



## Enhancing Community Resilience: Integrating Human Security Principles in Localized Disaster Risk Reduction Efforts in Mon State, Myanmar

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### Abstract

Myanmar, highly vulnerable to climate change, faces escalating risks from extreme weather events, notably Cyclone Nargis' impact in 2008. Mon State, prone to floods and landslides, lacks localized disaster plans, necessitating robust disaster management practices. This study aims to assess current practices, investigate community collaboration for resilience, and propose human security integration into the Sendai Framework. Using a qualitative approach, diverse stakeholders from ten Mon State townships were interviewed from December 2023 to February 2024. The study identifies collaboration mechanisms for resilience and proposes integrating human security principles within the Sendai Framework. Community-driven initiatives, such as preventive measures by Buddhist monks and grassroots aid distribution, demonstrate resilience despite governmental constraints. Local rescue teams, operating on self-funding, display resilience but encounter technical obstacles. Collaboration within communities, as emphasized by political entities and citizen journalists, highlights the necessity for inclusive disaster planning. Moreover, the analysis suggests integrating human security principles focusing on trust-building and ecological sustainability into disaster frameworks. Despite these positive strides, the study also identifies bureaucratic challenges and resource limitations that impede comprehensive resilience efforts within the region. Recommendations include increased local disaster management budgets and enhanced international cooperation. By prioritizing a people-centered approach, Myanmar can empower communities, improve early warning systems, and foster cross-sectoral collaboration. Further research is needed to assess the effectiveness of proposed measures in enhancing community well-being amidst escalating climate risks.

**Keywords:** *Community Resilience, Human Security, Disaster Risk Reduction, Sendai Framework, Mon State, Myanmar*

### 1. Introduction

In recent years, Asia, including Myanmar, has experienced a rise in extreme weather events leading to disasters, with Myanmar ranking among the most vulnerable countries globally to climate change (MacLeod et al., 2022). The Global Climate Risk Index 2021 identified Myanmar as the 2nd most affected country during 2000-2019, citing increased severe droughts and cyclones (Climate Change Knowledge Portal, 2021). Cyclone Nargis in 2008 caused significant devastation, claiming 140,000 lives and displacing 880,000 people, especially impacting Mon State with frequent seasonal flooding (Mi Mi Tun, 2021; UNOCHA, 2019). The study, guided by a Sentinel-1 satellite image from August 5, 2023, shows 1,557 square kilometers inundated, potentially affecting 280,772 individuals in Kayin and Mon states (Myanmar Information Management Unit, 2023). The disasters have led to the displacement of 15,000 residents, interruptions in educational activities, and structural damage to infrastructure like the Asia Highway and rail transit in Kayin and Mon states.

Geographically, Mon State borders Bago Division, Kayin State, Thailand, Tanintharyi Division, the Andaman Sea, and the Gulf of Mottama, with 7 out of 10 townships situated below 50 feet elevation, making them vulnerable to heavy rainfall and floods (Department of Population, 2015). Despite each township having a Department of Disaster Management, only Mawlamyine and Kyaikmaraw have localized disaster plans, highlighting potential gaps in disaster preparedness (General Administration Department, 2019). The study aims to assess the existing disaster management practices of local communities in Mon State in the context

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of weak or absent authoritative interventions, contributing to disaster governance and community resilience amidst escalating climate-related threats.

Human security, originating from the United Nations Development Programme's Human Development Report of 1994, extends beyond traditional national security to prioritize individual and community well-being across seven key dimensions: economic, food, health, environmental, personal, community, and political security (UNDP, 1994). Sadako Ogata and Amartya Sen contributed to defining its core principles: "freedom from fear" and "freedom from want" (Ogata & Sen, 2003). Kofi Annan later introduced the idea of "freedom to live in dignity," emphasizing addressing insecurity arising from humiliation (Annan, 2005). The fourth pillar, "freedom from hazard impact," highlights the role of human security in understanding vulnerability to environmental challenges (Brauch, 2005). Varied perceptions of risks and security among those impacted by threats are often influenced by their local environments. This localized perspective often underscores the significance of specific threats like poverty, food and water scarcity, climate effects on agriculture, frequent flooding and landslides, and concerns about lawlessness (Atienza, 2015). Hence, a localized approach to human security provides a more customized path for effective solutions (Pulhin et al., 2021, p. 13). Moreover, the Commission on Human Security (2003) underscored five key tenets: a people-centered approach, integration with human development and rights, recognition of diverse threats, involvement of stakeholders beyond governments, and a bi-modal strategy merging protection with empowerment. A paradigm shift in security discourse emphasizes fortifying and empowering communities, particularly in disaster contexts, intertwining human security principles with resilience-building endeavors.

