Disaster Resilience and Preparedness Program Evaluation for Enhancement

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Abstract
The study was conducted to evaluate the level of disaster resilience and preparedness among the members of the MDRRMC and BDRRMC in the Municipality of Alabel, Sarangani Province. Descriptive-correlative research design were utilized employing quantitative method. Data were gathered through survey questionnaires administered to 219 respondents. Key Informant Interviews were conducted among 9 members of the BDRRMC to triangulate the quantitative data. The gathered data were analyzed using frequency, percentage, weighted mean, and Pearson correlation. The findings of the study revealed that there was a proportional number of male and female respondents of which majority of them belong to adult aged group. Majority of the respondents are government employees and government officials who are college graduates. The level of disaster resilience of the respondents in terms of the five areas on governance, risk assessment, knowledge and education, risk management and vulnerability reduction, and disaster preparedness and response are relatively high with a verbal description of high resilience. On the level of disaster preparedness among the respondents, the results revealed that the members are always prepared based on the four areas for likelihood of being impacted by a national hazard, vulnerability of physical structures, people, and livelihoods, barangay-level planning and individual's preparation for disaster, and individual's sense of control over their own lives and their ability to participate and influence their community and government. In relation to the disaster resilience and preparedness experiences, three themes emerged in this study as perceived by the informants and these are: (1) Planning and Preparation, (2) Issues and Challenges, and (3) Coping Mechanism. Generally, there is a moderate positive correlation between disaster resilience and disaster preparedness among the respondents (r= .449).

Key Words: Coping Mechanism, Disaster, Preparedness, Resilience, Vulnerability

Introduction
In past years, the raiment of social and physical stresses that people and communities experience has tremendously increased. Vignette of natural, man-made, and technological disasters globally have multiplied in the past decade, and these disasters sheathing the day-to-day challenges that many communities already confront, including economic difficulties, structural racism, and environmental stress (United Nations, 2015).

Similarly, in 2017, the devastation of disasters in Mexico, the Caribbean, India, and the United States are evident resulting in significant loss of life, as well as other economic and societal impacts on the affected areas. In addition to natural, man-made, and technological disasters, other acute shocks, such as active shooter events, have also increased in frequency over the last decade.

On the national level, as what Alcayna et al. (2016) asserted the Philippines is one of the top countries in the world at risk of climate-related disasters. For populations subsisting at the poverty line in particular but also the nation as a whole, daily lives and well-being are routinely challenged. In line with this, the national government has taken disaster risk reduction and management seriously and has devoted significant resources to build disaster capacity and reduce population exposure and vulnerability both nationally and locally.

According to Bollettino et al. (2018), the Philippines is one of the world's most disaster-prone countries. Located along the boundary of major tectonic plates and at the center of a typhoon belt, its islands are regularly impacted by floods, typhoons, landslides, earthquakes, volcanic eruptions, and droughts. The Philippines also ranks among the top three countries in the world for population exposure and vulnerability to hazards.

In the local level on the other hand, the Municipality of Alabel was stricken by numerous events of earthquakes, landslides and flash floods brought about by heavy rainfall in 2019 and onwards. Data of the previous occurrences of disasters in Alabel from year 1968-2022 shows that flooding brought about by heavy rainfall caused damage to properties (infrastructure and agriculture) amounting to a total of Php. 16,340,955.00, while affecting a total of 25,868 individuals and 5,471 families. Further, the data on landslide incidence in the Municipality from year 2012-2019 shows that a total amount of Php. 6,487,000.00 damage to properties, affecting 493 individuals and 89 families (MDRRMO Alabel, 2022).

Based on the Geo-hazard map of Sarangani, Alabel is connected to Malungon fault line interconnecting to other neighboring Municipalities of the Province causing quake from sudden shaking of the ground. In connection, the said events have untoward effect not only the business sector but most especially on the workforce including the employees in local government unit particularly on their economic or financial condition, property and infrastructure, as well as their mental and physical health. The worker's mental well-being was under severe strain during the onset of several earthquakes and flash floods experienced at that time. Employees were at a state of panic and anxious due to the lack of information and training on what to do in the middle of the shaking incidents brought about by earthquakes inside the workplace.

In order to address the underlying issues on disaster risk reduction and management, a national law otherwise known as Republic Act (RA) 10121 was enacted. The Act mandates the establishment of a Disaster Risk Reduction and Management Office (DRRMO) in every province, city and municipality, and a Barangay Disaster Risk Reduction and Management Committee (BDRRMC) in every barangay. Moreover, it provides fund for the calamity to be utilized in support of disaster risk reduction or mitigation, prevention, and preparedness activities for the potential occurrence of disasters and not just for response, relief, and rehabilitation efforts (Legislative Digital Resources, 2010).

Given the situation, resilience has been the by-word. It can be understood as an umbrella term that encompasses a range of ways in which a system responds to external stresses, major disruptions and new circumstances. While the concept has gained currency in many fields from ecology to psychology, in recent years it has become a prominent concept in the lexicons of climate change adaptation, disaster risk management, and sustainable development.

Several works on this field has yielded some consensus around the factors that make a resilience approach unique from traditional emergency preparedness. The Philippine government has developed strong coping mechanisms over its long history of experience with disasters. Yet, significant gaps remain in disaster management capacities across different regions in the Philippines and surprisingly little data are available referencing local levels of disaster resilience and preparedness. In connection, while significant progress has been made to advance this type of resilience approach, including multiple initiatives led by government agencies and philanthropic organizations to implement resilience frameworks, there remain several research and practice gaps that have prevented the full optimization of resilience. The main objective of this research is to evaluate the level of resilience and preparedness of the selected officials and members of MDRRMC and BDRRMC. Thus, this study on the level of disaster resilience and level of disaster preparedness program in Alabel, Sarangani Province was conducted.

Materials and Methods

This chapter discusses the research design, selection of respondents, research instruments, data gathering procedure, data analysis, and ethical considerations.

Research Design

In the conduct of the study, descriptive correlative quantitative research design was used. Descriptive correlational design is used in research studies that aim to measure the extent of the relationship between the two variables that occur between or among them (Akinlua, 2019). A descriptive correlational study is a study in which the researcher is primarily interested in describing the relationships among variables, without seeking to establish a causal connection. The quantitative tool consists mainly of a survey questionnaire on the level of local disaster resilience and preparedness adapted from the GOAL Toolkit Manual of 2015 and Harvard Humanitarian Initiative-Program on Resilient Communities. In addition, the qualitative part includes analysis of the cross-cutting themes from the key informant interview transcripts (GOAL, 2015; Bollettino, et al., 2018).

Selection of Respondents/Participants

In the conduct of the research, survey questionnaires were distributed among the selected officials and members of the Municipal Disaster Risk Reduction and Management Council (MDRRMC) and the Barangay Disaster Risk Reduction Management Council (BDRRMC). The respondents of the study were the two hundred nineteen (219) selected officials and members of the MDRRMC and BDRRMC. They came from the thirteen (13) barangays of Alabel in the Province of Sarangani. The selection of the sample population was done through purposive sampling procedure. Purposive sampling is common in qualitative research and mixed methods research. It is a non-probability method for obtaining a sample where researchers use their expertise to choose specific participants that will help the study meet its goals (Frost, 2023).

The inclusion of the target population is determined through complete enumeration based on the membership stipulated in the Executive Order of the Local Chief Executive (Mayor) and the Barangay Captains. Out of the fourteen (14) barangays of Alabel, the data gathering was conducted only among the thirteen (13) barangays considering that New Canaan was a newly created barangay of Alabel and there is still no existing composition of the Barangay Disaster Risk Reduction Management Committee (BDRRMC). The total composition of the BDRRMC among the thirteen (13) barangays are 195 members, while twenty-four (24) members of the MDRRMC. On the Focused-Group Discussion (FGD), a total of nine (9) participants were selected among the thirteen barangays which are considered to be disaster-prone barangays. The participants from the top three (3) disaster-prone barangays were composed of the barangay captains and two (2) members of the BDRRMC from each barangay. Respondents were asked to answer the items included in the survey questionnaire, while the selected key informants responded to structured questions during the interview.

Box 1 below shows the distribution of the respondents and participants from the aforesaid barangays of Alabel, Sarangani Province involved in the conduct of the study.

