Government Intervention and Community Preparedness for Climate Change-Induced Disasters: Evidence from a Selected District in Sri Lanka

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Abstract

Sri Lanka is experiencing extreme weather events, including intense rainfall, prolonged droughts, and rising temperatures, driven by recent climate change. Despite policies to mitigate climate change, the effectiveness of government intervention in Sri Lanka is problematic. The main objectives of this study are to examine the reasons for the less effectiveness of government interventions and to explore the community's preparedness for climate change. Based on qualitative research methods, this study utilizes both primary and secondary data. Six villages considered highly disaster-prone were selected purposefully, in the Passara Divisional Secretariat in the Badulla District. Data was collected with the assistance of undergraduates of the Public Administration Department of the University of Sri Jayewardenepura using semi-structured open-ended questions. Narrative analyses were employed to present the data. The effectiveness of the government intervention was not satisfactory due to low awareness of early warning systems and evacuation plans, the lack of secure shelters, inadequate post-disaster support, a mismatch in relocation land, inequitable subsidy distribution, inadequate long-term recovery support and limited community participation. Several policy measures are suggested to improve the effectiveness of government intervention. The study provides valuable insights for improving disaster preparedness and response strategies by identifying gaps in government intervention and community preparedness for disaster mitigation in the country.

Key Words

Awareness, Community Participation, Disaster Mitigation

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A. INTRODUCTION

Climate change is characterized by a significant and lasting alteration in average climate conditions or their variability, usually observed over an extended timeframe, such as a decade. (López P., 2021). Climate change in a country often leads to various natural disasters. Natural disasters occur independently of human influence (Ibrahim, 2007). Because of the negative impacts of natural disasters, almost every country has initiated policies and plans to mitigate disasters and minimize damage, especially through preparedness, response, and mitigation measures.

As a tropical island nation, Sri Lanka is highly vulnerable to natural disasters triggered by climate change. Studies indicate that the increase in floods and droughts in recent years is largely due to global warming. To address these challenges, Sri Lanka has adopted policies such as the National Adaptation Plan (NAP) and the National Climate Change Policy (NCCP, 2012) (National Adaptation Plan for Climate Change, 2016). Furthermore, the devastating Indian Ocean tsunami in 2004 led to the establishment of the Disaster Management Centre (DMC) under the Disaster Management Act No. 13 of 2005.

Sri Lanka's National Policy on Disaster Management (NPDM), based on the Disaster Management Act, serves as the cornerstone of the nation's disaster risk reduction and resilience efforts (Parliament of Sri Lanka, 2005). The Act established the National Council of Disaster Management (NCDM), which implements the national policy under the Ministry of Disaster Management (National Council for Disaster Management, 2013).

The National Disaster Management Plan (NDMP) 2022–2030 provides a strategic framework for disaster risk management. The DMC has played a central role in disaster preparedness and response, reducing casualties during the 2017 floods through real-time local collaboration (Annual Report, 2022). The DMC has also strengthened early warning systems, most recently in December 2023, when a sophisticated nationwide system was launched in collaboration with major telecommunication providers (Saparamadhu, 2023).

Despite these strengths, weaknesses remain, including inconsistent community involvement and delayed recovery. Other challenges include inadequate integration of risk-sensitive planning, incomplete project implementation, and difficulties in resource mobilization (Newswire, 2024).

The Badulla District, located in the Uva Province, is more prone to natural disasters than many other parts of the country, experiencing frequent landslides, floods, and droughts primarily due to its geographical and climatic conditions. As this research focuses on the Passara Divisional Secretariat, the study area provides an opportunity to identify these gaps more precisely. It frequently experiences floods and landslides, and approximately 66.91% of the district's land area is classified as being at risk (Rathnayake, 2021). The Badulla District frequently experiences a high number of landslides and heavy rainfall.

The Disaster Management Centre (DMC) has introduced several strategies to mitigate floods, including updating district disaster management plans, ensuring quick identification of disaster situations, and sending prior notices to Grama Niladhari divisions and disaster management

committees through the district secretariat. Other measures involve collecting information from affected areas, mobilizing response teams to assist victims, establishing care units, and providing essential supplies (Siriwardana C.S.A., 2018). But despite these policies and plans, the effectiveness of institutional adaptation to recent climate changes in the country remains questionable.

This research focuses on the Passara Divisional Secretariat in Badulla District, one of the most disaster-prone areas in Sri Lanka. The study specifically examines how disaster management policies are implemented in six villages within the Passara Divisional Secretariat.

