smart," a program that refers to ways to protect their property from fire by reducing risk (60.00%).

From Valenzuela City, 60 percent have received information or training regarding emergency preparedness. Likewise, most of them have seen or heard messages encouraging people in the city to prepare for emergencies in the past 12 months (93.33%). The respondents were also highly adapted to disaster risks since 86.67 percent found the information or messages helpful to prepare for and respond during and after disasters or emergencies. Sixty-three percent (63.33%) were also aware of

emergency plans at their child's school. The respondents who have received information and training, seen, and heard messages regarding emergency preparedness in the past 12 months know that the city has a public emergency alert system, (90.00%); however, only 26.67 percent were signed up (Table 3). Only 40.00 percent of the respondents also know the term "fire smart," a program that refers to ways to protect their property from fire by reducing risk.

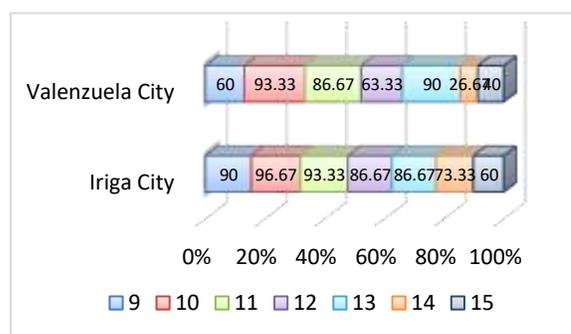


Fig. 5. Percent Responses on Disaster or Emergency Awareness

The Iriga City respondents who have received training, information, see, and heard messages registered the top three sources (Figure 6) encouraging people to prepare for emergencies were from the radio (80.00%), television (76.67%), and presentation or workshop (66.67%) from the CDRRMO and BFP. While from Valenzuela city, the top three sources encouraging people to prepare for emergencies were the television (70.00%), the internet (56.67%), and radio (53.33%).

What strongly accounts for a high awareness level among the respondents in Iriga is likely the city-wide training on disaster risk reduction adopting and implementing the Sendai Framework of Japan to mitigate disaster risks and prepare the city for existing and upcoming disasters. Even the public alert system to the town is both known to and signed up by most Iriga respondents to continually update information. Early warning devices such as flood warning and flood alarm systems were installed in riverbanks and BFP stations.

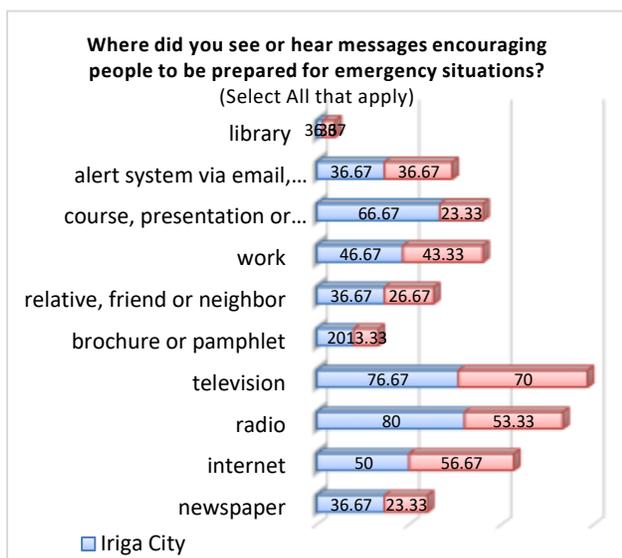


Fig. 6. Percent Responses on Sources of Information on Disaster Awareness

In Valenzuela City, the percentage of those informed and trained on emergency preparedness was relatively meager on the community's flood issues. Those who were reached by advisory messages on readiness, on the other hand, were quite a good percentage. As part of Metro Manila, it was not surprising that most Valenzuela respondents get information urging people to prepare for emergencies through television, internet, and then radio. What is striking was that 90 percent of the Valenzuela group was aware of the city alert system, yet only 27 percent have signed up for the alert system. These results may indicate that the people may not have internalized the urgency of signing up in this public emergency alert system.

#### 4. Level of the Community's Personal Preparedness in Disasters

**On disaster or emergency preparedness.** On preparedness (Figure 7), Iriga City respondents know what to do before, during, and after disasters where 83.33 percent can handle an emergency without outside assistance for 72 hours in their household; and 63.33 percent have

plans for their pets, livestock, or other animals during a disaster. Meanwhile, 93.33 percent of respondents know the need to leave the area when told to evacuate and remain indoor or go inside when asked to "shelter-in-place" (96.67%). Eighty-three percent (83.33%) gave at least three responses on what to do to prevent fire in their home. At the same time, 63.33% knew how to become better prepared to handle a disaster.

