RISE 2026 REPORT
Insights from Global Heumann Fellows

The Disability Inclusion Gaps: Advancing Inclusive Disaster Systems for Persons with Disabilities in Climate and Disaster-Vulnerable Contexts

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This work was supported by the Global Heumann Fellowship at the World Institute on Disability. The opinions and conclusions expressed herein are solely those of the author and do not represent the views of the fellowship or sponsoring organizations.

Table of Contents

The Disability Inclusion Gaps: Advancing Inclusive Disaster Systems for Persons with Disabilities in Climate and Disaster-Vulnerable Contexts 1

Introduction 6

Conceptual Framing 13

Methods 20

Research Design 20

The Philippine Case Study 38

Results and Discussion 47

Overview 47

Part I. Disability Inclusion in Disaster and Climate Governance: A Cross-Country Analysis 47

Recommendations: Moving From Recognition to Implementation 109

PART II: Case Study Findings (Central Pangasinan, Philippines) 114

What the Findings Mean from the Disability Climate Justice and Disaster Justice Perspectives 188

Conclusion 196

Summary of Findings 196

Significance of the Project 197

Areas for Further Research 198

Areas for Policy Change 198

Reflections 199

Glossary 202

About the Author 208

Acknowledgments 209

About the Global Heumann Fellowship 210

About the World Institute on Disability 211

List of Images 213

List of Tables 225

References 238

Appendix A: Literature Review 257

Introduction 257

Disaster Justice: A Moral Claim for Protection 257

Why Does Disability Inclusion Matter? 259

Disasters and Disability: Hidden Discrimination 260

The Need for Disability-Inclusive Disaster Preparedness 262

The Importance of Early Warning Systems 263

Disability Data Gap in Disaster Preparedness and Early Warning Systems 265

Appendix B: List of Documents Reviewed 268

Appendix C: Dataset for Content Analysis of Disaster and Climate Documents 271

Appendix D: Extended Tables and Source Tables 272

Supplementary Table 1. Codebook 272

Supplementary Table 2A. Mean Scores of Countries Across Disaster and Climate Documents 274

Supplementary Table 2B. Mean Rating of Countries Across Disaster and Climate Documents 275

Supplementary Table 3A. Mean Ratings Across Disability Inclusion Indicators and Documents 276

Supplementary Table 3B. Mean Ratings Across Disability Inclusion Indicators and Countries 277

Source Table 5. Disability Inclusion Scores by Document Type Across Ten Countries 278

Source Table 6. Overall Disability Inclusion Scores Across the 6 Governance Criteria 278

Source Table 8.1 Disability Inclusion in Early Warning 279

Source Table 8.2 Disability Inclusion in Disaster Preparedness 280

Source Table 10B. Inclusion Score of Countries in Terms of Disability Recognition 281

Source Table 11A. Disability Inclusion in Participation 282

Source Table 11B. Cross-Country Comparison: Recognition of Disability Participation in Planning 283

Source Table 12B. Disability Inclusion Score in Terms of Early Warning 284

Source Table 13B. Overall Disability Inclusion Score in Disaster Preparedness 285

Source Table 14B. Overall Inclusion Score in Capacity and Funding 286

Source Table 15B. Overall Inclusion Score in Data Monitoring 287

Source Table 17. Overall Inclusion Score (Recognition vs Implementation) 288

Source Table 18. Sources of Risk Among Respondents 289

Source Table 19. Disaster Preparedness Indicators Among Persons with Disabilities in Central Pangasinan 290

Source Table 20. Distance from Evacuation Center 291

Source Table 21. Causes of Displacement 291

Source Table 22. Places of Relocation When Displaced 292

Source Table 23. Barriers to Early Warning Access 292

Source Table 24. Disability Accessibility of Early Warning Information 293

Source Table 25. Sources of Early Warning Among Persons with Disabilities in Central Pangasinan.....294
Source Table 26. Lead Time for Receipt of Early Warning Before Impact 295
Source Table 27. Coping Strategies When Facing Barriers for Early Warning 295
Source Table 28. Persons with Disabilities Responses to Early Warning 296
Source Table 29. Factors that Influence Early Warning Actionability 297

Appendix E: Survey Instrument 298

Appendix F: Datasets for the Survey 305

Appendix G: Interview Protocol.....306

Overview 306

Appendix H: List of Interviewees 309

Appendix I: Interviewee Transcripts 310

Appendix J: Language Translations 373

Introduction

Climate change and disasters are the intertwined realities of our time. In the past decades, they have increasingly (re)defined the global risk landscapes of the Anthropocene, affecting human health, livelihoods, and development outcomes across regions. Over the years and across countries, disasters and extreme events have become more frequent and intense, affecting billions of people worldwide (EM-DAT, 2026; Donatti, et al., 2024; Malpass et al., 2019).

In the last two decades (2000-2020), there were over 4,600 recorded climate-related disasters worldwide. These disasters affected over 3.39 billion people, almost half of the world's population. Some disasters affected more people than others: droughts affected over 1.4 billion people; floods, 1.2 billion people; and tropical cyclones, over half a billion (Donatti, et al., 2024; EM-DAT, 2023). During the same period, more than 472,000 people lost their lives because of droughts, floods, storms, and other climate-related hazards (EM-DAT, 2023). In 2025 alone, the Emergency Events Database (EM-DAT) recorded 358 disasters. These events in 2025 affected more than 110 million people, led to 16,607 deaths, and caused nearly US$170 billion in economic losses (EM-DAT, 2026). Climate-related hazards such as floods, droughts, storms, heatwaves, and water scarcity are increasingly disrupting livelihoods and forcing people to leave their homes across many regions (McMichael, 2022). Projections suggest that climate change could displace up to 200 million people worldwide by 2050, including an estimated 18 million persons with disabilities (Smith et al., 2017).

While disasters affect almost everyone, they are never socially neutral. When disasters occur, inequality decides who suffers most. They are not experienced uniformly across sectors of society, as their impacts intersect with existing social, political, cultural, and economic inequalities, producing differentiated patterns of vulnerability among populations (Amorim-Maia & Olazabal, 2025; Anguelovski et al., 2016).

Evidence consistently shows that persons with disabilities are disproportionately affected by climate change and extreme events because of barriers that limit their access to resources, services, and social protection (Stein et al., 2024; Akike & Goulding, 2025). Around the world, more than 1.3 billion people have disabilities, and about 80 percent of them live in low- and

middle-income countries, where exposure to climate hazards and disaster risks is often highest (Stein et al., 2024; UNCHR, 2020). Existing socio-economic vulnerabilities influence both adaptive and coping capacities in how persons with disabilities prepare for, respond to, and cope with disasters (Kim et al., 2026).

Persons with disabilities often face greater risks during disasters, but these risks are not always fully recognized in climate and disaster planning. Many already have health challenges, limited income, or restricted access to services, which can make emergency situations riskier for them (Umucu et al., 2025;World Health Organization [WHO], 2011, 2022; United Nations Office for Disaster Risk Reduction [UNDRR], 2024.For example, a person who depends on medication, assistive devices, or regular medical care may struggle to maintain treatment when transport systems fail or health facilities are disrupted. These everyday constraints can quickly turn into life-threatening risks during disasters.

The combination of disability, poverty, and underlying health conditions can shape how people prepare for disasters, respond to warnings, and recover. Persons with disabilities may have fewer resources to evacuate, limited access to reliable information, or reduced social support during emergencies. As a result, their recovery can take longer compared to people without disabilities (Cote & Banks, 2025). Some groups face additional challenges. Persons with psychosocial disabilities, for example, may experience heightened anxiety or confusion during crisis situations. These conditions can make it harder to interpret instructions, trust evacuation messages, or decide when to seek help, increasing the risk of delayed response during emergencies (Kim et al., 2026; Cote & Banks, 2025). Disaster risks may create intergenerational inequality among persons with disabilities. Children with disabilities born in low-income countries today are projected to experience more frequent and intense extreme weather events over their lifetimes than earlier generations. This growing exposure raises concerns about climate-induced intergenerational inequality, as persons with disabilities may carry a heavier burden of risk in the future if protective systems are not strengthened (Thiery et al., 2021).

When crises strike, the burden often falls on those already left behind. This is especially true for persons with disabilities, who are constrained by social, political and cultural barriers even before a disaster occurs. Disability communities often experience social discrimination, historical marginalization, and ableism that limit their participation in economic and social opportunities, reducing their resilience in the face of environmental shocks (Stein, 2024, 2023; NCD, 2022; UN, 2020). They also frequently encounter structural, informational, and institutional barriers that constrain their capacity to anticipate, respond to, and recover from climate and disaster-related emergencies (Kim et al., 2026). These barriers are often compounded by poverty, isolation, and other forms of social inequality. Persons with disabilities who live in remote areas, belong to Indigenous communities, or face discrimination related to gender, age, or socio-economic status in life are often exposed to greater risks while having fewer resources to adapt and recover (Stein et al., 2022, 2023, 2024; Gaskin et al., 2017; Jampel, 2018; Mac-Seing, 2023).

Even when local disaster plans exist, persons with disabilities are often left out of how those plans are designed and carried out. In disaster governance, exclusion can occur both in policy and in practice. At the policy level, disability inclusion is sometimes mentioned in disaster risk management frameworks but not fully integrated into planning, budgeting, and implementation. In low-resource countries in the Global South, local governments operate under real fiscal and administrative constraints. Limited budgets, staffing, and weak infrastructures can restrict their ability to provide accessible services during emergencies. As a result, even well-intentioned disaster response systems can create systemic vulnerabilities that only become visible during emergencies (Global Facility for Disaster Reduction and Recovery [GFDRR], 2017).

At the operational level, policy gaps often translate into practical barriers. Persons with disabilities may not be consulted in the design of early warning systems or evacuation procedures, making it harder for them to leave safely and on time. Many continue to face everyday challenges, such as evacuation routes that are difficult to navigate, limited transportation options, and emergency shelters that lack ramps, accessible toilets, or other reasonable accommodations (Malpass et al., 2019). Most persons with disabilities fail to act on

early warning systems before disaster strikes when messages are not delivered in universally accessible, multi-designed formats or adapted to diverse communication needs (GFDRR, 2017; UNDRR, 2023).

Evacuation processes can be particularly challenging for individuals with mobility impairments, especially when infrastructure systems fail or accessible transportation is unavailable during emergencies (UNDRR, 2024; GFDRR, 2017; UNDRR, 2023). Thus, disaster risk reduction and climate adaptation initiatives themselves may inadvertently create new barriers when accessibility considerations are not systematically integrated into planning and implementation processes (Stein et al., 2025).

Even in epistemic communities, persons with disabilities are significantly underrepresented in climate and disaster research. Globally, persons with disabilities account for an estimated 1.3 billion people, yet their experiences and needs are still insufficiently reflected in climate change and health research (Stein, 2024; WHO, 2022). While studies have documented the disproportionate impacts of climate change on marginalized populations more broadly (Berberian et al., 2022; Son et al., 2019), disability perspectives remain comparatively limited within research on disaster preparedness and risk reduction, particularly in low-resource and disaster-prone settings (Kim, 2026; Lindsay et al., 2022; Kosanic et al., 2022; Wolbring & Leopatra, 2012; Jodoin et al., 2023; Stein et al., 2023; Stein et al., 2024). The 2007 World Disasters Report concludes that people with disabilities are “often ignored or excluded at all levels of disaster preparedness, mitigation, and intervention” (IFRC, 2007, p.86).

This gap is visible in climate policy and governance, where persons with disabilities are often overlooked in planning and decision-making. Despite growing attention to climate adaptation, relatively little is known about whether persons with disabilities are actively involved in designing policies, accessing services, or participating in disaster preparedness systems (Kosanic et al., 2022; Eriksen et al., 2021). In many cases, disability is mentioned in policy documents but not fully integrated into implementation or monitoring processes. Large-scale reviews of climate adaptation research confirm the scale of this omission. For example, a global assessment of more than 1,600 climate adaptation response studies found that only a small

proportion explicitly addressed disability, indicating that the needs and experiences of persons with disabilities remain underrepresented in both research and policy discussions (Araos et al., 2021).

Similarly, analyses of national climate commitments indicate that most countries have not systematically incorporated disability considerations into their climate planning frameworks (Jodoin et al., 2022). There also exists a longstanding pattern of exclusion from disaster risk reduction and climate adaptation planning (Gomes et al., 2022; King & Gregg, 2022; Eriksen et al., 2021; Wolbring, 2009; Abbott & Porter, 2013).

While a growing body of research has examined disability inclusion in climate legislation and policy frameworks (Jodoin et al., 2025, 2022; Lesnikowski et al., 2023; Kosanic et al., 2022; Eriksen, 2021; Araos et al., 2021), comparatively little attention has been given to disability inclusion in disaster governance frameworks, particularly in relation to early warning systems. Similarly, although the experiences of persons with disabilities in disaster contexts in the Global North are relatively well documented (Cote & Banks, 2025; Mitchell & Chakraborty, 2015; Kosanic et al., 2022; Alexander et al., 2019; Chakraborty et al., 2019; Malpass et al., 2019), research examining the lived experiences of persons with disabilities in Global South settings remains comparatively scarce.

Despite the growing attention to inclusive disaster risk reduction, important knowledge gaps remain. In particular, there is limited research on whether early warning messages and disaster plans truly recognize and include persons with disabilities, or whether they unintentionally leave them behind. While the idea of disability-inclusive disaster risk reduction is widely discussed, practical examples of how it works—and where it fails—remain relatively rare. Most existing studies come from a small number of places and often focus on single communities (Gvetadze & Pertiwi, 2022; Mambetkadyrov et al., 2025; Chisty et al., 2021).

As a result, key questions remain about how disability inclusion is translated from policy commitments into real-world action. We still know relatively little about how inclusion is institutionalized in national frameworks, implemented by local governments, and, more importantly, experienced by communities during disasters. Closing this gap is essential for

building early warning and disaster preparedness systems that are not only truly accessible but also disability-inclusive, people-centric, informed, reliable, and actionable for persons with disabilities.

I aim to contribute to filling these gaps through an integrated analysis of disability inclusion in early warning systems and disaster preparedness at both macro (policy-level) and micro (community-level) levels. In so doing, I asked the following research questions:

1. *How do ten disaster-prone countries in the Global South integrate persons with disabilities in early warning and disaster preparedness within disaster and climate plans and policies?*
2. *What barriers do persons with disabilities face in accessing early warning information, and how do they cope with these barriers?*
3. *How do persons with disabilities respond to early warning, and what factors influence early warning actionability?*

To address research question 1 (macro-level policy analysis), I conducted a systematic content analysis of disaster and climate documents of 10 disaster-prone countries in the Global South. Specifically, I analyzed six disaster, and climate governance documents the latest Voluntary National Reports, the latest Nationally Determined Contributions, disaster laws, climate laws, disaster plans, and climate plans. Research question 1 assesses disability inclusion based on the disaster and climate instruments and is not intended to evaluate the full operational performance of early warning systems or all aspects of disaster management of the 10 countries surveyed.

To address research questions 2 and 3 (micro-level analysis), I zoomed in on Central Pangasinan, the Philippines—one of the world's most hazard-exposed countries—where persons with disabilities are disproportionately affected by disaster risks (World Risk Report, 2026; Mörchen et al., 2021). I drew on mixed-methods fieldwork in Central Pangasinan, an area repeatedly exposed to flooding and other hazards due to its geographical, climatic, hydro-meteorological, and socio-economic vulnerabilities (River and dela Vega, 2025; Werg et al., 2024; Yanquiling, 2024). I conducted a survey, held semi-structured interviews, and engaged

with the disability communities to examine how persons with disabilities experience local early warning and disaster preparedness systems in practice—the barriers they face in receiving and interpreting warning information, coping strategies, and the factors that influence their decisions to act or not to act on early warnings.

My analysis focused on the Global South as the majority of the world's 1.3 billion persons with disabilities reside in the Global South, and they are most-at-risk of disproportionate impact in disasters and climate change (WHO, 2022). Moreover, socio-economic and political factors such as poverty, limited coping capacity, constrained resources, and fragmented disaster governance systems in Global South contexts interact with disability conditions that intensify impacts on persons with disabilities compared to people without disabilities. As Priestley and Hemingway note, "understanding the connection between disability and disaster involves understanding the connection between disability, poverty and social exclusion" (2007, p. 38). The Global South, therefore, represents a critical policy arena for examining how disability inclusion is framed, institutionalized, and operationalized within disaster risk reduction (DRR) systems.

This report contributes towards advancing a justice-oriented understanding of disability inclusion in disaster preparedness, particularly in relation to early warning systems. It integrates human rights, disability climate justice, and disaster justice perspectives to show how structural inequalities shape risk exposure and response among persons with disabilities. In doing so, the study supports global commitments under the Sendai Framework for Disaster Risk Reduction [SFDRR] (UNDRR, 2015) and reinforces state obligations under the Convention on the Rights of Persons with Disabilities (CRPD) to guarantee the participation and protection of persons with disabilities in disaster risk management and emergency planning (United Nations, 2006). In particular, it responds to scholarly calls for "shifting institutional policy" and "making reforms visible" as essential steps toward meaningful inclusion of persons with disabilities (Akike & Goulding, 2025). Consistent with the long-standing disability rights movement principle of "Nothing about us without us," it helps advance inclusive, participatory, rights-based governance that centers the lived experiences of persons with disabilities in disaster risk management.

In the next section, I turn to the theoretical and conceptual perspectives that informed the analysis of this report.

Conceptual Framing

This report draws on several theoretical perspectives to understand disability and its relevance to disaster risk and preparedness. The way disability is understood has changed significantly over time. For much of the nineteenth and twentieth centuries, the medical model of disability shaped public thinking in many parts of the world (Kim et al., 2026; Zaks, 2024; Peterson & Aguiar, 2004; Marks, 1997). Under this model, disability was viewed primarily as a problem within the individual — a condition caused by physical or mental impairment that required treatment or correction. Disabled bodies and minds were often seen as abnormal, and individuals were expected to adjust to society rather than society adjusting to them (Barnes, 2018).

Over time, disability activists and scholars have challenged this view. The social model of disability shifted attention away from the individual and toward the environment. From this perspective, disability is not simply the result of a medical condition, but rather the product of barriers in society, such as exclusionary institutions and infrastructures, discriminatory attitudes, and limited opportunities for participation, to cite a few (Oliver, 2018; Shakespeare, 2013; Oliver, 1990). This shift marked an important turning point. It emphasized that many of the difficulties faced by persons with disabilities arise not from their bodies alone, but from the way societies are organized.

More recently, scholars and practitioners have recognized that disability cannot be explained by social or medical factors alone. This recognition led to the development of the biopsychosocial model, advocated in the World Health Organization's International Classification of Functioning, Disability and Health (ICF) (WHO, 2001). In this framework, disability is understood as the result of the interaction between a person's health condition and the surrounding environment. A person may have an impairment, but the extent to which that impairment becomes disabling depends on whether the environment supports or restricts inclusion. This model is now widely

used in policy and practice because it acknowledges both the realities of the body and the influence of social conditions.

Today, disability is increasingly understood not only as a medical or social condition, but also a matter of human rights, justice, and equity. From a legal and policy perspective, persons with disabilities are entitled to the same protections, opportunities, and dignity as persons without disabilities. This shift toward a rights-based approach has important implications for disaster governance. It means that disability recognition is not simply a matter of recognizing their vulnerability and need for protection, but as a moral and legal obligation based on the principles of inclusivity, equity, dignity, justice, non-discrimination, and the equal protection of human life. I now shift to discussing this approach in relation to the context of my research.

A human rights approach to disability inclusion in disaster and climate governance

One of the components of this report is the macro-level systematic content analysis of disaster and climate plans and policies. At its core, this report asks a simple but important question: Do disaster and climate systems protect the rights of persons with disabilities? To answer this, the report examines disaster and climate policies from ten countries in the Global South through a systematic review of official documents. This report applies the human rights approach to disability to examine how disaster and climate systems recognize, protect, and fulfill the rights of persons with disabilities.

The foundation of this approach lies in the UNCRPD, a landmark international agreement that establishes clear obligations for governments. The Convention recognizes that persons with disabilities are entitled to the same civil, political, economic, social, and cultural rights as others, including the rights to life, health, accessibility, and participation in community life (Degener, 2016; Stein, 2007; United Nations, 2006; Jodoin, 2025). It also explicitly addresses disaster risk, requiring states to take “all necessary measures to ensure the protection and safety of persons with disabilities in situations of risk, including humanitarian emergencies” (CRPD, Article 11).

Because the UNCRPD is legally binding, it has influenced how scholars and practitioners assess disaster and climate governance in relation to disability inclusion (Eriksen et al., 2021; Jodoin et

al., 2020; Stein & Stein, 2022; Jodoin, 2025). Building on a growing body of scholarship on disability inclusion and climate policy, a disability rights framework carries three important implications for disaster planning and evaluation (Kim et al., 2026; Jodoin et al., 2023; Stein et al., 2024; Lesnikowski et al., 2023; Stein & Stein, 2022; Eriksen et al., 2021; Jodoin et al., 2021; Jampel, 2018).

First, governments must respect, protect, and fulfill the rights of persons with disabilities in the context of disaster and climate governance. To respect disability rights means ensuring that disaster and climate policies do not create exclusion or harm. To protect these rights means preventing discrimination or neglect by institutions, service providers, or emergency systems. To fulfill these rights means taking proactive steps to remove barriers. For example, by investing in accessible infrastructure, inclusive communication, and targeted preparedness measures (Jodoin et al., 2021; Stein et al., 2024).

Second, governments must recognize that disasters affect people differently. Disaster and climate risks do not impact everyone in the same way. Persons with disabilities may face greater danger not only because of health conditions or impairments, but also because of barriers in early warning communication, transportation, evacuation, and health and psychosocial support services. A rights-based approach, therefore, requires governments to assess how disaster risks are experienced across populations and to design policies that address those differences (Stein & Stein, 2022). This assessment must also account for intersectionality, meaning that vulnerability can be shaped by multiple forms of inequality at the same time. For example, a person may face a higher risk because of disability combined with poverty, geographic isolation, gender, age, or ethnicity. Recognizing these overlapping factors is essential for understanding how disasters create unequal outcomes across communities (Stein et al., 2024; Eriksen et al., 2021; Jampel, 2018). In disaster contexts, these responsibilities are especially critical because failures in preparedness can quickly become failures in protection.

Third, persons with disabilities must be fully involved in decisions about disaster and climate action. A human rights approach recognizes persons with disabilities not as passive recipients of assistance, but as active participants in governance. This means ensuring that they are

meaningfully included in planning, decision-making, and evaluation processes related to disaster preparedness and climate adaptation (Stein & Stein, 2022; Jodoin, 2020). Participation also requires access to capacity, funding, and other resources so that individuals and communities can prepare for and respond to emergencies effectively (Engleman et al., 2022). It further requires that their lived experience and knowledge inform the design and implementation of disaster and climate policies (Jodoin, 2023 Stein et al., 2024). When harm occurs, whether from disasters themselves or from inadequate preparedness systems, persons with disabilities must also have access to legal and administrative remedies to seek protection and justice (Lesnikowski et al., 2023).

Guided by these three implications, this report moves beyond asking whether policies exist to examine whether they lead to meaningful participation and protection for persons with disabilities across the policy cycle — from planning and implementation to monitoring and accountability. This evaluation is grounded in the lived experiences of persons with disabilities in Central Pangasinan, Philippines, which serve as an illustrative case study of how disability inclusion is realized, or constrained, in everyday disaster governance.

Disability climate justice and disaster justice framework

To better understand why some persons with disabilities face greater challenges during disasters, this research uses the disability climate justice and disaster justice frameworks as practical guides for analysis. These frameworks help explain how social exclusion, government decisions, and the way institutional resources and services are shared can affect who receives help, who stays safe, and who recovers after emergencies. In simple terms, they provide a way to examine whether disaster systems treat people fairly and support those who face the greatest barriers to protection and recovery (Stein et al., 2024; Stein & Stein, 2022; Engelman et al., 2022; Eriksen et al., 2021; United Nations, 2006; Lukasiewicz & Baldwin, 2020; Douglass & Miller, 2018; Verchick, 2012).

Climate justice is built on a simple but powerful idea: people who contribute the least to climate change often suffer its worst impacts. Many groups, such as Indigenous peoples, women, children, low-income communities, and persons with disabilities, are among those

least responsible for environmental damage; yet they face greater risks when disasters occur (Aruta, et al, 2022; Ogunbode et al., 2024; Ford, 2018; Olajide &Lawanson, 2014) . Their homes may be located in hazard-prone areas, their access to services may be limited, and the systems meant to protect them may not always meet their needs.

Persons with disabilities are an essential part of this climate justice conversation. Many face barriers in receiving early warnings, accessing transportation, or finding safe shelter during emergencies. For this reason, disability climate justice calls for disaster and climate policies that recognize these unequal risks and ensure that protection, resources, and participation are shared fairly across all members of society.

The disability climate justice framework foregrounds the lived experiences of persons with disabilities within climate and disaster governance. It "encompasses the cross-disability community with myriad intersectional identities; embraces human diversity; and values self-actualization, everyday problem solving, interconnectedness, and environmental stewardship" (Stein et al., 2024, p. 243). It further advances the goal of the "removal of discrimination, marginalisation, and poverty and the fulfilment of rights, including the rights to life, health, education, independent living, cultural life, and accessibility" (Ibid). Importantly, this framework recognizes the legal mandate for aligning disaster and climate governance with international human rights instruments and emphasizes the need to address intersecting forms of inequality affecting marginalized populations (Stein et al., 2024; Stein & Stein, 2022; Engelman et al., 2022; Eriksen et al., 2021; United Nations, 2006).

The disability climate justice framework complements the disaster climate justice perspective by focusing on fairness in how people are protected before, during, and after disasters. In recent years, the idea of disaster justice has gained greater attention as the unequal effects of disasters on different groups in society have become increasingly visible. Disasters do not affect everyone in the same way. Instead, they often reveal and worsen existing inequalities. As scholars have observed, disasters 'expose, magnify, and deepen existing injustices in society, which can then lead to further injustices' (e.g., Lukasiewicz & Baldwin, 2020).

Coined by Verchick (2010) to describe how people were left without adequate protection from natural hazards during the post-Hurricane Katrina period, the disaster justice framework emphasizes that safety and protection of citizens are basic responsibilities of public institutions and that state responsibilities go beyond during emergencies but extend to recovery and reconstruction. When governments fail to protect people from preventable harm, this failure is regarded not only as an injustice but as 'a breach of democracy's fundamental obligation to its citizens' (Verchick, 2012, p. 52). Disaster justice, therefore, requires that 'the allocation of safety and risk reduction should be governed by a process sensitive to the values of liberty, equality, and broad social benefit' (Verchick, 2010, p. 149). This principle recognizes that governments have a duty to protect people from harm through laws, policies, and public services, especially people who face greater disadvantage. In practical terms, the state is regarded as having a mandatory obligation to shield people from physical harm and to provide 'a minimally sufficient level of well-being' for individuals who are systematically disadvantaged (Clarinval & Hunt, 2014).

Rooted in environmental justice traditions, disaster justice also points to the moral responsibility of institutions to address structural inequalities that shape exposure to hazards and opportunities for recovery. This is particularly important for populations who are often least responsible for environmental degradation yet disproportionately affected by disasters (Douglass & Miller, 2018; Lukasiewicz & Baldwin, 2020; Verchick, 2012). In other words, disaster risks are not only determined by natural events, but also by social and political conditions that influence who is protected and who is left behind.

Finally, the disaster justice framework recognizes that disaster outcomes are shaped by multiple interacting forces. These include "institutional, social, economic, environmental, physical, and cultural" factors that influence governance, resilience, equity, and human dignity (Hamdanieh et al., 2024; Calabrese, 2020; Clark et al., 2013; Morrow, 2008; Mustafa, 1998). Understanding these interconnected factors is essential for evaluating whether disaster systems are truly fair, inclusive, and capable of accommodating the accessibility needs of the whole community.

This report was informed by both disability climate justice and disaster justice perspectives to determine how disaster preparedness systems operate in practice at the community level. Specifically, the framework is used to examine whether early warning systems are accessible, whether evacuation support is available and responsive to diverse needs, whether persons with disabilities are included in planning and decision-making, and whether local governance processes provide fair protection during emergencies. These questions are explored through a community-level case study in Central Pangasinan, Philippines, drawing on the lived experiences of persons with disabilities to assess how justice and inclusion are realized—or constrained—in everyday disaster governance.

Methods

The Methods chapter outlines the procedures used to collect and analyze data from two complementary components of the research: a cross-country review of disaster and climate governance instruments across ten disaster-prone countries and a community-based case study of persons with disabilities in Central Pangasinan, Philippines. In the following subsections, I describe the research design, document selection and coding procedures, case study site and sampling approach, data collection methods, analytical techniques, and study limitations.

Research Design

This study adopts a mixed-methods research design to examine the extent to which disaster and climate governance systems integrate the needs of persons with disabilities, with particular attention to the accessibility and actionability of early warning systems. The research combines cross-country legal and policy analysis with an in-depth case study of persons with disabilities in Central Pangasinan, Philippines. This design allows the study to assess both the formal commitments embedded in national governance frameworks (macro-level) and the lived realities of persons with disabilities navigating disaster preparedness and response at the community level (micro-level) (see Figure 1)

Figure 1. Integrated Research Design and Analytical Process

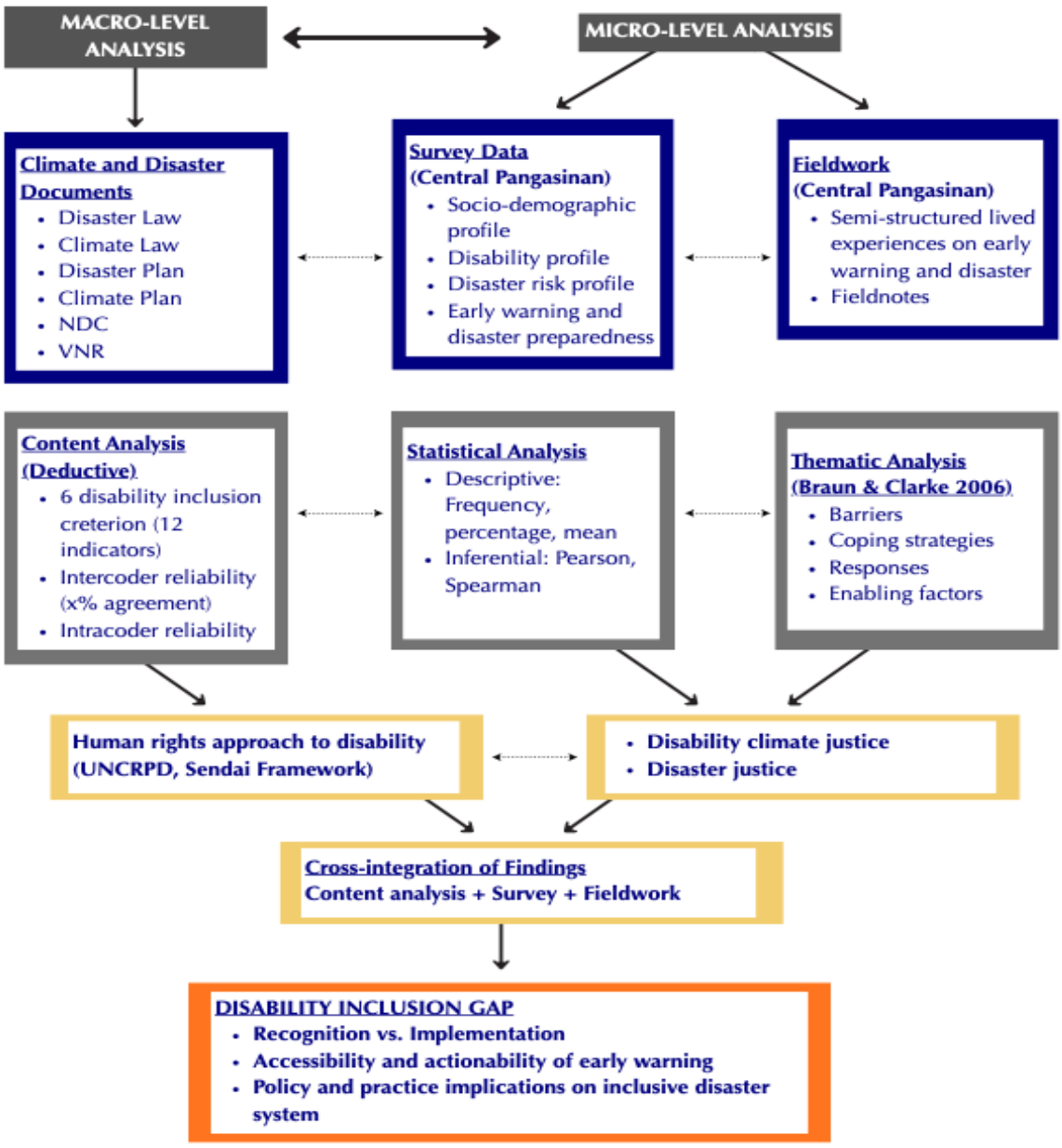


Figure 1: The study's mixed-methods design, combining content analysis of climate and disaster documents, survey analysis, and thematic analysis of fieldwork in Central Pangasinan are highlighted in this flowchart. These are integrated using a human rights approach to disability,

disability climate justice, and disaster justice to identify gaps between policy recognition and implementation. *(Source: Author's construction)*

As shown in Fig. 1, for the macro level (policy content analysis), the analytical framework of the study is grounded in the human rights model of disability, which frames disability inclusion as a matter of rights, equality, and state responsibility (Degener, 2016; Stein, 2007; United Nations, 2006; Jodoin, 2025). Hence, it follows the human rights principles of disability-inclusive disaster risk reduction and early warning governance, as articulated in international frameworks such as the SFDRR 2015–2030, UNCRPD, and the 2030 Agenda for Sustainable Development, particularly the commitment to leave no one behind. These frameworks emphasize the importance of accessible information, inclusive preparedness, and meaningful participation of persons with disabilities in disaster planning and response. In line with these principles, the study conceptualizes disability inclusion not merely as the presence of policy references to persons with disabilities, but as the extent to which governance systems enable persons with disabilities to receive timely warnings, evacuate safely, and access essential services during emergencies.

To operationalize this perspective, I assess disability integration across different dimensions:

1. Recognition and commitment to disability inclusion in governance documents
2. Participation and governance mechanisms involving persons with disabilities and their representative organizations
3. Accessibility and dissemination of early warning information
4. Preparedness and response measures, including evacuation and shelter accessibility
5. Resources and institutional capacity to support inclusive disaster management
6. Monitoring and data systems, particularly the use of disability-disaggregated indicators

These dimensions reflect internationally recognized priorities for inclusive disaster risk reduction and provide a structured basis for evaluating the responsiveness of national disaster and climate governance systems to the needs of persons with disabilities.

Study scope and country selection for content analysis

This study examines disability inclusion in disaster and climate governance across ten disaster-prone countries representing diverse geographic regions, hazard profiles, and governance contexts. These countries were selected based on four criteria: (1) exposure and vulnerability to disasters based on global indices such as the World Risk Index and the UNDRR Risk Index; (2) these countries were poorly resourced with low coping capacity but high vulnerability; (3) geographic balance and representation; and (4) availability of climate and disaster legislation and policies.

The ten countries

While the ten countries differ in governance structures and development trajectories, they share common challenges related to disaster preparedness, early warning accessibility, and the inclusion of persons with disabilities in risk reduction systems.

1. The Philippines (Southeast Asia);
2. Bangladesh (South Asia)
3. Indonesia (Southeast Asia);
4. Tanzania (East Africa);
5. Haiti (Caribbean)
6. Vietnam (Southeast Asia);
7. Pakistan (South Asia);
8. Mozambique (East Africa);
9. Fiji (Pacific/Oceania; Small-Island States); and
10. Madagascar (East Africa)

This shared vulnerability provides a meaningful basis for comparative analysis while allowing the study to examine how different policy environments influence the integration of disability considerations into disaster and climate governance. The comparative analysis is intended to identify patterns of inclusion and implementation that can inform policy learning and institutional strengthening across contexts. The focus on early warning and disaster

preparedness reflects the central role of timely and accessible risk information in reducing disaster impacts and safeguarding the rights and well-being of persons with disabilities.

Document selection

The analysis focused on key national-level disaster and climate governance instruments. These documents were selected because they represent the core policy and legal frameworks through which governments articulate risk reduction priorities, allocate responsibilities, and guide disaster response operations. To capture both the normative and operational dimensions of governance, the study examined six categories of documents:

1. **National Disaster Risk Reduction Laws**

   These include national disaster risk management acts, emergency management laws, or equivalent legislation establishing the legal mandates, institutional arrangements, and guiding principles for disaster governance. Disaster laws typically define the authority of national and local disaster management agencies and establish the legal basis for preparedness, response, and recovery actions.
2. **National Disaster Risk Reduction and Management Plans**

   These documents outline operational measures for disaster preparedness, evacuation planning, shelter management, and early warning dissemination. Disaster plans translate legal mandates into specific implementation procedures and coordination mechanisms across government agencies and local authorities.
3. **Climate Change Laws**

   These include national climate change acts or related legislation that establish legal responsibilities for climate adaptation, mitigation, and resilience-building. Climate laws typically define institutional mandates, governance structures, and policy principles guiding national responses to climate-related risks.
4. **Climate Change Adaptation Plans or National Climate Strategies**

   These documents provide operational guidance for climate adaptation and resilience planning, including measures related to climate-related disaster risks, community preparedness, and early warning systems. Climate adaptation plans often specify

sectoral actions, implementation timelines, and coordination mechanisms among government agencies.

5. **Nationally Determined Contributions (NDCs)**

   These documents outline national commitments to climate action under the Paris Agreement, including adaptation and resilience measures related to disaster risk reduction. NDCs were obtained from the official NDC Registry maintained by the secretariat of the United Nations Framework Convention on Climate Change (UNFCCC). In accordance with Article 4, paragraph 12 of the Paris Agreement, NDCs communicated by Parties are recorded in a public registry maintained by the UNFCCC secretariat to ensure transparency and accountability in national climate commitments.

6. **Voluntary National Reviews (VNRs)**

   These reports provide national assessments of progress toward the Sustainable Development Goals (SDGs), including commitments related to disaster preparedness, inclusive governance, and resilience-building. VNR documents were sourced from the United Nations High-Level Political Forum on Sustainable Development (HLPF) repository, where country reports are published as submitted by national governments.

Documents were collected from official and publicly accessible institutional repositories to ensure transparency, reliability, and consistency across countries. Nationally Determined Contributions (NDCs) were obtained from the official NDC Registry maintained by the secretariat of the United Nations Framework Convention on Climate Change (UNFCCC). In accordance with Article 4, paragraph 12 of the Paris Agreement, NDCs communicated by Parties are recorded in a public registry maintained by the UNFCCC secretariat to promote transparency and accountability in national climate commitments. The registry provides an authoritative and standardized repository of national climate policy submissions, enabling consistent cross-country comparison of climate-related disaster and adaptation measures.

VNR documents were sourced from the United Nations HLPF online repository, which serves as the central platform for countries to report progress toward the SDGs. The documents available on this platform are published as submitted by national governments, ensuring that the analysis reflects official state-reported commitments and implementation updates related to

inclusive development, disaster preparedness, and resilience-building. Only the latest available NDCs and VNRs of the ten countries surveyed were included in the analysis.

Disaster management laws, national disaster risk reduction strategies, and climate adaptation plans were obtained from official government websites and publicly available institutional repositories, including national disaster management authorities, ministries of environment or climate change, and related government agencies. Priority was given to the most recent versions of these documents to ensure that the analysis reflects current policy frameworks guiding disaster preparedness and early warning systems.

Several governance instruments included in the study were published in languages other than English. Where official English translations were available, they were used as the primary reference. In cases without official translations, relevant sections were translated using widely recognized translation applications, including Google Translate and DeepL, to facilitate consistent analysis of technical and legal provisions. Translated excerpts were then cross-checked against the original language text during coding, and key terms related to disability, preparedness, and early warning were verified using bilingual dictionaries or parallel policy documents, where available. In selected cases, back-translation was conducted to confirm the accuracy of interpretation.

A total of 51 disaster and climate governance instruments were collected and analyzed across the ten countries included in the study (see Appendix C). These documents comprised 9 VNRs, 10 NDCs , 10 disaster risk reduction plans, 9 disaster management laws, 10 climate adaptation plans, and 3 climate change laws. All ten countries had publicly available NDCs and national disaster plans. However, the presence of dedicated legal frameworks varied across countries. Only three countries had standalone climate change laws (Philippines, Pakistan and Fiji), while Haiti did not have an available VNR or a dedicated disaster law at the time of analysis.

Analytical approach

This study employs a systematic content analysis to assess the extent to which national disaster and climate governance frameworks integrate the needs of persons with disabilities, with particular attention to disaster preparedness and early warning systems. Content analysis was

selected as the primary method for the cross-country component because national laws, policies, and planning instruments constitute the formal basis for disaster governance and define the institutional responsibilities, priorities, and operational strategies guiding disaster risk reduction and emergency response.

I approach the analysis by drawing on the human rights model of disability, which frames disability inclusion as a matter of rights, equality, and state responsibility (Degener, 2016; Stein, 2007; United Nations, 2006; Jodoin, 2025). This perspective is institutionalized in the UNCRPD, a widely ratified international treaty that establishes clear obligations for governments to ensure the full participation of persons with disabilities in all areas of public life. The Convention explicitly acknowledges "the difficult conditions faced by persons with disabilities who are subject to multiple or aggravated forms of discrimination" on the basis of social, economic, and identity-related factors (CRPD, Preamble).

It further recognizes "the valued existing and potential contributions made by persons with disabilities to the overall well-being and diversity of their communities," emphasizing that the realization of their rights and participation contributes to broader social and economic development (ibid). This rights-based lens has been increasingly applied in climate and disaster governance research to evaluate how states operationalize inclusion across the policy cycle—from policy formulation and implementation to monitoring and evaluation (Eriksen et al., 2021; Jodoin et al., 2020; Stein & Stein, 2022; Jodoin, 2025).

To evaluate the extent to which the countries integrate persons with disabilities in disaster preparedness and early warning systems, the researcher developed a coding framework grounded in international human rights and disaster risk reduction standards that draw on two principal normative instruments: the Convention on the Rights of Persons with Disabilities (United Nations, 2006) and the SFDRR 2015–2030 (see Table 1; and Figure 1).

Table 1. Relevant Provisions of the UNCRPD and SFDRR

Obligations of States Parties for Persons with Disabilities (Reframed in Disaster Preparedness & Early Warning Context)	Key CRPD Provisions	SFDRR

Ensure protection and safety of persons with disabilities in situations of risk, armed conflict, humanitarian emergencies, and natural disasters (including inclusive preparedness, response, and recovery).	Article 11	Para V.36.a.iii
Guarantee non-discrimination and equal protection in accessing disaster preparedness resources, relief, and early warning systems.	Article 5(1–3)	Para V.36.a.iii
Ensure accessibility of the physical environment, transportation, information, and communications systems (including early warning signals, shelters, and evacuation routes).	Article 9(1–2)	Para IV.29; Para VI.32
Provide accessible formats of information (sign language, braille, plain language, augmentative communication) for early warning and disaster preparedness campaigns.	Article 21(b–c); 31	Para IV.23; Para VI.32
Guarantee equal right to life and survival assistance during disasters, including prioritization in emergency response planning.	Article 10	
Ensure inclusive health and rehabilitation services during and after disasters, including access to medical aid, psychological support, and assistive devices.	Article 25-26	Para IV.29;Para VI.32
Promote participation of persons with disabilities and their representative organizations in planning, implementing, and monitoring disaster risk reduction and early warning systems.	Article 4, 8, 12, 13, 21, 29, 31.	Para V.36.a.iii; Para IV.23; Para IV.26
Pay special attention to women, children, and older persons with disabilities who may be disproportionately affected during disasters.	Article 6-7	Para VI.32
Foster international cooperation and assistance to ensure disability-inclusive disaster preparedness and humanitarian relief.	Article 32(1)	Para IV.26; Para IV.29

Table 1: Summary of key UNCRPD and Sendai Framework provisions relevant to disability-inclusive disaster risk reduction and early warning. *(Source: Author's construction)*

Data coding

To ensure systematic and comparable analysis across countries, the study applied a structured coding framework designed to evaluate disability inclusion across key dimensions of disaster preparedness and early warning governance.

The coding protocol (see Table 2; see also Figure 2) is organized into six thematic clusters that follow a logical progression from recognition to accountability:

1. **Recognition and Commitment:** Whether persons with disabilities are explicitly mentioned as rights-holders in disaster preparedness and early warning, including attention to intersectionality (women, children, older persons with disabilities).
2. **Participation and Governance:** Whether persons with disabilities and their representative organizations (OPDs) are consulted and actively involved in the design, implementation, and monitoring of disaster risk governance;
3. **Information and Early Warning Systems**: Whether early warning systems and public communication campaigns are accessible, multi-format, and inclusive of diverse disability needs;
4. **Preparedness and Response Measures:** Whether evacuation routes, shelters, health, and psychosocial services are designed and delivered in ways accessible to persons with disabilities;
5. **Resources and Capacity:** Whether financial, technical, and training resources are allocated to ensure disability-inclusive disaster preparedness and whether capacity-building initiatives involve OPDs; and
6. **Monitoring and Accountability:** Whether States collect disability-disaggregated data, establish indicators, and ensure reporting on disability-inclusive disaster risk reduction.

Table 2: Coding Framework for Disability Inclusion in Early Warning

CRITERIA	INDICATORS	SCORING	KEY PROVISIONS FROM UNCRPD and SFDRR
1. Recognition & Commitment			
Explicit Mention	Does the document explicitly reference persons with disabilities in the context of disaster preparedness or early warning? If yes, indicate the relevant sections/provisions	0 = No; 1 = General mention (e.g., "vulnerable groups") 2 = Yes	CRPD Art. 11; SFDRR 36(a)(iv)
Protection in Emergencies	Are persons with disabilities recognized as a group requiring specific protection in disasters, climate risks, or humanitarian emergencies? If yes, indicate the relevant sections/provisions	0 = No; 1 = Mentioned in passing; 2 = Yes	CRPD Art. 11; UNDRIP Art. 7 & 22
Intersectionality	Does the document address specific subgroups (women, children, older persons with disabilities) during disasters, humanitarian emergencies or extreme weather events? If yes, indicate the relevant sections/provisions	0 = No 1 = General mention (e.g., "vulnerable groups") 2 = Yes	CRPD Art. 6 & 7; SFDRR 36(a)(i)
2. Participation & Governance			
Consultation & Participation	Are persons with disabilities or their representative organizations (OPDs) explicitly involved in disaster risk governance, climate planning, or early warning in the document?	0 = No 1 = General consultation 2 = Yes	CRPD Art. 4(3); SFDRR 36(a)(iv)
3. Information & Early Warning Systems			

Accessible Early Warning	Does the document explicitly require accessible multi-formats (sign language, braille, plain language, digital accessibility) in early warning systems?	0 = Not mentioned 1 = General accessibility 2 = Yes	CRPD Art. 9 & 21
Public Information Campaigns	Are public awareness and preparedness campaigns for persons with disabilities explicitly provided in the document?	0 = No 1 = General reference 2 = Yes	SFDRR 36(a)(iii); CRPD Art. 21
4. Preparedness & Response Measures			
Inclusive Evacuation & Shelters	Are there explicit provisions for accessible evacuation routes, shelters, and preparedness drills for persons with disabilities?	0 = No 1 = Partial reference 2 = Yes	CRPD Art. 9; SFDRR 33(c)
Health & Support Services	Does the document explicitly provide for disability-inclusive health, rehabilitation, or psychosocial services planned for disaster response and recovery?	0 = No 1 = General health measures mentioned 2 = Yes	CRPD Art. 25–26
5. Resources & Capacity			
Capacity Building & Training	Does the document explicitly provide for the training of disaster personnel regarding disability inclusion in relation to EWS?	0 = No 1 = General training 2 = Yes	CRPD Art. 26; SFDRR 36(a)(iii)
Resource Allocation	Does the document explicitly provide/earmark financial/technical resources for disability-inclusive early warning?	0 = No 1 = General allocation	SFDRR 27 & 48

		2 = Yes	
International Cooperation	Does the document link disability inclusion to international frameworks, humanitarian aid, or NDC reporting?	0 = No 1 = General cooperation 2 = Yes	CRPD Art. 32; SFDRR 48–49
6. Monitoring & Accountability			
Data & Indicators	Does the document explicitly provide for disability-disaggregated data or indicators to monitor inclusive disaster preparedness/early warning?	0 = No 1 = General mention of vulnerable groups 2 = Yes	CRPD Art. 31; SFDRR 24(b)

Table 2: Coding framework used to assess disability inclusion in early warning and disaster preparedness documents. *(Source: Author's construction, 2026)*

Scoring and interpretation

Each law or policy document was independently coded by two trained coders using the same coding protocol and scoring criteria. The coders reviewed the documents separately and assigned scores to each indicator based on the presence and clarity of disability-related provisions. Each document was coded using a three-point ordinal scale (see Table 3A) against each indicator and criterion provided in Table 2.

Following independent coding, the coders compared their results to identify areas of agreement and disagreement. Where discrepancies in coding occurred, the coders engaged in structured discussion to clarify interpretation and reach consensus. Disagreements were resolved through reference to the original text of the document and the operational definitions contained in the coding protocol. In cases where interpretation remained uncertain, final decisions were guided by a conservative coding principle, meaning that higher scores were assigned only when provisions clearly demonstrated explicit and actionable inclusion measures.

Table 3A. Disability Inclusion Scoring

Score	Level of Inclusion	Operational Definition
0	Absent	No explicit reference to persons with disabilities or disability inclusion measures in the document.
1	Partial or General Inclusion	Persons with disabilities are mentioned indirectly, often grouped under broad categories such as “vulnerable populations”
2	Explicit Inclusion	The document provides clear and specific provisions addressing the needs of persons with disabilities, including concrete measures related to disaster preparedness, accessible early warning, evacuation support, shelter accessibility, health services, or other disability-specific interventions.

Table 3A: The scoring scale used to classify disability inclusion across policy documents.
(Source: Author’s construction, 2026)

Scores were calculated for each of the 6 dimensions of disability inclusion and aggregated to produce overall inclusion ratings for each country across each document. These ratings were interpreted using predefined score ranges to support consistent comparison across countries.

Table 3B Interpretation of Overall Disability Inclusion Scores

Score Range	Level of Inclusion	Interpretation
0.00–0.50	Very Low Inclusion	Disability inclusion is largely absent from governance frameworks, with minimal or no recognition of the needs of persons with disabilities.
0.51–1.00	Low Inclusion	Disability inclusion is acknowledged in general terms but lacks specific operational measures or implementation mechanisms.
1.01–1.50	Moderate Inclusion	Governance frameworks demonstrate meaningful efforts to integrate disability considerations, including some concrete provisions related to preparedness, early warning accessibility, or support services.
1.51–2.00	High Inclusion	Disability inclusion is strongly integrated across governance frameworks, with explicit provisions, operational measures, and institutional mechanisms supporting inclusive disaster preparedness and early warning systems.

Table 3B: The interpretation guide for overall disability inclusion scores. *(Source: Author's construction, 2026)*

To examine relationships between key dimensions of disability inclusion, correlation analysis was conducted using both Pearson correlation coefficients and Spearman rank correlation coefficients, depending on the distribution and scale of the variables analyzed. Given the relatively small sample size in the cross-country component (N = 10 countries), correlations were interpreted primarily as indicators of relationship strength rather than strict tests of statistical significance. Statistical significance thresholds were determined using a two-tailed test based on the student's distribution with degrees of freedom equal to n − 2. Under these conditions, correlation coefficients of approximately 0.63 or higher were interpreted as statistically significant at the $p < 0.05$ level, while coefficients of approximately 0.77 or higher were interpreted as significant at the $p < 0.01$ level.

Coding reliability

To ensure consistency and reliability in the coding process, both inter-coder reliability and intra-coder reliability were assessed using percentage agreement and Cohen's kappa coefficient (κ). Cohen's kappa is widely used in analysis to measure degrees of agreement between coders beyond what would be expected by chance (see Table 4A).

Table 4A Scope of Reliability Testing for Document Coding

Component	Total in study	Reliability sample	Approximate number of coding decisions
Countries	10	Stratified across countries	—
Document types	6	Stratified across document types	—
Indicators	12	Included across sampled documents	—
Total coding decisions	10 × 6 × 12 = 720	—	720
Inter-coder reliability sample	—	25%	180
Intra-coder reliability sample	—	20%	144

Table 4A: Scope of reliability testing for document coding. *(Source: Author's construction, 2026)*

Inter-coder reliability was assessed by having two independent coders review and score the same set of policy documents using the standardized coding protocol. The level of agreement between coders was calculated across all indicators and document categories prior to reconciliation of discrepancies. The analysis yielded an inter-coder reliability coefficient of $\kappa = 0.79$, indicating substantial agreement according to commonly accepted interpretation thresholds (Landis & Koch, 1977). Percentage agreement between coders was 87%, further demonstrating consistent application of the coding criteria.

Intra-coder reliability was evaluated by re-coding a subset of documents after a defined interval of time to assess consistency in scoring decisions by the same coder. The comparison of initial and repeated coding results produced an intra-coder reliability coefficient of $\kappa = 0.83$, indicating almost perfect agreement, with a percentage agreement of 91%. These results confirm the stability and internal consistency of the coding process over time.

Table 4B Inter-coder and Intra-coder Reliability Results

Reliability test	Coding comparison	Sample coded	Cohen's kappa (κ)	Percentage agreement
Inter-coder reliability	Coder 1 vs Coder 2	180 coding decisions	0.79	87%
Intra-coder reliability	Time 1 vs Time 2 coding	144 coding decisions	0.83	91%

***Table 4B**:* Inter-coder and intra-coder reliability results. *(Source: Author's construction)*

Intra-coder reliability was assessed by conducting repeated coding checks on a subset of documents after a defined interval of time. In this procedure, the same coder independently re-coded selected documents without reference to the initial coding results. The level of consistency between the first and second coding rounds was then calculated using percentage agreement and Cohen's kappa statistics. The results demonstrated stable coding decisions over time, confirming the internal consistency of the coding process. (See also Figure 2.)

Figure 2. Coding Framework for Disability Inclusion in Climate and Disaster Document

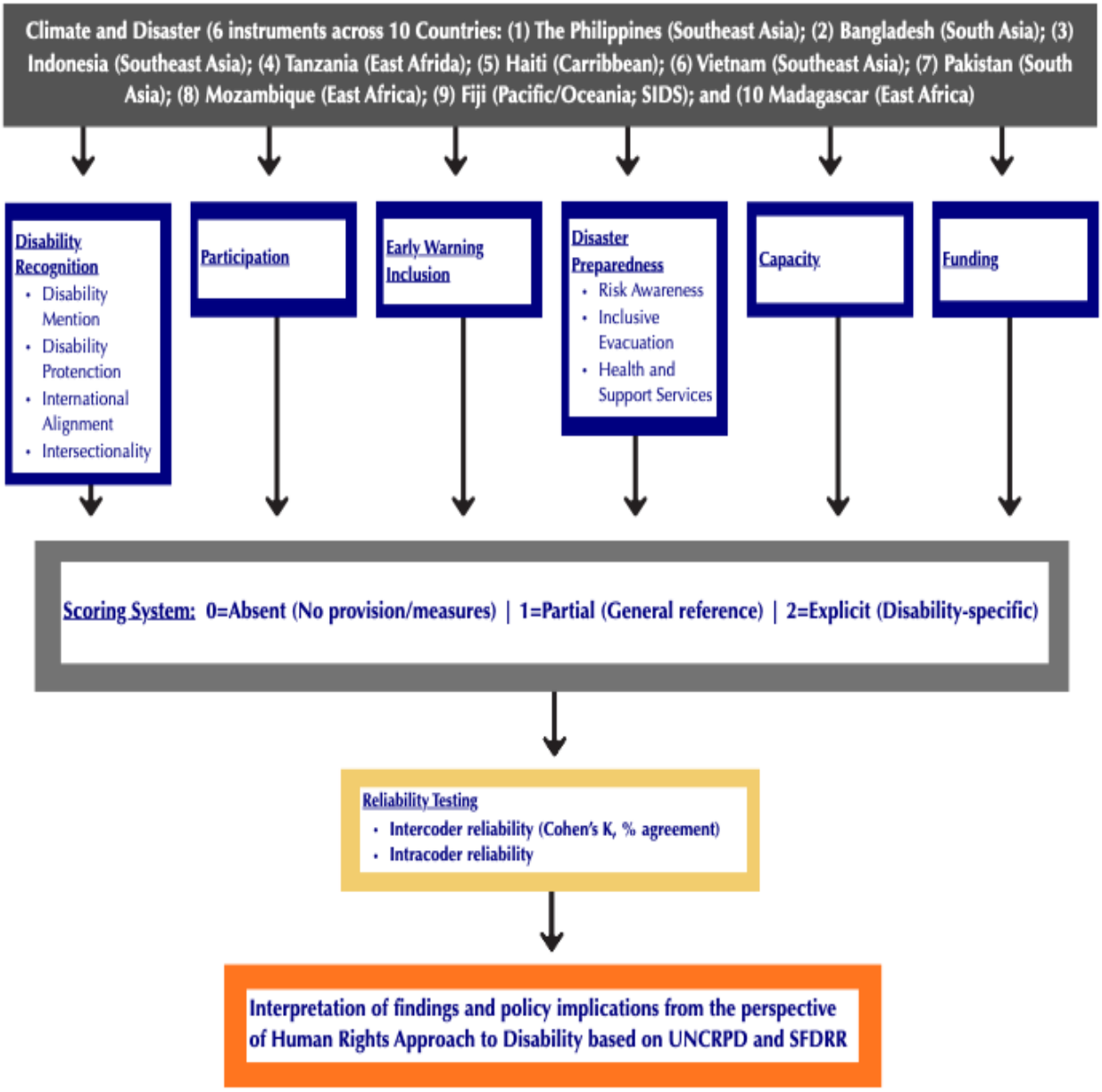


Figure 2: This figure presents the coding framework used to assess disability inclusion across climate and disaster documents, and the 0–2 scoring system *(Source: Author's construction)*

The Philippine Case Study

Case study site and context

The second component of the study focuses on Central Pangasinan, Philippines, specifically the municipalities of Aguilar and Bugallon (see Figure 3). These municipalities are situated within the broader Agno River system, one of the major river basins in Luzon. Aguilar's municipal profile notes that flooding occurs in the eastern portion of the municipality because it is traversed by the Agno River, while some barangays also experience flash floods linked to denuded forest areas and drainage conditions (Municipality of Aguilar, accessed 2026).

Bugallon is an agricultural municipality in Pangasinan with a land area of approximately 16,652 hectares and a population of about 68,000 (2015 census). Comprising 24 barangays, the local economy is largely dependent on crop production, including rice, sugarcane, corn, cassava, and vegetables, alongside aquaculture activities such as bangus and tilapia farming across roughly 237 hectares of fishponds. Livelihoods are further supplemented by poultry raising, piggeries, and small-scale industries such as sawali weaving. This strong dependence on agriculture and fisheries makes the municipality particularly sensitive to climate-related hazards, including flooding, drought, and extreme weather events, which can disrupt production cycles and household incomes. Some residents also belong to indigenous Kankanaey communities, whose livelihoods and access to resources may be further shaped by geographic and socio-economic conditions (Official Government Website of Bugallon, accessed 15 January 2026).

Aguilar is a third-class municipality in Pangasinan with a total land area of approximately 19,507 hectares and a population of 41,463 (2015 census). The town is composed of 16 barangays and is predominantly characterized by extensive agricultural lands used for rice, corn, vegetable, and mango production, alongside poultry and livestock raising. Similar to Bugallon, the municipality's reliance on climate-sensitive livelihoods heightens its exposure to disaster risks such as typhoons, flooding, and drought. While tourism has grown in recent years, agriculture remains the primary source of income for most households. The presence of Kankanaey

communities further highlights the need to consider diverse socio-cultural contexts in disaster preparedness and response, particularly in relation to access to information, mobility, and support systems (Department of the Interior and Local Government, accessed 16 December 2025).

The Philippine Atmospheric Geophysical Astronomical Services Administration (PAGASA), the country's weather agency, similarly describes the Agno River Basin as hydrologically significant, with mountainous upstream terrain causing flood runoff to reach downstream plains rapidly (PAGASA, accessed 2026). The selection of Aguilar and Bugallon is also supported by the municipalities documented exposure to typhoons, flooding, and related hazards.

Studies on Pangasinan identify the province as vulnerable to typhoons, floods, and landslides, while research on disaster management capability in Pangasinan notes that several disaster-prone localities are low-lying and include rural or far-flung barangays served by local disaster control units (Yanquiling, 2024; Valdez, 2021; Estember & Abiog, 2018).

Figure 3 Location Map of Aguilar/Bugallon Central Pangasinan, Philippines



***Figure 3**:* This figure shows the study area in Central Pangasinan, Philippines. The map identifies the location of fieldwork sites, including Aguilar and Bugallon. *(Source: Author's construction)*

These environmental and geographical vulnerabilities are consistent with broader Philippine hazard patterns: the country is frequently affected by typhoons, floods, landslides, earthquakes, volcanic eruptions, and droughts, and recurrent flash floods have been identified across all Philippine regions, with Northern Luzon among the areas requiring priority attention for flood risk reduction (River & dela Vega, 2025; Werg et al., 2024; Yanquiling, 2024). Central Pangasinan is particularly important for this study because it reflects the conditions of last-mile communities, where early warning effectiveness depends not only on the delivery of information but also on whether people can interpret, trust, and act on warnings in time (Yanquiling, 2024).

Central Pangasinan offers a strategically relevant site for examining disability-inclusive early warning and disaster preparedness. Its riverine geography, recurrent exposure to typhoon-induced flooding, and mixture of lowland, agricultural, and last-mile community conditions make it well suited for analyzing the gap in disability inclusion in terms of early warning disaster preparedness.

By focusing on persons with disabilities in Aguilar and Bugallon, the study captures how early warning systems are experienced at the community level and how accessibility, mobility, social support, and institutions shape protective actions during emergencies.

Data collection methods

Data for the case study component were collected through a combination of survey and semi-structured interviews with persons with disabilities in the municipalities of Aguilar and Bugallon, Central Pangasinan, Philippines. This mixed-methods approach enabled the study to capture both quantitative patterns in disaster preparedness and early warning access and qualitative insights into the lived experiences of persons with disabilities during hazard events.

Survey of Persons with Disabilities

A structured survey was administered to 86 persons with disabilities residing in selected barangays in Aguilar and Bugallon. The survey instrument was designed to collect information on demographic characteristics, disability type, household conditions, disaster risk exposure, early warning access, evacuation capacity, displacement history, and perceived barriers to

disaster preparedness. The questionnaire included both closed-ended and categorical questions to allow for systematic quantitative analysis of preparedness and early warning actionability.

Participants were identified through coordination with local government units, community leaders, and disability organizations to ensure that respondents represented a range of disability types, age groups, and socioeconomic backgrounds. The survey was conducted through face-to-face interviews to accommodate respondents with varying literacy levels and communication needs. Data collection took place in community settings such as barangay halls, homes, and local gathering spaces to ensure accessibility and familiarity for participants.

Sampling and statistical analysis

Participants for the survey were selected using a purposive sampling approach designed to capture the experiences of persons with disabilities residing in hazard-prone communities in Central Pangasinan, specifically in the municipalities of Aguilar and Bugallon. Respondents were identified in coordination with local government units (LGUs), barangay officials, and community-based disability networks to ensure inclusion of individuals with diverse disability types, age groups, and socioeconomic backgrounds. The sampling process prioritized residents living in flood-prone and geographically vulnerable barangays where exposure to typhoons and flooding is a recurring concern and where early warning and evacuation decisions are critical for safety.

Eligibility criteria required that participants be residents of the selected municipalities and self-identify as persons with disabilities or be recognized as such within their household or community. The sample size of 86 respondents reflects the practical realities of field-based research in last-mile communities, where persons with disabilities may be geographically dispersed and not always captured in formal registries. Consistent with established practices in community-based disaster risk reduction research, the sampling strategy prioritized relevance to hazard exposure and lived experience rather than statistical representativeness, enabling the study to generate contextually grounded insights into the accessibility and actionability of early warning and disaster preparedness systems for persons with disabilities.

Quantitative data from the survey of persons with disabilities were analyzed using descriptive and inferential statistical techniques to identify patterns in disaster preparedness, early warning access, evacuation capacity, and displacement experience. Descriptive statistics—including frequencies, percentages, and cross-tabulations—were used to summarize demographic characteristics, types of disability, living arrangements, income levels, and preparedness indicators.

Semi-structured interviews

In addition to the survey, qualitative interviews were conducted to document the lived experiences of 13 persons with disabilities during disaster events, particularly in relation to early warning, evacuation, and shelter accessibility. These interviews allowed respondents to describe personal experiences in their own words, providing contextual detail that could not be captured through structured survey questions alone. Interview topics included experiences receiving early warning messages, challenges encountered during evacuation, reliance on family or community support, and perceptions of safety and accessibility in evacuation centers.

Narratives collected through these interviews were used to illustrate patterns identified in the survey data and to provide grounded examples of how disability inclusion—or exclusion—shapes disaster preparedness outcomes. This qualitative component strengthened the study's analytical depth by linking statistical findings to real-world experiences in last-mile communities.

Thematic Analysis of interview narratives

Qualitative data from interviews and lived experience narratives were analyzed using a thematic analysis approach to identify recurring patterns, concepts, and experiences related to disaster preparedness, early warning accessibility, evacuation, and shelter conditions for persons with disabilities. The analysis followed the widely used six-step framework proposed by Braun and Clarke (2006), which includes: (1) familiarization with the data, (2) generation of initial codes, (3) identification of themes, (4) review of themes, (5) definition and naming of themes, and (6) writing up the findings. Although presented as a sequence of steps, the analytical process was iterative and reflective, requiring repeated engagement with the data to

ensure depth, consistency, and alignment with the study's research objectives on disability-inclusive disaster preparedness and early warning systems.

In the initial stage of analysis, interview transcripts and field notes were reviewed carefully to develop familiarity with the data and identify recurring issues related to risk communication, evacuation decision-making, accessibility barriers, and reliance on social support networks. An inductive coding approach was applied, allowing themes to emerge naturally from participants' narratives rather than imposing predetermined categories. Initial codes were assigned to relevant segments of text, and related codes were grouped into subcategories reflecting shared meanings or experiences. In subsequent stages, these initial codes were refined into broader analytical themes through systematic comparison across interviews and validation against the study's analytical framework. Particular attention was given to identifying patterns that explained how persons with disabilities interpret early warning messages, assess risk, and mobilize resources during emergencies.

To enhance the trustworthiness and rigor of the qualitative analysis, the study followed established qualitative research criteria proposed by Guba and Lincoln (1985), including credibility, dependability, confirmability, and transferability. Credibility was supported through careful documentation of coding decisions and the use of direct participant quotations to illustrate key findings. Dependability was strengthened through consistent application of the coding framework across transcripts, while confirmability was maintained by grounding interpretations in observable evidence from the data rather than researcher assumptions. Transferability was addressed by providing detailed descriptions of the study context, including the hazard environment and social conditions of last-mile communities in Central Pangasinan.

The final stage of analysis involved synthesizing the coded data to identify key themes and subthemes that captured the lived experiences of persons with disabilities in disaster-prone settings. Representative quotations were selected to illustrate central patterns and provide contextual depth to quantitative findings. These qualitative insights were then integrated with survey results to explain observed statistical patterns and to highlight practical barriers and enabling factors influencing the actionability of early warning systems. This systematic thematic

analysis enabled the study to generate evidence-based insights into how structural, social, and environmental conditions shape disaster preparedness outcomes for persons with disabilities in hazard-prone communities.

Disaster climate justice and disaster justice as an analytical lens

I drew on the disability climate justice framework to interpret the findings from the Central Pangasinan case study. I used this lens to examine how persons with disabilities experience disasters in ways shaped not only by impairment, but by barriers embedded in early warning systems, evacuation processes, and access to support. In analyzing the fieldwork data, I focused on how inequality is produced and reproduced through these systems, for example, whether warning messages are accessible, whether evacuation support is available, and whether persons with disabilities are able to participate in preparedness activities. This approach allowed me to situate everyday challenges such as distance, mobility constraints, and lack of a social support system within broader questions of inclusion, equity, and fairness.

I also applied the disaster justice framework, introduced in the Conceptual Framing, to assess the role of institutions and their responsibility to protect and accommodate persons with disabilities during disasters. Through this lens, I examined whether disaster preparedness measures are not only present in policy but also function in ways that ensure fair access to protection and support. In the Central Pangasinan case, I used this framework to identify gaps between formal systems and lived experience, including limited government support, unclear procedures, and the reliance on family or community networks to fill gaps in institutional assistance.

Ethical considerations and informed consent

The study followed established ethical standards for research involving human participants, with particular attention to the rights, dignity, and safety of persons with disabilities. Prior to participation, respondents were provided with clear information about the purpose of the study, the voluntary nature of participation, and the confidentiality of their responses. Informed consent was obtained from all participants before data collection .

Participants were assured that their responses would be used solely for research and policy analysis purposes and that no personally identifiable information would be disclosed in published reports. Respondents were also informed that they could decline to answer any question or withdraw from the study at any time without consequence. These procedures were implemented to ensure compliance with ethical principles of respect, voluntary participation, and protection of at-risk populations.

Accessibility accommodations

Recognizing the diverse needs of persons with disabilities, specific measures were taken to ensure that data collection procedures were accessible and inclusive. Survey and interview activities were conducted in locations familiar and accessible to participants, including their homes and community centers. Questions were delivered orally where necessary to accommodate respondents with limited literacy or visual impairments, and sufficient time was provided to allow participants to respond comfortably.

Where mobility or communication barriers were present, family members or caregivers were permitted to assist participants in clarifying questions or facilitating communication, while ensuring that responses reflected the participant's own experiences. These accommodations were implemented to uphold the principle of meaningful participation and to ensure that persons with disabilities could engage fully in the research process.

Limitations

The survey component of the study involved 86 persons with disabilities residing in selected communities in Central Pangasinan. Although this sample size provided sufficient depth to identify recurring patterns in disaster preparedness and early warning access, it does not represent the full population of persons with disabilities in the province or in the Philippines more broadly. The use of purposive sampling, while appropriate for community-based disaster research, limits the generalizability of the findings to other geographic contexts or population groups. Instead, the results should be interpreted as context-specific insights into the experiences of persons with disabilities in Aguilar and Bugallon, both municipalities of Central Pangasinan.

However, the integration of survey data with qualitative interviews firmed up the findings by enabling triangulation across multiple data sources. This mixed-methods approach allowed the study to capture both measurable patterns and lived experiences, providing a nuanced understanding of how early warning systems function in real-world settings for persons with disabilities.

Results and Discussion

Overview

This section presents the findings of the study through a two-part analysis that examines disability inclusion in early warning systems and disaster preparedness from both macro and micro-level perspectives.

Part I presents the results of the content analysis of national-level disaster and climate laws, plans, Nationally Determined Contributions, and Voluntary National Reports under the Sendai Framework from ten disaster-prone countries in the Global South. It assesses how persons with disabilities are recognized and included across these instruments.

Part II presents a case study of Central Pangasinan, Philippines, focusing on the barriers, coping strategies, responses, and enabling factors that influence the actionability of early warning among persons with disabilities.

Part I. Disability Inclusion in Disaster and Climate Governance: A Cross-Country Analysis

To assess disability inclusion, six (6) national-level documents were analyzed for each country: disaster laws, climate laws, national disaster risk reduction and management plans, national climate adaptation plans, National Voluntary Reports submitted under the Midterm Review of the Sendai Framework, and Nationally Determined Contributions under the Paris Agreement. These documents represent the primary institutional instruments through which governments articulate plans, policies, and commitments to inclusive disaster and climate governance. The analysis focused on ten countries in the Global South:

- Philippines
- Bangladesh
- Indonesia
- Tanzania
- Haiti
- Vietnam
- Pakistan

- Mozambique
- Fiji
- Madagascar

Disability inclusion was evaluated using systematic content analysis organized around six (6) thematic clusters: recognition; participation; inclusive early warning systems and disaster preparedness; capacity; funding; and monitoring. Each cluster was assessed using a set of indicators scored on a three-point scale from 0 to 2, where 0 indicates absence of provision, 1 indicates general or partial inclusion, and 2 indicates explicit inclusion of persons with disabilities. Indicator scores were aggregated to generate an overall disability inclusion score for each document, with a maximum possible score of 12. Two summary metrics were calculated to support cross-country comparison: the mean raw score, representing the average total score across documents, and the mean rating score, representing the average score per thematic cluster on a scale from 0 to 2.

Disability inclusion in disaster and climate documents ranges from low to moderate levels across the 10 countries

Across the ten countries analyzed, disability inclusion in disaster and climate governance documents remains partial and uneven. The overall disability inclusion score was 7.12 out of 12, equivalent to a mean rating of 1.19 on a 0–2 scale. This places the overall result within the lower end of the moderate range. Figure 4 summarize these results.

Figure 4. Disability Inclusion Scores Across Six Disaster and Climate Governance Document Types in Ten Countries.

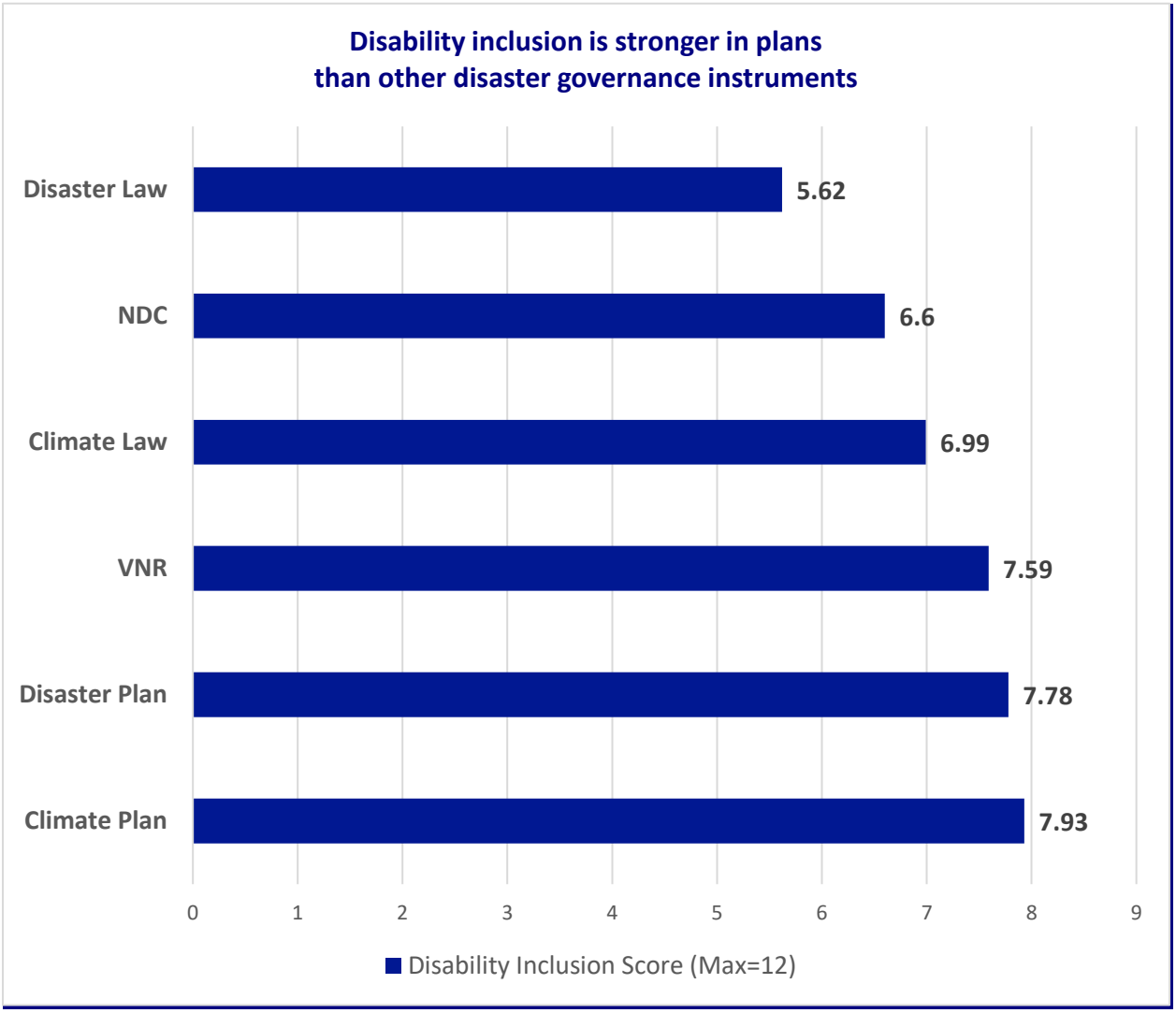


Figure 4. Overall disability inclusion scores across six disaster and climate documents in ten countries from the Global South *(Source: Content analysis)*

Planning documents showed stronger disability inclusion than laws and formal climate commitment instruments (i.e., NDC). Climate Plans recorded the highest score (7.93; mean rating 1.32), followed by Disaster Plans (7.78; 1.30) and Voluntary National Reviews (7.59; 1.27). By contrast, Climate Laws (6.99; 1.17), Nationally Determined Contributions (6.60; 1.10), and Disaster Laws (5.62; 0.94) showed weaker levels of inclusion. The findings suggest that disability inclusion is more developed in planning instruments than in legal or commitment-

based documents. Plans are more likely to specify practical measures such as accessible early warning, evacuation support, preparedness actions, and service delivery. Laws, by contrast, often establish broad mandates but provide less operational detail.

Across disaster and climate laws, persons with disabilities are frequently folded into broad categories such as “vulnerable groups,” without being explicitly recognized as rights-holders and often key contributors, who may require targeted protection in addition to accessibility, and support.

This matters because legal recognition has a foundational role in inclusive disaster governance. Laws do not merely describe priorities; they define who is visible, who is protected, and which institutions can be held accountable. When disability is only implied, rather than explicitly articulated, later planning and implementation may lack a clear legal basis for accessible early warning, inclusive evacuation, and disability-responsive preparedness.

A similar pattern appears in the comparison between Voluntary National Reviews and Nationally Determined Contributions. VNRs generally show stronger disability inclusion because they report progress on inclusive disaster risk reduction under the Sendai Framework. NDCs, by contrast, remain primarily oriented toward climate mitigation and adaptation commitments, where disability is acknowledged less consistently and rarely operationalized in detail.

In summary, disability inclusion is present but shallow. It appears most clearly in planning documents, less consistently in laws and climate commitments, and only unevenly in provisions that would make early warning and preparedness accessible in practice.

Disability inclusion is weakest in early warning and disaster preparedness

Disability inclusion across the 6 governance criteria varies systematically, with the lowest level observed in early warning systems and disaster preparedness (mean raw score 6.13; mean rating 1.02), placing it within the low inclusion range (Figure 5; Source Table 6: Appendix D: Extended Tables & Source Tables). By contrast, recognition achieved the highest score (8.90; 1.48), followed by participation (7.91; 1.32), both within the moderate inclusion range.

Monitoring (6.95; 1.16), funding (6.33; 1.05), and capacity (6.29; 1.05) fall at the lower end of inclusion.

