

# The Level of Disaster Awareness and Preparedness of San Jose Vegetable Farmers in Monkayo, Davao De Oro: Basis for Extension Intervention

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## ABSTRACT

This study investigates the level of disaster awareness and preparedness among the San Jose Vegetable Farmers in Monkayo, Davao de Oro, a region frequently impacted by natural disasters due to its geographical and climatic conditions. The primary aim is to assess the demographic profile, disaster awareness, and preparedness levels of these farmers. Using a descriptive quantitative research design, data were collected through surveys involving 50 participants selected via purposive sampling. The results reveal a diverse age group with half of the respondents aged 41 years or older. Most farmers have occupied their land for over 31 years, with the majority operating on small-scale land holdings of 1-2 hectares. The findings indicate a high level of disaster awareness among the farmers, characterized by a strong understanding of disaster risks and active engagement in education and training activities. However, there is a slight gap in their confidence in securing themselves and their families. In terms of preparedness, the farmers exhibit robust readiness, particularly in family communication and community plans. Nonetheless, areas such as disaster supplies, and first aid training require further enhancement. The involvement of government and local disaster management offices has been crucial in supporting and strengthening the community's preparedness efforts, ensuring a resilient approach to disaster management. This study underscores the importance of continuous education, resource allocation, and community involvement in enhancing disaster resilience among small-scale farmers in disaster-prone areas. Extension services, provided by agricultural and disaster management experts, can play a crucial role in addressing the identified gaps and strengthening the community's overall awareness and preparedness.

**Keywords:** Disaster Awareness, Disaster Preparedness, SAVEFA, Natural disaster, disaster management

## INTRODUCTION

### Background of the Study

Asia had more disasters than any other continent because of its large area, unique physiography, and dense population. India ranked third among all impacted countries in the world in terms of both economic losses and fatalities, with 321 occurrences (UNDRR, 2021). Between 2000 and 2019, 7348 disaster incidents were documented globally, affecting over 4.03 billion people and resulting in 12 million fatalities. It has been demonstrated that in nations where populations engage in disaster risk reduction initiatives, the losses resulting from natural disasters are minimal. Communities in developing nations with little resources, such as India, can be crucial to disaster risk reduction (DRR). Involving communities in disaster risk reduction (DRR) will not only lessen the load on the government and local administration, but it will also help communities become self-sufficient in times of need.

The Philippines is one of the most disaster-prone nations in the world due to its location in a disaster-prone

zone (Cinco et al., 2016; Valenzuela, Esteban, Takagi, Thao, & Onuki, 2020). The Philippines' unusual geographic location renders the nation particularly vulnerable to a wide range of dangers, such as sporadic typhoons, earthquakes, and volcanic eruptions—which are regarded as the deadliest and most expensive natural disasters worldwide (Doroteo, 2015). Additional dangers include wildfires, landslides, tsunamis, and flooding. These natural disasters happen quickly and have significantly altered the nation's perception of hazards (Office for Disaster Risk Reduction, UN, 2019).

Natural catastrophes erode poverty alleviation initiatives and divert government funding intended for recovery and restoration; they also result in fatalities and significant damage to social and economic infrastructure, according to a 2005 World Bank assessment. The Philippines responded by passing the Philippine Disaster Risk Reduction and Management Act of 2010, also known as Republic Act 10121. The foundation for a paradigm shift from disaster preparedness to disaster risk reduction and management (DRRM) has been established by this legislation. The objective is to promote sustainable development practices that are rights-based and gender-responsive for the welfare and security of the populace (Republic Act No. 10121, 2010).

Farmers should be prepared for disasters for several reasons. First, it improves people's general health, happiness, and life satisfaction, all of which contribute to a higher quality of life (Chen, Q., et al., 2021). Second, adopting disaster-preparedness practices can lessen the detrimental effects that earthquakes have on the advancement of the world economy (Panpan, L., et al., 2021). Furthermore, cycles of agricultural production are disrupted by climate change-related natural catastrophes, underscoring the necessity of climate disaster preparedness throughout the cereal value chain (Brigadier, L., 2021). Finally, enhancing farmers' ability to withstand external shocks like droughts calls for increased readiness, adaptation, and change in farming methods (Characterising farming resilience capacities, 2023).