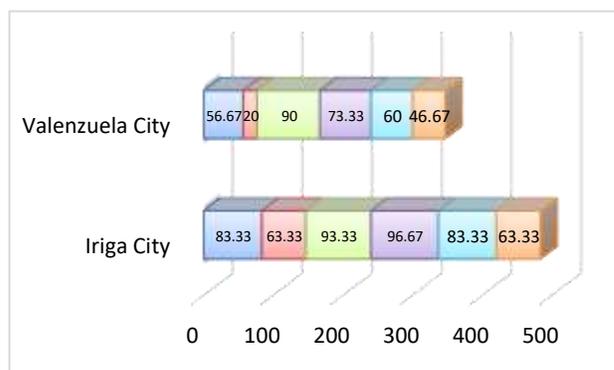


Fig. 7. Percentages of Responses on Disaster or Emergency Preparedness

In Valenzuela City, while 56.67 percent can handle an emergency without outside assistance for 72 hours, only 20 percent have plans for their pets, livestock, or other animals during a disaster; 43.33 percent have no plans while 33.33 percent have no pets, livestock or other animals under their care; while 90.00 percent of respondents know the need to leave the area when told to evacuate and remain indoor or go inside when asked to "shelter-in-place" (73.33%). Sixty percent (60.00%) gave at least three responses on what to do to prevent fire in their home, while 46.67 percent can handle a disaster.

Eighty-three percent of Iriga City respondents know how to prevent fire in their homes through unplugging appliances when not in use or leaving the house (48.00%). Always make sure that the gas stove and the tank were closed after use or when leaving the house, and sources like matches should be appropriately kept and away from children (32.00% respectively). Sixty-three percent can handle



disaster by preparing enough foods and drinks for the family and keeping updated (31.58%). Twenty-one percent responded to prepare an emergency kit, evacuate if needed, and attend disaster preparedness seminars and training to learn the phases of fire and earthquake drill (alarm phase, response, evacuation, assembly, headcount, evaluation phase).

In Valenzuela City, 60 percent of respondents identified the top three responses to prevent fire by unplugging appliances when not in use or leaving the house (44.44%). Ensure that the gas stove and tank were closed after use or when leaving the house, and sources like matches should be appropriately kept and away from children (27.78%). At the same time, 47 percent of them handled disasters by being alert and mindful, attended disaster preparedness seminars and training, and prepared enough foods and drinks for the family (21.43%, respectively).

The Iriga group's responses, being relatively high, indicate that the community prepares for disasters or emergencies. On the other hand, the Valenzuela community indicates a reasonable or moderate level of disaster preparedness. In 2013, Fajardo discussed the importance of local community participation in implementing DRRM in the Philippines. Furthermore, this study considers the Community-based Monitoring System (CBMS) to provide information on the community's socio-economic conditions. Such information helps in DRRM planning, response system, dissemination of information to the public, human resource management, coordination, and legislative support. The LGU, therefore, has the most direct involvement and likely efficient, compelling force on the community regarding the implementation and practice of DRRM programs.

More so, the DSWD urges the public to get involved and be part of the nationwide campaign for disaster preparedness. It emphasized that disaster preparedness is the responsibility of every citizen rather than the government's duty alone. Hence, one of the essential preparations an individual citizen can do is to have an emergency kit. It contains the most basic yet essential elements such as food and water,

flashlight, medicine, whistle, and necessary documents (Asia News Monitor, 2016).

## CONCLUSIONS

The study uncovered an overall perception of the subject communities on the legislation of DRRM programs in their localities, the hazards, and related problems they experience, the level of people's participation in disaster preparedness programs, and the level of their preparedness in disasters.

1. The findings of this study include a generally affirmative perception of the community people of San Francisco, Iriga City, and Karuhatan, Valenzuela City, on the city-wide DRRM programs for disaster preparedness.

2. The community responses on the four categories: (1) Disaster Legislation, (2) Vulnerability to Disaster, (3) Disaster or Emergency Awareness, and (4) Disaster or Emergency Preparedness are remarkably high in San Francisco, Iriga City, which indicate the local government's intense drive can explain a relatively high level of involvement in DRRM programs and high level of preparedness for disasters.

3. The overall responses of the Karuhatan community in Valenzuela City indicate a moderately high level of involvement, awareness, and preparedness. Their answers on the four categories suggest that the strongest is on Disaster Legislation. The city government's endeavor to make the city resilient to disasters is evident in establishing a complex that provides a common venue for vital agencies. Nevertheless, high on Disaster Legislation, Karuhatan respondents obtained a fair rating on Disaster Awareness and Disaster Preparedness. It indicates that the city-wide campaign for disaster risk reduction, mitigation, and management must go down to the locals, the lowest institutional level, to every family in the barangay level and aim for a more participatory operation of the DRRM programs and practices.



## RECOMMENDATION

Aside from the information obtained from sources like TV, radio, internet, and the likes, the following are good points to consider for future programs:

1. A successful DRRM campaign may be maximized and institutionalized at the local government level, rather than at the regional or national levels. Following the Sendai framework as the case of Iriga City, the DRRM office may continuously promote a culture of safety and resiliency of the community people by increasing knowledge about disaster and disaster awareness.

2. Tenable actions may be implemented to sustain previous programs, as the case of Valenzuela City DRRMO. They may make the center more visible through programs and activities to keep people informed and prepared because disaster preparedness always starts with understanding the risks. More important than managing the outcome of disasters is managing resources and efforts to reduce disasters.

3. Preparedness for disasters involves a step-by-step process. Although it starts with awareness and understanding of the risks, it may move up to conscious involvement and active participation in the DRRM programs to eventually prepare for disasters.

4. Ultimately, DRRM programs' success in reducing risks, mitigating, and managing disasters be assessed at a communal level of participation. Members of the community are the receiving ends of disasters' outcomes, the direct victims of natural calamities. Community members must make decisions to reduce the risk of catastrophe.

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