Disaster risk management encompasses the formulation, execution, and assessment of strategies, policies, and measures aimed at enhancing comprehension of disaster risk, fostering reduction and transfer of risk, and advancing ongoing enhancements in preparedness, response, and recovery efforts (Lavell et al., 2012). The primary objective is to elevate human security, well-being, quality of life, and sustainable development in the community. Meanwhile, the concept of community in the context of disaster, as discussed by Hunter (2018) and Räsänen et al. (2020), extends beyond a geographical location to include networks of interactions, social structures, shared identities, and professional groups. Community-based disaster risk reduction often struggles due to oversimplified understandings, ignoring power dynamics, changing cultural contexts, and root causes of vulnerability (Buggy & McNamara, 2016; Titz et al., 2018). Hence, defining and conceptualizing community resilience in disaster contexts becomes crucial.

Resilience, originating from engineering and ecology, has evolved to encompass the social sciences and disaster discourse. Crawford Stanley Holling (1973) defined it as a system's ability to persist and adapt, emphasizing adaptive capacity. In disaster contexts, resilience involves resisting, absorbing, accommodating, and recovering from hazards efficiently. Principles such as diversity, connectivity, learning, and governance are central to building resilience, particularly in coastal areas prone to disasters (Biggs et al., 2015). Community resilience literature often categorizes approaches into systems perspectives focusing on infrastructure and strengths-based approaches emphasizing community agency and self-organization.

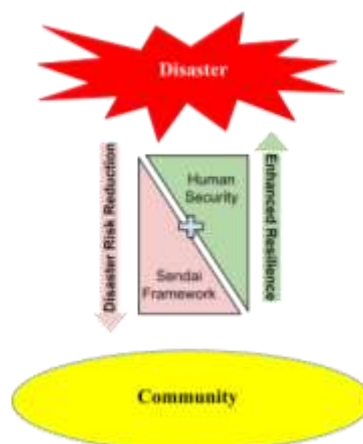
Diverging from its antecedent, the Hyogo Framework for Action (HFA), the priorities delineated within the Sendai Framework for Disaster Risk Reduction (SFDRR) are designed for execution at both the national and local levels, with a particular emphasis on a "people-centered approach" (UNISDR, 2015). The SFDRR prominently emphasizes Climate Change Adaptation, sustainable development, and human security. Key attributes of the SFDRR include its emphasis on the interplay among global frameworks and initiatives, as well as its concentration on local implementation (Pulhin et al., 2021, p. 33). This framework advocates a broader and more people-oriented approach to disaster risk reduction that integrates the most crucial principles of human security. Specifically, it recognizes the existing gap in community involvement,



particularly in developing countries, and proposes strategies for shifting focus to community engagement, awareness, and mobilization to reduce disaster losses in lives, livelihoods, productive assets, and cultural heritage.

The integration of human security principles into the SFDRR presents a critical research gap. While both frameworks share goals of enhancing community well-being and security (Robles, 2022; UNISDR, 2017), the practical implementation of human security within disaster risk reduction and community resilience strategies remains limited explored. The SFDRR acknowledges the importance of human security but lacks specific guidance on translating it into actionable policies (Shaw et al., 2021), particularly in local contexts. Research in this area is essential to ensuring that disaster risk reduction efforts prioritize dignity, rights, and well-being, particularly of vulnerable groups, within communities facing disasters. It calls for comprehensive studies that identify multisectoral threats, develop context-specific resilience strategies, and promote solutions benefiting human dignity and lives, thus bridging the gap between theory and practice in disaster risk reduction. Moreover, integrating Human Security Principles with SFDRR in a locality offers a novel perspective, aiming to explore its implications for disaster governance. Hence, this study examines community resilience efforts in the absence of central authority, within Myanmar's complex political landscape, providing insights into effective disaster resilience strategies. The primary research questions focus on the state of community-based disaster management, collaboration for resilience, and integrating human security principles within the Sendai Framework in Mon of Myanmar.