According to the National Disaster Risk Reduction and Management Council (NDRRMC), on January 17–18, 2024, Caraga and Davao Regions in Eastern Mindanao experienced heavy rains and thunderstorms since January 16 due to the shear line; these have caused flooding and landslides in several provinces in these regions. Tragedy strikes in the Davao Region. Shear line-induces disaster claims 12 lives with 10 casualties in Monkayo, Davao de Oro, and 2 in Davao City.

Small-scale farmers have been the most affected by this disaster, especially the San Jose Vegetable Farmers land area, which was situated beside the riverbanks of the Agusan River. Their crops were the first to be affected. It is timely and relevant to conduct this research due to the recent flooding, landslides, and earthquakes experienced in the Municipality of Monkayo. This research will reveal the level of disaster awareness and preparedness of San Jose vegetable farmers in Monkayo, Davao de Oro.

### **Purpose of the Study/Research Objectives**

This research aims to determine the level of disaster awareness and preparedness of San Jose Vegetable Farmers in Monkayo, Davao de Oro. The study's specific objectives are to address the following:

1. To determine the demographic profile of the farmers in terms of:
  - Age
  - Years of occupancy
  - Land Area
2. To determine the level of Disaster Awareness of the farmers
3. To determine the level of Disaster Preparedness of the farmers

## METHODOLOGY

### Research Design

The study utilized a descriptive quantitative research design to assess the level and extent of disaster awareness and preparedness of the respondents. According to Creswell (2012), the descriptive research design is a study that describes the characteristics of a population or phenomenon being studied. Primarily used to gain an understanding of a group or phenomenon. This involves collecting data through surveys, interviews, or observation.

### Research Locale

The study was conducted at Barangay San Jose, Monkayo Davao de Oro. San Jose is one of the barangays in the municipality of Monkayo, in the province of Davao de Oro. Its population as determined by the 2020 Census was 3,145. This represented 3.35% of the total population of Monkayo.

### Population and Sample

The study used purposive sampling, where respondents are chosen according to the purpose of the study. The respondents are members of the San Jose Vegetable Farmers who live and cultivate their crops in Barangay San Jose, Monkayo, Davao de Oro. Purposive sampling is a technique for determining samples with previous considerations in which the researcher creates characteristics or boundaries based on the characteristics of the subjects who will be sampled in the research (Campbell et al., 2020).

### Research Instrument

The researcher used an adopted questionnaire from the study of Talplacido, et.al.,. It was adopted based on investigating disaster risk reduction knowledge. The questionnaire is composed of two (2) parts, each part is composed of five (5) questions.

A 5-point Likert scale will be utilized to determine the level of Disaster Awareness and Preparedness of San Jose Vegetable Farmers in Monkayo, Davao de Oro. The indicators for each factor will be assessed and will be evaluated using the Likert Scale as follows:

Rating Scale	Mean Score Range Interval	Response Anchor	Descriptive Level
5	4.20-5.00	Strongly Agree	Very Aware
4	3.40-4.19	Agree	Aware
3	2.60-3.39	Neither Agree nor Disagree	Neutral
2	1.80-2.59	Disagree	Not aware
1	1.00-1.79	Strongly Disagree	Not Aware at all
Rating Scale	Mean Score Range Interval	Response Anchor	Descriptive Level
5	4.20-5.00	Strongly Agree	Very Prepared
4	3.40-4.19	Agree	Prepared
3	2.60-3.39	Neither Agree nor Disagree	Neutral
2	1.80-2.59	Disagree	Not prepared
1	1.00-1.79	Strongly Disagree	Not Aware at all

## Data Collection

Before the conduct of the study, necessary consent was obtained from the Barangay Captain of Barangay San Jose and to the president of SAVEFA. After securing consent and permissions, the approved questionnaires were distributed to the members. Each farmer was given enough time to answer the questions. Lastly, the questionnaires were gathered, checked, tallied, interpreted, and analyzed.

## Statistical Treatment

The data that was gathered from the respondents was first coded based on the coding manual developed for the questionnaire. Coded data was then encoded and tabulated for analysis. Different statistical tools were employed to analyze and interpret data. Mean and Standard deviation was used to analyze the data.