Figure 5. Overall Disability Inclusion Scores Across the Six Governance Criteria

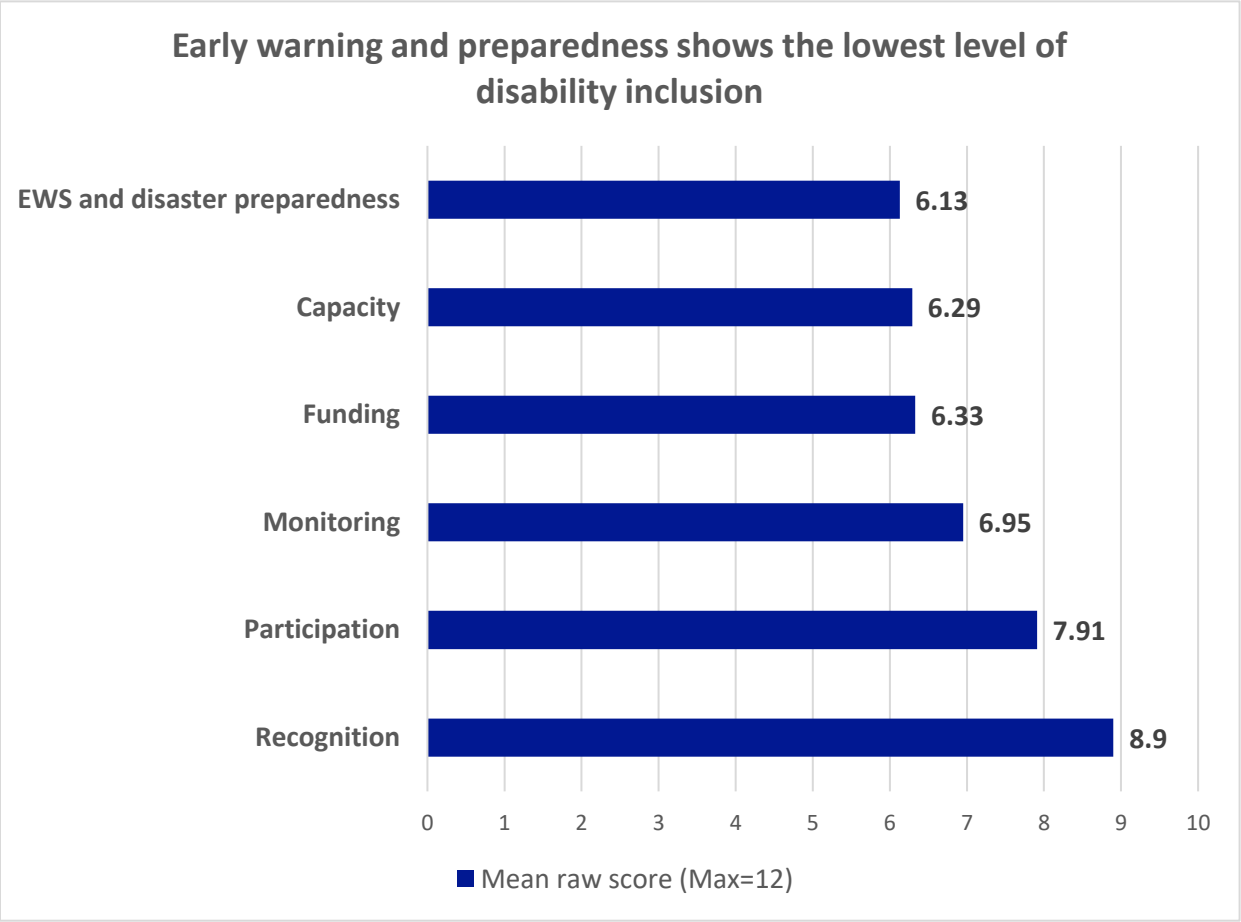


Figure 5. This chart shows disability inclusion scores across six disability inclusive governance criteria in disaster and climate documents from ten disaster-prone countries. *(Source: Content analysis)*

Recognition achieved the highest overall score, with a mean raw score of 8.90 and a mean rating score of 1.48, clearly within the moderate inclusion range. This finding indicates that some of the countries have started to acknowledge persons with disabilities in disaster and climate documents not merely as part of affected groups but as a specific group of right-holders who require equal protection from disasters like the rest of the population.

Evidence of recognition is particularly visible in national disaster planning instruments. For example, Pakistan's National Disaster Risk Reduction Strategy 2025–2030 refers to the need for an "inclusive disaster management ecosystem," which ensures the participation of women, youth, persons with disabilities, and marginalized groups across all stages of disaster management(p. 14). Similarly, Fiji's National Disaster Risk Reduction Policy 2018–2030 recognizes that "women, children and persons with disabilities are not only most vulnerable but also have a lot to contribute when allowed to participate in DRR processes" (p. 24). The same policy also invokes the principle of normalization, emphasizing that persons with disabilities should participate in social and community activities in the same way as other members of society.

Criteria requiring concrete implementation show consistently lower levels of disability inclusion. Monitoring recorded a mean raw score of 6.95 and a mean rating score of 1.16, positioning it at the upper boundary of the low inclusion range. Funding (mean raw score 6.33, mean rating 1.05) and capacity (mean raw score 6.29, mean rating 1.05) similarly fall within the low inclusion category, indicating that provisions related to institutional capacity-building and dedicated financial resources for disability inclusion are present but not consistently specified.

The lowest level of inclusion is observed in early warning systems and disaster preparedness, which records a mean raw score of 6.13 and a mean rating score of 1.02, placing it firmly within the low inclusion range. This suggests two things: firstly, that while disability inclusion has been partially recognized across the documents, concrete and operational measures to ensure accessible and inclusive early warning and preparedness systems for persons with disabilities remain limited; and secondly, that disability-inclusive planning remains an under-institutionalized dimension of disaster governance, with relatively few actionable measures specifying accessible warning formats, inclusive preparedness protocols, disability-sensitive risk communication, or mechanisms for the active participation of persons with disabilities in decision-making processes. The weakest performance in early warning and disaster preparedness is especially concerning. These are the systems that determine whether people can receive warnings, understand them, and act in time to stay safe. Yet the analysis shows that

many disaster and climate documents do not clearly explain how these systems should be made accessible for persons with different needs.

This finding is consistent with earlier studies. Research has shown that while persons with disabilities may understand disaster risks, warning systems, and communication channels are often not designed in ways they can easily access or use (Christy et al., 2021; Batchelor et al., 2021).

The results indicate a clear gap. Disability inclusion is more strongly reflected in areas related to recognition and participation, which tend to focus on policy commitments and principles than on actual implementation. In contrast, criteria that require concrete implementation—such as monitoring, capacity, funding, and inclusive early warning and preparedness systems—show weaker integration.

Disability recognition is strongest in international alignment but weakest in intersectionality

The recognition criterion assesses whether disaster and climate documents explicitly acknowledge persons with disabilities across four dimensions: (1) alignment with international norms, such as the CRPD, Paris Agreement, and Sendai Framework; (2) explicit mention of persons with disabilities in policy language; (3) provision of targeted protection measures, including assistance, evacuation, and access to services; and (4) recognition of intersectional vulnerability, where disability is considered alongside factors such as gender, age, ethnicity, or socioeconomic status.

As shown in Fig. 6 and Table 7 recognition of persons with disabilities across the 4 indicators is within the moderate level (Table 7, Figure 6). International norm alignment records the highest mean score (10.48; 1.75), followed by disability mention (9.75; 1.62) and disability protection (9.11; 1.52). Intersectionality records the lowest mean score (6.27; 1.05). Across document types, Voluntary National Reviews record the highest overall mean rating (1.81), followed by climate plans (1.78) and Nationally Determined Contributions (1.48). In contrast, disaster laws show the lowest level of recognition (1.14).

Table 7. Disability Recognition Across Four Indicators

Documents	International norm	Disability mention	Disability protection	Intersectionality	Mean rating
VNR	2.00	1.88	1.88	1.50	1.81
Climate Plan	2.00	1.90	1.90	1.30	1.78
NDC	2.00	1.50	1.50	0.90	1.48
Disaster Plan	1.70	1.70	1.50	0.90	1.45
Climate Law	1.67	1.33	1.00	1.00	1.25
Disaster Law	1.11	1.44	1.33	0.67	1.14
Mean rating	1.75	1.62	1.52	1.05	1.458
Mean score	10.48	9.75	9.11	6.27	8.90

Table 7. Score Range and interpretation: 0–3: Very low inclusion; 4–6: Low inclusion; 7–9: Moderate inclusion; 10–12: High inclusion *(Source: Content analysis)*

International norm alignment records the highest level of recognition (mean score 10.48/12; rating 1.75), indicating strong incorporation of global frameworks such as the CRPD, the Paris Agreement, and the Sendai Framework. This suggests that disaster and climate policies are generally aligned with the language of international climate and disaster-related instruments for disability inclusion. In practical terms, this alignment signals a strong normative commitment to disability inclusion, at least at the level of policy orientation and strategic framing.

Figure 6. Disability Recognition Across Four Indicators

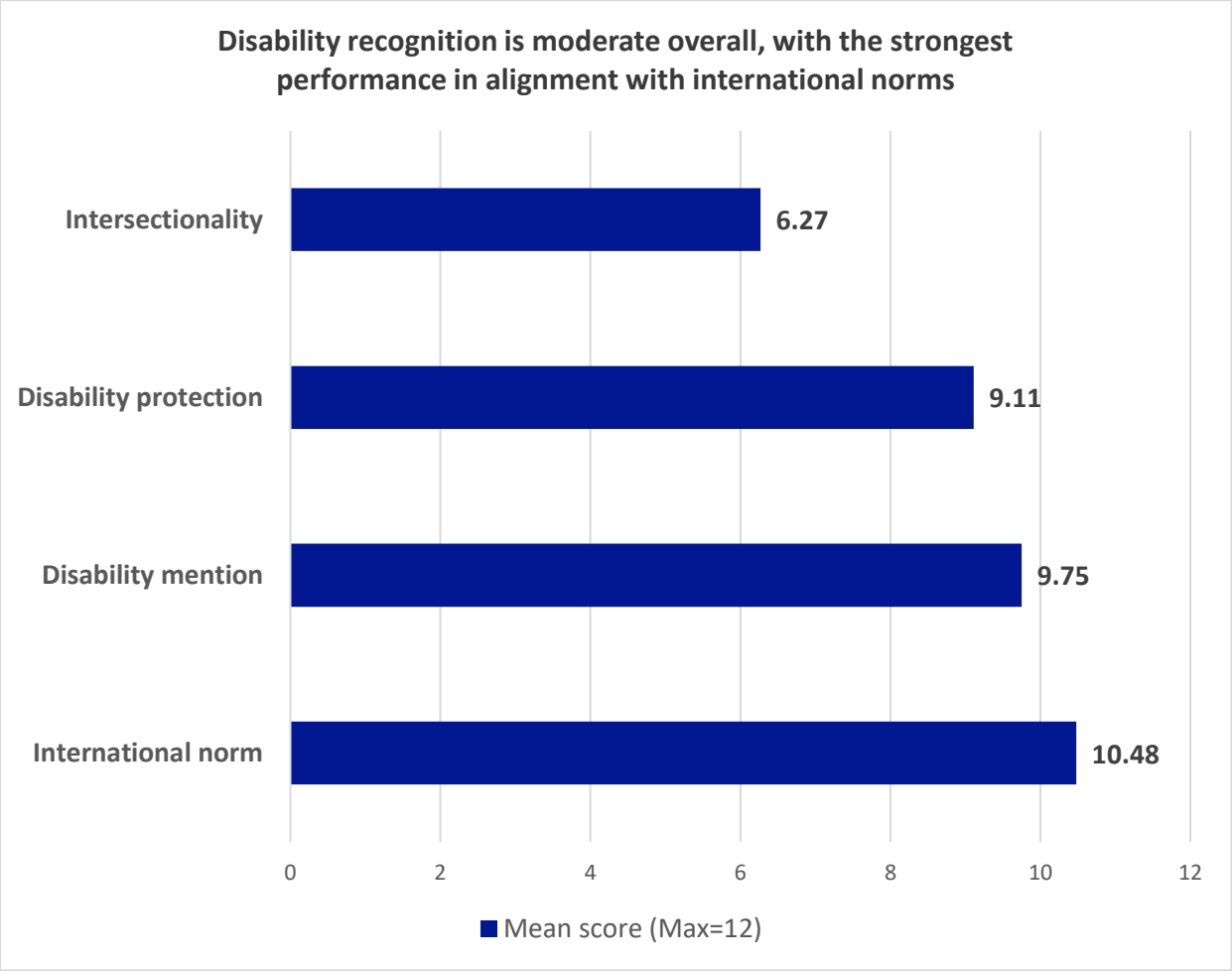


Figure 6. Disability recognition based on 4 indicators across 6 disaster and climate governance documents for the 10 countries surveyed. Results indicate moderate overall recognition, with the strongest performance in alignment with international norms and the weakest performance in addressing intersectional vulnerability. *(Source: Content analysis)*

The pattern is evident in several national adaptation and disaster planning documents that explicitly situate their policies within international frameworks. For example, Tanzania's National Adaptation Plan 2025–2035 states that the plan is "fundamentally aligned with international, regional, and national frameworks," including the SDGs and the Sendai Framework, which guide climate adaptation and disaster risk reduction strategies (p. 12). Such

language reflects a deliberate effort to anchor national planning processes in globally recognized standards for resilience and inclusive governance.

A similar orientation is observed in Madagascar's National Adaptation Plan (2021), where the policy explicitly references international climate governance processes. The document states:

> *"In accordance with the guidelines from the Conferences of the Parties to the United Nations Framework Convention on Climate Change, particularly those strengthened during the 21st Conference of the Parties held in Paris in 2015, Madagascar resumed the process of developing its National Adaptation Plan."*
> *Introduction, p. XVIII, Madagascar's 2021 National Adaptation Plan (See Appendix J: Translations from original language)*

These references to international frameworks signal alignment within the broader global climate governance system and reflect strong recognition at the conceptual level. Alignment with international frameworks shows that countries recognize the importance of including persons with disabilities in disaster and climate documents. This signals agreement at the level of principles. However, agreement does not always lead to action. Many policies reflect these global commitments, but do not clearly set out how inclusion will be carried out in practice or what specific steps will be taken.

Disability mention (9.75; 1.62) and disability protection (9.11; 1.52) showed relatively strong results. This means that many policies clearly refer to persons with disabilities and often identify them as a group that needs protection during disasters, climate risks, and emergencies. In many documents, persons with disabilities are explicitly named in sections on disaster preparedness or early warning and are recognized as requiring specific support and assistance. However, these scores still fall within the moderate range. This suggests that while persons with disabilities are being identified in policy, this recognition is not yet consistent across all documents or fully developed.

A clear example of explicit disability mention and protection can be found in Vietnam's 2022 Voluntary National Report, where the policy calls for sustained efforts to "develop, update,

disseminate, and apply guidelines on integrating women, ethnic minority groups, youth, and persons with disabilities into DRR [disaster risk reduction] and CBDRM [community-based disaster risk management]" (p. 52). In another section, the same report emphasizes that "women, vulnerable persons, persons with disabilities, and marginalized groups (including ethnic minorities) need to be prioritized" to achieve concrete disaster risk management outcomes, including reduced mortality, economic recovery, and social protection (p. 42). I interpret these provisions as evidence of a deliberate shift from general recognition toward more targeted protection measures, particularly in relation to preparedness and recovery.

A similar commitment is reflected in Indonesia's 2022 Nationally Determined Contribution (NDC), which situates disability inclusion within a broader human rights framework. The document states that Indonesia "respects, promotes and considers its obligation on human rights…including the rights of persons with different abilities and people in vulnerable situations" (p. 2). I suggest that framing disability within a rights-based approach signals an effort to mainstream disability considerations across climate and disaster governance, rather than treating disability as an isolated sectoral concern.

By contrast, intersectionality records the lowest level of recognition (6.27; 1.05), placing it at the threshold of low inclusion. This indicates that while persons with disabilities are frequently acknowledged, policies are less likely to recognize how disability intersects with other forms of inequality, such as gender, age, ethnicity, and poverty. In this sense, intersectionality remains one of the least developed dimensions of disability recognition within disaster and climate governance frameworks. Limited attention to intersectionality suggests that climate and disaster plans and policies are less equipped to address the differentiated risks faced by diverse groups of persons with disabilities. This insight is consistent with existing research showing that overlapping forms of disadvantage can lead to compounded risks, often described as "double discrimination," particularly for women, children, and marginalized communities with disabilities (Batchelor et al., 2021; Guidry-Grimes et al., 2020; Lord et al., 2016; Dhungana & Kusakabe, 2010).

Only a few countries in this report explicitly incorporate intersectional considerations in their policy and planning documents. One example can be found in Fiji's Voluntary National Review, which links disability inclusion to broader development and social equity goals. The report notes that the government intends to strengthen inclusive development by setting targets such as "establishing facilities for children with disabilities to make education more inclusive" (pp. 21–22). Although the provision is framed primarily within the education sector, it exemplifies an effort to recognize the specific needs of children with disabilities within a wider development context. A similar acknowledgment of intersectional vulnerability appears in Vietnam's 2022 Voluntary National Report, which highlights the role of data gaps in shaping inclusive policy responses. The report observes that "the lack of specific data on women affected by disasters, especially those with disabilities and belonging to ethnic minority groups, poses challenges to designing specific programme interventions" (p. 42). This statement reflects an emerging awareness of the importance of intersectional data in informing targeted disaster risk reduction strategies.

Overall, the findings show that most disaster and climate policies now mention persons with disabilities. This is a positive step, but how deeply they are included still varies across documents. In many cases, disability is recognized but not explained in detail or supported with clear actions.

At the same time, policies rarely consider how disability overlaps with other factors such as poverty, gender, age, or location. Because of this, some groups may face greater risks that are not fully addressed. Improving this will require better data, a clearer understanding of different needs, and more specific policies that go beyond treating all groups the same.

Persons with disabilities are barely included in early warning system of the 10 countries

Persons with disabilities are weakly included in the early warning system of the 10 countries. Across the six documents, the overall mean rating is 1.04 (mean score: 6.21), placing early warning within the low inclusion range (Table 8.1 – see Appendix K: Supporting Tables; Figure 7.1). Climate laws record the highest inclusion rating (1.33), followed by disaster plans (1.30).

Disaster laws show a moderate level (1.00), while lower ratings are observed in climate plans (0.90), Voluntary National Reviews (0.88), and Nationally Determined Contributions (0.80).

Figure 7.1. Disability Inclusion in Early Warning

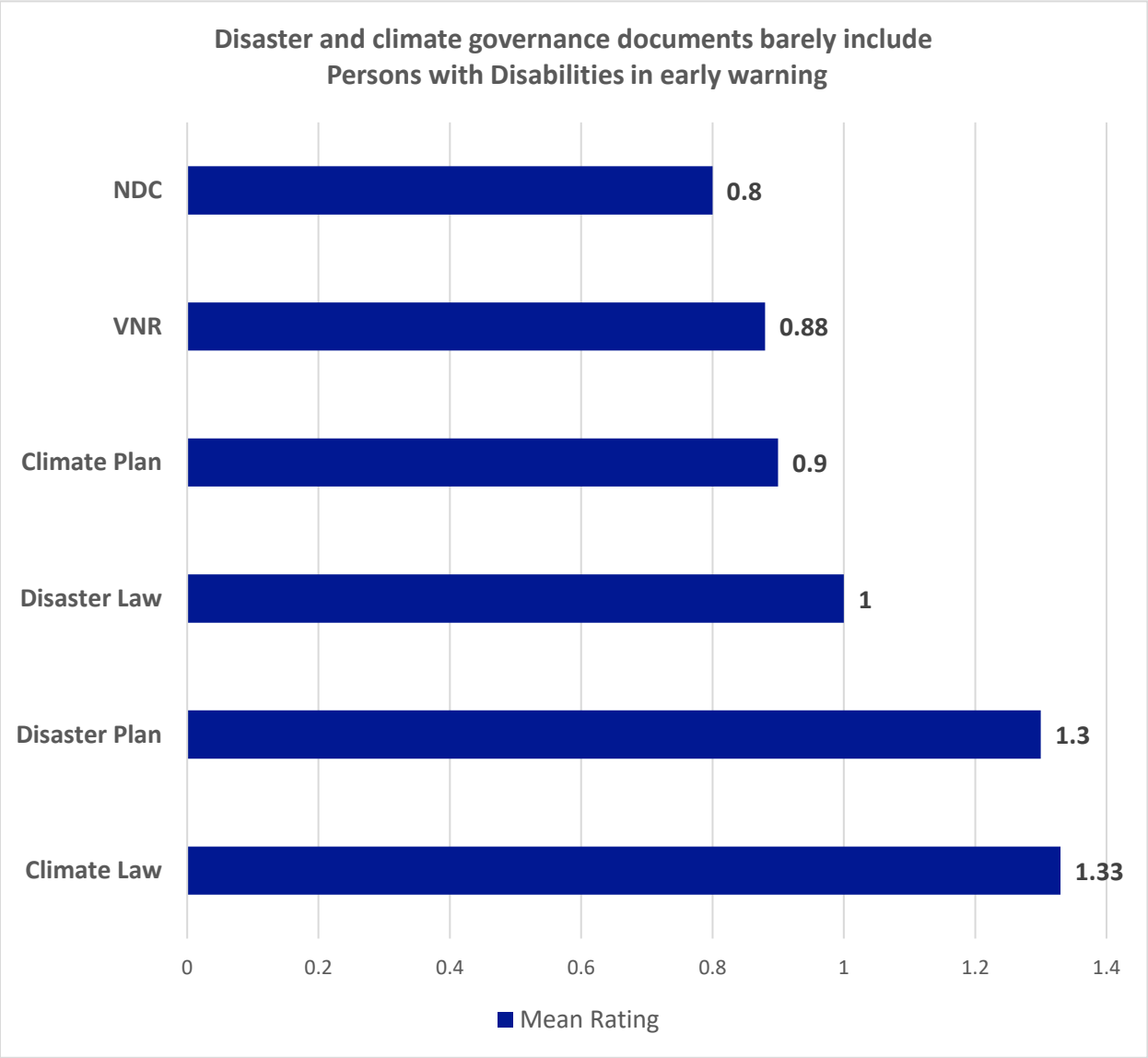


Figure 7.1. This chart demonstrates that Persons with Disabilities are weakly included in early warning and how weakly early warning inclusion is integrated across disaster and climate instruments *(Source: Content analysis)*

As gleaned in Figure 7.1, the highest inclusion ratings are found in Climate Law (1.33) and Disaster Plan (1.30), suggesting that early warning inclusion is more visible in legal and planning

documents. By contrast, lower ratings are observed in NDCs (0.80) and VNRs (0.88). Disaster law also records only a modest score (1.00), suggesting weak disability inclusion in early warning.

While early warning systems are widely referenced across the documents examined, details on specific reference to accessibility standards and support requirements for persons with disabilities are rarely mentioned. References to disability-specific, multi-format, or universally designed early warning systems remain relatively rare. In many cases, early warning is mentioned as a general system intended for the population, without explicit attention to disability accessibility standards. For example, Outcome 1, Target G of the Philippines' National Disaster Risk Reduction and Management Plan 2020–2030 calls for efforts to "substantially increase the availability of and access to multi-hazard early warning systems and disaster risk information and assessments to people by 2030." A similar formulation appears in Tanzania's National Disaster Management Strategy (2022–2027), which aims "to improve multi-hazard, end-to-end and people-centered early warning systems" (p. 19). While this may be evidence of a strong commitment to expanding early warning coverage, the provision is largely silent on how such systems will be made accessible to persons with disabilities.

This emphasis on general early warning coverage is also evident across disaster laws of the countries examined. For instance, Article 46 of Indonesia's Disaster Management Law (No. 24/2007) outlines the technical components of early warning, including observation of disaster signs, analysis, decision-making, dissemination of information, and community action. However, the provision does not specify accessibility standards or accommodations for persons with disabilities. This reflects a common policy tendency to define early warning in procedural terms while leaving questions of accessibility and inclusiveness insufficiently addressed in terms of planning and execution While many policies acknowledge the importance of accessible communication in general terms, they often provide limited guidance on how warnings will be adapted for persons with visual, hearing, cognitive, or mobility impairments.

One notable exception is Fiji's National Disaster Risk Reduction Policy 2018–2030, which explicitly incorporates the principle of universal design. The policy states that persons with

disabilities and their organizations are critical partners in assessing disaster risk and in designing plans that consider "the principles of universal design" (p. 26). This is an important example of how accessibility can be embedded into the design of early warning systems from the outset, rather than addressed as an afterthought. Another good example is Vietnam's commitment to disability-inclusive early warning in its 2022 Voluntary National Report, to wit: "The national EWS should continue to be improved, with a focus on an integrated, impact-based alert system and with a community-based focus on enabling alerts that are culture-, language-, and disability-sensitive." (p. 41)

Previous studies have shown that early warning systems often fail to reach persons with sensory, cognitive, psychosocial, or mobility-related disabilities when communication formats, evacuation guidance, and preparedness systems are not designed around diverse functional needs (GFDRR, 2017; UNDRR, 2023, 2024). The result also resonates with the argument that disability inclusion in climate and disaster policy often remains rhetorical rather than operational, with persons with disabilities acknowledged as disproportionately affected groups but not systematically provided with accessible information, services, or response pathways (Jodoin et al., 2022; Kosanic et al., 2022; Stein et al., 2024).

For persons with disabilities, weakly specified early warning provisions may reproduce the very forms of exclusion identified in disaster justice and disability climate justice scholarship: unequal access to information, delayed preparedness, dependence on others for interpretation, and reduced capacity for safe evacuation (Priestley & Hemingway, 2007; Stein et al., 2024; Hamdanieh et al., 2024). In this sense, the finding confirms that the main policy gap is not simply whether disability is mentioned, but whether early warning systems are explicitly designed to be accessible, actionable, and disability-responsive.

Persons with disabilities are poorly considered in disaster preparedness

Persons with disabilities are weakly considered in disaster and climate documents of the 10 countries. Across three components—risk awareness, health and support services, and inclusive evacuation—the overall mean rating is 1.02 (mean score: 6.11), placing disaster preparedness within the low inclusion range (Table 8.2 – See Appendix K: Source Tables; Figure 7.2).

Risk awareness records the highest rating (1.09; score: 6.53), followed by health and support services (1.01; 6.03). Inclusive evacuation records the lowest rating (0.96; 5.77).

Across document types, climate plans (1.10) and Voluntary National Reviews (1.09) show relatively higher inclusion, followed by disaster plans (1.07). Lower ratings are observed in climate laws (1.00) and Nationally Determined Contributions (0.97), while disaster laws record the lowest level (0.89).

Figure 7.2 Disability Inclusion in Disaster Preparedness

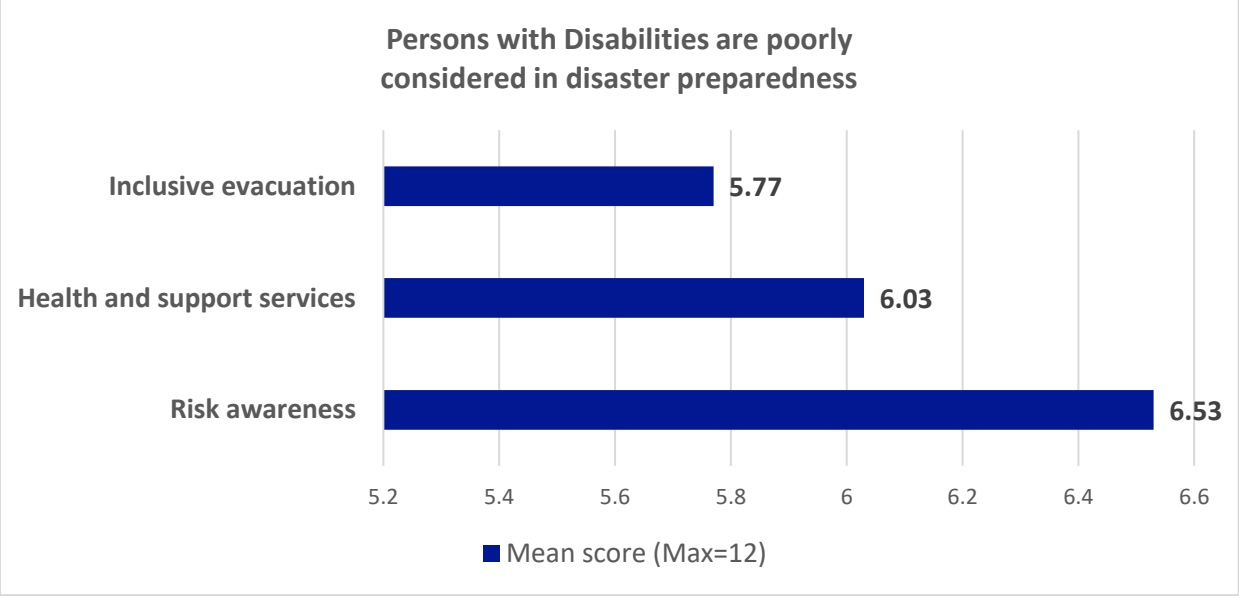


Figure 7.2 presents mean scores for three indicators of disability inclusion in disaster preparedness—risk awareness, inclusive evacuation, and health and support services—across six disaster and climate policy instruments from ten disaster-prone countries. *(Source: Content analysis)*

It can be deduced from the data in Figure 7.2 that evacuation support is the weakest area of disability inclusion within disaster preparedness. Compared with risk awareness and health support, policies or measures are less clear and less detailed when it comes to helping persons with disabilities evacuate safely.

This gap is also reflected in existing studies. Research shows that many persons with disabilities face barriers such as inaccessible transportation, limited evacuation support, and shelters that are not designed for their needs (GFDRR, 2017; UNDRR, 2023, 2024). Similarly, research on disability-inclusive disaster risk reduction has shown that preparedness planning often emphasizes awareness and service provision while underinvesting in accessible evacuation infrastructure and logistical coordination (Kosanic et al., 2022; Stein et al., 2024).

This gap is important because evacuation is the moment when plans and policies must work in real life. When evacuation systems are not clearly designed for persons with disabilities, they can reproduce structural vulnerabilities already faced by persons with disabilities, such as evacuation delays, greater dependence on others, and higher risk of harm during disasters (Priestley & Hemingway, 2007; Hamdanieh et al., 2024).

How disability-inclusive countries are: a cross-country comparison

To provide a more granular understanding of disability inclusion in early warning and disaster preparedness, I compare countries across key dimensions of disability inclusion, beginning with overall scores and then examining specific functional areas of governance. I use the overall mean score as the primary indicator of disability inclusion, as it allows standardized comparison across countries regardless of document type or thematic area.

Disability inclusion varies across countries but remains moderate overall

Disability inclusion shows limited variation across countries, with all scores concentrated within the moderate range. Across the ten countries, scores range from 5.85 to 8.75, with an overall mean of 7.12 (1.19/2.0) (Table 9; Figure 8). Countries cluster into four tiers. At the higher end, Bangladesh (8.75), Fiji (7.83), and Indonesia (7.60) record the strongest inclusion. A middle group, Vietnam (7.30) and Tanzania (7.20), lies close to the overall mean. A lower-middle cluster—including Mozambique (6.90), Pakistan (6.71), and the Philippines (6.50)—falls below the mean but remains within the moderate range. At the lower end, Haiti (6.25) and Madagascar (5.85) record the weakest inclusion (Figure 8).

Despite these differences, the overall spread of scores is narrow. Even the highest-performing countries do not reach the high inclusion category, while the lowest remain close to the

moderate threshold. This clustering suggests that disability inclusion is not strongly differentiated across countries but instead remains broadly partial and uneven across all contexts.

Table 9. Overall Disability Inclusion Scores of the Ten Countries

Country	Mean score (Max=12)	Mean rating (Max=2)
Bangladesh	8.75	1.49
Fiji	7.83	1.31
Indonesia	7.60	1.27
Vietnam	7.30	1.22
Tanzania	7.20	1.20
Mozambique	6.90	1.14
Pakistan	6.71	1.12
Philippines	6.50	1.08
Haiti	6.25	1.04
Madagascar	5.85	1.01
Overall	7.12	1.19

Table 9. Score Range and interpretation: 0–3: Very low inclusion; 4–6: Low inclusion; 7–9: Moderate inclusion; 10–12: High inclusion *(Source: Content analysis)*

Figure 8. Overall Disability Inclusion Scores of the Ten Study Countries

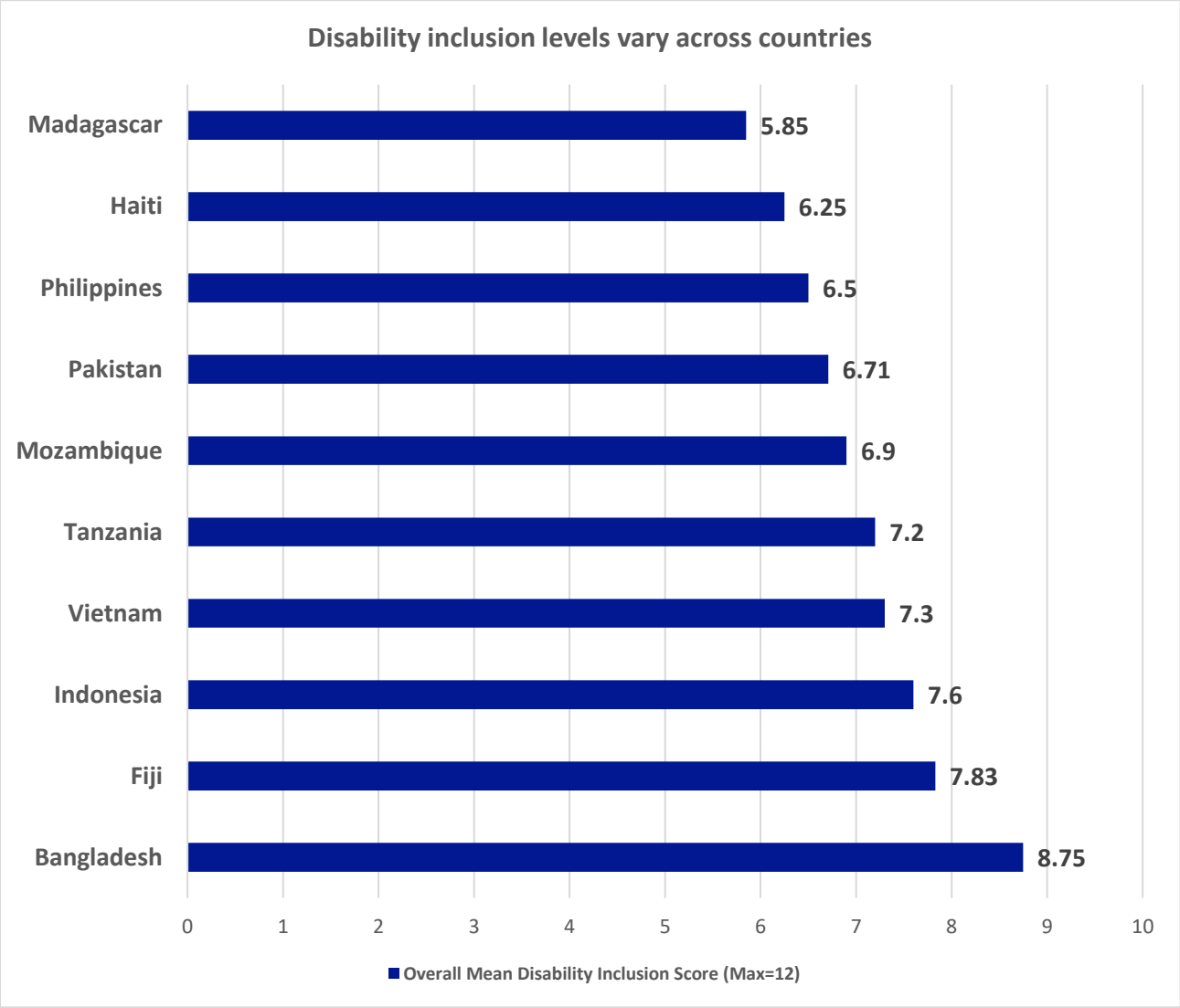


Figure 8. Disability inclusion scores vary across countries, with Bangladesh, Fiji, and Indonesia showing relatively stronger integration of disability inclusion compared to other countries (Maximum possible score = 12) *(Source: Content analysis)*

These differences across countries are similar to those found in other studies . Research shows that disability inclusion in disaster and climate policies is still uneven, especially in low- and middle-income countries. In several cases, some of the countries surveyed already recognize persons with disabilities in their disaster and climate documents, but they struggle to turn these commitments into real actions because of limited resources, weaker institutions, and

coordination challenges (Jodoin et al., 2022; Lesnikowski et al., 2023; Kosanic et al., 2022). In other words, the main issue is not whether disability accessibility is mentioned in policies, but whether it is actually built into how systems work.

The stronger performance of Bangladesh can be linked to its disability-inclusive disaster planning. For example, Bangladesh's National Plan for Disaster Management (2021–2025) clearly states that persons with disabilities and their organizations should be involved in disaster preparedness and response. It also calls for collecting data on disability to guide planning and resource allocation (Government of Bangladesh, 2020). Studies also show that Bangladesh has invested in community-based disaster preparedness after experiencing repeated disasters, which has helped improve how inclusion is applied in practice (Rahman et al., 2021).

A similar pattern can be seen in Fiji. Its higher score reflects a clear effort to include persons with disabilities in disaster and climate planning. Fiji's National Disaster Risk Reduction Policy (2018–2030) emphasizes that persons with disabilities should take part in planning and that disaster systems should be designed to be accessible to everyone (Government of Fiji, 2018). Research on Pacific countries also shows that places like Fiji have made more effort to include disability because they face high climate risks and must protect people most likely to be left behind (Kelman, 2017).

In contrast, countries like the Philippines and Madagascar tend to include disability under broad categories such as "vulnerable groups," without clear, disability-specific measures. In the Philippines, disaster laws and plans are strong overall, but they do not include any explicit reference to persons with disabilities in evacuation provisions. While inclusion is mentioned in general terms, there is no clear guidance on how evacuation will be made accessible or how persons with disabilities will be supported during emergencies. For example, the Philippine Disaster Risk Reduction and Management Plan (2020–2030) refers to inclusion but does not provide disability-specific measures for evacuation, preparedness, or post-disaster social support.

A similar situation exists in Madagascar. Its disaster and climate frameworks mention protection for affected populations but fail to define the vulnerabilities and give little detail on how to support persons with disabilities in practice. There are also broader challenges, such as limited government capacity, lack of resources, and weak coordination between systems, which make it harder to include disability in disaster planning (Government of Madagascar, 2016; World Bank, 2021).

The findings suggest that cross-country differences in disability inclusion are determined by the degree to which disability considerations are explicitly integrated into policies, operations, and implementation. Countries with higher scores tend to demonstrate stronger alignment with international norms, clearer institutional responsibilities, and more explicit references to inclusive preparedness and response mechanisms. Countries with lower scores rely more on general statements about inclusion, without clearly explaining how these will be carried out in practice.

Explicit mention of persons with disabilities is established across documents but intersectionality remains largely absent

Figure 9 (also Table 10A) presents the cross-country comparison of disability recognition across four indicators: disability mention, disability protection, intersectionality, and alignment with international norms. Overall, explicit recognition of persons with disabilities is common across disaster and climate governance instruments, particularly through disability mention and alignment with international norms. But disability recognition is strikingly limited in intersectionality (Table 10A).

All ten countries explicitly align their Nationally Determined Contributions and climate plans with international frameworks, and nine do so in Voluntary National Reviews.

Explicit mention of persons with disabilities appeared in nine countries that named them in climate plans and eight in Voluntary National Reviews. Provisions for disability protection also appeared in nine climate plans and eight Voluntary National Reviews. This means that some of the countries have begun to mention and recognize persons with disabilities in their disaster and climate documents. However, this pattern is not consistent across all documents. In several

cases, disability is only mentioned in general terms. Sometimes it is only partly included, and in some policies it is not mentioned at all. This means that inclusion is uneven.

No country explicitly acknowledges the intersectional marginalization of persons with disabilities in Nationally Determined Contributions. Only five do so in Voluntary National Reviews, and just one in disaster and climate laws. In many documents, intersectional marginalization is only partly addressed, and in some, it is completely absent. This means that policies often treat persons with disabilities as one group, without considering how factors like gender, age, poverty, or socio-economic status can increase risk.

Table 10A. Disability Inclusion on Four Disability Recognition Indicators

Documents	Score	Number of countries with the following disability provisions (N=10 countries)			
		Disability mention	Disability protection	Intersectio-nality	International norms
VNR_MTR*	0 (Absent)	0	0	0	0
	1 (Partial)	1	1	4	0
	2 (Full/explicit)	8	8	5	9
NDC	0 (Absent)	1	1	1	0
	1 (Partial)	3	3	9	0
	2 (Full/explicit)	6	6	0	10
Disaster Law*	0 (Absent)	2	3	4	1
	1 (Partial)	3	2	6	8
	2 (Full/explicit)	5	5	0	1
Climate Law*	0 (Absent)	-	1	1	-
	1 (Partial)	2	1	1	1
	2 (Full/explicit)	1	1	1	2
Disaster Plan	0 (Absent)	0	0	2	0

	1 (Partial)	3	5	7	3
	2 (Full/explicit)	7	5	1	7
Climate Plan	0 (Absent)	0	0	1	0
	1 (Partial)	1	1	5	0
	2 (Full/explicit)	9	9	4	10

Table 10A. *(Source: Content analysis)*

These findings on disability recognition both align with and differ from the findings of Jodoin and colleagues (2025). Their study shows that disability is often absent or only minimally addressed in domestic climate policies. By contrast, this study finds that disability is more consistently recognized across disaster and climate governance documents in the countries examined. However, this recognition is not uniform. It varies across document types and indicators and remains uneven in depth. This pattern is consistent with earlier research showing that disability inclusion is often expressed through general recognition and references to international norms, while more detailed provisions on protection, rights, and overlapping vulnerabilities are less consistently integrated into policy frameworks (Jodoin et al., 2022; Lesnikowski et al., 2023; Stein et al., 2024). In particular, the weakest area is intersectionality. Few policies consider how disability overlaps with factors such as poverty, age, gender, or geography. As a result, people who already experience multiple marginalization may face even greater risks during disasters.

Disability recognition is strongest in Bangladesh and Fiji but remains uneven across countries

Disability recognition varies across countries, with Bangladesh and Fiji demonstrating the highest levels of recognition across governance instruments (Source Table 10B: Appendix D: Extended Tables and Source Tables, and Figure 9). Bangladesh records the highest recognition score (7.20, mean rating 1.80), followed closely by Fiji (7.00, mean rating 1.75). Both countries achieve consistently high scores across disability mention, protection, and alignment with international norms, placing them within the high inclusion category.

Most countries fall within the moderate recognition range, indicating widespread but uneven institutionalization of disability recognition. Vietnam (6.60, mean rating 1.65), Mozambique (6.40, mean rating 1.60), Indonesia (6.20, mean rating 1.55), Tanzania (6.00, mean rating 1.50), Pakistan (5.83, mean rating 1.46) and the Philippines (5..33, mean rating 1.33) demonstrate moderate levels of recognition, suggesting that disability is acknowledged across governance frameworks but not consistently specified across all recognition dimensions. Lower recognition scores are observed in (4.67, mean rating 1.17) and Madagascar (4.25, mean rating 1.06), placing these countries at the low inclusion range. In these contexts, lower scores are primarily associated with limited recognition of disability protection measures and weaker integration of intersectionality provisions.

Across countries, alignment with international norms is generally strong, while intersectionality remains the least consistently integrated recognition dimension. The findings indicate that countries with the highest recognition scores, particularly Bangladesh and Fiji, demonstrate clearer and more direct policy language that identifies persons with disabilities as a priority group requiring targeted protection and support. In contrast, countries with lower recognition scores, such as the Philippines and Madagascar, tend to rely on generalized and broader forms of recognition across the documents analyzed.

Figure 9. Inclusion Score of Countries in Terms of Disability Recognition

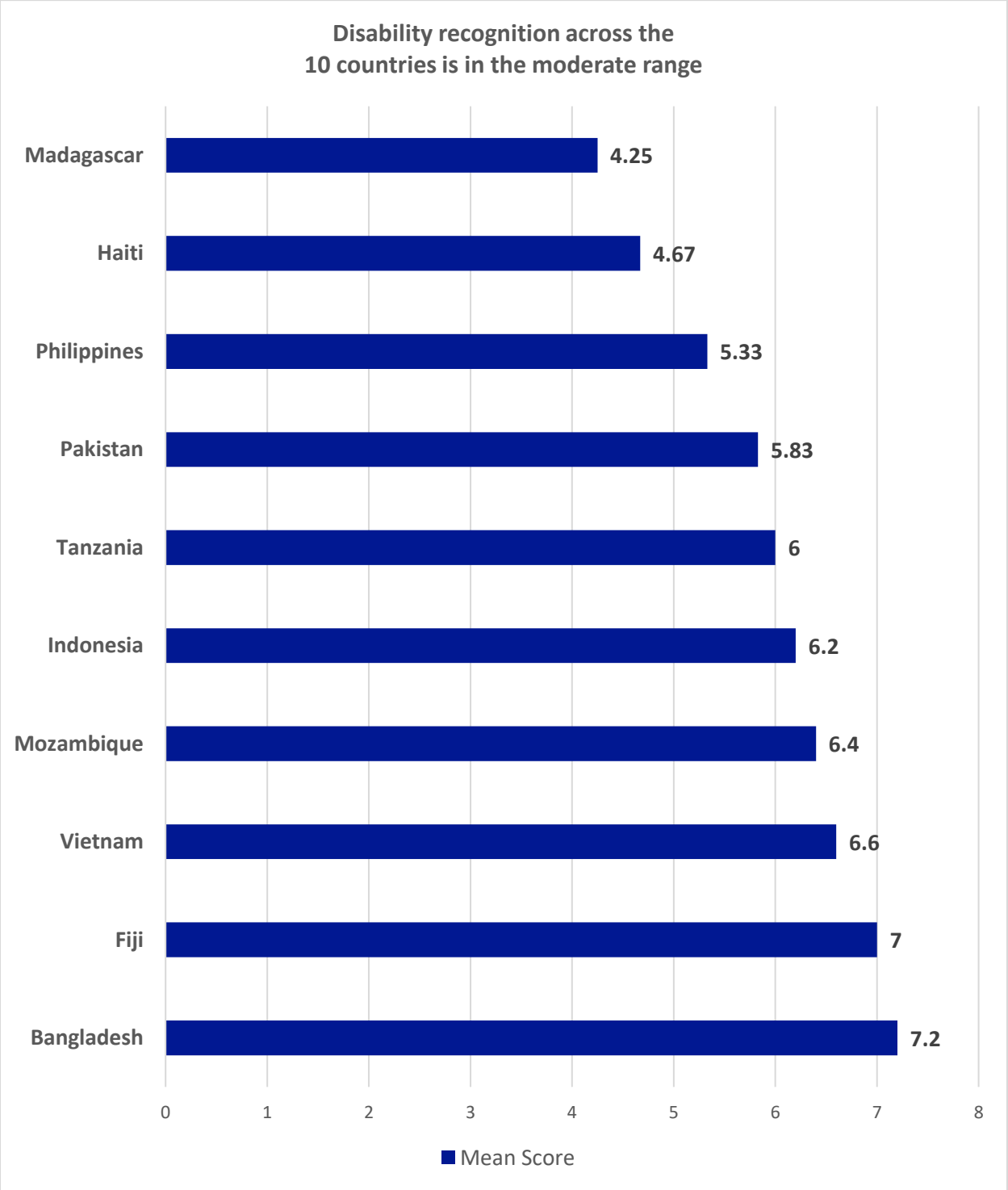


Figure 9. Cross-Country Comparison of Disability Recognition Across Four Indicators. See Source Table 10B: Appendix D: Extended Tables and Source Tables for individual series scores. *(Source: Content analysis)*

In the case of Bangladesh, the relatively high level of recognition is supported by explicit legal provisions that directly identify persons with disabilities as a group requiring priority protection. For example, the Disaster Management Act of 2012 clearly states:

> *"Preference shall be given on protection and reduction of risk of the poorest and underprivileged community, especially the older persons, women, children and disabled persons while providing such assistance." (Chap. 3, par. 23, Disaster Management Act, 2012 (Act No. 34 of 2012))*

This provision illustrates an explicit form of reference and a form of recognition of persons with disabilities. It establishes a clear language for prioritizing persons with disabilities in disaster risk reduction and rehabilitation efforts.

A similar pattern can be observed in Fiji, where disability recognition is embedded within a broader inclusive governance framework that explicitly identifies multiple groups facing heightened marginalization . The National Disaster Risk Reduction Policy 2018–2030 states:

> *"In case of a disaster special attention should be directed toward women, children and youth, persons with disabilities, poor people, foreign tourists, volunteers… older persons…" (p. 136, National Disaster Risk Reduction Policy 2018–2030)*

This provision reflects a policy orientation that explicitly recognizes persons with disabilities as a distinct group within disaster governance systems. Importantly, the language emphasizes targeted attention during disaster response, signaling an institutional commitment to inclusive protection.

From a human rights perspective, these findings point to uneven fulfilment of disability rights across disability recognition dimensions. The relatively strong results on disability mention show that persons with disabilities are increasingly visible in disaster and climate plans and policies. This aligns with the basic requirement to recognize persons with disabilities as rights-holders. However, recognition alone is not enough. The findings on disability protection suggest

that while some policies include provisions for support and safety, these are not consistently detailed or guaranteed across all documents. This raises concerns about whether governments are fully meeting their duty to protect the rights and well-being of persons with disabilities during disasters.

The weakest area—intersectionality—reveals a deeper gap. Very few policies recognize how disability overlaps with other factors such as poverty, gender, age, or location. From a human rights perspective, this matters because people experience risk differently, and those facing multiple forms of disadvantage may require more targeted support. When policies treat persons with disabilities as a single group, they risk overlooking those with the greatest needs.

Participation of persons with disabilities in disaster planning is mostly partial, with few clear commitments

Participation of persons with disabilities in disaster planning is included in many policies, but usually only in general terms. Across the ten countries, very few documents provide clear and detailed provisions on how persons with disabilities are involved in disaster planning and decision-making (Table 11A: See Appendix D: Extended Tables and Source Tables).

In Voluntary National Reviews, four countries have explicit provisions or measures on disability participation in disaster planning, four include it only partly, and one does not include it at all. In Nationally Determined Contributions, almost all countries (nine out of ten) refer to participation only in general terms, with just one showing clear inclusion.

A similar pattern appears in laws. In disaster laws, none of the countries provide clear provisions for participation in disaster planning, and most include it only partly. In climate laws, participation is often missing, with seven countries not including it at all.

Plans show slightly stronger results. In disaster plans, five countries include participation in disaster planning clearly, while five include it only partly. In climate plans, six countries show clear participation, and four include it partly.

Overall, the participation of persons with disabilities in disaster planning is often mentioned but rarely explained in detail. Clear and consistent involvement in planning and decision-making remains limited across most policy documents.

As shown in Figure 10 (see also Table 11B: See Appendix D: Extended Tables and Source Tables), out of the 10 countries, Bangladesh records the highest mean rating (1.80), followed by Indonesia and Tanzania (1.60 each), indicating stronger recognition of disability participation in disaster planning provisions in their climate and disaster documents. Fiji (1.50) and Vietnam (1.40) also show moderate levels. A second group—Pakistan (1.33), Mozambique (1.20), and the Philippines (1.17)—shows lower but still moderate recognition. At the lower end, Haiti and Madagascar (both 1.00) show weaker recognition of participation provisions.

Figure 10. Inclusion Score in Terms of Disability Participation Studied Across Countries

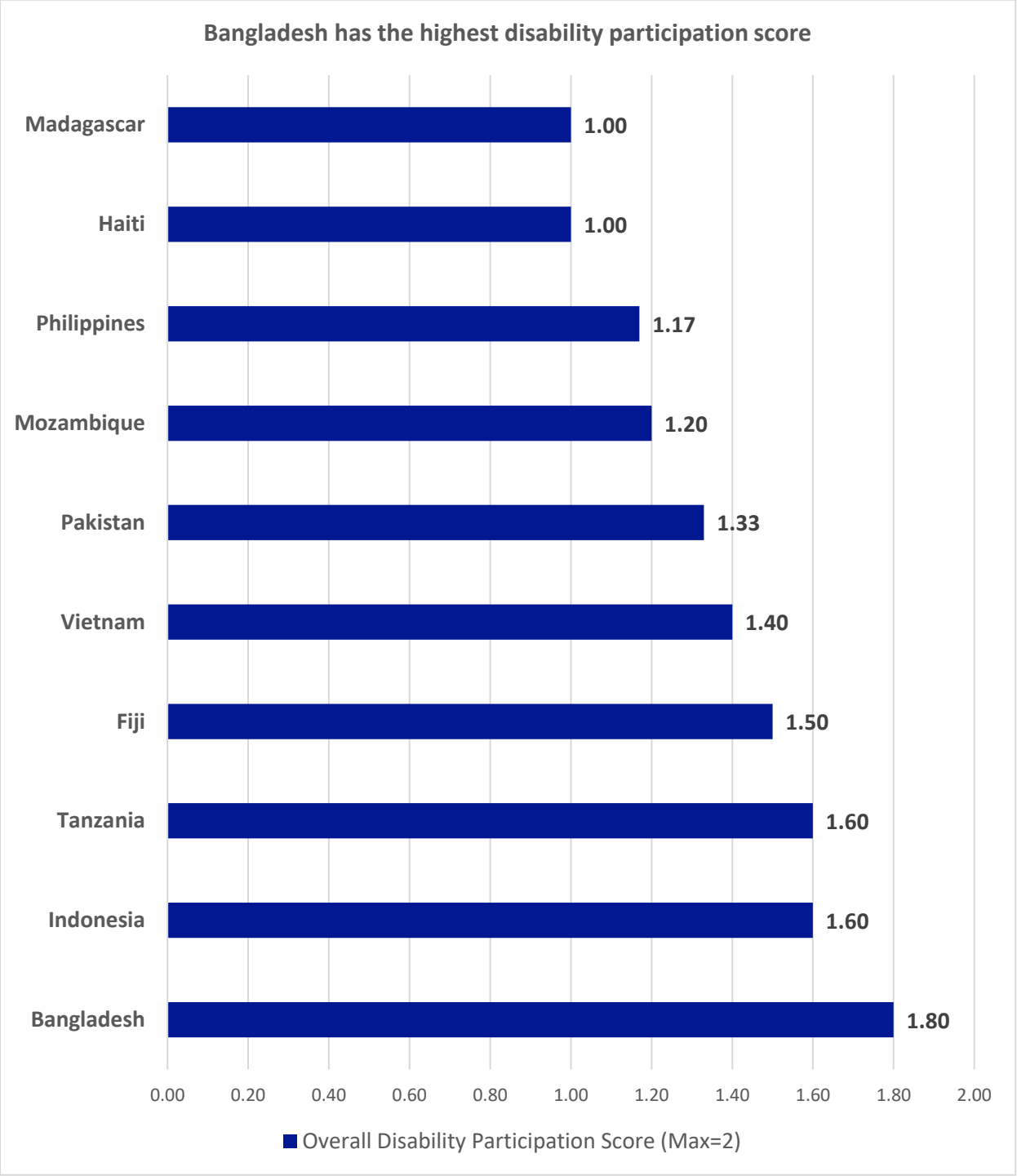


Figure 10. Presents the mean rating of countries in terms of recognition of disability participation in disaster planning *(Source: Content analysis)*

In the case of Bangladesh, the relatively high participation score reflects explicit policy direction to integrate disability considerations across disaster governance processes. The National Plan for Disaster Management (2021–2025) identifies inclusion as a core strategy and states:

> *"To ensure adequate considerations for people with vulnerabilities (e.g. single marital status, age, disability) in DRM policies and programs and across implementation of NPDM 2021–2025." (p. 21, National Plan for Disaster Management 2021–2025)*

This provision signals an institutional commitment to embedding disability considerations across planning and implementation activities. The participatory orientation is further reinforced in Bangladesh's climate policy framework. The National Adaptation Plan calls for:

> *"Create a framework for climate action that is participatory, locally led, and gender, disability, youth and socially inclusive." (p. 104, National Adaptation Plan of Bangladesh 2023–2050)*

These provisions illustrate participation that is framed not merely as consultation, but as an organizing principle of governance, where inclusion is positioned as a foundational strategy. A similar observation can be made in Indonesia, where participation is framed as a structured and inclusive governance requirement supported by explicit reference to persons with disabilities. Indonesia's National Adaptation Plan (2026–2030) identifies participation as a cross-cutting priority and states :

> *"Ensuring meaningful participation is essential to inclusive adaptation governance. This cross-cutting priority promotes active engagement of women, youth and persons with disabilities in the planning, implementation and monitoring of adaptation actions. Mechanisms include participatory consultations, leadership programmes and accessible feedback channels integrated into the NAP delivery framework." (p. 17, National Adaptation Plan 2026–2030 on The Pathway Toward 2035)*

This language is particularly notable because it identifies participation as both a principle and a structured process. The reference to specific mechanisms—such as consultations and feedback channels—indicates a more operational understanding of participation. I interpret Indonesia's relatively high score as reflecting a policy framework that moves beyond general recognition toward institutionalized participation pathways.

In contrast, the participation provisions observed in the Philippines and Madagascar reflect a more procedural or generalized approach. For example, the Philippine Disaster Risk Reduction and Management Act requires representation of disaster-affected communities in local disaster governance structures:

> *"The punong barangay shall facilitate and ensure the participation of at least two (2) CSO representatives… representing the most vulnerable and marginalized groups in the barangay." (Sec. 12(d), Philippine Disaster Risk Reduction and Management Act of 2013)*

While this provision establishes a formal participation requirement, it does not explicitly reference persons with disabilities or define mechanisms to support their engagement. Participation is therefore framed as representation of vulnerable groups broadly rather than as disability-specific inclusion.

Similarly, in Madagascar, while the disaster strategy emphasizes public involvement, its disaster plan merely provides limited detail on how participation should be operationalized. The National Disaster Risk Management Strategy (2016–2030) calls: "increase participation of the population in the planning and implementation of all DRR actions" (pp. 12-13).1

[1] "accroitre la participation de la population dans la planification, la mise en œuvre de toute action de GRC/RRC" found under Axe 2: AXE 2: MEILLEURE GOURVERNANCE EN MATIERE DE GRC/RRC A TOUS LES

NIVEAUX.; R 2.1 Le cadre politique et institutionnel de la GRC/RRC est amélioré

This provision signals recognition of participation as a governance objective, but it lacks specific reference to persons with disabilities or structured participation mechanisms. Under the human rights approach to disability, governments are expected to ensure that persons with disabilities can take part meaningfully in decisions that affect their safety and well-being. The results suggest that this right is only partly fulfilled. In simple terms, persons with disabilities are broadly acknowledged in planning, but not consistently given the support and space needed to participate fully.

Consideration of persons with disabilities in early warning is largely absent across countries

Early warning provisions for persons with disabilities are rarely clearly defined in policy documents. Across the ten countries, most documents include early warning only in general terms, with limited detail on how systems are made accessible (Table 12A).

In Voluntary National Reviews, eight countries include early warning only partly, one does not include it, and none provide clear provisions. A similar pattern appears in Nationally Determined Contributions and disaster laws, where early warning is almost always included only in general terms and never clearly specified.

Climate laws show weaker inclusion overall, with seven countries not including early warning at all and only one providing clear provisions. Plans perform slightly better. In disaster plans, three countries include clear early warning provisions, while most still include them only partly. In climate plans, only one country provides clear provisions, while most remain partial.

Table 12A. Disability Inclusion on Early Warning

Documents	Score	Early Warning (N=10 countries)
VNR_MTR*	0 (Absent)	1
	1 (Partial)	8
	2 (Full/explicit)	0
NDC	0 (Absent)	2
	1 (Partial)	8
	2 (Full/explicit)	0
Disaster Law*	0 (Absent)	1
	1 (Partial)	9
	2 (Full/explicit)	0
Climate Law*	0 (Absent)	7
	1 (Partial)	2
	2 (Full/explicit)	1
Disaster Plan	0 (Absent)	0
	1 (Partial)	7
	2 (Full/explicit)	3
Climate Plan	0 (Absent)	2
	1 (Partial)	7
	2 (Full/explicit)	1

Table 12A. *(Source: Content analysis)*

Disability inclusion in early warning is mostly partial across countries

Among the ten countries analyzed, Bangladesh records the highest early warning inclusion rating (1.40), placing it within the moderate inclusion category. All other countries fall within the moderate or very low inclusion ranges, indicating limited institutionalization of disability-responsive early warning provisions (Table 12B: See Appendix D: Extended Tables and Source Tables).

Most countries cluster at the lower boundary of the inclusion scale, reflecting minimal operational integration of disability in early warning systems. Pakistan and Fiji each record ratings of 1.17, while Indonesia, Tanzania, Vietnam, and Mozambique each record ratings of 1.00, placing them at the threshold of the moderate inclusion category.

Very low inclusion is observed in the Philippines, Madagascar, and Haiti, indicating limited consideration of disability in early warning frameworks. The Philippines records a rating of 0.83, Madagascar 0.75, and Haiti 0.33, placing these countries within the lower end of the inclusion scale. These results indicate that early warning provisions for persons with disabilities are either minimally articulated or largely absent in national policy frameworks.

Figure 11. Disability Inclusion Score in Terms of Early Warning

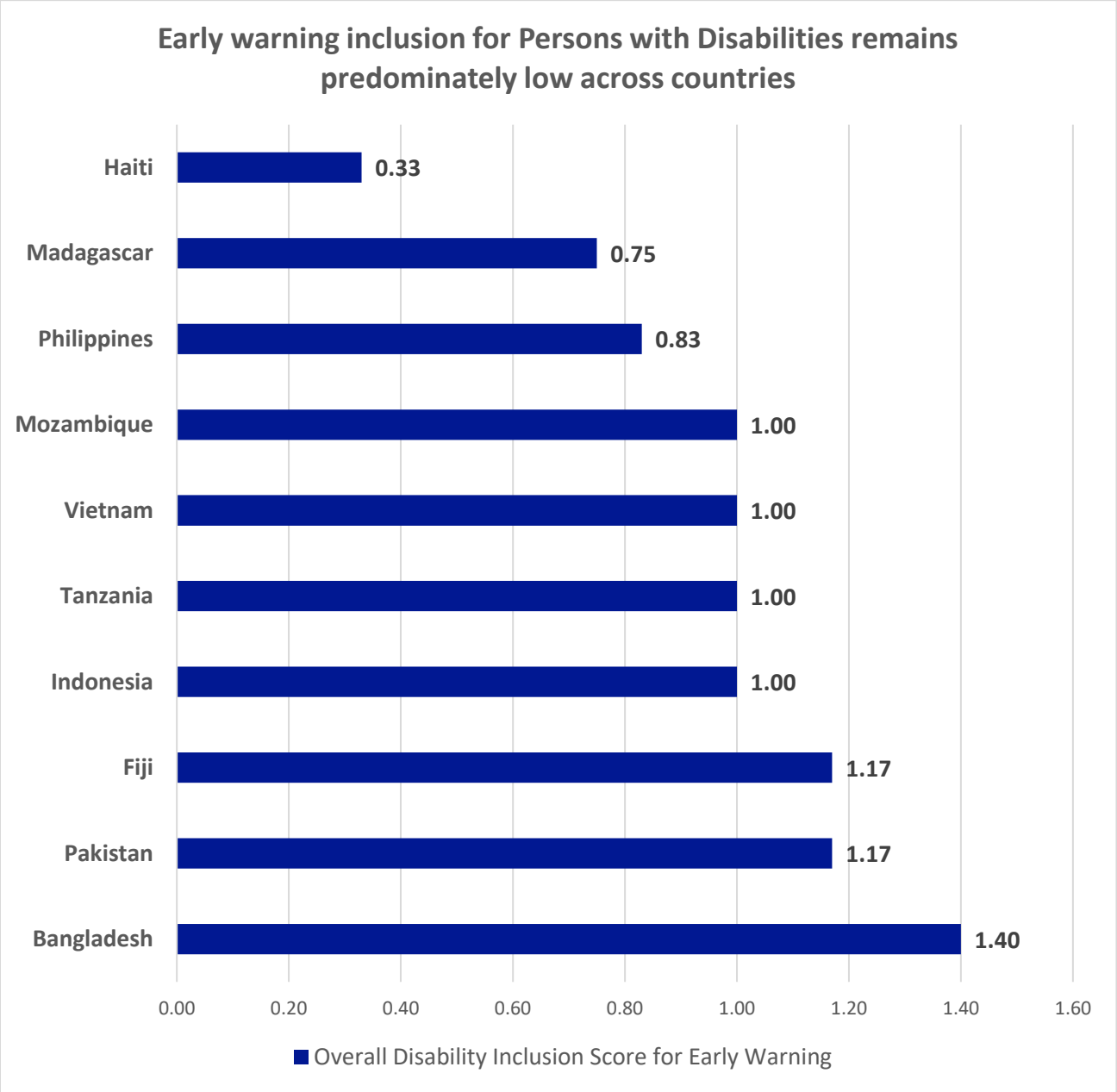


Figure 11. This chart shows a cross-country comparison of early warning inclusion for persons with disabilities in disaster and climate governance. *(Source: Content analysis)*

In the case of Fiji, the relatively stronger performance in early warning inclusion reflects an explicit recognition of the role of persons with disabilities in risk assessment and planning

processes. The National Disaster Risk Reduction Policy (2018–2030) emphasizes that inclusive planning must consider accessibility and universal design principles, stating:

> *"Persons with disabilities and their organisations are critical in the assessment of disaster risk and in designing and implementing plans tailored to specific requirements, taking into consideration, inter alia, the principles of universal design." (p. 26, National Disaster Risk Reduction Policy 2018–2030)*

This provision is particularly significant because it frames persons with disabilities not only as recipients of warnings but as contributors to the design of risk communication and preparedness systems. Fiji's moderate inclusion score reflects a governance approach that links early warning accessibility with broader principles of inclusive planning and universal design.

In Pakistan, on the other hand, disability inclusion in the early warning system is articulated through a direct operational requirement. The National Disaster Risk Reduction Strategy (2025–2030) explicitly states:

> *"Establish accessible communication systems for early warnings tailored to the needs of persons with disabilities." (p. 60, National Disaster Risk Reduction Strategy 2025–2030)*

The explicit reference to accessible communication systems indicates a more concrete understanding of inclusion, moving beyond general recognition toward actionable design requirements. I interpret Pakistan's score as reflecting a policy framework that acknowledges accessibility as a necessary condition for effective early warning.

In Bangladesh, early warning inclusion is embedded within a broader adaptation and preparedness agenda that explicitly incorporates disability across several operational areas. The National Adaptation Plan of Bangladesh (2023–2050) includes a dedicated set of measures for "women, the elderly, persons with disabilities and other disadvantaged people," and goes beyond general recognition by identifying concrete preparedness actions. These include "disability-friendly entries and rooms" in cyclone and flood shelters, "gender-, age- and

disability-inclusive search and rescue programmes during disaster periods," and "better access to inclusive and responsive early warning systems in appropriate languages and modalities" (p. 119). The same section also refers to "accessible communication facilities" in climate-resilient houses and health-care facilities. Bangladesh also has a similar provision in its 2025 VNR:

> *"Persons with disabilities continue to face challenges in accessing public services due to inadequate inclusive design and infrastructure, and the lack of digital services intensifies the situation. To address these issues, mandatory universal design in public infrastructure and specialized training for healthcare providers are essential to improve accessibility. …."(Bangladesh 2025 VNR, p. 62)*

These interrelated provisions in Bangladesh disaster and climate instruments are noteworthy because they explicitly link disability accessibility to communication formats and delivery mechanisms, which are critical elements of effective early warning systems. Bangladesh's policy orientation is to recognize accessibility as part of preparedness infrastructure rather than as an optional add-on.

In contrast, the early warning provisions observed in the Philippines reflect a more technical and system-oriented definition of early warning that does not explicitly address disability inclusion. The Philippine Disaster Risk Reduction and Management Act defines early warning as:

> *"…the set of capacities needed to generate and disseminate timely and meaningful warning information… spanning all steps from hazard detection to community response." (Sec. 3(q), Philippine Disaster Risk Reduction and Management Act of 2013)*

Similarly, the National Disaster Risk Reduction and Management Plan (2020–2030) emphasizes the importance of "end-to-end and multi-hazard early warning systems" and improved dissemination of risk information to communities. While these provisions demonstrate a strong commitment to early warning systems in general, they do not explicitly reference accessible communication formats or disability-responsive design. I therefore interpret the Philippines'

lower score as reflecting the presence of well-developed early warning frameworks that remain largely disability-neutral in their formulation.

In Haiti, while early warning systems are recognized as a governance priority, there was no specific reference to accessibility for persons with disabilities. For instance, its national disaster strategy calls to: “evaluate, adapt and update existing early warning systems” (Plan national de gestion des risques de désastre 2019–2030)

In both the Philippines and Haiti, while the cited examples signal awareness of the need to strengthen early warning capacity, they do not define how systems should be adapted to meet the needs of persons with disabilities.

As deduced from the findings, countries with higher scores tend to articulate early warning inclusion through explicit references to accessible communication, universal design, and disability-responsive planning. By contrast, countries with lower scores often emphasize generalized references to monitoring, forecasting, and dissemination—without clearly addressing the accessibility conditions required for persons with disabilities to receive and act on warnings. Early warning inclusion represents one of the most operational dimensions of disability-inclusive disaster governance, where the effectiveness of policy commitments ultimately depends on whether warning systems are designed to be accessible, understandable, and actionable for all members of society.

Persons with disabilities are weakly included in disaster preparedness across countries

Disability inclusion in disaster preparedness is largely limited to partial references, with few explicit provisions across all three indicators---risk awareness, evacuation, and health and support services. Across the ten countries, most documents record partial inclusion (score = 1) for risk awareness (7–10 countries), evacuation (6–8 countries), and health and support services (6–10 countries), while explicit provisions (score = 2) remain limited (Table 13A).

Table 13A. Disability Inclusion on Three Disaster Preparedness Indicators

Documents	Score	N=10 countries

		Risk Awareness	Evacuation	Health and support services
VNR_MTR*	0 (Absent)	1	2	0
	1 (Partial)	7	7	6
	2 (Full/explicit)	1	0	3
NDC	0 (Absent)	0	3	0
	1 (Partial)	10	6	9
	2 (Full/explicit)	0	1	1
Disaster Law*	0 (Absent)	1	2	3
	1 (Partial)	9	8	7
	2 (Full/explicit)	0	0	0
Climate Law*	0 (Absent)	7	7	8
	1 (Partial)	3	2	2
	2 (Full/explicit)	0	1	0
Disaster Plan	0 (Absent)	0	1	0
	1 (Partial)	8	8	10
	2 (Full/explicit)	2	1	0
Climate Plan	0 (Absent)	0	1	0
	1 (Partial)	8	8	9
	2 (Full/explicit)	2	1	1

Table 13A. *(Source: Content analysis)*

Evacuation provisions show the weakest level of explicit disability inclusion across governance instruments. No disaster laws include clear evacuation provisions for persons with disabilities. Explicit measures appear only in a few cases: in the Nationally Determined Contribution of Bangladesh, in the climate laws of Bangladesh and Fiji, and in the disaster plan of Pakistan. In

most other disaster and climate laws across the countries surveyed, evacuation provisions are either general or absent.

Risk awareness is more consistently included but remains largely general rather than specific. Across most documents, between seven and ten countries include disability in risk awareness activities only in partial terms. Clear, disability-specific provisions appear in very few cases—once in the Voluntary National Review of the Philippines, and in the climate adaptation plans of Bangladesh and Mozambique (see Appendix C).

Health and support services are mostly partially included across documents. Between six and ten countries include these provisions only in general terms. Explicit provisions are limited and appear mainly in a few countries and document types. In Voluntary National Reviews, three countries include explicit provisions, while in Nationally Determined Contributions, only Bangladesh provides an explicit recognition. In climate plans, explicit inclusion appears in Bangladesh. Provisions on health and support services for persons with disabilities are absent in climate and disaster laws in eight and three countries, respectively.

Across countries, disability inclusion in disaster preparedness is predominantly moderate, although a number of countries remain within the low inclusion range. Six out of 10 countries, namely Bangladesh (1.33), Mozambique (1.13), Indonesia (1.07), Vietnam (1.07), Pakistan (1.06), and Fiji (1.13), fall within the moderate inclusion category. On the other hand, Haiti (0.89), Tanzania (0.87), Philippines (0.83), and Madagascar (0.83), are categorized under the low inclusion category (Table 13.B: See Appendix D: Extended Tables and Source Tables).

Figure 12. Overall Disability Inclusion Score in Disaster Preparedness

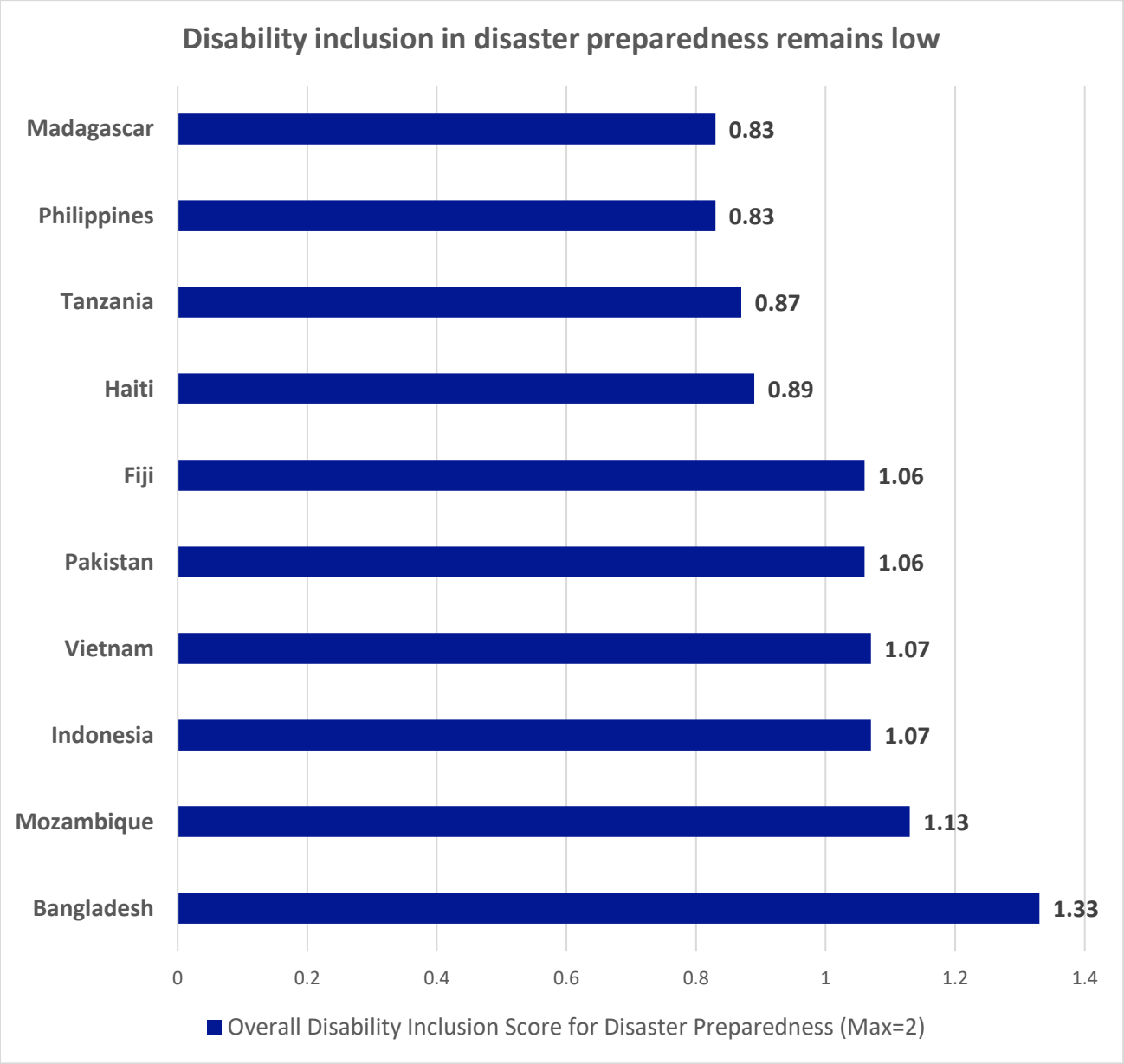


Figure 12. A cross-country comparison of disability inclusion in disaster preparedness. *(Source: Content analysis)*

Risk awareness tends to be more consistently addressed across countries, whereas inclusive evacuation and health and support services receive comparatively less systematic attention in planning and policy documents.

In countries demonstrating moderate inclusion, disaster preparedness for persons with disabilities is supported by provisions that explicitly acknowledge their role in risk awareness. For example, Vietnam's Voluntary National Review emphasizes the need to strengthen inclusive preparedness through knowledge deployment and capacity-building, stating that:

> *"Efforts need to be made to ensure that the expertise, capabilities, and knowledge of women, ethnic minority groups, youth, and persons with disabilities can be better deployed." (Vietnam VNR, p. 53)*

Similarly, Pakistan's Voluntary National Review frames inclusive preparedness as a function of risk assessment processes that systematically incorporate disability considerations:

> *"Conducting risk assessments that consider the needs and perspectives of marginalized communities—including women, children, older people, people with disabilities, and indigenous communities—is crucial to addressing their unique vulnerabilities." (Pakistan VNR, p. 53)*

These provisions indicate that disability inclusion in preparedness is not limited to passive recognition but extends to the active integration of disability perspectives in risk analysis and planning processes.

The contrast becomes even more pronounced in the domain of evacuation planning. Countries with moderate inclusion tend to translate disability inclusion into tangible infrastructure and accessibility measures. A clear illustration can be found in Bangladesh's Voluntary National Review, which describes evacuation systems designed with explicit accessibility features:

> *"The shelters are accessible and inclusive for persons with disability, women, children, and senior citizens… multi-purpose accessible boats are disability inclusive, gender inclusive and have facilities of quick evacuation for saving lives and protection of assets." (Bangladesh VNR, p. 13)*

This commitment is reinforced in Bangladesh's Nationally Determined Contribution, which specifies the development of:

> *"Gender-, age- and disability-sensitive, multipurpose, climate-resilient, and accessible cyclone and flood shelters." (Bangladesh NDC, p. 32)*

These provisions demonstrate a level of preparedness planning that reflects structural readiness, where evacuation systems are designed to accommodate diverse functional needs.

By contrast, countries categorized under low inclusion often frame evacuation in generalized terms that do not specify accessibility standards or disability-sensitive arrangements. For instance, Haiti's Nationally Determined Contribution refers broadly to:

> *"…relocation of vulnerable and affected populations…" (Haiti NDC, p. 8) See Appendix J: Translations from original language*

While the provision acknowledges affected populations, it does not articulate how evacuation processes will be adapted to persons with disabilities. This is indicative of procedural inclusion without operational detail, where evacuation is recognized as a policy objective but lacks the design specifications necessary to ensure accessibility.

The divergence between moderate and low inclusion becomes most visible in the provision of health and support services, which consistently emerges as the weakest preparedness component across countries. In countries demonstrating moderate inclusion, preparedness planning is often framed through universal service provision targets that explicitly recognize persons with disabilities as priority groups.