The conceptual framework of this study, illustrated in Figure 1 below, embodies a comprehensive approach to disaster risk reduction rooted in the principles of the Sendai Framework for Disaster Risk Reduction 2015-2030. Human security aligns closely with the "Build Back Better" principle, emphasizing the creation of safer, more secure, and improved living conditions in the aftermath of disasters. The framework emphasizes local engagement, as communities are central to preparedness and recovery, tailored to their strengths and needs. In essence, the framework interconnects these concepts to create a holistic disaster risk reduction approach, envisioning empowered and resilient communities that uphold well-being and security.



**Figure 1:** Conceptual Framework on Human Security Integration into the Sendai Framework on Disaster Risk Reduction

## 2. Objectives

This research aims to achieve three primary objectives,

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- 1) To assess the existing practices and strategies of community-based disaster management in flooded areas of Mon State, Republic of the Union of Myanmar.
- 2) To investigate the mechanisms of collaboration within communities aimed at bolstering resilience in the absence of authoritative interventions.
- 3) To propose and evaluate frameworks for the integration of human security principles into community resilience efforts, specifically within the context of the Sendai Framework.

### 3. Materials and Methods

This qualitative research delved into the dynamics of community-based disaster management in Mon State, Myanmar, focusing on flooded areas across ten townships. The study was conducted from December 2023 to February 2024 and employed a purposive sampling technique with a sample size of 20 participants. These participants were carefully selected based on their roles in climate-related policy making, disaster risk management, and community mobilization, ensuring a diverse representation of expertise in the field. The research method centered on in-depth interviews with key informants, including ten township rescue team leaders, policymakers, NGO practitioners, local media personnel, community leaders such as the Mon State minister, political party members, policy analysts, legal experts, climate activists, religious leaders, citizen journalists, environmentalists, meteorologists, and schoolteachers. Structured around open-ended questions, the interviews allowed for comprehensive insights, supplemented by follow-up inquiries to explore emerging themes. Additionally, the empirical data underwent meticulous recording, transcription, and translation into English. Thematic analysis utilized a combination of inductive and deductive coding techniques, with a coding master list derived from predefined research questions (deductive codes), to which emerging codes were continually added. Consequently, Dedoose, a qualitative software, was deployed to facilitate systematic and in-depth examination of the qualitative data. In this study, the community served as the unit of analysis, providing a lens through which to understand their collaboration and disaster management practices amidst the absence of centralized authority, thereby contributing to the broader discourse on enhancing community resilience in the face of natural disasters.

### 4. Results and Discussion

#### 4.1 Results

##### 4.1.1 Current State of Community-Based Disaster Management

In exploring the current state of community-based disaster management in flooded areas of Mon State, the interviews shed light on various aspects, from meteorological perspectives to community responses and governmental challenges. Meteorologists played a crucial role in providing early warnings and essential weather information. They emphasized the importance of accurate data collection, training in meteorology, and financial support for equipment to enhance preparedness. A notable concern raised was the need for collective action to address climate change, emphasizing sustainable practices and disaster preparedness at the community level. A meteorologist highlighted the challenges of erroneous forecasts, underscoring the necessity for improved data accuracy and dissemination (“...when the forecast source data has an error, the reporters also make mistakes...”).

The Buddhist monk's interview, as a religious leader, accentuated the community's collaborative efforts amidst challenges. Monks and civil society organizations provided support to disaster-affected individuals, yet limitations in equipment and governmental aid hindered comprehensive relief. Challenges such as inadequate equipment for evacuations during landslides and floods were prominent. The monk underscored the need for community-level preparedness, urging preventive measures like building houses on stilts and avoiding risky terrain. (“When building a house, it is necessary to carefully study and test the natural



disaster that may occur. So, prevention is the best...”). However, the reliance on governmental assistance, coupled with a lack of awareness among the populace, posed significant hurdles.

The interviews with township rescue teams in Mon State, Myanmar, revealed a complex landscape of challenges and efforts in community-based disaster management. The Bilin Township Rescue Team, for instance, noted the annual occurrence of floods and landslides during the rainy season. They highlighted their preventive measures, such as digging drainage ditches, yet expressed a lack of full resilience. Despite the Myanmar Emergency Rescue Association's efforts to provide timely evacuation and aid distribution, they stressed the need for more assistance after disasters. The suggestion for timely construction in affected areas emphasized a desire for proactive measures to mitigate risks (“...a lack of timely assistance...”, “built in a timely manner”).