## RESULTS AND DISCUSSION

This part includes the discussion of results of the study. This study aims to assess the level of disaster awareness and preparedness of San Jose Vegetable Farmers in Monkayo, Davao de Oro. The data collected provides a comprehensive view of the demographic distribution, land use, and resource availability among the participants, along with their levels of awareness and preparedness for disasters.

**Table 1: Age of the respondents**

Age		
	Frequency	Percent
18-25 years old	13	26.0
26-30 years old	6	12.0
31-35 years old	6	12.0
41 and above	25	50.0
<b>Total</b>	<b>50</b>	<b>100.0</b>

Table 1 categorizes the respondents by age, offering insights into the demographic composition of the study population. Based on the data, there are 13 or 26% of the total respondents aged 18-25 years old. Out of 50 respondents, 25 respondents or 50% of the total population aged 41 years old and above. Lastly, there were 6 respondents or 12% of the total population aged 26-30 and 31-35 years old.

**Table 2. Year of occupancy**

Year of occupancy		
	Frequency	Percent
11-20 years	6	12.0
21-25 years	13	26.0
26-30 years	9	18.0
31 and above	22	44.0
<b>Total</b>	<b>50</b>	<b>100.0</b>

The data from table 2 highlights the diverse lengths of land occupancy within the community. A relatively small segment of respondents has occupied their land for 11-20 years with only 6 respondents or 12% of the total population. Furthermore, there were 13 respondents or 26% of the total population occupied their area

for 21-25 years. 9 farmers or 18% of the total population occupied their farmland for 26-30 years and the largest group, nearly half of the respondents or 22 farmers comprised 44% of the population tenured for 31 years and above.

**Table 3. Farmer’s land Area**

Land area		
	Frequency	Percent
1-2 hectares	47	94.0
7-8 hectares	3	6.0
<b>Total</b>	<b>50</b>	<b>100.0</b>

Table 3 presents the distribution of land area owned by the farmers, highlighting the size of their agricultural holdings. Most farmers, with total number or 47 or 94% of the total population, operate on small-scale land holdings of 1-2 hectares. On the other hand, a small proportion of farmers, 6%, own larger plots of land, ranging from 7 to 8 hectares.

**Table 4. Interpretation of Responses for the Disaster Awareness**

Descriptive Statistics				
	N	Mean	Response Anchor	Interpretation
1. I am concerned about my disaster preparedness knowledge for any disaster.	50	4.86	Strongly Agree	Very Aware
2. I am well-planned for any potential flooding.	50	4.4	Strongly Agree	Very Aware
3. I am aware that our barangay is a flood-prone area.	50	4.88	Strongly Agree	Very Aware
4. I am aware that Climate Change also affects the impact of a disaster/ flooding in our barangay.	50	4.94	Strongly Agree	Very Aware
5. I will recommend a friend or colleague study more about disaster management based on my knowledge of disasters and their consequences.	50	4.4	Strongly Agree	Very Aware
6. I know when the disaster will happen.	50	4.44	Strongly Agree	Very Aware
7. I know there is no prevention for the occurrence of a disaster	50	4.88	Strongly Agree	Very Aware
8. I have been a participant in a disaster risk education seminar and training.	50	4.78	Strongly Agree	Very Aware
9. I know already that disaster can cause damage that will harm anyone.	50	4.86	Strongly Agree	Very Aware
10. I know the specific actions to do to inform other’sby disseminating the information about disaster- related knowledge.	50	4.64	Strongly Agree	Very Aware
11. I can secure myself and my family because I am aware.	50	4.12	Agree	Aware
<b>Total Mean</b>		<b>4.65</b>	<b>Strongly Agree</b>	<b>Very Aware</b>

Table 4 presents the responses of respondents regarding their awareness for disasters. Each statement was rated on a 5-point scale, with the mean response and corresponding interpretation provided. This data offers insights into the level of disaster awareness among the participants. The data on table 4 demonstrates a high level of disaster awareness among the participants. They exhibit strong concern for their disaster awareness knowledge, are well-informed about the risks and impacts of disasters, and actively engage in education and training. While most aspects of awareness are rated very highly, the slightly lower score in the ability to secure themselves and their families suggests an area where additional support or resources may be beneficial. Overall, the community shows a robust foundation of disaster awareness, which is crucial for effective preparedness and resilience.