Although the DMC plays a crucial role in mitigating disaster impacts through early warning systems and community awareness programs, implementation challenges remain. Shortcomings in policy execution and insufficient community engagement continue to undermine disaster preparedness.

In this context, the main purpose of this study is to identify the reasons behind the limited effectiveness of current disaster management policies and to assess community preparedness for climate change impacts. Finally, the study proposes policy measures to strengthen existing frameworks and enhance community-based strategies to mitigate the effects of climate change in the Passara Divisional Secretariat, Badulla District**.**

B. Literature Review

Climate change can cause natural disasters. A disaster is characterized as a sudden, calamitous event that causes significant damage, loss, or destruction. Natural disasters can disrupt daily routines, affecting local resources and the overall functioning of communities.

Disaster management policies involve the formulation and application of strategies to mitigate the effects of existing and potential disaster risks and to increase community resilience (Selmi A.A., 2015). Disaster management involves proactive actions such as preparedness, response, recovery, and mitigation efforts. In the past, disaster management practice was based on a top-down approach, later converted to a bottom-up approach (Enenkel, 2017), as community participation was an important aspect of disaster mitigation. As a top-down mechanism, early warning systems are needed to convey timely and correct warnings to individuals, communities and organizations to prepare and act in a timely manner to reduce the harm from disasters (Fernando et al., 2015). Adequate shelters and relocation policies are also important for disaster mitigation. Relocating away from hazards reduces future destruction. Many countries of the world have initiated institutional arrangements for post-disaster recovery. For example, after the 7.6 earthquake in Kashmir in 2005, the government of Pakistan established the Earthquake Reconstruction and Rehabilitation Authority (ERRA) to coordinate and manage the country's earthquake recovery process.

Another aspect of disaster risk reduction is the participatory involvement of the local community. Combining modern ideas and technology can provide new approaches. (Zubir *et al*., 2011). If local officials can engage directly with communities and make them equal partners with the government in disaster risk reduction, they would increase community participation. In the

Philippines, selected villagers were trained by the Global Facility for Disaster Reduction and Recovery (GFDRR) in disaster mitigation, and they shared their knowledge with others, spreading awareness across many communities (Community Participation and Citizen Engagement, 2022). Victoria, Australia, has the Community Fireguard Program, which gives preparedness education which has been highly successful in disaster mitigation. (Ryan et al., 2020).

Community-Based Disaster Risk Management (CBDRM) is a participatory approach to risk management, which is often successfully applied by other disaster-prone countries. In this approach, communities actively engage in identification, analysis, planning, implementation, monitoring and evaluation of the disaster. Under this approach, workshops and campaigns are conducted to educate residents about landslide risks, evacuation routes and safety protocols (Compendium of Good Practices on Community-Based Disaster Risk Management, 2020).

Many countries have their own disaster management policies. For example, the United States has the National Flood Insurance Program (NFIP) managed by the Federal Emergency Management Agency (FEMA), which provides flood insurance to property owners, renters and businesses, and helps them recover faster when floodwaters recede (USA government, 2024).

In China, the Sponge City Policy is a national plan to reduce flooding in cities in response to the increased frequency of serious urban flooding (Wang, 2022).

The Netherlands has the Room for the River Policy, a government-led program to address flood protection and improve the ecological conditions of catchment areas of rivers. This policy includes floodplain excavating, relocating dykes, excavating riverbeds, etc. (The Nature Conservancy, 2025).

Bangladesh has a Community-Based Disaster Management Flood Program, which is an effective approach for reducing people's vulnerability and building their capacity to cope with disasters, particularly for women (Annear M, 2020).

In Europe, there is the Flood Hazard and Risk Mapping Policy, which consists of flood risk maps indicating which streets, schools, hospitals, elderly homes, etc., are in flood-prone areas and showing the probability of flooding (Floods, 2023).

To reduce disaster risks, Japan has established the National Disaster Risk Reduction (DRR) Council and Emergency and DRR Headquarters. These organizations promote Disaster Risk Reduction policies. Also, Japan has the Basic Plan for Disaster Management, established under the Basic Act on Disaster Management (Saya, 2018). The national government coordinates with organizations and sets a framework to support local governments in disaster risk reduction for their communities. Local governments manage planning, budgeting, implementation, and monitoring, while issuing guidelines for stakeholders. They also promote self-protection measures such as building code compliance and business continuity plans to encourage proactive risk mitigation (Takashi O, 2021).