For example, Vietnam's 2025 Voluntary National Review identifies persons with disabilities as a key population in national sanitation and hygiene targets, stating:

> *"By 2030, ensure access to adequate and equitable sanitation facilities and hygiene for all, with particular attention paid to the needs of women, girls, people with disabilities and other vulnerable groups; end open defecation practices; 100% of households should have hygienic toilets." (Vietnam 2025 VNR, p. 78)*

This provision indicates that disability inclusion in preparedness is commonly embedded within universal access and public health infrastructure goals. In contrast, countries categorized under low inclusion tend to frame health and social services in universal terms, without specifying disability-specific support mechanisms. For instance, the Philippines' National Disaster Risk Reduction and Management Plan states that:

> *"Affected individuals, families, and communities have access to responsive, appropriate and adequate education, health, and social protection services." (Philippines NDRRMP 2020–2030, p. 81)*

Similarly, Tanzania's disaster management strategy emphasizes the provision of psychosocial and rehabilitation services for the general population:

> *"Provision of psychosocial support and mental health and rehabilitation services for all people in need during emergency and recovery processes." (Tanzania National Disaster Management Strategy 2022–2027, p. 28)*

Although these provisions recognize the importance of health and social support, they do not specify disability-sensitive delivery mechanisms or continuity-of-care arrangements. This signals generic service provision, where preparedness systems assume uniform needs across populations, thereby overlooking the differentiated requirements of persons with disabilities.

Disability inclusion in capacity and funding is generally low across countries

Across the ten countries, almost all documents mention capacity and funding in general terms (Table 14A).

For capacity (training, skills, and support), between eight and ten countries mention persons with disabilities in their plans and reports. But only a few countries, such as Bangladesh, Vietnam, and Indonesia, clearly mention engagement of persons with disabilities for capacity-building. In many laws, especially climate laws, capacity involving persons with disabilities is not mentioned at all.

Funding is even weaker. While many countries mention the need for funding for persons with disabilities, very few say how much money will be set aside or how it will be used. Clear funding commitments appear only in a few cases, such as in Tanzania, Madagascar, and Bangladesh. In many policies, especially climate laws, funding is missing completely.

Plans do better than laws. Disaster and climate plans are more likely to mention capacity and funding, while laws often leave them out or only mention them briefly.

Table 14A. Disability Inclusion in Capacity and Funding

Documents	Number of countries with the following disability provisions (N=10 countries)		
	Score	Capacity	Funding
VNR_MTR*	0 (Absent)	0	0
	1 (Partial)	9	7
	2 (Full/explicit)	0	2
NDC	0 (Absent)	0	0
	1 (Partial)	10	9
	2 (Full/explicit)	0	1
Disaster Law*	0 (Absent)	2	1
	1 (Partial)	8	9
	2 (Full/explicit)	0	0
Climate Law*	0 (Absent)	7	7
	1 (Partial)	3	3
	2 (Full/explicit)	0	0
Disaster Plan	0 (Absent)	0	0
	1 (Partial)	8	10
	2 (Full/explicit)	2	0
Climate Plan	0 (Absent)	0	0
	1 (Partial)	8	9
	2 (Full/explicit)	2	1

Table 14A. *(Source: Content analysis)*

Across the ten countries analyzed, the overall mean ratings cluster narrowly between 1.00 and 1.10, indicating that capacity-building and funding provisions for disaster preparedness are

mentioned in the documents, but those earmarked specifically for persons with disabilities are not mentioned explicitly (see Figure 13 and Table 14B: Appendix D: Extended Tables & Source Tables).

Overall, Bangladesh records the highest overall rating (1.30), with relatively stronger scores in both capacity (1.40) and funding (1.20). A second group—Indonesia, Tanzania, and Vietnam—follows with similar ratings (1.10), showing moderate inclusion across both areas.

Most countries cluster at the same level. The Philippines, Haiti, Pakistan, Mozambique, and Fiji all record a mean rating of 1.00, indicating that capacity and funding are present but only mentioned in general terms. Madagascar records the lowest rating (0.88), with weaker capacity (0.75) despite similar funding levels (1.00).

Only 4 countries include disability-specific measures on capacity and funding. For capacity, these are found in Bangladesh's National Plan for Disaster Management (2021–2025) and National Adaptation Plan (2023–2050), Indonesia's Disaster Plan (Renstra BNPB 2025–2029), and Vietnam's National Adaptation Plan (2021–2030). For funding, disability-specific actions appear in Bangladesh's National Adaptation Plan (2023–2050) and Tanzania's National Adaptation Plan (2025–2035).

For example, Bangladesh's National Plan for Disaster Management frames inclusive capacity development as a multi-sectoral governance responsibility, emphasizing leadership roles for marginalized groups, including persons with disabilities:

> *"Adopting an inclusive approach—via multi-sector/stakeholder DRR platforms… should embrace the leadership of persons with disability, women, children and youth." (Bangladesh National Plan for Disaster Management 2021–2025, p. 21)*

In the same vein, Vietnam's National Adaptation Plan highlights the importance of mobilizing the expertise of persons with disabilities within institutional preparedness systems:

> *"Efforts need to be made to ensure that the expertise, capabilities, and knowledge of… persons with disabilities can be better deployed." (Vietnam National Adaptation Plan 2021–2030, p. 53)*

These policy narratives illustrate a common pattern among moderate-performing countries: capacity development is framed as an inclusive governance function, where persons with disabilities are recognized not only as beneficiaries of training but as contributors to preparedness and decision-making processes.

In contrast, countries categorized under low inclusion tend to conceptualize capacity-building in generic institutional terms, with limited reference to disability-specific needs or participation mechanisms. For example, Mozambique's Voluntary National Review refers broadly to strengthening its internal capacity building:

> *"At the same time, there is a need to strengthen the national strategic and operational planning system and establish a management tool for the National SDG Indicator Framework, as well as internal capacity building for its operationalization." (Mozambique 2025 VNR, p. 4)*

Similarly, the Madagascar National Disaster Risk Management Strategy emphasizes the development of training programs for emergency preparedness:

> *"…develop an institutional network of specialized agencies for emergency relief interventions…" (Madagascar National Disaster Risk Management Strategy 2016–2030, p. 20) (See Appendix J: Translations)*

While these provisions recognize the importance of capacity development, they do not explicitly identify persons with disabilities as participants in training or preparedness systems. This is indicative of institutional capacity without inclusive targeting, where training programs exist but are not systematically designed to address disability-specific needs.

Figure 13. Overall Inclusion Score in Capacity and Funding

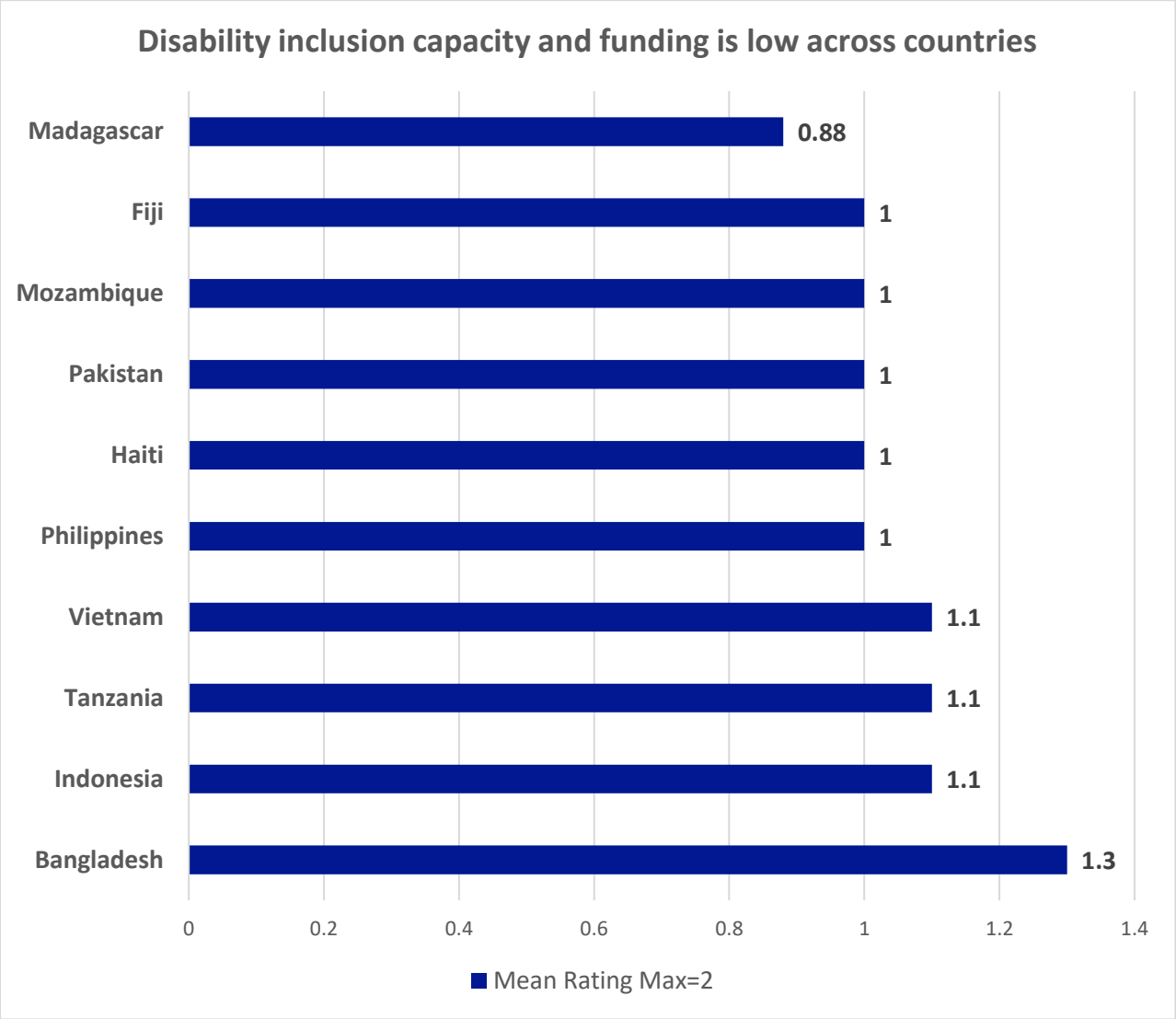


Figure 13. Cross-country comparison of disability inclusion in funding and capacity. The figure presents the overall mean inclusion rating for persons with disabilities across two resource-related indicators—capacity development and funding allocation—based on national disaster and climate policy and planning documents from studied countries. *(Source: Content analysis)*

A similar pattern emerges in the domain of financial resources. For instance, Bangladesh's climate planning framework proposes the development of financial instruments designed to strengthen resilience among marginalized groups that are "gender-, age- and disability-responsive":

> *"Increase the resilience of vulnerable poor communities by introducing gender-, age- and disability-responsive diversified livelihoods, effective insurance mechanisms and climate resilience funds."(Bangladesh National Adaptation Plan, pp. 73–74)*

These provisions demonstrate a funding architecture that explicitly integrates disability considerations into resilience financing systems. In practical terms, such measures indicate a shift from general disaster financing toward inclusive resource allocation, where financial instruments are designed to address differentiated vulnerability.

In contrast, countries categorized under low inclusion tend to frame financial support mechanisms in broad fiscal or institutional terms, without specifying disability-targeted funding streams. For example, Madagascar's disaster strategy calls for increased financial resources for disaster risk management:

> *"Provide and/or increase budget lines dedicated to disaster risk management."(Madagascar National Disaster Risk Management Strategy 2016-2030, p 11) (See Appendix J: Translations)*

Similarly, Philippine policy frameworks emphasize the mobilization of financial resources for disaster and climate resilience through general funding mechanisms:

> *"The thematic pillar is about the institutionalization of risk financing mechanisms… emphasizing the complementarity of resources to help strengthen resilience." (Philippines National Disaster Risk Reduction and Management Plan 2020–2030, p. 19)*

Summing up the above discussion, countries demonstrating moderate inclusion tend to frame resources and capacity as inclusive governance functions, characterized by targeted training programs, disability-responsive budgeting, and participatory institutional structures. In contrast, countries categorized under low inclusion often rely on general capacity-building and

financing frameworks that acknowledge vulnerability but do not specify disability-sensitive implementation mechanisms.

Disability inclusion in data monitoring is at a moderate level across countries

Monitoring of disaster data is widely mentioned across countries, but disability-specific and disaggregated data remain limited. Across the ten countries, most documents include monitoring only in general terms. Disability-specific or disaggregated monitoring is reported in the Voluntary National Reviews of 7 countries and in the Nationally Determined Contributions of all 10 countries (Table 15A).

Clear disability-specific monitoring measures appear in the disaster plans of 5 countries—the Philippines, Bangladesh, Indonesia, Haiti, and Fiji—and in the climate plans of 2 countries (Bangladesh and Fiji). By contrast, no country includes disability-specific monitoring in disaster laws, and only 2 countries (the Philippines and Fiji) do so in climate laws. Monitoring is entirely absent in 4 countries in disaster laws and in 8 countries in climate laws. Data monitoring is recognized across the documents surveyed but disability-disaggregated monitoring of disaster data remains weakly institutionalized across the documents.

Table 15A. Disability Inclusion on Disability-Disaggregated Data Monitoring

Documents	Score	Data monitoring (N=10 countries)
VNR_MTR*	0 (Absent)	0
	1 (Partial)	7
	2 (Full/explicit)	2
NDC	0 (Absent)	0
	1 (Partial)	10
	2 (Full/explicit)	0
Disaster Law*	0 (Absent)	4
	1 (Partial)	6
	2 (Full/explicit)	0
Climate Law*	0 (Absent)	8
	1 (Partial)	0
	2 (Full/explicit)	2
Disaster Plan	0 (Absent)	0
	1 (Partial)	5
	2 (Full/explicit)	5
Climate Plan	0 (Absent)	0
	1 (Partial)	8
	2 (Full/explicit)	2

***Table 15A**. (Source: Content analysis)*

Across the ten countries analyzed, the majority record mean ratings between 1.00 and 1.20, indicating that disability inclusion in data monitoring is generally moderate across countries, although several countries remain within the low inclusion range (see Figure 14, and Table 15B:

Appendix D: Extended Tables & Source Tables **)**. Out of the 10 countries, Fiji records the highest rating (1.50), followed by Haiti (1.33), indicating relatively stronger attention to disability-related data in their disaster and climate documents.

Most countries cluster at a moderate level. Bangladesh and Indonesia (1.20) and the Philippines (1.17) show moderate inclusion of monitoring provisions. A larger group—Tanzania, Vietnam, Mozambique, and Madagascar (1.00)—remains at a low inclusion level, while Pakistan (0.83) registered a very low inclusion rating.

Figure 14. Overall Inclusion Score in Data Monitoring

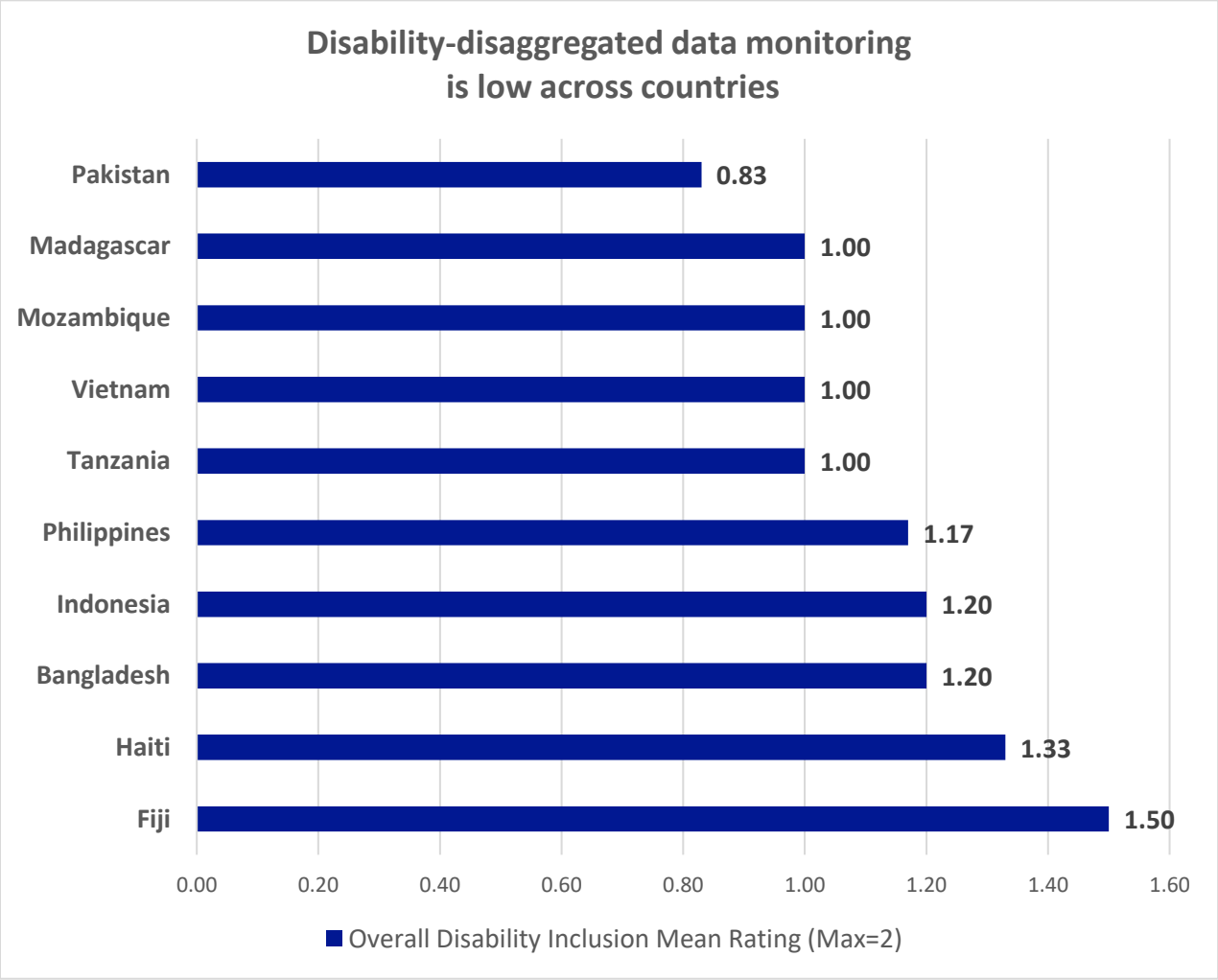


Figure 14. Cross-country comparison of disability inclusion in data monitoring indicating that disability disaggregated data monitoring is low. *(Source: Content analysis)*

Some countries have clear systems to collect and use data on persons with disabilities. Others only mention monitoring in general terms, without explaining how the data will actually be gathered or used. For example, Fiji's disaster plan emphasizes the need for inclusive risk-informed decision-making based on disaggregated data:

> *"DRR requires a multi-hazard approach and inclusive risk-informed decision-making based on the open exchange and dissemination of disaggregated data, including by sex, age, disability and foreign tourists, as well as on easily accessible, up-to-date, comprehensible, science-based, non-sensitive risk information, complemented by traditional knowledge." (National Disaster Risk Reduction Policy 2018–2030, p. 29)*

Similarly, Fiji's climate law requires the establishment of performance indicators that are explicitly sensitive to disability and disaggregated for evaluation purposes:

> *"The Minister must establish effectiveness and performance indicators that are gender, age and disability sensitive and, where possible, disaggregated to facilitate the evaluation of the results of the implementation of this Act." (Part 4, Sec. 10(2), National Disaster Risk Management Act 2024)*

Indonesia's 2025 Voluntary National Review also specifies the systematic use of disaggregated data to operationalize the Leave No One Behind principle:

> *"Identifying the data of people in vulnerable situations disaggregated by age, gender, disability, geographic location, and socioeconomic background." (Indonesia 2025 VNR, p. 12*

By contrast, other documents reference data collection more generally without clearly specifying disability-disaggregated monitoring requirements. For example, Pakistan's NDC notes the intention to improve data collection and track inclusive outcomes, but does not define specific disability-disaggregated indicators:

> *"The government will track GEDSI outcomes in climate initiatives through improved data collection, requiring disaggregated data in climate MRV, and establish accountability for inclusive policy delivery." (Pakistan NDC, p. 4)*

Similarly, Madagascar's disaster plan outlines general monitoring and evaluation arrangements without explicit reference to disability-disaggregated data:

> *"7.3 MONITORING AND EVALUATION…*
> *The definition of specific actions under the Master Plan, as well as the indicators, implementation mechanisms, responsibilities and monitoring arrangements, will be established in five-year plans aligned with the objectives and duration of the Government's Five-Year Programmes." (National Disaster Risk Management Strategy 2016–2030, p. 32) (See Appendix J: Translations)*

These examples illustrate a clear distinction between explicit disability-disaggregated monitoring requirements and general references to data collection across disaster and climate governance documents.

From a governance perspective, the findings point to the central role of data systems in operationalizing inclusive data monitoring and as a feedback mechanism on the effectiveness of disaster systems and climate adaptation. Early warning and disaster preparedness and adaptation measures cannot be effectively evaluated—or improved—without accurate information on who receives warnings, who evacuates safely, and who remains at risk. I argue that strengthening disability-disaggregated data monitoring represents a critical step toward closing the implementation gap between policy commitments and inclusive preparedness outcomes.

Linkages Between Recognition, Preparedness, and Early Warning Inclusion: A Correlation Analysis

Table 16 presents the correlation coefficients among three key dimensions of disability inclusion across ten disaster-prone countries: disability recognition, disaster preparedness, and early warning inclusion. Both Pearson and Spearman correlation coefficients are reported to

assess the strength of relationships across countries. Given the relatively small sample size (N = 10), the coefficients are interpreted primarily as indicators of relationship strength rather than as definitive tests of statistical significance.

Overall, the results reveal consistently strong and positive relationships among the three dimensions of disability inclusion. Disability recognition shows a strong association with disaster preparedness (r = 0.85) and early warning inclusion (r = 0.83), indicating that countries with stronger policy recognition of persons with disabilities also tend to demonstrate higher levels of inclusion in preparedness and early warning systems. The strongest relationship is observed between disaster preparedness and early warning inclusion (r = 0.92), suggesting a particularly close connection between these two operational dimensions of disaster governance.

The Spearman rank coefficients, shown in parentheses, closely mirror the Pearson results, ranging from 0.76 to 0.96, which indicates that the relationships remain robust even when accounting for potential ranking differences across countries. These consistent patterns across statistical measures reinforce the reliability of the observed associations.

Table 16. Strength of Relationships Between Disability Recognition, Disaster Preparedness, and Early Warning Inclusion Across Ten Disaster-Prone Countries

Variable	Recognition	Preparedness	Early Warning
Recognition	1.00	0.85** (0.76*)	0.83** (0.84**)
Preparedness		1.00	0.92** (0.96**)
Early Warning			1.00

Table 16. Values outside parentheses represent Pearson correlation coefficients, while values in parentheses represent Spearman rank correlation coefficients (* $p < 0.05$; ** $p < 0.01$; N = 10 countries). *(Source: Content analysis)*

The strong correlation between disability recognition and disaster preparedness (r=0.85) suggests that formal acknowledgment of persons with disabilities in laws and policy instruments serves as a doorstep condition for operational inclusion. Where disability is

explicitly identified as a priority group, preparedness systems are more likely to incorporate disability-sensitive measures.

A similarly strong relationship between disability recognition and early warning inclusion (r = 0.83) indicates that policy recognition is strongly associated with early warning inclusion for persons with disabilities. Countries that explicitly recognize disability in governance frameworks tend to provide more inclusive early warning mechanisms. This suggests that recognition functions as a normative driver of institutional change, shaping how risk information is communicated and acted upon during emergencies.

The strongest correlation observed in the table—between disaster preparedness and early warning inclusion (r = 0.92)—points to the operational interdependence of these two dimensions. Early warning systems cannot function effectively in isolation from preparedness infrastructure; timely warnings must be supported by evacuation planning, accessible shelters, and coordinated response services. That being said, preparedness and early warning represent mutually reinforcing components of inclusive disaster governance.

From a policy perspective, these findings underline the importance of adopting a systems-based approach to disability inclusion in disaster risk management. Improvements in one dimension—such as strengthening recognition in legislation—are likely to produce positive spillover effects in related areas, including preparedness planning and early warning accessibility. Conversely, weaknesses in foundational policy recognition may limit progress across the entire preparedness system.

It is important, however, to interpret these relationships with caution, given the small sample size. While the correlation coefficients exceed commonly accepted thresholds for statistical significance, the primary value of the analysis lies in identifying patterns of association rather than establishing causal relationships. The results should therefore be understood as indicative of structural alignment among key dimensions of disability inclusion, rather than as definitive evidence of cause-and-effect relationships.

Strengthening disability inclusion in disaster governance requires coordinated action across multiple domains. Recognition, preparedness, and early warning inclusion are not separate policy tasks but components of a single institutional ecosystem. Efforts to improve inclusive disaster preparedness will therefore be most effective when they address these dimensions simultaneously, ensuring that policy commitments are matched by operational systems capable of protecting persons with disabilities during emergencies.

The Disability Inclusion Gap: Recognition vs Implementation Scores Across Countries

Figure 15 (also in Source Table 17: See Appendix D: Extended Tables and Source Tables) presents a comparative analysis of overall mean rating scores for disability recognition and implementation across ten disaster-prone countries. Recognition refers to the extent to which persons with disabilities are explicitly acknowledged in policy frameworks (including recognition and participation indicators), while implementation reflects the degree to which inclusive measures such as early warning accessibility, preparedness planning, resource allocation, and monitoring systems are operationalized. Scores are measured on a scale from 0 to 2, where higher values indicate stronger levels of disability inclusion.

Recognition scores are consistently higher than implementation scores in every country. This shows a clear gap between what governments say in their disaster and climate plans and policies and how these will actually be carried out in disaster and climate systems.

Interestingly, even countries with high scores in recognition indicators still score lower in implementation indicators. For example, Fiji records the highest recognition score (1.67), but its implementation score is lower (1.15). A similar pattern is seen in Vietnam (1.58 vs 1.06) and Tanzania (1.60 vs 1.01). These results suggest that strong policy commitments do not always lead to equally strong action. Interestingly, several countries show moderate recognition but weaker implementation. Pakistan (1.41 vs 0.98) and Indonesia (1.35 vs 0.93) recognize disability inclusion in their policies, but their implementation scores fall below the moderate range. Madagascar (0.99 vs 0.87) and Haiti (0.67 vs 0.59) show lower scores in both recognition and implementation.

Figure 15. Overall Inclusion Score (Recognition vs Implementation)

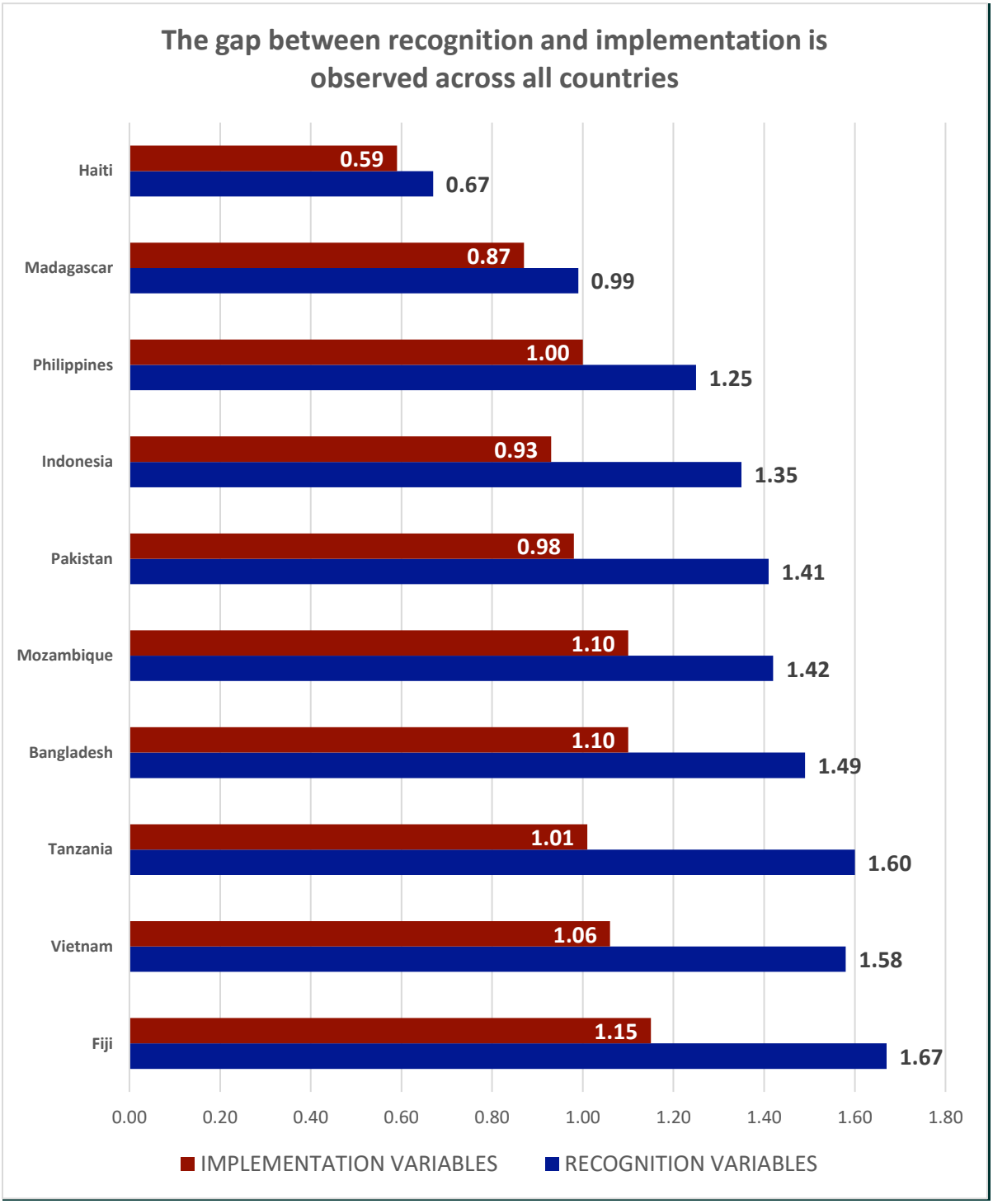


Figure 15. Comparison of recognition and implementation scores for disability inclusion across the ten studied disaster-prone countries. *(Source: Content analysis)*

Overall, the results point to a clear “recognition–implementation gap.” While recognition of persons with disabilities in disaster and climate documents is an important starting point, it does not automatically lead to action. In simple terms, countries that “say more” about disability also tend to “do more,” but not as much as their policies suggest. A test to support this argument is the scores of countries in implementation indicators in their latest Voluntary National Report, as the report contains self-assessed performance of their commitments pursuant to the Sendai Framework (see Appendix D). There remains a clear gap between what policies promise and what systems deliver. Several of the 10 countries surveyed have started to acknowledge the importance of including persons with disabilities but turning those commitments into real systems such as accessible early warning, evacuation support, and services remains a continuing challenge.

Strengthening early warning, institutional capacity, ensuring adequate funding, and establishing robust monitoring systems will be essential to advancing disability-inclusive disaster risk management. Notably, countries with relatively high recognition but weaker implementation represent key opportunities for targeted interventions, as they already possess a foundational policy framework upon which more effective practices can be built.

What do the Findings Mean from a Human Rights Approach to Disability?

The human rights approach requires governments to respect, protect, and fulfill the rights of persons with disabilities. While some countries have started to partially acknowledge and include persons with disabilities as right-holders requiring protection, practical measures to ensure accessible early warning, inclusive evacuation, meaningful participation, and sustained support remain unclear, underdeveloped, not consistently defined, or without concrete means of implementation. Hence, while policies are increasingly aligned with rights-based language, the systems required to translate those commitments into concrete implementation measures are still evolving.

From a rights-based perspective, this gap matters because failures in preparedness can quickly become failures in protection. When early warning messages are not accessible, when evacuation routes are difficult to navigate, or when shelters lack reasonable accommodations,

persons with disabilities may face preventable risks to their safety and well-being. In these situations, the absence of practical measures represents a failure to fulfill the state's obligation to remove barriers and provide equal protection under disaster and climate systems (Jodoin et al., 2021; Stein et al., 2024).

The human rights approach emphasizes that disasters affect people differently and that governments must design policies that account for those differences. In practice, disaster risks are shaped not only by hazards but also by access to transportation, communication, healthcare, and social support. Persons with disabilities living in rural areas, low-income households, or geographically isolated communities may face multiple and overlapping barriers that increase their exposure to danger and slow recovery after disasters. These intersecting forms of inequality related to class, disability, poverty, gender, age, or geography, create distinct patterns of risk that cannot be addressed through uniform policies alone (Stein & Stein, 2022; Eriksen et al., 2021; Jampel, 2018). The findings indicate that disaster and climate frameworks are beginning to recognize these differences, but systematic mechanisms for assessing and responding to them remain limited. Without clear procedures for identifying diverse needs and allocating resources accordingly, disaster management systems may inadvertently reinforce existing inequalities rather than reduce them.

The third implication of a human rights approach requires the meaningful participation of persons with disabilities in disaster and climate governance. Participation is a practical condition for effective preparedness. When persons with disabilities are involved in planning and decision-making, their experiences can help identify barriers that may otherwise remain invisible to policymakers and emergency planners.

The content analysis shows that participation is moderately recognized as a principle in disaster and climate documents, yet the mechanisms for ensuring meaningful engagement of persons with disabilities are often underdeveloped. From a human rights perspective, participation is closely linked to protection. When persons with disabilities are excluded from planning processes, disaster systems may fail to anticipate their needs, increasing the likelihood of unsafe evacuation, delayed assistance, or unequal recovery outcomes. Conversely, when

participation is institutionalized as supported by training, funding, and accessible communication, the disaster preparedness systems become more responsive, inclusive, and resilient (Engleman et al., 2022; Jodoin, 2024; Stein et al., 2024).

In sum, while the ten countries are moving toward compliance with international obligations, they have not yet fully translated those commitments into concrete systems of protection, accessibility, and participation as envisioned by the UNCRPD and the Sendai Framework.

Policy Implications

Countries are making progress on disability inclusion, but key gaps remain in how policies/measures/programs are carried out in practice.

Across the ten countries analyzed, disability inclusion is gradually recognized in disaster and climate documents, but important gaps remain in how these commitments are put into practice. Persons with disabilities are now commonly identified as priority groups in VNR, NDC, disaster and climate plans, and disaster and climate laws. This shows growing awareness that disaster preparedness and early warning systems should include everyone. However, many policies still describe inclusion in general terms without clearly explaining how it will be implemented, funded, or monitored.

A major gap exists between policy recognition and real-world implementation. Many countries have policies that mention disability inclusion, but fewer provide clear instructions on what actions should be taken, who is responsible, and what resources are required. As a result, disability inclusion is often treated as a goal or principle rather than as an integral part of disaster preparedness systems.

Early warning systems are widely discussed, but accessibility for persons with disabilities is not always clearly addressed. Many documents refer to people-centered or multi-hazard early warning systems, yet fewer explain how warnings will reach persons with disabilities—for example, through sign language, audio alerts, plain language, or assistive technologies. This means that early warning is often treated merely as a technical system for sharing information,

rather than as an inclusive system that ensures everyone can understand and act on the warning in time.

Disaster preparedness measures for persons with disabilities are often mentioned but not fully specified. Many policies say that persons with disabilities and other marginalized populations, should be protected, but few explain how this will be done in practice. They often do not give clear guidance on things like accessible evacuation, health services, assistive devices, or access to medicines during disasters. Accessibility is mentioned, but clear standards and enforcement are often missing.

Limited funding, training, and data systems continue to slow progress on disability inclusion. In many countries, funding for disability-inclusive preparedness is not clearly allocated, and training for responders and local officials is inconsistently defined. Monitoring systems are also still developing, with relatively few policies requiring regular collection of disability-disaggregated data to track whether preparedness and early warning systems are working for persons with disabilities.

Recommendations: Moving From Recognition to Implementation

The content analysis shows that disability inclusion is slowly recognized across disaster and climate governance instruments, but implementation remains uneven. The main task, therefore, is to move from mentioning persons with disabilities to building systems that make preparedness, early warning, evacuation, funding, and monitoring accessible in practice.

1. **Establish clear implementation mechanisms for disability inclusion**. Governments should develop operational guidelines that specify how disability inclusion will be implemented across disaster preparedness, early warning, evacuation, health support, and recovery. These guidelines should assign responsibilities to disaster agencies, local governments, health systems, and social protection offices. This directly supports the Sendai Framework's priorities on strengthening disaster risk governance and enhancing preparedness for effective response. It also aligns with CRPD Article 11, which requires

States to take all necessary measures to protect persons with disabilities in situations of risk and humanitarian emergencies.

2. **Make early warning systems accessible, understandable, and actionable.** Early warning systems should not only send alerts; they should ensure that persons with disabilities can receive, understand, trust, and act on warnings. Governments should require warnings in multiple formats, including audio, visual, plain language, sign language, SMS, community-based alerts, and accessible digital platforms. This aligns directly with Sendai Target G, which aims to increase access to multi-hazard early warning systems and disaster risk information by 2030. It also supports SDG 11.5, which focuses on reducing disaster deaths and the number of affected people, especially among affected populations.
3. **Integrate disability-specific health and support services into preparedness planning.** Preparedness plans should include clear protocols for medication continuity, assistive devices, caregiver support, accessible health services, psychosocial support, and support during evacuation and sheltering. These should be treated as core preparedness measures, not optional add-ons. This recommendation supports CRPD Article 11 on protection and safety during disasters, and SDG 13.1, which calls for strengthened resilience and adaptive capacity to climate-related hazards and natural disasters.
4. **Institutionalize disability-disaggregated data monitoring**. Governments should require the routine collection and use of sex-, age-, and disability-disaggregated data in disaster preparedness, early warning, evacuation, and recovery monitoring. This data should be used to assess whether persons with disabilities are actually reached by warning systems and supported during emergencies. This aligns with SDG Target 17.18, which calls for stronger availability of high-quality, timely, reliable, and disaggregated data, including by disability where relevant. It also supports the Sendai Framework's emphasis on understanding disaster risk through better information and risk assessment.
5. **Allocate dedicated funding and build institutional capacity.** Governments and development partners should create dedicated budget lines for disability-inclusive disaster preparedness and early warning. Funding should support accessibility audits, assistive technologies, inclusive shelters, community-based preparedness, and training

for responders and local officials. This addresses one of the clearest findings of the analysis: capacity and funding are often mentioned but rarely disability-inclusive or disability-specific.

6. **Require meaningful participation of persons with disabilities and OPDs.** Persons with disabilities and organizations of persons with disabilities should be involved in designing, testing, monitoring, and evaluating disaster preparedness and early warning systems. Participation should be formalized through consultation mechanisms, advisory bodies, and local disaster planning processes. This aligns with the Sendai Framework's all-of-society approach and its recognition of persons with disabilities as important stakeholders in disaster risk reduction. It also supports SDG 10.2, which promotes social, economic, and political inclusion irrespective of disability.
7. **Adopt enforceable accessibility standards for evacuation and shelters.** Governments should set minimum accessibility standards for evacuation centers, transport, warning infrastructure, toilets, shelter layouts, and communication systems. These standards should be linked to compliance checks, inspections, and funding requirements. This supports CRPD Article 9 on accessibility and CRPD Article 11 on protection in situations of risk. It also advances the Sendai Framework's goal of reducing disaster risk and strengthening preparedness systems.

These recommendations call for a shift from policy recognition to enforceable systems. Disability inclusion should be built into the everyday machinery of disaster governance: planning, warning, evacuation, health support, financing, monitoring, and accountability.

Table 17.1 Policy Recommendations for Strengthening Disability Inclusion in Disaster Governance

Key Policy Gap	Policy Recommendation	Priority Actions	Responsible Actors
Implementation gap between recognition and operational practice	Translate disability inclusion commitments into enforceable implementation mechanisms	Develop national implementation guidelines for disability-inclusive disaster preparedness and early warning; establish accountability and compliance monitoring systems; integrate disability inclusion into national disaster preparedness standards	National disaster management agencies; ministries responsible for disaster risk reduction; legislative and regulatory bodies
Participation of persons with disabilities is not consistently institutionalized	Formalize participation of persons with disabilities and organizations of persons with disabilities (OPDs) in disaster governance	Establish consultation mechanisms; include OPDs in disaster planning committees; conduct participatory risk assessments; monitor participation outcomes	Disaster management agencies; Local governments; OPDs; Civil society organizations; Community leaders
Limited disability-inclusive early warning provisions	Strengthen accessibility and actionability of early warning systems for persons with disabilities	Provide multi-format warning messages (visual, audio, sign language, plain language); establish backup communication channels; conduct accessibility testing during drills; integrate accessibility standards into early warning protocols	National and local disaster management agencies; meteorological services; telecommunications providers; local government units

Evacuation centers and infrastructure are not consistently accessible	Adopt enforceable accessibility standards for evacuation and shelter infrastructure	Develop national accessibility standards; conduct regular accessibility audits; require compliance for funding approval; retrofit existing evacuation centers and transport systems	Ministries of Infrastructure; Disaster management agencies; Local governments; Public works departments; Building regulators
Weak disaster preparedness and support service indicators	Integrate disability-specific health and support services into disaster preparedness planning	Develop standards for continuity of care (medication, assistive devices, caregiver support); establish accessible evacuation and health service protocols; maintain registries of persons requiring specialized support	Ministries of health; disaster management agencies; local governments; social welfare agencies
Underdeveloped disability-disaggregated data and monitoring systems	Institutionalize disability-disaggregated data systems for preparedness and early warning monitoring	Require collection and reporting of sex-, age-, and disability-disaggregated data; integrate disability indicators into national disaster information systems; establish regular monitoring and reporting mechanisms	National statistics offices; disaster management agencies; ministries of planning; monitoring and evaluation units
Limited resources and institutional capacity for disability inclusion	Allocate dedicated financial and human resources for disability-inclusive disaster preparedness	Establish dedicated budget lines for disability inclusion; provide specialized training for emergency responders; support capacity-building for local disaster management personnel	Ministries of finance; disaster management agencies; training institutions; development partners

Table 17.1. *(Source: Author Construction)*

PART II: Case Study Findings (Central Pangasinan, Philippines)

The findings presented in this section drew on the fieldwork conducted in the municipalities of Aguilar and Bugallon in Central Pangasinan, Philippines—rural, agriculture-dependent communities located in flood-prone areas of the province. These municipalities experience recurrent flooding and typhoon-related hazards associated with monsoon rainfall, river overflow, and seasonal weather disturbances, which periodically disrupt livelihoods and require the evacuation of residents in vulnerable barangays (Pacific Disaster Center, 2023; National Disaster Risk Reduction and Management Council [NDRRMC], 2009, 2014, 2018).

Drawing on survey data, interviews, and field observations, I have identified the barriers that Persons with Disabilities face in accessing early warning information and their coping strategies in overcoming these barriers. I have also determined how persons with disabilities respond to early warning information and the factors that shape their risk reduction actions before a disaster. Findings from the fieldwork were triangulated using data from the disaster and climate documents of the Philippines.

This section is organized into four parts. I begin by presenting the socio-demographic and disaster risk profile of the respondents. I then examine the main barriers faced by persons with disabilities in accessing early warning information and the coping strategies adopted to address these challenges. Next, I analyze how respondents respond to early warning information and the factors affecting the actionability of early warning information. I conclude by discussing the implications of these findings for advancing disability-inclusive disaster risk reduction planning and strengthening early warning systems at the local level.

Socio-demographic and Disability Profile of the Respondents

This section outlines the socio-demographic and disability profile of the 86 persons surveyed in Central Pangasinan in terms of age, gender, educational attainment, income, living arrangement, access to the grid and connectivity, and disabilities.

Age profile

Most respondents with disabilities are working-age adults, with fewer older persons represented. The respondents in the study are mostly adults in their working-age years, particularly those between 41 and 59 years old (Fig. 16). This age group includes 34 respondents (39.53%), making it the largest group in the study, followed by adults aged 26–40 years, with 26 respondents (30.23%). These two groups make up the majority of respondents with disabilities. Younger adults aged 18–25 years account for 16 respondents (18.60%), while older adults aged 60 years and above form the smallest group, with 10 respondents (11.63%).

Figure 16. Age Breakdown of Respondents

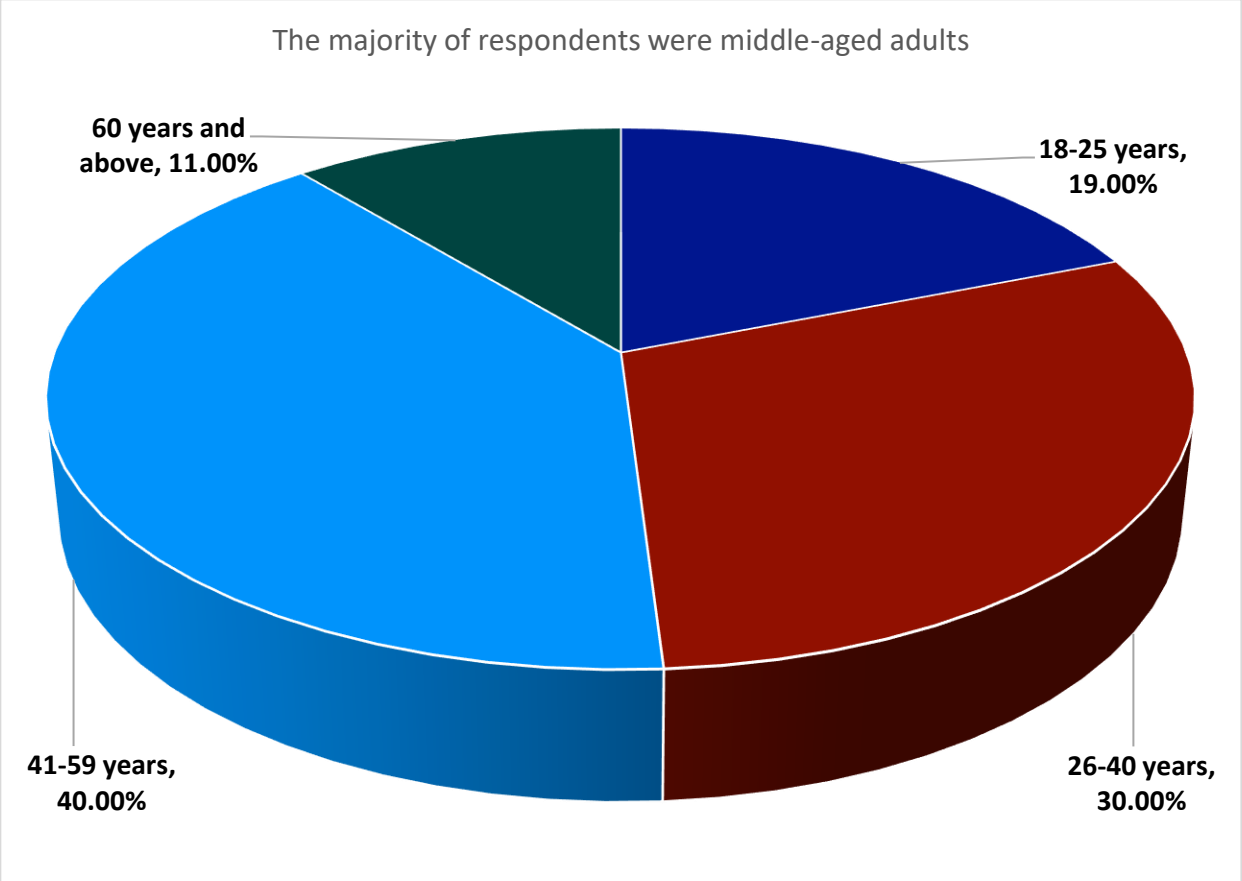


Figure 16. A pie chart highlighting age distribution of study respondents in the sample N=86. *(Source: Survey of Persons with Disabilities in Central Pangasinan, 2026)*

As can be gleaned from Fig. 16, most respondents in the study are in their productive years, meaning many are likely to be working or supporting their families. At the same time, the

presence of older persons with disabilities, although smaller in number, remains important, as they may require additional assistance and protection during disasters and emergencies.

Gender profile

With respect to gender, the data shows a relatively balanced distribution, with a slight predominance of female respondents (see Figure 17). Forty-eight out of 86 respondents (55.81%) identify as female, while 38 respondents (44.19%) identify as male. No respondents reported identifying as non-binary or choosing not to disclose their gender. The results indicate that women with disabilities represent a modest majority of the respondents. This finding is important to note because women with disabilities may face different risks and responsibilities during disasters, including caregiving roles and limited access to resources. Understanding the gender profile of respondents with disabilities, therefore, helps planners design preparedness and response measures that respond to the needs of both women and men with disabilities.

Figure 17. Gender Breakdown of Respondents

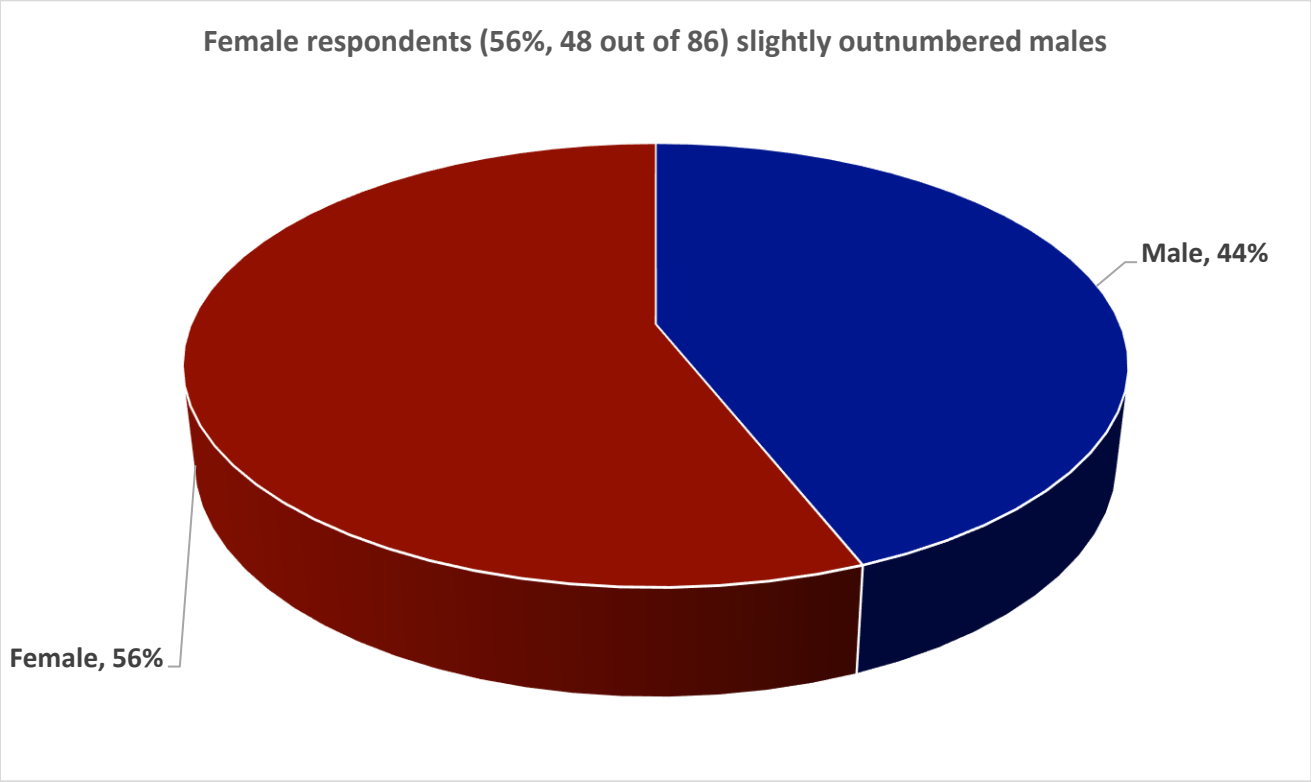


Figure 17. This pie chart highlights the gender distribution of respondents in the study sample (N = 86). *(Source: Survey of Persons with Disabilities in Central Pangasinan, 2026)*

Education profile

Most respondents have completed secondary or elementary education, while only a small number have reached higher education. Most respondents in the study have basic to intermediate levels of formal education, with secondary school being the most common level attained (Fig. 18). Out of respondents, 32 (37.21%) completed secondary education, making this the largest group. This is followed by 25 respondents with disabilities (29.07%) who completed elementary education. This suggests that most respondents have foundational schooling but limited access to advanced education.

Figure 18. Educational Attainment Breakdown of Respondents

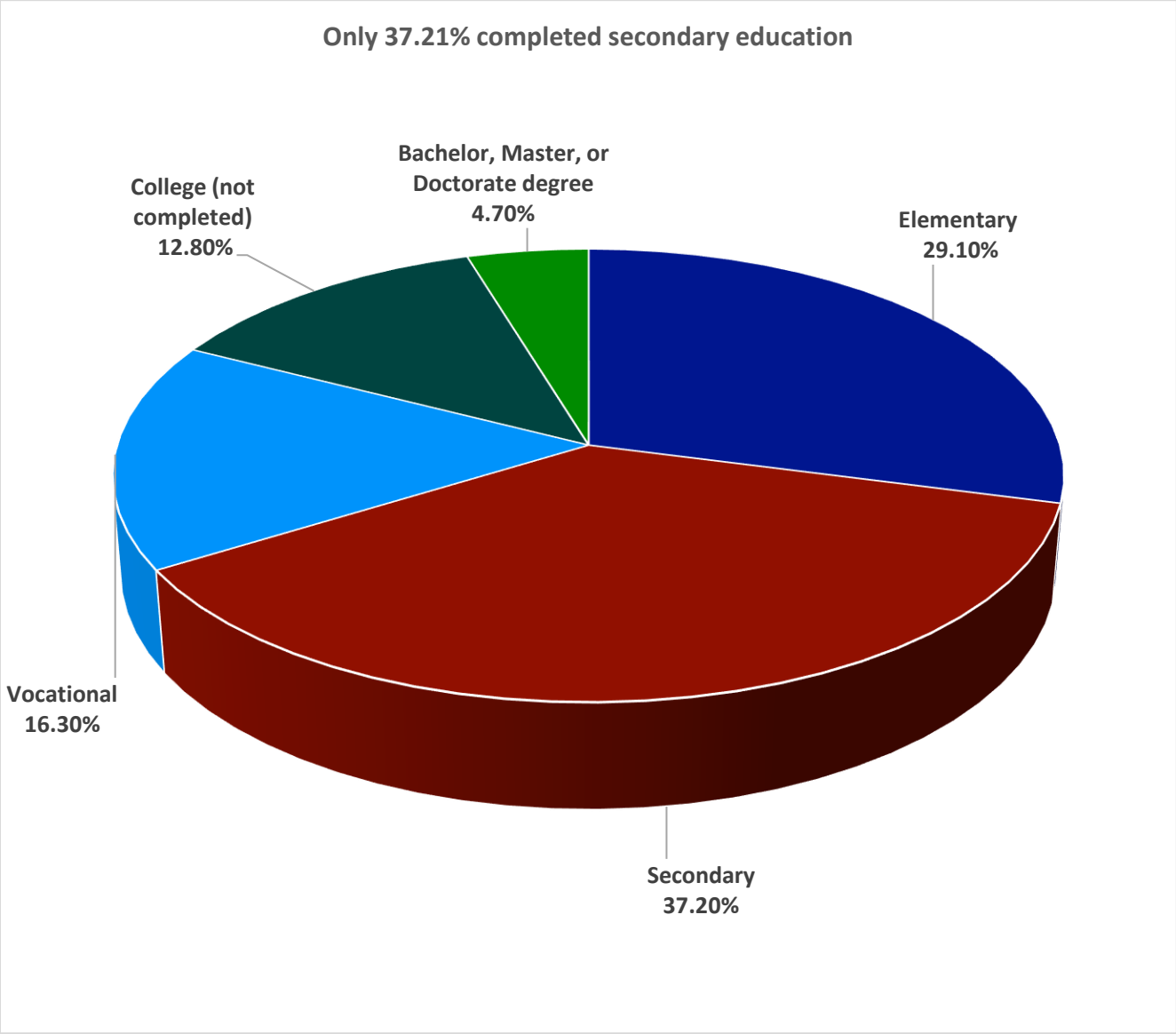


Figure 18. This pie chart identifies the distribution in terms of educational attainment *(Source: Survey of Persons with Disabilities in Central Pangasinan, 2026)*

A smaller share of respondents reported completing vocational training (14% or 16.28%). Another 11 respondents (12.79%) attended college but did not finish a degree. Only 4 (4.65%) reached higher education at the bachelor's, master's, or doctoral level.

The results show that higher education remains uncommon among persons with disabilities in Central Pangasinan, while most have education levels that provide basic knowledge but may limit access to more stable employment and specialized skills.

Income profile

The income profile shows that a majority respondents live on very low annual incomes, with more than half earning less than ₱100,000 per year (Fig. 19). Specifically, 47 out of 86 respondents (54.65%) reported annual incomes below ₱100,000. This means that most respondents with disabilities rely on modest and often unstable financial resources to meet their daily needs.

Another 31 respondents (36.05%) reported annual incomes between ₱100,000 and ₱300,000, representing the second largest group in the study. Only 8 respondents (9.30%) reported incomes between ₱301,000 and ₱400,000, and no respondents reported with disabilities earning more than ₱400,000 per year.

To put this into perspective, in 2023, a family of five in the Philippines needed at least ₱12,523 per month to meet these minimum requirements (Philippine Statistics Authority, 2025). This is called the poverty threshold or the minimum income required for a family to meet basic food and non-food needs. This indicates that many respondents with disabilities are living close to, or only slightly above, the level required to cover essential household needs.

Apparently, the results show that financial resources among respondents with disabilities are generally limited, which may reduce their ability to prepare for disasters, evacuate quickly, or recover after emergencies.

Figure 19. Income Breakdown of Respondents

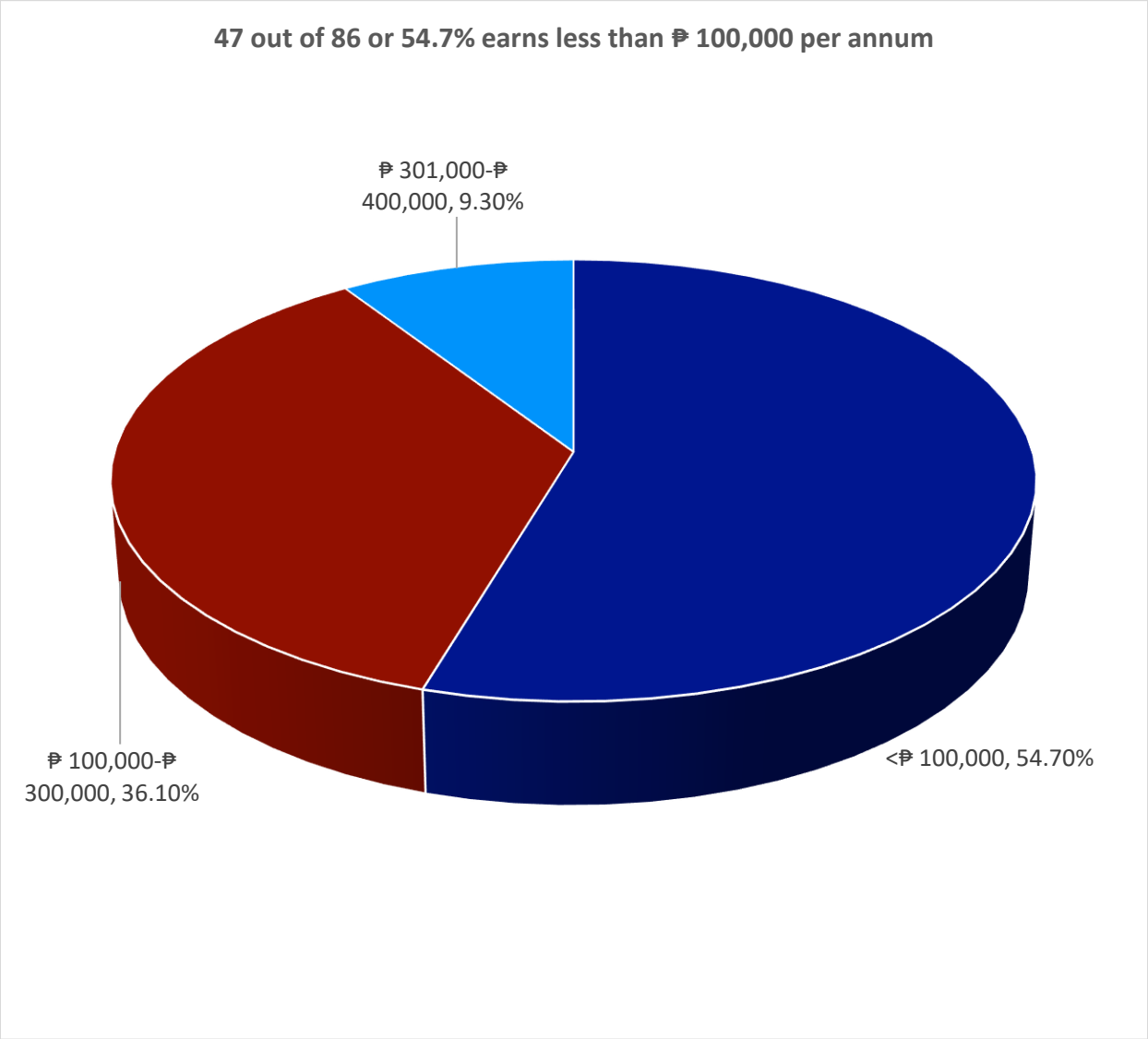


Figure 19. Here, the pie chart shows the Income distribution of respondents. *(Source: Survey of Persons with Disabilities in Central Pangasinan, 2026)*

Living arrangement profile

Nearly all respondents live with family members, making family support the main source of daily assistance (Fig. 19). Out of 86 respondents, 81 individuals (94.19%) reported living with family. This indicates that family-based living arrangements are the dominant household

structure in the study area and likely play a central role in providing care, communication support, and help during emergencies.

Figure 20. Living Arrangement Breakdown of Respondents

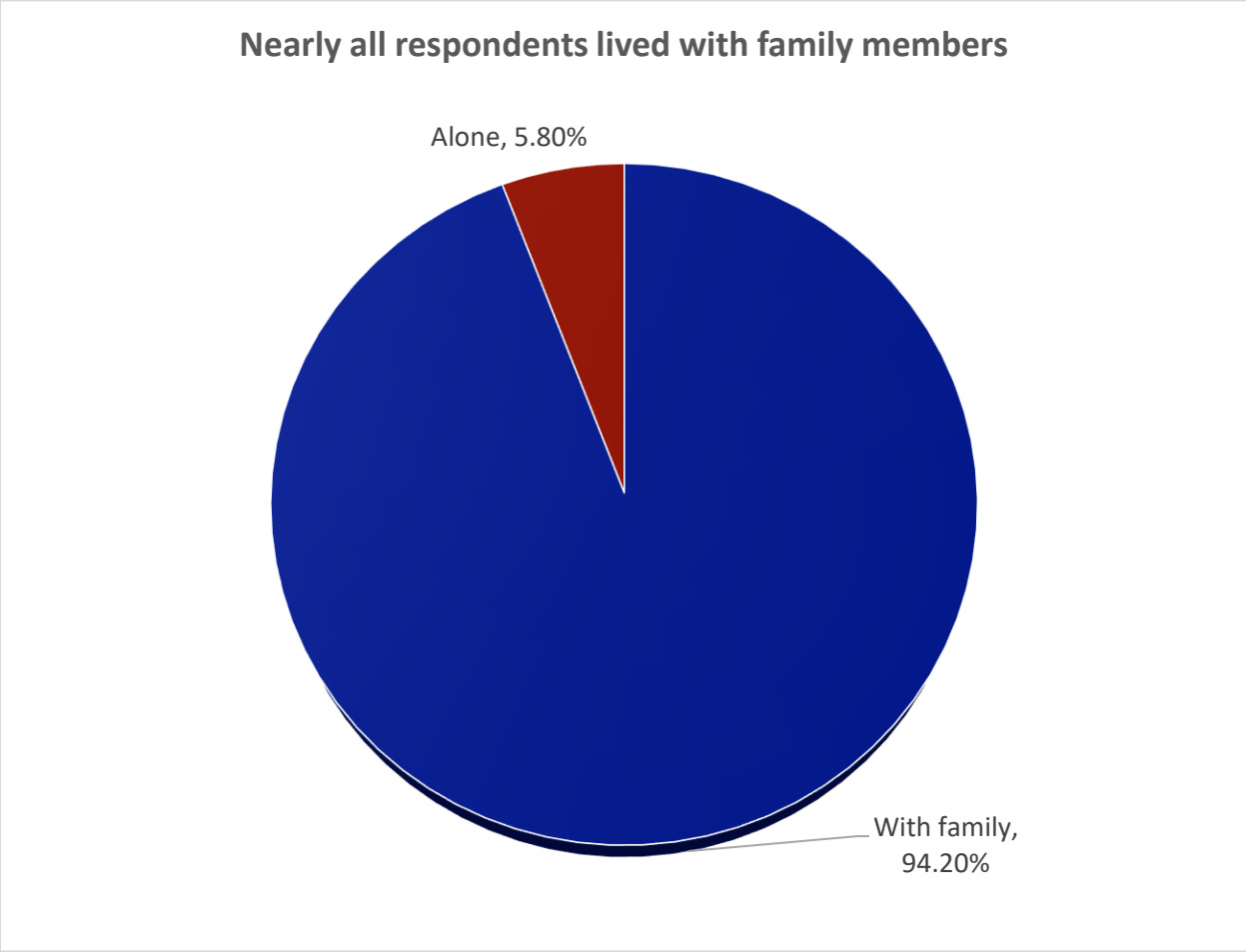


Figure 20. This chart shows the distribution of respondents in terms of living arrangement indicating an overwhelming majority 94.2% live with family. *(Source: Survey of Persons with Disabilities in Central Pangasinan, 2026)*

A small group of respondents—5 individuals (5.81%)—reported living alone. Although this represents a minority, respondents with disabilities who live alone may face greater risks during disasters, particularly when evacuation requires assistance, timely information, or physical support. Notably, none of the respondents with disabilities reported living with a formal

caregiver or residing in an institutional facility, such as a residential care center or assisted living arrangement. This suggests that formal care systems are rarely used in the study area. Instead, support for persons with disabilities is primarily provided by families and community networks.

Profile in terms of access to electricity and internet

Electricity is widely available among respondents with disabilities, but internet access remains limited for most households (Figure 21).

Figure 21. Access to Electricity and the Internet (%)

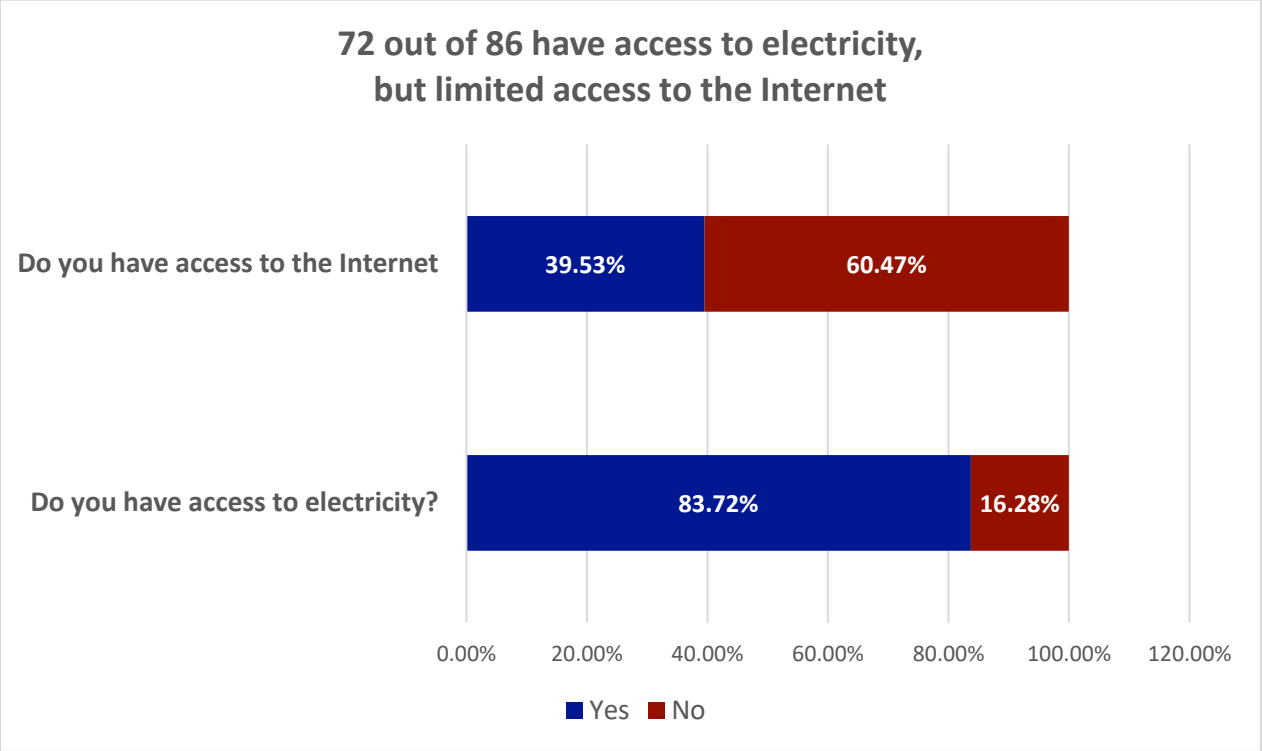


Figure 21. Access to electricity and the internet of respondents in the study. *(Source: Survey of Persons with Disabilities in Central Pangasinan, 2026)*

As shown in Figure 21, most respondents with disabilities reported having electricity in their households, with 72 out of 86 individuals (83.72%) indicating reliable access to power. This suggests that many households have the basic infrastructure needed to operate communication devices such as mobile phones, radios, and televisions. However, access to

internet connectivity is considerably more limited. Only 34 respondents (39.53%) reported having internet access, while the majority, 52 respondents (60.47%) indicated that they do not.

This means that more than half respondents with disabilities may not be able to receive warnings through online channels such as social media, mobile applications, or web-based alerts, and this may imply continue reliance on traditional communication methods in the community. Radio broadcasts, community announcements, text messages, and face-to-face communication remain essential for delivering early warning information, particularly for households without internet access. As a result, disaster preparedness strategies that rely mainly on digital platforms may not reach all persons with disabilities, especially those living in areas with limited connectivity.

Disability profile

Mobility-related difficulties are the most common type of functional disability among respondents (Fig. 22). A total of 34 respondents (43.59%) reported challenges related to mobility, making this the largest group in the study.

Other functional difficulties are present in smaller but still important proportions. Twelve respondents (15.38%) reported hearing difficulties, and another 12 respondents (15.38%) reported challenges with self-care activities such as washing, dressing, or eating. Ten respondents (12.82%) reported difficulties with seeing, while another 10 respondents (12.82%) reported challenges with remembering or concentrating. The smallest group consists of 8 respondents (10.26%) who reported communication difficulties, including problems with understanding others or being understood.

Figure 22. Respondent Disability Profile

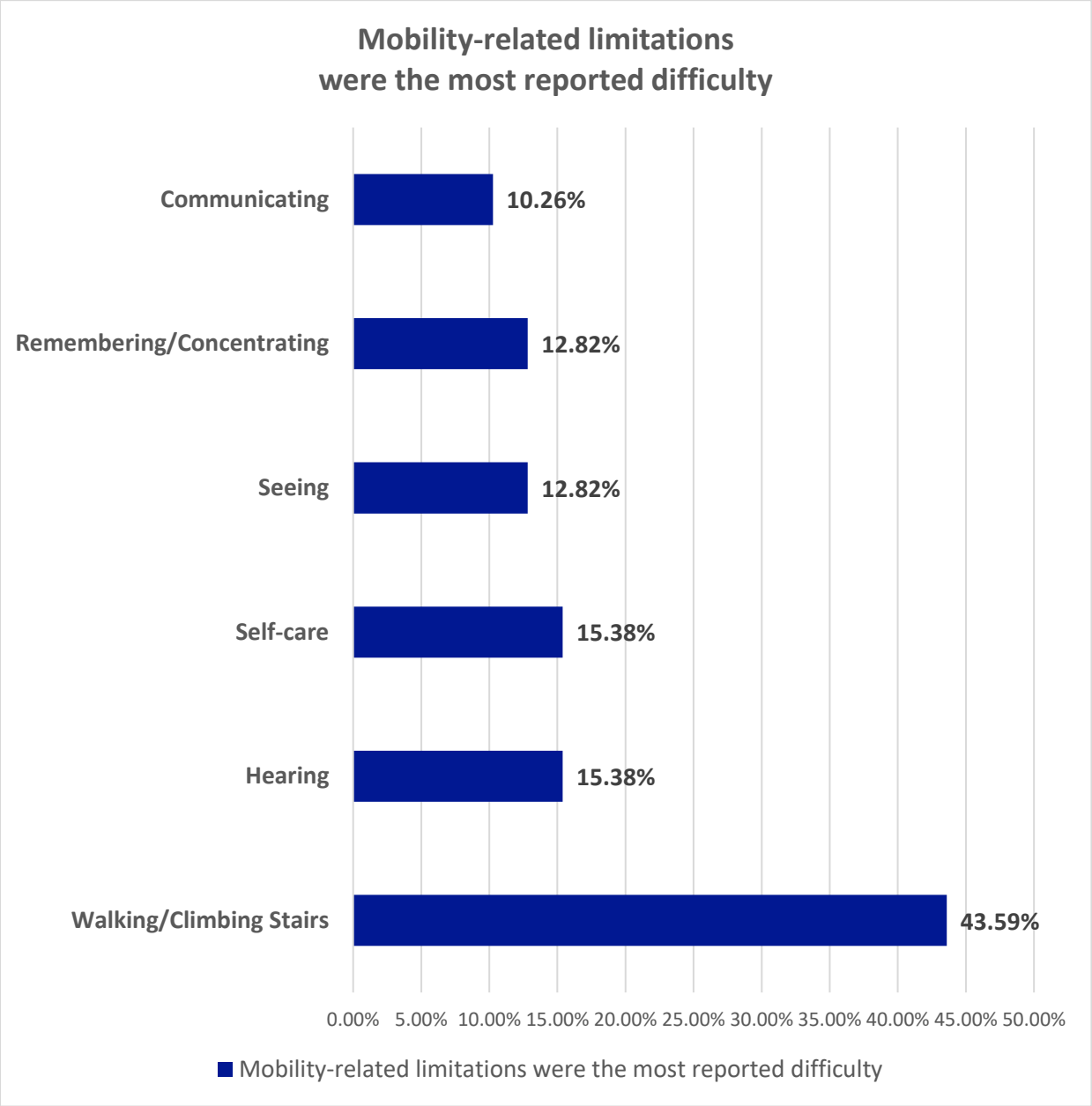


Figure 22. Breakdown of respondents in terms of disabilities *(Source: Survey of Persons with Disabilities in Central Pangasinan, 2026)*

It is important to note that different disabilities require different forms of support, particularly in early warning and emergency response. Moreover, different types of functional disabilities can influence how respondents prepare for and respond to disasters. Mobility-related

difficulties may make evacuation and access to shelters more challenging. Hearing difficulties can limit the ability to detect warning signals such as sirens or announcements. Limitations in self-care such as washing, dressing, or eating may affect the ability to maintain safety and hygiene during emergencies or displacement.

Visual and cognitive difficulties may affect how individuals understand warning messages, remember evacuation steps, or make timely decisions. Communication-related difficulties, although less common, can still create barriers when emergency information is delivered only through spoken or written instructions without alternative formats. This also implies the need for disaster preparedness measures that address different functional needs, ensuring that all respondents with disabilities can receive warnings, evacuate safely, and manage daily needs during emergencies.

Disaster risk profile of persons with disabilities in Central Pangasinan

Figure 23 summarizes respondents' exposure to multiple hazards, levels of household preparedness, evacuation accessibility, displacement history, and relocation patterns, providing context for understanding barriers to early warning access and response capacity among persons with disabilities.

Typhoons and floods are the most common sources of risk among respondents with disabilities

Typhoons and floods are the most widely recognized sources of risk among respondents in Central Pangasinan. Findings are presented in Figure 23 (Source Table 18: See Appendix D: Extended Tables and Source Tables).

Figure 23. Sources of Risk Among Respondents

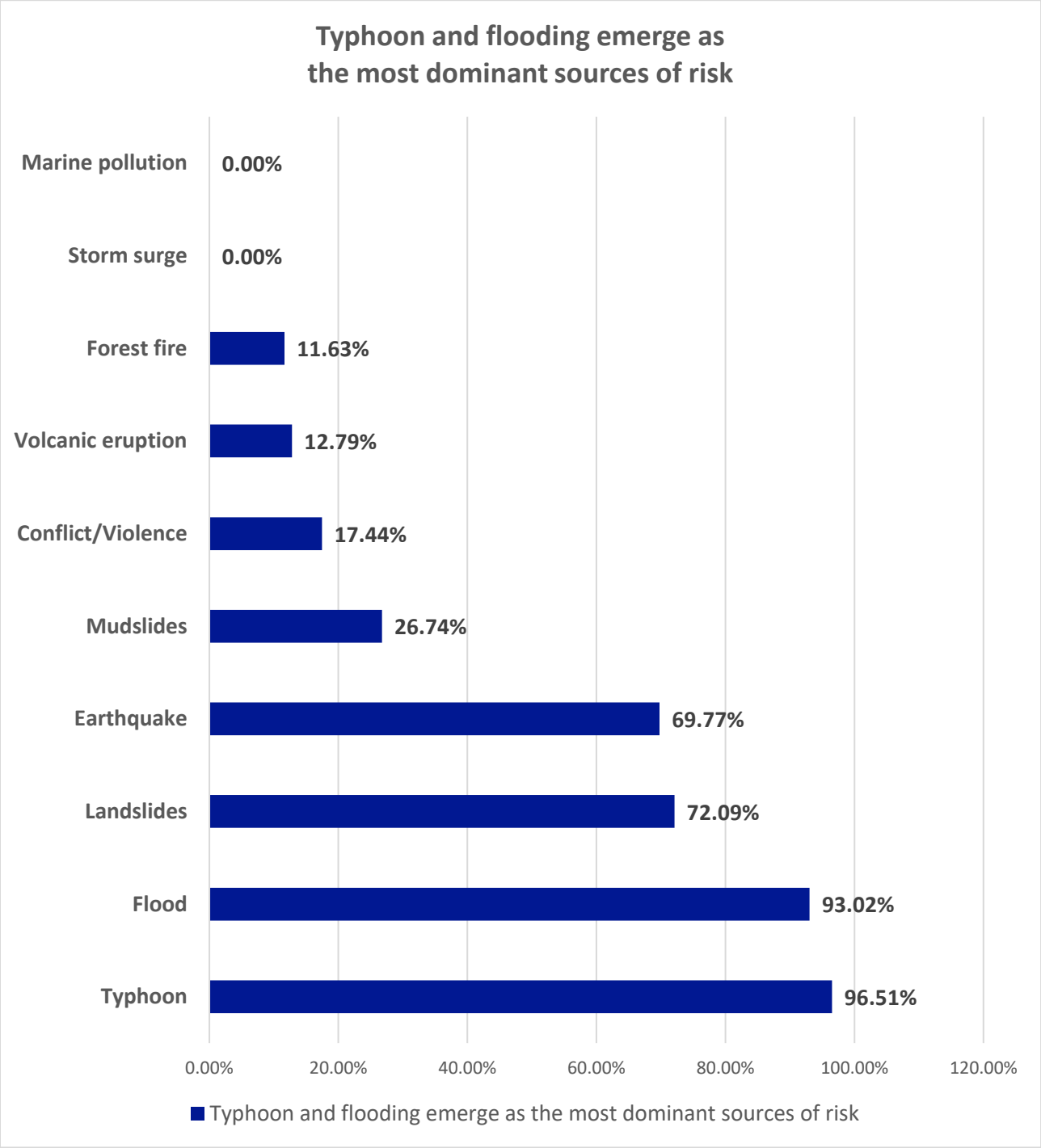


Figure 23. Chart lists the reported sources of disaster risk among respondents. *(Source: Survey of Persons with Disabilities in Central Pangasinan, 2026)*

Almost all respondents identified typhoons as a major source of danger, with 83 individuals (96.51%) reporting this risk. Flooding follows closely, reported by 80 respondents (93.02%). These findings show that most respondents with disabilities regularly face hazards related to heavy rains and rising water.