**Table 5. Interpretation of Responses for the Disaster Preparedness**

Descriptive Statistics				
	N	Mean	Response Anchor	Interpretation
1. I believe my family is adequately prepared in the event of flooding.	50	4.4	Strongly Agree	Very Prepared
2. I have talked to my family about flood preparedness.	50	4.72	Strongly Agree	Very Prepared
3. My family had experienced a natural disaster.	50	4.96	Strongly Agree	Very Prepared
4. Another family member can carry out the emergency plan in my absence.	50	4.7	Strongly Agree	Very Prepared
5. I have disaster supplies or e-balde that will last at least 72 hours. (i.e., Water supply, Food supply, Two-way radio, flashlights, or light sources, Vehicles for evacuation,	50	3.68	Agree	Prepared
6. I and/or a family member have training on First Aid or BLS-CPR.	50	3.94	Agree	Prepared
7. I reside in a densely populated area.	50	4.48	Strongly Agree	Very Prepared
8. There is a disaster or emergency plan, laws, and policies in place for the community	50	4.42	Strongly Agree	Very Prepared
9. I have a phone number for disasters outside our province.	50	4.3	Strongly Agree	Very Prepared
10. I would want to receive disaster management information or emergency through effective channels like	50	4.78	Strongly Agree	Very Prepared
A. Newspapers, Public Meetings, Television, Radio				
B. Family/ Friends, Cellphones, E-mails, Internet/ social media	50	4.72	Strongly Agree	Very Prepared
11. Has someone from the list below assisted you or your community develop a disaster plan?	50	4.36	Strongly Agree	Very Prepared
A. National Government				
B. Local Government Unit	50	4.84	Strongly Agree	Very Prepared



C. Local Disaster Risk Reduction and Management Office	50	4.82	Strongly Agree	Very Prepared
D. Non-governmental organization or voluntary organization	50	3.92	Agree	Very Prepared
<b>Total Mean</b>		<b>4.46</b>	<b>Strongly Agree</b>	<b>Very Prepared</b>

Table 5 presents the responses of participants regarding their disaster preparedness. Each statement was rated on a 5-point scale, with the mean response and corresponding interpretation provided. This data highlights the level of preparedness among participants. Data from Table 5 demonstrates a high level of disaster preparedness among participants. They exhibit strong confidence in their family's preparedness, communication about disasters, and structured community plans. While the overall preparedness is very high, there are specific areas, such as disaster supplies and first aid training, where additional efforts could further strengthen their readiness. The involvement of government and local disaster management offices plays a crucial role in supporting the community's preparedness efforts, ensuring a robust and resilient approach to disaster management.

## CONCLUSION

The study revealed that the San Jose Vegetable Farmers in Monkayo, Davao de Oro, exhibit a high level of disaster awareness and preparedness. The farmers are well-informed about the risks associated with natural disasters and have actively engaged in educational and training activities to mitigate these risks. This proactive approach to disaster risk reduction (DRR) is crucial given the frequent occurrence of natural disasters in the Philippines, such as typhoons, earthquakes, and floods. The farmers' awareness extends to understanding the impact of climate change on the frequency and severity of these disasters, which is vital for their preparedness and resilience.

The demographic data indicate a diverse age range among the farmers, with a significant proportion of them being 41 years or older. This demographic diversity is important as it reflects a mix of experience and potentially different perspectives on disaster preparedness. The study also found that many farmers have long-term land occupancy, with nearly half of the respondents having occupied their land for over 31 years. This long-term occupancy suggests a deep connection to the land and community, which can enhance the effectiveness of community-based disaster preparedness initiatives.

Most farmers operate on small-scale land holdings of 1-2 hectares. This small-scale farming is typical in many rural parts of the Philippines and poses specific challenges for disaster preparedness. Small-scale farmers often have limited resources to invest in disaster mitigation infrastructure and supplies, making community support and government intervention even more critical. According to the findings, the farmers were quite prepared, especially in terms of community planning and family communication. A family's anxiety and bewilderment can be decreased by having effective communication about what to do in case of an emergency. In contrast, community planning calls for concerted efforts to use the community's resources and expertise to both prevent and respond to disasters.