India has the National Disaster Management Authority (NDMA), the Disaster Management Act, 2005 (National Policy on Disaster Management (NPDM)) and the National Plan 2019, which is aligned to the Sendai Framework for DRR (2015-2030) (Satyarthi K, 2019).

In the Philippines, NGOs play a central role in disaster management. They bridge the gap between the government efforts and the community's needs through training, resource allocation and advocacy.

The CBDRM programs in the Passara Divisional Secretariat showed both successes and failures. Excellent landslide awareness, efficient early warning systems, practical training, and active engagement of officers were a success. Failures included low community participation, errors in technical maps, weak supervision, few safe areas and evacuation routes, participation issues, and insufficient funding (Samarasinghe, 2022).

Some countries, such as Nicaragua, have increased community involvement in disaster mitigation by equipping individuals with hands-on experience to prepare for the unfamiliar challenges posed by climate change (Bachofen, Suarez, & Steenbergen, 2012). Tools such as games, simulations, and role-playing support an individual in processing information and emotions necessary for making good decisions (MIeth R.A, 2023). For example, a participatory game played in Nicaragua enhanced community understanding of specific climate risks such as flooding, droughts, and deforestation (Bachofen, Suarez, & Steenbergen, 2012).

Also, a study in Songkar village, Bangladesh, expresses how traditional beliefs, bureaucratic attitudes, limited resources, and socio-cultural norms increase effective community participation in flood disaster management (All I, 2016).

C. Methodology

This research is based on qualitative methods. The following six villages in the Passara Divisional Secretariat in Badulla District were selected: Sumanathissagama, Tholabowaththa, Pallegama, Maussagala, Gamewela 4 Kanuwa, and Kanaweralla.

Both primary and secondary data were used. Primary data were collected by 12 groups of students from the Department of Public Administration, University of Sri Jayewardenepura, using a semi-structured, open-ended questionnaire and face-to-face interviews. The data collectors also observed the families' lifestyles and the damage caused by climate change and environmental factors. During the interviews, family members were invited to share their personal stories and experiences. Each student group interviewed five families in their assigned village, resulting in a purposive sample of 60 families across the six villages. Field notes were taken to capture the realities of daily life in the study area. The data were analyzed and presented using narrative analysis.

1. Sample Description

Families in the selected villages represented diverse ethnic groups, including Sinhalese, Tamils, and Muslims. Most households consisted of 4–5 members, with an average monthly income from Rs. 15,000 to 50,000. Only a few families benefited from the *Aswasuma* welfare program. Some families had as few as two members or as many as six, with most depending on a single employed member, typically the father, engaged in farming, masonry, or other irregular jobs. Younger family members had often migrated

to urban areas in search of employment, leaving behind ageing populations who are more vulnerable to disasters.

Floods and landslides were reported as the most common disasters faced by these villages for generations, while earthquakes and cyclones were rarely experienced. Disasters typically occurred in November and December, coinciding with the monsoon season. Several families identified blocked drainage systems as a primary cause of flooding.

The analysis focuses on personal stories and experiences to understand how individuals perceive, experience, and respond to disasters, to evaluate the effectiveness of government interventions and community preparedness.

D. DATA ANALYSIS AND DISCUSSION

Government intervention refers to actions taken by the government to manage or mitigate issues and challenges faced by individuals or communities, particularly in times of crisis. The following reasons were identified for the lack of effectiveness of the government interventions in the Passara DS in the Badulla District.

1. Ineffectiveness of Early Warning Systems

Early warning systems are designed to issue timely alerts to vulnerable communities to minimize loss of life and property. However, many respondents expressed dissatisfaction, describing the mechanisms as inconsistent and poorly communicated:

"We never know when the warnings will come. Sometimes, we hear about the danger only after it has already started. We did not receive a warning siren or any prior training." (Respondent)

It is evident that while systems exist, their effectiveness is uneven. Statistics support some level of progress: between 1980 and 2000, only 1,499 people evacuated due to floods, whereas between 2001 and 2021, the number rose to 42,556, a 28-fold increase (Hewawasam, 2022). Jayasekara et al. (2021) highlight governance challenges, technical communication failures, and weak community preparedness as significant barriers.