Box 1 : Distribution of Respondents/Participants of the Study

Name of Barangay	Respondents	Participants
BDRRMC Members		
Alegria	15	
Bagacay	15	

Baluntay	15	3
Datal Anggas	15	
Domolok	15	
Kawas	15	
Ladol	15	3
Maribulan	15	3
Pag-asa	15	
Paraiso	15	
Poblacion	15	
Spring	15	
Tokawal	15	
MDRRMC Members	24	
Total	**219**	**9**

Research Instrument

In the conduct of the study, the researcher utilized Survey Questionnaire (SQ) to consolidate the respective responses of the respondents. In order to support the answers and or responses generated from the Survey Questionnaire (SG), the researcher made a Key Informant Interview (KII) Guide. The data were collated and summarized for interpretation and recommendation. The inquiry on the level of disaster resilience and disaster preparedness among the respondents were determined using a five-point Likert rating scale.

The observations were interpreted in the following manner:

Box 2 : Likert Rating Scale for the Level of Disaster Resilience

Likert Rating Scale				
5	4	3	2	1
Very Highly Resilience	High Resilience	Moderate Resilience	Low Resilience	Very Low Resilience

Box 3 : Likert Rating Scale for the Level of Disaster Preparedness

Likert Rating Scale				
5	4	3	2	1
Highly Prepared	Always Prepared	Somewhat Prepared	Slightly Prepared	Unprepared

Using the questionnaire validation form, the identified experts rated and validated the Survey Questionnaire and the Key Informant Interview (KII) Guide. The experts were from the academe, and local

government unit (LGU) who had a well-founded work experience on disaster risk reduction and management and are master's or doctoral degree holder. The instruments were certified according to their construction and content. This process determined if the objectives of the study were achieved. Further, the instruments were checked to ensure validity and reliability and the comments and suggestions were incorporated. The validated instruments on the level of disaster resilience and the level of disaster preparedness were piloted to the identified 18 respondents.

On the other hand, Cronbach's alpha (Appendix K) was used to measure and ensure the internal reliability or consistency of the set of items in the developed survey questionnaire (Tabler, 2017).

Data Gathering Procedure
During the conduct of the said study, data were gathered through informed consent among the respondents and key informants. A letter of request was sent to the Office of the Municipal Mayor and to the Offices of the Barangay Captains seeking approval to conduct the study. Procedures and pertinent instructions in the survey questionnaire and interview guide were provided. The survey questionnaire were then distributed among the selected officials and members of the Municipal Disaster Risk Reduction and Management Council (MDRRMC) and Barangay Disaster Risk Reduction Management Council (BDRRMC) in the Municipality of Alabel, Province of Sarangani.

Data Analysis
The data that were gathered from each respondent were tallied and tabulated. To analyze the data, the following statistical tools were utilized: frequency, weighted mean, and correlation.

Frequency was used to identify the incidence of the occurrence of a particular responses. This statistical tool was utilized in this study to tally and tabulate the socio-demographic profile of the respondents in terms of age, sex, educational levels, employment, and source of income.

The Weighted mean was utilized to measure central tendencies of the gathered data and to further explain the level of disaster resilience and preparedness among the respondents. It was used to analyze the data that were gathered based on the SOP number two (2) and three (3).

Pearson's Product Moment Correlation (Pearson's *r*) measured the strength and direction of a linear association between two variables. It was used to determine the mean relationships of the independent and dependent variables. This tool was used to analyze the data based on the SOP number four (4).

In order to supplement the data that were gathered, the researcher conducted Key Informant Interviews to triangulate the findings of the study. This research used triangulation to help explain and explore complex research results using various methods to offer more balanced explanations to readers. This procedure enabled validation of the data and can be used in both quantitative and qualitative research.

The following scoring guide were used to evaluate the level of disaster resilience and the level of disaster preparedness of the respondents:

Box 4 : Scoring Guide for the Level of Disaster Resilience of the Respondents

Range	Verbal Interpretation
4.50-5.00	Very Highly Resilience
3.50-4.49	High Resilience
2.50-3.49	Moderate Resilience
1.50-2.49	Low Resilience
1.00-1.49	Very Low Resilience

Box 5 : Scoring Guide for the Level of Disaster Preparedness of the Respondents

Range	Verbal Interpretation
4.50-5.00	Highly Prepared
3.50-4.49	Always Prepared
2.50-3.49	Somewhat Prepared
1.50-2.49	Slightly Prepared
1.00-1.49	Unprepared

Ethical Consideration

The main thrust of this research was anchored in a fair, honest, impartial and transparent demeanor especially in dealing with respondents involved in this study. Data gathering was made possible by securing the informed consent of the respondents and participants involved in this study. The researcher attached a signed letter to the questionnaire informing the respondents that the results of the survey will be treated with the utmost confidentiality. The research respondents were notified accordingly to take part with proper approval, which is a crucial method to ensure that informants are respected by providing meaningful approval actions rooted in volunteerism.

In the same manner, the data-gathering tool were administered with approval from the appropriate channel of authority. The respondents of this study were identified and grounded on the standard and benchmark imposed by the researcher. Only the identified and qualified informants were subjected to participation. The study ensured that all informants were psychologically, socially, and morally healthy by strictly adhering to the informed consent and assent statements. The research participants are not exposed to physical, psychological, or socio-economic threats. In the absence or unavailability of the respondents, the researcher asked their most convenient time to proceed with the survey or data gathering. The researcher ensured that there will be no misrepresentation of somebody's research as his own. To avoid charges of plagiarism or irregularity, proper recognition and reference were given to all materials in the research. Plagiarism detection tools were used to ensure that this study is not plagiarized. The research authorship reflected the individuals' contribution to the study. The researcher is the author of this study, while the adviser as the co-author.

Results

This chapter comprises the presentation of data and textual presentation of key findings. It includes tables and textual presentations of the key findings of the study. The data presented in this chapter were taken from the responses of the 219 government officials, employees and members of the MDRRMC and BDRRMC in the Municipality of Alabel, Sarangani through a purposive sampling procedure.

The order of discussion was based on the specific problems presented and identified in the first chapter of this study. Tables 1, 2, 3, 4, and 5 were intended to answer the first problem on the socio-demographic profile of the respondents in terms of the following: age, sex, educational levels, employment status, and sources of income. Frequency distribution, percentage, and weighted mean were utilized to describe the results of the study.

Table 1 : Results of the Age of the Members of MDRRMC and BDRRMC

Age Bracket	Frequency	Percentage
18-19	1	0.50
20-24	4	2.00
25-29	20	9.00
30-34	26	12.00
35-39	12	5.50
40-44	28	13.00
45-49	42	19.00
50-54	35	16.00
55-59	25	11.00
60-64	13	6.00
65-69	11	5.00
70-74	2	1.00
75-79	-	-
80+	-	-
Total	219	100.00

Table 1 shows the age of the members of MDRRMC and BDRRMC. Majority of the respondents are coming from the age brackets of 45-49 with a frequency of 42 respondents or 19. 18% of the population; second, ages 50-54 with a frequency of 35 respondents or 15.98%; third, ages 40-44 with a frequency of 28 respondents or 12. 79%; fourth, ages 30-34 with a frequency of 26 respondents or 11.87%. The four age brackets with a total of one hundred thirty one (131) respondents comprise 60% of the total 219 respondent. Fifth, ages 55-59 with a frequency of 25 respondents or 11% of the population; sixth, ages 25-29 with a frequency of 20 respondents or 9%; seventh, ages 60-64 with a frequency of 13 respondents or 6%; eighth, ages 65-69 with a frequency of 11 respondents or 5%; ninth, ages 20-24 with a frequency of 4 respondents or 2% of the population; tenth, ages 70-74 with frequency of 2 respondents or 1% of the population, eleventh, ages 18-19 with a frequency of 1 respondent or 0.5%; and twelfth, ages 75-79 and 80+ has no respondent.

Table 2 : Results of the Sex of the Members of MDRRMC and BDRRMC

Sex	Frequency	Percentage
Male	109	49.80
Female	110	50.20
Total	219	100.00

Table 2 presents the results of the sex of the members of MDRRMC and BDRRMC. Among the 219 respondents, a frequency of one hundred ten (110) are females or 50.20% of the population, while 49.80% of the population or a frequency of one hundred nine (109) are males.

Regarding the educational qualification of the respondents, Table 3 shows that most are college graduate with 56 respondents or 25.57% of the population, followed by 42 respondents (19.17%) who completed secondary education, 37 respondents (16.89%) with earned units in college and 32 (14.61%) respondents who did not complete elementary education. The lesser portion consists of those who completed their elementary education, did not complete their secondary education (12 or 5.50%, 23 or 10.50%), finished vocational degree (7 or 3.19%) and 10 (4.57%) respondents are graduates with master's degree.