However, there are areas that require further enhancement. For example, although though farmers are generally well-prepared, disaster supplies, and first aid training still need to be improved. In the early aftermath of a disaster, having enough supplies of food, water, medical kits, and emergency tools is crucial for survival. Training in first aid is equally vital since it allows people to treat injured people right away, which can save lives and lessen the severity of injuries. The involvement of government and local disaster management offices has been crucial in supporting the community's preparedness efforts. These agencies provide resources, training, and information that help farmers prepare for disasters. Their support ensures a

resilient approach to disaster management, integrating local knowledge with scientific expertise and institutional support.

Overall, the study underscores the importance of continuous education, resource allocation, and community involvement in enhancing disaster resilience among small-scale farmers in disaster-prone areas. Continuous education keeps the farmers updated on the latest disaster preparedness strategies and climate change impacts. Resource allocation ensures that farmers have the necessary tools and supplies to implement these strategies. Community involvement fosters a sense of collective responsibility and mutual support, which is essential for effective disaster management.

By addressing the identified gaps in disaster preparedness and leveraging the strengths of community and government support, the San Jose Vegetable Farmers can enhance their resilience to natural disasters. This holistic approach to disaster preparedness will not only protect lives and livelihoods but also contribute to the sustainable development of the region.

## RECOMMENDATIONS

Given the findings of the study, it is evident that the San Jose Vegetable Farmers in Monkayo, Davao de Oro, have made significant strides in disaster awareness and preparedness. However, to further enhance their resilience and ensure comprehensive disaster risk management, targeted extension interventions are necessary. Extension services, provided by agricultural and disaster management experts, can play a crucial role in addressing the identified gaps and strengthening the community's overall preparedness.

### Objectives of Extension Intervention

- 1. Enhance First Aid and Emergency Response Training:** Conduct regular workshops and training sessions focused on first aid and emergency response. These should include practical demonstrations and hands-on practice to ensure farmers can effectively administer first aid during emergencies.
- 2. Improve Disaster Supplies and Infrastructure:** Facilitate the provision and proper storage of essential disaster supplies. Extension services can assist in the establishment of community-based disaster supply depots that are easily accessible to all farmers.
- 3. Promote Sustainable and Resilient Farming Practices:** Introduce and educate farmers on climate-resilient farming techniques. This includes the use of drought-resistant crops, proper water management practices, and soil conservation methods to reduce the impact of natural disasters on agricultural productivity.
- 4. Strengthen Community-Based Disaster Risk Reduction Programs:** Work closely with local government units (LGUs) and disaster management offices to develop and implement comprehensive disaster risk reduction (DRR) programs. These programs should be tailored to the specific needs and conditions of the San Jose Vegetable Farmers.
- 5. Increase Access to Information and Technology:** Utilize modern technology and communication tools to disseminate timely and accurate disaster-related information. This includes the development of mobile applications, community radio broadcasts, and social media platforms to keep farmers informed about impending disasters and best practices for preparedness and response.
- 6. Conduct Regular Disaster Drills and Simulations:** Organize regular community-wide disaster drills and simulations. These activities will help farmers practice their response strategies, identify potential weaknesses in their preparedness plans, and improve coordination among community members during actual disaster events.

### Implementation Strategy

- 1. Collaborative Partnerships:** Establish partnerships with local government agencies, non-



governmental organizations (NGOs), educational institutions, and private sector stakeholders. These partnerships can provide additional resources, expertise, and support for the extension interventions.

2. **Community Involvement:** Engage community leaders and members in the planning and implementation of extension activities. Their involvement ensures that the interventions are culturally appropriate, widely accepted, and effectively address the community's specific needs.
3. **Monitoring and Evaluation:** Implement a robust monitoring and evaluation framework to assess the effectiveness of the extension interventions. Regular feedback from farmers and continuous assessment of outcomes will help refine and improve the programs over time.
4. **Capacity Building:** Focus on building the capacity of local extension workers and community volunteers. Providing them with advanced training and resources will enable them to deliver high-quality services and support to the farmers.

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