Similar concerns were echoed by the Ye Rescue Team, which discussed the increased frequency of climate-induced disasters post-2015. They emphasized education and collaboration with Civil Society Organizations (CSOs) for disaster preparedness. However, challenges included technical limitations, community cooperation, and restrictions on movement, especially concerning areas controlled by Ethnic Armed Organizations (EAOs). The need for systematic, collaborative preparation involving authorities, CSOs, NGOs, and the community was emphasized, highlighting the interconnectedness of various stakeholders (“...need local community cooperation...”, “...get prepared systematically and collaboratively...”).

#### *4.1.2 Collaboration and Resilience Amidst Authoritative Absences*

In the absence of authoritative interventions, communities in Mon State showcased resilience through mutual aid and local initiatives, as highlighted in the interviews with the political party representative and citizen journalist. The political party emphasized community collaboration, citing challenges posed by armed conflicts and governmental limitations. They stressed the importance of civil society organizations in providing humanitarian aid and disaster relief. Challenges such as bureaucratic hurdles, misinformation, and village head gatekeeping practices emerged as barriers to effective assistance. Similarly, the citizen journalist reflected on community responses to disasters, emphasizing grassroots efforts and self-organization. Communities mobilized swiftly to aid one another, distributing essential supplies and utilizing monasteries as shelters (“People and organizations come to help each other by distributing food and water”). However, shortcomings in government aid distribution, delayed warnings, and inadequate infrastructure planning were prevalent concerns. The need for improved early warning systems, enhanced emergency response training, and community awareness initiatives was evident.

The Paung Rescue Team discussed their response to climate change-induced disasters, including floods and hill slides. They emphasized their role in evacuations, aid provision, and active cooperation with authorities. Notably, they were a self-funded organization, relying on community donations. This reliance on local support underscored the community's intrinsic motivation to aid itself (“...cooperate with authorities...”, “...self-funded organizations...”). Similarly, the Kyaikmaraw Rescue Team described the yearly floods affecting their village, leading to changes in housing practices and the formation of a social relief association. They stressed the importance of preparation, sacrifice, and trust among teams for effective disaster response. The emphasis on local initiatives, such as diver training and community-led awareness programs, illustrated the grassroots nature of resilience-building efforts (“...Every year we have to prepare...”, “...try and learn on your own...”).

#### *4.1.3 Integrating Human Security Principles for Enhanced Resilience*

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The thematic analysis underscored the potential benefits of integrating human security principles within the Sendai Framework context. The policy analyst emphasized the importance of establishing trust and understanding in disaster response systems (“The main thing is to establish mutual trust and common understanding in disaster response systems”). The climate activist and environmental minister shed light on the impacts of environmental degradation and resource mismanagement on community resilience. Community-based organizations and youth volunteers played crucial roles in disaster preparedness and response, often bridging gaps left by governmental inefficiencies. The climate activist emphasized the importance of community-led disaster risk reduction efforts, advocating for collaborative planning and resource allocation. The environmentalist called for CSOs to provide first aid training and WASH awareness, emphasizing the importance of health and well-being in disaster preparedness. This aligns with human security principles, which prioritize the protection of individuals and communities.

Conversely, the environmental minister highlighted the ecological consequences of deforestation and unsustainable land use practices, particularly in rubber plantations. The need for reforestation, sustainable resource management, and community empowerment through education emerged as key solutions. The legal expert emphasized the necessity of revising laws to align with environmental conservation and community participation. They stressed the importance of bottom-up policymaking, incorporating local voices and knowledge into disaster management frameworks (“Laws should be bottom to top, not top to bottom”). Furthermore, the teacher emphasized the role of education in building resilience, suggesting updates to the curriculum based on international best practices. This aligns with the Sendai Framework's goal of promoting education and knowledge-sharing for disaster risk reduction.

The Mudon Rescue Team, for instance, highlighted the coordination between rescue teams, the Fire Department, and the Disaster Management Department. They discussed drill trainings, meetings, and preparations, yet noted challenges with public compliance and donor support. The call for greater cooperation between the public and government departments underscored the need for a shared responsibility in disaster preparedness (“...lack of cooperation among the public...”, “...lack of cooperation...”). Furthermore, the Thanbyuzayat Rescue Team discussed the vulnerability of coastal communities to yearly storms and floods. They emphasized the need for proactive measures, such as building houses resilient to disasters and listening to weather reports. The impact on livelihoods, such as the salt industry and agriculture, highlighted the interconnectedness of environmental and economic factors in resilience (“...prepare in advance...”, “...preserve the environment...”).