Other risks are also recognized, but by fewer respondents. Landslides were reported by 62 respondents (72.09%), and earthquakes by 60 respondents (69.77%). Smaller numbers of respondents mentioned mudslides (23 respondents, 26.74%), conflict or violence (15 respondents, 17.44%), volcanic eruption (11 respondents, 12.79%), and forest fire (10 respondents, 11.63%).

No respondents reported storm surge or marine pollution as risks in their area. Notably, no respondents reported storm surge or marine pollution as sources of risk, suggesting that coastal hazards are not perceived as immediate threats in Central Pangasinan, where Aguilar and Bugallon are primarily inland rather than coastal municipalities.

These results reflect the everyday experience of communities in Aguilar and Bugallon, where heavy rains and river flooding are common. Because these towns are located in low-lying farming areas influenced by the Agno River system, many families have repeatedly experienced typhoons and floods over the years.

The findings observed in Figure 23 point to the central role of hydrometeorological hazards in shaping the risk environment of persons with disabilities in the study area. During my fieldwork, many respondents with disabilities described these hazards not as rare events but as regular experiences that happen almost every year. This repeated exposure has made flooding and strong storms a familiar part of community life. One respondent with disabilities explained how common these events have become:

> *“Almost every year we are hit by typhoons, and when the rain is strong, flooding is certain in our area.” (INT_001, Bugallon, December 27, 2025)*

Other respondents with disabilities described how flooding follows a predictable pattern during the rainy season. As one participant shared:

> *"During typhoon season, we already expect our area to flood." (INT_008, Aguilar, January 1, 2026)*

These accounts reflect the environmental reality of many communities in Central Pangasinan, where heavy rains and typhoons often lead to sudden flooding. Respondents with disabilities also described how quickly floodwaters can rise, creating pressure to move to safety without delay. One participant explained:

> *"The water rises quickly when the rain is heavy, so we need to evacuate immediately." (INT_011, Aguilar, January 5, 2026)*

Considering these accounts, disaster preparedness in the study area must focus strongly on early warnings, safe evacuation, and ready shelters. In practical terms, this means ensuring that early warning messages are delivered in accessible formats, evacuation routes are safe and easy to use, and shelters are prepared to support respondents with different needs.

Many persons with disabilities respondents prepare for disasters, but gaps remain in evacuation knowledge and ability to move to safety

The results show a mixed level of disaster preparedness among respondents with disabilities in Central Pangasinan See Fig. 24 below and Source Table 19: in Appendix D: Extended Tables & Source Tables. Most respondents with disabilities reported having some form of personal or household disaster plan.

Figure 24. Disaster Preparedness Indicators Among Persons with Disabilities in Central Pangasinan

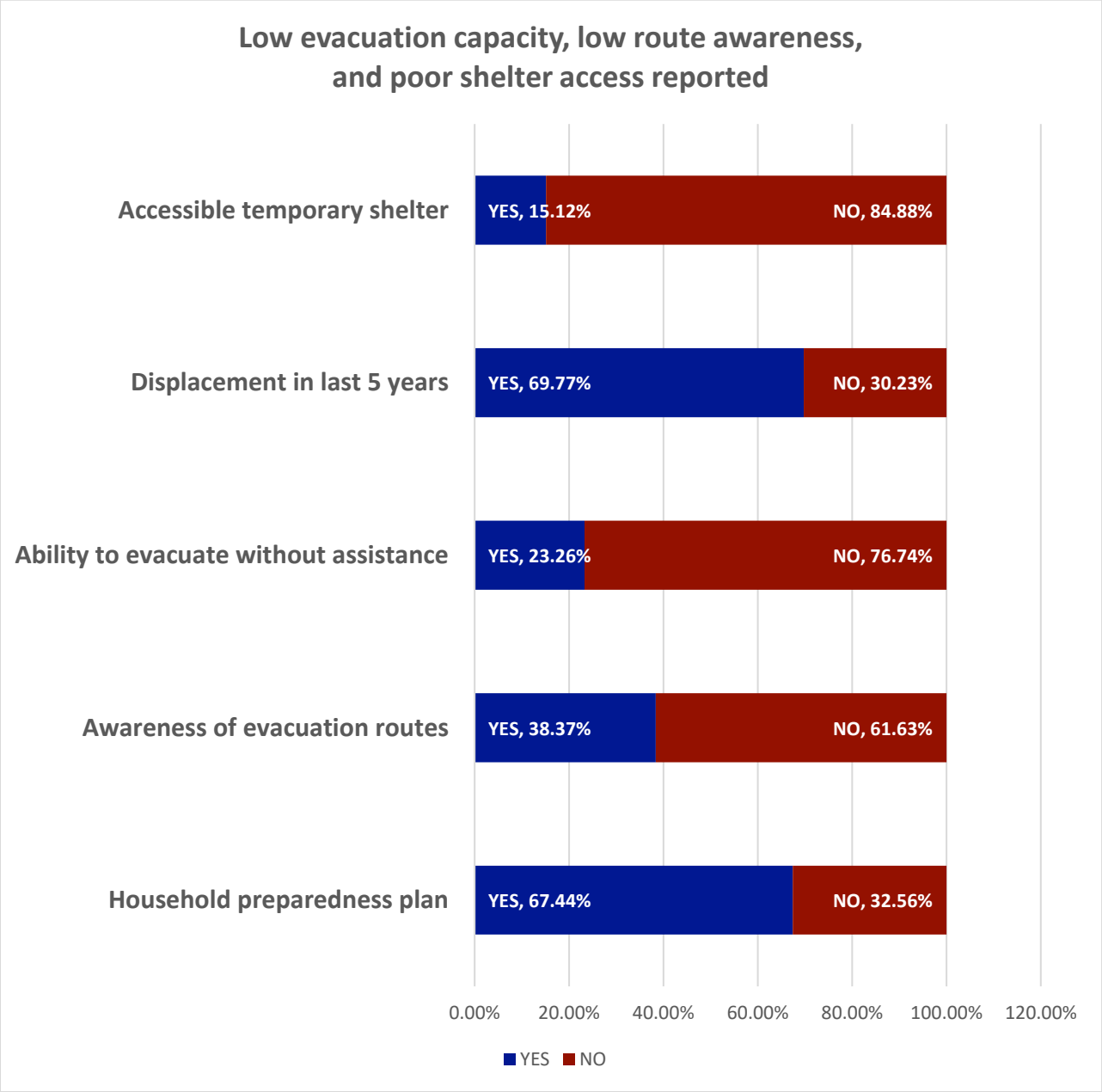


Figure 24. Respondents reported in five key disaster preparedness indicators: presence of a household preparedness plan, awareness of evacuation routes, ability to evacuate independently, displacement experience in the past five years, and accessibility of temporary shelters. *(Source: Survey of Persons with Disabilities in Central Pangasinan, 2026)*

Specifically, 58 out of 86 respondents with disabilities (67.44%) said they prepare in advance for disasters, while 28 respondents (32.56%) reported having no plan. This suggests that awareness of preparedness is fairly common, although a significant group of respondents with disabilities still lacks formal arrangements. Some respondents with disabilities described simple but practical steps they take when a strong storm is expected:

> *"It is altogether different if it is a super typhoon…We make plans, especially when a strong typhoon is expected or when flooding is likely—we prepare our belongings and start stocking food, clothing, and medicines in case evacuation becomes necessary. It reminds me of Ondoy…" (INT_003, Bugallon, December 28, 2025)*

At the same time, other respondents with disabilities explained that they rely mainly on instructions from local authorities rather than their own household plans:

> *"We rely on barangay advisories when there is a typhoon. If we are told to evacuate, we will do so, but whenever possible, we prefer to remain at home." (INT_012, Aguilar, January 6, 2026)*

Awareness of evacuation routes, however, appears considerably lower. Only 33 respondents with disabilities (38.37%) reported knowing the evacuation routes in their area, while the majority, 53 respondents (61.63%), said they were not familiar with them. One respondent with disabilities described this uncertainty clearly:

> *"I am not really familiar with the evacuation route. I just follow other people when a disaster happens." (INT_004, Bugallon, December 28, 2025)*

Another major challenge is the ability to evacuate independently. Most respondents with disabilities reported needing help to move to safety during emergencies. In total, 66 out of 86 respondents (76.74%) said they could not evacuate on their own, while only 20 respondents (23.26%) reported being able to evacuate without assistance.

During fieldwork, it became clear that evacuation in flood-prone communities often depends on support from others. One respondent explained:

> *"I cannot evacuate on my own, especially when there is already flooding outside. I really need someone to accompany me to help me cross or carry my belongings because it is slippery and difficult to move when the water is high." (INT_001, Bugallon, December 27, 2025)*

These experiences reflect the environmental conditions commonly found in Central Pangasinan. In many low-lying barangays, heavy rain can quickly cause flooding, making roads muddy, slippery, or impassable. For respondents with mobility limitations, even short periods of flooding can turn familiar paths into dangerous routes. Limited transportation and weak infrastructure can further increase the difficulty of evacuating safely.

In practice, evacuation in these communities is often a shared effort rather than an individual task. Family members, neighbors, and local authorities play a critical role in helping respondents with disabilities move to safety during emergencies. This means that disaster preparedness plans must consider not only individual needs but also the social support systems that make evacuation possible.

Finally, displacement due to disasters appears to be a common experience among respondents with disabilities in the study area. A total of 60 out of 86 respondents with disabilities (69.77%) reported being displaced within the past five years, while 26 respondents (30.23%) reported no recent displacement. This suggests that evacuation has become a regular part of life in hazard-prone communities exposed to repeated flooding and typhoons. Many respondents with disabilities described evacuation as something they have done several times over the years. One participant explained:

> *"We have evacuated several times in recent years because of flooding—it has become almost normal for us." (INT_010, Aguilar, January 5, 2026)*

This account shows how evacuation has shifted from being an unusual event to a familiar response to recurring disasters. In communities that face frequent flooding, households have learned to expect disruption and prepare for repeated movement to safer places. At the same time, the findings reveal a serious challenge related to the accessibility of evacuation shelters. Only 13 respondents (15.12%) reported that shelters were accessible to them, while the vast majority, 73 respondents (84.88%), reported that shelters were not accessible. This indicates that many respondents face barriers even after reaching a place of safety.

These barriers go beyond simply entering the shelter. Basic facilities such as toilets and washing areas are often difficult to use for persons with disabilities. One respondent described this challenge clearly:

> *"There are no proper toilets that are easy for persons with disabilities to use, so we struggle when staying in the evacuation center." (INT_009, Aguilar, January 5, 2026)*

This lived experience shows that inaccessible shelters can affect the safety, health, and dignity of respondents during displacement. When facilities are not designed to meet different functional needs, evacuation can become stressful and physically difficult, especially during long stays in crowded shelters. Improving shelter accessibility including barrier-free entrances, safe toilets, and adequate support services should therefore be a key priority for disability-inclusive disaster preparedness and response.

Most respondents with disabilities are far from the evacuation center

Most respondents with disabilities must travel several kilometers to reach evacuation centers, which can delay safe evacuation during emergencies. The results show that while evacuation centers are present in many communities, most respondents with disabilities do not live within a short walking distance of these facilities (Fig. 25; Source Table 20: See Appendix D: Extended Tables and Source Tables)

Figure 25. Respondent Distance from Evacuation Center

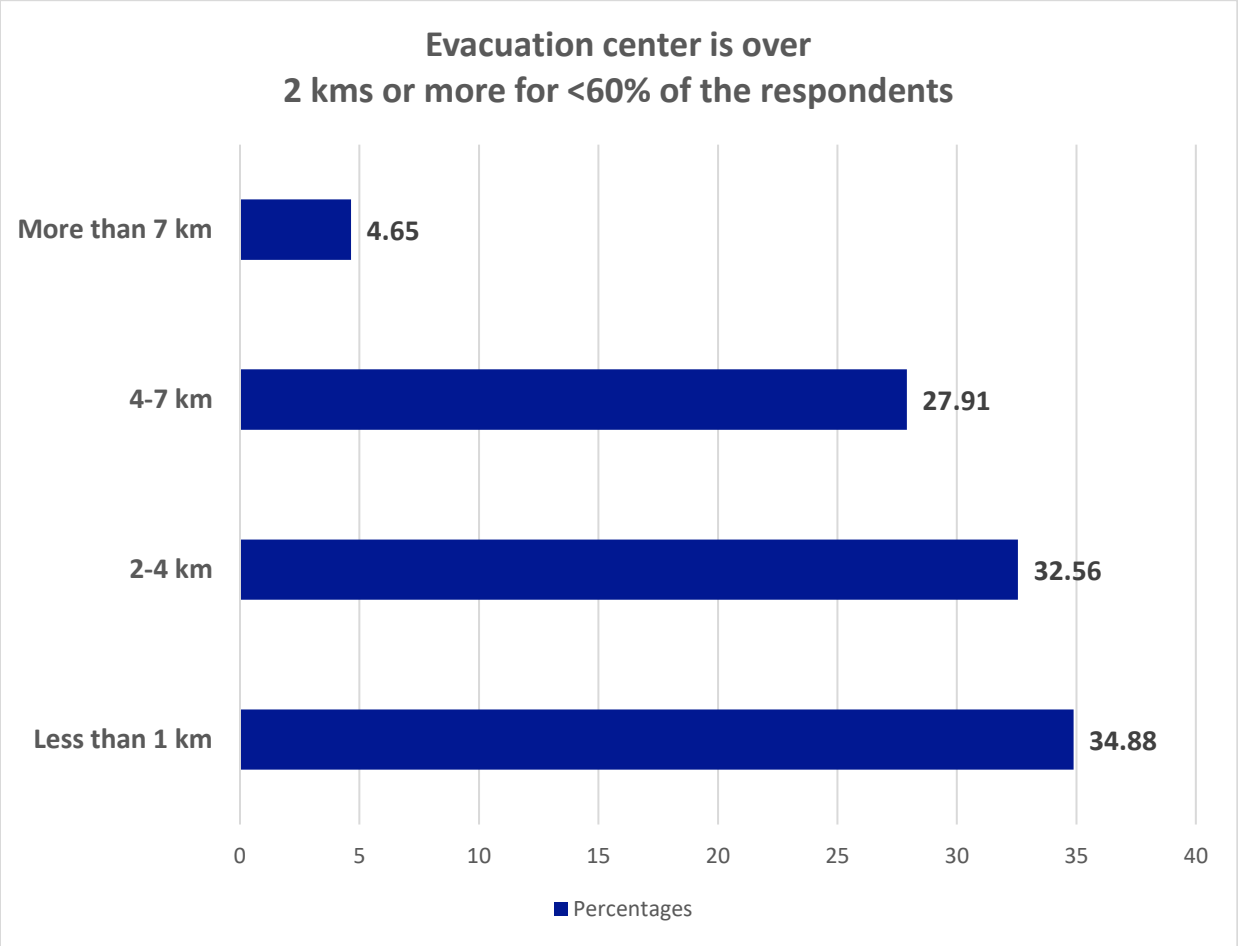


Figure 25. Respondents reported distance from residence to evacuation site in Central Pangasinan *(Source: Survey of Persons with Disabilities in Central Pangasinan, 2026)*

About one-third of respondents with disabilities, 30 out of 86 individuals (34.88%) reported living less than 1 kilometer from the nearest evacuation center. This means that some households can reach safety relatively quickly under normal conditions.

However, the majority of respondents with disabilities live farther away. More than six out of ten respondents with disabilities (52 individuals, or 60.47%) reported living 2 kilometers or more from the nearest evacuation center. Specifically, 28 respondents (32.56%) live between 2 and 4 kilometers away, while another 24 respondents (27.91%) live between 4 and 7 kilometers

away. These distances may seem manageable on ordinary days, but they can become difficult or dangerous during heavy rain, flooding, or nighttime emergencies.

A small group of respondents with disabilities (4 or 4.65%) reported living more than 7 kilometers from the nearest evacuation center. Although this group is small, the long travel distance can create serious risks, particularly for those with mobility limitations or limited access to transportation.

Many respondents with disabilities explained that distance becomes a real problem when roads are flooded or slippery. One participant described this situation clearly:

> *"Our evacuation center is far, and when flooding starts, it becomes difficult to reach quickly, especially if there is no transportation." (INT_006, Bugallon, January 1, 2026)*

These experiences show that distance alone does not determine safety—conditions on the ground matter just as much. In low-lying communities in Central Pangasinan, heavy rainfall can quickly flood roads, making travel slower and more dangerous. For respondents, especially those with mobility or health limitations, even moderate distances can delay evacuation and increase dependence on assistance from family members, neighbors, or local authorities.

This finding is particularly important when considered together with earlier results showing that many respondents with disabilities are not familiar with evacuation routes and that most shelters are not fully accessible. In such situations, distance becomes more than a measure of space—it becomes a practical barrier to reaching safety. The findings suggest that improving evacuation safety for respondents with disabilities requires going beyond providing evacuation infrastructures. It also requires reliable transportation, safe and accessible roads, clear evacuation routes, and early warning systems that give people enough time to prepare and move to safety.

Typhoons and flooding are the main causes of displacement of persons with disabilities

The results show that typhoons and flooding are by far the most common causes of displacement among respondents with disabilities in Central Pangasinan (Fig. 26; See Source Table 21: Appendix D: Extended Tables & Source Tables). A total of 65 out of 86 respondents with disabilities (75.58%) reported that they had to evacuate or temporarily relocate because of flooding or strong storms. This means that more than three out of four respondents with disabilities have experienced displacement due to these recurring hazards.

Landslides were identified as the second most common cause of displacement, reported by 12 respondents with disabilities (13.95%). Although much lower than the number affected by flooding and typhoons, this finding shows that landslides remain an important risk in some communities, especially in areas affected by heavy rainfall or runoff from nearby upland terrain.

Other causes of displacement were reported much less often. Fire, earthquake, and conflict or violence were each identified by 3 persons with disability respondents (3.49%). These hazards are present but do not appear to be the main reasons people leave their homes in the study area.

Figure 26. Respondent Identified Causes of Displacement

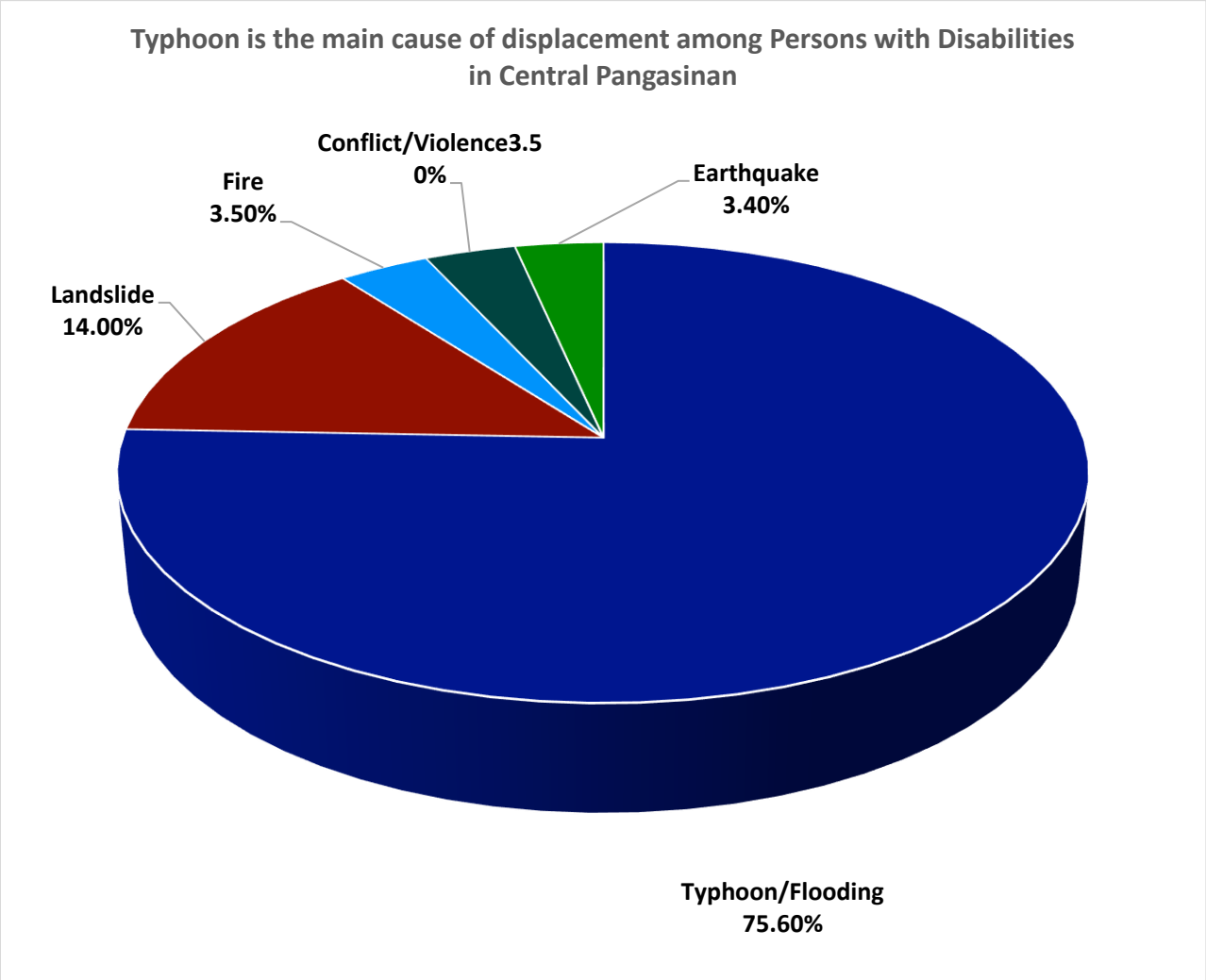


Figure 26. Respondents reported the main causes of displacement among surveyed Persons with Disabilities in Central Pangasinan over the last five years. *(Source: Survey of Persons with Disabilities in Central Pangasinan, 2026)*

These patterns reflect the environmental conditions of Central Pangasinan, where many communities are located in low-lying areas near rivers and agricultural plains. When heavy rain falls, water can rise quickly and force households to move to safer places. One person with disability respondent described this situation clearly:

Our area is low-lying and close to the river, so when the rain is heavy, flooding happens quickly and we are forced to evacuate. (INT_002, Bugallon, December 27, 2025)

For many persons with disability respondents, evacuation is not a rare event but something that happens repeatedly over time. In flood-prone communities, leaving home during storms has become a familiar response to protect lives and property.

The presence of landslides as the second most reported cause of displacement also shows how hazards can be connected. Heavy rainfall during typhoons can saturate the soil and trigger landslides, meaning that different risks can occur at the same time or in sequence.

The findings show that displacement in Central Pangasinan is driven mainly by predictable and seasonal hazards, especially flooding and typhoons. From a disaster preparedness perspective, this means that planning efforts for respondents with disabilities should prioritize these recurring risks. In practical terms, this includes providing early warning messages in accessible formats, ensuring safe evacuation routes, and preparing shelters that can support persons with disabilities during repeated emergencies.

Place of relocation: most respondents with disabilities stay with relatives or friends during disasters

The results show that the most common place of relocation for respondents with disabilities during disasters is the home of relatives or friends (Fig. 27; Source Table 22: See Appendix D: Extended Tables and Source Tables). A total of 47 out of 86 respondents with disabilities (54.65%) reported seeking refuge with family members or close contacts when flooding or storms occur. This means that more than half of respondents with disabilities rely on personal support networks as their main source of shelter during emergencies.

Figure 27. Respondent Reported Displaced Relocation

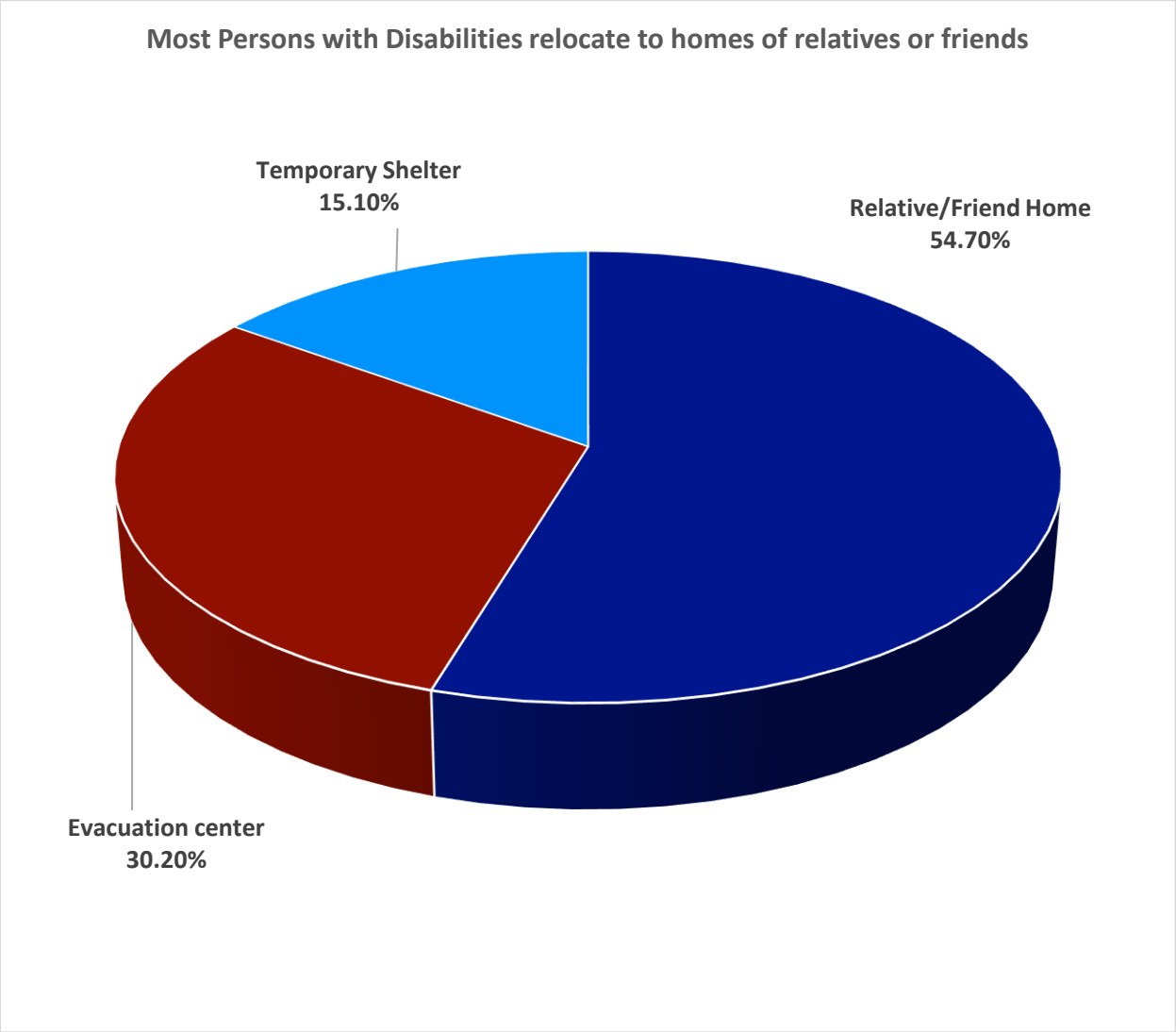


Figure 27. This chart identifies the place of relocation among Persons with Disabilities during displacement in Central Pangasinan. Percentages reflect the proportion of respondents reporting relocation to relatives' or friends' houses, evacuation centers, or temporary shelters. *(Source: Survey of Persons with Disabilities in Central Pangasinan, 2026)*

Many respondents with disabilities explained that staying with relatives feels safer and more comfortable because assistance is readily available. One participant shared:

"We evacuate to a relative's house during flooding because we feel safer there and someone can assist us." (INT_010, Aguilar, January 5, 2026)

Another participant emphasizes the spatial proximity of a relative's home; hence easier when evacuation becomes necessary:

"Our relative's house is nearby, so we immediately move there when a disaster occurs." (INT_008, Aguilar, January 1, 2026)

Evacuation centers are the second most common place of relocation, but they are used by fewer respondents with disabilities. A total of 26 respondents (30.23%) reported relocating to designated evacuation centers during displacement. These facilities remain the main formal shelter provided by the government, but they are used less often than informal arrangements with family or friends.

Some respondents with disabilities explained that evacuation centers are usually chosen only when family support is not available. One participant described this situation clearly:

"When we have no relatives to stay with, we move to the evacuation center during flooding." (INT_013, Aguilar, January 6, 2026)

A smaller group of respondents with disabilities, 13 respondents (15.12%), reported relocating to temporary shelters. This represents the least common option among the three relocation sites.

Overall, the findings suggest that evacuation centers often serve as a last option rather than the first choice for respondents with disabilities. Many families prefer to stay with relatives or friends because these arrangements provide familiar surroundings, personal support, and a stronger sense of safety. This suggests that evacuation centers become a fallback option when seeking shelter with one's family or friends is to no avail. One respondent with disabilities expressed this clearly:

"We only go to the evacuation center when there is really nowhere else to stay."

(INT_009, Aguilar, January 5, 2026)

In practical terms, these results show that disaster response in Central Pangasinan depends heavily on family and community support networks. Strengthening disaster preparedness for respondents, with disabilities, therefore, requires not only improving evacuation centers but also recognizing the important role of social capital—relatives neighbors, and local communities in providing immediate shelter during emergencies.

Early Warning and Disaster Preparedness Among Persons with Disabilities in Central Pangasinan

Persons with disabilities face several barriers to early warning access

The results show that many respondents with disabilities face multiple barriers when trying to receive and act on early warning information in Central Pangasinan (Fig. 28; Source Table 23: Appendix D: Extended Tables & Source Tables). The most commonly reported barrier is the use of warning formats that are difficult to access or understand. A total of 69 out of 86 respondents with disabilities (80.23%) reported that warning messages are not always provided in forms suitable for their needs, such as clear audio, visual signals, or simple language.

Mobility difficulties were the second most frequently reported barrier. A total of 61 respondents with disabilities(70.93%) reported challenges related to moving quickly or safely during emergencies. These difficulties can make it harder to respond to warnings, especially when evacuation requires traveling through flooded roads, uneven terrain, or crowded areas.

More than half of respondents with disabilities, 46 respondents (53.49%), reported relying on other people to help them understand warning messages. This means that many depend on family members, neighbors, or community leaders to explain instructions or confirm whether evacuation is necessary.

Figure 28. Barriers to Early Warning Access

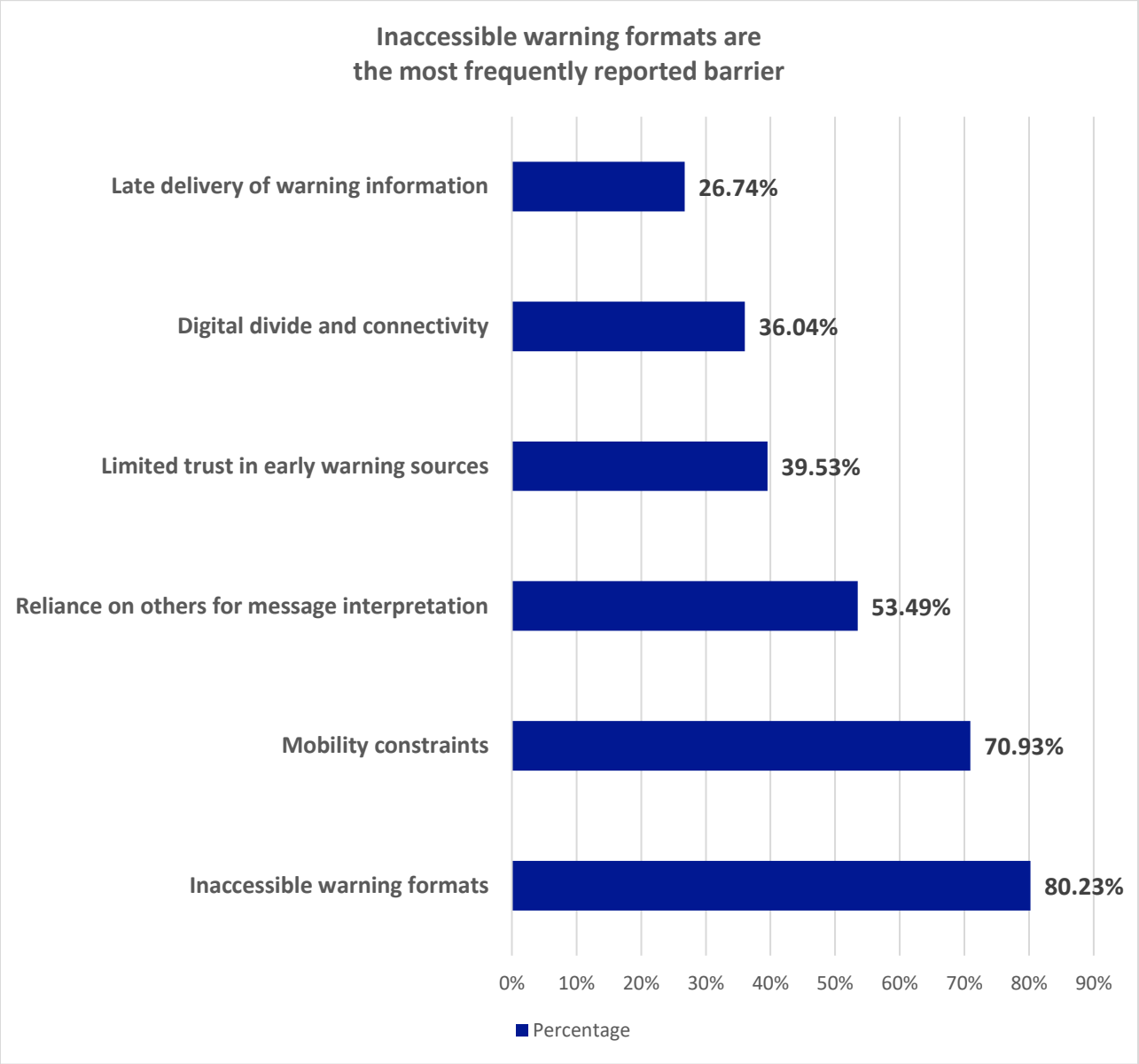


Figure 28. This chart identifies the main barriers to accessing early warning information among Persons with Disabilities in Central Pangasinan, Philippines. *(Source: Survey of Persons with Disabilities in Central Pangasinan, 2026)*

As further gleaned in Fig. 28, other barriers were reported less frequently but remain important. A total of 34 persons with disability respondents (39.53%) reported limited trust in warning sources, meaning they may hesitate to act immediately when warnings are issued.

Digital divide and connectivity problems were reported by 31 respondents (36.04%), showing that not all households have reliable access to mobile phones or internet services. Late delivery of warnings was reported by 23 respondents (26.74%), indicating that some people receive information only after conditions have already become dangerous.

Overall, the findings show that early warning challenges for respondents with disabilities are not caused by a single problem but by a combination of communication, mobility, and information barriers. These barriers can delay response time and increase risk during disasters, highlighting the need for warning systems that are accessible, timely, and easy to understand for all persons with disabilities.

In the following section, I look at each barrier one by one, using survey data, policy documents, and interview stories to explain how these challenges affect early warning access for respondents with disabilities in Central Pangasinan.

Barriers for Persons with Disabilities in Central Pangasinan

Barrier 1: Most respondents with disabilities cannot fully use early warning information because the formats are not accessible

Survey findings indicate that 69 out of 86 respondents (80.23%) identified the inaccessibility of early warning formats as a significant barrier to receiving and understanding warning messages (Figure 28; Source Table 23: Appendix D: Extended Tables & Source Tables). This is strongly corroborated by responses to related survey items assessing the accessibility and usability of early warning information.

As shown in the accessibility assessment in Figure 29 (Source Table 24: Appendix D: Extended Tables & Source Tables), only 11 respondents (12.79%) reported that risk information was accessible in a format they could understand, while a substantial majority, 69 respondents (80.23%), indicated that information was not accessible, and an additional 6 respondents (6.98%) reported that accessibility was only partial. This only shows that the issue of format accessibility is a major concern that reflects a systemic limitation in the design and delivery of early warning messages.

Figure 29. Disability Accessibility of Early Warning Information

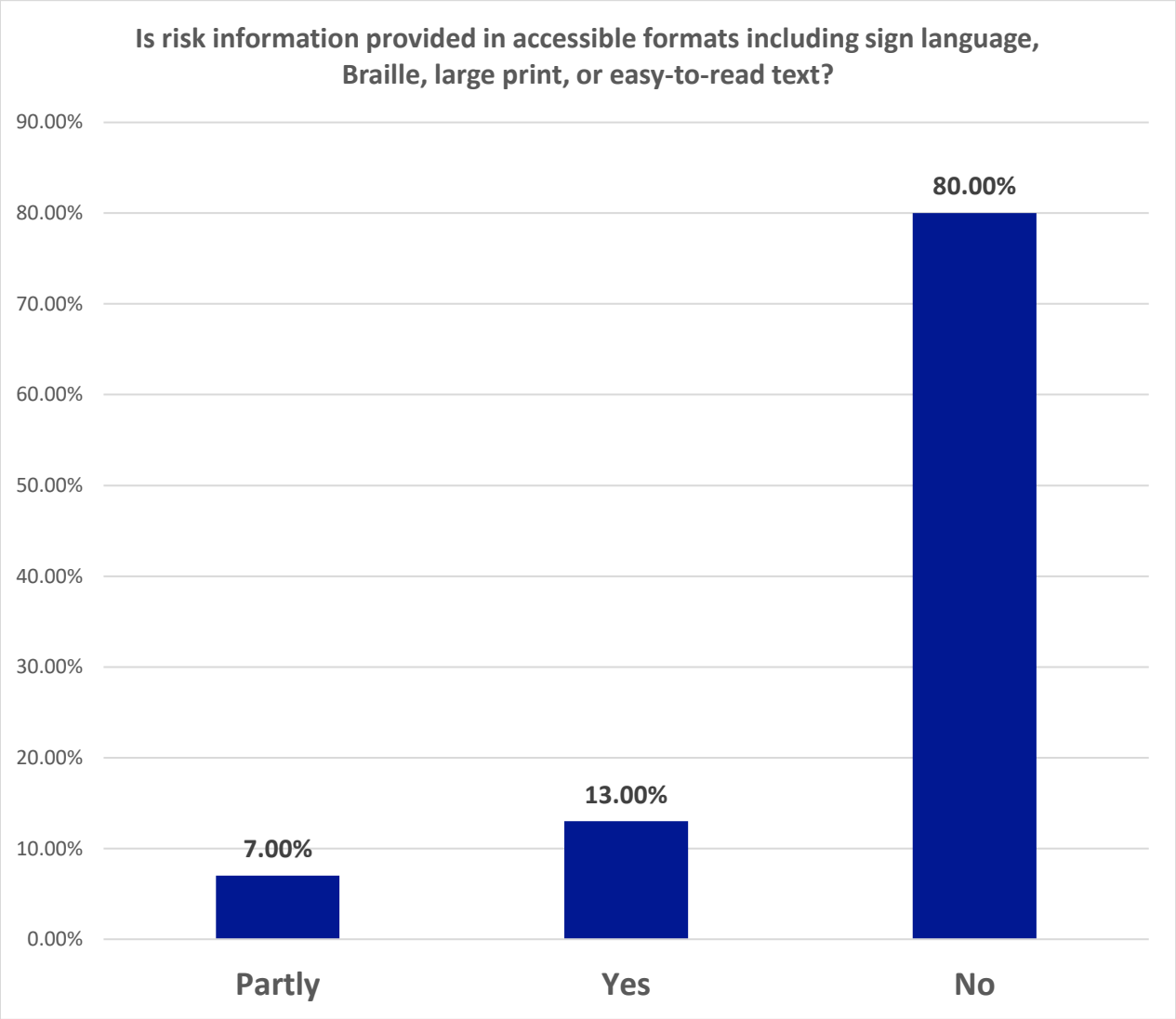


Figure 29. Participant reported perceived accessibility of early warning information formats. Overwhelmingly, respondents indicated early warning information was not accessible. *(Source: Survey of Persons with Disabilities in Central Pangasinan, 2026)*

The findings in Figure 29 are further reinforced by respondents lived experiences. More than eight out of ten respondents with disabilities (83.72%) reported having difficulty receiving early warning information in the past (see Figure 30), indicating that communication challenges are not isolated incidents but recurring barriers during emergencies. The convergence of these findings suggests that the high frequency of reported barriers is closely associated with persistent challenges in message accessibility and comprehension.

Figure 30. Experience in Accessing Early Warning

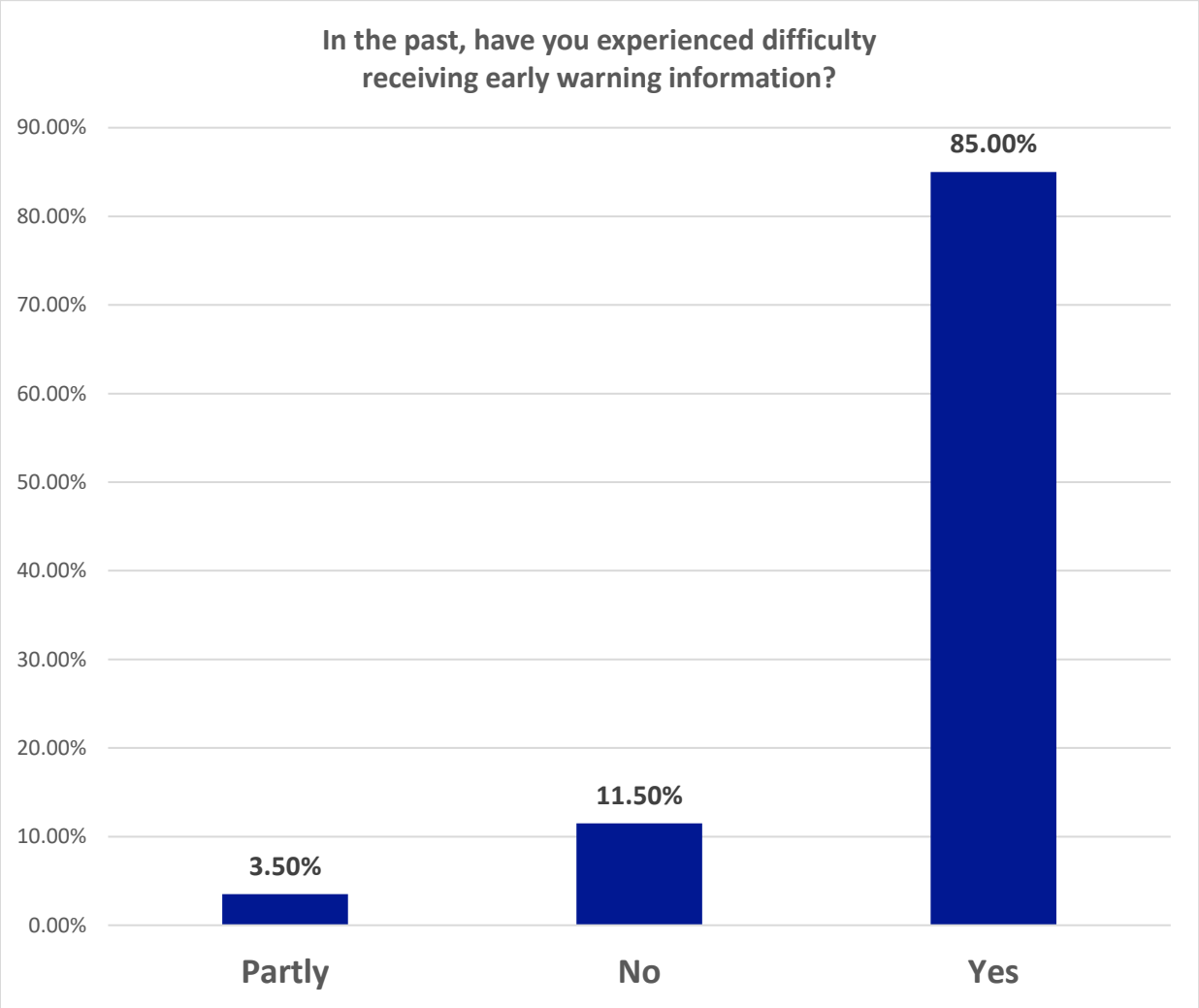


Figure 30. Experience of persons with disabilities in accessing early warning information..

(Source: Survey of Persons with Disabilities in Central Pangasinan, 2026)

Evidence from the policy review points in the same direction. National disaster and climate documents in the Philippines show only limited integration of disability-sensitive early warning provisions, suggesting that accessibility is often recognized in principle but not consistently implemented in practice. Across national climate and disaster policy instruments, disability inclusion in early warning systems in the Philippines received an overall mean rating of 0.67, indicating limited integration of disability-sensitive provisions (see Table 12 and Figure 11). In particular, the Nationally Determined Contribution (NDC) and Voluntary National Review (VNR)

of the Philippines were rated 0 (absent) in terms of disability inclusion in early warning systems, while climate and disaster laws and plans received a rating of 1 (partial inclusion) (see Appendix 2A, Supplementarym Table for Content Analysis).

Interview narratives help explain how these barriers occur in everyday situations. Several respondents described receiving warnings through barangay loudspeaker announcements but struggling to understand the message because it relied mainly on sound. One respondent shared:

> *"Sometimes there is an announcement in the barangay using a megaphone. I still need to ask my neighbor what the warning means." (INT_005, Bugallon, January 1, 2026)*

Another respondent with disabilities described learning about hazards only after others explained the situation:

> *"When they make announcements, I cannot immediately hear or understand them. If there is no text message or clear written message, I only learn about the situation when other people tell me." (INT_006, Aguilar, January 1, 2026)*

The survey results, policy review, and interview accounts point to the same conclusion: early warning systems are present in the community, but the way messages are delivered does not always match the communication needs of respondents with disabilities. When warnings rely on a single format—such as sound-only announcements—many individuals must depend on others to interpret the information, which can delay response and increase risk during fast-moving disasters like flooding or typhoons.

In simple terms, the message is clear: warnings must be delivered in ways that everyone can understand. Using multiple formats—such as clear text messages, visual alerts, sign language interpretation, and easy-to-read communication—can help ensure that respondents with disabilities receive timely information and can act quickly to stay safe during emergencies.

Barrier 2. Many respondents face mobility challenges that limit their access to early warning information

The findings show that mobility constraints are a major barrier to early warning access among respondents with disabilities in Central Pangasinan. A total of 61 out of 86 respondents with disabilities (about 71%) (Source Table 23: Appendix D: Extended Tables & Source Tables, Figure 28) reported difficulty accessing warning information because of mobility limitations, especially when warnings are shared through in-person meetings or community gatherings at the barangay level.

This barrier is closely connected to the functional characteristics of the respondents. Nearly half of respondents with disabilities (about 44%) reported difficulty walking or climbing steps, which can make it harder to attend meetings, travel to information centers, or respond quickly when warnings are issued. In communities where disaster information is often shared through face-to-face announcements or local assemblies, limited mobility can directly reduce opportunities to receive timely updates and preparedness guidance.

Research from other disaster-prone settings shows similar patterns. Studies have found that persons with mobility impairments often face obstacles such as limited transportation, inaccessible infrastructure, and long distances to community facilities, all of which can delay access to disaster information and services (c).

Interview narratives from respondents with disabilities illustrate how these challenges play out in everyday situations. One respondent explained:

> *"When there is a meeting in the barangay about typhoons or flooding, I cannot attend immediately because it is far and difficult to walk. I still have to wait for transportation or someone to accompany me before I can participate." (INT_008, Aguilar, January 1, 2026)*

The foregoing experience shows that mobility is not only a physical issue but also an information access issue. When disaster warnings depend heavily on physical presence such as

attending meetings or traveling to community centers respondents with mobility limitations may receive information later than others or miss it entirely.

In practical terms, this finding highlights the need to bring information closer to people rather than expecting people to travel to information. Providing home-based communication, accessible transportation support, and multiple communication channels such as mobile messages, community volunteers, or neighborhood alerts can help ensure that respondents with disabilities receive early warning information on time, even when movement is difficult.

Barrier 3. Many persons with disabilities heavily rely on others for interpreting early warning information

Another important barrier relates to the need for assistance in understanding warning messages. For many persons with disabilities, access to early warning does not end with receiving information; it also depends on whether the message can be interpreted correctly and acted upon in a timely manner. Survey findings indicate that 46 out of 86 respondents (53.49%) reported reliance on others to interpret early warning messages, highlighting the central role of interpersonal support in accessing and understanding risk information (see Source Table 23: Appendix D: Extended Tables & Source Tables, also Figure 28). This finding is expected as this is further reflected in patterns of information sourcing within households and communities. For instance, 62 out of 86 respondents (72%) identified relatives as a primary source of early warning information, suggesting that family members often function as intermediaries of early warning information for persons with disabilities (see Figure 31; Table 25: Appendix D: Extended Tables & Source Tables).

Interview narratives from persons with disabilities in Central Pangasinan provide a clearer picture of how mobility limitations shape reliance on others when responding to early warning messages. Respondents described situations in which physical difficulty in moving quickly, traveling long distances, or navigating uneven terrain delayed their ability to seek information or reach safe locations. In many cases, understanding and acting on warnings depended not only on receiving the message but also on the availability of family members or neighbors who could assist with movement and decision-making.

For example, one participant with a mobility impairment explained how limited physical capacity requires waiting for assistance before taking action:

> *"When there is a text or announcement about a typhoon, I cannot immediately understand what action to take. Usually, I wait for my child or spouse to explain whether it is already necessary to evacuate." (INT_009, Aguilar, January 5, 2026)*

This account illustrates how mobility-related dependence on others can slow decision-making and reduce the time available to prepare for evacuation. Other participants emphasized the physical effort required to attend community meetings or reach evacuation centers, particularly when transportation is limited. One respondent noted:

> *"It is not easy to go to the barangay hall when there is a meeting or announcement. The distance is far to walk, and I need transportation or someone to accompany me to get there." (INT_010, Aguilar, January 5, 2026)*

The foregoing experiences show how physical distance and lack of transport interact with mobility limitations to restrict participation in community-based warning activities.

In addition, a respondent living in a more remote area described how road conditions and terrain further complicate evacuation for persons with mobility impairments:

> *"It is difficult for me to walk, especially when the road is muddy or flooded. Even if there is already a warning, I cannot leave immediately without assistance." (INT_006, Bugallon, January 1, 2026)*

These experiences show that flooding and poor road conditions can make it harder for respondents with disabilities to move during disasters. These experiences confirm that mobility challenges are a major barrier to responding to early warnings in Central Pangasinan. In simple terms, mobility is not just about physical ability—it is also about distance, road conditions, and the need for help from others.

These findings are consistent with previous studies demonstrating that persons with disabilities often rely on family members, neighbors, or caregivers to interpret and respond to disaster information, particularly when early warning systems are not designed to be universally accessible (Neil, 2023; Steelfisher et al., 2022). Such dependence reflects structural gaps in communication and mobility support systems, where the absence of accessible formats, transportation, or assisted evacuation mechanisms shifts the burden of interpretation and response to immediate social networks.

At the same time, research suggests that reliance on informal networks and social capital can serve as an important coping mechanism that enhances community resilience during disasters and crises (Loebach & Stewart, 2015; Aldrich & Meyer, 2015). Evidence from disaster contexts further illustrates the critical role of social capital in enabling survival and recovery. In their qualitative study of families affected by Hurricane Katrina in New Orleans, Louisiana, Hawkins and Maurer (2010) found that residents—particularly those with limited economic resources—relied heavily on different forms of social capital to survive the disaster, relocate, and rebuild their lives. Close interpersonal ties, or bonding social capital, were especially important for providing immediate assistance during the emergency, while broader networks, including community organizations and institutions (bridging and linking social capital), supported longer-term recovery and community rebuilding.

In the context of Central Pangasinan, similar dynamics are evident in the reliance of persons with disabilities on family members and neighbors to interpret warnings, provide physical assistance, and facilitate evacuation. In many rural and tightly knit communities—such as the barangays in Central Pangasinan—family members and neighbors often function as the first line of assistance, helping persons with disabilities understand warnings, prepare essential items, and mobilize evacuation support.

Barrier 4. Some respondents with disabilities wait to confirm warnings because they are not fully confident in the source of the information

Access to early warning information is shaped not only by the availability of communication channels but also by the degree of confidence that individuals place in the sources of those

messages. When warning systems are perceived as unreliable, delayed, or insufficiently responsive to community needs, individuals may rely more heavily on alternative sources of information or delay protective action.

The findings show that trust in warning messages plays an important role in how quickly respondents with disabilities act during emergencies. About 34 out of 86 respondents with disabilities (around 40%) reported limited trust in formal early warning sources, meaning they sometimes hesitate to respond immediately when official warnings are issued (see Figure 28 and Source Table 23: Appendix D: Extended Tables & Source Tables).

This pattern becomes clearer when looking at where persons with disability respondents usually get their information. Most rely on familiar and easily accessible sources, such as social media (89.53%), television (74.42%), and relatives (72.09%).

Figure 31. Sources of Early Warning Among Persons with Disabilities in Central Pangasinan

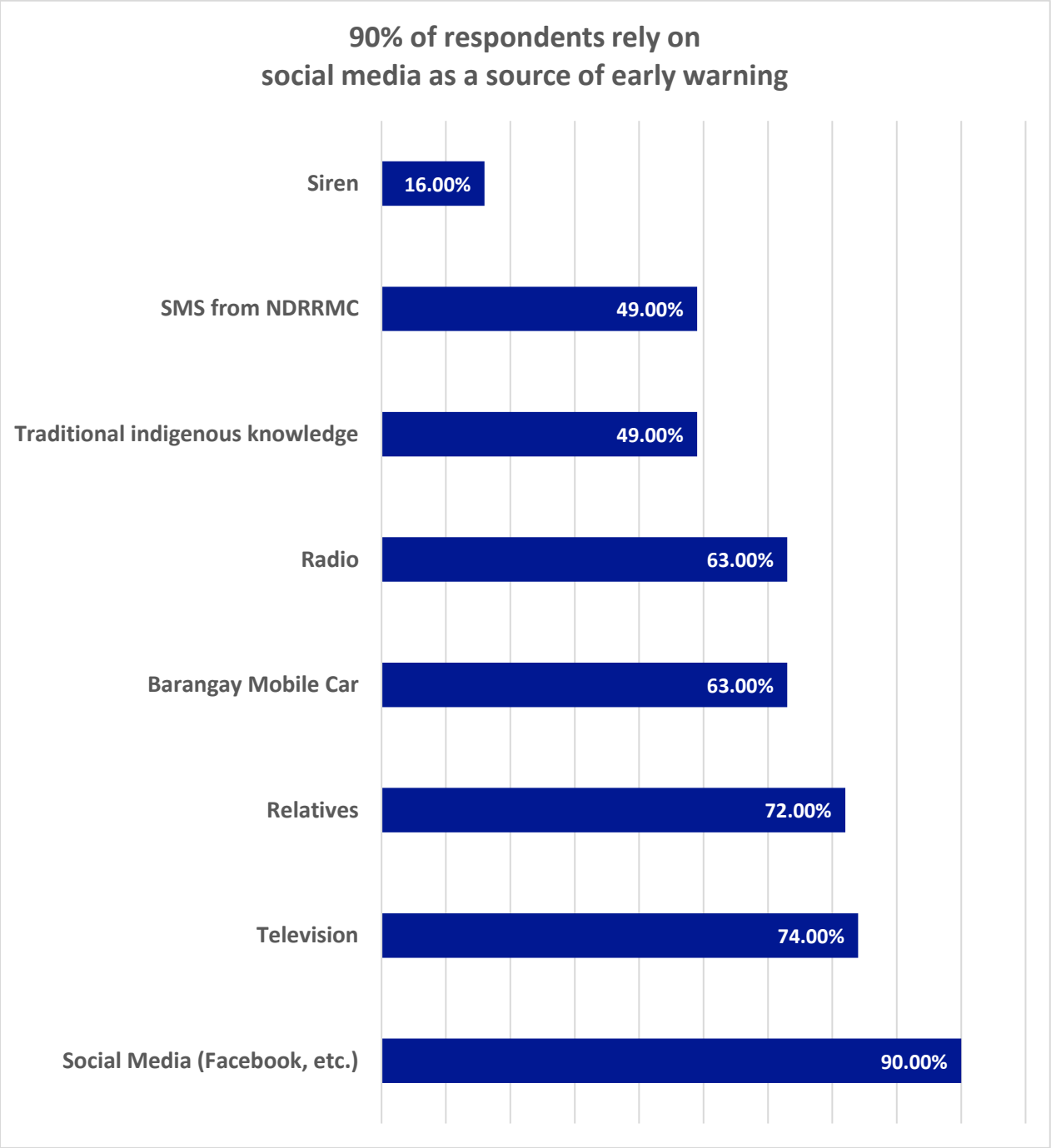


Figure 31. Source of early warning reported by survey respondents in Central Pangasinan.

(Source: Survey of Persons with Disabilities in Central Pangasinan, 2026)

Community-based channels like barangay mobile cars and radio were also commonly used, while government text alerts and sirens were used less frequently (see Source Table 25: Appendix D: Extended Tables & Source Tables).

These results suggest that respondents with disabilities tend to trust information that is fast, easy to understand, and confirmed by people around them. When official messages are unclear or delayed, many individuals look for confirmation from neighbors, family members, or social media before acting.

Interview stories from persons with disability respondents help explain this behavior. One participant shared:

> *"When there is a warning from the government, I do not act immediately unless I also see or hear the same information from other people or on Facebook… I feel more confident when several sources say the same thing." (INT_007, Aguilar, January 1, 2026)*

This experience shows a process of information verification, in which persons with disabilities seek confirmation from multiple sources before acting on a warning. Such behavior is consistent with the concept of milling, where individuals interact with others and gather additional information to reduce uncertainty and determine appropriate protective action. Similar patterns were described by other respondents who emphasized the importance of confirming warnings through everyday community interactions and environmental cues:

> *"When the rain keeps falling and neighbors say the river level is rising, that is when we start preparing. We do not rely on just one warning—we also look at what is happening around us." (INT_002, Bugallon, December 27, 2025)*

In this case, reliance on social media, neighbors, and environmental observation suggests that trust in warning messages is reinforced through social and situational confirmation rather than immediate acceptance of official alerts. This pattern aligns with disaster research showing that individuals often delay protective action after receiving a warning because they engage in

milling, or the process of seeking additional information and confirmation from others to make sense of uncertain situations (Aguirre et al., 1998; Drabek & McEntire, 2003; Lindell & Perry, 2012). Milling is particularly common in flood-prone communities, where residents draw on both social communication and the lived experience of local hazards before initiating protective behavior. Another respondent explained how this cautious approach shapes evacuation decisions:

> *"When the warning is not clear, we wait for confirmation from the barangay or from other people before evacuating." INT_012, Aguilar, January 6, 2026)*

These experiences show a simple but important pattern: people often double-check warnings before acting. This is especially common in flood-prone communities, where residents rely on both official information and everyday observations such as rising water levels or neighbors' advice before deciding to evacuate.

Studies have shown that members of disability communities may develop skepticism toward government communication systems due to previous negative experiences, perceived neglect, or ineffective communication during past disasters (Steelfisher et al., 2022; Lindell & Perry, 2012;Engelman, 2012). Other studies have also documented how marginalized populations may rely more heavily on peer networks and informal communication channels when institutional trust is limited (de Onís et al., 2020; Trujillo-Falcón et al., 2023).

In practical terms, limited trust can slow down response time during disasters. Even when warnings are available, people may delay action until they feel confident that the information is correct. For respondents with disabilities, this delay can increase risk, particularly during fast-moving hazards like flooding or typhoons.

The key lesson from this finding is straightforward: early warning systems must not only send messages quickly—they must also build trust. Clear, consistent, and reliable communication from authorities, combined with community engagement and accessible information, can help ensure that respondents with disabilities feel confident enough to act immediately when danger is approaching.

Barrier 5. Early warnings are often received within short timeframes before disasters

Timeliness is a critical factor in determining whether early warning information can be translated into protective action. Even when warning messages are received, insufficient lead time may constrain the ability of persons with disabilities to prepare, mobilize assistance, or evacuate safely.

A total of 23 out of 86 respondents with disabilities (26.74%) reported that they received early warning information too late to prepare properly (see Figure 28 and Source Table 26: Appendix D: Extended Tables & Source Tables). Most respondents with disabilities do receive warnings, but often with only a short amount of time before the disaster arrives.

Figure 32. Respondent Reported Lead Time for Early Warning Before Impact

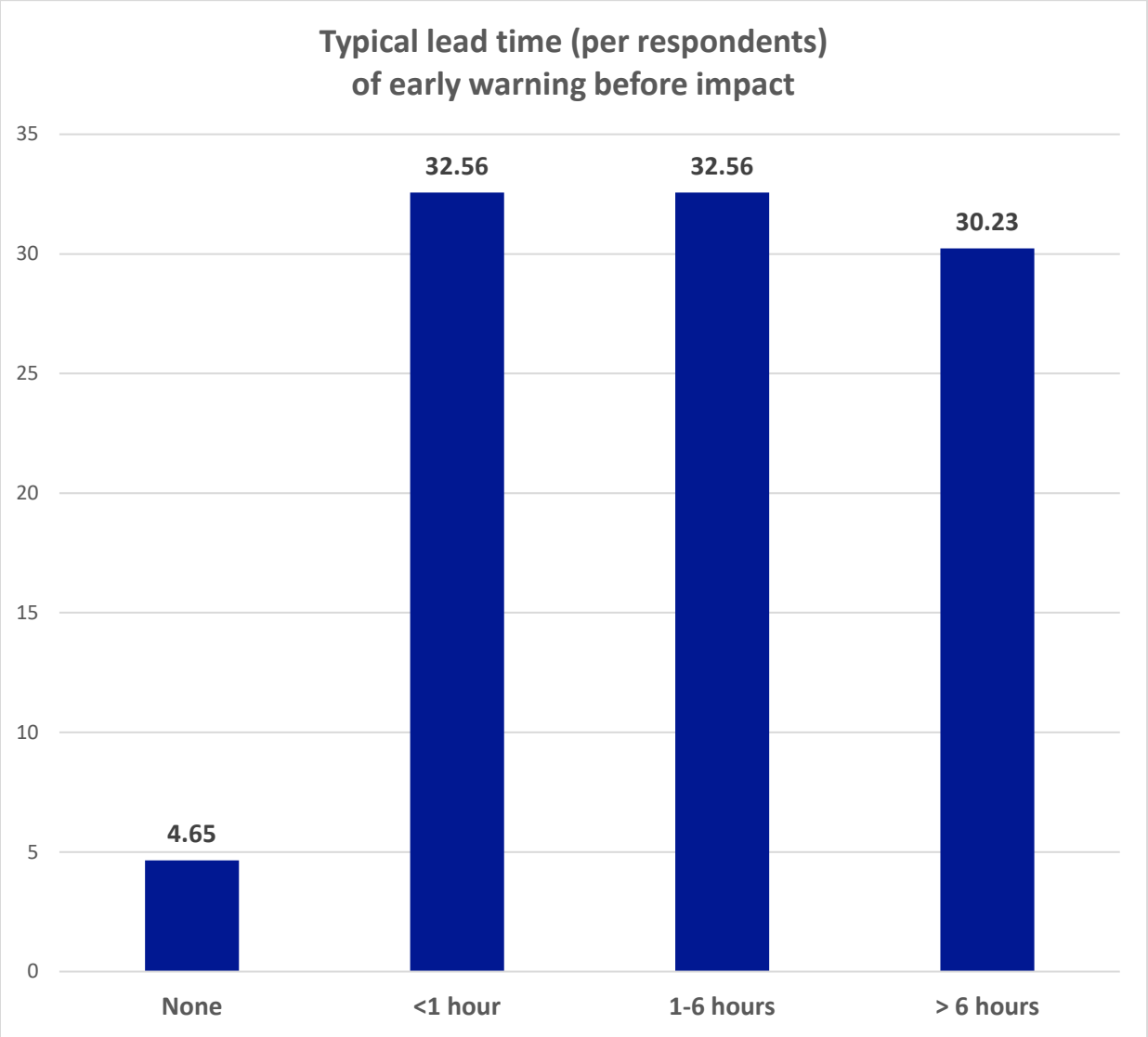


Figure 32. Lead time reported by respondents for receipt of early warning information before a disaster impacted their area. *(Source: Survey of Persons with Disabilities in Central Pangasinan, 2026)*

About one-third (32.56%) reported receiving warnings less than one hour before the event, and another one-third (32.56%) received warnings one to six hours in advance. Only 30.23% reported receiving warnings more than six hours before the disaster, while a small number (4.65%) said they received no warning at all. (Figure 32). These results suggest that warnings are generally available, but the time provided is often not enough—especially for respondents

with disabilities who may need extra time to prepare, gather belongings, arrange transportation, or seek assistance. In communities where flooding can happen quickly, even a short delay in receiving information can make evacuation more difficult and risky.

Interview stories from respondents with disabilities clearly show how short lead times affect real-life decisions. One respondent explained:

> *"Sometimes we receive warnings, but the flood or typhoon is already near when the message arrives. There is not enough time to prepare or find someone to help me evacuate." (INT_001, Bugallon, December 27, 2025)*

Other respondents with disabilities described confusion caused by mixed or unclear instructions from different authorities:

> *"There are times when the barangay and other officials give different instructions about when to evacuate. Because of this, we become confused about whether we should start preparing or wait for another announcement." (INT_005, Bugallon, January 1, 2026)*

These experiences highlight that early warnings must be both timely and clear enough to act. When warnings arrive too late—or when messages are inconsistent— respondents with disabilities may struggle to make timely decisions, especially if evacuation requires assistance or transportation.

Existing studies similarly emphasize that delays in disseminating accessible warnings can reduce confidence in warning systems and limit the effectiveness of emergency response. Research has shown that insufficient institutional capacity to deliver alerts across multiple communication channels and formats can slow message dissemination and reduce preparedness among persons with disabilities (Villarreal et al., 2025; Dutta & Basnayake, 2018). Other studies have found that delayed or unreliable alerts may lead individuals to question the credibility of warning systems, particularly when messages arrive too late to support timely protective action

(Tannenbaum-Baruchi et al., 2014). All these show the importance of timely, coordinated, and inclusive warning dissemination in strengthening early warning effectiveness.

In simple terms, the lesson from this finding is clear: early warning must come early. For respondents with disabilities, a few extra hours of warning time can make the difference between a safe evacuation and a dangerous delay. Strengthening coordination between authorities, improving communication systems, and ensuring timely delivery of warnings are therefore essential steps in building safer and more inclusive disaster preparedness systems.

Barrier 6. Limited access to phones, internet, and electricity can delay early warning information for some respondents with disabilities

Access to early warning information increasingly depends on the availability and reliability of communication technologies. For persons with disabilities, the absence of personal communication devices—or inconsistent access to them—can restrict the timely receipt of warning messages, particularly when alerts are disseminated through digital platforms.

Thirty- one (31) out of 86 respondents (36.04%) identified lack of access to communication devices, digital and power connectivity as a barrier to accessing early warning information (see Figure 28 and Source Table 23: Appendix D: Extended Tables & Source Tables). This partly explains the continued reliance by respondents with disabilities on traditional broadcast media as primary information sources. A substantial proportion of respondents reported using television (74.42%) and radio (62.79%) as key channels for receiving warnings (Figure 31; Source Table 25: Appendix D: Extended Tables & Source Tables), suggesting that conventional communication systems remain essential in contexts where digital access is uneven.

Even when households own a mobile phone, access to warning information is not always guaranteed. Interview stories revealed that phones are sometimes shared among family members or taken to work, which can delay the receipt of urgent messages. One respondent with disabilities explained:

> *"We have a mobile phone at home, but my spouse uses it for work. When there is a warning, I sometimes learn about it late because the phone is not with me." (INT_010, Aguilar, January 5, 2026)*

This experience shows that the digital divide is not only about technology, but also about daily life and household realities. In lower-income households, devices are often shared, electricity or signal may be unstable, and access to communication tools may depend on who is at home at the time. These everyday conditions can delay the flow of information, especially for respondents with disabilities who depend on timely updates to prepare or evacuate safely.

In practical terms, this finding implies that local governments must employ the principle of redundancy when disseminating early warning. By redundancy, I mean using multiple ways of disseminating early warning across communication channels—not only digital platforms but also radio, television, community announcements, and person-to-person communication. Redundancy is widely recognized as a core feature of effective early warning systems, as it enhances reliability and ensures continuity of communication during emergencies (López et al., 2020; Dias et al., 2024).

A redundant early warning system ensures continuous and multi-layered detection and alerting by combining primary communication technologies such as internet and cellular networks with backup mechanisms, including sirens, radio broadcasts, satellite communication, and alternative power sources. These overlapping channels enable warnings to reach communities even when one system becomes unavailable due to infrastructure damage, power outages, or signal disruption during disasters (Nguyen, 2025). In practice, integrating diverse communication channels reduces gaps in warning delivery and improves the likelihood that risk information will reach affected populations, including persons with disabilities and residents of remote or resource-constrained areas (Dias et al., 2024; López et al., 2020).

This combined approach helps ensure that respondents with disabilities receive timely information, even when technology is limited. Under the SFDRR 2015–2030, early warning systems should be accessible, affordable, and tailored to the needs of populations in remote or resource-constrained settings (UNDRR, 2015).

Coping Strategies of Persons with Disabilities in Accessing Early Warning

Figure 33 (also Source Table 27: Appendix D: Extended Tables & Source Tables) presents four coping strategies used by 86 respondents with disabilities when facing barriers to accessing early warning information. The data indicate that respondents employ a range of strategies to manage barriers to early warning access, with most relying on a combination of personal initiative and social support.

The most reported strategy was using multiple information channels to verify warning information, reported by 74 respondents (86.05%). This suggests that the majority of respondents actively cross-check warnings through different sources, such as radio, text messages, neighbors, and community announcements, to confirm the accuracy and urgency of risk information.

A similarly high proportion of respondents reported seeking assistance from family members and friends, with 62 respondents (72.09%) identifying this as a key strategy. This finding indicates the importance of interpersonal support networks in facilitating understanding of warnings and enabling timely protective action, particularly for persons with disabilities who may face communication or mobility constraints.

Figure 33. Respondent Coping Strategies When Facing Barriers to Early Warning

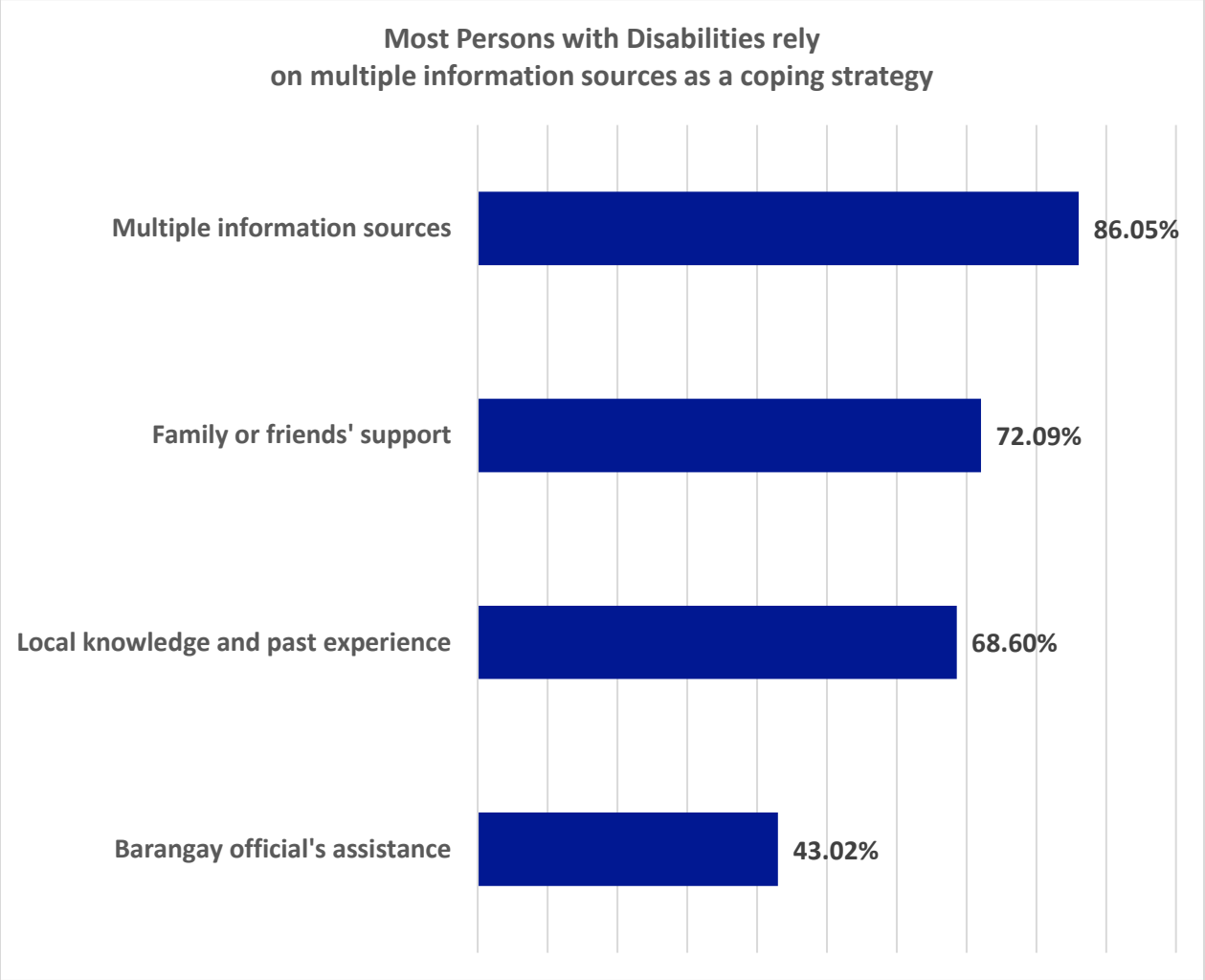


Figure 33. Coping strategies used by Persons with Disabilities when facing barriers to accessing early warning information in Central Pangasinan, Philippines *(Source: Survey of Persons with Disabilities in Central Pangasinan, 2026)*

Another widely used strategy involves drawing on local knowledge and past experience for preparedness, reported by 59 respondents (68.60%). This reflects the role of experiential learning in shaping disaster response, where individuals rely on familiar environmental cues such as rising river levels, prolonged rainfall, or past flood patterns to anticipate risk and prepare accordingly.

In contrast, a smaller but still substantial proportion of respondents reported relying on barangay officials for information and support, with 37 respondents (43.02%) identifying this strategy. While local government remains an important source of early warning communication, the lower proportion suggests that community members often supplement official information with informal networks and personal judgment.

In general, the distribution shows that respondents do not rely on a single source of information but instead adopt multiple, overlapping strategies to navigate early warning barriers. The widespread use of multiple information channels suggests a pragmatic response to uncertainty in warning communication. In hazard-prone environments where information may be delayed, unclear, or inaccessible, cross-checking messages through different sources becomes a critical risk management strategy. This behavior reflects an adaptive form of information-seeking that enhances confidence in warnings and reduces the likelihood of misinterpretation.

I will discuss each coping strategy in turn.

Coping Strategy 1. Many respondents with disabilities check information from several sources before deciding what to do on early warning received

When formal warning systems are perceived as insufficient, delayed, or unclear, individuals often seek confirmation from different sources before taking protective action. In this study, the most widely reported coping strategy was the use of multiple information channels to verify early warning information.

A total of 74 out of 86 respondents with disabilities (86.05%) reported that they use more than one channel—such as television, radio, social media, or advice from relatives and neighbors—to confirm whether a warning is accurate and urgent.

This behavior reflects an active effort by respondents with disabilities to reduce uncertainty before taking action. Instead of relying on a single message, many people compare information from different sources to make sure the situation is real and serious. This finding is closely linked to earlier findings in this report showing strong reliance on diverse communication

channels, particularly social media, television, and family members as trusted sources of information.

In simple terms, respondents with disabilities create their own safety net by checking information in more than one place. When the same message appears across several sources, people feel more confident that the warning is reliable and worth acting on. Using multiple communication pathways is widely recognized as a key feature of effective early warning systems because it improves reliability during emergencies. During my interviews, respondents actively compare information from different channels before making decisions. One participant described the process of verifying warnings through several sources:

> *"When there is news about a typhoon or flood, I do not act immediately until I hear the same information from other places or from television and radio. I feel more confident when the information is consistent. (INT_007, Aguilar, January 1, 2026)*

This behavior shows careful decision-making rather than hesitation. Respondents with disabilities are not ignoring warnings; instead, they are making sure the information is correct before acting. In communities where warnings may arrive at different times or through different formats, checking several sources helps people understand the situation more clearly and prepare more safely. This behavior reflects a process commonly described in disaster research as milling, where individuals seek additional information and confirmation from multiple sources to make sense of uncertain situations before initiating protective action (Lindell & Perry, 2012). Previous studies have shown that people rarely act on the first warning they receive; instead, they compare messages from different channels and consult trusted networks to validate the information (Mileti & Sorensen, 1990; Drabek, 1986).

Coping Strategy 2. Many respondents with disabilities rely on family members and neighbors for help in understanding warnings and preparing for disasters

Another common way in which persons with disabilities manage barriers to early warning access is by relying on family members and close social networks for assistance. In contexts

where communication formats are difficult to interpret, mobility is limited, or warning messages are received late, support from trusted individuals becomes an essential mechanism for accessing and acting on risk information.

Survey results show that 62 out of 86 respondents (72.09%) reported seeking assistance from family members or friends when facing difficulties in accessing early warning information (see Source Table 27: Appendix D: Extended Tables & Source Tables, Figure 33). This reliance on interpersonal support is consistent with broader patterns observed in the survey. It was mentioned elsewhere in this report that 72.09% of respondents identified relatives as a primary source of early warning information, while 54.65% reported relocating to a relative's home during displacement (see Tables 22 and 25). These data suggest that family networks serve not only as information intermediaries but also as critical providers of shelter and logistical support during emergencies.