Table 3 : Results of the Educational Level Among the Members of MDRRMC and BDRRMC

Level of Education	Frequency	Percentage
Primary Incomplete	32	14.61
Complete Elementary Education	12	5.50
Secondary Incomplete	23	10.50
Complete Secondary Education	42	19.17
Vocational	7	3.19
Some College	37	16.89
College Graduate	56	25.57
Post Tertiary	10	4.57
Total	219	100.00

Table 4 shows the results of the employment status of the members of MDRRMC and BDRRMC in the Municipality of Alabel, Sarangani Province. The bulk of the respondents are government employees with sixty (60) respondents or 27.40% of the population; fifty nine (59) or 26.90% are government officials; forty seven (47) or 21.50% are barangay health workers and thirty eight (38) respondents or 17.35% of the population are security officers of their barangays.

Table 4 : Results of the Employment Status Among the Members of MDRRMC and BDRRMC

Status of Employment	Frequency	Percentage
Government Official	59	26.90
Government Employee	60	27.40
Peace Security Officer	38	17.35
Others:		
civil society representative	5	2.30
barangay health worker	47	21.50
barangay nutrition scholar	5	2.30
lupong tagapamayapa member	1	0.45
violence against women council member	1	0.45
purok chairman	1	0.45
water tender	1	0.45
child development worker	1	0.45
Total	219	100.00

Table 5 presents the sources of income among the members of MDRRMC and BDRRMC. The source of income of 183 respondents is employment in the government which is 83.6% of the total 219 respondents. The rest of the respondents are into farming (27 or 12.30%) and business (9 or 4.10%) as sources of income.

Table 5 : Results of the Source of Income Among the Members of MDRRMC and BDRRMC

Source of Income	Frequency	Percentage
Employment	183	83.60
Farming	27	12.30
Business	9	4.10
Total	219	100.00

Tables 6, 7, 8, 9, and 10 present the level of disaster resilience of the respondents in terms of: governance, risk assessment, knowledge and education, risk management and vulnerability reduction, and disaster preparedness and response.

Table 6 shows the results for the level of disaster resilience of the respondents in terms of governance. Integration with development planning got the highest weighted mean of $\bar{x}$= 4.06; second, community leadership has the weighted mean of $\bar{x}$= 4.00; third, rights awareness and advocacy has the weighted mean of $\bar{x}$= 3.98; fourth, women's participation has the weighted mean of $\bar{x}$= 3.84; fifth, access to funding and partnership has the weighted mean of $\bar{x}$= 3.81; and   sixth, inclusion of vulnerable groups has the weighted mean of $\bar{x}$= 3.64. In summary, the level of disaster resilience in terms of governance has an overall weighted mean of $\bar{x}$= 3.89.

Table 6 : Results for the Level of Disaster Resilience of the Respondents in terms of Governance

Governance	Mean	Description
Indicators		
Community Leadership	4.00	HR
Rights Awareness and Advocacy	3.98	HR
Integration with Development Planning	4.06	HR
Access to Funding and Partnership	3.81	HR
Inclusion of Vulnerable Groups	3.64	HR
Women's Participation	3.84	HR
Overall Weighted Mean	3.89	HR

Legend: VHR- Very High Resilience; HR- High Resilience; MR- Moderate Resilience; LR- Low Resilience   VLR- Very Low Resilience

Table 7 shows that results for the level of disaster resilience of the respondents in terms of risk assessment. Hazard assessment got the highest weighted mean of $\bar{x}$= 3.92; second, vulnerability/capacity assessment has the weighted mean of $\bar{x}$= 3.80; and third, local and scientific methods for risk awareness got the lowest weighted mean of $\bar{x}$= 3.78.

The level of disaster resilience of the respondents in terms of risk assessment has an overall weighted mean of $\bar{x}$= 3.84.

Table 8 : Results for the Level of Disaster Resilience of the Respondents in term of Knowledge and Education

Knowledge and Education	Mean	Description
Indicators		
Public Awareness and Knowledge	3.85	HR
Dissemination of DRR Knowledge	3.93	HR
Cultural Attitudes and Value	3.64	HR
Overall Weighted Mean	3.81	HR

Legend: VHR- Very High Resilience; HR- High Resilience; MR- Moderate Resilience; LR- Low Resilience; VLR- Very Low Resilience

Table 9 shows the results for the level of disaster resilience of the respondents in terms of risk management and vulnerability reduction. Operation of education services in emergencies got the highest weighted mean $\bar{x}= 3.91$; second, access to healthcare in emergencies has the weighted mean of $\bar{x}= 3.87$; third, sustainable environmental management has the weighted mean of $\bar{x}= 3.86$; fourth, health access and awareness in normal times and social protection has the same weighted mean of $\bar{x}= 3.82$; fifth, food and water supplies and protection of infrastructure and basic services has the same weighted mean of $\bar{x}= 3.81$; sixth, land use and planning has the weighted mean of $\bar{x}= 3.79$; seventh, hazard-resistant livelihoods practices has the weighted mean of $\bar{x}= 3.76$; eighth, access to financial services has the weighted mean of $\bar{x}= 3.74$; ninth, income and asset protection has the weighted mean of $\bar{x}= 3.69$; and tenth, access to market got the lowest weighted mean of $\bar{x}= 3.74$. The level of disaster resilience of the respondents in term of risk management and vulnerability reduction has an overall weighted mean of $\bar{x}= 3.79$.

Table 9 : Results for the Level of Disaster Resilience of the Respondents in terms of Risk Management and Vulnerability Reduction

Risk Management and Vulnerability Reduction	Mean	Description
Indicators		
Sustainable Environmental Management	3.86	HR
Access to Healthcare in Emergencies	3.87	HR
Health Access and Awareness in Normal Times	3.82	HR
Food and Water Supplies	3.81	HR
Hazard-Resistant Livelihoods Practices	3.76	HR
Access to Market	3.67	HR
Social Protection	3.82	HR
Access to Financial Services	3.74	HR
Income and Asset Protection	3.69	HR
Protection of Infrastructure and Basic Services	3.81	HR
Land Use and Planning	3.79	HR
Operation of Education Services in Emergencies	3.91	HR
Overall Weighted Mean	3.79	HR

Legend: VHR- Very High Resilience; HR- High Resilience; MR- Moderate Resilience; LR- Low Resilience; VLR- Very Low Resilience

Table 10 shows the results for the level of disaster resilience of the respondents in terms of preparedness and response. Early warning system got the highest weighted mean of x̄= 3.98; second, capacities in preparedness and response has the weighted mean of x̄= 3.91; third, emergency response and recovery has the weighted mean of x̄= 3.84; fourth, emergency infrastructure has the weighted mean of x̄= 3.83; fifth, volunteerism and accountability has the weighted mean of x̄= 3.81; and sixth, contingency planning got the lowest weighted mean of x̄= 3.79.

The level of disaster resilience in terms of preparedness and response has an overall weighted mean of x̄= 3.86.

Table 10 : Results for the Level of Disaster Resilience of the Respondents in terms of Preparedness and Response

Preparedness and Response	Mean	Description
Indicators		
Capacities in Preparedness and Response	3.91	HR
Early Warning System	3.98	HR
Contingency Planning	3.79	HR
Emergency Infrastructure	3.83	HR
Emergency Response and Recovery	3.84	HR
Volunteerism and Accountability	3.81	HR
Overall Weighted Mean	3.86	HR

Legend: VHR- Very High Resilience; HR- High Resilience; MR- Moderate Resilience; LR- Low Resilience;   VLR- Very Low Resilience

Tables 11, 12, 13, and 14 provide answers to the third problem. It shows the results on the level of disaster preparedness of the respondents in terms of: likelihood of being impacted by a national hazard, vulnerability of physical structures, people, and livelihoods, barangay-level planning and individual's preparation for disaster, and individual's sense of control over their own lives and their ability to participate and influence their community and government.

Table 11 shows the results for the level of disaster preparedness in terms of likelihood of being impacted by a national hazard. Flood or Storm Surge got the highest weighted mean of x̄= 4.03; second, typhoon has the weighted mean of x̄= 3.94; third, drought, has the weighted mean of x̄= 3.83; fourth, earthquake has the weighted mean of x̄= 3.79; and fifth, landslide got the lowest weighted mean of x̄= 3.63.

The level of disaster preparedness of the respondents in terms of likelihood of being impacted by a national hazard has the overall weighted mean of x̄= 3.84.