By contrast, Japan's early warning system is centralized, technologically advanced, and highly integrated with community drills. The Japan Meteorological Agency uses sirens, SMS alerts, media broadcasts, and local training to ensure every citizen understands their role (Jayarathne, 2016). Sri Lanka has adopted some similar technologies—such as automated rain gauges and SMS alerts- but findings from Passara reveal that community members often lack the training to act effectively. Early warning systems must deliver timely, accurate information to both communities and organizations to enable appropriate action (Fernando et al.,2015). Therefore, Sri Lanka's system requires significant updates to close the gap between technology and community engagement.

2. Inadequacy of Shelters and Relocation Policies

In landslide events, people are often forced to evacuate their homes. However, evacuation planning remains weak, and people often must move to temporary shelters provided by estate management or local authorities. For those displaced by disasters, temporary accommodation is arranged, such as community centres, schools, or purpose-built camps. These shelters provide safety and basic facilities until it is safe for people to return to their homes or alternative arrangements are made. But these are frequently overcrowded and lack essential facilities.

"The shelter was too small for our family. We had to sleep outside in the rain because there wasn't enough space" (Respondent).

"In times of disaster, all the people of the village gather at the school or the temple, but the resources provided by the government are not enough" (Respondent).

Disaster-induced displacement creates long-term development challenges (Senanayake et al., 2022). Their study emphasizes the importance of comprehensive relocation strategies that address not only immediate housing needs but also the long-term economic and social well-being of displaced communities. Relocation policies often fail to address economic and social sustainability, particularly for communities dependent on agriculture (Jayasiri *et al.,* 2022).

This misalignment was echoed by respondents. *"We received land near the town from the government, but if we move there, we cannot survive. We will lose all our income sources,"* said one respondent.

Such mismatches between policy and local needs have resulted in resistance to relocation and weakened long-term resilience in Passara.

3. Lack of Post-Disaster Support and Recovery

In the aftermath of disasters, community recovery depends heavily on both immediate relief and long-term aid. Many residents voiced disappointment and frustration with the post-disaster support received from government institutions. Although some assistance is provided by the government and local authorities, it is often insufficient and delayed. *"The support we received was minimal. We were given food and water, but not enough to cover our basic needs during the recovery period"* (A respondent). Moreover, difficulties in accessing financial or material assistance due to complex and time-consuming government processes are a recurring issue. *"We were told to apply for financial aid, but the process was confusing, and it took a long time to get approval,"* said a respondent. These accounts highlight the need for more efficient and accessible recovery mechanisms.

In terms of infrastructure rebuilding, participants noted that government assistance was often inadequate for the scale of damage. *"The road to our village was completely damaged after the flood, but we had to wait for months before it was repaired. By then,*

we had already lost much of our crops, and the situation had worsened" (A respondent). Such delays in infrastructure recovery directly undermine long-term rehabilitation efforts. Budgetary constraints further hinder recovery, particularly in rural areas like Monaragala (Fernando, 2017). Slow resource allocation during post-disaster management has also delayed rehabilitation and reconstruction (Siriwardana, Jayasiri, & Hettiarachchi, 2018).

While the government promotes long-term recovery strategies, the assistance is often insufficient to meet immediate and substantial needs (Keraminiyage *et al*., 2008). Budget limitations delay recovery and weaken preparedness, particularly in rural districts (Fernando, 2017). Keraminiyage *et al*. (2008) further highlight challenges such as poor coordination among agencies, inadequate resource allocation, and the lack of community involvement in the recovery process. Limited stakeholder awareness, inadequate institutional capacity, and policy gaps continue to undermine the effectiveness of post-disaster recovery.

4. Lack of Coordination among Government Agencies

Effective coordination among government agencies is crucial for delivering a timely disaster response. Although delays occurred frequently, some residents acknowledged that collaborative efforts occasionally led to faster mobilization. For example, during the 2018 landslide, several families received food and water within 48 hours due to joint efforts by the Disaster Management Centre (DMC) and the local Divisional Secretariat.

The institutional framework in Sri Lanka places the Ministry of Disaster Management in charge of national policies, with the DMC serving as the implementing body for disaster risk management (UNDRR, 2019). In some cases, agencies pooled resources effectively, using schools, temples, and community centres as temporary shelters managed by local authorities and religious groups. *"The shelter arrangements were coordinated between the school staff and the local government, which gave us a safe place to stay during the landslide"* (A respondent). Local officers, such as Grama Niladharis, played a key role in bridging the gap between agencies and communities. *"Our Grama Niladhari worked with the disaster office and arranged basic supplies. It was a relief to see someone act so quickly"* (A respondent). Early warning systems managed by the Department of Meteorology and the DMC also helped strengthen inter-agency communication and timely responses (UNDRR, 2019).