Interview stories from respondents with disabilities clearly show how this support works in daily life. One respondent explained how a family member helps interpret warning messages and prepare for evacuation:

> *"When there is a warning about a typhoon or flood, my child helps explain the message and prepare our belongings. He also takes care of things when we need to evacuate." (INT_009, Aguilar, January 5, 2026)*

This experience reflects the importance of social support systems in disaster preparedness, particularly for individuals who require assistance in interpreting information or moving to safer locations. Similar patterns emerged in other interviews, where respondents described relying on neighbors and extended family members for timely information and physical assistance during emergencies:

> *"When there is heavy rain or flooding, my neighbor immediately informs me if it is time to prepare or evacuate. They also help me leave the house when the water level rises." (INT_004, Bugallon, December 28, 2025)*

These experiences show that disaster preparedness is often a shared effort rather than an individual task. In many communities, respondents with disabilities depend on trusted people nearby to interpret information, provide reassurance, and assist with movement during emergencies. Neighbors act as early informants and mobility support providers during rapidly evolving hazard situations. Social networks can provide rapid access to information, emotional reassurance, and physical assistance, especially in resource-constrained settings where formal support systems may be limited. Social capital is best shown among Filipinos during disasters. This is part of the Filipino culture of "pakikipag-kapwa" (fellowship or human connectedness) 2 and "bayanihan" (solidarity).3

Another respondent emphasized how social networks enable coordinated preparedness within households and communities. Some respondents with disabilities also described how relatives living in upstream areas act as informal warning sources. When heavy rainfall occurs upstream, they call family members downstream to alert them about possible flooding.

One participant explained:

> *"When there is heavy rain in the upstream areas of the river, our relatives immediately call to tell us to prepare. We know that when the water rises, flooding will soon follow here." (INT_002, Bugallon, December 27, 2025)*

In simple terms, family and community relationships act as an informal early warning system. These social ties help spread information quickly, provide practical assistance, and support timely evacuation, especially in places where formal services may be limited. These findings are

[2] Pakikipagkapwa is a core Filipino relational value that denotes a sense of shared self with others, characterized by empathy, mutual respect, and an ethical obligation to engage with others as fellow human beings that provides a "sense of security and continuity of life". (del Castillo and Eder, 2023, 365)

[3] Bayanihan is a traditional Filipino concept of communal unity and cooperation, characterized by voluntary collaboration and mutual aid among community members to support one another, particularly during crises or shared challenges.

consistent with a substantial body of literature demonstrating that social capital, particularly trust and reciprocity within close networks, enhances information sharing and collective response during disasters (Aldrich, 2011; Coleman, 1988; Putnam, 2001). Trust among community members has been shown to improve the circulation of risk information and strengthen individuals' capacity to act on warnings, thereby contributing to improved preparedness and resilience (Hardin, 2002; Kawachi et al., 1997; Rothstein & Stolle, 2001). Social capital can also reinforce both risk perception and self-efficacy by providing emotional reassurance and practical assistance during emergencies (Yanquiling, 2024; Hudson et al., 2020). In the context of disability-inclusive disaster preparedness, these dynamics are particularly important, as family members and trusted peers often serve as intermediaries who translate warnings, provide mobility assistance, and coordinate evacuation decisions.

However, the literature also cautions that social capital may produce ambivalent or even inhibiting effects on preparedness behavior. For example, studies in Austria found that strong social ties increased self-efficacy but reduced perceived risk and household investment in protective measures, suggesting that reliance on social networks can sometimes foster complacency or a false sense of security (Babcicky & Seebauer, 2017). Similarly, other research indicates that communities with high levels of social capital may be less willing to invest in formal mitigation or infrastructure when informal support systems are perceived as sufficient (Zhang et al., 2020). These findings highlight the complexity of social capital as both a resource and a potential constraint in disaster risk reduction.

However, the evidence from this study aligns more closely with the enabling perspective of social capital rather than the inhibiting one. In the case of persons with disabilities in Central Pangasinan, assistance from family members and friends does not appear to substitute for preparedness but instead compensates for structural and communication barriers within the early warning system. Social networks function as practical support mechanisms that bridge gaps in accessibility, rather than as sources of complacency. This distinction is particularly important in resource-constrained and hazard-prone settings, where formal warning systems may not always deliver information in accessible formats or within sufficient lead time.

From a practical point of view, these results suggest that disaster preparedness should build on social trust and social capital. Preparing for disasters is not only about sirens, text messages, or technology—it is also about people helping one another. Training family members, caregivers, and community volunteers to support respondents with disabilities during emergencies can make early warning and evacuation systems more inclusive and more effective. In simple terms, safety comes from both strong systems and strong relationships working together.

Coping Strategy 3. Many respondents with disabilities use their own observations and past experience to prepare for disasters

In situations where formal warning information is delayed, unclear, or difficult to access, persons with disabilities often rely on their own observations and past experiences to guide preparedness actions. Local knowledge developed through repeated exposure to hazards serves as an important source of situational awareness, particularly in communities that regularly experience flooding, typhoons, or landslides.

Survey findings show that 59 out of 86 respondents (68.60%) reported drawing on local knowledge and past experience as a strategy for coping with barriers to early warning access (see Source Table 27: Appendix D: Extended Tables & Source Tables; Figure 33). This behavior is consistent with earlier results indicating that 48.84% of respondents identified traditional or indigenous knowledge as a source of early warning information, suggesting that experiential understanding of environmental signals and past disaster-related experiences complement early warning systems (Source Table 25: Appendix D: Extended Tables & Source Tables, and Figure 31). For many respondents, environmental cues such as rainfall intensity, river level changes, or wind patterns provide early indications of potential hazards, especially when official warnings are received late or not at all.

During my fieldwork, I noticed how respondents translate environmental observations into taking protective action. One participant described how personal experience helps guide early action:

> *"When we notice the river level is rising quickly and the rain continues, we start preparing even without an announcement. From experience, we already know when it becomes dangerous." (INT_011, Aguilar, January 5, 2026)*

This account highlights how local knowledge functions as a form of anticipatory decision-making, enabling individuals to act before formal warnings are issued. Residents frequently rely on everyday environmental indicators as signals of impending hazards. Community members observe the behavior of animals and insects—such as ants, house lizards, frogs, and birds—as practical cues for anticipating heavy rainfall or approaching storms. As one respondent described:

> *"When we notice ants coming out and transferring food or small items, the elders tell us that heavy rain or a typhoon may be coming, so we start preparing." (INT_003, Bugallon, December 28, 2025)*

Among old community members in Aguilar, observing subtle changes in animal behavior remains an important component of everyday risk monitoring. One community member explained:

> *"The elders where we're from say that when the house lizard sounds a bit different and you keep hearing it throughout the day, it could mean a storm is coming. They say it's an old belief, and more often than not it turns out to be true. So for us, there's really no harm in preparing—even if it's just putting things in order or checking the house." (INT_008, Aguilar, January 1, 2026)*

These experiences illustrate how traditional ecological knowledge and intergenerational learning continue to function as locally grounded early warning systems. Instead of waiting passively for official messages, many respondents with disabilities actively monitor their surroundings and prepare based on what they see and remember from past disasters. Another participant highlighted how these observations are integrated with routine environmental monitoring:

> *"We also watch the color of the sky and the intensity of the rain. When the water in the creek or river rises quickly, we know it is time to prepare even before an official warning is issued." (INT_011, Aguilar, January 5, 2026)*

Disaster risk reduction research has long recognized the role of indigenous and experiential knowledge in enhancing community preparedness, particularly in hazard-prone environments (Mercer et al., 2010; Shaw et al., 2009). In Central Pangasinan, as in many parts of the Philippines, these traditional methods of generating and sharing early warning alerts—particularly through direct observation of rainfall patterns, river behavior, and surrounding environmental conditions—remain widely used and trusted alongside formal warning systems. These practices are often passed down from older family members to younger generations.

In hazard-prone areas such as Central Pangasinan, where flooding and typhoons are recurrent features of the local risk landscape, the integration of indigenous knowledge and lived experience strengthens community readiness and supports timely protective action. Drawing on local knowledge and past experience represents an adaptive coping strategy that helps persons with disabilities compensate for gaps in formal warning delivery. When formal warnings and local knowledge work together, communities can respond earlier and more safely to disasters.

Coping Strategy 4. Many respondents with disabilities rely on barangay officials for early warnings and help during emergencies

The findings show that barangay officials play an important role in helping respondents with disabilities receive information and assistance during disasters. A total of 37 out of 86 respondents with disabilities (43.02%) reported that they depend on barangay officials for guidance, updates, and support when they face difficulties accessing early warning information (see Source Table 27: Appendix D: Extended Tables & Source Tables; Figure 33).

This coping strategy reflects the continued importance of local leadership in community safety. Earlier results in this report also showed that barangay mobile cars are commonly used to announce warnings, especially in areas where internet access is limited or electricity is

unreliable. While not as much as a trusted intermediary of early warning, in areas where digital access may be uneven, or warning messages are easily accessible, direct announcements from barangay officials provide a familiar and accessible channel for communicating risk information.

Interview narratives further illustrate how respondents depend on barangay officials to relay warnings and assist with preparedness and evacuation. One participant explained how barangay personnel help ensure that warnings reach households, particularly during power outages or signal disruptions:

> *"When there is a typhoon or flood and there is no way to get early warning updates due to power outage or connectivity issues, we rely on announcements from the barangay, especially when their vehicle goes around our area. They also help us to relay our need of help from MDRRMC when we need to evacuate." (INT_013, Aguilar, January 6, 2026)*

These experiences show that barangay officials serve as a bridge between formal warning systems and the community. They help translate information, spread messages quickly, and coordinate assistance for residents who may need extra support, including respondents with disabilities. Disaster risk reduction research has consistently emphasized the role of community-level authorities in strengthening preparedness and ensuring that warning information reaches the whole community particularly in rural or resource-constrained settings (Allen, 2006; Twigg et al., 2018). Put simply, this finding highlights an important but often ignored lesson in disaster management: strong local leadership saves lives. Investing in well-trained barangay officials, reliable communication tools, and regular community outreach can make early warning systems more inclusive and more effective for respondents with disabilities and their families.

Responses to Early Warning

Figure 34 (see also Source Table 28: Appendix D: Extended Tables & Source Tables) presents four responses to early warning information among 86 respondents with disabilities. The most common response was waiting (55.81%), indicating that many respondents delayed action after

receiving warning information. This was followed by evacuation (25.58%), while smaller proportions reported staying in place (15.12%) or doing nothing (3.49%).

Figure 34. Persons with Disabilities Responses to Early Warning

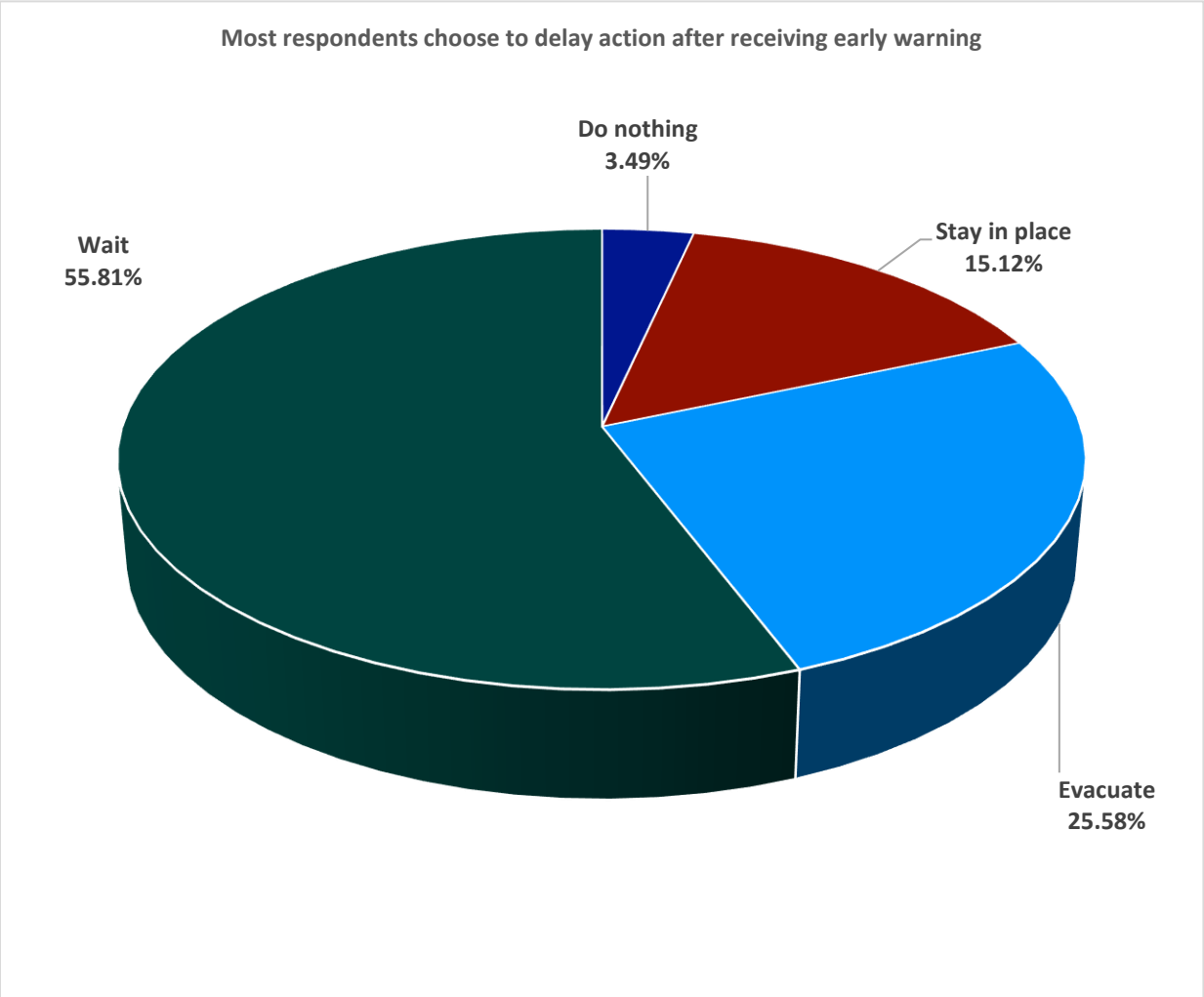


Figure 34. Responses of persons with disabilities upon receipt of early warning (*Source: Survey of Persons with Disabilities in Central Pangasinan, 2026).*

I will discuss each response in turn.

Response 1. Waiting Before Taking Action

Waiting emerged as the most common immediate response to early warning information, reported by 48 out of 86 respondents (55.81%). Waiting here does not necessarily mean

inaction or ignoring early warning. During my interviews and conversations with respondents with disabilities waiting gives them a period of reflection, or a period of information verification and coordination, before deciding on protective measures. When they receive early warning, the first impulse is not to pack their things and immediately evacuate. Insights from my interviews suggest that they first verify the source of information, observe environmental cues, and do some ground truthing of whether or not it makes sense to evacuate. This response aligns with earlier findings showing that 86.05% of respondents reported using multiple information sources to verify warning information, while 72.09% relied on family members or relatives as key sources of early warning information (see Source Table 25: Appendix D: Extended Tables & Source Tables; Figure 31). In addition, 39.53% of respondents reported limited trust in early warning sources, reflecting uncertainty about the reliability of official messages. As one respondent explained:

> *"Sometimes we think the message from the NDRRMC is just spam or false information, especially when they send text alerts frequently even when the rain is not that strong." (INT_007, Aguilar, January 1, 2026)*

This perception of warning messages as spam or misinformation contributes to hesitation in responding immediately to alerts and reinforces the need for confirmation through other sources. This likely necessitates a brief period of waiting to confirm information and organize resources before acting. In this context, delayed response should not be interpreted simply as inaction but as a rational strategy shaped by past experience and trust dynamics. For persons with disabilities, verifying warnings through trusted networks becomes particularly important, as responding to evacuation orders often requires additional preparation, coordination, and assistance.

Nearly all respondents (94.19%) also lived with family members, who lived with them as neighbors, suggesting that response decisions were often made collectively within the household or in consultation with neighbors. A respondent with disabilities described waiting as a deliberate step to assess the situation and coordinate with others before evacuating:

> *"When there is a warning, we do not leave immediately. We first wait for confirmation from relatives or neighbors about how serious the situation is." (INT_010, Aguilar, January 5, 2026)*

For persons with disabilities, waiting may also be shaped by practical considerations such as mobility constraints, the need for assistance, and coordination with family caregivers or household members. These factors mean that evacuation decisions often involve additional planning and preparation time compared to other households. As one respondent explained:

> *"I cannot leave immediately when there is a warning because I have to wait for my child or relatives to assist me. I also move slowly, so we need to plan first before evacuating." (INT_009, Aguilar, January 5, 2026)*

From a behavioral perspective, waiting reflects the process of milling, wherein individuals seek additional information and social confirmation before initiating protective action. Research in disaster risk communication shows that people rarely act immediately upon receiving warnings; instead, they engage in interactions with family members, neighbors, and authorities to interpret the situation and determine appropriate responses (Lindell & Perry, 2012; Mileti & Sorensen, 1990). Milling is particularly common in contexts where information credibility, accessibility, and logistical readiness are uncertain, as individuals attempt to reduce risk and avoid unnecessary disruption.

The predominance of waiting as a response shows that respondents with disabilities do not immediately act on early warning; their decisions are also shaped by experiential, social, cultural, and logistical factors through which they interpret and respond to risk.

Response 2. Some respondents with disabilities evacuate when warnings are issued, especially when help and clear guidance are available

The findings show that evacuation is an important protective response among respondents with disabilities in Central Pangasinan. A total of 22 out of 86 respondents with disabilities (25.58%) reported evacuating after receiving early warning information. This action reflects a

willingness to protect themselves and their families, but it also depends on practical conditions such as knowing where to go, having transportation, and receiving assistance from others. Elsewhere in this report, only 38.37% of respondents reported being aware of evacuation routes in their area (see Figure 24; Source Table 19: Appendix D: Extended Tables & Source Tables). Moreover, it should be noted that 72.09% of respondents rely on family members or relatives, and 43.02% on barangay officials for assistance (see Source Table 27: Appendix D: Extended Tables & Source Tables; Figure 33). These suggest how important logistical, social, and institutional factors are in facilitating evacuation.

Interview stories from respondents with disabilities clearly illustrate how evacuation becomes possible when these support systems are in place. One respondent emphasized the role of support networks in enabling evacuation, particularly for persons with mobility limitations:

> *"When the authorities say we need to evacuate, we prepare immediately, but I need help from my family to reach the evacuation center." (INT_012, Aguilar, January 6, 2026)*

For persons with disabilities, evacuation decisions are often shaped not only by the severity of the hazard but also by the availability of family support, accessible transportation, and timely guidance from local authorities. These decisions can be particularly complex when individuals are responsible for the safety of dependents, such as young children, while simultaneously managing their own mobility limitations. One wheelchair user caring for a young child described how evacuation was prompted by advice from local authorities:

> *"When the water level rose, they strongly urged me to evacuate because it was dangerous, especially since I was with a small child. If I had been alone, I would not have evacuated because I do not like staying in evacuation centers. It was only when the police and local authorities advised me that I needed to leave for the safety of my child and myself that I decided to evacuate." (INT_009, Aguilar, January 5, 2026)*

This experience illustrates how evacuation among persons with disabilities is often influenced by a combination of personal judgment, caregiving responsibilities, and external guidance from authorities. It also highlights the important role of trusted institutional actors in prompting protective action, particularly when individuals may otherwise hesitate to evacuate due to concerns about accessibility, comfort, or previous negative experiences in evacuation centers. In the Philippines, under the disaster risk reduction law, the Local Disaster Risk Reduction and Management Council (LDRRMC) has the power to recommend the implementation of forced or preemptive evacuation of local residents if necessary (Section 11, par. b, of Philippine Disaster Risk Reduction and Management Act of 2010).

This finding aligns with disaster risk literature emphasizing that evacuation behavior is shaped by the availability of resources, assistance, and accessible infrastructure rather than warning information alone. Studies show that individuals are more likely to evacuate when they have clear evacuation plans, social support, and confidence in transportation and shelter accessibility (Wong et al, 2021; Wong et al, 2018; Wu, et al., 2012; Prater et al, 2000). Having said that, strengthening evacuation readiness for persons with disabilities requires not only timely warning dissemination but also accessible infrastructure, coordinated assistance mechanisms, and clear evacuation guidance at the community level.

Response 3. Some respondents with disabilities stay at home because evacuation can be difficult or uncomfortable

Staying in place was reported by 13 out of 86 respondents (15.12%) as an immediate response to early warning information. Several factors help explain why staying at home becomes the safer or more realistic option for some respondents . Elsewhere in this report, many (70.93%) reported mobility limitations, which can make it hard to travel quickly during emergencies (Fig. 28; Source Table 23: Appendix D: Extended Tables & Source Tables). Distance also plays an important role. Only about one-third of respondents with disabilities live within one kilometer of an evacuation center, while many others must travel several kilometers to reach safety. For individuals who need assistance or transportation, even moderate distances can make evacuation difficult, especially during heavy rain or flooding.

Concerns about the condition of evacuation centers also influence this decision. Only a small number of respondents (15.12%) reported that shelters were accessible to persons with disabilities, which can reduce confidence in staying there safely and comfortably. Many respondents also rely on family members for support and feel more secure in familiar surroundings where help is readily available. This helps explain why more than half of respondents (72.09%) reported staying with relatives or friends during disasters rather than going to evacuation centers.

Interview stories from respondents with disabilities reveal how past experiences shape these choices, particularly when facilities are not designed to accommodate the needs of persons with disabilities. One participant shared:

> *"If possible, I do not want to go to the evacuation center again. The last time we evacuated, I struggled to use the toilet because it was not suited to my condition, and there was not enough water or proper bathing facilities." (INT_010, Aguilar, January 5, 2026)*

Deducing from this account, staying at home is often a practical decision shaped by real challenges, not by carelessness or lack of awareness. When evacuation centers are difficult to reach or not designed to meet the needs of persons with disabilities, people may feel safer remaining in a familiar place where they can manage their daily needs.

The findings of this report align with previous studies showing that persons with disabilities frequently encounter structural and environmental barriers during evacuation, including inaccessible transportation, inadequate sanitation facilities, limited privacy, and insufficient hygiene support in evacuation centers. Such conditions not only compromise safety and dignity during displacement but also shape future risk behavior, contributing to reluctance or delayed evacuation in subsequent emergencies (Matsuo et al., 2025; Rosenkoetter et al., 2007).

In addition to physical constraints, social conditions can further intensify vulnerability during disasters. Studies show that individuals who experience social isolation, especially older adults and those with limited support networks, are more likely to face difficulties during evacuation

and to experience increased psychological stress following disaster events (Dargin & Mostafavi, 2020; Brockie & Miller, 2017). Negative shelter experiences can erode trust in evacuation systems and reinforce the preference for sheltering in place, even when risks remain present.

Apparently, staying in place is often a constrained choice shaped by accessibility limitations, distance, and prior experiences with evacuation conditions. Improving disability-inclusive infrastructure—particularly accessible sanitation, water, and hygiene facilities in evacuation centers may therefore be critical to strengthening evacuation confidence and enabling safer protective action among persons with disabilities.

Response 4. Doing Nothing as a Response to Uncertainty or Limited Actionable Information

Doing nothing was reported by 3 out of 86 respondents (3.49%), making it the least common immediate response to early warning information. Although numerically small, this response provides important insight into situations where warning information does not translate into immediate action. Rather than reflecting negligence, doing nothing appears to be associated with uncertainty about the credibility or urgency of warnings, as well as limited capacity to interpret or act upon available information.

Earlier findings showed that 39.53% of respondents reported limited trust in early warning sources, while 26.74% identified delayed delivery of warning information as a barrier, suggesting that uncertainty about message reliability and timing may discourage immediate response. In addition, many respondents relied on others for interpreting warning information (72.09%), indicating that independent decision-making may be constrained when assistance is not immediately available. These conditions are further compounded by short lead times, with 32.56% of respondents receiving warnings less than one hour before the event and another 32.56% receiving warnings one to six hours in advance, limiting the time available to prepare or relocate

Uncertainty and lack of actionable guidance can lead individuals to remain inactive until clearer information becomes available, just as one respondent explains:

"Sometimes we hear warnings, but it is not clear how serious the danger is, so we wait first before taking action." (INT_010, Aguilar, January 5, 2026)

Individuals may delay or refrain from action when warnings are perceived as ambiguous, inconsistent, or insufficiently credible. Studies have found that unclear messages, limited trust in authorities, and uncertainty about risk severity can reduce protective action, particularly when individuals lack confidence in the accuracy or relevance of the information they receive (Lindell & Perry, 2012; Mileti & Sorensen, 1990). For persons with disabilities, these challenges may be amplified by communication barriers and dependence on intermediaries for interpreting warning information.

Factors influencing early warning actionability

Figure 35 (see also Source: Appendix D: Extended Tables & Source Tables) identifies seven key factors that influence whether warning messages lead to real action, such as preparing or evacuating. The most reported factor was physical or health condition, identified by 72 out of 86 respondents with disabilities (83.72%). In simple terms, even when warnings are clear, the ability to move safely or manage health conditions can determine whether action is possible.

Support from others also plays a major role. Evacuation assistance from relatives or local government and the accessibility of evacuation centers were each reported by 64 respondents (74.42%). These findings show that early warning action is rarely an individual task. Instead, it often depends on whether help is available and whether shelters are designed to accommodate persons with disabilities.

Access to transportation was another important factor, reported by 60 respondents (70.59%). Without reliable transport, even short distances can become difficult to travel during heavy rain or flooding. Financial capacity also influenced decision-making, with 52 respondents (60.47%) noting that limited resources can affect the ability to buy supplies, arrange transport, or recover after evacuation.

Past experience and trust also shaped how people responded to warnings. Previous evacuation experience was reported by 51 respondents (59.30%), suggesting that lessons learned from earlier disasters help guide future decisions. Similarly, trust in authorities was identified by 50 respondents (58.14%), indicating that confidence in official guidance can encourage timely action.

Acting on early warnings is not determined by one factor alone. Instead, it depends on a combination of health, support, infrastructure, resources, and trust. When these conditions are in place, respondents with disabilities are more likely to respond quickly and safely to warning information. I will discuss each factor in turn.

Figure 35. Factors that Influence Early Warning Actionability

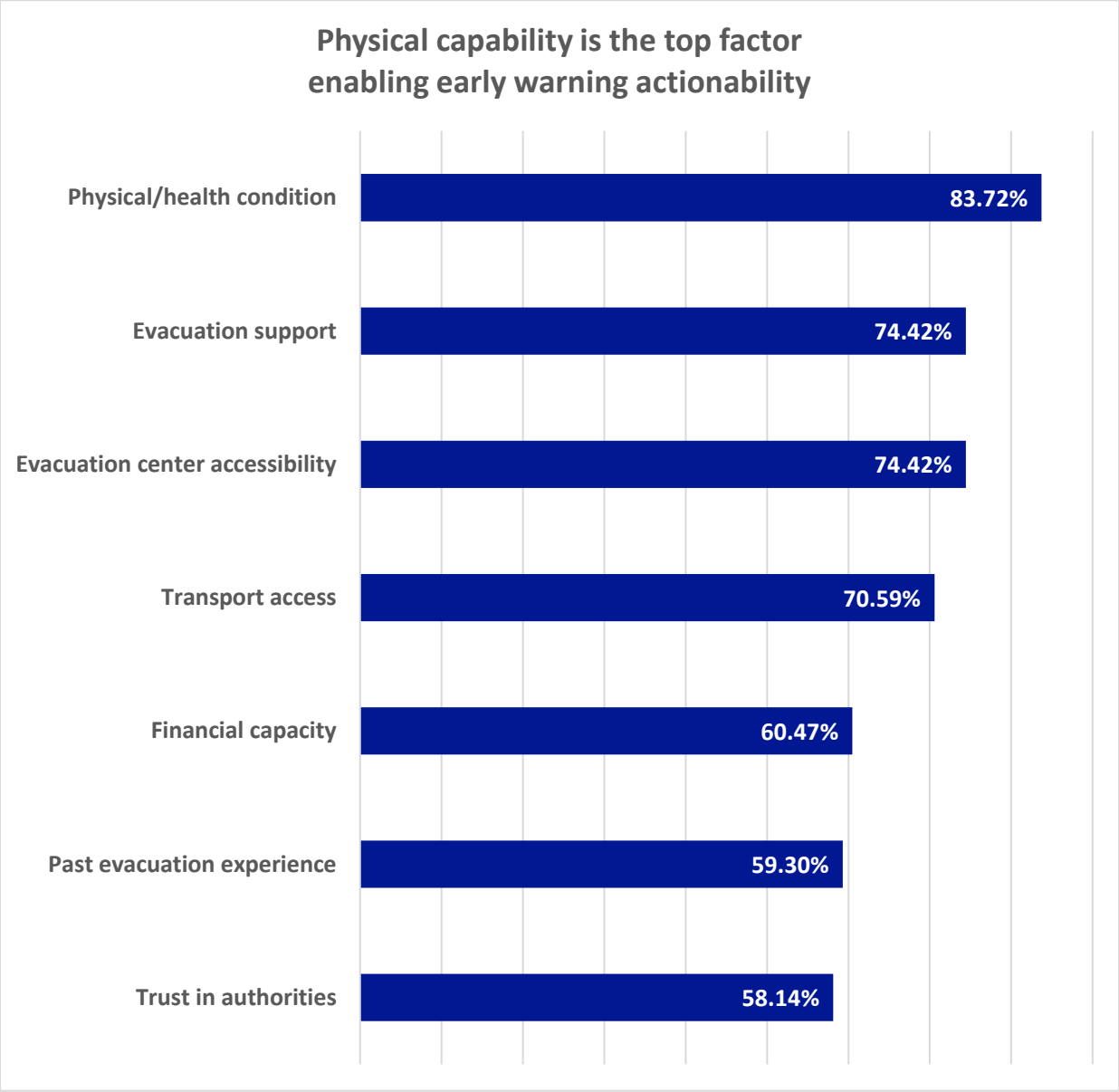


Figure 35. Factors that influence early warning actionability among persons with disabilities in Central Pangasinan. *(Source: Survey of persons with disabilities in Central Pangasinan, 2026)*

Factor 1: Health and physical condition strongly influence how quickly respondents with disabilities can respond to early warnings.

The findings show that physical and health conditions are the most important factors affecting whether respondents with disabilities can act on early warning information. A total of 72 out of

86 respondents with disabilities (83.72%) identified their health or physical condition as a key influence on their ability to prepare or evacuate during emergencies.

This result reflects a simple reality: responding to danger often takes more time for people managing mobility limitations or chronic illnesses. Many respondents need to gather medication, secure assistive devices, or wait for help before they can move to safety. Because of this, the usefulness of early warning depends not only on receiving the message, but also on having enough time to act safely.

These challenges are especially clear in flood-prone communities, where movement can quickly become difficult once roads are covered with water. One visually impaired respondent living with diabetes explained:

> *"I cannot move immediately when there is a warning about flooding or a typhoon because I still need to prepare my diabetes medication and wait for someone to guide me. When there is not enough time, it becomes more dangerous for me to rush, especially when the roads are already flooded." (INT_005, Bugallon, January 1, 2026)*

The foregoing account illustrates how health-related constraints, mobility issues, and environmental conditions intersect to co-shape evacuation timing and decision-making. It reinforces the principle that early warning systems must be designed with differentiated response times in mind, particularly for individuals who depend on medication, assistance, or guided mobility to evacuate safely.

Factor 2: Having someone to help makes evacuation possible for many respondents with disabilities.

A total of 64 out of 86 respondents with disabilities (74.42%) reported that having assistance—from relatives, caregivers, or local government—plays a major role in whether they can evacuate safely.

This result reflects a practical reality in many communities. When roads are flooded, transportation is limited, or mobility is difficult, evacuation often depends on whether someone is available to help. For many respondents with disabilities , especially older adults, leaving home during emergencies is not something they can do alone. Instead, it becomes a shared effort involving family members, neighbors, or local officials.

These dynamics are particularly evident among older persons with disabilities who depend heavily on family members for daily care. As described by an elderly wheelchair user who is a beneficiary of the Pantawid Pamilyang Pilipino Program (4Ps) and lives in a flood-prone community in Central Pangasinan:

> *"I am already old and use a wheelchair, so I cannot evacuate without my child who takes care of me. We rely on the small assistance we receive from the 4Ps, but when flooding occurs, we need to find transportation and help to reach the evacuation center." (INT_001, Bugallon, December 27, 2025)*

Based on these reflections, one can deduce how important both social, logistical, and institutional support systems are in enabling timely evacuation among persons with disabilities, more so in climate-impacted and low-resourced municipalities, not only in Central Pangasinan, but also in other hazard-prone provinces in the country. Some respondents with disabilities mostly rely on the presence of practical assistance and accessible facilities that make evacuation physically possible.

Factor 3: Accessible transportation determines whether respondents with disabilities can leave safely during emergencies.

A total of 60 out of 86 persons with disability respondents (70.59%) reported that the availability of reliable and accessible transport strongly affects their ability to evacuate. Without suitable transport arrangements, even timely warnings may not lead to immediate evacuation, particularly for individuals with mobility constraints. This challenge is especially pronounced in last-mile communities characterized by geographical isolation, rugged terrain, and limited

public transportation infrastructure, where reaching evacuation centers often requires assistance from others or the use of improvised transport.

These challenges are especially common in remote or hard-to-reach communities where roads are narrow, unpaved, or easily flooded during heavy rain. In such places, transportation is often limited, and people may need to wait for help from neighbors, relatives, or local officials before they can evacuate. One respondent from an isolated barangay explained:

> *"In our area, the roads are difficult to pass, especially when it rains. There is no regular transportation, so when there is a warning about a typhoon or flooding, we still have to wait for a tricycle or a neighbor who can help take us to the evacuation center." (INT_006, Bugallon, January 1, 2026)*

Distance and physical limitations can make this situation even more difficult. Another respondent with disabilities described how terrain and mobility challenges combine to delay evacuation:

> *"The evacuation center is far from our place and the road going there is uphill. If there is no government rescue vehicle or someone to assist me, I cannot leave immediately even when there is already a warning." (INT_013, Aguilar, January 6, 2026)*

The foregoing narratives reinforce a growing body of research highlighting transportation access as a critical enabling condition for early warning actionability, particularly in geographically isolated or last-mile communities. The experiences shared by respondents in this study demonstrate how mobility constraints and limited transport options can delay or prevent timely evacuation, even when warnings are received in advance. In such contexts, the capacity to act on early warning information depends not only on communication systems but also on the availability of safe, reliable, and accessible means of transport.

Previous studies conducted in major urban disaster settings have similarly identified transportation barriers as a central factor shaping evacuation outcomes for older adults and

persons with disabilities. For example, research in New Orleans, Louisiana, following Hurricane Katrina, documented how limited access to private vehicles and inaccessible public transportation systems left many affected residents unable to evacuate safely before floodwaters inundated the city. In another case, studies in Los Angeles, California, where hazards such as wildfires and earthquakes can disrupt transport routes with little warning, found that evacuation challenges were compounded by insufficiently accessible transport services and the high cost of private mobility options (Matsuo et al., 2025; Lindsay et al., 2022). Although these studies focus on large metropolitan areas affected by hurricanes, wildfires, and other large-scale emergencies, similar structural challenges are evident in rural and last-mile communities.

In places like Central Pangasinan, transportation is difficult for many reasons. It is not just about cost or accessibility, but also about distance, terrain, and infrastructure conditions. Communities connected by narrow, unpaved, or flood-prone roads may face delays in securing transport during emergencies, reducing the practical value of early warning messages. These parallels suggest that strengthening early warning actionability requires integrating transportation planning into disaster preparedness strategies, particularly for populations with mobility limitations and those living in geographically isolated or resource-constrained settings. These findings reinforce the need for disaster preparedness strategies that integrate accessible transport planning, community-based assistance mechanisms, and decentralized evacuation options tailored to the spatial realities of remote and hard-to-reach communities.

Factor 4: Financial capacity influences persons with disabilities decision to act or not to act on early warning information.

Economic considerations also influence early warning actionability. Financial capacity was reported by 52 respondents (60.47%), suggesting that the cost of transportation, food, medicine, or temporary relocation may affect decisions about evacuation.

This result reflects a simple but powerful reality: responding to disasters often requires money. Families may need to pay for transport, buy food, secure medicines, or prepare supplies before

leaving their homes. When income is limited, these costs can delay preparation or make evacuation more difficult.

As reported in the income profile of persons with disabilities in Figure 19, more than half of respondents in this study reported very low annual incomes, with many earning less than ₱100,000 per year. This means that even small expenses—such as transportation, food, or medicine—can become major challenges during emergencies.

To better understand what these numbers mean, it is helpful to compare them with national standards. In 2023, the Philippine government estimated that a family of five needed about ₱13,873 per month, or roughly ₱166,476 per year, to meet basic needs such as food, housing, and clothing. Families earning below this level are officially considered poor (PSA, 2025). When we compare these national figures with the income profile of respondents with disabilities in Central Pangasinan, many households in this study are living at or below the level needed to meet basic daily needs. Most of them face economic insecurity, a condition where families can manage daily expenses under normal conditions but struggle when unexpected costs arise, such as during floods or typhoons.

This pattern is consistent with broader evidence showing that persons with disabilities experience disproportionately higher rates of poverty compared with the general population. For example, recent estimates indicate that the poverty rate among persons with disabilities in the Philippines reached 40.8%, nearly four times higher than the national poverty rate of 10.4% (Mori, 2025). Structural factors such as limited employment opportunities, reliance on informal work, health-related expenditures, and physical barriers to mobility contribute to persistent economic disadvantage among persons with disabilities.

In disaster-prone areas such as Central Pangasinan, where recurring flooding and typhoons impose additional financial burdens, limited income can directly affect the ability of households to act on early warnings. Costs associated with transportation, food, temporary shelter, and medical supplies may delay or discourage evacuation, particularly for individuals who depend on assistive devices or regular medication. One respondent explained this challenge in very practical terms:

> *"Our income from farming is small, so when a typhoon or flood comes, it is difficult for us to prepare. We have to save money for transportation, food, and medicine if we need to evacuate." (INT_003, Bugallon, December 28, 2025)*

This experience shows that financial limitations can delay action, even when people understand the danger. When families must first find money before they can move, valuable time can be lost during emergencies. Strengthening disaster preparedness, therefore, requires not only better warning systems but also financial support mechanisms such as transportation assistance, emergency cash support, or livelihood protection so that persons with disabilities can act quickly and safely when disasters occur.

Factor 5: Past disaster experience helps respondents with disabilities prepare earlier and act more carefully.

The findings likewise show that past disaster experience strongly influences how persons with disabilities respond to early warnings. A total of 51 out of 86 persons with disability respondents (59.30%) reported that their previous evacuation or disaster experience shaped how they prepare for future hazards.

This result reflects an important lesson from everyday life: people who have lived through dangerous events often learn to take warnings more seriously. When someone has seen how quickly flooding can rise or how strong a storm can become, they are more likely to prepare earlier and act more carefully the next time.

Interview accounts from older respondents with disabilities clearly show how major disasters can change attitudes toward preparedness. One elderly respondent who survived Typhoon Yolanda described how that experience transformed his approach to safety:

> *"During the time of Yolanda, I saw how strong the typhoon was and how many homes and livelihoods were destroyed. Since then, I no longer wait for the last warning—I prepare my belongings early and coordinate with my family whenever a storm is approaching." (INT_005, Bugallon, January 1, 2026)*

This narrative shows how memories of past disasters can change behavior in lasting ways. For many respondents with disabilities, difficult experiences in the past encourage earlier preparation and more cautious decision-making in the future.

Viewed from the perspective of Protection Motivation Theory (PMT), prior disaster experience contributes to both threat appraisal and coping appraisal processes. Individuals who have experienced severe hazards firsthand are more likely to perceive disasters as personally relevant and potentially life-threatening (perceived severity and vulnerability), while also developing practical knowledge and confidence in protective measures (response efficacy and self-efficacy). In this way, past experience serves as a powerful teacher. It helps people recognize danger sooner and understand what actions are needed to stay safe. Over time, these experiences build confidence in preparedness—such as packing essential items, coordinating with family members, or leaving early before conditions become risky. (Lindell & Perry, 2012; Becker et al., 2017; Masud et al., 2018; Yanquiling, 2024).

In hazard-prone communities such as those in Central Pangasinan, where typhoons and flooding are recurring features of the local risk environment, accumulated disaster experience serves as a critical driver of anticipatory action and adaptive preparedness practices. Translated in practical terms, past experience becomes a guide for future safety. Strengthening disaster preparedness, therefore, means not only improving warning systems but also learning from past disaster events and abstracting those lessons for risk reduction planning in the future.

Factor 6: Trust in authorities encourages action to early warning.

Trust in authorities plays an important role in shaping how persons with disabilities respond to early warnings. A total of 50 out of 86 respondents with disabilities (58.14%) reported that their confidence in local officials—such as barangay leaders, police, and disaster responders—influences whether they follow evacuation advice or preparedness instructions.

Trust matters. When people believe that authorities are giving reliable and honest information, they are more likely to listen and take warnings seriously. Trust can give people confidence that

recommended actions such as preparing supplies or leaving early are necessary and worthwhile.

Viewed from the Protection Motivation Theory (PMT), trust in authorities can strengthen coping appraisal, particularly perceptions of response efficacy (belief that recommended actions are effective) and self-efficacy (confidence in one's ability to act). When individuals trust official warnings and guidance, they are more likely to perceive protective measures as credible and worthwhile, thereby increasing their motivation to comply with evacuation orders or preparedness instructions.

The findings of this study align with a growing body of research regarding the importance of trust in disaster preparation. Studies have shown that trust in governmental and non-governmental institutions influences individuals' willingness to adhere to safety guidelines and cooperate with public policies during emergencies (Paton et al., 2008; Abla et al., 2009; Hu et al., 2024). Trust has also been associated with stronger intentions to prepare for disasters, reduced anxiety about hazard impacts, and greater compliance with evacuation and preparedness measures (Paton et al., 2005; Cohen et al., 2016). In a study conducted in Sichuan Province, China, Hu et al. (2024) found that trust functions as a critical mediator between risk information and preparedness decisions, shaping how individuals interpret and act on early warning messages.

However, other studies caution that trust alone does not guarantee action. For instance, Basolo et al. (2009) demonstrated that even when individuals express confidence in authorities, structural barriers such as limited transportation, financial constraints, or inaccessible facilities may still prevent timely evacuation.

Experiences shared by respondents in Central Pangasinan reflect this complex relationship between trust and practical capability. One older person with a disability explained how confidence in local authorities is important, but must be matched by concrete support and resources:

> *"We do trust the announcements from the barangay and the police when there is a typhoon, but if there is no transportation or no one to assist us, it is still difficult to evacuate right away. Even if you trust them, you still need help in order to stay safe." (INT_013, Aguilar, January 6, 2026)*

This account highlights how trust operates within broader structural and environmental conditions that shape disaster response capacity. Trust alone is not enough. In hazard-prone communities such as those in Central Pangasinan, many respondents with disabilities explained that even when they believe the warnings, they may still struggle to act if practical support such as transportation, assistance, or accessible shelters is not available. Therefore, evacuation decisions emerge from the interaction between institutional credibility and the availability of practical support systems, including accessible transport, family assistance, and timely coordination at the local level.

What the Findings Mean from the Disability Climate Justice and Disaster Justice Perspectives

The Central Pangasinan case study shows that disaster preparedness is not simply a matter of whether warnings, evacuation centers, or barangay response systems exist. The more important question is whether these systems work fairly for persons with disabilities. From both disability climate justice and disaster justice perspectives, the findings suggest that persons with disabilities are not only exposed to floods, storms, and other hazards; they are also exposed to systems that are not yet fully designed around their safety, participation, and dignity.

From a disability climate justice perspective, the findings show that persons with disabilities experience climate and disaster risks through everyday barriers. Early warning messages may be available, but they are not always accessible, timely, or easy to understand. Evacuation support exists, but it often depends on family members, neighbors, or barangay volunteers rather than on a guaranteed, disability-responsive system. Participation also remains uneven: persons with disabilities may be invited to meetings or consulted occasionally, but they are not

always involved in shaping preparedness plans from the beginning. This means that inclusion is still treated as an add-on rather than as a core part of climate and disaster governance.

The case study also shows why disability climate justice must be grounded in lived experience. Respondents described warning delays, unclear messages, inaccessible evacuation centers, difficult roads, lack of transport, financial hardship, and dependence on others during evacuation. These are not separate problems. They show how climate risk becomes disabling when social systems fail to provide accessible information, mobility support, and meaningful participation. In this sense, the problem is not only the flood or typhoon itself. The problem is also the unequal way disaster systems are built and delivered.

From a disaster justice perspective, the findings reveal that the capacity for safety when disaster strikes is unevenly distributed. Some residents can act quickly when warnings arrive because they have transport, savings, family support, or physical mobility. Others — especially persons with disabilities, older persons, low-income households, and those in flood-prone or geographically isolated areas — need more time, assistance, and resources to reach safety. The findings also show that local communities play a crucial role in filling gaps left by formal systems. Families, neighbors, and barangay workers often become the real first responders. They interpret warnings, help move belongings, assist with evacuation, and provide emotional support. This community support is a strength, but it also reveals a governance problem. If persons with disabilities depend mainly on informal help, their safety becomes uncertain. Disaster justice requires that protection should not depend on whether someone has a helpful neighbor, a nearby relative, or enough money for transport. It should be built into the system. The government should be at the forefront to provide the enabling conditions for this system.

Overall, the Central Pangasinan case study suggests that disability-inclusive disaster preparedness remains partial. Early warning systems, evacuation arrangements, and local governance mechanisms are present, but they do not yet consistently guarantee accessible, timely, and dignified protection for persons with disabilities. From a justice perspective, this means that inclusion must move beyond consultation and assistance. It must involve concrete investments in accessible communication, transport, evacuation centers, preparedness training,

household-level support, and sustained participation of persons with disabilities in decision-making.

The larger argument, therefore, is this: disaster preparedness in Central Pangasinan is sustained by community solidarity, but justice requires more than solidarity. It requires systems that are designed from the start to protect persons with disabilities as rights-holders, decision-makers, and active members of climate-resilient communities.

Policy implications

The Central Pangasinan case study shows that early warning systems are generally in place and information is regularly shared through barangay announcements, mobile messages, and community networks. However, the findings reveal that the ability of respondents with disabilities to act on early warning information relies more on the practical conditions that shape everyday life and decisions of persons with disabilities. Many respondents with disabilities face mobility and health limitations, limited access to transportation, inaccessible evacuation centers, and financial constraints that make timely evacuation difficult, even when warnings are received. In this sense, the effectiveness of early warning systems is determined not only by how quickly information is delivered, but also by whether individuals have the support, resources, and accessible infrastructure needed to respond safely. Strengthening disaster preparedness for persons with disabilities, therefore, requires shifting attention from communication alone toward the broader conditions that make protective action possible—particularly accessible facilities, reliable assistance, coordinated local response systems, and inclusive planning at the community level. Based on the findings of this study, I advance a number of actionable items to strengthen disability-inclusive early warning and disaster preparedness systems (see Table 30). I will discuss each in turn.

Recommendation 1. Ensure early warning information is accessible to all persons with disabilities.

Many respondents with disabilities reported difficulty receiving or understanding early warning messages because information was not always delivered in accessible formats. In the survey, 80.23% identified inaccessible warning formats as a key barrier, particularly for individuals with

hearing, visual, or communication limitations. When warning messages are not accessible, people may receive information too late or misunderstand instructions, increasing the risk of delayed evacuation or unsafe decisions during emergencies.

Local governments and disaster management agencies should ensure that early warning messages are delivered in multiple accessible formats that accommodate different functional needs. This includes combining visual signals, clear audio announcements, simplified language, and direct community outreach to households with persons with disabilities. Warning systems should be tested regularly with disability groups to confirm that messages are understandable and actionable under real conditions. Strengthening accessible communication will help ensure that early warning information reaches everyone at the same time and allows respondents with disabilities to respond safely and confidently during emergencies.

Recommendation 2. Provide sufficient lead time and reliable delivery of early warning information.

Many respondents with disabilities reported receiving warnings only shortly before disasters occurred. In the survey, 65.12% received warnings within six hours or less, and some reported receiving no warning at all. Respondents also described delays, inconsistent announcements, and coordination gaps that created confusion about when to prepare or evacuate. Short or unreliable lead time reduces the ability of persons with disabilities to prepare safely, especially for those who require additional time to gather medication, arrange transportation, or secure assistance.

Early warning information must be delivered early, clearly, and consistently across communities, with governments and local disaster management agencies responsible for issuing timely warnings, improving coordination, and setting clear communication procedures. This includes issuing warnings in advance of expected hazards, strengthening coordination among national agencies, local governments, and barangay officials, and establishing clear procedures for when and how warnings should be communicated. Regular drills and monitoring systems should also be used to check whether warnings reach households with enough time for

persons with disabilities to prepare, secure assistance, and evacuate safely. In simple terms, early warning systems should give people enough time to act—not just enough time to react.

Recommendation 3. Strengthen transportation and evacuation support for persons with disabilities.

The study shows that transportation and evacuation support are essential for turning early warning into protective action. Many respondents with disabilities reported that even when they received warnings on time, they could not evacuate immediately because transportation was unavailable or assistance was not ready. In the survey, 70.59% identified transport access as a key factor influencing their ability to act on warnings, and many explained that they had to wait for a vehicle, neighbor, or government assistance before leaving their homes. In flood-prone communities like those in Central Pangasinan, where roads can quickly become muddy or impassable, the absence of reliable transportation can delay evacuation and increase risk, especially for persons with mobility or health concerns.

To improve disaster preparedness for persons with disabilities, transportation planning needs to be built into regular practice, supported by local governments and disaster management agencies. This includes identifying households that may require assistance, pre-arranging accessible vehicles for evacuation, and coordinating support teams who can respond quickly during emergencies. Communities should also establish clear transportation plans before disasters occur, including designated pickup points and backup transport options for areas that become difficult to reach during heavy rainfall. Strengthening these systems will help ensure that when warnings are issued, people are not left waiting for help but are able to move safely and on time.

Recommendation 4. Improve accessibility of evacuation centers and shelters.

The accessibility of evacuation centers strongly influences whether respondents with disabilities decide to evacuate. Many respondents reported that evacuation centers lacked basic accessibility features such as ramps, accessible toilets, adequate space for assistive devices, and

safe bathing facilities. This explains why some individuals delay evacuation or prefer to remain at home despite receiving warnings.

Local governments and disaster management agencies should make accessibility a standard requirement in the design and operation of evacuation centers. This includes installing ramps, handrails, accessible toilets and bathing areas, adequate lighting, and clear pathways for people using wheelchairs or other assistive devices. In the Philippines, buildings are legally required to be accessible to persons with disabilities through laws like BP 344 and RA 7277, which mandate features such as ramps, accessible toilets, and barrier-free design in both public and private facilities. Regular inspections should be conducted to ensure that shelters remain functional and accessible before disasters occur. Communities should also involve persons with disabilities in assessing evacuation facilities and identifying practical improvements. Strengthening shelter accessibility will build confidence in evacuation systems and help ensure that persons with disabilities can relocate safely, comfortably, and with dignity during emergencies.

Recommendation 5. Formalize and strengthen family and community support systems in disaster preparedness.

The study shows that family members, neighbors, and barangay officials play a central role in helping respondents with disabilities respond to early warnings and evacuate safely. Many respondents reported relying on relatives or community members to interpret warning messages, prepare belongings, arrange transportation, and provide physical assistance during emergencies. In the survey, a large proportion of respondents with disabilities indicated dependence on family support for evacuation, reflecting how disaster response in many households is a shared responsibility.

Having said that, family members, caregivers, volunteers, and community groups should be included as part of disability-inclusive disaster preparedness planning. This includes identifying households that may require assistance, providing training on safe evacuation support, and organizing community-based response teams that can assist persons with disabilities during emergencies. Barangay-level preparedness plans should clearly assign roles for assisting residents with specific access and support needs, including who will provide transport,

guidance, and follow-up during evacuation. Strengthening and organizing these support systems will ensure that help is not left to chance and that persons with disabilities receive timely and reliable assistance when warnings are issued.

Recommendation 6. Provide financial and logistical support to enable timely evacuation.

Financial capacity directly affects whether respondents with disabilities can act on early warning information. Many respondents reported that the costs of transportation, food, medicine, and temporary relocation can delay or prevent evacuation, particularly among households with limited income. Earlier findings in this report indicate that a large share of respondents with disabilities earn relatively modest incomes, and some earn below the national poverty threshold, making it difficult to prepare for emergencies without additional support.

Effective disaster preparedness for persons with disabilities requires financial and logistical support to be integrated into regular planning, led by local governments and disaster management agencies, private sector, humanitarian organizations, and relevant non-governmental organizations. This can include providing transportation support, emergency cash assistance, food and medicine supplies, and temporary shelter resources for households that may struggle to evacuate on their own. Pre-arranged assistance programs—such as transport vouchers, emergency relief packages, or priority access to social protection services—should be activated before disasters occur, not only after displacement. Strengthening financial support mechanisms will help ensure that evacuation decisions are guided by safety needs rather than financial limitations, enabling persons with disabilities to respond quickly and securely when early warnings are issued.

Table 30. Policy Recommendations to Strengthen Disability-Inclusive Early Warning and Disaster Preparedness Systems

Key Policy Gap	Policy Recommendation	Priority Actions	Responsible Actors
Early warning messages are not always accessible to persons with disabilities	Ensure accessible early warning communication for all persons with disabilities	Deliver warnings in multiple accessible formats (visual, audio, simplified language); conduct accessibility testing with disability groups; train barangay officials on inclusive communication	Local Government Units (LGUs); Municipal/City DRRM Offices; Barangay Officials; Communication Agencies
Limited lead time and inconsistent delivery of warning messages	Provide sufficient lead time and reliable delivery of early warning information	Issue early and staged warnings; standardize communication protocols; strengthen coordination between national and local agencies; conduct regular drills and monitoring	National DRRM Agencies; PAGASA; LGUs; Barangay DRRM Committees
Lack of reliable transportation and evacuation assistance	Strengthen transportation and evacuation support for persons with disabilities	Identify households requiring assistance; pre-arrange accessible transport; establish evacuation pickup points; coordinate community support teams	LGUs; Barangay Officials; MDRRMC/LDRRMC; Community Volunteers
Evacuation centers and shelters are not fully accessible	Improve accessibility of evacuation centers and shelters	Install ramps, accessible toilets, and handrails; ensure adequate space for assistive devices; conduct regular accessibility inspections; involve persons with disabilities in facility assessments	LGUs; Engineering Offices; Social Welfare Offices; Shelter Management Teams
Failure to capitalize on social capital (e.g., informal family and community support systems)	Formalize and strengthen family and community support networks in disaster preparedness	Develop household registries of persons with disabilities; train family members and volunteers; assign clear evacuation assistance roles at the barangay level	Barangay Officials; LGUs; Community Organizations; Civil Society Groups
Financial constraints limit the ability to evacuate safely	Provide financial and logistical support to enable timely evacuation	Provide transport subsidies or emergency cash assistance; pre-position relief supplies; integrate disability needs into social protection and emergency support programs	LGUs; Social Welfare Offices; National Government Agencies; Humanitarian Organizations

Table 30. *(Source*

Conclusion

Summary of Findings

In this report, I examined disability inclusion in disaster preparedness and early warning systems through a two-part analysis that combined a cross-country legal and policy review with a community-level case study in Central Pangasinan, Philippines. The first part assessed how ten disaster-prone countries in the Global South integrate persons with disabilities into disaster and climate governance frameworks, while the second part explored how persons with disabilities experience, interpret, and act on early warning information in practice. Across both the national and community levels, a clear pattern emerged: disability inclusion is increasingly recognized in policy frameworks, but translating these commitments into concrete action on the ground remains uneven—especially at the local level, where early warning systems must ultimately result in meaningful action on the ground in order to save lives and "leave no one behind."

Across the ten countries I surveyed—Bangladesh, Fiji, Haiti, Indonesia, Madagascar, Mozambique, Pakistan, the Philippines, Tanzania, and Vietnam—national-level disaster and climate documents generally acknowledge the importance of disability inclusion, especially in terms of recognition and participation. However, practical provisions related to accessible early warning, evacuation support, and inclusive infrastructure remain limited or inconsistently implemented. While planning instruments often contain stronger references to disability inclusion than disaster and climate laws, explicit mechanisms for ensuring disability-inclusive, accessible, and actionable early warning communication, evacuation, and social support services are frequently limited or only partially implemented. I argue that while disability inclusion in disaster governance across countries has progressed normatively, it remains constrained institutionally and operationally, indicating a gap between recognition and implementation.

The case study in Central Pangasinan provides a grounded perspective on how this implementation gap manifests in the everyday life of persons with disabilities in dealing with

disasters. Persons with disabilities in the study area face multiple barriers to accessing early warning information, such as inaccessible early warning formats, mobility constraints, reliance on others for message interpretation, and limited trust in warning sources. Despite these barriers, persons with disabilities also showed agency. Respondents described practical coping strategies such as using multiple information sources, relying on family and community networks, and drawing on local knowledge and past experiences to manage risk. Among their immediate responses are waiting, seeking information, preparing belongings, and relocating to safer locations, which often serve as intermediate steps before evacuation decisions are made. These decisions are determined by a number of personal and socio-environmental factors, as well as social and logistical conditions that enable them to act.

Moreover, based on the results of the survey and interviews, I identified a set of enabling factors that determine the actionability of early warning for persons with disabilities. Consistent with findings of previous studies, I found that physical capacity, social capital, evacuation support, availability of transport, past disaster experience, and financial capacity influence whether or not people with disabilities act on early warning and implement protective actions (Matsuo et al., 2025; Lindsay et al., 2023, Lindell & Perry, 2012; Becker et al., 2017; Masud et al., 2018). Without social support systems and disability-inclusive infrastructures, even timely and accurate warnings may not lead to effective protective action. A warning is just as meaningful when everyone has a real and meaningful opportunity to act on it.

Significance of the Project

One important contribution of this report is linking how disability inclusion, as articulated in disaster and governance instruments, resonates with the lived experiences of persons with disabilities. Hence, it not only shows disability inclusion as governments promised on paper, but also how persons with disabilities actually experience accessibility and inclusion on the ground. This two-pronged (policy analysis and fieldwork) approach helps unravel the gap between policy recognition and implementation.

More broadly, this report contributes to global efforts to promote disability-inclusive disaster risk reduction in line with the Sendai Framework, the SDGs, and the Convention on the Rights of Persons with Disabilities.

Areas for Further Research

I consider this report exploratory in nature, which can jumpstart further interest in disability climate justice and disaster justice. The following are some of the areas that require further research to strengthen disability-inclusive disaster preparedness:

First, I suggest further research on how disability accessibility and inclusion is implemented across different socioeconomic and geographic settings, such as urban centers, coastal areas, and mountainous communities. Disaster risks and preparedness needs vary across locations, and understanding these differences can help tailor policies more effectively. Conducting a similar study in the last-mile community context is particularly interesting.

Second, I suggest further research to evaluate the impacts and outcomes of disability-inclusive early warning and disaster preparedness programs (e.g., assessing whether improvements in accessible early warning, evacuation, transportation, and other social support systems can lead to favorable disaster outcomes). Lessons from these studies can help inform policy.

Third, I also believe that more research is needed on strengthening data systems that track the experiences of persons with disabilities before, during, and after disasters. In particular, disability-disaggregated data can help governments monitor progress, identify gaps, and allocate resources more efficiently.

Finally, it will also be interesting to look at longitudinal and cross-country comparative studies specifically focusing on the last four submissions of Voluntary National Reports to UNDRR to trace how well countries progress in their policy commitments over time.

Areas for Policy Change

From a disaster governance perspective, strengthening disability-inclusive preparedness requires moving beyond aspirational legal tokenism and policy rhetoric toward practical

implementation across sectors and levels of government. National-level laws and plans must be matched by local funding, institutional arrangements, and strategies that ensure disability-inclusive, accessible, and actionable early warning formats, reliable transportation support, and disability-accessible evacuation and sheltering facilities. Investments in community-based preparedness—particularly through barangay-level coordination, inclusive planning, and capacity-building—can help bridge the gap between national policy intentions and local response realities. Just as importantly, informal support networks, including families, mutual support and community organizations, should be recognized and supported as essential components of inclusive disaster preparedness.

Ultimately, disability inclusion in disaster risk reduction is not achieved through policy recognition alone but through the creation of enabling environments that allow persons with disabilities to act safely, confidently, and with dignity in times of crisis. This report recommends a more grounded understanding of how inclusive early warning systems can be designed, implemented, and sustained in disaster-prone contexts. Saving lives is not achieved through policy recognition alone, but through systems that enable people to act. Inclusive early warning depends on accessible information, reliable support, and infrastructure that works when it is needed most. Early warning systems are only effective when persons with disabilities can understand the message, reach safe places, and rely on support that responds in time. Strengthening disability-inclusive disaster governance, therefore, requires sustained investment in accessible facilities, coordinated support mechanisms, and community-level preparedness. Early warning does not save lives by itself—people do, when systems make action possible.

Reflections

Working on this study has been a deeply satisfying personal journey. The cross-country analysis allowed me to see how governments around the world are increasingly recognizing persons with disabilities in disaster and climate governance. Some countries have now started to acknowledge the importance of inclusion, participation, and accessible early warning systems. Yet, as I examined these documents more closely, I also saw how recognition on paper does not always translate into protection in practice. Policies often speak the language of inclusion, but the everyday conditions needed to make that inclusion real such as accessible infrastructure,

reliable transport, and dedicated support systems are still unevenly developed. This realization reinforced an important lesson: progress in policy is meaningful, but justice is measured by what people experience during actual disasters.

My fieldwork in Central Pangasinan, the Philippines brought this lesson into sharper focus. Listening to the stories of respondents with disabilities living in flood-prone communities made the abstract ideas in policy documents feel real and immediate. Many participants described how they carefully prepare for disasters, depend on family members for assistance, and make difficult decisions about evacuation based on their physical condition, financial capacity, and past experiences. These conversations reminded me that disaster preparedness is not simply about receiving information—it is about having the means, support, and confidence to act safely. I saw firsthand how resilience is often built through everyday cooperation among families, neighbors, and local officials, even in communities with limited resources.

These experiences also deepened my understanding of disability climate justice and disaster justice. Persons with disabilities are often among those most affected by disasters, not because of their impairments alone, but because of the social and environmental conditions surrounding them—poverty, inaccessible infrastructure, limited transportation, and unequal access to services. Climate-related hazards such as flooding and typhoons do not affect persons without disabilities in the same way it affects persons with disabilities.

Reflecting on this work, I am reminded that building inclusive disaster preparedness systems requires more than policies and plans. It requires listening to the lived experiences of communities, recognizing the value of local knowledge, and designing systems that respond to real conditions on the ground. Ultimately, disability inclusion in disaster and risk reduction management is about justice: ensuring that safety is not a privilege, or just a right on paper but a reality for all . When disaster systems are designed with persons with disabilities—not just for them—they create safer, fairer, and more resilient communities for everyone. The principle of “nothing about us without us” reminds us that persons with disabilities must be actively involved in shaping the policies and programs that affect everyone’s safety and well-being. This message resonates deeply with the legacy of Judith Heumann, whose lifelong advocacy helped

transform disability rights into a global movement grounded in dignity, participation, and equality.

Glossary

This glossary provides definitions of key terms, concepts, and abbreviations used in the report to support clarity and accessibility for diverse audiences.

Term	Plain-language meaning for this report
Accessible early warning	Warning information that persons with disabilities can receive, understand, and act on. This may include text alerts, audio messages, visual signals, sign language, simple language, or person-to-person communication.
Accessibility	The extent to which information, services, buildings, transport, shelters, and systems can be used by persons with different disabilities.
Actionable warning	A warning that gives people enough time, clear information, and practical guidance to take protective action.
Adaptive capacity	The ability of individuals, households, communities, or institutions to adjust to climate and disaster risks.
Assistive devices	Tools or equipment that support persons with disabilities, such as wheelchairs, canes, hearing aids, walkers, or communication devices.
Bayanihan	A Filipino value that refers to collective community support and mutual help, especially during times of need. In disaster contexts, it describes how neighbors, families, and community members work together—such as helping evacuate persons with disabilities, sharing resources, or providing informal assistance when formal systems are limited.
Barangay	The smallest administrative unit in the Philippines, responsible for local governance and community-level disaster response.
Capacity	The skills, training, knowledge, staff, and institutional support needed to make disaster preparedness inclusive.

Climate governance	The laws, policies, plans, institutions, and decision-making processes used to respond to climate risks.
Climate justice	The idea that those least responsible for climate change often suffer its worst effects and therefore deserve fair protection, resources, and participation.
Community-based disaster risk management	Disaster planning and response that involve local communities in identifying risks and preparing for emergencies.
Continuity of care	Ongoing access to medicines, treatment, and support during disasters.
Coping strategies	Practical ways people respond to difficulties during disasters, such as relying on family, neighbors, local signs, or informal support networks.
Disability climate justice	A framework that places the lived experiences, rights, and knowledge of persons with disabilities at the center of climate and disaster governance.
Disability-disaggregated data	Data that separately identifies persons with disabilities, allowing governments to see whether disaster systems are reaching and supporting them.
Disability inclusion	The meaningful recognition, participation, protection, and support of persons with disabilities in policies, services, and disaster systems.
Disability recognition	The extent to which policies explicitly mention persons with disabilities and identify them as a group requiring rights, protection, and support.
Disaster governance	The laws, institutions, plans, resources, and practices used to prepare for, respond to, and recover from disasters.
Disaster justice	A framework focused on fairness in how disaster risks, protection, resources, and recovery support are shared.

Disaster preparedness	Actions taken before disasters to reduce harm, including early warning, evacuation planning, training, emergency supplies, and accessible shelters.
DRR	Disaster Risk Reduction
Early warning system (EWS)	A system that detects hazards, communicates warnings, and helps people take action before a disaster occurs.
Evacuation support	Assistance that helps people move to safety, including transport, guidance, rescue help, accessible routes, and support for family members or carers.
Functional needs	The practical support a person may need during disasters, such as mobility assistance, communication support, medication, personal care, or help understanding warnings.
GFDRR	Global Facility for Disaster Reduction and Recovery
Human rights approach to disability	An approach that treats persons with disabilities as rights-holders, not passive recipients of charity. It requires governments to respect, protect, and fulfil their rights.
Inclusive disaster preparedness	Preparedness that considers the needs, rights, and participation of everyone, including persons with disabilities.
Inclusive evacuation	Evacuation planning that is safe and usable for persons with disabilities, including accessible transport, routes, shelters, toilets, and support services.
Institutionalization	The process of making inclusion part of regular systems, rules, budgets, training, and responsibilities—not just one-time activities.
Inter-coder reliability	A test of whether two coders apply the same coding rules consistently when analyzing policy documents.
Intra-coder reliability	A test of whether the same coder applies the same coding rules consistently over time.

Intersectionality	The idea that people may face overlapping risks because of disability combined with other factors such as poverty, gender, age, ethnicity, location, or Indigeneity.
Local governance	The way local authorities, barangays, agencies, and community actors plan and deliver disaster preparedness and response.
Logistical support	Practical support such as transport, evacuation assistance, and coordination.
LGU	Local Government Unit
Monitoring	Tracking whether policies and systems are being implemented and whether they are reaching persons with disabilities.
NAP	National Adaptation Plan
Nationally Determined Contributions (NDCs)	National climate commitments submitted under the Paris Agreement, usually covering mitigation and adaptation priorities.
Operationalization	Turning policy commitments into practical actions, procedures, budgets, and responsibilities.
OPD	Organization of Persons with Disabilities
Pakikipagkapwa	A Filipino concept that means treating others as fellow human beings with shared dignity and identity. In this study, it reflects everyday practices of care, empathy, and responsibility toward others, including supporting persons with disabilities during disasters through respect, understanding, and mutual aid.
Participation	The involvement of persons with disabilities and their organizations in planning, decision-making, implementation, and evaluation.
Partial inclusion	A situation where a certain aspect of inclusion criterion or indicator is mentioned or partly addressed, but without clear, detailed, or enforceable disability-specific measures.

Persons with disabilities (persons with disabilities)	People with long-term physical, sensory, intellectual, psychosocial, or other impairments who may face barriers that limit full participation in society.
Policy commitment	A statement in a law, plan, report, or strategy that expresses government intention or responsibility.
Policy implementation gap	The gap between what policies promise and what actually happens in practice.
Reasonable accommodation	Practical changes or support provided so persons with disabilities can access services and participate equally.
Redundancy	Having multiple ways to deliver warnings (e.g., SMS, sirens, radio, community networks) to ensure messages are received.
Resilience	The ability to prepare for, withstand, respond to, and recover from disasters.
Risk awareness	Knowledge of hazards, exposure, and what actions people should take before or during disasters.
SFDRR (Sendai Framework)	Sendai Framework for Disaster Risk Reduction (2015–2030). A global agreement guiding countries on disaster risk reduction, including the need for inclusive and accessible disaster systems.
Social capital	Support from family, neighbors, community members, and local networks that helps people during disasters.
Structural barriers	Systemic obstacles—such as inaccessible transport, weak services, poverty, poor infrastructure, or exclusion from planning—that increase risk for persons with disabilities.
UN Convention on the Rights of Persons with Disabilities (UNCRPD)	An international treaty that requires governments to protect and promote the rights of persons with disabilities, including in situations of risk and emergencies.
UNDRR	United Nations Office for Disaster Risk Reduction

Universal design	Designing environments, services, and systems so they can be used by as many people as possible without needing later adaptation.
Voluntary National Reviews / Midterm Reviews (VNR/VNR-MTR)	Government reports that assess progress, gaps, and challenges in implementing development or disaster risk reduction commitments.
Vulnerability	The conditions that make people more likely to be harmed by disasters, including poverty, disability-related barriers, poor infrastructure, and limited support.
WHO	World Health Organization

About the Author

Rhomir S. Yanquiling is a researcher, local development professional, lawyer, and disability advocate committed to advancing social, environmental, and economic equity, located in the Philippines. His interdisciplinary work centers on amplifying the voices of marginalized communities, particularly Indigenous peoples and persons with disabilities for the past 12 years. His work has brought him to cities like Bangkok, Yogyakarta, Taipei, Hanoi, Beijing, Brussels, Strasbourg, London, and Frankfurt for fellowships, policy dialogues, and conferences that led to international publications. He leads the Persons With Disability Inclusion Network (Pangasinan, Philippines), a volunteer-led initiative and grassroots advocacy platform that helps people with disabilities navigate government processes to access benefits—such as disability IDs, healthcare, and social protection—and provides legal support for workplace discrimination, denied entitlements, and recognition of disability status.

He has been an Atlantic Fellow for Social and Economic Equity at the London School of Economics (UK), a UNESCO-Keizo Obuchi Research Fellow (Tokyo and Paris), and a Climate Adaptation Finance Fellow (Frankfurt and Bangkok). He holds a Joint European Master's in Comparative Local Development Studies (Hungary/Slovenia/Italy/Germany) as an Erasmus Mundus scholar of the EU, an MSc in Water Management and Governance (IHE Delft, The Netherlands), a law degree, and a BA in English. He is published in Journal of Historical Geography, Earth System Governance, and the International Journal of Disaster Risk Reduction.

Acknowledgments

This research was made possible through the support of the World Institute on Disability under the Global Heumann Fellowship (2025–2026). I am deeply grateful for the opportunity to undertake this work and contribute to advancing disability-inclusive climate and disaster governance.

I would like to sincerely thank Marcie Roth for her guidance and support throughout this research. I am also especially grateful to Heather Duncan for her leadership and care in overseeing the fellowship, and for creating a supportive space for learning and collaboration. My sincere thanks also go to Kathleen McCoy, whose guidance as a writing mentor strengthened the clarity and direction of this work, and to Jody Santos for valuable support as a video mentor.

I extend my heartfelt appreciation to the entire WID community. Being part of this fellowship has been both intellectually enriching and personally meaningful, and I am grateful for the encouragement, solidarity, and shared commitment to disability justice that define the WID family and the legacy of Judy Heumann.

I would also like to thank the persons with disabilities, families, and community members in Central Pangasinan who generously shared their time, experiences, and insights. Their voices are at the heart of this research---"mula sa kaibuturan ng aking puso, walang hanggang pasasalamat sa pagbabahagi ng inyong mga kuwento at karanasan."[4] I am equally grateful to local government units, barangay officials, and disaster management personnel who supported and facilitated the fieldwork.

Finally, I thank my family for their unwavering support, patience, and encouragement throughout this journey.

[4] *From the depths of my heart, I offer my deepest and endless gratitude for sharing your stories and experiences.*

About the Global Heumann Fellowship

Creating a Global Bridge to the Future

The WID Global Heumann Fellowship Program honors WID co-founder Judy Heumann's enduring legacy by empowering disability leaders and advocates worldwide to advance disability rights and justice within their regional communities. Through this program, fellows will work on impactful projects aimed at fostering equity, inclusion, and justice globally. Their responsibilities include conducting research, drafting a white paper, cultivating relationships, driving collaborative opportunities, and contributing to program development aligned with WID's mission and strategic focus areas.

During this twelve-month fellowship term, each fellow will engage in a unique combination of opportunities for thought leadership on national and global policy, research strategies, advocacy, program development, and contributions to initiatives aimed at advancing the rights of persons with disabilities globally. Fellows will focus on identifying and leading research with the support of WID, as it regards the fellow's respective region, expertise, and collaboration with WID.

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To build a more inclusive global society, the World Institute on Disability (WID):

- Helps assure that products and services are more accessible
- Promotes equity policies
- Provides consulting services
- Offers training and tools
- Supports emergency, disaster, and climate efforts

WID is dedicated to designing, building, and supporting whole community solutions by removing barriers to include people with disabilities.

Our Mission

On a global scale, to continuously advance the rights and opportunities of more than one billion people with disabilities

Our Vision

A world in which people with disabilities live freely where access, inclusion, equity, and resilience are embedded throughout every global community

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Valuing lived experience, with 71% or more of our Board and staff identifying as people with disabilities

Accelerating Inclusion

Leading a global effort to eliminate barriers and advance policies that eliminate exclusion and drive inclusion

Pan-disability Movement Solidarity

Pursuing equality, inclusion, and accessibility for all people with any disability

Advancing Human Rights and Supporting Disability Justice Across the LifeSpan

Securing and enhancing independent and interdependent livelihoods for the whole community

Intersectional and Cross-Cultural Competency

Including the full spectrum of identities and the range of privilege, marginalization, and oppression that impact how disabled people are treated

Ethics, Integrity, and Accountability

Directing our focus and uncompromising standards to the needs of everyone with disabilities, especially people who are most marginalized

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List of Images

Figure 1: Integrated Research Design and Analytical Process

Type: Flow chart .pdf **Section**: Methods

Caption: ***Figure 1***: The study's mixed-methods design, combining content analysis of climate and disaster documents, survey analysis, and thematic analysis of fieldwork in Central Pangasinan are highlighted in this flowchart. These are integrated using a human rights approach to disability, disability climate justice, and disaster justice to identify gaps between policy recognition and implementation. *(Source: Author's construction)*

Alt-Text: Figure 1: Diagram showing policy documents, survey data, and fieldwork analyzed and combined to identify gaps in disability inclusion in disaster systems.

Figure 2: Coding Framework for Disability Inclusion in Climate and Disaster Documents

Type: Flow chart .pdf **Section**: Methods

Caption: ***Figure 2***: This figure presents the coding framework used to assess disability inclusion across climate and disaster documents, and the 0–2 scoring system *(Source: Author's construction)*

Alt-Text: Figure 2: A flow chart showing how policy documents are coded and grouped, indicators, and a three-level scoring system. It highlights the parameters, scoring system, reliability testing, and the interpretation of findings based on UNCRPD and SFDRR.

Figure 3: Location Map of Aguilar/Bugallon Central Pangasinan, Philippines

Type: Image .pdf **Section**: Methods

Caption: ***Figure 3:*** This figure shows the study area in Central Pangasinan, Philippines. The map identifies the location of fieldwork sites, including Aguilar and Bugallon.

Alt-Text: Figure 3: Location Map of Central Pangasinan, Philippines showing the location of fieldwork sites, including Aguilar and Bugallon. *(Source: Author's construction).*

Figure 4: Disability Inclusion Scores Across Six Disaster and Climate Governance Document Types in Ten Countries

Type: Bar Chart – in doc Word **Section**: Results & Discussion

Caption: *Figure 4:* Overall disability inclusion scores across six disaster and climate documents in ten countries from the Global South *(Source: Content analysis)*

Alt-Text: Figure 4 is a comparison of disability inclusion scores across 6 disaster and climate document types. It shows that disability inclusion is stronger in climate and disaster plans than in other types of disaster governance instruments. Climate Plan (7.93), Disaster Plan (7.78), VNR (7.59), Climate Law (6.99), NDC (6.6), and Disaster Law (5.62).

Figure 5: Overall Disability Inclusion Scores Across the Six Governance Criteria

Type: Bar Chart – in doc Word Section: Results & Discussion

Caption: ***Figure 5:*** This chart shows disability inclusion scores across six disability inclusive governance criteria in disaster and climate documents from ten disaster-prone countries. *(Source: Content analysis)*

Alt-Text: Figure 5 is a bar chart showing the disability inclusion scores across 6 disability inclusive governance criteria in disaster and climate documents from 10 disaster prone countries. Early warning and preparedness show the lowest level of disability inclusion across the board.

Figure 6: Disability Recognition Across Four Indicators

Type: Bar Chart – in doc Word Section: Results & Discussion

Caption: This chart highlights disability recognition on four indicators across six disaster and climate governance documents for the ten countries in the study. Results indicate moderate overall recognition, with the strongest performance in alignment with international norms and the weakest performance in addressing intersectional vulnerability. *(Source: Content analysis)*

Alt-Text: Figure 6, a bar chart indicates moderate disability recognition based on 4 indicators (intersectionality, disability protection, disability mention, and international norm) across 6 different disaster and climate governance documents. The strongest performance in alignment is with international norms, while the weakest lies in the intersectional vulnerability.

Figure 7.1 Disability Inclusion in Early Warning

Type: Bar Chart – in doc Word Section: Results & Discussion

Caption: ***Figure 7.1.*** This chart demonstrates that Persons with Disabilities are weakly included in early warning and how weakly early warning inclusion is integrated across disaster and climate instruments *(Source: Content analysis)*

Alt-Text: Figure 7.1, a bar chart, showing that disability inclusion in early warning across disaster and climate documents has low integration across disaster and climate instruments.

Figure 7.2 Disability Inclusion in Disaster Preparedness

Type: Bar Chart – in doc Word Section: Results & Discussion

Caption: ***Figure 7.2.*** This chart presents mean scores for three indictors of disability inclusion in disaster preparedness—risk awareness, inclusive evacuation, and health and support services—across six disaster and climate policy instruments from the ten countries in the study. *(Source: Content analysis)*

Alt-Text: Figure 7.2 This bar chart displays the mean scores for 3 indicators of disability inclusion in disaster preparedness—risk awareness, inclusive evacuation, and health and support services. Persons with Disabilities are poorly considered in disaster preparedness according to the author's research and analysis.

Figure 8. Overall Disability Inclusion Scores of the Ten Study Countries

Type: Bar Chart – in doc Word Section: Results & Discussion

Caption: ***Figure 8.*** Disability inclusion scores vary across countries, with Bangladesh, Fiji, and Indonesia showing relatively stronger integration of disability inclusion compared to other countries (Maximum possible score = 12) *(Source: Content analysis)*

Alt-Text: Figure 8 is a bar chart showing the disability inclusion scores across the 10 countries this project examines. The highest score (possible out of 12) is attributed to Bangladesh with an 8.75. While the lowest score is attributed to Madagascar with 5.85.