Table 11 : Results for the Level of Disaster Preparedness of the Respondents in terms of Likelihood of being Impacted by a National Hazard

Likelihood of being Impacted by a National Hazard	Mean	Description
Indicators		
Typhoon	3.94	AP
Flood or Storm Surge	4.03	AP
Landslide	3.63	AP
Drought	3.83	AP
Earthquake	3.79	AP
Overall Weighted Mean	3.84	AP

Legend: HP- Highly Prepared; AP- Always Prepared; SP- Somewhat Prepared; SP- Slightly Prepared; UP- Unprepared

Table 12 shows the results for the level of disaster preparedness in terms of vulnerability of physical structures, people, and livelihoods. Barangay Official got the highest weighted mean of x̄= 4.59; second, employees has the weighted mean of x̄= 4.03; third, office of the barangay has the weighted mean of x̄= 3.98; fourth, schools has the weighted mean of x̄= 3.92; fifth, clinics has the weighted mean of x̄= 3.90; and sixth, homes got the lowest weighted mean of x̄= 3.89.

In summary, the level of disaster preparedness of the respondents in terms of vulnerability of physical structures, people, and livelihoods has the overall weighted mean of x̄= 4.05.

Table 12 : Results for the Level of Disaster Preparedness of the Respondents in terms of Vulnerability of Physical Structures, People, and Livelihoods

Vulnerability of Physical Structures, People, and Livelihoods	Mean	Description
Indicators		
Homes	3.89	AP
Schools	3.92	AP
Clinics	3.90	AP
Office of the Barangay	3.98	AP
Barangay Officials	4.59	HP
Employees	4.03	AP
Overall Weighted Mean	4.05	AP

Legend: HP- Highly Prepared; AP- Always Prepared; SP- Somewhat Prepared; SP- Slightly Prepared; UP- Unprepared

Table 13 shows the results for the level of disaster preparedness of the respondents in terms of barangay-level planning and individual's preparation for disaster. Barangay-level planning got the highest weighted mean of x̄= 4.12; while individual's preparation for disaster got the lowest weighted mean of x̄= 4.06.

The level of disaster preparedness in terms of barangay-level planning and individual's preparation for disaster has an overall weighted mean of x̄= 4.09.

Table 13 : *Results for the Level of Disaster Preparedness of the Respondents in terms of Barangay-Level Planning and Individual's Preparation for Disaster*

Barangay-Level Planning and Individual's Preparation for Disaster	Mean	Description
Indicators		
Barangay-Level Planning	4.12	AP
Individual's Preparation for Disaster	4.06	AP
Overall Weighted Mean	4.09	AP

Legend: HP- Highly Prepared; AP- Always Prepared; SP- Somewhat Prepared; SP- Slightly Prepared;   UP- Unprepared

Table14 shows the results the level of disaster preparedness of the respondents in terms of Individual's sense of control over their own lives and their ability to participate and influence their community and government. Ability to participate and influence their community and government got the highest weighted mean of x̄= 4.01; while sense of control of their own lives got the lowest weighted mean of x̄= 3.99. The result for the level disaster preparedness in terms of individual's sense of control over their own lives and their ability to participate and influence their community and government has the overall weighted mean of x̄= 4.00.

Table 14 : **Results for the Level of Disaster Preparedness of the Respondents in terms of Individual's Sense of Control Over their Own Lives and their Ability to Participate and Influence their Community and Government**

Individual's Sense of Control Over their Own Lives and their Ability to Participate and Influence their Community and Government	Mean	Description
Indicators		
Sense of control of their own lives	3.99	AP
Ability to participate and influence their community and government	4.01	AP
Overall Weighted Mean	4.00	AP

Legend: HP- Highly Prepared; AP- Always Prepared; SP- Somewhat Prepared; SP- Slightly Prepared;   UP- Unprepared

The computation of the mean scores of the five different indicators for disaster resilience (governance, risk assessment, knowledge and education, risk management and vulnerability reduction, and preparedness and response) in Table 15 reveals the following results. Governance obtained the highest mean score of x̄=3.89; followed by preparedness and response with a mean of x̄= 3.85. The indicator on risk assessment comes in third with a mean of x̄=3.84. The fourth rank is the indicator on knowledge and education with a mean score of x̄= 3.81. On the other hand, the indicator of risk management and vulnerability reduction has the lowest mean score of (x̄= 3.79) ranking fifth.

Table 15 : Results of the Computation of the Mean on the Five Different Indicators for Disaster Resilience

Level of Disaster Resilience	Overall Mean	Description	Rank
Governance	3.89	HP	1
Risk Assessment	3.84	HP	3
Knowledge and Education	3.81	HP	4
Risk Management and Vulnerability Reduction	3.79	HP	5
Preparedness and Response	3.86	HP	2

Legend: VHR- Very High Resilience; HR- High Resilience; MR- Moderate Resilience; LR- Low Resilience;   VLR- Very Low Resilience

Table 16 shows the results of the computation of the mean on the four different indicators for Disaster Preparedness. Barangay-level planning and individual's preparation for disaster got the highest weighted mean of $\bar{x}$= 4.09; second, vulnerability of physical structures, people, and livelihoods has the weighted mean of $\bar{x}$= 4.05; third, individual's sense of control over their own lives and their ability to participate and influence their community and government has the weighted mean of $\bar{x}$= 4.00; and fourth, likelihood of being impacted by a national hazard got the lowest weighted mean of $\bar{x}$= 3.84.

Table 16 : Results of the Computation of the Mean on the Four Different Indicators for Disaster Preparedness

Level of Disaster Preparedness	Overall Mean	Description	Rank
Likelihood of being Impacted by a National Hazard	3.84	AP	4
Vulnerability of Physical Structures, People, and Livelihoods	4.05	AP	2
Barangay-Level Planning and Individual's Preparation for Disaster	4.09	AP	1
Individual's Sense of Control Over their Own Lives and their Ability to Participate and Influence their Community and Government	4.00	AP	3

Legend: HP- Highly Prepared; AP- Always Prepared; SP- Somewhat Prepared; SP- Slightly Prepared;   UP- Unprepared

Table 17 presents answer to the fourth problem of the study on the significant relationship between disaster resilience and disaster preparedness of the respondents. The results shows the relationship between disaster resilience and disaster preparedness among the members of the MDRRMC and BDRRMC in the Municipality of Alabel, Sarangani Province, with a Pearson Correlation of (r= .449).

Table 17 : Results for the Relationship Between the Local Disaster Resilience and Disaster Preparedness of the MDRRMC and BDRRMC members in the Municipality of Alabel, Sarangani Province

Correlations			
		Disaster Resilience	Disaster Preparedness
Disaster Resilience	Pearson Correlation	1	.449**
	Sig. (2-tailed)		.000
	N	219	219
Disaster Preparedness	Pearson Correlation	.449**	1
	Sig. (2-tailed)	.000	
	N	219	219
**. Correlation is significant at the 0.01 level (2-tailed).			

Table 18 presents the answer of the fifth problem on what are the disaster resilience and preparedness experiences of the barangay officials in the Municipality of Alabel. Based on the results, it reveals the disaster resilience and disaster preparedness experiences among the nine (9) participants of the disaster prone barangays of Alabel, Sarangani Province. The informants shared varied views and experiences in dealing calamity in their respective area of concern. Based on the Focus Group Discussion (FGD) with the selected informants, analysis of the findings of the study gave rise to the following core ideas and themes and were used to explain and explore the complex results of the study which are shown in the table below.

Table 18 : *Disaster Resilience and Disaster Preparedness Experiences of the Barangay Officials in the Municipality of Alabel*

Core Ideas	Themes
Constant Communication Division of Labor/Tasking by Committee	Planning and Preparation
Financial Issues Rescue Equipment and Vehicle Lack of Cooperation among Constituent Relocation Area	Issues and Challenges
Support Group Leadership	Coping Mechanism

The result presents the core ideas and themes that prevailed after a thorough data analysis which includes constant communication and division of labor/tasking by committee under category 1.1 and 1.2 of theme 1 (Planning and Preparation) respectively. Theme 2 on the issues and challenges has four core ideas emerged and these are financial issues, rescue equipment and vehicle, lack of cooperation among

constituents, and relocation area. Further, theme 3 on the coping mechanism has two core ideas predominated and these are the support group and leadership (category 3.1 and 3.2) respectively.

Discussion

This chapter presents the detailed analyses, interpretation of data, justification of results, implication of findings guided with its objective and supported by existing literature. It encompasses conclusions, and recommendations on the level of disaster resilience and level of preparedness of the respondents in the Municipality of Alabel, Sarangani Province.

Socio-demographic Profile of the Respondents

Age

Based on the findings, majority of the respondents belong to the adult age brackets. The presence of respondents age underscored the significant role of experience in decision making which is deem crucial especially in addressing the issues and challenges in disaster resilience and preparedness not only at the barangay level but also in the Municipal level as a whole.