However, residents also reported significant lapses in coordination. Many described being redirected between offices without receiving proper guidance. *"We were told to go to the local office for aid, but they asked us to contact another department. Different officials gave conflicting instructions, and it wasted precious time when we were in urgent need of help"* (Respondents). These gaps in coordination delayed relief deliveries and worsened the situation. For example, during the 2018 landslide, overlapping responsibilities among agencies slowed the clearing of blocked roads and the distribution of supplies. *"We waited for days because one agency said they needed approval from another to clear the debris"* (A respondent). Thus, resource constraints

and inadequate funding were key barriers to effective inter-agency coordination, particularly at the local level (UNDRR, 2019).

The lack of a centralized disaster response system meant some areas were overlooked entirely. *"The officials only focused on the main town, but villages like ours received no help because no one reported our situation to higher authorities"* (A respondent). These coordination failures align with findings from Abdeen et al. (2021), which highlight overlapping responsibilities, communication gaps, and the absence of a unified command structure as barriers to multi-agency collaboration. Similar issues were reported during the 2016–2017 floods and landslides in Colombo, where ineffective communication and coordination between national and local stakeholders posed serious problems (Ali & Mannakkara, 2024).

5. Limited Community Participation

Community participation is essential in mitigating disasters, as residents possess valuable firsthand knowledge of risks and potential solutions. Active involvement ensures that disaster management strategies are practical, relevant, and tailored to local needs, thereby improving resilience (Samarasinghe & Herath, 2023).

However, many residents felt excluded from decision-making. *"We know the risks in our village better than anyone, but no one asks for our ideas. Decisions are made far away by people who don't live here"* (A respondent). Government interventions are often introduced without consultation. *"Officials come with their own plans, but they don't ask us what we need or what would work here"* (A respondent). This lack of consultation weakens the effectiveness of interventions (Samarasinghe & Herath, 2023), where poorly implemented top-down approaches have become a reason for the less effectiveness of the government interventions in disaster management (Ali & Mannakkara, 2024).

Evidence shows that the lack of community involvement has hindered disaster resilience in Sri Lanka. For example, during past disasters, communities demonstrated low preparedness and slow responses due to poor inclusion in planning (World Bank Group, 2021). Many residents noted that their local knowledge, such as monitoring river levels, soil cracks, or animal behaviour, was disregarded by authorities. *"We noticed the river rising unusually fast, and we knew a flood was coming. But the officials didn't act until it was too late"* (A respondent).

Additionally, communities often lacked awareness of how to participate in disaster planning. *"Even if we wanted to participate, we don't know where to go or who to talk to"* (A respondent). Weak outreach programs and the absence of structured communication channels contributed to this disconnect (Samarasinghe & Herath, 2023).

That said, some positive examples exist. In certain cases, authorities engaged communities in evacuation planning during landslides and floods. However, broader efforts are needed to bridge the gap between government and communities. Strategies

such as encouraging community-based problem-solving, integrating local knowledge with modern technology, and fostering equal partnerships, as seen in the Philippines, could improve outcomes (Zubir *et. al*., 2011; Community Participation and Citizen Engagement, 2022).

6. Community Preparedness Strategies

Community preparedness for climate change is a critical factor in coping with its growing impacts. Through narrative analysis, the lived experiences of residents reveal their coping mechanisms, the gaps in formal support systems, and the opportunities to enhance preparedness and adaptation strategies. Even though residents lack formal knowledge about climate change, they all experience its impacts. One resident remarked, *"We know the weather is not like it used to be. The rains come heavier, and sometimes, there are long dry periods, but we don't know why it's happening."*

7. Individual and Household-Level Coping Mechanisms

Residents have adopted various individual and household-level strategies to cope with recurring natural disasters. For example, in Sumanatissagama, many families build two-storey houses and keep valuables upstairs to reduce flood risks. Families without an upstairs floor keep an emergency bag with essentials like birth certificates, identity cards, jewelry, and clothes. When a warning is issued, they grab the bag and move to safer locations.