Figure 9. Inclusion Score of Countries in Terms of Disability Recognition

Type: Bar Chart – in doc Word Section: Results & Discussion

Caption: ***Figure 9.*** Cross-Country Comparison of Disability Recognition Across Four Indicators. See Source Table 10B: Appendix D: Extended Tables and Source Tables for individual series scores. *(Source: Content analysis)*

Alt-Text: Figure 9, a bar chart shows a cross-country comparison of Disability Recognition across 4 indicators. The mean score (out of 8) from best to worst are: Bangladesh (7.2), Fiji (7), Vietnam (6.6), Mozambique (6.4), Indonesia (6.2), Tanzania (6), Pakistan (5.83), Philippines (5.33), Haiti (4.67), and Madagascar (4.25). For individual series scores, see Source Table 10B: Appendix D: Extended Tables and Source Tables.

Figure 10. Inclusion Score in Terms of Disability Participation Across Studied Countries

Type: Bar Chart – in doc Word Section: Results & Discussion

Caption: ***Figure 10.*** This chart presents the mean rating of countries in terms of recognition of disability participation in disaster planning. *(Source: Content analysis)*

Alt-Text: Figure 10, is a bar chart displaying the overall disability participation score for the 10 countries in this study. With a max score of 2, the highest scoring country is Bangladesh (1.80). Following Bangladesh are: Indonesia (1.6), Tanzania (1.60), Fiji (1.50), Vietnam (1.40), Pakistan (1.33), Mozambique (1.20), Philippines (1.17), Haiti (1.00), and Madagascar (1.00)

Figure 11. Disability Inclusion Score in Terms of Early Warning

Type: Bar Chart – in doc Word Section: Results & Discussion

Caption: ***Figure 11.*** This chart shows a cross-country comparison of early warning inclusion for persons with disabilities in disaster and climate governance. *(Source: Content analysis)*

Alt-Text: Figure 11, a bar chart shows the overall disability inclusion score for early warning (Max score=1.60) across the 10 subject countries. Early warning inclusion for Persons with disabilities remains predominately low. In descending order, the countries rank Bangladesh (1.40), Pakistan (1.17), Fiji (1.17), Indonesia (1.00), Tanzania (1.00), Vietnam (1.00), Mozambique (1.00), Philippines (0.83), Madagascar (0.75), Haiti (0.33).

Figure 12. Overall Disability Inclusion Score in Disaster Preparedness

Type: Bar Chart – in doc Word Section: Results & Discussion

Caption: ***Figure 12.*** A cross-country comparison of disability inclusion in disaster preparedness. *(Source: Content analysis)*

Alt-Text: Figure 12, a bar chart, displays the overall disability inclusion score for disaster preparedness, with a max score of 2. The chart indicates that disability inclusion in disaster preparedness remains low. From highest to lowest score, Bangladesh (1.33), Mozambique (1.13), Indonesia (1.07), Vietnam (1.07), Pakistan (1.06), Fiji (1.06), Haiti (0.89), Tanzania (0.87), Philippines (0.83), Madagascar (0.83).

Figure 13. Overall Inclusion Score in Capacity and Funding

Type: Bar Chart – in doc Word Section: Results & Discussion

Caption: ***Figure 13***. Cross-country comparison of disability inclusion in funding and capacity. The figure presents the overall mean inclusion rating for persons with disabilities across two resource-related indicators—capacity development and funding allocation—based on national disaster and climate policy and planning documents from studied countries. *(Source: Content analysis)*

Alt-Text: Figure 13 is a bar chart ranking the 10 countries in this study in relation to their overall ranking for capacity and funding. This chart shows that disability inclusion capacity and funding is low across all 10 countries. With a max rating of 2, the top scoring Bangladesh scores a 1.30. In descending order, Indonesia, Tanzania, and Vietnam all scored 1.1 while the Philippines, Haiti, Pakistan, Mozambique, and Fiji scored 1, while Madagascar is at the bottom of the list at 0.88.

Figure 14. Overall Inclusion Score in Data Monitoring

Type: Bar Chart – in doc Word Section: Results & Discussion

Caption: ***Figure 14.*** Cross-country comparison of disability inclusion in data monitoring indicating that disability disaggregated data monitoring is low. *(Source: Content analysis*

Alt-Text: Figure 14, a bar chart of the 10 studied countries shows the comparison of disability inclusion rates in data monitoring. The chart indicates disability disaggregated data monitoring is low across countries.

Figure 15. Overall Inclusion Score: Recognition vs. Implementation

Type: Bar Chart – in doc Word Section: Results & Discussion

Caption: ***Figure 15.*** Comparison of recognition and implementation scores for disability inclusion across the ten studied disaster-prone countries. *(Source: Content analysis)*

Alt-Text: Figure 15 is a bar chart showing the gap between recognition and implementation scores for disability inclusion across the 10 studied countries. Fiji scored the highest (Implementation = 1.15 and Recognition-1.67) while Haiti (Implementation=0.59 and Recognition=0.67) scored the lowest. All country scores identify a gap between recognition and implementation.

Figure 16. Age Breakdown of Respondents

Type: Pie Chart – in doc Word Section: Results & Discussion

Caption: ***Figure 16.*** A pie chart highlighting age distribution of study respondents in the sample N=86. *(Source: Survey of Persons with Disabilities in Central Pangasinan, 2026)*

Alt-Text: Figure 16 is a pie chart of the age distribution of respondents from the survey of Persons with Disabilities in Central Pangasinan. Age group distribution is 18-25=19%, 26-40=30%, 41-59=40%, and 60 plus=11%.

Figure 17. Gender Breakdown of Respondents

Type: Pie Chart – in doc Word Section: Results & Discussion

Caption: ***Figure 17.*** This pie chart highlights the gender distribution of respondents in the study sample (N = 86). *(Source: Survey of Persons with Disabilities in Central Pangasinan, 2026)*

Alt-Text: Figure 17 is a pie chart representing the gender breakdown of respondents to the survey. Females=56%, Males=44%.

Figure 18. Educational Attainment Breakdown of Respondents

Type: Pie Chart – in doc Word Section: Results & Discussion

Caption: ***Figure 18.*** This pie chart identifies the distribution in terms of educational attainment *(Source: Survey of Persons with Disabilities in Central Pangasinan, 2026)*

Alt-Text: Figure 18 is a pie chart showing the distribution of respondents based on educational attainment. Only 37.21% of respondents have completed at least a secondary education. The next highest score, Elementary shows that 29.10% of respondents finished only through Elementary school.

Figure 19. Income Breakdown of Respondents

Type: Pie Chart – in doc Word Section: Results & Discussion

Caption: ***Figure 19***. Here, the pie chart shows the Income distribution of respondents. *(Source: Survey of Persons with Disabilities in Central Pangasinan, 2026)*

Alt-Text: Figure 19 is a pie chart depicting the income breakdown of survey respondents. 54% earn less than ₱100,000 per year (USD $1,595 in September 2026 exchange rates).

Figure 20. Living Arrangement Breakdown of Respondents

Type: Pie Chart – in doc Word Section: Results & Discussion

Caption: ***Figure 20.*** This chart shows the distribution of respondents in terms of living arrangement indicating an overwhelming majority 94.2% live with family. *(Source: Survey of Persons with Disabilities in Central Pangasinan, 2026)*

Alt-Text: Figure 20 is a pie chart showing survey participant breakdown in living arrangements. Overwhelmingly, 94.20% of respondents report living with family members.

Figure 21. Respondent Access to Electricity and Internet

Type: Bar Chart – in doc Word Section: Results & Discussion

Caption: ***Figure 21***. Access to electricity and the internet of respondents in the study. *(Source: Survey of Persons with Disabilities in Central Pangasinan, 2026)*

Alt-Text: Figure 21 is a bar graph showing respondents' access to electricity and the internet. 83.72% of respondents report having access to electricity while only 39.53% of respondents report having access to the internet.

Figure 22. Respondent Disability Profile

Type: Bar Chart – in doc Word Section: Results & Discussion

Caption: ***Figure 22***. Breakdown of respondents in terms of disabilities *(Source: Survey of Persons with Disabilities in Central Pangasinan, 2026)*

Alt-Text: Figure 22 is a bar graph representing disability profile of respondents. At nearly 3 to 1, mobility limitations (walking and climbing stairs) were reported by 43.59% of respondents. Tied in second place at 15.38%, self-care and hearing were reported, followed by seeing 12.82%, concentration/remembering 12.82%, and communicating 10.26%.

Figure 23. Sources of Risk Among Respondents

Type: Bar Chart – in doc Word Section: Results & Discussion

Caption: ***Figure 23***. Chart lists the reported sources of disaster risk among respondents. *(Source: Survey of Persons with Disabilities in Central Pangasinan, 2026*

Alt-Text: Figure 23 is a pie chart showing disaster risk among survey respondents. Participants reported Typhoon (96.51%), Flood (93.02%), Landslides (72.09%), Earthquake (69.77%), Mudslides (26.74%), Conflict/Violence (17.44%), Volcanic eruption (12.79%), Forest fire (11.63%). None of the respondents chose Storm Surge or Marine pollution as a risk.

Figure 24. Disaster Preparedness Indicators Among Persons with Disabilities in Central Pangasinan

Type: Bar Chart – in doc Word Section: Results & Discussion

Caption: ***Figure 24***. Respondents reported in five key disaster preparedness indicators: presence of a household preparedness plan, awareness of evacuation routes, ability to evacuate independently, displacement experience in the past five years, and accessibility of temporary shelters. *(Source: Survey of Persons with Disabilities in Central Pangasinan, 2026)*

Alt-Text: Figure 24 is a two-sample bar chart representing the five key disaster preparedness indicators. Respondents report low evacuation capacity, low route awareness, and very poor rates of access to accessible temporary shelter.

Figure 25. Respondent Distance from Evacuation Center

Type: Bar Chart – in doc Word Section: Results & Discussion

Caption: ***Figure 25***. Respondents reported distance from residence to evacuation site in Central Pangasinan *(Source: Survey of Persons with Disabilities in Central Pangasinan, 2026)*

Alt-Text: Figure 25 is a bar chart representing the distance respondents must travel to reach an evacuation center. For <65% of the respondents, an evacuation center is over 2 kms.

Figure 26. Respondent Identified Causes of Displacement

Type: Pie Chart – in doc Word Section: Results & Discussion

Caption: ***Figure 26.*** Respondents reported the main causes of displacement among surveyed Persons with Disabilities in Central Pangasinan over the last five years. *(Source: Survey of Persons with Disabilities in Central Pangasinan, 2026)*

Alt-Text: Figure 26 is a pie chart representing the main cause of displacement among Persons with Disabilities in Central Pangasinan. Overwhelming, (75.60%) of respondents reported displacement due to typhoon/flooding, followed by landslides (14%), Fire (3.5%), Conflict/Violence (3.5%), and Earthquake (3.4%)

Figure 27. Respondent Reported Displaced Relocation

Type: Pie Chart – in doc Word Section: Results & Discussion

Figure 27. This chart identifies the place of relocation among Persons with Disabilities during displacement in Central Pangasinan. Percentages reflect the proportion of respondents reporting relocation to relatives' or friends' houses, evacuation centers, or temporary shelters. *(Source: Survey of Persons with Disabilities in Central Pangasinan, 2026)*

Alt-Text: Figure 27 is a pie chart representing where respondents of the survey relocate to when displaced. The majority, 54.7% stay with relatives or friends, followed by 30.2% at an evacuation center, and 15.10% at a temporary shelter.

Figure 28. Barriers to Early Warning Access

Type: Bar Chart – in doc Word Section: Results & Discussion

Figure 28. This chart identifies the main barriers to accessing early warning information among Persons with Disabilities in Central Pangasinan, Philippines. *(Source: Survey of Persons with Disabilities in Central Pangasinan, 2026)*

Alt-Text: Figure 28 is a bar chart showing the most frequently reported barriers to alerts and warnings. The top barrier identified by survey respondents was Inaccessible Warning Formats (80.23%), followed by Mobility Constraints (70.93%), Reliance on Others for Message

Interpretation (53.49%), Limited Trust in Early Warning Sources (39.53%), Digital Divide and Connectivity (36.04%), Late Delivery of Warning Information (26.74%).

Figure 29. Disability Accessibility of Early Warning Information

Type: Bar Chart – in doc Word Section: Results & Discussion

Figure 29. Participant reported perceived accessibility of early warning information formats. Overwhelmingly, respondents indicated early warning information was not accessible. *(Source: Survey of Persons with Disabilities in Central Pangasinan, 2026)*

Alt-Text: Figure 29 is a bar chart showing the perceived accessibility of early warning information formats. 80% of respondents reported that risk information is not accessible, with only 13% saying it is accessible.

Figure 31. Sources of Early Warning Among Persons with Disabilities in Central Pangasinan

Type: Bar Chart – in doc Word Section: Results & Discussion

Figure 31. Source of early warning reported by survey respondents in Central Pangasinan. *(Source: Survey of Persons with Disabilities in Central Pangasinan, 2026)*

Alt-Text: Figure 31 is a bar showing the sources of early warning communications and what category survey respondents rely on. 90% rely on social media, 74%= television, 72%-relatives, Barangay Mobile Car=63%, Radio=63%, Traditional Indigenous Knowledge=49%, SMS from NDRRMC=49%, and Siren=16%.

Figure 32. Respondent Reported Lead Time for Early Warning Before Impact

Type: Bar Chart – in doc Word Section: Results & Discussion

Figure 32. Lead time reported by respondents for receipt of early warning information before a disaster impacted their area. *(Source: Survey of Persons with Disabilities in Central Pangasinan, 2026)*

Alt-Text: Figure 32 is a bar chart highlighting the typical lead time (per respondents) of early warning before impact. 32.56% report receiving less than one lead time prior to impact.

Figure 33. Respondent Coping Strategies When Facing Barriers to Early Warning

Type: Bar Chart – in doc Word Section: Results & Discussion

Figure 33. Coping strategies used by Persons with Disabilities when facing barriers to accessing early warning information in Central Pangasinan, Philippines *(Source: Survey of Persons with Disabilities in Central Pangasinan, 2026)*

Alt-Text: Figure 33 is a bar chart displaying the respondents'' coping strategies when facing barriers for early warnings. The vast majority (86.05%) rely on multiple information sources, family/friends support (72.09%), and past experience (68.80%). Less than half (43.02%) report relying on Barangay official's assistance.

Figure 34. Persons with Disabilities Responses to Early Warning

Type: Pie Chart – in doc Word Section: Results & Discussion

Figure 34. Responses of persons with disabilities upon receipt of early warning (*Source: Survey of Persons with Disabilities in Central Pangasinan, 2026).*

Alt-Text: Figure 34 is a pie chart showing how the survey respondents react to early warnings. The majority (55.81%) waits, 25.58% evacuates, 15.12% stays in place, and 3.49% do nothing.

Figure 35. Factors that Influence Early Warning Actionability

Type: Bar Chart – in doc Word Section: Results & Discussion

Figure 35. Factors that influence early warning actionability among persons with disabilities in Central Pangasinan. *(Source: Survey of Persons with Disabilities in Central Pangasinan, 2026)*

Alt-Text: Figure 35 is a bar chart depicting the factors that encourage action after an early warning. Physical capability is the top factor according to respondents while trust in authorities is at the bottom of the list.

Figure 34. Persons with Disabilities Responses to Early Warning

Type: Pie Chart – in doc Word Section: Results & Discussion

Figure 34. Responses of persons with disabilities upon receipt of early warning (*Source: Survey of Persons with Disabilities in Central Pangasinan, 2026).*

Alt-Text: Figure 34 is a pie chart showing how the survey respondents react to early warnings. The majority (55.81%) waits, 25.58% evacuates, 15.12% stays in place, and 3.49% do nothing.

List of Tables

Table 1. Relevant Provisions of the UNCRPD and SFDRR

Type: Table built in Word **Section**: Methods

Caption: ***Table 1:*** Summary of key UNCRPD and Sendai Framework provisions relevant to disability-inclusive disaster risk reduction and early warning*. (Source: Author's construction)*

Alt-Text: Table 1: Relevant Provisions of the UNCRPD and SFDRR. A table listing international legal and policy provisions that support disability inclusion in disaster preparedness and early warning.

Supplementary Table 1: Codebook

Type: Table built in Word **Section**: Appendix D: Extended Tables & Source Tables

Caption: ***Supplementary Table 1*** *is the codebook for the research highlighting the criteria for the study.*

Alt-Text: Supplementary Table 1 is the Codebook for the research including Criteria 1: Recognition & Commitment, Criteria 2: Participation & Governance, Criteria 3: Early Warning & Disaster Preparedness Systems, Criteria 4: Capacity, Criteria 5: Funding, and Criteria 6: Monitoring & Accountability.

Table 2: Coding Framework for Disability Inclusion in Early Warning

Type: Table built in Word **Section**: Methods

Caption: ***Table 2****:* Coding framework used to assess disability inclusion in early warning and disaster preparedness documents. *(Source: Author's construction, 2026)*

Alt-Text: Table 2: Table showing indicators and scoring criteria used to code disability inclusion in policy documents.

Supplementary Table 2A: Mean Scores of Countries Across Disaster & Climate Documents

Type: Table built in Word **Section**: Appendix D: Extended Tables & Source Tables

Caption: ***Supplementary Table 2****:* The mean scores of the 10 studied countries across official disaster and climate documents.

Alt-Text: Supplementary Table 2A: Mean Scores of Countries Across Disaster and Climate Documents of the 10 countries in this study.

Supplementary Table 2B: Mean Rating of Countries Across Disaster and Climate Documents

Type: Table built in Word **Section**: Appendix D: Extended Tables & Source Tables

Caption: ***Supplementary Table 2****:* The mean rating of the 10 studied countries across official disaster and climate documents.

Alt-Text: Supplementary Table 2B: Mean Rating of Countries Across Disaster and Climate Documents of the 10 countries in this study.

Table 3A: Disability Inclusion Scoring

Type: Table built in Word **Section**: Methods

Caption: ***Table 3A***: The scoring scale used to classify disability inclusion across policy documents. *(Source: Author's construction, 2026)*

Alt-Text: Table 3A: Table explaining the 0-2 scoring system for absent, partial, and explicit disability inclusion.

Supplementary Table 3A: Mean Ratings Across Disability Inclusion Indicators and Documents

Type: Table built in Word **Section**: Appendix D: Extended Tables & Source Tables
Caption: ***Supplementary Table 3A***: The mean ratings across disability inclusion indicators and documents.

Alt-Text: Supplementary Table 3: Mean Ratings across disability inclusion official documents.

Table 3B: Interpretation of Overall Disability Inclusion Scores

Type: Table built in Word **Section**: Results & Discussion

Caption: ***Table 3B:*** The interpretation guide for overall disability inclusion scores. *(Source: Author's construction, 2026)*

Alt-Text: Table 3B: Depiction showing how total scores are interpreted from very low to high inclusion.

Supplementary Table 3B: Mean Rating Across Disability Inclusion Indicators and Countries

Type: Table built in Word **Section**: Appendix D: Extended Tables & Source Tables

Caption: ***Supplementary Table 3B:*** The mean ratings across disability inclusion indicators across the

Alt-Text: Table 3B: Mean ratings across disability inclusion indicators and countries studied.

Table 4A: Scope of Reliability Testing for Document Coding

Type: Table built in Word Section: Results & Discussion

Caption: ***Table 4A:*** Scope of reliability testing for document coding. *(Source: Author's construction, 2026)*

Alt-Text: Table 4A: Table showing the number of coding decisions used for inter-coder and intra-coder reliability testing.

Table 4B: Inter-coder and Intra-coder Reliability Results

Type: Table built in Word Section: Results & Discussion

Caption: ***Table 4B****:* Inter-coder and intra-coder reliability results. *(Source: Author's construction)*

Alt-Text: Table 4B: Table showing Cohen's kappa and percentage agreement for coding reliability.

Source Table 5: Disability Inclusion Scores by Document Type Across Ten Countries Studied

Type: Table built in Word **Section**: Appendix D: Extended Tables & Source Tables

Caption: ***Source Table 5:*** Score Range and interpretation: 0–3: Very low inclusion; 4–6: Low inclusion; 7–9: Moderate inclusion; 10–12: High inclusion *(Source: Content analysis)*

Alt-Text: Source Table 5 shows the overall disability inclusion score (max=2) and overall mean rating score (max=2) for official documents including: Climate Plan, Disaster Plan, VNR, Climate Law, NDC, Disaster Law, and Overall mean score.

Source Table 6. Overall Disability Inclusion Scores Across the 6 Governance Criteria

Type: Table – in doc Word **Section**: Appendix D: Extended Tables & Source Tables

Caption: ***Source Table 6.*** Score Range and interpretation: 0–3: Very low inclusion; 4–6: Low inclusion; 7–9: Moderate inclusion; 10–12: High inclusion *(Source: Content analysis)*

Alt-Text: Source Table 6: Overall Disability Inclusion Scores Across the 6 Governance Criteria (Overall Mean Raw Score: Max=12; Overall Mean Rating Score: Max=2). Criteria include: Recognition, Participation, Monitoring, Funding, Capacity, and EWS and disaster Preparedness.

Table 7. Disability Recognition Across Four Indicators

Type: Table – in doc Word **Section**: Results & Discussion

Caption: ***Table 7.*** Score Range and interpretation: 0–3: Very low inclusion; 4–6: Low inclusion; 7–9: Moderate inclusion; 10–12: High inclusion *(Source: Content analysis)*

Alt-Text: Table 7: Disability Recognition Across Four Indicators. This table identifies the mean rating and mean score across the four indicators (International Norm, Disability Mention, Disability Protection, Intersectionality).

Source Table 8.1 Disability Inclusion in Early Warning

Type: Table – in doc Word **Section**: Appendix D: Extended Tables & Source Tables

Caption: ***Source Table 8.1:*** Shows the Mean Rating and Mean Score for each governance document for disability inclusion in early warning. (Source: Content analysis)

Alt-Text: Source Table 8.1 shows the Mean Rating and Mean Scores for each of the governance documents for disability inclusion in early warning.

Source Table 8.2 Disability Inclusion in Disaster Preparedness

Type: Table – in doc Word **Section**: Appendix D: Extended Tables & Source Tables

Caption: ***Source Table 8.1:*** Score Range and interpretation: 1–3: Very low inclusion; 4–6: Low inclusion; 7–9: Moderate inclusion; 10–12: High inclusion *(Source: Content analysis)*

Alt-Text: Source Table 8.2 Disability Inclusion in Disaster Preparedness shows the mean rating and mean score across governance documents for disability inclusion in disaster preparedness.

Table 9. Overall Disability Inclusion Scores of the Ten Countries

Type: Table – in doc Word **Section**: Results & Discussion

Caption: ***Table 9.*** Score Range and interpretation: 0–3: Very low inclusion; 4–6: Low inclusion; 7–9: Moderate inclusion; 10–12: High inclusion *(Source: Content analysis)*

Alt-Text: Table 9: Overall Disability Inclusion Scores of the Ten Countries shoes the mean score and mean rating of each of the 10 countries in this report for overall disability inclusion.

Table 10A. Disability Inclusion on Four Disability Recognition Indicators

Type: Table – in doc Word **Section**: Results & Discussion

Caption: ***Table 10A.*** *(Source: Content analysis)*

Alt-Text: Table 10A. Disability Inclusion on Four Disability Recognition Indicators shows the score for each governance document on Disability Mention, Disability Protection, Intersectionality, and International Norms.

Source Table 10B. Inclusion Score of Countries in Terms of Disability Recognition

Type: Table – in doc Word **Section**: Appendix D: Extended Tables & Source Tables

Caption: ***Source Table 10B:*** Score Range and interpretation: 0–2: Very low inclusion; 3-4: Low inclusion; 5–6: Moderate inclusion; 7–8: High inclusion *(Source: Content analysis)*

Alt-Text: Source Table 10B. Inclusion Score of Countries in Terms of Disability Recognition show how each country ranks (in both Mean Score and Mean Rating) across Disability Mention, Disability Protection, Intersectionality, and International Norms.

Source Table 11A. Disability Inclusion in Participation

Type: Table – in doc Word **Section**: Appendix D: Extended Tables & Source Tables

Caption: ***Source Table 11A:*** *(Source: Content analysis)*

Alt-Text: Source Table 11A. Disability Inclusion in Participation table shows the participation by country of each of the governance documents.

Source Table 11B. Cross-Country Comparison of Recognition of Disability Participation in Disaster Planning

Type: Table – in doc Word **Section**: Appendix D: Extended Tables & Source Tables

Caption: ***Table 11B.*** Score range and interpretation: 0.00–0.50: Very low inclusion; 0.51–1.00: Low inclusion; 1.01–1.50: Moderate inclusion; 1.51–2.00: High inclusion *(Source: Content analysis)*

Alt-Text: Source Table 11B. Cross-Country Comparison of Recognition of Disability Preparedness Planning shows the ranking of each of the 10 countries studied..

Table 12A. Disability Inclusion on Early Warning

Type: Table – in doc Word **Section**: Results & Discussion

Caption: ***Table 12A.*** *(Source: Content analysis)*

Alt-Text: Table 12A. Disability Inclusion on Early Warning shows the score across the governance documents.

Source Table 12B. Disability Inclusion Score in Terms of Early Warning

Type: Table – in doc Word **Section**: Appendix D: Extended Tables & Source Tables

Caption: ***Source Table 12B.*** Score range and interpretation: 0.00–0.99: Very low inclusion; 0.51–1.00: Low inclusion; 1.01–1.50: Moderate inclusion; 1.51–2.00: High inclusion *(Source: Content analysis)*

Alt-Text: Source Table 12B. Disability Inclusion Score in Terms of Early Warning shows the cross-country comparison scores of the 10 countries studied.

Table 13A. Disability Inclusion on Three Disaster Preparedness Indicators

Type: Table – in doc Word **Section**: Results & Discussion

Caption: ***Table 13A.*** *(Source: Content analysis)*

Alt-Text: Table 13A. Disability Inclusion on Three Disaster Preparedness Indicators shows the scores for Risk Awareness, Evacuation, and Health and Support Services across the governance documents.

Source Table 13B. Overall Disability Inclusion Score in Disaster Preparedness

Type: Table – in doc Word **Section**: Appendix D: Extended Tables & Source Tables

Caption: ***Source Table 13B.*** Score range and interpretation: 0.00–0.50: Very low inclusion; 0.51–1.00: Low inclusion; 1.01–1.50: Moderate inclusion; 1.51–2.00: High inclusion *(Source: Content analysis)*

Alt-Text: Source Table 13B. Overall Disability Inclusion Score in Disaster Preparedness is a cross-country comparison across Risk Awareness, Inclusive Evacuation, and Health and Support Services.

Table 14A. Disability Inclusion in Capacity and Funding

Type: Table – in doc Word **Section**: Results & Discussion

Caption: ***Table 14A.*** *(Source: Content analysis)*

Alt-Text: Table 14A. Disability Inclusion in Capacity and Funding shows the number of countries with each of the governance documents.

Source Table 14B. Overall Inclusion Score in Capacity and Funding

Type: Table – in doc Word **Section**: Appendix D: Extended Tables & Source Tables

Caption: ***Source Table 14B.*** Score range and interpretation: 0.00–0.50: Very low inclusion; 0.51–1.00: Low inclusion; 1.01–1.50: Moderate inclusion; 1.51–2.00: High inclusion *(Source: Content analysis*

Alt-Text: Source Table 14B. Overall Inclusion Score in Capacity and Funding is a cross-country comparison of capacity and funding for the 10 studied countries.

Table 15A. Disability Inclusion on Disability-Disaggregated Data Monitoring

Type: Table – in doc Word **Section**: Results & Discussion

Caption: ***Table 15A.*** *(Source: Content analysis)*

Alt-Text: Table 15A. Disability Inclusion on Disability-Disaggregated Data Monitoring shows the number of countries score.

Source Table 15B. Overall Inclusion Score in Data Monitoring

Type: Table – in doc Word **Section**: Appendix D: Extended Tables & Source Tables

Caption: ***Source Table 15B:*** Score range and interpretation: 0.00–0.50: Very low inclusion; 0.51–1.00: Low inclusion; 1.01–1.50: Moderate inclusion; 1.51–2.00: High inclusion *(Source: Content analysis)*

Alt-Text: Source Table 15B. Overall Inclusion Score in Data Monitoring is a cross-country comparison of the 10 studied countries in data monitoring.

Table 16. Strength of Relationships Between Disability Recognition, Disaster Preparedness, and Early Warning Inclusion Across 10 Disaster-Prone Countries

Type: Table – in doc Word **Section**: Results & Discussion

Caption: ***Table 16.*** Values outside parentheses represent Pearson correlation coefficients, while values in parentheses represent Spearman rank correlation coefficients (* $p < 0.05$; ** $p < 0.01$; N = 10 countries). *(Source: Content analysis)*

Alt-Text: Table 16. Strength of Relationships Between Disability Recognition, Disaster Preparedness, and Early Warning Inclusion Across Ten Disaster-Prone Countries.

Table 17.1. Policy Recommendations for Strengthening Disability Inclusion in Disaster Governance

Type: Table – in doc Word **Section**: Results & Discussion

Caption: ***Table 17.1.*** *(Source: Author construction)*

Alt-Text: Table 16. Strength of Relationships Between Disability Recognition, Disaster Preparedness, and Early Warning Inclusion Across Ten Disaster-Prone Countries.

Source Table 17. Overall Inclusion Score (Recognition vs. Implementation)

Type: Table – in doc Word **Section**: Appendix D: Extended Tables & Source Tables

Caption: ***Source Table 17.*** Score range and interpretation: 0.00–0.50: Very low inclusion; 0.51–1.00: Low inclusion; 1.01–1.50: Moderate inclusion; 1.51–2.00: High inclusion *(Source: Content analysis)*

Alt-Text: Source Table 17. Overall Inclusion Score (Recognition vs. Implementation) is a cross-country comparison of Recognition vs. Implementation scores of the 10 studied countries in terms of inclusion.

Source Table 18. Sources of Risk Among Respondents

Type: Table – in doc Word **Section**: Appendix D: Extended Tables & Source Tables

Caption: ***Source Table 18. (***Source: Survey of Persons with Disabilities in Central Pangasinan, 2026)

Alt-Text: Source Table 18. Sources of Risk Among Respondents shows the frequency and percentage of each risk (Typhoon, Flood, Landslides, Mudslides, Conflict/Violence, Volcanic Eruption, Forest Fire, Storm Surge, and Marine Pollution).

Source Table 19. Disaster Preparedness Indicators Among Persons with Disabilities in Central Pangasinan

Type: Table – in doc Word **Section**: Appendix D: Extended Tables & Source Tables

Caption: ***Source Table 19. (****Source: Survey of persons with disabilities in Central Pangasinan, 2026)*

Alt-Text: Source Table 19. Disaster Preparedness Indicators Among Persons with Disabilities in Central Pangasinan.

Source Table 20. Distance from Evacuation Center

Type: Table – in doc Word **Section**: Appendix D: Extended Tables & Source Tables

Caption: ***Source Table 20. (****Source: Survey of persons with disabilities in Central Pangasinan, 2026)*

Alt-Text: Source Table 20. Distance from Evacuation Center shows survey respondent answers of whether they are: Less than 1km, 2-4km, 4-7km, or more than 7km.

Source Table 21. Causes of Displacement

Type: Table – in doc Word **Section**: Appendix D: Extended Tables & Source Tables

Caption: ***Source Table 21: (****Source: Survey of persons with disabilities in Central Pangasinan, 2026)*

Alt-Text: Source Table 21. Causes of Displacement shows survey responses.

Source Table 22. Places of Relocation when Displaced

Type: Table – in doc Word **Section**: Appendix D: Extended Tables & Source Tables

Caption: ***Source Table 22: (****Source: Survey of persons with disabilities in Central Pangasinan, 2026)*

Alt-Text: Source Table 22. Places of Relocation When Displaced shows where respondents have evacuated to.

Source Table 23. Barriers to Early Warning Access

Type: Table – in doc Word **Section**: Appendix D: Extended Tables & Source Tables

Caption: ***Source Table 23. (****Source: Survey of persons with disabilities in Central Pangasinan, 2026)*

Alt-Text: Source Table 23. Barriers to Early Warning Access shows how respondents answered the questions regarding their barriers to early warning access.

Source Table 24. Disability Accessibility of Early Warning Information

Type: Table – in doc Word **Section**: Appendix D: Extended Tables & Source Tables

Caption: ***Source Table 24. (****Source: Survey of persons with disabilities in Central Pangasinan, 2026)*

Alt-Text: Source Table 24. Disability Access of Early Warning Information.

Source Table 25. Sources of Early Warning Among Persons with Disabilities in Central Pangasinan

Type: Table – in doc Word **Section**: Appendix D: Extended Tables & Source Tables

Caption: ***Source Table 25. (****Source: Survey of persons with disabilities in Central Pangasinan, 2026)*

Alt-Text: Source Table 25. Sources of Early Warning Among Persons with Disabilities shows respondent answers.

Source Table 26. Lead Time for Receipt of Early Warning Before Impact

Type: Table – in doc Word **Section**: Appendix D: Extended Tables & Source Tables

Caption: ***Source Table 26. (****Source: Survey of persons with disabilities in Central Pangasinan, 2026)*

Alt-Text: Source Table 26. Lead Time for Receipt of Early Warning Before Impact shows respondent answers to typical receipt of early warning information.

Source Table 27. Coping Strategies When Facing Barriers for Early Warning

Type: Table – in doc Word **Section**: Appendix D: Extended Tables & Source Tables

Caption: ***Source Table 27. (****Source: Survey of persons with disabilities in Central Pangasinan, 2026)*

Alt-Text: Source Table 27. Coping Strategies When Facing Barriers for Early Warning shows respondent answers.

Source Table 28. Persons with Disabilities Responses to Early Warning

Type: Table – in doc Word **Section**: Appendix D: Extended Tables & Source Tables

Caption: ***Source Table 28. (****Source: Survey of persons with disabilities in Central Pangasinan, 2026)*

Alt-Text: Source Table 28. Persons with Disabilities Responses to Early Warning shows respondent's answer to whether they Wait, Evacuate, Stay, or Do Nothing.

Source Table 29. Factors that Influence Early Earning Actionability

Type: Table – in doc Word **Section**: Appendix D: Extended Tables & Source Tables

Caption: ***Source Table 29. (****Source: Survey of persons with disabilities in Central Pangasinan, 2026)*

Alt-Text: Source Table 29. Factors that Influence Early Warning Actionability shows respondent answers as to what influences their action.

References

Abbott, D., & Porter, S. (2013). Environmental hazard and disabled people: From vulnerable to expert to interconnected. Disability & Society, 28(6), 839–852. https://doi.org/10.1080/09687599.2013.802222

Adger, W. N. (2006). Vulnerability. Global Environmental Change, 16(3), 268–281. https://doi.org/10.1016/j.gloenvcha.2006.02.006

Aguirre, B. E., Wenger, D., & Vigo, G. (1998). A test of the emergent norm theory of collective behavior. Sociological Forum, 13(2), 301–320

Akike, K., & Goulding, S. (2025). Disability and climate change – Inclusive futures. Development in Practice, 1–6.https://doi.org/10.1080/09614524.2025.2544031

Aldrich, D. P. (2011). The externalities of strong social capital: Post-tsunami recovery in Southeast India. Journal of Civil Society, 7(1), 81–99.https://doi.org/10.1080/17448689.2011.553441

Aldrich, D. P., & Meyer, M. A. (2015). Social capital and community resilience. American behavioral scientist, 59(2), 254-269.

Amorim-Maia, A. T., & Olazabal, M. (2025). Beyond adjustment: A new paradigm for climate change adaptation in a complex world. Global Environmental Change, 93, 103027. https://doi.org/10.1016/j.gloenvcha.2025.103027

Anguelovski, I., Shi, L., Chu, E., Gallagher, D., Goh, K., Lamb, Z., Teicher, H. (2016). Equity impacts of urban land use planning for climate adaptation: Critical perspectives from the global north and south. Journal of Planning Education and Research, 36(3), 333–348. https://doi.org/10.1177/0739456X16645166

Araos, M., Jagannathan, K., Shukla, R., et al. (2021). Equity in human adaptation-related responses: A systematic global review. One Earth, 4(10), 1454–1467. https://doi.org/10.1016/j.oneear.2021.09.001

Aruta, J. J. B. R., & Guinto, R. R. (2022). Safeguarding youth health in climate-vulnerable countries. The Lancet Child & Adolescent Health, 6(4), 223–224. https://doi.org/10.1016/S2352-4642(22)00029-3

Babcicky, P., & Seebauer, S. (2017). The two faces of social capital in private flood mitigation: Opposing effects on risk perception, self-efficacy and coping capacity. Journal of Risk Research, 20(8), 1017–1037. https://doi.org/10.1080/13669877.2016.1147489

Barnes, C. (2018). Theories of disability and the origins of the oppression of disabled people in Western society. In L. Barton (Ed.), Disability and society: Emerging insights and issues (pp. 43–60). Routledge. https://doi.org/10.1080/0142159X.2023.2200118

Batchelor, C., Cha, J. Y., Osterwalder, K., Pickles, J., & Stowe, C. (2021). Towards disability transformative early warning systems: Barriers, challenges and opportunities. Practical Action Consulting. https://zcralliance.org/resources/item/towards-disability-transformative-early-warning-systems-barriers-challenges-and-opportunities/

Baudoin, M. A., Henly-Shepard, S., Fernando, N., Sitati, A., & Zommers, Z. (2016). From top-down to community-centric approaches to early warning systems: Exploring pathways to improve disaster risk reduction through community participation. International Journal of Disaster Risk Science, 7(2), 163–174. https://doi.org/10.1007/s13753-016-0085-6

Berberian, A. G., Gonzalez, D. J. X., & Cushing, L. J. (2022). Racial disparities in climate change-related health effects in the United States. Current Environmental Health Reports, 9, 451–464. https://pmc.ncbi.nlm.nih.gov/articles/PMC9363288/

Brockie L & Miller E (2017) Understanding older adults' resilience during the Brisbane floods: Social capital, life experience, and optimism. Disaster Medicine and Public Health Preparedness 11, 72–79. https://doi.org/10.1017/dmp.2016.161

Calabrese, J. (2020). "UNNATURAL" DISASTERS AND INJUSTICE IN THE INDIAN RISKSCAPE: UNLEASHING YOUTH POTENTIAL. Asian Affairs, 51(4), 913–936. https://doi.org/10.1080/03068374.2020.1834798

Clark, N., Chhotray, V. and Few, R. (2013), Global justice and disasters. The Geographical Journal, 179: 105-113. https://doi.org/10.1111/geoj.12005

Coleman JS (1988) Social capital in the creation of human capital. American Journal of Sociology 94(Supplement), S95–S120. Available at http://www.jstor.org/stable/2780243

CBM Global. (2023, May). Position paper: SFDRR political declaration – Disability stakeholder group. https://cbm-global.org

Chisty, M. A., Nazim, A., Rahman, M. M., Dola, S. E. A., & Khan, N. A. (2021). Disability inclusiveness of early warning system: A study on flood-prone areas of Bangladesh. Disaster Prevention and Management: An International Journal, 30(4–5), 494–509. https://doi.org/10.1108/DPM-05-2021-0177

Clarinval, C., & Hunt, M. R. (2014). Disaster, displacement and justice: Powers and Faden's theory of social justice and the obligations of non-governmental organizations towards internally displaced persons. Bioethica Forum, 7(2), 60–69. https://escholarship.mcgill.ca/downloads/6d570207v?locale=en

Corbin, T. B. (2015). Leveraging disaster: Promoting social justice and holistic recovery through policy advocacy after Hurricane Katrina. Journal of Public Management & Social Policy, 22(2), 5. https://digitalscholarship.tsu.edu/jpmsp/vol22/iss2/5/

Cote, A., & Banks, L. M. (2025). Global disability inclusion report: Accelerating disability inclusion in a changing and diverse world. UNICEF. https://www.globaldisabilitysummit.org/wp-content/uploads/2025/03/GIP03351-UNICEF-GDIR-Full-report_Proof-4.pdf

Dargin J.S., Mostafavi A. Human-centric infrastructure resilience: Uncovering well-being risk disparity due to infrastructure disruptions in disasters. PLoS ONE. 2020;15:e0234381. https://doi:10.1371/journal.pone.0234381

Degener, T. (2016). Disability in a human rights context. Laws, 5(3), 35. https://doi.org/10.3390/laws5030035

de Onís, C. M., Cubelos, E., & Ortiz Chavarria, M. del R. (2020). "No había humanidad": Critiquing English monolingualism and other entwined systems of white supremacy in local emergency management responses. Social Justice, 47(1–2), 135–170.

Dhungana BM & Kusakabe K (2010) The role of self-help groups in empowering disabled women: A case study in Kathmandu Valley, Nepal. Development in Practice 20(7), 855–865. https://doi.org/10.1080/09614524.2010.508244

Dias, N., Haigh, R., Amaratunga, D., & Rahayu, H. (2024). A review of tsunami early warning at the local level: Key actors, dissemination pathways, and remaining challenges. International Journal of Disaster Risk Reduction, 101, 104195. https://doi.org/10.1016/j.ijdrr.2023.104195.

Donatti, C. I., Nicholas, K., Fedele, G., Delforge, D., Speybroeck, N., Moraga, P., Blatter, J., Below, R., & Zvoleff, A. (2024). Global hotspots of climate-related disasters. International Journal of Disaster Risk Reduction, 108, 104488. https://doi.org/10.1016/j.ijdrr.2024.104488

Douglass, M., & Miller, M. A. (2018). Disaster justice in Asia's urbanising Anthropocene. Environment and Planning E: Nature and Space, 1(3), 271–287. https://doi.org/10.1177/2514848618797333

Drabek T. E. (1986). Human system responses to disaster: An inventory of sociological findings. New York, NY: Springer-Verlag.

Drabek, T. E., & McEntire, D. A. (2003). Emergent phenomena and the sociology of disaster: Lessons, trends and opportunities from the research literature. Disaster Prevention and Management, 12, 97–112.

Dutta R, Basnayake S (2018), "Gap assessment towards strengthening early warning systems". International Journal of Disaster Resilience in the Built Environment, Vol. 9 No. 2 pp. 198–215, https://doi.org/10.1108/IJDRBE-11-2016-0051

EM-DAT: The International Disaster Database (Centre for Research on the Epidemiology of Disasters [CRED], UCLouvain). (2023). EM-DAT database. https://www.emdat.be

EM-DAT: The International Disaster Database, Centre for Research on the Epidemiology of Disasters (CRED). (2026). 2025 disasters in numbers. https://files.emdat.be/reports/2025_EMDAT_report.pdf

Engelman, A. A. (2012). Addressing disparities in emergency communication with the deaf and hard-of-hearing: Cultural competence and preparedness for first responders. University of California, Berkeley. https://escholarship.org/uc/item/4j843811

Engelman, A., Craig, L., & Iles, A. (2022). Global disability justice in climate disasters: Mobilizing people with disabilities as change agents. Health Affairs, 41(10), 1496–1504. https://doi.org/10.1377/hlthaff.2022.00474

Eriksen, S. H., Grøndahl, R., & Sæbønes, A. M. (2021). On CRDPs and CRPD: Why the rights of people with disabilities are crucial for understanding climate-resilient development pathways. The Lancet Planetary Health, 5, e929–e939. https://doi.org/10.1016/S2542-5196(21)00233-3

Estember, R. D., & Abiog, M. C. M. (2018). Vulnerability assessment of Pangasinan province to typhoons, floods and landslides. AIP Conference Proceedings, 2045, 020060. https://doi.org/10.1063/1.5080873

Ford, J. D., et al. (2018). Preparing for the health impacts of climate change in Indigenous communities: The role of community-based adaptation. Global Environmental Change, 49, 129–139. https://doi.org/10.1016/j.gloenvcha.2018.02.006

Gaskin, C. J., Taylor, D., Kinnear, S., Mann, J., Hillman, W., & Moran, M. (2017). Factors associated with the climate change vulnerability and the adaptive capacity of people with disability: A systematic review. Weather, Climate, and Society, 9, 801–814. https://doi.org/10.1175/WCAS-D-16-0126.1

Global Facility for Disaster Reduction and Recovery. (2017). Disability inclusion in disaster risk management: Promising practices and opportunities for enhanced engagement. https://www.gfdrr.org/sites/default/files/publication/GFDRR%20Disability%20inclusion%20in%20DRM%20Report_F.pdf

Gomes, G., Marchezini, V., & Sato, M. (2022). (In)visibilities about the vulnerabilities of people with visual impairments to disasters and climate change. International Journal of Disaster Risk Science, 13, 38–51. https://doi.org/10.1007/s13753-022-00394-6

Engelman, A. A. (2012). Addressing disparities in emergency communication with the deaf and hard-of-hearing: Cultural competence and preparedness for first responders. University of California, Berkeley. https://escholarship.org/uc/item/4j843811

Gvetadze, N., & Pertiwi, P. (2022). Including persons with disabilities in disaster risk reduction: A research study from eight countries of Africa, Asia and South/Central America. https://reliefweb.int/report/world/including-persons-disabilities-disaster-risk-reduction-research-study-eight-countries-africa-asia-and-southcentral-america

Hardin R (2002) Trust and trustworthiness. Russell Sage Foundation, New York. Hawkins, R. L., & Maurer, K. (2010). Bonding, bridging and linking: How social capital operated in New Orleans following Hurricane Katrina. British Journal of Social Work, 40(6), 1777-1793.

Hudson, P., Hagedoorn, L., & Bubeck, P. (2020). Potential linkages between social capital, flood risk perceptions, and self-efficacy. International Journal of Disaster Risk Science, 11(3), 251–262. https://doi.org/10.1007/s13753-020-00259-w

Humanity & Inclusion. (2022, February 17). HI helps survivors of Typhoon Rai rebuild their lives. https://www.hi.org/en/news/hi-helps-survivors-of-typhoon-rai-rebuild-their-lives

Humanity & Inclusion. (2024, June 12). Philippines: HI prepares people with disabilities to cope with climate-related disasters.

IFRC. (2007). World Disasters Report- Focus on discrimination. https://www.preventionweb.net/files/1720_WDR2007English.pdf?startDownload=true

Jampel, C. (2018). Intersections of disability justice, racial justice and environmental justice. Environmental Sociology, 4, 122–135.

Jodoin, S., Lofts, K., Bowie-Edwards, A., Leblanc, L., Gupta, N., & Rourke, C. (2022, November). Disability rights in national climate policies: Status report. Centre for Human Rights & Legal Pluralism & International Disability Alliance. https://www.disabilityinclusiveclimate.org/researcheng/project-one-ephnc-76974-dsc4y

Jodoin S, Buettgen A, Groce N, Gurung P, Kaiser C, Kett M, et al. (2023) Nothing about us without us: The urgent need for disability-inclusive climate research. PLOS Clim 2(3): e0000153. https://doi.org/10.1371/journal.pclm.0000153

Jodoin, S., Savaresi, A., & Wewerinke-Singh, M. (2021). A rights-based approach to climate decision-making. Current Opinion in Environmental Sustainability, 51–52, 45–53. https://doi.org/10.1016/j.cosust.2021.01.006

Jodoin, S., Bowie-Edwards, A., Lofts, K., et al. (2025). A systematic analysis of disability inclusion in domestic climate policies. Climate Action, 4, 24. https://doi.org/10.1038/s44168-025-00228-3

Jodoin, S., Ananthamoorthy, N., & Lofts, K. (2020). A disability rights approach to climate governance. Ecology Law Quarterly, 47, 73–116.

Jodoin, S., et al. (2023). Nothing about us without us: The urgent need for disability-inclusive climate research. PLOS Climate, 2, e0000153. https://doi.org/10.1371/journal.pclm.0000153

Kawachi I, Kennedy BP, Lochner K & Prothrow-Stith D (1997) Social capital, income inequality, and mortality. American Journal of Public Health 87(9), 1491–1498. https://doi.org/10.2105/AJPH.87.9.1491

Kälin, W. (2024). Disaster and climate change-induced displacement of persons with disabilities: A human rights perspective. In M. H. Rioux, A. Buettgen, E. Zubrow, & J. Viera (Eds.), Handbook of disability (pp. 1613–1632). Springer. https://doi.org/10.1007/978-981-19-6056-7_27

Kett, M., & Twigg, J. (2007). Disability and disasters: Towards an inclusive approach. International Federation of Red Cross and Red Crescent Societies.

Kharas, H., McArthur, J. W., & Ohno, I. (2019). Getting specific to leave no one behind. In Leave no one behind (Chapter 1). Brookings Institution.

Kim S, Kim Y, Park J, Kim R, Lee W, Bell ML & Lee J-T (2026) Leave no one behind: A call to include people with disabilities in climate change and health research. The Lancet Planetary Health 10(3), 101440. https://doi.org/10.1016/j.lanplh.2026.101440

King, M. M., & Gregg, M. A. (2022). Disability and climate change: A critical realist model of climate justice. Sociology Compass, 16, e12962. https://doi.org/10.1111/soc4.12962

Kirk-Wade, E., Stiebahl, S., & Wong, H. (2024, October 2). UK disability statistics: Prevalence and life experiences (Research briefing). House of Commons Library. https://commonslibrary.parliament.uk/research-briefings/cbp-9602/

Kosanic, A., Petzold, J., Martín-López, B., & Razanajatovo, M. (2022). An inclusive future: Disabled populations in the context of climate and environmental change. Current Opinion in Environmental Sustainability, 55, 1–11. https://doi.org/10.1016/j.cosust.2022.101168

Landis JR & Koch GG (1977) The measurement of observer agreement for categorical data. Biometrics 33(1), 159–174. https://doi.org/10.2307/2529310

Lesnikowski, A., Jodoin, S., Lemay, J.-P., Thomson, V., & Johnson, K. (2023). Human rights in climate change adaptation policies: A systematic assessment. Climate Policy, 23(1), 1–15. https://doi.org/10.1080/14693062.2022.2153102

Lincoln, Y., & Guba, E. G. (1985). Naturalistic inquiry. Newbury Park, CA: Sage.

Lindell, M.K. and Perry, R.W. (2012), The Protective Action Decision Model: Theoretical Modifications and Additional Evidence. Risk Analysis, 32: 616-632. https://doi.org/10.1111/j.1539-6924.2011.01647.x

Lindsay, S., Hsu, S., Ragunathan, S., & Lindsay, J. (2022). The impact of climate change related extreme weather events on people with pre-existing disabilities and chronic conditions: A scoping review. Disability and Rehabilitation, 1–21. https://doi.org/10.1080/09638288.2022.2150328

Loebach, P., & Stewart, J. (2015). Vital linkages: A study of the role of linking social capital in a Philippine disaster recovery and rebuilding effort. Social Justice Research, 28(3), 339-362.

Lopez A, Coughlan de Perez E, Bazo J, Suarez P, van den Hurk B & van Aalst M (2020) Bridging forecast verification and humanitarian decisions: A valuation approach for setting up action-oriented early warnings. Weather and Climate Extremes 27, 100167. https://doi.org/10.1016/j.wace.2018.03.006

Lord, A., Sijapati, B., Baniya, J., Chand, O. and Ghale, T. (2016) Disaster, disability and difference: a study of the challenges faced by persons with disabilities in post-earthquake Nepal. Kathmandu: UNDP.

Lukasiewicz, A., & Baldwin, C. (Eds.). (2020). Natural hazards and disaster justice: Challenges for Australia and its neighbors. Springer Nature. https://doi.org/10.1007/978-981-15-0466-2

Mac-Seing, M. (2023). The climate crisis: Unpacking the intersectional implications of “leaving no one behind.” Global Health Promotion, 30(1), 3–5. https://doi.org/10.1177/17579759231199934

Marks, D. (1997). Models of disability. Disability and Rehabilitation, 19(3), 85–91. https://doi.org/10.3109/09638289709166831

Malpass, A., West, C., Quail, J., & Barker, R. (2019). Experiences of individuals with disabilities sheltering during natural disasters: An integrative review. Australian Journal of Emergency Management, 31(2), 60–65. https://knowledge.aidr.org.au/resources/ajem-april-2019-experiences-of-individuals-with-disabilities-sheltering-during-natural-disasters-an-integrative-review/

Mambetkadyrov, I., Miao, Q., Rothenberg, S., Tomaszewski, B., Fugate, J., & Rotoli, J. (2025). Disability inclusion in local emergency management: Evidence from a national survey of emergency managers. International Journal of Disaster Risk Reduction, 130, 105808. https://doi.org/10.1016/j.ijdrr.2025.105808

Marlowe, J. (2014). A social justice lens to examine refugee populations affected by disasters. Advances in Social Work and Welfare Education, 16(2), 46–59. https://journal.anzswwer.org/index.php/advances/article/view/62/54

Masud MM, Sackor AS, Ferdous Alam ASA, Al-Amin AQ & Abdul Ghani AB (2018) Community responses to flood risk management: An empirical investigation of the Marine Protected Areas (MPAs) in Malaysia. Marine Policy 97, 119–126. https://doi.org/10.1016/j.marpol.2018.08.026

Matsuo Y, Kietzman K, Hays RD & Song Y (2025) Evacuation and transportation barriers among vulnerable populations in natural hazard-related disasters: A scoping review. International Journal of Environmental Research and Public Health 22(11), 1680. https://doi.org/10.3390/ijerph22111680

McMichael, C. (2022). Climatic and environmental change, migration, and health. Annual Review of Public Health, 44, 171–191. https://pubmed.ncbi.nlm.nih.gov/36542773/

Mercer J, Kelman I, Taranis L, Suchet-Pearson S (2010) Framework for integrating indigenous and scientific knowledge for disaster risk reduction. Disasters 34:214–239. https://pubmed.ncbi.nlm.nih.gov/19793324/

Mileti D. S., Sorensen J. H. (1990). Communication of emergency public warnings: A social science perspective and state-of-the-art assessment. Oakridge, TN: Oak Ridge National Laboratory.

Mitchell, B. C., & Chakraborty, J. (2015). Landscapes of thermal inequity: Disproportionate exposure to urban heat in the three largest US cities. Environmental Research Letters, 10, 115005. https://doi.org/10.1088/1748-9326/10/11/115005

Mörchen M, Ocasiones E, Relator R & Lewis D (2021) Climate change, vulnerability, and disability: Do we "leave no one behind"? Disaster Medicine and Public Health Preparedness 15(5), 537–538. https://doi.org/10.1017/dmp.2020.79

Mori, S. 2025. "Go further with evidence-based research: Disability and development." IDE Research Columns, January. https://www.ide.go.jp/English/ResearchColumns/Columns/2025/soya_mori.html.

Morrow BH (2008) Community resilience: A social justice perspective. CARRI Research Report No. 4. Community and Regional Resilience Initiative (CARRI), Oak Ridge, TN. https://doi.org/10.13140/RG.2.1.1278.9604

Municipality of Aguilar. (n.d.). Geo-physical environment. https://aguilar.gov.ph/about/geo-physical-environment/

National Centre on Disability and Journalism. (2018). Disability language style guide. https://ncdj.org/style-guide

National Council on Disability. (2022, May 25). Disparate treatment of Puerto Rico residents with disabilities in federal programs and benefits. https://www.ncd.gov

National Council on Disability. (2023, May 4). The impacts of extreme weather events on people with disabilities. https://ncd.gov

National Disaster Risk Reduction and Management Council. (2009). Final report on the effects of Typhoon Emong (Chan-hom). Government of the Philippines.

National Disaster Risk Reduction and Management Council. (2014). Final report on the effects of Typhoon Luis (Kalmaegi). Government of the Philippines.

National Disaster Risk Reduction and Management Council. (2018). Situational report on Super Typhoon Ompong (Mangkhut). Government of the Philippines.

Neil, E. (2023, April 9). Philadelphia plans to roll out multilingual emergency alerts this year. WHYY (PBS News). https://whyy.org/articles/philadelphia-multilingual-alert-system-office-emergency-management/

Nguyen, T. (2025, February 19). Strengthening redundancy for the early warning system in Hue City, Vietnam. Z Zurich Foundation. https://zcralliance.org/blogs/early-warning-system-in-hue-city/

Nowell, L. S., Norris, J. M., White, D. E., & Moules, N. J. (2017). Thematic analysis: Striving to meet the trustworthiness criteria. International Journal of Qualitative Methods, 16(1), 1–13. https://doi.org/10.1177/1609406917733847

Ogunbode, C. A., Doran, R., Ayanian, A. H., et al. (2024). Climate justice beliefs related to climate action and policy support around the world. Nature Climate Change, 14, 1144–1150. https://doi.org/10.1038/s41558-024-02168-y

Olajide, O., & Lawanson, T. (2014). Climate change and livelihood vulnerabilities of low-income coastal communities in Lagos, Nigeria. International Journal of Urban Sustainable Development, 6(1), 42–51. https://doi.org/10.1080/19463138.2013.837575

Oliver, M. (2018). Understanding disability: From theory to practice. Bloomsbury publishing.

Office of the High Commissioner for Human Rights / Committee on the Rights of Persons with Disabilities. (2022, August 19). Experts of the Committee on the Rights of Persons with Disabilities commend China on reforms made since the initial review [Meeting summary]. United Nations.

Oliver, M. (1990). The politics of disablement—New social movements. In The politics of disablement (pp. 125–143). Palgrave. https://doi.org/10.1007/978-1-349-20895-1_8

PAGASA. (n.d.). Flood forecasting and warning system for river basins. https://www.pagasa.dost.gov.ph

Pearce, E., Kamenov, K., Barrett, D. D., & Cieza, A. (2022). Promoting equity in health emergencies through health systems strengthening: Lessons learned from disability inclusion in the COVID-19 pandemic. International Journal for Equity in Health, 21(Suppl 3). https://doi.org/10.1186/s12939-022-01766-6

Peterson, D. B., & Aguiar, L. (2004). History and systems: United States. In T. F. Rigger & D. R. Maki (Eds.), Handbook of rehabilitation counseling (pp. 50–75). Springer Publishing Company.

Philippine Statistics Authority Regional Statistical Services Office II. (2025). 2023 full year poverty statistics. https://rsso02.psa.gov.ph/system/files/attachment-dir/2025R0215-SR004%202023%20Full%20Year%20Poverty%20Statistics.pdf

Pollack, H. A. (2020). Disaster preparedness and social justice in a public health emergency. Journal of Health Politics, Policy and Law, 45(6), 907–920. https://pubmed.ncbi.nlm.nih.gov/32464639/

Priestley, M., & Hemingway, L. (2007). Disability and disaster recovery: A tale of two cities? Journal of Social Work in Disability & Rehabilitation, 5(3–4), 23–42. https://doi.org/10.1300/J198v05n03_02

Reduction, D. (2017). Terminology on disaster risk reduction. United Nations International Strategy for Disaster Reduction.

Putnam RD (2001) Social capital: Measurement and consequences. Canadian Journal of Policy Research 2, 41–51.

Rivera, A. T., & Dela Vega, J. B. G. (2025). From vulnerability to resilience: Addressing the causes, impacts, and solutions for recurrent flash floods in the Philippines. Tropical Cyclone Research and Review, 14(3), 301–310. https://doi.org/10.1016/j.tcrr.2025.08.005

Rofiah, N. H., & Sudiraharja, D. (2025). An introduction to disability inclusive disaster risk reduction. Disability & Society, 1–3. https://doi.org/10.1080/09687599.2025.2546221

Ronoh, S., Gaillard, J. C., & Marlowe, J. (2015). Children with disabilities and disaster risk reduction: A review. International Journal of Disaster Risk Science, 6(1), 38–48. https://doi.org/10.1007/s13753-015-0042-9

Rothberg, M. A. (2019). Designing for inclusion: Ensuring accessibility for people with disabilities. In Inclusion matters (pp. 125–143). Springer. https://doi.org/10.1007/978-3-319-96906-0_7

Rothstein, B., Stolle, D. (2003). Social Capital, Impartiality and the Welfare State: An Institutional Approach. In: Hooghe, M., Stolle, D. (eds) Generating Social Capital. Palgrave Macmillan, New York. https://doi.org/10.1057/9781403979544_10

Sauerborn, R., & Ebi, K. (2012). Climate change and natural disasters: Integrating science and practice to protect health. Global Health Action, 5, 19295. https://doi.org/10.3402/gha.v5i0.19295

Scott, J. C. (2003). Disaster early warning and individuals with special needs. In Disaster early warning systems (pp. 71–90). Springer. https://doi.org/10.1007/978-3-642-55903-7_13

See, S., Opdyke, A., & Banki, S. (2025). A review of the climate change–disaster–conflict nexus and humanitarian framing of complex displacement contexts. Climate and Development, 1–14. https://doi.org/10.1080/17565529.2025.2514027

Sendai Framework for Disaster Risk Reduction 2015–2030. (2015). United Nations. https://www.preventionweb.net/files/43291_sendaiframeworkfordrren.pdf

Shakespeare, T. (2013). Disability rights and wrongs revisited. Routledge. https://doi.org/10.4324/9781315887456

Smith, F., Simard, M., Twigg, J., Kett, M., & Cole, E. (2017). Disability and climate resilience: A literature review. Leonard Cheshire.

Son, J. Y., Liu, J. C., & Bell, M. L. (2019). Temperature-related mortality: A systematic review and investigation of effect modifiers. Environmental Research Letters, 14, 073004. https://pmc.ncbi.nlm.nih.gov/articles/PMC12362558/

SteelFisher, G. K., Clark, J., McMurtry, C. L., Caporello, H., & Blendon, R. J. (2022). Getting critical information during the COVID-19 pandemic: Experiences of Spanish and Chinese speakers with limited English proficiency. Health Security, 20(4), 273–285. https://doi.org/10.1089/hs.2021.0218

Stein, M. A. (2007). Disability human rights. California Law Review, 95(1), 75–121. https://doi.org/10.15779/Z38XQ4Z

Stein, P. J. S., & Stein, M. A. (2022). Climate change and the right to health of people with disabilities. The Lancet Global Health, 10(1), e24–e25. https://pubmed.ncbi.nlm.nih.gov/34863369/

Stein, P. J. S., & Stein, M. A. (2022). Disability, human rights, and climate justice. Human Rights Quarterly, 44(1), 81–110. https://doi.org/10.1353/hrq.2022.0003

Stein, P. J. S., Groce, N., & Kett, M. (2023). The role of the scientific community in strengthening disability-inclusive climate resilience. Nature Climate Change, 13, 108–109. https://doi.org/10.1038/s41558-022-01564-6

Stein, P. J. S., et al. (2024). Advancing disability-inclusive climate research and action, climate justice, and climate-resilient development. The Lancet Planetary Health, 8, e242–e255. https://pubmed.ncbi.nlm.nih.gov/38580426/

Sufri, S., Dwirahmadi, F., Phung, D., & Rutherford, S. (2020). Enhancing community engagement in disaster early warning systems in Aceh, Indonesia: Opportunities and challenges. Natural Hazards, 103(3), 2691–2709. https://doi.org/10.1007/s11069-020-04098-2

Tannenbaum-Baruchi C, Feder-Bubis P, Adini B, Aharonson-Daniel L (2014) Emergency situations and deaf people in Israel: communication obstacles and recommendations. Disaster Health 2:106–111. https://doi.org/10.4161/21665044.2014.989131

Thiery, W., Lange, S., Rogelj, J., et al. (2021). Intergenerational inequities in exposure to climate extremes. Science, 374(6564), 158–160. https://doi.org/10.1126/science.abi7339

Trujillo-Falcón, J. E., Pabón, A. G., Reedy, J., & Klockow-McClain, K. E. (2023). Systemic vulnerabilities in Hispanic and Latinx immigrant communities led to the reliance of an informal warning system in the December 10–11, 2021 tornado outbreak. Natural Hazards Review, Advance online publication, 1–44.

Umucu, E., Vernon, A. A., Pan, D., Qin, S., Solis, G., Campa, R., & Lee, B. (2025). Health inequities among persons with disabilities: A global scoping review. Frontiers in Public Health, 13, 1538519. https://doi.org/10.3389/fpubh.2025.1538519

United Nations Office of the High Commissioner for Human Rights. (2020, April 22). Analytical study on the promotion and protection of the rights of persons with disabilities in the context of climate change (UN Doc. A/HRC/44/30). https://undocs.org/A/HRC/44/30

United Nations Office for Disaster Risk Reduction. (2024). Global status of multi-hazard early warning systems 2024 [Report]. https://www.undrr.org/reports/global-status-MHEWS-2024

United Nations. (n.d.). Inclusive communications: A guide for communicating with, about and for people with disabilities. https://www.un.org/sites/un2.un.org/files/un_disability-inclusive_communication_guidelines.pdf

Valdez, H. K. M. (2021). Disaster management capability of disaster risk reduction and management council in selected areas in Pangasinan: Basis for a capability enhancement program. NOSTE.

Verchick, R. R. (2010). Facing catastrophe: Environmental action for a post-Katrina world. Harvard University Press.

Verchick, R. R. (2012). Disaster justice: The geography of human capability. Duke Environmental Law & Policy Forum, 23(Fall), 23–71. http://scholarship.law.duke.edu/delpf/vol23/iss1/2

Villarreal, M., MacPherson-Krutsky, C., & Painter, M. A. (2025). Barriers and best practices for inclusive emergency alerts and warnings. International Journal of Disaster Risk Reduction, 105581.https://doi.org/10.1016/j.ijdrr.2025.105581

Werg, J. L., Grothmann, T., Spies, M., & Mieg, H. A. (2020). Factors for self-protective behavior against extreme weather events in the Philippines. Sustainability, 12(15), 6010. https://doi.org/10.3390/su12156010

Wolbring, G. (2009). A culture of neglect: Climate discourse and disabled people. M/C Journal, 12(4).

Wolbring, G., & Leopatra, V. (2012). Climate change, water, sanitation and energy insecurity: Invisibility of people with disabilities. Canadian Journal of Disability Studies, 1(2), 66–90.

Wong, S., Shaheen, S., & Walker, J. (2018). Understanding evacuee behavior: A case study of Hurricane Irma. https://escholarship.org/uc/item/9370z127

Wong, S. D., Walker, J. L., & Shaheen, S. A. (2021). Trust and compassion in willingness to share mobility and sheltering resources in evacuations: A case study of the 2017 and 2018 California Wildfires. International Journal of Disaster Risk Reduction, 52, 101900. https://doi.org/10.1016/j.ijdrr.2020.101900

World Health Organization. (2022). Global report on health equity for persons with disabilities. https://www.who.int/publications/i/item/9789240063600.

World Health Organization. (2023, March 7). Disability and health. https://www.who.int/news-room/fact-sheets/detail/disability-and-health

World Vision, & United Nations Population Fund. (2021, November 23). World Vision and UNFPA partner to assist pregnant and breastfeeding mothers. https://reliefweb.int/report/philippines/world-vision-and-unfpa-partner-assist-pregnant-and-breastfeeding-mothers-and

World Health Organization, & World Bank. (2011). World report on disability. https://iris.who.int/handle/10665/44575

World Health Organization. (2001). International classification of functioning, disability and health (ICF). https://www.who.int/standards/classifications/international-classification-of-functioning-disability-and-health

United Nations Office for Disaster Risk Reduction. (2023). 2023 global survey report on persons with disabilities and disasters. https://www.undrr.org/report/2023-gobal-survey-report-on-persons-with-disabilities-and-disasters

Yanquiling, R. S. (2024). Predictors of risk reduction behavior: Evidence in last-mile communities. International Journal of Disaster Risk Reduction, 113, 104875. https://doi.org/10.1016/j.ijdrr.2024.104875

Yıldırım, D. (2025). Inclusiveness of disaster management for persons with disabilities in Türkiye from stakeholders' perspective. Scientific Reports, 15(1), 22779. https://doi.org/10.1038/s41598-025-05464-5

Zaks, Z. (2024). Changing the medical model of disability to the normalization model of disability: Clarifying the past to create a new future direction. Disability & Society, 39(12), 3233–3260. https://doi.org/10.1080/09687599.2023.2255926

Zhang, Y., Liu, X., & Vedlitz, A. (2020). How social capital shapes citizen willingness to co-invest in public service: The case of flood control. Public Administration, 98(3), 696–712. https://doi.org/10.1111/padm.12646

Appendix A: Literature Review

Introduction

This literature review examines scholarship at the intersection of disaster justice, climate, and disaster impacts on persons with disabilities, disability inclusion in policies and practices, and the accessibility of early warning systems. By reviewing these bodies of work, it situates the study within ongoing debates about equity and inclusion in DRR. The review is organized into several interrelated sections. The first explores the concept of disaster justice and its implications for inclusive risk governance. The second discusses the disproportionate impacts of climate change and disasters on persons with disabilities. The third analyzes how disability inclusion has been integrated—or neglected—within disaster and climate policy frameworks. The fourth turns to early warning systems, assessing current knowledge on their accessibility for persons with disabilities and the disability data gap on EWS that the proposed research intends to fill.

Disaster Justice: A Moral Claim for Protection

The world has seen a significant increase in both the severity and frequency of disasters. In this age of Anthropocene, the link between disasters and climate change is increasingly being recognized (See, et al. 2025; Sauerborn & Ebi, 2012; IPCC, 2012). Most of these disasters, such as super typhoons, heat waves, drought, pandemic, etc., are directly or indirectly influenced by human activities. Hence, to say that disasters are “natural” has become anachronistic. As Sauerbon and Ebi notes “there is no such thing as a purely natural disaster” as even natural causes are modified by human interventions and all disasters involve “social choices, social constraints, and societal actions or inactions” (2012, p.1).

Disasters undermine social, economic, environmental, and broader societal well-being, which can exacerbate existing inequalities and threaten decades of public good gains. (Watts et al., 2018). They disrupt built infrastructure, supply systems, and support networks, creating heightened risks for persons with disabilities, older adults, and others who may face barriers during emergencies (Curtis et al., 2018).. For those with chronic illness, disability, or existing

vulnerabilities, disasters can be life-changing in negative terms. Hence, an increasingly growing call to integrate disaster justice in climate and disaster governance among groups who are deemed least responsible for anthropogenic activities and yet suffer the brunt of disasters (Douglass & Miller, 2018).

Disaster justice means recognizing "equity in worth, rights, resource distribution, and consequences" across all sectors of society and in all phases of disaster risk management (Hamdanieh et al., 2024, p.1). It is a moral claim under the broader framework of environmental justice, particularly for less empowered sectors who are least responsible for the ecological crisis and yet suffer the most during ruptures and displacements. In policy perspectives, it presupposes incorporating more equitable and inclusive policies and practices in disaster risk reduction and management, and more responsive programs and activities for marginalized groups such as women, children, Indigenous people, and persons with disabilities (Douglass & Miller, 2018). Disaster justice is influenced by multidimensional factors such as physical, cultural, environmental, and socioeconomic factors that influence resiliency, sustainability, and equity (Hamdanieh et al., 2024; Calabrese, 2020; Clark et al., 2013, Morrow, 2008; Mustafa, 1998). In sustainability parlance, disaster justice requires integrating the 3 elements of social justice in disaster management—recognitional, procedural, and distributional dimensions into the processes of sustainability transformations. Without these elements, a just sustainability transition remains aspirational (Ray-Bennett, et al., 2015).

Disaster justice recognizes that disasters do not affect all people equally. Persons with disabilities, women, and children often face disproportionate risks and therefore require targeted protection and support from the state and its policymakers (Kearney & Bell, 2019).). This duty is based on the premise that the state's legitimacy is tied to protecting the disadvantaged who have less power and resources in times of disasters. Moreover, a just society requires giving protection to the least advantaged and that human dignity demands respect and protection (Rawls, 1971; Sen, 1999; Nussbaum, 2003). This is also enshrined in international instruments such as the Universal Declaration of Human Rights (UN, 1948), the International Covenant on Economic, Social and Cultural Rights (UN, 1966), and the Convention

on the Rights of Persons with Disabilities (UN, 2006), which oblige states to secure equality, social protection, and adequate living conditions for all.

Studies have shown that disasters can exacerbate existing social vulnerabilities (Yi, et al., 2025; Kearney et al., 2018; Marlowe, 2014; Kett & Twigg, 2007). Social vulnerability becomes more manifest during disasters. Such vulnerabilities are aggravated or exacerbated by inequitable access to resources and asymmetrical power relations (Corbin, 2015; Morrow, 2008; Bolin & Stanford, 1998). Disability, race, class, and gender shape disaster experiences, leaving groups with intersectional vulnerabilities even more disproportionately exposed to risks during disasters (Morrow, 2008). The intersections of disability with gender, age, or ethnicity further entrench ableism and worsen existing inequalities (McNamara & Clissold, 2019; Kosanic et al., 2022). Within a social justice framework, disaster justice aims to minimize physical, economic, social, cultural, and environmental vulnerabilities through inclusive and holistic integration into policies and practices in disaster risk management.

Why Does Disability Inclusion Matter?

Disability inclusion in disaster preparedness and recovery is a global imperative. Disabled populations are the largest marginalised group. Today, 1.3 billion people—16% of the world's population—live with disabilities (WHO, 2023). If care providers—parents, children, and relatives caring for a disabled family member are accounted for, the percentage would be much higher (Kosanic et al., 2022). Almost everyone in their lifetime is likely to temporarily or permanently experience disability. The percentage of persons with disabilities in the population is expected to increase with demographic trends of ageing and the prevalence of chronic health conditions associated with disability, such as diabetes, cardiovascular diseases, sensory diseases/impairment, and mental illnesses (WHO and WB,2011; Trani, 2018). In the USA alone, 26% of all adults have disabilities (Kirk-Wade et al., 2024). Approximately 14.6 million people in the U.K. have some form of disability (Kirk-Wade et al., 2024). China has the world's largest population of people with disabilities, with 85 million (UNSDG, 2018). But what makes the figure even more staggering is that eighty (80%) of persons with disabilities live in developing countries with high vulnerability and where resources and coping capacity are low (WHO, 2022).

The mantra “leave no one behind” will remain aspirational if 16% of the world’s population—the global community of persons with disabilities (persons with disabilities) continues to be neglected. Although some countries have introduced “inclusive” measures in disaster planning, these often remain rhetorical rather than producing meaningful changes on the ground. As Roth (2018) observes, despite frequent references to inclusivity, persons with disabilities remain disproportionately affected during disasters, not primarily due to medical conditions but because of stigma, low expectations, and inadequate planning. The resilience of any community is ultimately measured by how well it protects and supports those who are most at risk of being left behind, and while complete equality of opportunity may be unattainable, the current levels of exclusion in disaster risk reduction policies and practices are indefensible.. Beyond the moral imperative of protecting the most-at-risk, there is also a practical necessity: inclusive disaster planning strengthens resilience for all. From the perspective of the whole-of-society approach to disasters, the resilience of a community depends on the totality of resilience of all its members, irrespective of age, gender, ability, ethnicity, race, class, and other markers of differentiation. As Morrow (2008, 12) aptly phrased it: “a community is only as resilient as its weakest link.”

Disasters and Disability: Hidden Discrimination

Disasters—whether natural or human-made—have always exposed people with disabilities (persons with disabilities) to disproportionate risks. Across history, evidence shows that persons with disability communities often receive the least protection and support during crises. Experiences from past events such as the Great Hanshin Earthquake in Japan (1995), Hurricane Katrina in the United States (2005), Typhoon Haiyan in the Philippines (2012), and the French heatwave (2003) all point to systemic neglect of persons with disabilities. In France, for example, 63% of heat-related datable aths occurred in institutions, with a quarter in nursing homes (Priestley & Hemingway, 2007; Fjord & Manderson; Smith et al., 2012).

In recent decades, the nature of disasters has shifted. While traditional hazards remain, most major disasters today are climate-related, amplifying the vulnerabilities persons with disabilities already face (Alam et al., 2022; Akerlof et al., 2015). The growing frequency and intensity of

extreme weather events such as floods, cyclones, wildfires, and heatwaves have placed persons with disabilities at even greater risk compared to other groups in society.

Persons with disabilities often face greater health risks due to barriers in accessing healthcare, information, and support services in these contexts.. They face higher exposure to vector- and water-borne diseases such as malaria, Zika, and COVID-19, alongside mental health conditions like post-traumatic stress disorder. These health burdens increase the likelihood of higher illness and death rates during and after disasters (Curtis et al., 2018; Morchen et al., 2021). The risks grow even more for persons with disabilities who also belong to other marginalized groups, including Indigenous peoples, women, children, and older adults (Bell et al., 2020; Gaskin et al., 2017; Aryankhesal, 2018). For example, children with disabilities are especially prone to water-borne diseases because of weaker immune systems and limited access to medicine, assistive devices, food, and clean water (Kosanic et al., 2022).Facilities that serve them, such as schools or residential care centers, are often underprepared for climate events—research in the Maldives found these institutions ill-equipped to support children with disabilities during displacement (McNamara & Clissold, 2019).

Heatwaves illustrate how risks vary across disability types. While heat may not directly affect those with hearing impairments, it can worsen conditions such as multiple sclerosis (Davis & Wilson, 2010; Chackho et al., 2021).People with spinal cord injuries may face heightened health risks from climate change: in one survey of rehabilitation professionals, more than half reported that climate change was already harming their clients' health (Wolbring, 2009). Heat can also undermine livelihoods, compounding health risks (Morchen et al., 2021; Akerlof et al., 2015). Despite these realities, a review of 18 U.S. heatwave response plans revealed almost no attention to the needs of persons with disabilities (Ebi & Meehl; Bernhard & McGeehin).

Beyond health and infrastructure, social barriers magnify risk. persons with disabilities often encounter stigma and discrimination in housing, employment, and forced migration linked to climate-related disasters (Dintwa et al., 2019; Roth, 2018; Adger et al., 2020). Vulnerabilities are shaped by overlapping factors: personal characteristics (e.g., gender, race, income), weak institutional support, physical conditions that increase sensitivity to hazards, and practical

barriers such as lack of preparedness, limited evacuation options, and loss of adaptive equipment (Gaskin et al., 2017). Scholars emphasize the importance of an intersectional lens to uncover “hidden discriminations” that persons with disabilities face before, during, and after disasters (McNamara & Clissold, 2019; Dintwa et al., 2019; Roth, 2018)

Hurricane Katrina in 2005 provides a powerful case study. An estimated 155,000 persons with disabilities including those who were blind, deaf, mobility-impaired, reliant on service animals, or living with mental health conditions were severely affected at every stage (Kosanic et al., 2022; Alexander et al., 2019). Before the storm, many lacked access to timely and accessible early warning systems, due to absent sign language interpretation in televised alerts, network disruptions, and limited accessible transport (Alexander et al., 2019; Gaskin et al., 2017). During the disaster, shelters and evacuation centers were unequipped to meet their needs; women with disabilities faced higher risks of sexual violence, while children with disabilities were more likely to experience displacement. Roughly 12% of persons with disabilities were rendered homeless (Walsh-Warder, 2018; Lord, 2010). Afterward, recovery efforts often reinforced inequities, leaving many unable to access housing, healthcare, food, water, education, and employment (Kosanic et al., 2022).

The Need for Disability-Inclusive Disaster Preparedness

Despite being among the most affected in crises, people with disabilities (persons with disabilities) are still overlooked in disaster preparedness and recovery planning. Literature consistently shows a lack of recognition of disability rights in disaster risk management (Smith et al., 2012; Kett, 2010; IFRC, 2007). The 2007 World Disasters Report concludes that persons with disabilities are “often ignored or excluded at all levels of disaster preparedness, mitigation, and intervention” (IFRC, 2007, p.86). Earlier global frameworks, such as the Hyogo Framework for Action (2005–2015), made only a single reference to disability, offering limited guidance before the more inclusive Sendai Framework emerged in 2015.