This is supported by the claim of Alcayna et al. (2018) in their study on the nationwide household-level survey which involved respondents aged between 18 to 88. In this study, the average respondent age was 42 years of age. Although the younger respondents might not have the same level of involvement on decision-making as their older counterparts they still have valuable contributions to impart.

The aforesaid is further supported by (Eberhardt et al., 2018) that younger individuals could bring innovation, adaptability, and fresh perspectives in the community especially in disaster mitigation plans and preparedness.

The results, therefore, underscored a significant implication on the importance of having a mix of both younger and older individuals involved in the MDRRMC and BDRRMC.

Sex

The recent findings of the study justified that out of the two hundred nineteen members of the Municipal Disaster Risk Reduction and Management Council (MDRRMC) and Barangay Disaster Risk Reduction and Management Council (BDRRMC), there are proportional number of male and female respondents, which conforms to the study of Bollettino et al. (2018) with the 4,368 adult respondents nationwide in the Philippines, geographically representative at the regional level which showed the numbers of male and female respondents as statistically tie.

In line with the planning and preparation in the MDRRMC and BDRRMC of Alabel, this implies that both sexes have equal distribution of representation in terms of decision making relative to disaster resilience and preparedness.

Employment Status

In terms of employment status, majority of the respondents are working in the government sector. However, this is in contrast to the result of the study of Enriquez et al. (2018) that 30% of Filipinos with 45 percent of these households receiving remittances from a family members working abroad. This contrasts sharply with the national average for Filipino men. Twelve percent (12%) of Filipino men interviewed reported no monthly income, nine percent (9%) reported earning less than PHP1,000 per month, sixty three percent (63%) reported earning between PHP1,000 – 10,000 per month, and the remaining 16 percent earned more than PHP10,000 pesos per month.

The percentage of both women and men reporting no monthly income varied widely across regions. The largest number of women reporting no monthly income was found in CARAGA, where fifty-nine percent (59%) of women reported no monthly income. This contrasts sharply with Davao, where eleven percent (11%) of women reported no monthly income. Men living in Zamboanga Peninsula and the National Capital Region reported the highest percentages of no monthly income, with twenty two percent (22%) and

twenty-three percent (23%) respectively. By contrast, only four percent (4%) of men residing in Davao claimed to have no monthly income.

The study's findings therefore have a significant implication that there is a security of tenure among the members of MDRRMC and BDRRMC contributory to support their respective family and enable them to send their children to formal education.

Educational Level
Pertaining to the educational qualification of the respondents, the data reveal that most have an academic degree or if not have earned units in college which speaks to a high literacy rate among the sample population.

This is supported by the study of Enriquez et al. (2018) with respect to highest level of educational achievement, 15% of total respondents had completed primary school, and 31% had completed secondary school, 5% of respondents completed vocational school, 21% had either started a college education or were college graduates out of the 4,368 total sample population.

The recent findings have a significant implication of a competent employee and government official serving the constituents in the Barangays and the Municipality of Alabel, Sarangani Province as a whole.

Sources of Income
On the sources of income, majority of the respondents are employed with the government. The rest of the respondents are engaged into agriculture and commerce as their sources of income.

However, these findings are in contrast to the study of Vinck et al. (2018) that the percentage of both women and men reporting no monthly income which speaks of unemployment varied widely across regions. Based on national average, the household's primary sources of income came from farming (17 percent), daily unskilled labor (11 percent), and daily skilled labor (5 percent), respectively.

In light of these findings, it has a significant implication that the respondents have a stable means of livelihood to support their respective necessities.

Summary on the Level of Disaster Resilience of the Respondents
Results revealed that majority of the respondents are High Resilient on the level of disaster resilience among the members of the Municipal Disaster Risk Reduction and Management Council (MDRRMC) and Barangay Disaster Risk Reduction and Management Council (BDRRMC) in terms of the governance, risk assessment, knowledge and education, risk management and vulnerability reduction and disaster preparedness and response.

In light with these findings, it has a significant implication that the first three indicators that have the greatest mean are the areas of best practices of the Municipality while the last indicator with the lowest mean is the area that needs improvement. It is supported by the study of Tozier de la Poterie and Baudoin (2015) which focused on incorporating emergency management knowledge that existed in the local level and on improving coping capacities to manage known risks. The strategy was designed to focus international and local communities on cooperating to implement disaster risk reduction activities.

Further, GOAL (2015) claimed that major hazards such as hurricanes, earthquakes, volcano eruptions, droughts, and landslides, among others, constantly threaten the lives and livelihoods of the most vulnerable populations across the world. In the context of accelerated climate change and population growth, the current trend of frequent major disasters is expected to increase in the foreseeable future. To mitigate this trend, increased disaster resilience is essential to reduce the potential impact of humanitarian crises on the poorest communities.

In addition, Pellini et al. (2013) studied the initiatives of LGUs to reduce the negative effects of natural disasters, as well as the use of knowledge and research evidence in the design of urban resilience policies in urban areas. The study found that a history of being a disaster-prone area means a higher level of

awareness among people of the risks associated with natural disasters. This is also true in the condition of the Municipality of Alabel.

In the contrary, Florano (2014) examined the role of community governance in disaster recovery and resilience by looking into selected barangays in the cities of Tacloban, Iligan, Dagupan, and Marikina. The study conducted several key informant interviews and focus group discussions and used a Disaster-Resilient Community Index (DRCI) to measure resilience of the affected communities.

Findings of the study revealed that community governance for disaster recovery seems to be stuck in the pre-National Disaster Risk Reduction and Management (NDRRMC) years because recovery planning is still passive and reactive. There is no early recovery planning and government that has been relying on post-disaster needs assessment. Another finding of the study was that faster recovery time from a disaster is directly related with resilience.

Summary on the Level of Disaster Preparedness among the Respondents
The recent findings of the study revealed that the level of disaster preparedness of the members of Municipal Disaster Risk Reduction and Management Council (MDRRMC) and Barangay Disaster Risk Reduction and Management Council (BDRRMC) are Always Prepared in terms of: Likelihood of being impacted by a national hazard, vulnerability of physical structures, people, and livelihoods, barangay-level planning and individual's preparation for disaster, and individual's sense of control over their own lives and their ability to participate and influence their community and government.

The findings have a significant implication that the highest rank with the greatest mean score connotes the area of best practices of the Municipality of Alabel, while the least rank with the lowest mean score is the area that needs improvement. This conforms to the claim of Alcayna et al. (2018) that most Filipinos (70 percent) cited their experience with previous disaster as the reason for being prepared for future disasters. Similarly, a large majority of Filipinos (68 percent) believed their local government is well-prepared to deal with disasters and 70 percent felt that the national government is well-prepared to cope with disasters. The study asserted further that regarding preparations ahead of a disaster, 40 percent believed that relatives, and 50 percent believed the Local Government Unit (LGU), had a role in helping their household to prepare.

Moreover, Francisco et al. (2014) studied the coping strategies of households in Marikina City in response to extreme floods. The main objective was to understand the kinds of coping strategies that households used. The study surveyed 402 households to identify the measures they took in preparation for the rainy season of 2012 and the preparations they had made for the monsoon season of 2013.

Finding of the study revealed that the most commonly adapted measure in 2012 was to check weather updates and flood warnings regularly (88%) followed by the preparation of an evacuation plan for the family (73%). The percentage of respondents who adapted these measures further increased to 97% and 79% respectively in 2013.

The author argued that these changes suggest that many households learned from their recent experience of flooding, and that more households have now implemented measures in preparation for the next rainy season.

The study suggested that pro-active adaptation measures be encouraged and enhanced by providing vulnerable households with better access to information, training on disaster management and adaptation, livelihood support to enhance their economic capability, opportunities for higher education, and financial support to enable them to build stronger and more resilient housing units. Government should also expand the reach and availability of low-interest rate calamity loans as most households rely on loans to address their immediate needs after being struck by a disaster.

Significant Relationship between Disaster Resilience and Disaster Preparedness among the Respondents

The result revealed that there is a moderate positive correlation ($r= 0.449$) between disaster resilience and disaster preparedness among the members of Municipal Disaster Risk Reduction and Management Council (MDRRMC) and Barangay Disaster Risk Reduction and Management Council (BDRRMC). In light of these findings, it has a significant implication that the higher the disaster resilience, the higher also is the preparedness in times of disaster. The result supports the findings of Vinck et al. (2018) that preparedness is a component of resilience. Their study claimed that perceptions of individual disaster preparedness, planning, coping, and adaptation revealed that at the national average, Filipinos were divided with 31 percent saying, they are only slightly prepared or not at all prepared to respond to a disaster in the near future.