One respondent explained: *"We live in a rented house on the ground floor. The owners stay upstairs. When the rain increases and flooding seems likely, we go to the temple with our important documents, clothes, and other items."*

Similar coping behaviour have been observed in other flood- and landslide-prone areas such as Kolonnawa (Samaraweera, 2018). Families without safe homes often move to relatives' houses and prepare flood emergency kits and use sandbags around doors and low-lying windows to reduce water entry.

8. Community-Based Early Warning Systems

In the absence of formal early warning systems, residents rely on informal networks to spread disaster alerts. They use loudspeakers, temple bells, or word-of-mouth warnings during heavy rains. As one group noted: *"When the rain starts, we announce through the speaker to be ready. It's how we save lives."*

Temples play a central role in the community, and bells are often used to signal impending disasters, allowing residents to gather quickly (Dasanayaka & Matsuda, 2019). People also rely on traditional knowledge. For instance, one resident said, *"When the rain increases, snails move up trees or walls and stay just above the flood level. We believe they can sense the water level."*

These informal systems, rooted in cultural practices, are often faster and more trusted

than formal ones. During disasters, residents also share food, water, and other essentials. One respondent explained: *"When someone runs out of supplies, we help them. We've learned to rely on each other during tough times."*

9. Agricultural Adaptation Strategies

As Passara residents rely heavily on agriculture, particularly tea plantations, natural disasters severely disrupt their livelihoods. To cope, they adopt strategies such as terracing, mulching, and planting cover crops to prevent soil erosion. *"We plant grasses and other cover crops between tea rows to hold the soil during heavy rains,"* said one farmer.

Communities also reserve forested upper slopes to prevent landslides and plant tree belts near houses to protect against rockfalls. *"We keep the forest above our houses and plant tree belts to stop rocks and soil from falling during heavy rains,"* explained a resident. In addition, they build stone walls using cost-effective local materials as protective barriers.

E. Conclusion and Policy Implications

Although Sri Lanka has developed disaster management and climate adaptation policies, the actual implementation remains very weak in high-risk areas such as Passara due to weak early warning systems, inadequate relocation plans, limited support after a disaster, poor coordination, and low public engagement. Effective practices at the community level include informal warnings, sustainable land use, and housing adaptation, but these are yet to be integrated into the national resilience policy frameworks. This requires strengthening community participation, improving communication, and ensuring resource allocation in an equitable manner. Policy reform needs to address the issues related to community-level governance, evacuation and recovery of infrastructure, and collaboration with marginalized groups. Further research is recommended to incorporate other vulnerable regions and government stakeholders to investigate institutional gaps and work toward more integrated models for disaster preparedness and climate resilience. To address the gaps following strategic recommendations are proposed:

- **Improve Early Warning Systems**
    - Strengthen coverage, communication, and public awareness.
    - Adopt global best practices like Japan's multi-level centralized early warning system.
- **Strengthening Shelter and Relocation Policies**
    - Invest in disaster-resilient, multi-purpose community centres equipped with food, water, sanitation, and bedding.
    - Learn from Bangladesh's community-based relocation and the Philippines' hazard-free site relocations post-2013 storms (Iuchi et al., 2020).

- **Enable Nature-Based Solutions**
  - Enhance reforestation in upstream catchments to reduce flood and landslide risks.
  - Promote sustainable farming techniques like terracing, mulching, and buffer planting.
- **Improve Coordination among Government Agencies**
  - Establish a centralized disaster response system with clear roles, real-time data-sharing, and online communication dashboards.
  - Adapt models such as India's National Disaster Management Plan and the UK's Joint Emergency Services Interoperability Programme (JESIP) (Abdeen et al., 2021).
- **Enhance Community Participation**
  - Incorporate local knowledge in hazard analysis.
  - Provide training in evacuation, first aid, and emergency kit preparation, particularly for children and vulnerable households.
- **Strengthen Post-Disaster Recovery**
  - Simplify administrative procedures.
  - Accelerate the payment of claims and rebuilding processes to prevent prolonged recovery delays.

F. Limitations and Areas for Further Research

The sample was limited to six villages in the Passara district. Language barriers, time limitations, and logistical bottlenecks further constrained the study's scope and consequently reduced the depth of data on community assessment and engagement. This research recommends an assessment of how these initiatives fit into formal community-based disaster risk management, comparative studies between regions where there is both low and high community involvement, and the use of higher technologies such as artificial intelligence and GIS in developing early warnings. Lessons from other countries like Japan and studies on public awareness and the long socio-economic impacts would go a great distance in strengthening research into disaster preparedness.

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