This exclusion extends to climate and disaster policy. persons with disabilities are rarely considered in adaptation planning, despite their heightened vulnerability (Kosanic et al., 2022). For instance, an analysis of national adaptation strategies across 12 developed countries found

that while some socially disadvantaged groups were recognized, references to persons with disabilities were scarce and weakly linked to concrete measures (Seidel & Bell, 2014). Similarly, major international reports, including the IPCC and the Human Development Report (2007/2008), routinely highlight women, children, and Indigenous peoples, while neglecting persons with disabilities altogether (Wolbring, 2009; Australian Human Rights Commission, 2008, 2010).

Recent studies confirm that disability inclusion in climate policy remains limited. A systematic review of climate commitments under the Paris Agreement found that only 41 nationally determined contributions (NDCs) and 75 adaptation policies mention persons with disabilities, and most lacked actionable strategies to ensure participation or protection (Jodoin et al., 2025). Another global review of 217 adaptation policies across 147 countries showed that while many identify populations disproportionately affected by climate change, few translate this recognition into concrete actions or mechanisms for inclusion (Lesnikowski et al., 2023).

Scholars argue that this gap stems not only from neglect but also from ableist structures that frame disability as an individual impairment rather than a systemic exclusion. Integrating disability studies into climate and disaster planning could help shift this perspective, ensuring that preparedness strategies move beyond token recognition to genuine inclusion (Wolbring, 2009; Burns, 2017).

The Importance of Early Warning Systems

Among all disaster risk reduction and climate adaptation measures, early warning systems (EWS) are among the most proven and cost-effective. Effective warnings can save lives and reduce damage by up to 30% if issued just 24 hours before a hazard (UNDRR, 2025). Advances in EWS have already saved tens of thousands of lives and helped save hundreds of billions of dollars in losses (IFRC, 2020).

While global progress is seen in EWS in the past years, infrastructural gaps remain, particularly in under resourced countries. As of early 2024, more than half of countries worldwide reported having multi-hazard early warning systems (MHEWS)—double the number since 2015 (UNDRR,

2025). However, countries with only “limited” to “moderate” coverage experience six times higher disaster mortality and more than three times as many disaster-affected people compared to those with comprehensive systems. Gaps are especially severe in developing contexts: fewer than half of Least Developed Countries and only one-third of Small Island Developing States have MHEWS in place (UNDRR, 2024).

Recognizing these disparities, the UN Secretary-General launched the Early Warnings for All initiative in 2022, with the goal of ensuring universal protection by 2027. The plan, co-led by the World Meteorological Organization (WMO) and UNDRR, emphasizes “people-centered, end-to-end, multi-hazard” systems as the standard for future disaster preparedness (Samansiri et al., 2023).

Still, significant barriers persist in accessing EWS. Research shows that the effectiveness of EWS is often undermined by social, cultural, political, technological, and communication challenges (Islam et al., 2025). Community-based approaches, such as those pioneered in Bangladesh, demonstrate that inclusive, localized warning systems can overcome these barriers and strengthen resilience (Islam et al., 2025).

In short, EWS are a cornerstone of disaster preparedness and resilience. Yet unless they are designed to reach all groups equitably, their promise will remain incomplete. This brings us to a critical question: are persons with disabilities being left behind in early warning systems? Evidence shows that while people with disabilities (persons with disabilities) often understand the risks they face, they experience major gaps in receiving and acting upon early warnings. One study found that all four components of EWS—monitoring, communication, warning, and response—require greater inclusivity to reflect the needs and capacities of persons with disabilities (Chisty et al., 2021). Without such efforts, their resilience remains limited.

More broadly, many EWS still rely on expert-driven, top-down approaches that overlook grassroots realities. Reviews of EWS in Kenya, Hawai‘i, and Sri Lanka found that while technical systems can reduce hazard impacts, they often fail to reach communities effectively. A shift toward participatory, community-led systems is needed to ensure ownership, trust, and usability at the local level (Baudoin et al., 2016; Sufri et al., 2020).

For persons with disabilities specifically, inclusion is not just a matter of equity but of survival. Deaths can be reduced among persons with disabilities if they are accounted for across all phases of disaster management: before (e.g., resilient building codes, accessible shelters), during (e.g., personal protection facilities), and after disasters (e.g., accessible sanitation, safe housing, vermin-free environments) (Aryankhesal et al., 2018). This means that disaster risk management must go beyond "building back better" to also "build back fairer." Ultimately, the lack of disability-focused disaster plans continues to constrain the effectiveness and inclusiveness of EWS. Scholars have called for future research and practice to move beyond viewing persons with disabilities primarily through a lens of vulnerability and instead examine their capacities for resilience, while ensuring that their perspectives are integrated into the design and implementation of warning systems (Chisty et al., 2021; Islam et al., 2025).

Disability Data Gap in Disaster Preparedness and Early Warning Systems

Despite global progress in disaster risk reduction and the expansion of early warning systems, persons with disabilities (persons with disabilities) remain one of the least represented groups in disaster preparedness planning. Disability rights are often overlooked, with persons with disabilities excluded from risk assessments, policy frameworks, and disaster response mechanisms (Smith et al., 2012; Kett, et al., 2018 IFRC, 2007). Even international agreements and adaptation policies that acknowledge groups disproportionately affected by climate change often fail to translate these commitments into concrete strategies for disability inclusion (Seidel & Bell, 2014; Jodoin et al., 2025; Lesnikowski et al., 2023). The persistence of this gap points to the need to critically examine how disaster-prone countries address disability in both law and practice.

Early warning systems (EWS), widely recognized as one of the most cost-effective measures to save lives and reduce disaster losses, provide a clear lens into these challenges. While global initiatives such as the UN's Early Warnings for All (UNDRR, 2025; Samansiri et al., 2023) aim to extend universal protection, research shows that persons with disabilities continue to face barriers across the full chain of EWS—monitoring, communication, dissemination, and response (Chisty et al., 2021; Baudoin et al., 2016; Sufri et al., 2020).These structural barriers are compounded by inaccessible information channels, weak community engagement, and limited

recognition of persons with disabilities' lived experiences (Whalley, 2021). The result is delayed action, preventable loss of life, and the reinforcement of systemic exclusion.

This exclusion is also a data problem. Much of the disaster and climate literature still frames disability primarily in terms of vulnerability, while overlooking the agency, coping strategies, and adaptive capacities of persons with disabilities (Wolbring, 2009; Burns, 2017). Without disaggregated, context-specific data on disability, disaster preparedness, and EWS remain blind to the realities of diverse disability groups. As a result, progress toward inclusive, "people-centered" early warning systems is incomplete, and current practices risk reproducing inequities rather than reducing them (Kosanic et al., 2022; Belle et al., 2019).

The proposed research aims to contribute to filling the disability data gap in disaster preparedness and EWS in two ways. It first examines how the ten most disaster-prone countries in the Global South incorporate disability inclusion into disaster and climate legislation, with a focus on whether these frameworks provide for accessible early warning systems. This research will use a coding framework grounded in international human rights and disaster risk reduction standards that draw on two principal normative instruments: the Convention on the Rights of Persons with Disabilities (CRPD, 2006)and the Sendai Framework for Disaster Risk Reduction 2015–2030 (SFDRR). The coding framework considers the following thematic clusters: recognition and commitment; participation and governance; information and EWS; preparedness and response measures; resources and capacity; and monitoring and accountability mechanisms. The goal is to identify patterns of inclusion or exclusion, determine the gaps between commitments and obligations, and provide a comparative picture of how disability-inclusive disaster preparedness and early warning are enacted and performed in domestic legal and policy frameworks.

The study then zooms in on the Philippines, one of the world's most hazard-exposed nations, where persons with disabilities (persons with disabilities) are disproportionately affected (Mörchen et al., 2021). The devastating impacts of Typhoon Haiyan in 2013 illustrate these inequities: more than 4 million people were displaced, yet the number of persons with disabilities affected was never recorded, despite national data showing that 11.9% of Filipinos

aged 15 and above live with severe disability (Yamada & Galat; Cobley). Post-disaster assessments identified nearly 3,000 persons with disabilities requiring rehabilitation (Benigno, Kleinitz, & Calina), while barriers such as transport costs, discrimination in hospitals, and lack of specialists further restricted access to care (Cobley, 2018; Zayas, et al., 2017). More recent disasters, including Typhoon Goni (2020) and Super Typhoon Rai (typhoon "Odette" in 2021), reaffirm these challenges: while some disability-sensitive measures have been introduced, persons with disabilities continue to face exclusion from evacuation, relief, and recovery processes (World Vision, 2021; Humanity & Inclusion, 2022). Flooding in Compostela in 2023–2024 further showed how mobility barriers prevent persons with disabilities from acting on early warnings, leaving many at greater risk (Humanity & Inclusion, 2024). Building on this context, the study explores how persons with disabilities in Central Pangasinan (an area repeatedly exposed to disasters) experience early warning systems in practice—what barriers they face in receiving information, how they cope with these challenges, and the social and institutional factors that shape their response capabilities.

By linking global policy analysis with grounded community-level evidence, this study seeks to contribute to filling this disability data gap in disaster preparedness and EWS. In doing so, it contributes both to the international agenda of building inclusive, Early Warnings for All and to the urgent need for context-specific insights that can improve the resilience of one of the world's most disaster-prone populations. Ultimately, filling this gap is not only a matter of disaster justice but also essential for achieving the commitments of the Sendai Framework for Disaster Risk Reduction and the SDGs—ensuring that no one is left behind in the face of escalating disaster and climate risks.

Appendix B: List of Documents Reviewed

Country	Doc Type	Document Name	Year
Philippines	Disaster law	Philippine Disaster Risk Reduction and Management Act of 2010	2010
	Disaster Plan	National Disaster Risk Reduction and Management Plan 2020-2030	
	VNR_MTR	VNR_MTR	2025
	Climate Law	Climate Change Act of 2009/PSF	2009
	Climate Plan	National Climate Change Action Plan 2011-2028	2011
	NDC	NDC	2021
Bangladesh	Disaster law	Disaster Management Act, 2012 (Act No. 34 of 2012)	2012
	Disaster Plan	National Plan for Disaster Management (NPDM) 2021–2025	2020
	Climate Law	No climate law	
	Climate Plan	National Adaptation Plan of Bangladesh (2023-250)	2023
	VNR_MTR	VNR_MTR	2025
	NDC	NDC	2025
Indonesia	Disaster Law	Law of the Republic of Indonesia No. 24/2007 concerning disaster management	2007
	Disaster Plan	Indonesia's Disaster Plan (Renstra BNPB 2025–2029)	2024
	Climate Law	No Climate Law	
	Climate Plan	National Adaptation Plan, 2026–2030 on The Pathway Toward 2035	2026
	VNR_MTR	VNR_MTR	2025
	NDC	NDC	2022
Tanzania	Disaster Law	Disaster Management Act of 2015	2015

	Disaster Plan	National Disaster Management Strategy (2022-2027)	2022
	Climate Law	No climate law	2025
	Climate Plan	National Adaptation Plan 2025-2035	2025
	VNR_MTR	VNR_MTR	2023
	NDC	NDC	2021
Haiti	Disaster Law	No disaster law on record	
	Disaster Plan	Plan national de gestion des risques de désastre 2019–2030	2019
	Climate Law	No Climate Law	
	Climate Plan	National Adaptation Plan 2022-2030	2022
	VNR_MTR	VNR_MTR	No NVR data
	NDC	NDC	2021
Vietnam	Disaster Law	Law on Natural Disaster Prevention and Control	2013
	Disaster Plan	National Strategy for Natural Disaster Prevention and Control to 2030, Vision to 2050	2021
	Climate Law	No Climate_Law	
	Climate Plan	Vietnam NAP 2021-2030 with a Vision to 2050	2021
	VNR_MTR	VNR_MTR	2023
	NDC	NDC	2022
Pakistan	Disaster Law	National Disaster Management Act, 2010	2010
	Disaster Plan	National Disaster Risk Reduction Strategy 2025–2030	2025
	Climate Law	Climate Change Act of 2017	2017
	Climate Plan	National Adaptation Plan 2023	2023
	VNR_MTR	VNR_MTR	2022

	NDC	NDC	2025
Mozambique	Disaster Law	Lei n.º 15/2014 — Estabelece o regime jurídico da gestão das calamidades (Mozambique Disaster Management Law)	2014
	Disaster Plan	Master Plan for Disaster Risk Reduction 2017–2030	2017
	Climate Law	No Climate Law	
	Climate Plan	National Adaptation Plan 2023	2023
	VNR_MTR	VNR_MTR	2020
	NDC	NDC	2025
Fiji	Disaster Law	National Disaster Risk Management Act 2024	2024
	Disaster Plan	National Disaster Risk Reduction Policy 2018-2030	2018
	Climate Law	Climate Change Act of 2021 (Act No. 43 of 2021)	2021
	Climate Plan	National Adaptation Plan	2018
	VNR_MTR	VNR_MTR	2023
	NDC	NDC	2025
Madagascar	Disaster Law	Loi n° 2015-031 relative à la Politique Nationale de Gestion des Risques et des Catastrophes	2015
	Disaster Plan	National Disaster Risk Management Strategy 2016–2030	2016
	Climate Law	No Climate Law	
	Climate Plan	Plan National d'Adaptation au Changement Climatique (PNA) Madagascar (National Adaptation Plan)	2021
	VNR_MTR	VNR_MTR	2023
	NDC	NDC	2021

Appendix C: Dataset for Content Analysis of Disaster and Climate Documents

(attached as spreadsheet file)

Appendix D: Extended Tables and Source Tables

Supplementary Table 1. Codebook

Variable	Meaning	Scoring
Criteria 1: Recognition and Commitment		
REC_EXP	Explicit recognition of persons with disabilities	0 No mention 1 Mentions “vulnerable groups” only 2 Explicitly mentions persons with disabilities
REC_PROT	Protection in emergencies	0 No mention 1 Mentions “vulnerable groups” only 2 Explicitly mentions persons with disabilities
RESC_INTL_LINK	Link to international frameworks	0 No international reference 1 General cooperation 2 Explicit reference to frameworks
REC_INT	Intersectionality	0 No subgroup reference 1 Generic vulnerable populations 2 Specific subgroups of persons with disabilities named (e.g. women, children or elderly with disabilities)
Criteria 2: Participation & Governance		
GOV_PART	Participation & governance	0 No participation 1 General consultation of the population/vulnerable groups 2 Explicit involvement of OPDs/persons with disabilities
Criteria 3. Early Warning and Disaster Preparedness Systems		

INFO_EWS_ACC	Accessible early warning systems	0 No accessibility 1 General accessibility language 2 Disability-inclusive formats mentioned
INFO_CAM	Public information campaigns	0 No participation 1 General consultation of the population/vulnerable groups 2 Explicit involvement of OPDs/persons with disabilities
RESP_EVAC	Inclusive evacuation & shelters	0 No evacuation mentioned 1 General accessibility language 2 Disability-inclusive evacuation mentioned
RESP_HEALTH	Health & support services	0 No services 1 General health services 2 Disability-specific services
Criteria 4. Capacity		
RESC_CAP_TRAIN	Capacity building & training	0 No training 1 General training 2 Disability inclusion training
Criteria 5. Funding		
RESC_ALLOC	Resource allocation	0 No funding 1 General resource allocation 2 Dedicated funding for disability inclusion
Criteria 6. Monitoring & Accountability		
MON_DATA	Monitoring & disability-disaggregated data	0 No monitoring 1 General monitoring 2 Disability-disaggregated data

Supplementary Table 2A. Mean Scores of Countries Across Disaster and Climate Documents

Country	VNR_MTR	Disaster Law	Disaster Plan	Climate Law	Climate Plan	NDC	Mean score	STD
Philippines	3.50	5.00	6.50	7.00	6.75	6.25	5.83	1.34
Bangladesh	9.75	5.50	10.00		12.00	9.25	9.30	2.37
Indonesia	6.00	5.50	8.75		8.00	6.75	7.00	1.36
Tanzania	4.75	5.25	8.00		7.75	6.50	6.45	1.45
Haiti			7.25		5.50	6.00	6.25	0.90
Vietnam	9.25	6.50	6.25		8.75	6.75	7.50	1.39
Pakistan	9.00	5.75	8.75	4.50	8.00	6.25	7.04	1.81
Mozambique	7.00	6.50	6.50		8.25	6.25	6.90	0.80
Fiji	10.50	6.50	9.00	9.50	7.75	6.75	8.33	1.59
Madagascar		4.00	6.75		6.50	5.25	5.63	1.27
Mean	7.47	5.61	7.78	7.00	7.93	6.60	7.06	0.86
Score range:	0-6	Very low	13-18	Moderate				
	7-12	Low	19-24	High				

Supplementary Table 2B. Mean Rating of Countries Across Disaster and Climate Documents

Country	VNR_MTR	Disaster Law	Disaster Plan	Climate Law	Climate Plan	NDC	Mean rating	STD
Philippines	0.58	0.83	1.08	1.17	1.13	1.04	0.97	0.23
Bangladesh	1.63	0.92	1.67		2.00	1.54	1.55	0.39
Indonesia	1.00	0.92	1.46		1.33	1.13	1.17	0.23
Tanzania	0.79	0.88	1.33		1.29	1.08	1.07	0.24
Haiti			1.21		0.92	1	1.04	0.15
Vietnam	1.54	1.08	1.04		1.46	1.13	1.25	0.23
Pakistan	1.50	0.96	1.46	0.75	1.33	1.04	1.17	0.30
Mozambique	1.17	1.08	1.08		1.38	1.04	1.15	0.14
Fiji	1.75	1.08	1.50	1.58	1.29	1.13	1.39	0.27
Madagascar		0.67	1.13		1.08	0.88	0.94	0.21
Mean rating	1.25	0.94	1.30	1.17	1.32	1.10	1.18	0.14

Supplementary Table 3A. Mean Ratings Across Disability Inclusion Indicators and Documents

Country	REC_EXP	REC_PROT	REC_INT	RESC_INTL-LINK	GOV_PART	INFO_EWS-ACC	INFO_CAM	RESP_EVAC	RESP_HEALTH	RESC_CAP-TRAIN	RESC_ALLOC	MON_DATA	Mean raw score	Mean rating score	Recognition	Implementation
VNR_MTR	1.75	1.50	1.25	2.00	1.50	0.75	1.00	1.13	1.00	1.13	1.00	1.25	7.48	1.25	1.56	1.09
Disaster Law	1.44	1.33	0.67	1.11	1.00	1.00	1.00	0.89	0.78	0.89	1.00	0.67	5.62	0.94	1.07	0.87
Disaster Plan	1.70	1.50	0.90	1.70	1.50	1.30	1.20	1.00	1.00	1.20	1.00	1.50	7.78	1.30	1.48	1.21
Climate Law	1.33	1.00	1.00	1.67	1.33	1.33	1.00	1.33	0.67	1.00	1.00	1.33	6.99	1.17	1.29	1.10
Climate Plan	1.90	1.90	1.30	2.00	1.60	0.90	1.20	1.00	1.10	1.20	1.10	1.20	7.93	1.32	1.69	1.14
NDC	1.50	1.50	0.90	2.00	1.10	0.80	1.00	0.80	1.10	1.00	1.10	1.00	6.60	1.10	1.29	1.01
Mean	1.60	1.46	1.00	1.75	1.34	1.01	1.07	1.03	0.94	1.07	1.03	1.22	7.12	1.19	1.40	1.08

Supplementary Table 3B. Mean Ratings Across Disability Inclusion Indicators and Countries

Country	REC_EXP	REC_PROT	REC_INT	RESC_INTL-LINK	GOV_PART	INFO_EWS-ACC	INFO_CAM	RESP_EVAC	RESP_HEALTH	RESC_CAP-TRAIN	RESC_ALLOC	MON_DATA	Mean raw score	Mean rating score	Recognition	Implementation
Philippines	1.33	1.33	1.00	1.67	1.17	0.83	1.17	0.50	0.83	1.00	1.00	1.17	6.75	1.08	1.25	1.00
Bangladesh	2.00	2.00	1.40	1.80	1.80	1.40	1.20	1.40	1.40	1.40	1.20	1.20	8.75	1.46	1.49	1.10
Indonesia	1.80	1.80	1.00	1.60	1.60	1.00	1.00	1.00	1.20	1.20	1.00	1.20	7.60	1.27	1.35	0.93
Tanzania	1.80	1.60	0.80	1.80	1.60	1.00	1.20	0.60	0.80	1.00	1.20	1.00	7.20	1.20	1.60	1.01
Haiti	1.33	1.00	0.67	1.67	1.00	0.33	1.00	0.67	1.00	1.00	1.00	1.33	6.25	1.04	0.67	0.59
Vietnam	1.80	1.80	1.20	1.80	1.40	1.00	1.00	1.00	1.20	1.20	1.00	1.00	7.30	1.22	1.58	1.06
Pakistan	1.50	1.33	1.17	1.83	1.33	1.17	1.17	1.00	1.00	1.00	1.00	0.83	6.71	1.12	1.41	0.98
Mozambique	1.80	1.60	1.20	1.80	1.20	1.00	1.20	1.00	1.20	1.00	1.00	1.00	6.90	1.15	1.42	1.03
Fiji	2.00	2.00	1.17	1.83	1.50	1.17	1.00	1.17	1.00	1.00	1.00	1.50	7.83	1.31	1.67	1.15
Madagascar	1.00	1.00	0.50	1.75	1.00	0.75	1.00	0.50	1.00	0.75	1.00	1.00	5.63	0.94	0.99	0.87

Source Table 5. Disability Inclusion Scores by Document Type Across Ten Countries

Documents	Overall Disability Inclusion Score (Max=12)	Overall Mean Rating Score (Max=2.0)
Climate Plan	7.93	1.32
Disaster Plan	7.78	1.30
VNR	7.59	1.27
Climate Law	6.99	1.17
NDC	6.60	1.10
Disaster Law	5.62	0.94
Overall Mean Score	7.12	1.19

Source Table 5: Score Range and interpretation: 0–3: Very low inclusion; 4–6: Low inclusion; 7–9: Moderate inclusion; 10–12: High inclusion *(Source: Content analysis)*

Source Table 6. Overall Disability Inclusion Scores Across the 6 Governance Criteria

Criteria	Overall Mean Raw Score (Max=12)	Overall Mean Rating Score (Max=2.0)
Recognition	8.90	1.48
Participation	7.91	1.32
Monitoring	6.95	1.16
Funding	6.33	1.05

Capacity	6.29	1.05
EWS and disaster preparedness	6.13	1.02

Source Table 6: Score Range and interpretation: 0–3 — Very low inclusion; 4–6 — Low inclusion; 7–9 — Moderate inclusion; 10–12 — High inclusion. *(Source: Content analysis)*

Source Table 8.1 Disability Inclusion in Early Warning

Documents	Early warning
Climate Law	1.33
Disaster Plan	1.30
Disaster Law	1.00
Climate Plan	0.90
VNR	0.88
NDC	0.80
Mean rating	1.04
Mean score	6.21

Source Table 8.1: *Shows the Mean Rating and Mean Score for each governance document for disability inclusion in early warning. (Source: Content analysis)*

Source Table 8.2 Disability Inclusion in Disaster Preparedness

Documents	Risk awareness	Health and support services	Inclusive evacuation	Mean rating
Disaster Plan	1.20	1.00	1.00	1.07
Climate Law	1.00	0.67	1.33	1.00
Climate Plan	1.20	1.10	1.00	1.10
VNR	1.13	1.38	0.75	1.09
NDC	1.00	1.10	0.80	0.97
Disaster Law	1.00	0.78	0.89	0.89
Mean rating	1.09	1.01	0.96	1.02
Mean score	6.53	6.03	5.77	6.11

Source Table 8.1 Score Range and interpretation: 1–3: Very low inclusion; 4–6: Low inclusion; 7–9: Moderate inclusion; 10–12: High inclusion *(Source: Content analysis)*

Source Table 10B. Inclusion Score of Countries in Terms of Disability Recognition

Country	Disability Mention	Disability Protection	Inter-sectionality	Int'l Norm	Mean score (max=8)	Mean rating (max=2)
Bangladesh	2.00	2.00	1.40	1.80	7.20	1.80
Fiji	2.00	2.00	1.17	1.83	7.00	1.75
Vietnam	1.80	1.80	1.20	1.80	6.60	1.65
Mozambique	1.80	1.60	1.20	1.80	6.40	1.60
Indonesia	1.80	1.80	1.00	1.60	6.20	1.55
Tanzania	1.80	1.60	0.80	1.80	6.00	1.50
Pakistan	1.50	1.33	1.17	1.83	5.83	1.46
Philippines	1.33	1.33	1.00	1.67	5.33	1.33
Haiti	1.33	1.00	0.67	1.67	4.67	1.17
Madagascar	1.00	1.00	0.50	1.75	4.25	1.06

Source Table 10B. Score Range and interpretation: 0–2: Very low inclusion; 3-4: Low inclusion; 5–6: Moderate inclusion; 7–8: High inclusion *(Source: Content analysis)*

Source Table 11A. Disability Inclusion in Participation

Documents	Score	Participation (N=10) countries
VNR_MTR*	0 (Absent)	1
	1 (Partial)	4
	2 (Full/explicit)	4
NDC	0 (Absent)	0
	1 (Partial)	9
	2 (Full/explicit)	1
Disaster Law*	0 (Absent)	1
	1 (Partial)	9
	2 (Full/explicit)	0
Climate Law*	0 (Absent)	7
	1 (Partial)	2
	2 (Full/explicit)	1
Disaster Plan	0 (Absent)	0
	1 (Partial)	5
	2 (Full/explicit)	5
Climate Plan	0 (Absent)	0
	1 (Partial)	4
	2 (Full/explicit)	6

Source Table 11A. *(Source: Content analysis)*

Source Table 11B. Cross-Country Comparison: Recognition of Disability Participation in Planning

Country	Participation Mean Rating (Max=2.00)
Bangladesh	1.80
Indonesia	1.60
Tanzania	1.60
Fiji	1.50
Vietnam	1.40
Pakistan	1.33
Mozambique	1.20
Philippines	1.17
Haiti	1.00
Madagascar	1.00

Table 11B. Score range and interpretation: 0.00–0.50: Very low inclusion; 0.51–1.00: Low inclusion; 1.01–1.50: Moderate inclusion; 1.51–2.00: High inclusion *(Source: Content analysis)*

Source Table 12B. Disability Inclusion Score in Terms of Early Warning

Country	Early warning inclusion (Mean rating, Max=2)
Bangladesh	1.40
Pakistan	1.17
Fiji	1.17
Indonesia	1.00
Tanzania	1.00
Vietnam	1.00
Mozambique	1.00
Philippines	0.83
Madagascar	0.75
Haiti	0.33

Source Table 12B. Score range and interpretation: 0.00–0.99: Very low inclusion; 0.51–1.00: Low inclusion; 1.01–1.50: Moderate inclusion; 1.51–2.00: High inclusion *(Source: Content analysis)*

Source Table 13B. Overall Disability Inclusion Score in Disaster Preparedness

Country	Risk awareness	Inclusive evacuation	Health and support services	Mean rating (max=2)
Bangladesh	1.20	1.40	1.40	1.33
Mozambique	1.20	1.00	1.20	1.13
Indonesia	1.00	1.00	1.20	1.07
Vietnam	1.00	1.00	1.20	1.07
Pakistan	1.17	1.00	1.00	1.06
Fiji	1.00	1.17	1.00	1.06
Haiti	1.00	0.67	1.00	0.89
Tanzania	1.20	0.60	0.80	0.87
Philippines	1.17	0.50	0.83	0.83
Madagascar	1.00	0.50	1.00	0.83

Source Table 13B. Score range and interpretation: 0.00–0.50: Very low inclusion; 0.51–1.00: Low inclusion; 1.01–1.50: Moderate inclusion; 1.51–2.00: High inclusion *(Source: Content analysis)*

Source Table 14B. Overall Inclusion Score in Capacity and Funding

Country	Capacity	Funding	Mean rating (max=2)
Bangladesh	1.40	1.20	1.30
Indonesia	1.20	1.00	1.10
Tanzania	1.00	1.20	1.10
Vietnam	1.20	1.00	1.10
Philippines	1.00	1.00	1.00
Haiti	1.00	1.00	1.00
Pakistan	1.00	1.00	1.00
Mozambique	1.00	1.00	1.00
Fiji	1.00	1.00	1.00
Madagascar	0.75	1.00	0.88

Source Table 14B. Score range and interpretation: 0.00–0.50: Very low inclusion; 0.51–1.00: Low inclusion; 1.01–1.50: Moderate inclusion; 1.51–2.00: High inclusion *(Source: Content analysis)*

Source Table 15B. Overall Inclusion Score in Data Monitoring

Country	Data monitoring Mean rating (Max=2.0)
Fiji	1.50
Haiti	1.33
Bangladesh	1.20
Indonesia	1.20
Philippines	1.17
Tanzania	1.00
Vietnam	1.00
Mozambique	1.00
Madagascar	1.00
Pakistan	0.83

Source Table 15B: Score range and interpretation: 0.00–0.50: Very low inclusion; 0.51–1.00: Low inclusion; 1.01–1.50: Moderate inclusion; 1.51–2.00: High inclusion *(Source: Content analysis)*

Source Table 17. Overall Inclusion Score (Recognition vs Implementation)

Country	Recognition indicators	Implementation indicators
Fiji	1.67	1.15
Vietnam	1.58	1.06
Tanzania	1.60	1.01
Bangladesh	1.49	1.10
Mozambique	1.42	1.03
Pakistan	1.41	0.98
Indonesia	1.35	0.93
Philippines	1.25	1.00
Madagascar	0.99	0.87
Haiti	0.67	0.59

Source Table 17. Score range and interpretation: 0.00–0.50: Very low inclusion; 0.51–1.00: Low inclusion; 1.01–1.50: Moderate inclusion; 1.51–2.00: High inclusion *(Source: Content analysis)*

Source Table 18. Sources of Risk Among Respondents

Sources of risk	Frequency	Percentage (%)
Typhoon	83	96.51
Flood	80	93.02
Landslides	62	72.09
Earthquake	60	69.77
Mudslides	23	26.74
Conflict / violence	15	17.44
Volcanic eruption	11	12.79
Forest fire	10	11.63
Storm surge	0	0.00
Marine pollution	0	0.00

Source Table 18. (Source: Survey of Persons with Disabilities in Central Pangasinan, 2026)

Source Table 19. Disaster Preparedness Indicators Among Persons with Disabilities in Central Pangasinan

Disaster Preparedness	Yes		No	
	Frequency	Percentage	Frequency	Percentage
Do you have a personal or household disaster preparedness plan?	58	67.44	28	32.56
Are you aware of the evacuation routes in your area?	33	38.37	53	61.63
Can you evacuate without assistance during an emergency?	20	23.26	66	76.74
Have you been displaced due to disasters or crises in the past 5 years?	60	69.77	26	30.23
Was the temporary shelter accessible to you as a person with a disability?	13	15.12	73	84.88

Source Table 19. (*Source: Survey of persons with disabilities in Central Pangasinan, 2026)*

Source Table 20. Distance from Evacuation Center

Distance	Frequency	Percentage
Less than 1 km	30	34.88
2–4 km	28	32.56
4–7 km	24	27.91
More than 7 km	4	4.65

Source Table 20. *Source: Survey of persons with disabilities in Central Pangasinan, 2026*

Source Table 21. Causes of Displacement

Causes of displacement	Frequency	Percentage
Typhoon / Flooding	65	75.58
Landslide	12	13.95
Fire	3	3.49
Earthquake	3	3.49
Conflict / violence	3	3.49

Source Table 21: (*Source: Survey of persons with disabilities in Central Pangasinan, 2026)*

Source Table 22. Places of Relocation When Displaced

Place of relocation	Frequency	Percentage
Relative / friend's house	47	54.65
Evacuation center	26	30.23
Temporary shelter	13	15.12

Source Table 22. *(Source: Survey of persons with disabilities in Central Pangasinan, 2026)*

Source Table 23. Barriers to Early Warning Access

Main barriers	Frequency	Percentage
Inaccessible warning formats	69	80.23
Mobility constraints	61	70.93
Reliance on others for message interpretation	46	53.49
Limited trust in early warning sources	34	39.53
Digital divide and connectivity	31	36.04
Late delivery of warning information	23	26.74

Source Table 23. *Source: Survey of persons with disabilities in Central Pangasinan, 2026*

Source Table 24. Disability Accessibility of Early Warning Information

	Yes		No		Partly	
Accessibility format of EWS	Count	%	Count	%	Count	%
Is the risk information accessible to you in a format you can understand (e.g., sign language, Braille, large print, easy-to-read text)?	11	12.79	69	80.23	6	6.98
In the past, have you ever experienced difficulty in receiving early warning information?	72	83.72	10	11.63	3	3.49

Source Table 24. (*Source: Survey of persons with disabilities in Central Pangasinan, 2026)*

Source Table 25. Sources of Early Warning Among Persons with Disabilities in Central Pangasinan

Sources of early warning information	Frequency	Percentage
Social Media (e.g., Facebook, etc.)	77	89.53
Television	64	74.42
Relatives	62	72.09
Barangay Mobile Car	54	62.79
Radio	54	62.79
Traditional Indigenous Knowledge	42	48.84
SMS from NDRRMC	42	48.84
Siren	14	16.28

Source Table 25. (*Source: Survey of persons with disabilities in Central Pangasinan, 2026)*

Source Table 26. Lead Time for Receipt of Early Warning Before Impact

How long before a disaster impacts your area do you typically receive early warning information?	Frequency (N=86)	Percentage
<1 hr	28	32.56
1–6 hrs	28	32.56
>6 hrs	26	30.23
None	4	4.65

Source Table 26. *(Source: Survey of persons with disabilities in Central Pangasinan, 2026)*

Source Table 27. Coping Strategies When Facing Barriers for Early Warning

Strategies when facing barriers to EWS access	Frequency	Percentage
Using multiple information channels to verify warning information	74	86.05
Seeking assistance from family members and friends	62	72.09
Drawing on local knowledge and past experience for preparedness	59	68.60
Rely on barangay officials for information and support	37	43.02

Source Table 27. (*Source: Survey of persons with disabilities in Central Pangasinan, 2026)*

Source Table 28. Persons with Disabilities Responses to Early Warning

Immediate responses to early warning information	Frequency	Percentage
Wait	48	55.81
Evacuate	22	25.58
Stay	13	15.12
Do nothing	3	3.49

Source Table 28. (*Source: Survey of persons with disabilities in Central Pangasinan, 2026)*

Source Table 29. Factors that Influence Early Warning Actionability

Factors that influence early warning actionability	Frequency	Percentage
Physical/health condition	72	83.72
Evacuation support from relatives or local government	64	74.42
Evacuation center/ shelter accessibility	64	74.42
Transport access	60	70.59
Financial capacity	52	60.47
Past evacuation experience	51	59.3
Trust in authorities	50	58.14

Source Table 29. (*Source: Survey of persons with disabilities in Central Pangasinan, 2026)*

Appendix E: Survey Instrument

Part 1: Socio-Demographic Profile

1.1. Personal Information:

Name (optional): _____

Age: _____ 18-25 _____ 26-40 _____ 41-59 _____60 pataas

Gender: _____Male _____Female _____Binary_____ prefer not to disclose

Educational attainment:

____ Elementary

____ Secondary

____ Vocational

____ College (Not completed)

____ Bachelor, Master, Doctorate

Home ownership:

____ Owner

____ Renter

Annual Income

____ < Ph 100,000 ____ Ph 100,000-Ph 300,000

____ Ph 301,000-Ph 400,000 ____ Ph 401,000-Ph 500,000 ____ > Ph 500,000

Connected to power supply?

____ Yes

____ No

Connected to internet?

____ Yes

____ No

1.2. Disability information

Type of functional difficulty (Multiple answers allowed):

____ Seeing (even with glasses)

____ Hearing (even with hearing aid)

____ Walking or climbing steps

____ Remembering or concentrating

____ Self-care (washing, dressing, eating)

____ Communicating (understanding or being understood)

Assistive device(s) used: (Multiple answers allowed)

____ Wheelchair ____ Crutches/cane ____ Hearing aid

____ White cane ____ Communication board/device

____ None ____ Others (specify)

Living arrangement:

____ Alone ____ With family ____ With caregiver ____ Institutional facility

Part 2: Risk information and preparedness

2.1. In your opinion, which of the following are potential and/or actual sources of risk or disaster in your community?

_____typhoon _____flood

_____storm surge _____ earthquake

_____ forest fire _____volcanic eruption

_____landslides _____ marine pollution

_____ mudslides _____ conflict/violence

____ Others: _____ (please specify)

2.2. Do you have a personal or household disaster preparedness plan?

____ Yes ____ No

2.3. Are you aware of the evacuation routes in your area?

____ Yes ____ No

2.4. How far is your house to nearest "evacuation center" or shelter?

_____< 1 km _____> 2-4 km

_____ > 4-7 km _____ > 7km

2.5. Can you evacuate without assistance during an emergency?

____ Yes ____ No

2.6. Have you been displaced due to disasters or crises in the past 5 years?

____ Yes ____ No

2.7. If yes, main cause of displacement:

____ Typhoon/flooding ____ Earthquake ____ Landslide

____ Fire ____ Conflict/violence

____ Others: _____ (please specify)

2.8. Where did you relocate during displacement?

____ Evacuation center ____ Relative/friend's house

____ Temporary shelter provided by government/NGO

____ Others: _____ (please specify)

2.9. Was the temporary shelter accessible to you as a person with a disability?

____ Yes ____ No

Part 3: Access to early warning

3.1. In what ways do you receive early warning messages regarding typhoons, etc? Check as many as may be applicable

_____Social Media (e.g., Facebook, etc.) _____SMS from NDRMMC

_____Television _____Siren

_____Radio _____Barangay Mobile car

_____ Relatives _____Traditional indigenous knowledge

_____Others

3.2. How much advance warning do you usually receive before a hazard impacts your area?

____ None ____ Less than 1 hour

____ 1–6 hours ____More than 6 hours

3.3. Is this risk information accessible to you in a format you can understand (e.g., sign language, Braille, large print, easy-to-read text)?

____ Yes ____ Partly ____ No

Part 4. Barriers to access to early warning information

4.1. In the past, have you ever experienced difficulty in receiving early warning information?

____ Yes ____ Partly ____ No

4.2. Are you affiliated with an Organization of Persons with Disabilities (OPD)? In your opinion, how accessible are current early warning messages for persons with disabilities?

____ Very accessible ____ Somewhat accessible

____ Not accessible ____Unsure

4.3. If yes, what were the main barriers? (check all that apply)

____ No access to devices (radio, phone, TV, etc.)

____ No electricity/poor signal

____ Warnings not in accessible format (sign language, Braille, large print, etc.)

____ Information came too late

____ Dependence on others to interpret messages

____ Lack of trust in information sources

____ Physical mobility limits to attend meetings or announcements

____ Others: _____ (please specify)

4.4. How do the following factors affect your access to early warning messages during disasters? Check the appropriate box for your response/opinion.

Factors	Positive	Negative	Neutral
The language used in the early warning message			
The format/modality through which early warning information is conveyed			
The timing and frequency through which early warning information is conveyed			
Connectivity to power/grid during disaster			
The remoteness/geographical location of the village			

Part 5. Response and coping strategies

5.1. What do you usually do to cope with these barriers? (check all that apply)

____ Ask family/friends for updates

____ Rely on barangay officials for reminders

____ Use multiple sources (radio + text + neighbors)

____ Prepare based on local knowledge (rain, river level, etc.)

____ Others: _____ (please specify)

5.2. When you receive an early warning (e.g., for typhoon, flood, earthquake), how do you usually respond?

____ Evacuate immediately

____ Wait for confirmation from local officials/family

____ Stay at home and prepare (food, water, supplies)

____ Do nothing / unable to respond

____ Others: _____(please specify)

5.3. What makes it easier for you to respond to warnings? (check all that apply)

____ Clear instructions

____ Support from family/neighbors

____ Accessible transportation to evacuation centers

____ Barangay officials providing assistance

____ Prior disaster experience

____ Others: _____(please specify)

5.4. How do the following factors affect your response/reaction to reduce risk during disasters? Check the appropriate box for your response/opinion.

Factors	Positive	Negative	Neutral
Accessibility of transport			
Accompaniment/evacuation support from family, relatives or other people			
Accessibility of evacuation centers/shelters			
Physical/health condition			
Financial resources			
Past evacuation experience			
Trust to local authorities			

5.5. How confident are you in your ability to respond effectively when a disaster warning is issued?

____ Very confident ____ Somewhat confident

____ Not confident ____ Unsure

Part 6. Governance and community inclusion in disaster risk reduction

6.1. Are you affiliated with an Organization of Persons with Disabilities (OPD)?

____ Yes ____ No

6.2. Does your LGU or OPD have a dedicated role/person for disability inclusion in DRR?

____ Yes ____ No ____ Not sure

6.3. Do you feel included in community disaster preparedness activities (e.g., drills, meetings, trainings)?

____ Always ____ Sometimes ____ Never

6.4. Have you been consulted by the LGU or OPD in DRR planning?

____ Yes, regularly ____Yes, once or twice ____ No

6.5. Have you participated in community-based DRR decision-making in the past 2 years?

____ Yes ____ No ____ Not sure

6.6. Would you be willing to participate in DRR activities in the future?

____ Yes ____ No ____ Depends (specify)

6.7. What participation mechanisms are available in your community? (Multiple answers allowed)

____ Community meetings/forums

____ Direct representation in DRR councils

____ Door-to-door information campaigns

____ Online platforms/social media

____ Other (specify)

____ None

6.8. Barriers to participation (Multiple answers allowed):

____ Physical inaccessibility of venues

____ Lack of transportation

____ Lack of accessible information/materials

____ Not invited/informed about meetings

____ Safety/security concerns

____ Other (specify)

6.9. Which of the following do you think the persons with disability community really need to enhance its capacity to respond to disasters? (Check all that apply)

____ Accessible and timely early warning information (sign language, Braille, large print, audio, easy-to-read formats)

____ Training and capacity-building specifically for persons with disabilities

____ Disability-inclusive disaster drills and community preparedness activities

____ Accessible transportation during evacuations

____ Accessible evacuation centers (ramps, toilets, designated spaces, assistive devices)

____ Strengthened support from barangay/local government units

____ Greater involvement of persons with disabilities in disaster planning and decision-making

____ Financial assistance or livelihood support for disaster preparedness

____ Community volunteers trained to assist persons with disabilities during emergencies

____ Stronger coordination with disability organizations/associations

____Access to assistive technologies (hearing aids, mobility aids, communication devices)

____ Others: _____ (please specify)

Appendix F: Datasets for the Survey

Spreadsheet file attached

Appendix G: Interview Protocol

Overview

This Interview protocol is prepared to serve as a guide for the conduct of the interviews of the key informants of the study and therefore need not be applied to the letter. As such, it can be modified and used with a little flexibility whenever the circumstances and conditions of the interview call for it to allow new insights and perspectives to emerge. For further information on the purpose of the interviews, see further explanation in the Methodology section of this study.

Section I. Interview introduction

First of all, thank you for taking the time to speak to me today.

Allow me to introduce myself. I am Rhomir Yanquiling, a proud Global Heumann Fellow of the World Disability Institute. I am currently conducting a study on disability inclusion to Early Warning System.

I am here to speak to you about your perspectives and opinions regarding accessibility, usability and actionability of EWS. Let me briefly inform you of what is to take place in this interview. I am going to ask a series of questions and engage in a conversation with you to understand EWS and disaster preparedness from your perspective.

Rest assured that this conversation will be treated with utmost confidentiality, that your responses will be used only for purposes of the research and that you have the option to have your name and responses anonymized for the interview.

If you are comfortable, would it be OK with you for us to record this session for our note taking? If at any point, you want to take a break or stop the interview please just let me know and we can work around it. Any questions before we begin? Let's get started!

Section II. Guide questions

Could you share a bit about yourself, including your age, living situation, disability-related needs, and the kind of assistance you usually require in daily life?

What are your main sources of income or livelihood, and how are these affected when disasters such as typhoons or flooding occur?

What types of disasters commonly affect your community, and can you describe a memorable disaster experience that changed the way you prepare for future disasters?

How do you usually receive disaster warnings, and how clear and understandable are these messages for you?

When you receive a warning, how do you decide whether to prepare, evacuate, or stay at home? Do you sometimes wait for confirmation from other people, social media, or environmental signs?

What challenges make it difficult for you to evacuate during disasters, such as mobility limitations, health needs, distance, transport availability, or road conditions?

If you have experienced evacuation before, can you describe what happened, where you stayed, and whether the shelter or place you went to was accessible and safe for your needs?

How do family members, neighbors, or community members help you before, during, or after disasters?

How does your financial situation affect your ability to prepare for or evacuate during disasters?

Apart from official warnings, what local signs do people in your community observe before disasters, such as rising river levels, continuous rain, or animal behaviour?

What changes would make early warning systems, evacuation support, transportation, or shelters safer and more accessible for persons with disabilities in your community?

Section III. Interview wrap-up

(1) Do you have something to add or final comments to make?

(2) Should have I asked any question which I have not been able to ask?

(3) Do you have any friends, professional colleagues, acquaintances or contact you can recommend for further interviewing?

I wish to say that we greatly cherish the time and assistance you extended us. Thank you so much for gracing our invitation for this interview.

Have a nice day! Bye

Appendix H: List of Interviewees

Interviewee ID	Pseudonym	Position / Occupation	Location	Date of Interview	Gender
INT_001	Marcia	persons with disability barangay coordinator	Bugallon	12/2725	Female
INT_002	Mario	Fisher	Bugallon	12/2725	Male
INT_003	Karlo	Farmer	Bugallon	12/28/25	Male
INT_004	Lucio	Vendor	Bugallon	12/28/25	Male
INT_005	Belladona	persons with disability OPD officer	Bugallon	1/1/26	Female
INT_006	Boody	Waste picker	Bugallon	1/1/26	Female
INT_007	Ladylyn	Teacher; persons with disability focal person	Aguilar	1/1/26	Female
INT_008	Encarnacion	persons with disability barangay coordinator	Aguilar	1/1/26	Female
INT_009	Maria Luisa	persons with disability coordinator	Aguilar	1/5/26	Female
INT_010	Illuminada	Market vendor	Aguilar	1/5/26	Female
INT_011	Milano	Farmer	Aguilar	1/5/26	Male
INT_012	Juan	persons with disability barangay coordinator	Aguilar	1/6/26	Male
INT_013	Mateo	Barangay helper	Aguilar	1/6/26	Male

Appendix I: Interviewee Transcripts

Note the statements are translated verbatim into English. The original language statement is below each statement.

Interviewee ID: **INT_001**
Pseudonym: **Marcia**
Position/Occupation: **PwD Barangay Coordinator**
Location: **Bugallon**
Date of Interview: **December 27, 2025**
Gender: **Female**

1. Could you share a bit about yourself, including your living situation, disability-related needs, and the assistance you usually require in daily life?

“I am Marcia. I am a person with a disability. Forty-three years of age. I have difficulty walking. I am currently living with my family.”

“Ako si Marcia. Isa akong PwD. Apartnaput tatlong taong gulang. Ako ay nahihirapang makalakad. Ako ay kasalukuyang nakatira kasama ng aking pamilya.”

2. What are your main sources of income or livelihood, and how are these affected when disasters such as typhoons or flooding occur?

“At present, I no longer have regular work because of my condition. We depend on support from family and the small benefit we receive from the 4Ps program. When there is a typhoon or flooding, expenses become an additional burden because we need to prepare food, medicine, and transportation. Sometimes even if we want to prepare early, we still need to think about where to get the money.”

“Sa ngayon, wala na akong regular na trabaho dahil sa kondisyon ko. Umaasa kami sa tulong ng pamilya at sa maliit na benepisyo mula sa 4Ps. Kapag may bagyo o baha, nagiging dagdag na problema ang gastos dahil kailangan naming maghanda ng pagkain, gamot, at pamasahe. Minsan kahit gusto naming maghanda agad, kailangan pa rin naming isipin kung saan kukuha ng pera.”

3. What types of disasters commonly affect your community, and can you describe a memorable disaster experience that changed the way you prepare for future disasters?

“Almost every year we are hit by typhoons, and when the rain is strong, flooding is certain in our area.”

“Sometimes we receive warnings, but the flood or typhoon is already near when the message arrives. There is not enough time to prepare or find someone to help me evacuate.”

“Halos taon-taon po kaming binabagyo, at kapag malakas ang ulan, siguradong babaha dito sa amin….May mga pagkakataon na nakakatanggap kami ng babala, pero halos nandiyan na ang baha bago dumating ang mensahe. Nakakabahala iyon para sa akin dahil kailangan ko pa ng tulong bago makaalis.”

“Minsan nakakatanggap kami ng babala, pero malapit na ang baha o bagyo kapag dumating ang mensahe. Kulang ang oras para maghanda o maghanap ng tutulong sa akin sa paglikas.”

4. How do you usually receive disaster warnings, and how clear and understandable are these messages for you?

"We receive text messages from the NDRRMC when there is a typhoon or flood. This helps because we receive warnings directly on our phones. However, sometimes we get confused about how serious the situation is because the message is brief."

“Nakakatanggap kami ng text message mula sa NDRRMC kapag may bagyo o baha. Nakakatulong ito dahil direkta naming natatanggap ang babala sa cellphone. Pero minsan naguguluhan kami kung gaano kalala ang sitwasyon dahil maikli lamang ang mensahe.”

5. When you receive a warning, how do you decide whether to prepare, evacuate, or stay at home?

“I cannot leave immediately when there is a warning. I first need to make sure that someone will help me. Most of the time, we wait for my child or other relatives before deciding whether to evacuate or stay at home. It is not only about fear, but about my ability to move safely.”

“Hindi ako basta-basta makakaalis agad kapag may babala. Kailangan ko munang tiyakin kung may tutulong sa akin. Madalas, hinihintay namin ang anak ko o ibang kamag-anak bago kami magdesisyon kung lilikas o mananatili sa bahay. Hindi lang ito tungkol sa takot, kundi tungkol sa kakayahan kong makagalaw nang ligtas.”

6. What challenges make it difficult for you to evacuate during disasters?

“I think the biggest challenge for me is how to evacuate without other’s assistance. I cannot walk quickly, and it is difficult for me to leave the house when there is flooding. When the roads

become slippery, the situation becomes even more dangerous. I also need transportation and assistance from others to reach the evacuation center…I am already old and use a wheelchair, so I cannot evacuate without my child who takes care of me. We rely on the small assistance we receive from the 4Ps, but when flooding occurs, we still need to find transportation and help in order to reach the evacuation center."

"Sa aking palagay, ang pinakamalaking hamon sa akin ay kung paano kumilos ng mag-isa. Hindi ako makakalakad nang mabilis, at nahihirapan akong makalabas ng bahay kapag baha na. Kapag madulas ang daan, mas delikado pa ang sitwasyon. Kailangan ko rin ng sasakyan at tulong ng ibang tao para makarating sa evacuation center.

Matanda na ako at naka-wheelchair, kaya hindi ako makakalikas kung wala ang anak ko na nag-aalaga sa akin. Umaasa lang kami sa maliit na tulong mula sa 4Ps, pero kapag may baha, kailangan pa rin naming maghanap ng sasakyan at tulong para makarating sa evacuation center."

7. If you have experienced evacuation before, can you describe what happened?

"When the water level rises, we need to evacuate to the evacuation center. That process is not easy for me because I still need assistance to get there. Sometimes I worry that I might not reach the evacuation center quickly if the water rises suddenly."

"Kapag mataas na ang tubig, kailangan naming lumikas sa evacuation center. Hindi iyon madali para sa akin dahil kailangan ko ang tulong iba sa pagpunta doon. Minsan, natatakot ako na baka hindi ako makarating agad kung biglang tumaas ang tubig."

8. How do family members, neighbors, or community members help you during disasters?

"Family members and neighbors play a very important role in my safety. When there is a typhoon or flooding, they are the first to help me. They also provide information about what is happening in the community. Without them, it would be very difficult for me to stay safe in these situations."

"Malaki ang naitutulong ng pamilya at kapitbahay sa kaligtasan ko. Kapag may bagyo o baha, sila ang unang tumutulong sa akin. Sila rin ang nagbibigay ng impormasyon kung ano ang nangyayari sa paligid. Kung wala sila, mahirap 312alaga para sa akin na makaligtas sa ganitong sitwasyon."

How does your financial situation affect your ability to prepare or evacuate?

“Money has a big influence on our decision whether to evacuate or stay at home during disasters. When we know that we do not have enough money for food and other needs while staying in the evacuation center, we sometimes choose to remain at home even if there is risk. We think about where to get money for food or transportation if we stay in the evacuation center for a long time. It is not an easy decision because we have to balance safety and our ability to support the family. The 4Ps assistance is a big help, but it is not enough for all our needs. When disasters occur, we still need to save money for transportation, food, and medicine. Sometimes the lack of money becomes a barrier to quick preparation.”

“Malaki ang epekto ng pera sa desisyon kung lilikas ba kami o mananatili sa bahay kapag may sakuna. Kapag alam naming kulang ang pera para sa pagkain at iba pang pangangailangan habang nasa evacuation center, minsan pinipili naming manatili muna sa bahay kahit may panganib. Iniisip namin kung saan kukuha ng pambili ng pagkain o pamasahe kung matagal kaming mananatili sa evacuation center. Hindi ito madaling desisyon, dahil kailangan naming timbangin ang kaligtasan at ang kakayahang suportahan ang pamilya.”

“Malaking tulong ang 4Ps, pero hindi ito sapat para sa lahat ng pangangailangan. Kapag may sakuna, kailangan pa rin naming mag-ipon para sa pamasahe, pagkain, at gamot. Minsan nagiging hadlang ang kakulangan sa pera sa maagap na paghahanda.”

10. Apart from official warnings, what local signs do people in your community observe before disasters?

“When the rain continues and the water level rises quickly, we start preparing even without an official warning. Most of the time, our decisions are based on our past experiences.”

“Kapag tuloy-tuloy ang ulan at mabilis ang pagtaas ng tubig sa paligid, naghahanda na kami kahit wala pang opisyal na babala. Kalimitan, sa karanasan 313aming sa mga nagdaang kalamidad kami humuhugot ng basehan kung kailangan bang maghanda sa isang sakuna.”

11. What changes would make early warning systems, evacuation support, transportation, or shelters safer and more accessible for persons with disabilities in your community?

"For me, it is also important to maintain the dignity and safety of persons with disabilities while staying in evacuation centers. There are times when privacy is lacking, especially in toilets and bathing areas, which causes discomfort or embarrassment. If there are properly designed spaces for persons with disabilities, our stay will be more comfortable and safe. Safety is important, but so is respect for our needs as individuals."

“Para sa akin, mahalaga rin na mapanatili ang dignidad at kaligtasan ng persons with disabilities habang nasa evacuation center. May mga pagkakataon na kulang ang privacy, lalo na sa palikuran at paliligo, at nagiging sanhi ito ng discomfort o hiya. Kung magkakaroon ng maayos na espasyo para sa persons with disabilities, mas magiging komportable at ligtas ang pananatili namin doon. Hindi lamang kaligtasan ang mahalaga, kundi pati ang respeto sa aming pangangailangan bilang tao.”

Interviewee ID: **INT_002**
Pseudonym: **Mario**
Position/Occupation: **Fisher**
Location: **Bugallon**
Date of Interview: **December 27, 2025**
Gender: **Male**

1. Could you share a bit about yourself, including your living situation, disability-related needs, and the assistance you usually require in daily life?

"I live near the river and my livelihood is fishing. I have lived in this area for many years, so I am already familiar with how the water and weather behave. There are times when I need help from my family, especially when flooding occurs and it becomes difficult to move around."

"Nakatira ako malapit sa ilog at ang hanapbuhay ko ay pangingisda. Matagal na akong nakatira sa lugar na ito, kaya kabisado ko na ang galaw ng tubig at panahon. May mga pagkakataon na kailangan ko ng tulong mula sa pamilya ko, lalo na kapag may baha at mahirap gumalaw sa paligid."

2. What are your main sources of income or livelihood, and how are these affected when disasters such as typhoons or flooding occur?

"Kapag may bagyo o baha, halos wala kaming kita dahil hindi kami makapangingisda. Minsan umaabot ng ilang araw bago kami makabalik sa trabaho. Kapag ganoon ang sitwasyon, napipilitan kaming magtipid sa pagkain at ibang pangangailangan."

("When there is a typhoon or flooding, we earn almost nothing because we cannot go fishing. Sometimes it takes several days before we can return to work. In those situations, we are forced to reduce spending on food and other necessities.")

3. What types of disasters commonly affect your community, and can you describe a memorable disaster experience that changed the way you prepare for future disasters?

"In our area, flooding is common when heavy rain falls, especially because we live near the river. When the rain continues, the water rises quickly and we are forced to evacuate….Our area is low-lying and close to the river, so when the rain is heavy, flooding happens quickly and we are forced to evacuate. Because of those experiences, we have become more careful in preparing. We no longer wait for the last warning before taking action"

“Sa lugar namin, karaniwan ang baha kapag malakas ang ulan, lalo na dahil malapit kami sa ilog. Kapag tuloy-tuloy ang ulan, mabilis talagang tumataas ang tubig at napipilitan kaming lumikas.”

“Mababa ang lugar namin at malapit sa ilog, kaya kapag malakas ang ulan, mabilis talagang bumaha at napipilitan kaming lumikas. Dahil sa mga karanasang iyon, mas naging maingat na kami sa paghahanda. Hindi na kami naghihintay ng huling babala bago kumilos.”

4. How do you usually receive disaster warnings, and how clear and understandable are these messages for you?

“Usually, we receive warnings from barangay announcements or from news on the radio and television. When the information is clear, it becomes easier for us to decide what action to take.”

“Karaniwan, nalalaman namin ang babala mula sa barangay announcements o sa balita sa radyo at telebisyon. Kapag malinaw ang impormasyon, mas madali kaming makapagdesisyon kung ano ang dapat gawin.”

5. When you receive a warning, how do you decide whether to prepare, evacuate, or stay at home?

“We do not leave immediately when there is a warning. We first observe the situation around us and listen to what our neighbors are saying. When we see that the rain continues and the water level is rising, that is when we begin preparing…When the rain keeps falling and neighbors say that the river level is rising, that is when we start preparing. We do not rely on just one warning—we also look at what is happening around us.”

“Hindi kami agad umaalis kapag may babala. Tinitingnan muna namin ang sitwasyon sa paligid at nakikinig sa sinasabi ng mga kapitbahay. Kapag nakikita naming patuloy ang ulan at tumataas ang tubig, saka kami naghahanda. Hindi lang isang balita ang pinapakinggan namin—tinitingnan din namin kung ano ang nangyayari sa paligid.”

6. What challenges make it difficult for you to evacuate during disasters?

“When flooding begins, it becomes difficult to leave the house because the roads become slippery and the water current is strong. Sometimes we need to wait for assistance before evacuating, especially at night or during heavy rain.”

“Kapag baha na, nagiging mahirap ang paglabas ng bahay dahil madulas ang daan at malakas ang agos ng tubig. Minsan kailangan pa naming maghintay ng tulong bago makalikas, lalo na kung gabi o malakas ang ulan.”

7. If you have experienced evacuation before, can you describe what happened?

“In recent years, we have had to evacuate many times due to flooding. We have evacuated several times in recent years because of flooding. When the water becomes too high, we have no choice but to leave our home and look for a safer place.”

“Sa mga nagdaang taon, maraming beses na din kaming lumikas dahil sa pagbaha. Kapag mataas na ang tubig, wala na kaming ibang pagpipilian kundi umalis sa bahay at maghanap ng mas ligtas na lugar.”

8. How do family members, neighbors, or community members help you during disasters?

“It makes a great difference when your community, family, and neighbors genuinely care about you, because they are the first to help. There is a spirit of cooperation and mutual aid during times of disaster. When the flood reached our house, I remember that our neighbor took us in because their house had two floors. They let us stay until the water subsided.”

“Iba kapag may malasakit sa yo ang komunidad, pamilya at kapitbahay mo kasi sila ang unang tutulong sa yo. May bayanihan at pagtutulungan sa panahon ng kalamidad. Nung umabot ang baha sa bahay namin, naalala ko yung kapitbahay ko ang nagpatuloy sa amin kasi dos grados ang bahay nila.Pinatuloy kami hanggang mababaw na ang tubig.”

9. How does your financial situation affect your ability to prepare or evacuate?

"We find it difficult to decide to evacuate immediately when money is limited because we still need to allocate funds for food and transportation while staying in the evacuation center."

“Nahihirapan kaming magdesisyon na lumikas agad kapag kulang ang pera, dahil kailangan pa naming maglaan ng budget para sa pagkain at pamasahe habang nasa evacuation center.”

10. Apart from official warnings, what local signs do people in your community observe before disasters?

“When there is heavy rain in the upstream areas of the river, our relatives there immediately call to tell us to prepare. We know that when the water rises there, flooding will soon follow here.”

“Kapag malakas ang ulan sa bandang taas ng ilog, tumatawag agad ang kamag-anak namin doon para sabihing maghanda na kami. Alam naming kapag tumaas ang tubig sa kanila, susunod na rin ang baha dito sa amin.”

11. What changes would make early warning systems, evacuation support, transportation, or shelters safer and more accessible for persons with disabilities in your community?

“The government should allocate sufficient funds for preparedness-related needs such as evacuation facilities, rescue vehicles, and others.”

“Ang pamahalaan dapat maglalaan ng sapat na pondo sa mga bagay na may kinalaman sa paghahanda tulad ng pasilidad sa evacuation, sasakyang pang-rescue at iba pa.”

Interviewee ID: INT_003
Pseudonym: Karlo
Position/Occupation: Farmer
Location: Bugallon
Date of Interview: December 28, 2025
Gender: Male

1. Could you share a bit about yourself, including your living situation, disability-related needs, and the assistance you usually require in daily life?

"I am a farmer and have lived in our barangay for a long time. Our life is simple, we depend on our harvest and the support of our family. There are times when I have difficulty moving, especially when there is flooding or when the roads are muddy, so I also rely on my wife and children for assistance during emergencies."

“Ako ay magsasaka at matagal na akong nakatira dito sa aming barangay. Simple lang ang buhay namin—umaasa sa ani at sa tulong ng pamilya. May mga pagkakataon na nahihirapan akong gumalaw, lalo na kapag may baha o maputik ang daan, kaya umaasa rin ako sa tulong ng asawa at mga anak ko kapag may emergency.”

2. What are your main sources of income or livelihood, and how are these affected when disasters such as typhoons or flooding occur?

"My main livelihood is farming. When there is a typhoon or flooding, our crops are damaged and we lose income. Sometimes we even have to borrow money just to buy seeds and start again."

“Ang pangunahing hanapbuhay ko ay pagsasaka. Kapag may bagyo o baha, nasisira ang tanim at nawawala ang kita namin. Minsan kailangan pa naming umutang para lang makabili ng binhi at makapagsimula ulit.”

3. What types of disasters commonly affect your community, and can you describe a memorable disaster experience that changed the way you prepare for future disasters?

"Heavy rains and flooding are common in our area. When the rain continues for several days, we already know that there will be problems in the farm and at home. Because of those experiences, we learned to prepare earlier."

“Karaniwan sa amin ang malalakas na ulan at baha. Kapag tumagal ang ulan ng ilang araw, alam na namin na magkakaroon ng problema sa sakahan at sa bahay. Dahil sa mga karanasang iyon, natuto kaming maghanda nang mas maaga.”

4. How do you usually receive disaster warnings, and how clear and understandable are these messages for you?

"We usually receive warnings from the barangay or from the radio. When the message is clear, we can prepare properly. But sometimes the information does not arrive immediately, which makes decision-making difficult."

“Kadalasan naming nalalaman ang babala mula sa barangay o sa radyo. Kapag malinaw ang mensahe, mas nakakapaghanda kami nang maayos. Pero kung minsan, hindi agad dumarating ang impormasyon, kaya nagiging mahirap ang pagdedesisyon.”

5. When you receive a warning, how do you decide whether to prepare, evacuate, or stay at home?

"In our case, we do not leave immediately when there is a warning. We first observe the weather and the situation around us. When we see that the rain is worsening or the water level is rising, that is when we prepare and pack our belongings…It is altogether different if it is a suprt typhoon…We make plans, especially when a strong typhoon is expected or when flooding is likely—we prepare our belongings and start stocking food, clothing, and medicines in case evacuation becomes necessary. It reminds me of Ondoy…"

“Sa amin, hindi agad kami umaalis kapag may babala. Tinitingnan muna namin ang lagay ng panahon at ang sitwasyon sa paligid. Kapag nakikita naming lumalala ang ulan o tumataas ang tubig, saka kami naghahanda at nag-iimpake ng mga gamit. Pero ibang usapan na kapag supertyphoon….Nagplaplano din lalo na kung malaking bagyo ang darating o kung sakaling bumaha—naghahanda na ang mga gamit, bumibili na ng stocks ng pagkain, damit at gamot kung sakaling kailangang lumikas. Naalalala ko tuloy nung Ondoy.”

6. What challenges make it difficult for you to evacuate during disasters?

"One of the biggest challenges for us is the condition of the roads. When there is flooding or mud, it becomes difficult to walk or carry our belongings. Sometimes we have to wait for transportation or help from neighbors before we can leave."

“Isa sa pinakamalaking balakid sa amin ay ang kondisyon ng daan. Kapag baha o maputik, mahirap maglakad o magdala ng mga gamit. Minsan kailangan pa naming maghintay ng sasakyan o tulong mula sa kapitbahay bago makaalis.”

7. If you have experienced evacuation before, can you describe what happened?

"When the water level becomes high and the situation is dangerous, we are forced to evacuate. Usually, we bring important items such as food, clothes, and medicine. This is not easy because we need to ensure the safety of our family and our belongings."

“Kapag mataas na ang tubig at delikado na ang sitwasyon, napipilitan kaming lumikas. Karaniwan, nagdadala kami ng mahahalagang gamit tulad ng pagkain, damit, at gamot. Hindi ito madali dahil kailangan naming siguraduhin na ligtas ang pamilya at ang mga ari-arian namin.”

8. How do family members, neighbors, or community members help you during disasters?

"During disasters, the whole community works together to clean the surroundings, prepare evacuation centers, and assist those in need. This reflects the spirit of cooperation in our community."

“Sa panahon ng sakuna, nagtutulungan ang buong komunidad upang malinis ang paligid, maghanda ng evacuation center, at tumulong sa mga nangangailangan. Ipinapakita nito ang bayanihan sa aming lugar.”

9. How does your financial situation affect your ability to prepare or evacuate during disasters?

"Our income from farming is small, so when a typhoon or flood comes, it is difficult for us to prepare. We still have to save money for transportation, food, and medicine if we need to evacuate."

“Malaki ang epekto ng kakulangan sa pera sa paghahanda namin. Kapag maliit lang ang kita, mahirap mag-ipon para sa mga gastusin kapag may sakuna. Kailangan naming pag-isipan kung paano pagkakasyahin ang pera para sa pagkain, pamasahe, at gamot. Maliit lang ang kinikita namin sa pagsasaka, kaya kapag may bagyo o baha, hirap kaming maghanda. Kailangan pang pag-ipunan ang pamasahe, pagkain, at gamot kapag lilikas.”

10. Apart from official warnings, what local signs do people in your community observe before disasters?

"We see signals from our environment including rain patterns and animal movements around us. When we notice ants coming out and transferring food or small items, the elders tell us that heavy rain or a typhoon may be coming, so we start preparing."

“Napapansin namin ang mga senyales sa kapaligiran, tulad ng tuloy-tuloy na ulan at paggalaw ng mga hayop. Kapag napapansin naming naglalabasan ang mga langgam at naglilipatan ng pagkain o gamit, sinasabi ng matatanda na posibleng may malakas na ulan o bagyo na darating, kaya naghahanda na kami.”

11. What changes would make early warning systems, evacuation support, transportation, or shelters safer and more accessible for persons with disabilities in your community?

"I believe it is important to have clearer training and information for people in the barangay, especially for persons with disabilities. There should be regular training on disaster preparedness so that every family knows what to do when warnings are issued.”

“It would also help if the barangay had sufficient funding to purchase equipment and provide assistance to those in need. It is important to involve persons with disabilities in meetings and planning activities so that their experiences and needs can be heard.”

“If transportation systems were improved and coordination between the barangay and the community were clearer, evacuation would be faster and safer for everyone."

“Sa tingin ko, mahalaga na magkaroon ng mas malinaw na pagsasanay at impormasyon para sa mga tao sa barangay, lalo na sa mga may kapansanan. Kailangan din ng regular na training tungkol sa paghahanda sa sakuna upang alam ng bawat pamilya kung ano ang gagawin kapag may babala.”

“Makakatulong din kung may sapat na pondo ang barangay para makabili ng kagamitan at makapagbigay ng tulong sa mga nangangailangan. Mahalaga rin na isama ang mga persons with disabilities sa mga meeting at planning activities upang marinig ang kanilang karanasan at pangangailangan.”

“Kung may mas maayos na transportasyon at malinaw na sistema ng koordinasyon sa pagitan ng barangay at komunidad, mas magiging mabilis at ligtas ang paglikas ng lahat.”

Interviewee ID: INT_004
Pseudonym: Lucio
Position/Occupation: Vendor
Location: Bugallon
Date of Interview: December 28, 2025
Gender: Male

1. Could you share a bit about yourself, including your living situation, disability-related needs, and the assistance you usually require in daily life?

"I sell goods in the market every day to support my family. Our life in the barangay is simple. When the weather is normal, I can go to work and return home safely. But when there is flooding or heavy rain, it becomes difficult to leave the house and go to the market."

“Nagtitinda ako sa palengke araw-araw para may maipangkabuhayan ang pamilya namin. Simple lang ang buhay namin dito sa barangay. Kapag normal ang panahon, nakakapasok ako sa trabaho at nakakauwi nang maayos. Pero kapag may baha o malakas na ulan, nagiging mahirap ang paglabas ng bahay at pagpunta sa palengke.”

2. What are your main sources of income or livelihood, and how are these affected when disasters such as typhoons or flooding occur?

"My income depends on daily vending. When there is a typhoon or flooding, we have no sales because the market is closed or customers cannot come. Sometimes even if I want to open my stall, it is not possible because the roads are already flooded."

“Ang kita ko ay nakasalalay sa araw-araw na pagtitinda. Kapag may bagyo o baha, wala kaming benta dahil sarado ang palengke o hindi makapasok ang mga tao. Minsan kahit gusto kong magbukas ng tindahan, hindi rin posible dahil baha na ang daan.”

3. What types of disasters commonly affect your community, and can you describe a memorable disaster experience that changed the way you prepare for future disasters?

"In our area, flooding is common especially when heavy rain falls. When the rain continues, the water level on the roads rises quickly. Because of those experiences, I have learned to prepare earlier and make sure that my goods and belongings are placed in safe areas."

“Sa amin, karaniwan ang baha lalo na kapag malakas ang ulan. Kapag umulan nang tuloy-tuloy, mabilis na tumataas ang tubig sa kalsada. Dahil sa mga karanasang iyon, natuto na akong

maghanda nang mas maaga at siguraduhin na nakalagay sa ligtas na lugar ang mga paninda at gamit.”

4. How do you usually receive disaster warnings, and how clear and understandable are these messages for you?

"I often learn about typhoons or flooding through Facebook, especially from the official page of the barangay or municipality. Updates are fast and easy to access, but sometimes misinformation spreads, so we need to be cautious."

“Madalas kong nalalaman ang balita tungkol sa bagyo o baha sa Facebook, lalo na sa official page ng barangay o munisipyo. Madali itong makita at mabilis ang update, pero kung minsan may maling impormasyon na kumakalat kaya kailangan naming mag-ingat.”

5. When you receive a warning, how do you decide whether to prepare, evacuate, or stay at home?

"I do not leave immediately when there is a warning. I first observe the situation around me and how strong the rain is. When I see that the water level continues to rise, that is when I begin preparing to evacuate."

“Hindi ako agad umaalis kapag may babala. Tinitingnan ko muna ang sitwasyon sa paligid at kung gaano kalakas ang ulan. Kapag nakikita kong patuloy ang pagtaas ng tubig, saka ako naghahanda na lumikas.”

6. What challenges make it difficult for you to evacuate during disasters?

"One of the problems is the lack of clear information about evacuation routes. When a disaster occurs, I don’t immediately know the correct way to get to a safe place. I am not really familiar with the evacuation route. I just follow other people when a disaster happens."

“Isa sa mga suliranin ay ang kakulangan ng malinaw na impormasyon tungkol sa evacuation routes. Kapag nagkaroon ng sakuna, hindi ko agad alam kung saan ang tamang daan papunta sa ligtas na lugar.”

“Hindi ko kabisado kung saan talaga ang evacuation route. Sumusunod na lang ako sa ibang tao kapag may sakuna.”

7. If you have experienced evacuation before, can you describe what happened?

"When severe flooding occurs, we are forced to evacuate with our family. We usually rush to move our belongings and look for higher ground. This is not easy, especially if it happens at night or when the water rises suddenly."

“Kapag nagkaroon ng matinding baha, napipilitan kaming lumikas kasama ang pamilya. Madalas kaming nagmamadali sa paglipat ng mga gamit at paghahanap ng mas mataas na lugar. Hindi ito madaling gawin, lalo na kung gabi o biglaan ang pagtaas ng tubig.”

8. How do family members, neighbors, or community members help you during disasters?

"When there is heavy rain or flooding, my neighbor immediately informs me if it is time to prepare or evacuate. They also help me leave the house when the water level rises."

“Kapag may malakas na ulan o baha, ang kapitbahay ko ang agad na nagsasabi sa akin kung kailangan nang maghanda o lumikas. Sila rin ang tumutulong sa akin na makalabas ng bahay kapag mataas na ang tubig.”

9. How does your financial situation affect your ability to prepare or evacuate during disasters?

“When money is limited, we cannot immediately find transportation or assistance to evacuate. We have to wait until free help becomes available from the barangay. Sometimes we even need to borrow money from relatives or friends."

“Khindi kami agad makahanap ng sasakyan o tulong upang makalikas. Kailangan naming maghintay hanggang may libreng tulong mula sa barangay.Minsan kailangan pa naming manghiram ng pera sa kamag-anak o kaibigan.”

10. Apart from official warnings, what local signs do people in your community observe before disasters?

"We observe the rising water on the roads and the continuous rainfall. When we see that the water level is increasing quickly, we begin preparing even without an official warning."

“Napapansin namin ang pagtaas ng tubig sa kalsada at ang patuloy na pag-ulan. Kapag nakikita naming mabilis ang pagtaas ng tubig, naghahanda na kami kahit wala pang opisyal na babala.”

11. What changes would make early warning systems, evacuation support, transportation, or shelters safer and more accessible for persons with disabilities in your community?

"I believe it is important to provide clear information about evacuation routes and conduct regular orientation sessions for residents. Training and drills in the barangay would also help people become familiar with what to do during disasters."

"There should also be sufficient funding for equipment and transportation that can be used during evacuation, especially for persons with disabilities and older adults. It is also important to involve persons with disabilities in planning and decision-making to ensure that their needs are properly considered."

"Sa tingin ko, mahalaga na magkaroon ng malinaw na impormasyon tungkol sa evacuation routes at regular na orientation para sa mga residente. Makakatulong din kung may mga training at drills na ginagawa sa barangay upang masanay ang mga tao kung paano kikilos kapag may sakuna."

"Kailangan din ng sapat na pondo para sa mga kagamitan at sasakyan na magagamit sa paglikas, lalo na para sa mga may kapansanan at matatanda. Mahalaga rin na isama ang mga persons with disabilities sa pagpaplano at pagdedesisyon upang matiyak na ang kanilang pangangailangan ay isinasaalang-alang."

Interviewee ID: INT_005
Pseudonym: Belladona
Position/Occupation: PwD OPD Officer
Location: Bugallon
Date of Interview: January 1, 2026
Gender: Female

1. Could you share a bit about yourself, including your living situation, disability-related needs, and the assistance you usually require in daily life?

"As an officer of the organization of persons with disabilities in our barangay, I regularly coordinate with members and barangay officials regarding programs and assistance needed by persons with disabilities. I live with my family, and they also help me with daily tasks during disasters or emergencies."

"In my role, I think not only about my own situation but also about the condition of other persons with disabilities in the community. That is why it is important for me to have clear information and an organized support system during disasters."

"Bilang isang officer ng samahan ng persons with disabilities sa aming barangay, madalas akong nakikipag-ugnayan sa mga miyembro at sa barangay officials tungkol sa mga programa at tulong na kailangan ng mga may kapansanan. Nakatira ako kasama ang pamilya ko, at sila rin ang tumutulong sa akin sa mga gawain kapag may sakuna o emergency."

"Sa trabaho ko, hindi lang sarili ko ang iniisip ko kundi pati ang kalagayan ng ibang persons with disabilities sa komunidad. Kaya mahalaga para sa akin na may malinaw na impormasyon at maayos na sistema ng tulong sa panahon ng kalamidad."

2. What are your main sources of income or livelihood, and how are these affected when disasters such as typhoons or flooding occur?

"Our livelihood depends on small business activities and family support. When there is a typhoon or flooding, our work is disrupted and it becomes difficult to access services and assistance. Sometimes even community programs cannot continue because of bad weather."

"Ang kabuhayan namin ay nakadepende sa maliit na negosyo at sa tulong ng pamilya. Kapag may bagyo o baha, naaantala ang aming mga gawain at nagiging mahirap ang pag-access sa mga serbisyo at tulong. Minsan, pati ang mga programang pangkomunidad ay hindi natutuloy dahil sa masamang panahon."

3. What types of disasters commonly affect your community, and can you describe a memorable disaster experience that changed the way you prepare for future disasters?

"Heavy rains and flooding are common in our area. When disasters occur, I see how important early preparation and clear communication are in the community."

"There are times when the situation becomes confusing because people receive inconsistent information. As a leader in the organization, it is my responsibility to explain to members what actions they should take. During the time of Yolanda, I saw how strong the typhoon was and how many homes and livelihoods were destroyed. Since then, I no longer wait for the last warning—I prepare my belongings early and coordinate with my family whenever a storm is approaching."

"Karaniwan sa aming lugar ang malalakas na ulan at pagbaha. Kapag nagkaroon ng sakuna, nakikita ko kung gaano kahalaga ang maagang paghahanda at malinaw na komunikasyon sa komunidad."

"May mga pagkakataon na nagiging magulo ang sitwasyon dahil hindi pare-pareho ang impormasyon na natatanggap ng mga tao. Bilang lider sa samahan, responsibilidad kong ipaliwanag sa mga miyembro kung ano ang tamang hakbang na gagawin."

"Noong panahon ng Yolanda, nakita ko kung gaano kalakas ang bagyo at kung paano nawala ang mga bahay at kabuhayan ng maraming tao. Simula noon, hindi na ako nag-aantay ng huling babala—naghahanda na agad ako ng gamit at nakikipag-ugnayan sa pamilya kapag may paparating na bagyo."

4. How do you usually receive disaster warnings, and how clear and understandable are these messages for you?

"We learn about typhoons and weather conditions through television news. When we watch the news, we better understand how strong the typhoon is and when it will arrive.

Sometimes there is an announcement in the barangay using a megaphone. I still need to ask my neighbor what the warning means."

"Sa telebisyon namin nalalaman ang mga balita tungkol sa bagyo at panahon. Kapag nanonood kami ng balita, mas naiintindihan namin kung gaano kalakas ang bagyo at kung kailan ito darating."

"Minsan may anunsyo sa barangay gamit ang megaphone, pero hindi ko maintindihan. Kailangan ko pang magtanong sa kapitbahay kung ano ang ibig sabihin ng babala."