Moreover, only 27 percent of the population was confident that they could adapt to changes resulting from a disaster, and 41 percent of Filipinos said they would struggle to cope with changes in weather patterns if this resulted in more frequent disasters. Consequently, when the different broad measures of resilience-preparedness, adaptability, coping, and recovery were taken together their study revealed significant overall differences between regions.

As presented in the previous chapter on the Disaster Resilience and Disaster Preparedness Experiences of the Barangay Officials in the Municipality of Alabel, three major themes with core ideas or sub-themes surfaced from the informant's Focus Group Discussion (FGD) after an extensive analysis of the data gathered namely: (1) Planning and Preparation, (2) Issues and Challenges, and (3) Coping Mechanism.

Planning and Preparation. In the barangay-level, the informants shared that although they were not asking for any incidence of calamity, they plan and prepare to face the possible occurrence of a disaster. There is an active participation and composition of BDRRMC in the barangays of the Municipality of Alabel to plan before a disaster may strike and act in the middle of the calamity. The barangays have contingency plans and protocols being followed. Within the barangay, the respective barangay captains are the chairman of the Barangay Disaster Risk Reduction and Management Council (BDRRMC) who presides during the conduct of planning and preparation. Accordingly, it is recommended that (1) making disaster risk reduction a priority, (2) improving risk information and early warning, (3) building a culture of safety and resilience, (4) reducing the risks in key sectors and (5) strengthening preparedness for response (Shaw et al., 2010). It was explained explicitly by the informants that before a disaster may arise they make a plan and preparation. On this note, three of the informants posited:

I1:   *"So ito sir ah ang disaster response sa ang pagprepare namo sa ah inang plan diri sa barangay ang number one ang communication"… "So kailangan macommunicate ang mga tao nato nga magprepare kayo dahil may incoming na baha o flooding…"* (Actually sir, before a calamity or disaster may strike, we do planning and preparation in the barangay, number one is communication.) [lines 1-2]

I2:   "A*ng una namo gibuhat kaning IEC"* (Information Education Campaign)… *"Iinform ang mga tawo kung unsa ang angay nga buhaton kung naay baha, flashflood o Tsunami"… "Tanan nga mga tawo nakabalo na unya naga conduct pud ta og mga drill regarding sa baha o flashflood"… "Kompleto napud ta og mga communication device.. siren, alarm, radio hand set, flashlight… og kabalo pud ang mga tawo kung kinsa ang mga daganan kung example my Tsunami o flashflood nga mahitabo."* (We call the attention of every constituents through IEC. The communication devices were ready that includes siren, alarm, radio hand set, and flashlight.) [lines 9-13]

I8:   *"Sa barangay po sir naghahanda po kami ng mga like example*

evacuation center… Nagpreprepare kami ng mga.. nag-iimbak po kami ng mga pagkain para in case of emergency… May naglalagay din po kami ng warning signages, then naglalagay kami ng alarm doon sa risk area like doon sa isang purok malapit sa sapa... Nagkaroon din kami ng mga orientation, seminars sa mga rescuers para alam nila kung paano mag rerescue… Naga undergo ang mga responders og trainings, naay information education campaign". (In the barangay, we prepare the evacuation center, we stock food relief, put warning signages, rescuers undergo orientation, seminar, and information education campaign.) [lines 103-107]

Informant 1 shared how they plan and prepare before a disaster may arise. It was testified that before a possible calamity or disaster may strike they communicate the members of the BDRRMC especially the Purok Chairman and Barangay Tanod with the assistance of the Barangay Officials. In addition, informant 8 added that within the barangay, they prepare the rescuers by undergoing orientation, seminar and information education campaign to make them capable in responding in times of calamity. In connection, they prepare the evacuation center and the relief goods to be distributed if there is evacuation that will happen.

Under Theme 1, two core ideas were identified from the responses of the informants as they testified their experiences in which were categorized into (1) Constant Communication, and (2) Tasking by Committee/Division of Labor.

The aforesaid core ideas were supported by the testimony of informant 5:

I5: *"Salamat po sir during po sa ah mayroon po kaming ah… nagbubudgeting kami… mayroon po kaming kanya-kanyang tasking... mayroon naka assign sa pagluluto, medicine, at nakaassign sa paglalagyan sa mga apektado".* (Thank you sir. We do budgeting and we have our own task, we assign who will cook, in health, for medicine, and those who will be assigned at evacuation area.) [lines 73-76]

Further, informant 5 claimed and testified that:

I5: *"Pero kadalasan po namomonitor na namin… Malungon area palang ang baha… ang Malungon tatawag na sa amin na magprepare na kayo... sa barangay may mga committee na para si kapitan hindi na mahirapan.. dahil kung andon na ang kalamidad nandoon na kami".* (Usually we do monitor, other Municipality will communicate to us to prepare. In our barangay we have committee.) [lines 77-78]

Result of the Focus Group Discussion (FGD) revealed that within the barangay level, the Barangay Disaster Risk Reduction and Management Council (BDRRMC) played a significant role in times of disaster incidence. Based on the interview conducted, the informants emphasized based on their previous experiences that they had plan and preparation for disaster mitigation.

According to them, constant communication among Purok Officials is observed to monitor and assess the area of concern whenever calamity may strike. They shared that the barangay council through its respective committees are always prepared to respond. In relation, the committees involved for the quick response are committee on peace and order, food, finance, health, and transportation.

Issues and Challenges. Considering the existence of plan and preparation, the informants asserted the issues and challenges they encountered in the middle of the disaster. The study of Israel and Briones (2013)

found that past studies on adaptation and coping strategies point to the negative effects of natural disasters to household income and subsequently to household poverty.

Specifically, poor households in both urban and rural areas are the most affected because their asset base, livelihood opportunities and incomes diminished as a result of disasters. This consequently worsens the poverty situation and overall welfare of households.

Four core ideas under theme 2 were identified from the responses of the informants on the issues and challenges they encountered in times of disaster and categorized into (1) Financial Issues, (2) Rescue Equipment and Vehicle, (3) Lack of Cooperation among Constituent, and (4) Relocation Area.

The above statement is further emphasized by the Informants under financial issues which stated:

I2: *"Naga-ampo me nga madaku-dako among IRA para madugangan among 30% quick response".* (We pray that our IRA will be doubled so that our 30% quick response will be improved.) [lines 42-43]

I4: *"Okay this is the reality during calamity our BDRRM fund is not enough".* (This is the reality during calamity, our BDRRM fund is insufficient.) [lines 98-99]

I8: *"Ah talaga ang needs namin ang 'yong malaking pundo para sa disaster".* (We really need significant fund for disaster.) [lines 122-123]

Looking into the claims of the informants, they asserted the issues in terms of budget or availability of fund which is essential during disaster mitigation. There are still barangays in the Municipality of Alabel who have not yet purchased a rescue vehicle because of the deficiency of funds or not given priority.

On the other hand, Informants 3, and 5 further testified the need in the barangay in terms of rescue equipment and vehicle under category 2. The informants emphasized that:

I3: *"Isa yong rescue vehicle… yon lang".* (We need rescue vehicle.) [lines 57-59]

I5: *"Naexperience po namin during calamity yong speed boat o rubber boat at yong lubid"…"Sana po mayroong maistambay sa aming barangay na gamit para if in case na andiyan na ang problema hindi na po kami lalapit sa provincial government at kung anu-ano na ahensiya".* (We experience during calamity the need of speed boat or rubber boat and rope. Looking forward, we have our own equipment in our barangay.) [lines 100-101]

The informants shared the challenges in the middle of disaster especially in rescuing their affected constituents due to the deficiency of rescue equipment such as rope, rubber boat or speed boat, and rescue vehicle.

Informants testified further under theme 2 specifically category 3 on the issues and challenges encountered in times of disaster particularly the lack of cooperation among constituents especially during evacuation.

I2: *"okay ah sometimes kung may darating na calamity sa isang prone area... kung ang tao sinasabihan na ganun ang gawin.. yong mga tao ayaw nila na magsunod… halimbawa we need to evacuate the constituents sa evacuation area ayaw nila magsunod dahil doon sa mga alaga na maiiwan nila".* (In the middle of calamity especially in the disaster prone area, the people will not listen and cooperate

during evacuation.) [lines 90-91]

The barangay council considered this a challenge most especially in the middle of evacuation where some of the affected constituents in the area were advised to immediately vacate to avoid possible adversity yet they will not cooperate because accordingly, they cannot dispel because of their livelihood that will be left behind. In addition, they have their crops and livestock to attend.

In the same manner, the informants emphasized under theme 2 category 4, the need of relocation area for the constituents who are always affected by disaster. They testified further that:

I4: "*Okay ahh una in behalf sa council ng barangay nagprepare kami ng relocation area... Mabigyan sila ng relocation site especially sa mga soil erosion prone area sa barangay*". (In behalf of the barangay, we prepare relocation area.) [lines 84-85]

I5: "*Yong sa subdivision na para mabigay sa relocation site... hinihintay nalang namin ang go signal ni Mayor para maibigay sa kanila*". (We are waiting for the go signal of our Mayor to award the subdivision of relocation area.) [lines 87-88]

I6: "*Hinihintay lang talaga namin sir yong relocation area ng mga apektado*". (We are waiting for the relocation area.) [lines 88-89]

The aforesaid statements warrants the re-occurrence of affected individuals of the same area of concern if they will be provided a much safer place to reside away from possible catastrophe. Specifically, it is important to relocate the disaster prone constituents to avoid casualty and re-occurrence of the same concern to the same area.

Coping Mechanism. Given the respective issues and challenges encountered by the informants in times of disaster incidence, they still managed to cope and address the needs of their constituents. This is supported by the study of Francisco et al. (2014) on the coping strategies of households in Marikina City in response to extreme floods.

Findings of their study revealed that the most commonly adapted measure in 2012 was to check weather updates and flood warnings regularly (88%) followed by the preparation of an evacuation plan for the family (73%). The percentage of respondents who adapted these measures further increased to 97% and 79% respectively in 2013.

Under Theme 3, two core ideas were identified from the responses of the informants on how they manage to cope in the middle of the disaster incident based on their experience which categorized into (1) Support Group, and (2) Leadership.

Informants emphasized despite the limitations and challenges they encountered support group still exist which lighten-up the burden and address the immediate needs of the evacuees. Gowan (2014) argued that disaster risk reduction (DRR) focuses on building an engineering and systems-wide capacity for dynamic adaptation through risk management. DRR is often equated with minding the risk and, often by extension, resilience. These claims where explicitly shared and testified accordingly:

I1: "*So ang una-una nga magtabang sa amoa diri sir ang atong MSWD og ang ahh Disaster nato sir… mao na sila una nagaabot sa area nato kung may baha na darating*". "*Ikaduha nga makatabang sa amoa ang ahh MSWDO sila ang ara sa mga katawhan sa evacuation center sila ang naga assist sa supply*". (DSWD and MDRRMO extends support and assistance.) [lines 23-24]

Extreme events require robust decision-making capacities and deep personal resources, especially when displacement unexpectedly occurs. Moreover, people differ in how they perceive and process their risks affectively and cognitively (Gowan, 2014).

I4: "*So ganito yon sir ah halimbawa need ng kababayan natin ng.. nabigyan na natin ng ayuda… may mga iba na nawawalan ng gamit*

na gina arise nila sa amin sa barangay... nagahingi kami ng assistance sa ating congressional office… So yon ang experience namin nagbibigay agad ng assistance ang congressional office especially municipal office para sa kanilang pangangailangan aside sa pagkain nila". (Congressional and Municipal Office extends cash assistance to the affected constituents.) [lines 94-96]

I7: *"Mayroong civic organization na tumutulong…even galing Gensan".* (Even civic organization from General Santos City extends help and assistance.) [lines 110-111]

This therefore imply the significance and strength of "bayanihan" or support system in addressing issues and challenges in the midst of disaster. The informants asserted further that in the middle of calamity they can easily manage and cope because they had a first-hand preparation like for example, orientation, training on disaster response and preparedness, and vibrant information education campaign.

In addition, there is an early warning system device such as siren deployed and set-up not only among the Barangay Officials but in every purok particularly among those areas of concern through their Purok Chairman to warn the constituents of the possible evacuation relative to disaster incidence. The informants explained that an available evacuation facilities in every barangays that include barangay gym, school multi-purpose gym, warehouses, and even churches are all registered to the municipal disaster risk reduction and management office (MDRRMO) as evacuation facilities.

Furthermore, the barangay-level through the Municipal Social Welfare and Development Office (MSWDO) and Municipal Disaster Risk and Reduction Management Office (MDRRMO) are working hand-in-hand in the middle of calamity and during evacuation to support the affected constituents. According to them, relief goods are made available to support the immediate needs of the evacuees.

On category 2 of theme 3, the informants testified the good leadership from the provincial, municipal down to the barangay level in terms disaster resilience and preparedness. These claims are further emphasized accordingly:

I4: "W*e are always prepared on what we are… the needs of our barangay. I have the command especially in the peace and order".* (We are always prepared on the needs of our barangay. I have the command especially in the peace and order.) [lines 63-67]

I7: *"Para maging handa ang barangay ay nagpapatawag ang aming punong barangay sa mga purok chairman to conduct a meeting sa kanila including the tanod… yon ang aming paghahanda kung sakaling may sakuna na darating sa aming barangay".* (Our Barangay Captain calls and conducts meeting to all Purok Chairman and Barangay Peace Security Officers for disaster preparation.) [lines 102-103]

I1: "S*o yon ang experience namin nagbibigay agad ng assistance ang congressional office especially municipal office para sa kanilang pangangailangan aside sa pagkain nila".* (Based on our experience the Congressional and Municipal Office immediately provides assistance.) [lines 96-27]

I

Informants testified that after the incident the evacuees are made sure they were given cash support assistance to start their living through the program of the government both in the municipal and provincial level. They claimed that the local government unit through the leadership of the Municipal Mayor has made sure that the affected constituents within the barangay will be relocated the soonest time to avoid the re-occurrence of the incidence by purchasing a parcel of land safer than their previous residence.

Ballesteros and Domingo (2015) emphasized that the socioeconomic role of SMEs in a community must be recognized. Particularly in times of disasters, the immediate recovery of communities heavily relies on the ability of businesses like SMEs to provide products/services, employment opportunities, and local revenue.

Their study recommended that national frameworks and development plans should be reviewed and translated into workable subnational and sectoral action plans. A good approach to assessing the needs and providing DRRM interventions for SMEs would be a dis-aggregated or sectoral approach.

In addition, improving business continuity and resilience requires the joint effort and cooperation between the government, private sector, and local communities. Government would be responsible on defining the appropriate policy framework and invest climate which will lay the groundwork for building resilience.

Meanwhile, private sector and local community participation would entail a sense of ownership among them and therefore encourages participation and enhances the adaptive capacity among the various stakeholder involved.

Enhancement Program on Disaster Resilience and Preparedness of the Municipality of Alabel, Sarangani Province
Introduction
The Municipality of Alabel has a tenable programs on disaster resilience and preparedness and even awarded as a recipient of the "Kalasag Award" on disaster preparedness and resiliency from 2018 to present. Nonetheless, in order to promote sustainability of the said programs there is a need to prioritize and strengthen the enhancement program to solidify its merit.

Rationale
The Municipality of Alabel is a first class municipality and the capital town of the Province of Sarangani. Recently, it takes pride of its booming tourism attracting robust investments from various sectors which pretense a great potential for the socio-economic growth of the town.

On the other hand, a significant percentage of the land was devoted to agricultural production and thus scattered in all slope ranges. Slope ranges are directly proportional to erosion potential meaning the lower the slope, the lower its susceptibility to erosion. Based on the slope, soil type, and rainfall, the whole area of Alabel has a moderate flooding and landslide hazard. This means that flooding may occur in some spots with natural depressions and directly adjacent to bodies of water, specifically Buayan River (ALABEL-LDRRM-PLAN, 2022-2025).

The development of the enhancement program enables the local government unit to highlight relevant and responsible intervention activities that address the underlying needs pertaining to disaster resilience and preparedness. This will address the gap in knowledge on both local disaster resilience and preparedness by providing a comprehensive overview of measures of resilience and levels of disaster preparedness among the members of the MDRRMC and BDRRMC. Based on the results of the findings of the study, there are areas that need to be enhanced or improved, as well as the issues and challenges derived from the explicit discussion from the informants during the Focus Group Discussion (FGD). One of the five indicators highlighted and emphasized areas to be improved include: first, implementation of the risk management and vulnerability reduction under the disaster resilience program that implicates concerns on sustainable environmental management; second, access to healthcare in emergencies, health access and awareness in normal times, food and water supplies, hazard-resistant livelihoods practices; third, access to market, social protection; fourth, access to financial services, income and asset protection; and last, protection of infrastructure and basic services, land use and planning, and operation of education services in emergencies.