5. When you receive a warning, how do you decide whether to prepare, evacuate, or stay at home?

"In such situations, verifying information is very important. As an organization leader, I first make sure that the information is accurate and clear before advising other members. We do not act immediately unless the situation is confirmed."

“Sa ganitong sitwasyon, mahalaga ang tamang pag-verify ng impormasyon. Bilang lider ng samahan, tinitiyak ko muna na tama at malinaw ang balita bago magbigay ng payo sa ibang miyembro. Hindi kami basta kumikilos hangga’t hindi sigurado ang sitwasyon.”

6. What challenges make it difficult for you to evacuate during disasters?

“I cannot move immediately when there is a warning about flooding or a typhoon because I still need to prepare my diabetes medication and wait for someone to guide me. When there is not enough time, it becomes more dangerous for me to rush, especially when the roads are already flooded.”)

“Hindi ako agad makakakilos kapag may babala ng baha o bagyo dahil kailangan ko pang ihanda ang gamot ko sa diabetes at hintayin ang mag-aakay sa akin. Kapag kulang ang oras, mas delikado para sa akin na magmadali lalo na kung baha na ang kalsada.”

7. If you have experienced evacuation before, can you describe what happened?

"When severe flooding occurs, we need to evacuate together with other community members. During these times, we try to ensure that all persons with disabilities have companions and sufficient assistance when relocating."

“Kapag nagkaroon ng matinding baha, kinakailangan naming mag-evacuate kasama ang ibang miyembro ng komunidad. Sa ganitong pagkakataon, sinusubukan naming tiyakin na lahat ng persons with disabilities ay may kasama at may sapat na tulong sa paglipat.”

8. How do family members, neighbors, or community members help you during disasters?

"Family members and the community play an important role in helping persons with disabilities. During disasters, people work together to make sure no one is left behind. As an officer of the organization, I often coordinate with the barangay to ensure that adequate support is available for our group."

“Malaki ang papel ng pamilya at komunidad sa pagtulong sa mga persons with disabilities. Kapag may sakuna, nagtutulungan ang mga tao upang masigurong walang maiiwan. Bilang

officer ng samahan, madalas akong nakikipag-ugnayan sa barangay upang masigurong may sapat na tulong para sa aming grupo.”

9. How does your financial situation affect your ability to prepare or evacuate during disasters?

"When funding is limited, we rather stay at home until the situation becomes better. Not all families have enough money for transportation or food during evacuation. That is why support from the government and other organizations is very important."

“Kapag limitado ang pondo, mas nanaisin naming manatili na lang sa bahay hanggang umayos ang panahon. Hindi lahat ng pamilya ay may sapat na pera para sa transportasyon o pagkain kapag lilikas. Kaya mahalaga na may sapat na tulong mula sa pamahalaan at iba pang organisasyon.”

10. Apart from official warnings, what local signs do people in your community observe before disasters?

"In our community, preparation is also based on people's experiences and observations. When we see continuous rainfall or rapid water level rise, we begin preparing even without an official warning."

“Sa aming komunidad, nakabatay din ang paghahanda sa karanasan at obserbasyon ng mga tao. Kapag nakikita naming patuloy ang ulan o mabilis ang pagtaas ng tubig, naghahanda na kami kahit wala pang opisyal na babala.”

11. What changes would make early warning systems, evacuation support, transportation, or shelters safer and more accessible for persons with disabilities in your community?

"I believe it is important to have regular training and capacity-building activities for persons with disabilities and their families. The barangay should also have sufficient funding to provide equipment and transportation during disasters.

It is also essential to actively involve persons with disabilities in planning and decision-making processes to ensure that their voices and experiences are heard. With clear coordination between the barangay, community, and organizations, everyone will be better prepared during disasters."

“Sa ganang akin, mahalaga na magkaroon ng regular na training at capacity-building activities para sa mga persons with disabilities at kanilang pamilya. Dapat din magkaroon ng sapat na

pondo ang barangay upang makapagbigay ng kagamitan at transportasyon sa panahon ng sakuna.”

“Mahalaga rin na aktibong isali ang persons with disabilities sa planning at decision-making processes upang masigurong ang kanilang boses at karanasan ay naririnig. Kung may malinaw na koordinasyon sa pagitan ng barangay, komunidad, at mga organisasyon, mas magiging handa ang lahat sa panahon ng kalamidad.”

Interviewee ID: INT_006
Pseudonym: Boody
Position/Occupation: Waste picker; assists mother (fisher and laundry worker)
Location: Bugallon
Date of Interview: January 1, 2026
Gender: Female

Interview context: Participant has cognitive disability; mother present during interview and provided clarification support when needed

1. Could you share a bit about yourself, including your living situation, disability-related needs, and the assistance you usually require in daily life?

"I live with my mother. She helps me in daily life. I also help her in finding ways to earn a living. Sometimes I have difficulty understanding long explanations, so my mother helps me when someone asks questions or explains things."

“Nakatira ako kasama ang nanay ko. Siya ang tumutulong sa akin sa araw-araw. Tumutulong din ako sa kanya sa paghahanap ng mapagkakakitaan.”

“Minsan nahihirapan akong umintindi ng mga bagay bagay, kaya tinutulungan ako ng nanay ko sa pagtatanong o pagpapaliwanag.”

2. What are your main sources of income or livelihood, and how are these affected when disasters such as typhoons or flooding occur?

"I collect bottles, plastic, and other materials that can be sold. I also help my mother when she goes to the river to fish or when she washes clothes for other people. When there is a typhoon or flooding, we have no income because we cannot leave the house."

Mother (assisting):
"When there is flooding, he cannot collect recyclables and I also cannot wash clothes or go fishing. That is why we lose our income."

“Nangangalakal ako ng bote, plastik, at iba pang puwedeng ibenta. Tinutulungan ko rin ang nanay ko kapag pumupunta siya sa ilog para mangisda o kapag naglalaba siya ng damit ng ibang tao. Kapag may bagyo o baha, wala kaming kita dahil hindi kami makalabas ng bahay.”

Mother (assisting):
Kapag baha, hindi siya makapangangalakal at hindi rin ako makapaglaba o makapangisda. Kaya talagang nawawala ang kita namin.

3. What types of disasters commonly affect your community, and can you describe a memorable disaster experience that changed the way you prepare for future disasters?

"When it rains heavily, our area floods quickly. I feel afraid when the water level rises."

Mother (assisting):
"We are used to flooding, but we have learned to prepare early. When we see heavy rain, we start organizing our belongings and prepare in case evacuation becomes necessary."

“Kapag umuulan nang malakas, bumabaha agad sa amin. Natatakot ako kapag tumataas ang tubig.”

Mother (assisting):
“Sanay na kami sa baha, pero natuto na kaming maghanda nang maaga. Kapag nakikita naming malakas ang ulan, inaayos na namin ang mga gamit at naghahanda kung sakaling kailangan lumikas.”

4. How do you usually receive disaster warnings, and how clear and understandable are these messages for you?

"I hear announcements from the barangay, but sometimes I do not immediately understand what they mean. When they make announcements, I cannot immediately hear or understand them. If there is no text message or clear written message, I only learn about the situation when other people tell me."

Mother (assisting):
"I explain the warning to him. I make sure she understands what action needs to be taken."

“Naririnig ko ang anunsyo sa barangay, pero minsan hindi ko agad naiintindihan ang ibig sabihin.”

“Kapag nag-aanunsyo sila, hindi ko agad naririnig o naiintindihan. Kung walang text o malinaw na mensahe na mababasa, nalalaman ko na lang ang balita kapag sinabi na ng ibang tao.”

Mother (assisting):
“Ako ang nagpapaliwanag sa kanya kapag may babala. Tinitiyak kong naiintindihan niya kung ano ang dapat gawin.”

5. When you receive a warning, how do you decide whether to prepare, evacuate, or stay at home?

"It is difficult for me to walk, especially when the road is muddy or flooded. Even if there is already a warning, I cannot leave immediately without assistance."

“Hindi ako agad makakaalis kapag may babala dahil kailangan ko ng tulong.”

“Mahirap para sa akin ang maglakad lalo na kapag maputik ang daan o baha na. Kahit may babala na, hindi ako makakaalis agad kung walang tutulong.”

6. What challenges make it difficult for you to evacuate during disasters?

“In our area, the roads are difficult to pass, especially when it rains. There is no regular transportation, so when there is a warning about a typhoon or flooding, we still have to wait for a tricycle or a neighbor who can help take us to the evacuation center…Our evacuation center is far, and when flooding starts, it becomes difficult to reach quickly, especially if there is no transportation.”

Mother (assisting):
"I need to accompany him during evacuation because he cannot manage alone. Sometimes we still have to wait for assistance or transportation before leaving."

“Sa lugar namin, mahirap ang daan lalo na kapag umuulan. Wala ring regular na sasakyan, kaya kapag may babala ng bagyo o baha, naghihintay pa kami kung may tricycle o kapitbahay na puwedeng tumulong sa paghatid sa amin sa evacuation center.”

“Malayo ang evacuation center namin, at kapag baha na, mahirap makarating agad lalo na kung walang sasakyan.”

Mother (assisting):
“Kailangan ko siyang samahan sa paglikas dahil hindi niya kayang mag-isa. Minsan kailangan pa naming maghintay ng tulong o sasakyan bago makaalis.”

7. If you have experienced evacuation before, can you describe what happened?

"When the water level rises, we leave the house and go to the evacuation center or to a relative’s house."

"Sometimes I feel afraid when it is night and there is flooding."

“Kapag mataas na ang tubig, umaalis kami ng bahay at pumupunta sa evacuation center o sa bahay ng kamag-anak.”

“Minsan natatakot ako kapag gabi at may baha.”

8. How do family members, neighbors, or community members help you during disasters?

"My mother and neighbors help me when there is flooding."

Mother (assisting):
"Our neighbors help us when we need to evacuate. They also provide information about how serious the situation is."

“Tinutulungan ako ng nanay ko at ng kapitbahay kapag may baha.”

Mother (assisting):
“Ang mga kapitbahay namin ang tumutulong sa amin kapag kailangan naming lumikas. Sila rin ang nagbibigay ng impormasyon kung gaano kalala ang sitwasyon.”

9. How does your financial situation affect your ability to prepare or evacuate during disasters?

"Sometimes we do not have enough money when disasters occur."

Mother (assisting):
"We still need to save money for food and transportation during evacuation. When there is no income, preparation becomes more difficult."

“Minsan kulang ang pera namin kapag may sakuna.”

Mother (assisting):
“Kailangan pa naming mag-ipon ng pera para sa pagkain at pamasahe kapag lilikas. Kapag walang kita, mas mahirap ang paghahanda”

10. Apart from official warnings, what local signs do people in your community observe before disasters?

"When the rain becomes strong and the water level rises, we begin preparing."

Mother (assisting):
"We observe the weather and rising water levels around us. When the rain continues, we know flooding may happen."

“Kapag malakas ang ulan at tumataas ang tubig, naghahanda na kami.”

Mother (assisting):
“Tinitingnan namin ang panahon at ang pagtaas ng tubig sa paligid. Kapag patuloy ang ulan, alam naming posibleng bumaha.”

11. What changes would make early warning systems, evacuation support, transportation, or shelters safer and more accessible for persons with disabilities in your community?

"It would help if there were designated people assigned to assist persons with disabilities during disasters."

Mother (assisting):
"There should also be training for families of persons with disabilities, adequate transportation during disasters, and clearer information from the barangay. It is also important to include persons with disabilities in meetings so officials can better understand their needs."

“Mas makakatulong kung may taong nakatalaga para tumulong sa mga may kapansanan kapag may sakuna.”

Mother (assisting):
“Kailangan din ng training para sa mga pamilya ng persons with disabilities, sapat na transportasyon sa panahon ng sakuna, at mas malinaw na impormasyon mula sa barangay. Mahalaga rin na isama ang persons with disabilities sa mga meeting upang maintindihan ng mga opisyal ang kanilang pangangailangan.”

12. Are persons with disabilities like you included in meetings or activities related to disaster preparedness? When do authorities usually call or involve you?

"Sometimes we are invited to barangay meetings about typhoons or flooding, but not regularly. Usually we are informed only when a major disaster is expected or when the typhoon is already near. I also cannot attend meetings immediately because I still need assistance and transportation."

Mother (assisting):
"Most of the time, persons with disabilities are invited only during emergencies or relief distribution. It would be better if they were regularly included in planning and training activities, not only when disasters have already occurred."

“Minsan tinatawag kami sa barangay meetings tungkol sa bagyo o baha, pero hindi palagi. Kapag may malaking sakuna o kapag malapit na ang bagyo, saka lang kami naaabisuhan. Hindi rin ako agad nakakapunta sa pulong dahil kailangan ko pa ng kasama at sasakyan.”

Mother (assisting):
“Kadalasan, ang mga persons with disabilities ay naiimbitahan lamang kapag may emergency o kapag may relief distribution. Mas maganda sana kung regular silang isasama sa mga planning at training activities, hindi lang kapag may sakuna na.”

13. What are the most important priorities needed by persons with disabilities to prepare for disasters?

"For me, it is important to have clear information and someone who can assist us during disasters. We also need to know where to go and how to stay safe when flooding or typhoons occur."

Mother (assisting):
"The main priorities for persons with disabilities include training on disaster preparedness, adequate transportation, and a clear list of individuals who need assistance. Continuous support from the barangay is also important, such as regular orientation sessions, drills, and financial assistance for low-income families."

“Para sa akin, mahalaga na may malinaw na impormasyon at may taong tutulong sa amin kapag may sakuna. Kailangan din naming malaman kung saan pupunta at kung paano makakaligtas kapag may baha o bagyo.”

Mother (assisting):
“Ang mga pangunahing kailangan ng persons with disabilities ay training tungkol sa paghahanda sa sakuna, sapat na transportasyon, at listahan ng mga taong nangangailangan ng tulong. Mahalaga rin ang tuloy-tuloy na suporta mula sa barangay, tulad ng regular na orientation, drills, at financial assistance para sa mga mahihirap na pamilya.”

Interviewee ID: INT_007
Pseudonym: Ladylyn
Position/Occupation: Teacher; Staff, DSWD Office of Persons with Disability; Business Manager, Provincial OPD Organization
Location: Aguilar
Date of Interview: January 1, 2026
Gender: Female

1. Could you share a bit about yourself, including your living situation, disability-related needs, and the assistance you usually require in daily life?

“Aside from being a teacher, I also work at the DSWD Office of Persons with Disability and serve as the Business Manager of the provincial-level organization of persons with disabilities. In these roles, I frequently coordinate with the barangay and other agencies to ensure that persons with disabilities receive adequate services and support."

"I live with my husband and our three children. As a mother, it is important for me to ensure my family’s safety during disasters. I recently passed the Licensure Examination for Teachers, and I strive to use my knowledge to help not only my family but also the community.”

“Nakatira ako kasama ang aking asawa at tatlong anak. Bilang ina, mahalaga sa akin na masigurong ligtas ang aking pamilya sa panahon ng sakuna. Kakapasa ko lamang sa Licensure Examination for Teachers, kaya nagsisikap akong magamit ang aking kaalaman upang makatulong hindi lamang sa aking pamilya kundi pati sa komunidad.”

“Bukod sa pagiging guro, nagtatrabaho rin ako sa DSWD Office of Persons with Disability at nagsisilbi bilang Business Manager ng provincial-level na organisasyon ng persons with disabilities. Sa mga tungkuling ito, madalas akong nakikipag-ugnayan sa barangay at sa iba pang ahensya upang masigurong may sapat na serbisyo at suporta para sa mga persons with disabilities.”

2. What are your main sources of income or livelihood, and how are these affected when disasters such as typhoons or flooding occur?

"Our family’s main sources of income come from my work and my husband’s small livelihood. When there is a typhoon or flooding, work is disrupted and it becomes difficult to report to the office or school. When roads are closed, parents and students also cannot travel."

“Ang pangunahing pinagkukunan ng kita ng aming pamilya ay ang aking trabaho at ang maliit na kabuhayan ng aking asawa. Kapag may bagyo o baha, naaantala ang trabaho at nagiging

mahirap ang pagpasok sa opisina o paaralan. Kapag sarado ang mga kalsada, hindi rin makapasok ang mga magulang at estudyante.”

3. What types of disasters commonly affect your community, and can you describe a memorable disaster experience that changed the way you prepare for future disasters?

"In our barangay, flooding is common during heavy rains. One major challenge we faced before was the lack of a proper bridge connecting our area to the town center. When flooding occurred, our connection to services and assistance was cut off.

Because of that experience, I advocated together with other community members for the construction of a bridge that would link our barangay to the route leading to the town hall. I believe that proper infrastructure is essential for community safety."

“Sa aming barangay, madalas ang pagbaha kapag malakas ang ulan. Isang malaking hamon sa amin noon ay ang kawalan ng maayos na tulay na nag-uugnay sa aming lugar papunta sa bayan. Kapag baha, napuputol ang koneksyon namin sa mga serbisyo at tulong.”

“Dahil sa karanasang iyon, nag-advocate ako kasama ang iba pang miyembro ng komunidad para sa pagtatayo ng tulay na magdurugtong sa aming barangay papunta sa ruta patungo sa town hall. Naniniwala ako na ang maayos na imprastraktura ay mahalaga sa kaligtasan ng komunidad.”

4. How do you usually receive disaster warnings, and how clear and understandable are these messages for you?

"We usually receive warnings through the barangay, NDRRMC text messages, and official notices from the local government. As part of the DSWD and the OPD organization, it is important for me that the information is clear so that I can relay it accurately to persons with disabilities…Sometimes we think the message from the NDRRMC is just spam or false information, especially when they send text alerts frequently even when the rain is not that strong….”

“Nakakatanggap kami ng babala mula sa barangay at opisyal na abiso mula sa lokal na pamahalaan. Bilang bahagi ng DSWD at ng OPD organization, mahalaga sa akin na malinaw ang impormasyon upang maiparating ang tamang mensahe sa ibang PwDs.”

“Madalas din kaming makatanggap ng text alerts sa NDRRMC. Minsan iniisip namin na spam lang o maling balita ang mensahe mula sa NDRRMC, lalo na kapag madalas silang magpadala ng text kahit hindi naman ganoon kalakas ang ulan.”

5. When you receive a warning, how do you decide whether to prepare, evacuate, or stay at home?

"When a warning is issued, the first thing I consider is the safety of my family. When there is a warning from the government, I do not act immediately unless I also see or hear the same information from other people or on Facebook….I assess the situation and coordinate with barangay officials to determine whether evacuation is necessary…When there is news about a typhoon or flood, I do not act immediately until I hear the same information from other places or from television and radio…I feel more confident when several sources say the same thing."

“Kapag may babala, una kong iniisip ang kaligtasan ng aking pamilya. Kapag may babala mula sa gobyerno, hindi agad ako kumikilos hangga’t hindi ko nakikita o naririnig din sa ibang tao o sa Facebook…Sinusuri ko ang sitwasyon at nakikipag-ugnayan sa barangay officials upang malaman kung kinakailangan nang lumikas…Kapag may balita tungkol sa bagyo o baha, hindi ako agad kumikilos hangga’t hindi ko naririnig sa ibang lugar o sa TV at radyo. Mas sigurado ako kapag maraming nagsasabi ng parehong impormasyon.”

6. What challenges make it difficult for you to evacuate during disasters?

"Perhaps one such challenge is the lack of proper access routes, especially before the bridge was constructed. When flooding occurs, traveling to evacuation centers or to the town becomes dangerous."

“Siguro isang challenge ang kakulangan ng maayos na access routes, lalo na noong wala pang tulay. Kapag baha, nagiging delikado ang paglalakbay papunta sa evacuation center o sa bayan.”

7. If you have experienced evacuation before, can you describe what happened?

"There have been times when we needed to evacuate together with my family and other community members. As a leader in the OPD organization, I try to ensure that persons with disabilities have companions and sufficient assistance during relocation."

“May mga pagkakataon na kinailangan naming lumikas kasama ang aking pamilya at ang iba pang miyembro ng komunidad. Bilang lider sa OPD organization, sinisikap kong tiyakin na ang mga persons with disabilities ay may kasama at may sapat na tulong sa paglipat.”

8. How do family members, neighbors, or community members help you during disasters?

"Family and community play a major role in helping during disasters. My husband helps take care of our children while I coordinate with the barangay and members of the OPD organization to ensure everyone’s safety."

“Malaki ang papel ng pamilya at komunidad sa pagtulong sa panahon ng sakuna. Ang aking asawa ay tumutulong sa pag-aalaga ng aming mga anak habang ako naman ay nakikipag-ugnayan sa barangay at sa mga miyembro ng OPD organization upang masigurong ligtas ang lahat.”

9. How does your financial situation affect your ability to prepare or evacuate during disasters?

"I notice that families with sufficient money can prepare and recover more easily after disasters. They can buy stronger materials for their homes, store food, and repair damaged property quickly. For us with limited income, recovery takes longer because we still need to save or borrow money before starting again. Because of this, disasters become harder for poorer families. For me, money is not only about comfort but about the ability to be prepared and resilient during disasters."

“Napapansin ko na ang mga pamilyang may sapat na pera ay mas madaling makapaghanda at makabangon pagkatapos ng sakuna. Nakakabili sila ng matibay na materyales para sa bahay, nakakapag-imbak ng pagkain, at nakakapagpaayos agad ng nasirang ari-arian. Kami naman na limitado ang kita ay mas matagal makabawi, dahil kailangan pa naming mag-ipon o umutang bago makapag-umpisa muli. Dahil dito, mas nagiging mahirap ang sitwasyon para sa mga mahihirap na pamilya kapag may sakuna. Para sa akin, ang pera ay hindi lamang tungkol sa kaginhawaan, kundi tungkol sa kakayahang maging handa at maging matatag sa panahon ng sakuna.”

10. Apart from official warnings, what local signs do people in your community observe before disasters?

"We observe continuous rainfall and rising river levels as signs of an approaching disaster. When we see that the situation is worsening, we immediately begin preparing."

“Napapansin namin ang patuloy na pag-ulan at ang pagtaas ng tubig sa ilog bilang mga senyales ng paparating na sakuna. Kapag nakikita naming lumalala ang sitwasyon, agad kaming naghahanda.”

11. What changes would make early warning systems, evacuation support, transportation, or shelters safer and more accessible for persons with disabilities in your community?

"I believe continuous training and capacity-building for barangay officials and persons with disabilities are important. There should also be sufficient funding for accessible transportation and properly designed evacuation centers.”

“In addition, coordination with organizations of persons with disabilities is essential to ensure that their needs are considered in planning and program implementation."

“Sa tingin ko, mahalaga ang patuloy na training at capacity-building para sa mga barangay officials at persons with disabilities. Kailangan din ng sapat na pondo para sa accessible transportation at maayos na evacuation centers.”

“Bukod dito, mahalaga ang pakikipag-ugnayan sa mga organisasyon ng persons with disabilities upang masigurong ang kanilang pangangailangan ay isinasaalang-alang sa planning at implementation ng mga programa.”

12. Are persons with disabilities like you included in meetings or activities related to disaster preparedness? When do authorities usually call or involve you?

"As a member of the OPD organization, we are often invited to meetings and consultations. However, there are times when persons with disabilities are called only during emergencies or when a project is about to be implemented."

“Bilang miyembro ng OPD organization, madalas kaming inaanyayahan sa mga meeting at consultation. Ngunit may mga pagkakataon na tinatawag lamang ang mga persons with disabilities kapag may emergency o kapag may proyekto na ipatutupad.”

13. What are the most important priorities needed by persons with disabilities to prepare for disasters?

"One important priority is evacuation centers with ramps, clean toilets, and enough space for persons with disabilities. When facilities are properly designed, staying there becomes safer and more comfortable.. Education and awareness are also important so that the community can better understand the needs of persons with disabilities."

“Isa sa mga mahalagang kailangan ay evacuation centers na may ramp, malinis na palikuran, at sapat na espasyo para sa persons with disabilities. Kapag maayos ang pasilidad, mas magiging komportable at ligtas ang pananatili namin doon.. Mahalaga rin ang edukasyon at awareness upang mas maintindihan ng komunidad ang pangangailangan ng mga persons with disabilities.”

Interviewee ID: INT_008
Pseudonym: Maria Luisa
Position/Occupation: PwD Coordinator
Location: Aguilar
Date of Interview: January 5, 2026
Gender: Female

1. Could you share a bit about yourself, including your living situation, disability-related needs, and the assistance you usually require in daily life?

"I serve as the PwD coordinator in our barangay, so I frequently coordinate with community members and barangay officials regarding programs and assistance for persons with disabilities. I live with my family, and they also help me with daily tasks."

"In my role, I see how important proper preparation and clear communication are during disasters, especially for persons with disabilities."

“Ako ay nagsisilbing PwD coordinator sa aming barangay, kaya madalas akong nakikipag-ugnayan sa mga miyembro ng komunidad at sa barangay officials tungkol sa mga programa at tulong para sa persons with disabilities. Nakatira ako kasama ang aking pamilya, at sila rin ang tumutulong sa akin sa pang-araw-araw na gawain.”

“Sa aking tungkulin, nakikita ko kung gaano kahalaga ang maayos na paghahanda at malinaw na komunikasyon sa panahon ng sakuna, lalo na para sa mga taong may kapansanan.”

2. What are your main sources of income or livelihood, and how are these affected when disasters such as typhoons or flooding occur?

"Our family's main source of income comes from a small business and support from government programs. When there is a typhoon or flooding, our livelihood is disrupted and it becomes difficult to access services and assistance."

“Ang pangunahing pinagkukunan ng kita ng aming pamilya ay maliit na negosyo at suporta mula sa mga programa ng pamahalaan. Kapag may bagyo o baha, naaantala ang aming kabuhayan at nagiging mahirap ang pag-access sa mga serbisyo at tulong.”

3. What types of disasters commonly affect your community, and can you describe a memorable disaster experience that changed the way you prepare for future disasters?

"In our barangay, flooding is common when heavy rain occurs. During typhoon season, we already expect our area to flood. I will never forget Typhoon Yolanda even though it did not

directly hit our area. We saw on the news how severe the damage was and how many people lost their lives. That experience made me realize that we must prepare early and listen carefully to warnings."

“Sa aming barangay, madalas ang pagbaha kapag malakas ang ulan. Kapag panahon ng bagyo, inaasahan na namin na babaha ang lugar namin. Hindi ko makakalimutan ang bagyong Yolanda kahit hindi ito direktang tumama sa amin. Nakita namin sa balita kung gaano kalala ang pinsala at kung gaano karaming tao ang nawalan ng buhay. Doon ko na-realize na kailangan talagang maghanda nang maaga at makinig sa babala.”

4. How do you usually receive disaster warnings, and how clear and understandable are these messages for you?

“Frequently we receive it through the government’s text alerts. However, there are times when some persons with disabilities do not immediately understand the message, especially if it is unclear or lacks details. 'There are times when we receive warnings, but some persons with disabilities do not immediately understand what the message means or what they should do.”

“Madalas naming natatanggap ang babala mula text alerts ng gobyerno. Ngunit may mga pagkakataon na hindi agad naiintindihan ng ilang persons with disabilities ang mensahe, lalo na kung hindi ito malinaw o kung kulang ang detalye.”

“May mga pagkakataon na nakakatanggap kami ng babala, pero hindi agad naiintindihan ng ilang persons with disabilities kung ano ang ibig sabihin nito o kung ano ang dapat gawin.”

5. When you receive a warning, how do you decide whether to prepare, evacuate, or stay at home?

"As a coordinator, I try to ensure that persons with disabilities in our barangay have sufficient information before deciding whether to evacuate or stay at home. It is important to have clear guidance from barangay officials."

“Bilang coordinator, sinusubukan kong tiyakin na ang mga persons with disabilities sa aming barangay ay may sapat na impormasyon bago magdesisyon kung lilikas o mananatili sa bahay. Mahalaga na may malinaw na gabay mula sa barangay officials.”

6. What challenges make it difficult for you to evacuate during disasters?

"The lack of transportation and assistance for persons with disabilities I would say. When flooding or heavy rain occurs, it becomes difficult to reach evacuation centers. Not all persons

with disabilities have transportation or companions who can assist them during disasters, which makes evacuation difficult.”

“Masasabi kong ang kakulangan ng transportasyon at tulong para sa mga persons with disabilities. Kapag baha o malakas ang ulan, nagiging mahirap ang pagpunta sa evacuation center.”

“Hindi lahat ng persons with disabilities ay may sasakyan o kasama na tutulong sa kanila kapag may sakuna, kaya nagiging mahirap ang paglikas.”

7. If you have experienced evacuation before, can you describe what happened?

"There have been times when we needed to evacuate together with family and other community members…Our relative’s house is nearby, so we immediately move there when a disaster occurs…In such situations, coordination is important to ensure that no one is left behind."

“May mga pagkakataon na kinailangan naming lumikas kasama ang pamilya at iba pang miyembro ng komunidad…Malapit lang ang bahay ng kamag-anak namin, kaya doon kami agad lumilipat kapag may sakuna…Sa ganitong sitwasyon, mahalaga ang koordinasyon upang matiyak na walang maiiwan.”

8. How do family members, neighbors, or community members help you during disasters?

"Family and community play an important role in helping during disasters. During emergencies, people work together to ensure everyone’s safety, especially persons with disabilities."

“Malaki ang papel ng pamilya at komunidad sa pagtulong sa panahon ng sakuna. Kapag may emergency, nagtutulungan ang mga tao upang masigurong ligtas ang lahat, lalo na ang mga persons with disabilities.”

9. How does your financial situation affect your ability to prepare or evacuate during disasters?

"We depend on assistance from the government.Adequate government support is needed to help families prepare and evacuate properly. That support is important for recovery.”

“Umaasa kami sa tulong mula sa pamahalaan. Kailangan ng sapat na suporta mula sa pamahalaan upang matulungan ang mga pamilya na makapaghanda at makalikas nang maayos.Mahalaga ang tulong na iyon para makabangon muli.”

10. Apart from official warnings, what local signs do people in your community observe before disasters?

“The elders where we’re from say that when the house lizard sounds a bit different and you keep hearing it throughout the day, it could mean a storm is coming. They say it’s an old belief, and more often than not it turns out to be true. So for us, there’s really no harm in preparing—even if it’s just putting things in order or checking the house.”

“Sabi ng matatanda sa amin, kapag parang iba yung tunog ng butiki at paulit-ulit mong naririnig maghapon, baka may bagyong paparating. Sinaunang paniniwala na raw iyon, at kadalasan naman daw tumutugma. Kaya sa amin, wala namang mawawala kung maghahanda—kahit simpleng pag-aayos lang ng mga gamit o pag-check ng bahay.”

11. What changes would make early warning systems, evacuation support, transportation, or shelters safer and more accessible for persons with disabilities in your community?

"For me, the most important change is providing earlier and clearer warnings about disasters. There are times when we receive information, but the details are insufficient or not easily understood by persons with disabilities, especially those with hearing or cognitive disabilities. I hope there can be different ways of delivering warnings, such as visual signals, simple messages, and repeated announcements to ensure everyone understands. When warnings are clear and timely, we have enough time to prepare and evacuate safely."

“Para sa akin, ang pinakamahalagang pagbabago ay ang mas maaga at mas malinaw na pagbibigay ng babala tungkol sa sakuna. May mga pagkakataon na nakakatanggap kami ng impormasyon, pero kulang ang detalye o hindi agad naiintindihan ng persons with disabilities, lalo na ng may hearing o cognitive disability. Sana magkaroon ng iba’t ibang paraan ng pagbibigay ng babala, tulad ng visual signals, simple na mensahe, at paulit-ulit na anunsyo upang masigurong lahat ay nakakaintindi. Kapag malinaw at maaga ang babala, mas nagkakaroon kami ng sapat na oras upang maghanda at makalikas nang maayos.”

12. Are persons with disabilities like you included in meetings or activities related to disaster preparedness? When do authorities usually call or involve you?

"We are sometimes invited to meetings, but there are times when persons with disabilities are called only if the meeting concerns them or during aid distribution…Usually, persons with disabilities are called only during disasters or relief distribution, not always included in the planning stage….When there is a meeting in the barangay about typhoons or flooding, I cannot attend immediately because it is far and difficult to walk. I still have to wait for transportation or someone to accompany me before I can participate.”

“Inaanyayahan naman kami sa mga meeting paminsan-minsa, ngunit may mga pagkakataon na tinatawag lamang ang persons with disabilities kapag may kinalaman ito sa kanila o kapag may ipapamahaging tulong.”

“Karaniwan, tinatawag lamang ang persons with disabilities kapag may sakuna o kapag may relief distribution, hindi palaging kasama sa planning stage….Kapag may meeting sa barangay tungkol sa bagyo o baha, hindi ako agad nakakapunta dahil malayo at mahirap maglakad. Kailangan ko pang maghintay ng sasakyan o may kasama bago ako makadalo.”

13. What are the most important priorities needed by persons with disabilities to prepare for disasters?

"Education, adequate transportation during disasters and active participation in planning and decision-making. Continuous support from the government and community is also important."

Edukasyon, sapat na transportasyon sa panahon ng sakuna, at aktibong pakikilahok sa planning at decision-making. Mahalaga rin ang patuloy na suporta mula sa pamahalaan at komunidad.

Interviewee ID: INT_009
Pseudonym: Encarnacion
Position/Occupation: PwD Barangay Coordinator
Location: Aguilar
Date of Interview: January 1, 2026
Gender: Female

1. Could you share a bit about yourself, including your living situation, disability-related needs, and the assistance you usually require in daily life?

"I serve as the barangay coordinator for persons with disabilities in our area. One of my responsibilities is to identify who needs assistance, especially during disasters. I live with my family, and we support each other in daily tasks."

"As a coordinator, it is important for me that the community is prepared and has a clear plan during emergencies."

“Ako ay nagsisilbing barangay coordinator para sa persons with disabilities sa aming lugar. Isa sa mga tungkulin ko ang alamin kung sino ang nangangailangan ng tulong, lalo na kapag may sakuna. Nakatira ako kasama ang aking pamilya, at nagtutulungan kami sa pang-araw-araw na gawain.”

“Bilang coordinator, mahalaga sa akin na maging handa ang komunidad at may malinaw na plano kapag may emergency.”

2. What are your main sources of income or livelihood, and how are these affected when disasters such as typhoons or flooding occur?

"Our livelihood depends on a small business and family support. When there is a typhoon or flooding, work is disrupted and it becomes difficult to access services and assistance."

“Ang kabuhayan namin ay nakadepende sa maliit na negosyo at suporta mula sa pamilya. Kapag may bagyo o baha, naaantala ang trabaho at nagiging mahirap ang pag-access sa mga serbisyo at tulong.”

3. What types of disasters commonly affect your community, and can you describe a memorable disaster experience that changed the way you prepare for future disasters?

"Typhoons are frequent and sometime drought. During Typhoon Ondoy, the water rose suddenly and many of us were not able to prepare in time. I felt afraid because the flooding

happened very quickly. Since then, we have become more cautious and no longer wait for the last warning before taking action."

“Malimit ang bagyo, kung minsan may tagtuyot din. Noong panahon ng Ondoy, biglang tumaas ang tubig at marami sa amin ang hindi nakapaghanda agad. Natakot ako dahil mabilis ang pagdating ng baha. Simula noon, mas naging maingat na kami at hindi na naghihintay ng huling babala bago kumilos.”

4. How do you usually receive disaster warnings, and how clear and understandable are these messages for you?

"When the typhoon is strong, barangay officials go house-to-house to give warnings. This is helpful especially for older persons and persons with disabilities who do not have mobile phones. As a coordinator, it is important for me that the information is clear so that I can relay it correctly to persons with disabilities. It is my responsibility to immediately inform persons with disabilities about warnings from the barangay so they can prepare early."

“Kapag malakas ang bagyo, ang mga barangay officials ay umiikot sa bawat bahay upang magbigay ng babala. Nakakatulong ito lalo na sa mga matatanda at persons with disabilities na walang cellphone. Bilang coordinator, mahalaga sa akin na malinaw ang impormasyon upang maipasa ko ito nang tama sa mga persons with disabilities. Responsibilidad ko na ipaalam agad sa mga persons with disabilities ang babala mula sa barangay upang makapaghanda sila nang maaga.”

5. When you receive a warning, how do you decide whether to prepare, evacuate, or stay at home?

"When a warning is issued, I first assess the situation and coordinate with barangay officials. When there is a text or announcement about a typhoon, I cannot immediately understand what action to take. Usually, I wait for my child or spouse to explain whether it is already necessary to evacuate….When there is a warning about a typhoon or flood, my child helps explain the message and prepare our belongings. He also takes care of things when we need to evacuate.

“Kapag may babala, sinusuri ko muna ang sitwasyon at nakikipag-ugnayan sa barangay officials. Kapag may text o anunsyo tungkol sa bagyo, hindi ko agad maintindihan kung ano ang dapat gawin. Karaniwan, hinihintay ko muna ang anak o asawa ko na ipaliwanag kung kailangan na bang lumikas.”

“Kapag may babala tungkol sa bagyo o baha, tinutulungan ako ng anak ko na ipaliwanag ang mensahe at maghanda ng mga gamit. Siya rin ang nag-aasikaso kapag kailangan naming lumikas.”

6. What challenges make it difficult for you to evacuate during disasters?

"I cannot leave immediately when there is a warning because I have to wait for my child or relatives to assist me. I also move slowly, so we need to plan first before evacuating.”

“Hindi ako makaalis agad kapag may babala dahil kailangan ko munang hintayin ang anak ko o kamag-anak na tutulong sa akin. Hindi rin mabilis ang paggalaw ko, kaya kailangan naming magplano bago lumikas.”

7. If you have experienced evacuation before, can you describe what happened?

“There was a strong typhoon at that time. It was reported on the radio and TV. The rain was so heavy it sounded like it was pounding on our roof…When the water level rose, they strongly urged me to evacuate because it was dangerous, especially since I was with a small child. If I had been alone, I would not have evacuated because I do not like staying in evacuation centers. It was only when the police and local authorities advised me that I needed to leave for the safety of my child and myself that I decided to evacuate…But my experience at the evacuation center was not good. It was overcrowded, hot, and there was no water. There are no proper toilets that are easy for persons with disabilities to use, so we struggle when staying in the evacuation center…But when the water level is really high, there’s nothing that can be done…We only go to the evacuation center when there is really nowhere else to stay.”

“May malakas na bagyo nun. Nabalita sa radyo at TV. Malakas ang ulan na parang binabayo yung bubong namin… Nung mataas na ang tubig, pilit akong pinalilikas kasi delikado daw lalo na at may kasama akong batang maliit. Kung ako lang mag-isa, hindi na ako mag-e-evacuate kasi ayoko sa evacuation center. Kaya lamang inabisuhan ako ng mga pulis at mga kinauukulan na kailangan kong lumikas para sa kaligtasan naming mag-ina”

“Pero hindi maganda naging karanasan ko sa evacuation center. Siksikan, mainit, walang tubig. Walang maayos na palikuran na madaling gamitin para sa may kapansanan, kaya nahihirapan kami kapag nasa evacuation center…Pero kapag mataas talaga ang tubig, walang magagawa. Doon lang kami sa evacuation center kapag wala talagang ibang matutuluyan.”

8. How do family members, neighbors, or community members help you during disasters?

"The community plays a major role in helping during disasters. During emergencies, people work together to ensure everyone's safety."

"Malaki ang papel ng komunidad sa pagtulong sa panahon ng sakuna. Kapag may emergency, nagtutulungan ang mga tao upang masigurong ligtas ang lahat."

9. How does your financial situation affect your ability to prepare or evacuate during disasters?

"When money is limited, disasters feel more stressful because we worry about where to find money for food and other needs."

"Kapag kulang ang pera, mas nagiging mabigat ang pakiramdam kapag may sakuna dahil iniisip namin kung saan kukuha ng pera para sa pagkain at iba pang pangangailangan."

10. Apart from official warnings, what local signs do people in your community observe before disasters?

"We observe continuous rainfall and rising river levels as signs of an approaching disaster. When we see that the situation is worsening, we immediately begin preparing."

"Napapansin namin ang patuloy na pag-ulan at ang pagtaas ng tubig sa ilog bilang mga senyales ng paparating na sakuna. Kapag nakikita naming lumalala ang sitwasyon, agad kaming naghahanda."

11. What changes would make early warning systems, evacuation support, transportation, or shelters safer and more accessible for persons with disabilities in your community?

"I believe the condition of evacuation centers must be improved so they can be safe and comfortable for persons with disabilities. There are times when ramps are lacking, toilets are difficult to use, and space is overcrowded. When this happens, it becomes difficult to stay in evacuation centers, especially for those with disabilities or illnesses. If facilities are improved—with ramps, proper lighting, and adequate space—families will feel more confident about evacuating during disasters."

"Kailangan talagang pagbutihin ang kondisyon ng evacuation centers upang maging ligtas at komportable para sa persons with disabilities. May mga pagkakataon na kulang ang ramp, mahirap gamitin ang palikuran, at siksikan ang espasyo. Kapag ganito ang sitwasyon, nagiging mahirap manatili sa evacuation center, lalo na para sa may kapansanan o may sakit. Kung magiging mas maayos ang pasilidad—may ramp, maayos na ilaw, at sapat na espasyo—mas magiging kampante ang mga pamilya na lumikas kapag may sakuna."

12. Are persons with disabilities like you included in meetings or activities related to disaster preparedness? When do authorities usually call or involve you?

"We are often invited to meetings, but there are times when persons with disabilities are called only during emergencies or when assistance is being distributed."

“Madalas kaming inaanyayahan sa mga meeting, ngunit may mga pagkakataon na tinatawag lamang ang persons with disabilities kapag may emergency o kapag may ipapamahaging tulong.”

13. What are the most important priorities needed by persons with disabilities to prepare for disasters?

"It is important that warning systems are tailored to the needs of persons with disabilities, such as visual signals for those with hearing impairments or clear audio messages for those with visual impairments."

“Mahalaga na ang babala ay angkop sa pangangailangan ng persons with disabilities, tulad ng visual signals para sa may hearing impairment o malinaw na audio para sa may visual impairment.”

Interviewee ID: INT_010
Pseudonym: Illuminada
Position/Occupation: Market Vendor
Location: Aguilar
Date of Interview: January 5, 2026
Gender: Female

1. Could you share a bit about yourself, including your living situation, disability-related needs, and the assistance you usually require in daily life?

"I sell goods in the market to support my family. Every day I go to the market to sell food and other items. I live with my family, and we help each other with daily tasks, especially during disasters."

"When the weather is normal, I can go to work and return home safely. However, when there is flooding or heavy rain, it becomes difficult to leave the house and travel to the market."

“Ako ay nagtitinda sa palengke upang masuportahan ang aking pamilya. Araw-araw akong pumupunta sa palengke upang magbenta ng pagkain at iba pang paninda. Nakatira ako kasama ang aking pamilya, at nagtutulungan kami sa pang-araw-araw na gawain, lalo na kapag may sakuna.”

“Kapag normal ang panahon, nakakapasok ako sa trabaho at nakakauwi nang maayos. Ngunit kapag may baha o malakas na ulan, nagiging mahirap ang paglabas ng bahay at pagpunta sa palengke.”

2. What are your main sources of income or livelihood, and how are these affected when disasters such as typhoons or flooding occur?

"My income depends on daily vending. When there is a typhoon or flooding, we have no sales because the market is closed or customers cannot come. When flooding lasts longer, the problem becomes bigger because income is lost and capital is depleted."

“Ang kita ko ay nakasalalay sa araw-araw na pagtitinda. Kapag may bagyo o baha, wala kaming benta dahil sarado ang palengke o hindi makapasok ang mga mamimili. Kapag tumagal ang baha, mas lumalaki ang problema dahil nawawala ang kita at nauubos ang puhunan.”

3. What types of disasters commonly affect your community, and can you describe a memorable disaster experience that changed the way you prepare for future disasters?

"In our area, flooding is common when heavy rain occurs. During Typhoon Pepito, we had to evacuate in the middle of the night because the water level rose quickly. It was difficult, especially for older persons and persons with disabilities. Because of that experience, we are now more prepared and have an evacuation plan in case it happens again."

“Sa aming lugar, madalas ang pagbaha kapag malakas ang ulan. Noong bagyong Pepito, kinailangan naming lumikas sa kalagitnaan ng gabi dahil mabilis ang pagtaas ng tubig. Mahirap iyon lalo na sa mga matatanda at persons with disabilities. Dahil sa karanasang iyon, mas naging handa na kami ngayon at may nakahanda na kaming plano kung sakaling mangyari ulit.”

4. How do you usually receive disaster warnings, and how clear and understandable are these messages for you?

“We have a Messenger group chat where the barangay and residents share information. When there is a warning, it is immediately sent to the group chat, so we quickly learn about the situation. We have a mobile phone at home, but my spouse uses it for work. When there is a warning, I sometimes learn about it late because the phone is not with me. There are times when we only learn about flooding when the water level is already high, which makes preparation difficult."

“May group chat kami sa Messenger kung saan nagbabahagi ng impormasyon ang barangay at mga residente. Kapag may babala, agad itong ipinapadala sa group chat kaya mabilis naming nalalaman ang sitwasyon. May cellphone kami sa bahay, pero ginagamit ito ng asawa ko sa trabaho. Kapag may babala, minsan huli ko na itong nalalaman dahil wala sa akin ang telepono.”

“May mga pagkakataon na nalalaman lang namin ang tungkol sa baha kapag mataas na ang tubig, kaya nagiging mahirap ang paghahanda.”

5. When you receive a warning, how do you decide whether to prepare, evacuate, or stay at home?

"When there is a warning, we do not leave immediately. We first wait for confirmation from relatives or neighbors about how serious the situation is…Sometimes we hear warnings, but it is not clear how serious the danger is, so we wait first before taking action. I first observe the situation around me and how strong the rain is. When I see that the water level continues to rise, I begin packing belongings and looking for a safe place."

“Kapag may babala, hindi kami agad umaalis. Naghihintay muna kami ng kumpirmasyon mula sa kamag-anak o sa mga kapitbahay kung gaano kalala ang sitwasyon.

Minsan may naririnig kaming babala, pero hindi malinaw kung gaano kalala ang panganib, kaya naghihintay muna kami bago gumawa ng hakbang."

"Tinitingnan ko muna ang sitwasyon sa paligid at kung gaano kalakas ang ulan. Kapag nakikita kong patuloy ang pagtaas ng tubig, naghahanda na akong mag-impake ng mga gamit at maghanap ng ligtas na lugar."

6. What challenges make it difficult for you to evacuate during disasters?

"First of all it is the lack of transportation and coordination with authorities. When flooding occurs, it becomes difficult to leave the house and travel to the evacuation center.

When there is flooding, we struggle to move our belongings and find transportation to the evacuation center."

"Una sa lahat ang kakulangan ng transportasyon at koordinasyon sa kinauukulan."

"Kapag baha, nahihirapan kaming maglipat ng mga gamit at makahanap ng sasakyan papunta sa evacuation center."

7. If you have experienced evacuation before, can you describe what happened?

"We have evacuated several times in recent years because of flooding—it has become almost normal for us….There have been times when we needed to evacuate with our family when the water level became high. We often rush to move belongings and look for higher ground. This is not easy, especially when it happens at night or when the water rises suddenly…If possible, I do not want to go to the evacuation center again. The last time we evacuated, I struggled to use the toilet because it was not suited to my condition, and there was not enough water or proper bathing facilities."

"Ilang beses na kaming lumikas sa nakaraang mga taon dahil sa baha—parang pangkaraniwan na lang sa amin."

"May mga pagkakataon na kinailangan naming lumikas kasama ang pamilya kapag mataas na ang tubig. Madalas kaming nagmamadali sa paglipat ng mga gamit at paghahanap ng mas mataas na lugar. Hindi ito madaling gawin, lalo na kung gabi o biglaan ang pagtaas ng tubig."

"Sa totoo lang, ayaw ko nang pumunta sa evacuation center kung maaari. Noong huli kaming lumikas, nahirapan akong gumamit ng banyo dahil hindi ito akma sa kondisyon ko, at kulang din ang tubig at maayos na paliguan."

8. How do family members, neighbors, or community members help you during disasters?

"During disasters, my family gives me strength and reassurance. They help calm me down, especially when I feel afraid of flooding or heavy rain.…We evacuate to a relative's house during flooding because we feel safer there and someone can assist us."

"Kapag may sakuna, ang pamilya ko ang nagbibigay sa akin ng lakas ng loob. Pinapakalma nila ako lalo na kapag natatakot ako sa baha o sa malakas na ulan."

"Sa bahay ng kamag-anak kami lumilikas kapag may baha, kasi mas kampante kami roon at may tutulong sa amin."

9. How does your financial situation affect your ability to prepare or evacuate during disasters?

"We cannot store much food or water because our budget is limited. We only buy what we can afford for that day."

"Hindi kami makapag-imbak ng maraming pagkain o tubig dahil limitado ang budget. Kung ano lang ang kaya sa araw na iyon, iyon lang ang binibili namin."

10. Apart from official warnings, what local signs do people in your community observe before disasters?

"We observe continuous rainfall and rising water on the roads as signs of an approaching disaster. When we see that the water level is rising quickly, we immediately begin preparing."

"Napapansin namin ang patuloy na pag-ulan at ang pagtaas ng tubig sa kalsada bilang mga senyales ng paparating na sakuna. Kapag nakikita naming mabilis ang pagtaas ng tubig, agad kaming naghahanda."

11. What changes would make early warning systems, evacuation support, transportation, or shelters safer and more accessible for persons with disabilities in your community?

"One important change is having regular training and drills that include persons with disabilities. Sometimes training is conducted only for barangay officials or volunteers, but not for the people directly affected. If we are given the opportunity to participate in drills, we can learn how to act and where to go during disasters. This will also help reduce fear and confusion during emergencies."

“Isa sa mga mahalagang pagbabago ay ang pagkakaroon ng regular na training at drills na kasama ang persons with disabilities. Minsan ang training ay ginagawa lamang para sa barangay officials o volunteers, pero hindi kasama ang mismong mga taong apektado. Kung mabibigyan kami ng pagkakataon na sumali sa mga drills, mas matututo kami kung paano kumilos at saan pupunta kapag may sakuna. Makakatulong din ito upang mabawasan ang takot at kalituhan sa panahon ng emergency.”

12. Are persons with disabilities like you included in meetings or activities related to disaster preparedness? When do authorities usually call or involve you?

"Sometimes we are invited to meetings, but most of the time we are called only during emergencies or when assistance is being distributed…It is not easy to go to the barangay hall when there is a meeting or announcement. The distance is far to walk, and I need transportation or someone to accompany me to get there."

“Minsan kaming inaanyayahan sa mga meeting, ngunit kadalasan ay tinatawag lamang kami kapag may emergency o kapag may ipapamahaging tulong…Hindi madaling makapunta sa barangay hall kapag may pulong o anunsyo. Malayo ang lakarin at kailangan ko pa ng sasakyan o kasama para makarating.”

13. What are the most important priorities needed by persons with disabilities to prepare for disasters?

"For us, financial assistance is important to prepare for disasters, such as buying food, medicine, and emergency supplies. When resources are sufficient, families become more prepared."

“Para sa amin, mahalaga ang tulong pinansyal upang makapaghanda sa sakuna, tulad ng pagbili ng pagkain, gamot, at emergency supplies. Kapag may sapat na pondo, mas nagiging handa ang pamilya.”

Interviewee ID: INT_011
Pseudonym: Milano
Position/Occupation: Farmer
Location: Aguilar
Date of Interview: January 5, 2026
Gender: Male

1. Could you share a bit about yourself, including your living situation, disability-related needs, and the assistance you usually require in daily life?

"I am a farmer and have lived in our barangay for many years. Our life is simple—we depend on our harvest and family support. I live with my wife and children, and we work together in daily tasks on the farm and at home."

"During disasters, it is important for me to ensure the safety of my family and our livelihood."

“Ako ay magsasaka at matagal na akong nakatira sa aming barangay. Simple lang ang buhay namin—umaasa sa ani at sa tulong ng pamilya. Nakatira ako kasama ang aking asawa at mga anak, at nagtutulungan kami sa pang-araw-araw na gawain sa bukid at sa bahay.”

“Kapag may sakuna, mahalaga sa akin na masigurong ligtas ang aking pamilya at ang aming kabuhayan.”

2. What are your main sources of income or livelihood, and how are these affected when disasters such as typhoons or flooding occur?

"My main livelihood is farming. When there is a typhoon or flooding, our crops are damaged and we lose income. Sometimes we need to wait several months before we can recover. When crops are destroyed by flooding or typhoons, we lose income and struggle to start again."

“Ang pangunahing hanapbuhay ko ay pagsasaka. Kapag may bagyo o baha, nasisira ang tanim at nawawala ang kita namin. Minsan kailangan pa naming maghintay ng ilang buwan bago makabawi.”

“Kapag nasira ang tanim dahil sa baha o bagyo, nawawala ang kita namin at nahihirapan kaming magsimula ulit.”

3. What types of disasters commonly affect your community, and can you describe a memorable disaster experience that changed the way you prepare for future disasters?

"In our area, heavy rains and flooding are common. When the rain continues for several days, we already know that there will be problems on the farm. When Typhoon Ompong passed through our area, our crops were destroyed and it took a long time for us to recover from the loss of income. That experience taught me to store food and prepare emergency supplies before the typhoon arrives. Because of those experiences, we learned to prepare earlier and place equipment in higher areas."

“Sa aming lugar, madalas ang malalakas na ulan at pagbaha. Kapag tumagal ang ulan ng ilang araw, alam na namin na magkakaroon ng problema sa bukid. Noong dumaan ang bagyong Ompong, nasira ang aming pananim at matagal kaming nakabangon mula sa pagkawala ng kita. Doon ko natutunan na mag-imbak ng pagkain at maghanda ng emergency supplies bago pa dumating ang bagyo. Dahil sa mga karanasang iyon, natuto kaming maghanda nang mas maaga at maglagay ng mga kagamitan sa mas mataas na lugar.”

4. How do you usually receive disaster warnings, and how clear and understandable are these messages for you?

"TV and radio most frequently. When there is a power outage, we listen to the radio to get updates about typhoons or flooding. This helps especially when television or mobile phones are not working."

“Madalas sa TV o radyo. Kapag nawalan ng kuryente, nakikinig kami sa radyo upang malaman ang balita tungkol sa bagyo o baha. Nakakatulong ito lalo na kapag hindi gumagana ang telebisyon o cellphone.”

5. When you receive a warning, how do you decide whether to prepare, evacuate, or stay at home?

“When there is a warning, I first observe the weather and the situation around us. When I see that the rain continues and the water level is rising, we begin preparing and packing our belongings…The water rises quickly when the rain is heavy, so we need to evacuate immediately.”

“There are times when we also become proactive. When we notice that the river level is rising quickly and the rain continues, we start preparing even without an announcement. From experience, we already know when it becomes dangerous.”

“Kapag may babala, tinitingnan ko muna ang lagay ng panahon at ang sitwasyon sa paligid. Kapag nakikita kong patuloy ang ulan at tumataas ang tubig, saka kami naghahanda at nag-

iimpake ng mga gamit….Mabilis pong tumaas ang tubig kapag malakas ang ulan, kaya kailangan naming lumikas agad.”

“May mga pagkakataon na nagiging proactive din kami. Kapag napapansin namin na mabilis ang pagtaas ng tubig sa ilog at tuloy-tuloy ang ulan, naghahanda na kami kahit wala pang anunsyo. Alam na namin sa karanasan kung kailan delikado.”

6. What challenges make it difficult for you to evacuate during disasters?

"One challenge is the difficulty of moving belongings and livestock. When there is flooding or muddy roads, it becomes difficult to leave the house and go to evacuation centers.”

“When flooding occurs, we struggle to evacuate our belongings and livestock, especially when the water rises suddenly.'"

“Isa sa mga hamon ay ang hirap sa paglipat ng mga gamit at alagang hayop. Kapag baha o maputik ang daan, nagiging mahirap ang paglabas ng bahay at pagpunta sa evacuation center.”

“Kapag baha, nahihirapan kaming ilikas ang mga gamit at alagang hayop, lalo na kung biglaan ang pagtaas ng tubig.”

7. If you have experienced evacuation before, can you describe what happened?

"There have been times when we needed to evacuate with our family when the water level became high. We often rush to move belongings and look for higher ground. This is not easy, especially when it happens at night or when the water rises suddenly."

“May mga pagkakataon na kinailangan naming lumikas kasama ang pamilya kapag mataas na ang tubig. Madalas kaming nagmamadali sa paglipat ng mga gamit at paghahanap ng mas mataas na lugar. Hindi ito madaling gawin, lalo na kung gabi o biglaan ang pagtaas ng tubig.”

8. How do family members, neighbors, or community members help you during disasters?

"During typhoons or flooding, our neighbors regularly check on us to make sure we are safe. This is especially helpful for older persons and persons with disabilities."

“Kapag may bagyo o baha, ang mga kapitbahay namin ay regular na bumibisita upang tingnan kung maayos ang kalagayan namin. Nakakatulong ito lalo na sa mga matatanda at persons with disabilities.”

9. How does your financial situation affect your ability to prepare or evacuate during disasters?

"During the last flood, our roof was damaged. We had no savings, so we were forced to borrow money from relatives to repair it. Until now, we are still paying that debt. When funding is limited, disaster preparation becomes difficult. We need to save money for food and other expenses during evacuation. Sometimes we even need to borrow money to recover after disasters."

“Noong nakaraang baha, nasira ang bubong namin. Wala kaming ipon, kaya napilitan kaming umutang sa kamag-anak para makapagpaayos. Hanggang ngayon, binabayaran pa rin namin iyon. Kapag limitado ang pondo, nagiging mahirap ang paghahanda para sa sakuna. Kailangan naming mag-ipon ng pera para sa pagkain at iba pang gastusin kapag lilikas. Minsan kailangan pa naming umutang upang makabangon muli pagkatapos ng sakuna.”

10. Apart from official warnings, what local signs do people in your community observe before disasters?

“When we notice that the river level is rising quickly and the rain continues, we start preparing even without an announcement. From experience, we already know when it becomes dangerous.”

“We also watch the color of the sky and the intensity of the rain. When the water in the creek or river rises quickly, we know it is time to prepare even before an official warning is issued.”

“Kapag napapansin namin na mabilis ang pagtaas ng tubig sa ilog at tuloy-tuloy ang ulan, naghahanda na kami kahit wala pang anunsyo. Alam na namin sa karanasan kung kailan delikado.”

“Tinitingnan din namin ang kulay ng langit at lakas ng ulan. Kapag mabilis ang pagtaas ng tubig sa sapa o ilog, alam naming kailangan nang maghanda kahit wala pang opisyal na babala.”

11. What changes would make early warning systems, evacuation support, transportation, or shelters safer and more accessible for persons with disabilities in your community?

"For us, having reliable and organized transportation during disasters is very important. There are times when we have to wait a long time before getting a ride, especially when many people need to evacuate. I hope there can be designated vehicles assigned for persons with disabilities, older persons, and those who are sick. If the transportation system is clear and organized, evacuation will be faster and safer for the community. I believe earlier warnings and clear information from the barangay are important. There should also be sufficient assistance for farmers who lose their livelihood after disasters."

“Para sa amin, mahalaga ang pagkakaroon ng maayos at organisadong transportasyon sa panahon ng sakuna. May mga pagkakataon na kailangan naming maghintay nang matagal bago makasakay, lalo na kung marami ang lilikas. Sana magkaroon ng nakahandang sasakyan na nakatalaga para sa persons with disabilities, matatanda, at may sakit. Kung malinaw ang sistema ng transportasyon, mas magiging mabilis at ligtas ang paglikas ng komunidad. Kailangan din ng sapat na tulong para sa mga magsasaka na nawawalan ng kabuhayan pagkatapos ng sakuna.”

12. Are persons with disabilities like you included in meetings or activities related to disaster preparedness? When do authorities usually call or involve you?

"Sometimes we are invited to meetings, but most of the time we are called only during emergencies or when assistance is being distributed."

“Minsan kaming inaanyayahan sa mga meeting, ngunit kadalasan ay tinatawag lamang kami kapag may emergency o kapag may ipapamahaging tulong.”

13. What are the most important priorities needed by persons with disabilities to prepare for disasters?

"It is important to have an emergency kit with food, water, medicine, a flashlight, and important documents. When supplies are ready, evacuation becomes faster."

“Mahalaga na may nakahandang emergency kit na may pagkain, tubig, gamot, flashlight, at mahahalagang dokumento. Kapag handa ang mga gamit, mas mabilis ang paglikas.”

Interviewee ID:	**INT_012**
Pseudonym:	**Juan**
Position/Occupation:	**PwD Barangay Coordinator**
Location:	**Aguilar**
Date of Interview:	**January 6, 2026**
Gender:	**Male**

1. Could you share a bit about yourself, including your living situation, disability-related needs, and the assistance you usually require in daily life?

"I serve as the barangay coordinator for persons with disabilities in our area. One of my main responsibilities is to ensure that persons with disabilities have sufficient information and assistance during disasters. I live with my family, and we support each other in daily tasks."

"As a coordinator, it is important for me that the community is prepared and has a clear plan during emergencies."

“Ako ay nagsisilbing barangay coordinator para sa persons with disabilities sa aming lugar. Isa sa mga pangunahing tungkulin ko ang tiyakin na ang mga persons with disabilities ay may sapat na impormasyon at tulong kapag may sakuna. Nakatira ako kasama ang aking pamilya, at nagtutulungan kami sa pang-araw-araw na gawain.”

“Bilang coordinator, mahalaga sa akin na maging handa ang komunidad at may malinaw na plano kapag may emergency.”

2. What are your main sources of income or livelihood, and how are these affected when disasters such as typhoons or flooding occur?

"Our livelihood depends on a small business and family support. When there is a typhoon or flooding, work is disrupted and it becomes difficult to access services and assistance."

“Ang kabuhayan namin ay nakadepende sa maliit na negosyo at suporta mula sa pamilya. Kapag may bagyo o baha, naaantala ang trabaho at nagiging mahirap ang pag-access sa mga serbisyo at tulong.”

3. What types of disasters commonly affect your community, and can you describe a memorable disaster experience that changed the way you prepare for future disasters?

"Floodings, typhoons, drought and sometimes farm pests. In our barangay, flooding is common when heavy rain occurs. There was a typhoon where we received the warning late, so we had to evacuate in a hurry. We experienced fear and exhaustion because there was not enough

time to prepare. Because of that, we became more attentive to news and barangay announcements."

“Baha, bagyo, tagtuyot, peste sa bukid. Sa aming barangay, madalas ang pagbaha kapag malakas ang ulan. May isang bagyo na huli naming nalaman ang babala, kaya nagmamadali kaming lumikas. Nakaranas kami ng takot at pagod dahil kulang ang oras sa paghahanda. Dahil doon, mas naging maingat kami sa pakikinig sa balita at sa mga anunsyo ng barangay.”

4. How do you usually receive disaster warnings, and how clear and understandable are these messages for you?

"We usually receive warnings through barangay announcements and text messages. As a coordinator, it is important for me that the information is clear so that I can relay it correctly.”

“When the warning is not clear, we wait for confirmation from the barangay or from other people before evacuating.”

“When there is a warning from the barangay, I immediately inform persons with disabilities so they can prepare early."

“Kalimitan mula sa barangay at sa NDRRMC. Bilang coordinator, mahalaga sa akin na malinaw ang impormasyon upang maipasa ko ito nang tama sa mga persons with disabilities.”

“Kapag may babala mula sa barangay, agad ko itong ipinapaalam sa mga persons with disabilities upang makapaghanda sila nang maaga.”

“Kapag hindi malinaw ang balita, hinihintay muna namin ang kumpirmasyon mula sa barangay o sa ibang tao bago kami lumikas.”

5. When you receive a warning, how do you decide whether to prepare, evacuate, or stay at home?

"When the authorities says we need to evacuate, we prepare immediately, but I need help from my family to reach the evacuation center…We rely on barangay advisories when there is a typhoon. If we are told to evacuate, we will do so, but whenever possible, we prefer to remain at home.”

“Kapag sinabi ng kinauukulan na kailangan nang lumikas, naghahanda kami agad, pero kailangan ko ng tulong ng pamilya ko para makapunta sa evacuation center.”

“Umaasa din lang kami sa abiso ng barangay kapag may bagyo. Kapag sinabing lilikas, lilikas, pero hanggat maaari mas gugustuhin naming manatili.”

6. What challenges make it difficult for you to evacuate during disasters?

"I find evacuation difficult because I worry about the belongings left in our home. Sometimes I wonder whether our property will still be safe when we are gone."

“Nahihirapan akong lumikas dahil nag-aalala ako sa mga gamit na maiiwan sa bahay. Minsan iniisip ko kung ligtas pa ba ang aming mga ari-arian kapag wala kami.”

7. If you have experienced evacuation before, can you describe what happened?

"There have been times when we needed to evacuate together with family and other community members. In such situations, coordination is important to ensure that no one is left behind."

“May mga pagkakataon na kinailangan naming lumikas kasama ang pamilya at iba pang miyembro ng komunidad. Sa ganitong sitwasyon, mahalaga ang koordinasyon upang matiyak na walang maiiwan.”

8. How do family members, neighbors, or community members help you during disasters?

"The community plays a major role in helping during disasters. During emergencies, people work together to ensure everyone’s safety, especially persons with disabilities."

“Malaki ang papel ng komunidad sa pagtulong sa panahon ng sakuna. Kapag may emergency, nagtutulungan ang mga tao upang masigurong ligtas ang lahat, lalo na ang mga persons with disabilities.”

9. How does your financial situation affect your ability to prepare or evacuate during disasters?

"For us, money really has a big impact on disaster preparedness. We want to prepare properly, such as buying extra food, water, and flashlights, but sometimes our income is just enough for daily expenses. When a typhoon is approaching, we become worried because we do not have savings to use if we need to evacuate or repair our home after the disaster. We often think about how to divide our small budget—whether to buy food for today or set something aside for emergencies. Because of that, our ability to prepare early becomes limited."

“Sa amin, malaking epekto talaga ang pera sa paghahanda sa sakuna. Gusto sana naming maghanda nang maayos, tulad ng pagbili ng extra na pagkain, tubig, at flashlight, pero kung minsan sapat lang ang kita namin para sa pang-araw-araw na gastusin. Kapag may paparating na bagyo, nag-aalala kami dahil wala kaming ipon na magagamit kung sakaling kailangan naming lumikas o magpaayos ng bahay pagkatapos ng sakuna. Madalas iniisip namin kung paano namin hahatiin ang maliit na budget—kung bibili ba ng pagkain ngayon o magtatabi para sa emergency. Dahil doon, nagiging limitado ang aming kakayahang maghanda nang maaga.”

10. Apart from official warnings, what local signs do people in your community observe before disasters?

"We observe continuous rainfall and rising river levels as signs of an approaching disaster. When we see that the situation is worsening, we immediately begin preparing."

“Napapansin namin ang patuloy na pag-ulan at ang pagtaas ng tubig sa ilog bilang mga senyales ng paparating na sakuna. Kapag nakikita naming lumalala ang sitwasyon, agad kaming naghahanda.”

11. What changes would make early warning systems, evacuation support, transportation, or shelters safer and more accessible for persons with disabilities in your community?

"I believe clear coordination from the barangay and municipality is very important before and during disasters. Sometimes confusion arises about who to contact or where to go during emergencies. If there is a clear communication system and designated personnel to assist persons with disabilities, disaster response will be more organized. Regular updates are also important so we do not worry or wait too long for information."

“Naniniwala ako na mahalaga ang malinaw na koordinasyon mula sa barangay at munisipyo bago at habang may sakuna. Minsan nagkakaroon ng kalituhan kung sino ang dapat kontakin o kung saan pupunta kapag may emergency. Kung may malinaw na sistema ng komunikasyon at may taong nakatalaga na tutulong sa persons with disabilities, mas magiging maayos ang pagtugon sa sakuna. Mahalaga rin na may regular na update upang hindi kami mag-alala o maghintay nang matagal sa impormasyon.”

12. Are persons with disabilities like you included in meetings or activities related to disaster preparedness? When do authorities usually call or involve you?

"We are often invited to meetings, but there are times when persons with disabilities are called only during emergencies or when assistance is being distributed."

“Madalas kaming inaanyayahan sa mga meeting, ngunit may mga pagkakataon na tinatawag lamang ang persons with disabilities kapag may emergency o kapag may ipapamahaging tulong.”

13. What are the most important priorities needed by persons with disabilities to prepare for disasters?

"For persons with disabilities with health conditions, having sufficient medication and access to health services before and after disasters is important."

“Para sa persons with disabilities na may kondisyon sa kalusugan, mahalaga ang pagkakaroon ng sapat na gamot at access sa health services bago at pagkatapos ng sakuna.”

Interviewee ID: **INT_013**
Pseudonym: **Mateo**
Position/Occupation: **Barangay Helper**
Location: **Aguilar**
Date of Interview: **January 6, 2026**
Gender: **Male**

1. Could you share a bit about yourself, including your living situation, disability-related needs, and the assistance you usually require in daily life?

"I am a barangay helper in our community, and one of my responsibilities is to assist residents during disasters or emergencies. I live with my family, and in daily life I help the barangay in various tasks, especially during typhoons or flooding."

"As part of the barangay, it is important to me that the community is prepared and that there is a clear response system during disasters."

“Ako ay barangay helper sa aming lugar at isa sa mga tungkulin ko ang tumulong sa mga residente kapag may sakuna o emergency. Nakatira ako kasama ang aking pamilya, at sa araw-araw ay tumutulong ako sa barangay sa iba't ibang gawain, lalo na kapag may bagyo o baha.”

“Bilang bahagi ng barangay, mahalaga sa akin na maging handa ang komunidad at may malinaw na sistema ng pagtugon kapag may sakuna.”

2. What are your main sources of income or livelihood, and how are these affected when disasters such as typhoons or flooding occur?

"My main source of income comes from my work as a barangay helper and other small sources of livelihood. When there is a typhoon or flooding, work is disrupted and movement within the community becomes difficult."

“Ang pangunahing pinagkukunan ng kita ko ay ang aking trabaho bilang barangay helper at iba pang maliliit na pagkakakitaan. Kapag may bagyo o baha, naaantala ang trabaho at nagiging mahirap ang paggalaw sa komunidad.”

3. What types of disasters commonly affect your community, and can you describe a memorable disaster experience that changed the way you prepare for future disasters?

"Typhoons are frequent which cause untold sufferings among farmers. In our barangay, flooding is common when heavy rain occurs. When the water level rises, we immediately assist residents to ensure everyone’s safety."

"One experience I cannot forget was when the water suddenly rose and we had to quickly evacuate families, especially persons with disabilities."

“Madalas ang bagyo dito na sanhi ng paghihirap kadalasan ng mga magsasaka.”

“Isang karanasan na hindi ko makakalimutan ay noong biglang tumaas ang tubig at kinailangan naming magmadaling mag-evacuate ng aking pamilya.”

4. How do you usually receive disaster warnings, and how clear and understandable are these messages for you?

“We usually receive warnings from barangay officials and the municipal disaster office. When the information is clear, preparation and response become faster…When there is a typhoon or flood and there is no way to get early warning updates due to power outage or connectivity issues, we rely on announcements from the barangay, especially when their vehicle goes around our area. They also help us to relay our need of help from MDRRMC when we need to evacuate.”

“Karaniwan naming natatanggap ang babala mula sa barangay officials at sa municipal disaster office. Kapag malinaw ang impormasyon, mas nagiging mabilis ang paghahanda at pagresponde…Kapag may bagyo o baha at walang mapagkunan ng balita dahil walang kuryente or signal ng internet, umaasa kami sa anunsyo ng barangay lalo na kapag umiikot ang barangay mobile sa aming lugar. Sila rin ang tumutulong na maiparating sa MDRRMC kapag kailangan naming lumikas.”

5. When you receive a warning, how do you decide whether to prepare, evacuate, or stay at home?

"We do trust the announcements from the barangay and the police when there is a typhoon, but if there is no transportation or no one to assist us, it is still difficult to evacuate right away. Even if you trust them, you still need help in order to stay safe. When there is a warning, we follow instructions from barangay officials and observe the situation around us. If we see that the situation is worsening, we immediately assist in evacuating residents."

“Naniniwala naman kami sa abiso ng barangay at sa mga pulis kapag may bagyo, pero kung walang sasakyan o tutulong sa amin, mahirap pa ring lumikas agad. Kahit may tiwala ka sa kanila, kailangan mo pa rin ng tulong para makaligtas.”

“Kapag may babala, sinusunod namin ang instructions mula sa barangay officials at tinitingnan ang sitwasyon sa paligid. Kung nakikita naming lumalala ang sitwasyon, agad kaming tumutulong sa pag-evacuate ng mga residente.”

6. What challenges make it difficult to evacuate residents during disasters?

"One challenge is the lack of transportation and the difficulty of moving residents, especially older adults and persons with disabilities. When flooding or slippery roads occur, evacuation becomes dangerous. The evacuation center is far from our place and the road going there is uphill. If there is no government rescue vehicle or someone to assist me, I cannot leave immediately even when there is already a warning. There are times when we struggle to evacuate persons with disabilities because there is not enough transportation or manpower."

“Isa sa mga hamon ay ang kakulangan ng transportasyon at ang hirap sa paglipat ng mga residente, lalo na ang matatanda at persons with disabilities. Kapag baha o madulas ang daan, nagiging delikado ang pag-evacuate.”

“Malayo ang evacuation center sa amin at paakyat ang daan. Kung walang sasakyan mula sa gobyerno o tutulong magdala sa akin, hindi ako makakaalis agad kahit may babala na.”

“May mga pagkakataon na nahihirapan kaming mag-evacuate ng mga persons with disabilities dahil kulang ang sasakyan o manpower….”

7. If you have experienced evacuation before, can you describe what happened?

“When we have no relatives to stay with, we move to the evacuation center during flooding. This happened during the time of Typhoon Yolanda. We were forced to go to an evacuation center because the water was chest deep. If the situation is manageable, we would rather stay despite the flooding.”

“Kapag wala kaming mapuntahan na kamag-anak, doon kami sa evacuation center lumilipat kapag may baha. Nangyari ito noong panahon ng bagyong Yolanda. Napilitan kaming pumunta ng evacuation centre kasi hanggang dibdib ang tubig. Kung okay ang sitwasyon, mas nanaisin naming manatili sa bahay.”

8. How do family members, neighbors, or community members help during disasters?

"The community plays an important role in helping during disasters. During emergencies, people work together to ensure everyone’s safety."

“Malaki ang papel ng komunidad sa pagtulong sa panahon ng sakuna. Kapag may emergency, nagtutulungan ang mga tao upang masigurong ligtas ang lahat.”

9. How does financial situation affect disaster response?

"When disasters damage our home or livelihood, the lack of money makes recovery very difficult. During one strong typhoon, our roof was damaged and water entered our house. We did not have enough savings to repair it immediately, so we were forced to borrow money from relatives and local stores. Until now, we are still paying that debt. Because of that experience, I learned that money is important not only for preparation but also for faster recovery after disasters."

“Kapag may sakuna at nasira ang bahay o kabuhayan namin, ang kakulangan sa pera ang nagpapahirap sa pagbangon. Noong isang malakas na bagyo, nasira ang bubong ng bahay namin at pumasok ang tubig sa loob. Wala kaming sapat na ipon para agad itong maipaayos, kaya napilitan kaming umutang sa kamag-anak at sa tindahan. Hanggang ngayon, binabayaran pa rin namin ang utang na iyon. Dahil sa karanasang iyon, natutunan ko na ang pera ay hindi lang mahalaga sa paghahanda, kundi pati sa mabilis na pagbangon pagkatapos ng sakuna.”

10. Apart from official warnings, what local signs do people in your community observe before disasters?

"We observe continuous rainfall and rising river levels as signs of an approaching disaster. When we see that the situation is worsening, we immediately begin preparing."

“Napapansin namin ang patuloy na pag-ulan at ang pagtaas ng tubig sa ilog bilang mga senyales ng paparating na sakuna. Kapag nakikita naming lumalala ang sitwasyon, agad kaming naghahanda.”

11. What changes would make early warning systems, evacuation support, transportation, or shelters safer and more accessible for persons with disabilities in your community?

"I believe earlier warnings, adequate transportation, and more personnel to assist during disasters are important. Regular training for barangay staff and volunteers is also necessary."

“Para sa akin, mahalaga ang mas maagang babala, sapat na transportasyon, at mas maraming tauhan na tutulong sa panahon ng sakuna. Kailangan din ng regular na training para sa barangay staff at volunteers.”

12. Are persons with disabilities included in meetings or activities related to disaster preparedness? When do authorities usually call or involve them?

"There are times when persons with disabilities are included in meetings, but most of the time they are called only during emergencies or when assistance is being distributed."

“May mga pagkakataon na kasama ang persons with disabilities sa meeting, ngunit kadalasan ay tinatawag lamang sila kapag may emergency o kapag may ipapamahaging tulong.”

13. What are the most important priorities needed by persons with disabilities to prepare for disasters?

"Proper roads, bridges, and access routes are important so assistance can arrive quickly and residents can evacuate safely during disasters."

“Mahalaga ang maayos na kalsada, tulay, at access routes upang mabilis makarating ang tulong at makalikas ang mga residente sa panahon ng sakuna.”

Appendix J: Language Translations

Madagascar National Adaptation Plan (2021)

Original: "Conformément aux directives issues des Conférences des Parties (COP) à la Convention Cadre des Nations Unies sur les Changements Climatiques (CCNUCC), et renforcées plus particulièrement lors de la 21ème COP qui s'est tenue à Paris en 2015, Madagascar a repris le processus d'élaboration du Plan National d'Adaptation (PNA)…" (Introduction, p. XVIII, Plan National d'Adaptation au Changement Climatique (PNA) Madagascar)

Translation: "In accordance with the guidelines from the Conferences of the Parties to the United Nations Framework Convention on Climate Change, particularly those strengthened during the 21st Conference of the Parties held in Paris in 2015, Madagascar resumed the process of developing its National Adaptation Plan." Introduction, p. XVIII, Madagascar's 2021 National Adaptation Plan

Haiti's National Determined Contribution

Original: "la délocalisation des populations vulnérables et affectées"

Translation: "…relocation of vulnerable and affected populations…"

Madagascar National Disaster Risk Management Strategy 2016-2030, p. 20

Original: "...développer un réseau institutionnel d'organismes spécialisés dans les interventions de secours d'urgence…"

Translation*:* "…develop an institutional network of specialized agencies for emergency relief interventions…"

Madagascar National Disaster Risk Management Strategy 2016-2030, p. 11

Original: “Prévoir et/ou accroître les lignes budgétaires destinées à la GRC/RRC.”

Translation: “Provide and/or increase budget lines dedicated to disaster risk management.”

5. Madagascar National Disaster Risk Management Strategy 2016-2030, p. 32

Original: “7.3 Monitoria e Avaliação…

A definição de acções específicas do Plano Director, assim como dos indicadores, mecanismos de implementação, responsabilidades e monitoria será estabelecida em planos quinquenais, a serem alinhados com os objectivos e períodos de duração dos Programas Quinquenais do Governo.”

Translation: The definition of specific actions under the Master Plan, as well as the indicators, implementation mechanisms, responsibilities and monitoring arrangements, will be established in five-year plans aligned with the objectives and duration of the Government’s Five-Year Programmes.” (National Disaster Risk Management Strategy 2016–2030, p. 32)

"It is important to have an emergency kit with food, water, medicine, a flashlight, and important documents. When supplies are ready, evacuation becomes faster."