On one hand, the area that needs to be enhanced and improved under the disaster preparedness is the likelihood of being impacted by a national hazard that include typhoon, flood or storm surge, landslide, drought, and earthquake.

Based on the issues and challenges testified by the informants, the areas to be improved includes the availability of rescue equipment and vehicle especially in the barangay level as well as the urgent need of a relocation area for the affected constituents.

Areas of Concern

The areas of concern comprise the sub-indicators on risk management and vulnerability reduction under the area on disaster resilience which include sustainable environmental management ($\bar{x}$= 3.84), access to healthcare in emergencies ($\bar{x}$= 3.87), health access and awareness in normal times ($\bar{x}$= 3.82), food and water supplies ($\bar{x}$= 3.81), hazard-resistant livelihoods practices ($\bar{x}$= 3.76), access to market ($\bar{x}$= 3.67), social protection ($\bar{x}$= 3.82), access to financial services ($\bar{x}$= 3.74), income and asset protection ($\bar{x}$= 3.69), protection of infrastructure and basic services ($\bar{x}$= 3.81), land use and planning ($\bar{x}$= 3.79), and operation of education services in emergencies ($\bar{x}$= 3.91). Moreover, the areas that needs attention under the disaster preparedness is the likelihood of being impacted by a national hazard that include typhoon ($\bar{x}$= 3.94), flood or storm surge ($\bar{x}$= 4.03), landslide ($\bar{x}$= 3.63), drought ($\bar{x}$= 3.83), and earthquake ($\bar{x}$= 3.79). To respond to the needs of the community especially in the barangay level as indicated on the various areas on disaster resilience and preparedness, enhancement programs such as prevention and mitigation to reduce vulnerability and exposure of communities to all hazard are significant.

Goals and Objectives

Goal: To avoid hazards and mitigate their potential impacts by reducing vulnerabilities and exposure and enhancing capacities of communities.

The objectives will help the barangay level to be resilient and prepared in all aspect of disaster resilience and preparedness approaches. Its short term or long term objective depending on the prioritization of the local government unit is the relocation of the affected constituents to a safer area. In support to the prevention and mitigation program of the Municipality the following objectives are essential:

1. To reduce vulnerability and exposure of communities to all hazards identified in the municipality as a whole.

2. Enhance capacities and response of communities in all forms of calamity to reduce their own risks and cope with the impacts of all hazards.

Guiding Principles

The core principles on disaster resilience and preparedness enhancement program for the Municipality of Alabel, Sarangani Province include accountability, transparency, integrity, sincerity, and efficiency of service to the community as a whole.

Strategies

The strategies encompass specific enhancement programs on prevention and mitigation, preparedness, disaster response, recovery and rehabilitation and monitoring and evaluation.

The activities of the proposed program contains topics and action plan that will reinforce the strategies to address the identified areas of concern. These program activities may be modified and enhanced to respond to the needs of the organization especially in the barangay level.

In connection, Table 19 presents the enhancement program for the disaster resilience and preparedness in the Municipality of Alabel, Sarangani Province. The establishment of the aforesaid program including its recommendation was discussed comprehensively to the Office of the Municipal Disaster Risk Reduction and Management (MDRRMO). Further, it focuses on the area that needs improvement that come out on the results of the study particularly indicators on risk management and vulnerability reduction and disaster preparedness. Specifically, it includes sustainable environmental management, access to healthcare in emergencies, health access and awareness in normal times, food and water supplies, hazard-resistant livelihoods practices, access to market, social protection, access to financial services, income and asset

protection, protection of infrastructure and basic services, land use and planning, and operation of education services in emergencies. On the other hand, the area that requires attention under the disaster preparedness is the likelihood of being impacted by a national hazard, which include typhoon, flood or storm surge, landslide, drought, and earthquake.

AREAS OF CONCERN	OBJECTIVES	ACTIVITIES	TARGETS	EXPECTED RESULTS
Sustainable Environmental Management (SEM) ($\bar{x}$= 3.84)	SEM are utilized widely throughout the community with high adaptation capacity to new risks related to climate change.	Tree planting activities in the Barangay, Information Education Campaign (IEC)	Community	Program Implemented
Access to Healthcare in Emergencies ($\bar{x}$= 3.87)	Trained community health workers consistently visit and there is an accessible healthcare facility completely equipped with all necessary staff, equipment and medicines for health care and referrals for emergencies.	Training and Development for Barangay Health Response Team	Barangay Health Response Team, School Based, Private Company, Public Sector and CSOs	Training Conducted
Health Access and Awareness in Normal Times ($\bar{x}$= 3.82)	All community members maintain good health and physical ability in normal times and have a high level of awareness on staying healthy and life-protecting measures.	Availment of free health services in the barangay health center; access to vitamins, and immunization for children	Community	Program Implemented
Food and Water Supplies ($\bar{x}$= 3.81)	Community is organized to collectively store food and to manage an equitable distribution system; water supply is secure for emergencies/periods of scarcity	Community Gardening, Reforestation of Watershed Areas	Schools, Households in the Community	Program Implemented

	All community members employ		Sloping agricultural land	Program Implemented

AREAS OF CONCERN	OBJECTIVES	ACTIVITIES	TARGETS	EXPECTED RESULTS
Riverbank Protection Wall, and Sheet Pile	To prioritize the allocation of fund for the construction	Dredging of rivers, tree planting activities	Purok Cogonal creek, river bank of Brgy. Ladol, Maribulan and Alegria	Constructed Riverbank Protection and Sheet Pil
Rip-rap Protection	Allocation of funds for the construction	Planting of crops to sloping areas through Sloping Agricultural Land Technology (SALT)	Purok 8 Brgy. Baluntay, Brgy. Poblacion	Rip-rap constructed
Construction of Line Canal	Allocation of funds for the constructio	Dredging of canals	Brgy. Poblacion, and Brgy. Kawas	Line Canal constructed
AREAS OF CONCERN	OBJECTIVES	ACTIVITIES	TARGETS	EXPECTED RESULTS
Riverbank Protection Wall, and Sheet Pile	To prioritize the allocation of fund for the construction	Dredging of rivers, tree planting activities	Purok Cogonal creek, river bank of Brgy. Ladol, Maribulan and Alegria	Constructed Riverbank Protection and Sheet Pile
Rip-rap Protection	Allocation of funds for the construction	Planting of crops to sloping areas through Sloping Agricultural Land Technology (SALT)	Purok 8 Brgy. Baluntay, Brgy. Poblacion	Rip-rap constructed
Construction of Line Canal	Allocation of funds for the construction	Dredging of canals	Brgy. Poblacion, and Brgy. Kawas	Line Canal constructed

Disaster Response and Rescue Equipment	Availability of at least one rescue vehicle for the barangay and rescue equipments such as rubber boat, speed boat, and ropes	Sourcing of funds, re-programming on unexpended balances of 5% BDRRM fund	Brgy. Ladol, Brgy. Maribulan, Brgy. Datal-Anggas	Purchased Rescue Vehicle
Drought Mitigation	Enable the community to be prepared in times of drought	Rain water catchment facilities, Reforestation of watershed	All Barangays of Alabel	Program Implemented
Earthquake Drill	Disaster Prepared Community	Conduct earthquake drill at schools, government sectors and private organization	Barangay Response Team, School Based, Private Company, Public sector and Civil Society Organizations (CSOs)	Training Implemented

Conclusions

Based on the justification of result and implication of findings of the study, the following conclusions were drawn:

1. The socio-demographic profile showed a proportional number of male and female respondents who belong to adult aged group. Majority are working in the government with tenable degree of education, while portion of which are into agriculture and commerce as their means of livelihood.

2. Generally, the level of disaster resilience of the respondents is classified as High Resilience in terms of governance, risk assessment, knowledge and education, risk management and vulnerability reduction and disaster preparedness.

3. On the level of disaster preparedness, the members of the BDRRMC and MDRRMC are Always Prepared on the likelihood of being impacted by a national hazard, vulnerability of physical structures, people, and livelihoods, barangay-level planning and individual's preparation for disaster, and individual's sense of control over their own lives and their ability to participate and influence their community and government.

4. In relation to the disaster resilience and preparedness experiences, three themes emerged from this study as perceived by the informants and these are: (1) Planning and Preparation, (2) Issues and Challenges, and (3) Coping Mechanism.

5. There is a moderate positive correlation ($r = .449$) between disaster resilience and disaster preparedness among the respondents. Thus, the null hypothesis (Ho_1) which states that there is no significant relationship between the level of local disaster resilience and the level of disaster preparedness among the respondents is rejected.

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