**Table 1:** Thematic Analysis of Community- Based Disaster Resilience Building Interviews

Frequency	Community Emphases	Expressions and Examples
25	Community Solidarity and Cooperation, and Self-help	Instances of community-driven support, including donations, distribution of essentials, grassroots initiatives, volunteerism, and mutual assistance during disasters.
25	Adaptation, and Learning from Disasters	Discussions on adaptive measures, changes in housing practices like stilt houses, and the importance of learning from past disaster experiences.
23	Government, Policy, and Institutional Challenges	Challenges such as limited government resources, governance issues in conflict zones, and the need for increased community involvement in decision-making processes.
17	Community Awareness, Education, and Training	Emphasizes the importance of educating communities on disaster preparedness, sustainable practices, and the role of education and training in building resilience.

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13	Impacts of Disaster on Agriculture, Livelihoods, and Economy	Specific impacts such as crop damage, loss of livelihoods, and the challenges faced by farmers and fishermen during disasters.
8	Environmental Degradation, and Land Use	Discussions on the impact of activities like deforestation and mining on disasters, and the importance of sustainable land use practices.
5	Collaboration, Trust Building, and Social Capital	Highlighting the significance of collaboration, trust, and understanding among community members and stakeholders in disaster management.
5	Role of Early Warning Systems and Meteorological Information	Recognizing the critical role of meteorological information and early warning systems in disaster preparedness.
4	Challenges in Infrastructure and Equipment	Issues such as the lack of proper equipment for rescue operations, especially during floods and landslides, and the need for improved urban infrastructure.
3	Role of Civil Society Organizations (CSOs) and NGOs	Contributions of CSOs and NGOs in providing support, raising awareness, and implementing community-based initiatives.
2	Human Security and Well-being	Emphasis is placed on protecting individuals' health and safety during disasters, including the need for first aid training, WASH awareness, and access to necessities.

Table 1 above presents a thematic analysis of interviews on community-based disaster resilience building. Community solidarity and cooperation, along with self-help, emerge as significant, with 25 instances highlighting grassroots initiatives, volunteerism, and mutual assistance post-disaster, aligning closely with the "Build Back Better" principle, and reflecting the conceptual framework. Adaptation and learning from disasters, emphasized 25 times, underscore the community's adaptive measures, such as changes in housing practices, reflecting the framework's focus on enhancing community resilience. Government, policy, and institutional challenges, discussed 23 times, point to the need for increased community involvement and resources, resonating with the framework's call for local engagement. Other themes, such as community awareness, education, and training (17), impacts on agriculture, livelihoods, and the economy (13), and environmental degradation and land use (8), demonstrate the breadth of issues addressed within the framework's holistic approach. Additionally, themes like collaboration, trust building, and social capital (5) and the role of early warning systems and meteorological information (5) illustrate the interconnectedness and multi-faceted nature of disaster risk reduction efforts, as envisioned by the Sendai Framework. The thematic analysis also highlights the roles of Civil Society Organizations (CSOs) and Non-governmental Organizations (NGOs) (3), human security and well-being (2), and challenges in infrastructure and equipment (4), all contributing to a nuanced understanding of community-based disaster resilience building within the conceptual framework's guiding principles.

#### 4.2 Discussion

The research findings on community-based disaster management in Mon State, Myanmar, offer a multifaceted understanding of the challenges and efforts within this field. The study illuminates various perspectives on resilience, human security, and the implementation of the Sendai Framework for Disaster Risk Reduction (SFDRR). Through a critical lens, considering the theories discussed in the literature review, the results reveal both successes and areas for improvement.

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Starting with the meteorologists' insights, their emphasis on accurate data collection and training resonates with the Human Security principles of "freedom from fear" and "freedom from want" (Ogata & Sen, 2003). However, the challenges they face with erroneous forecasts also point to the need for more robust systems, aligning with Brauch's emphasis on "freedom from hazard impact" (2005). The importance of collective action to address climate change reflects the interconnectedness highlighted by the Commission on Human Security (2003), emphasizing the need for collaborative efforts beyond individual disciplines or sectors. Furthermore, the interviews with the Buddhist monk and civil society organizations underscore the community's role in disaster response, echoing the Human Security principle of "freedom to live in dignity" (Annan, 2005). Their emphasis on preventive measures and local-level preparedness speaks to the localized approach advocated by Atienza (2015) and Pulhin et al. (2021). However, the limitations in governmental aid point to a gap in the SFDRR's implementation at the local level, where communities often bear the brunt of disaster impacts.

The discussions with township rescue teams further highlight the complexities of community-based disaster management. Their emphasis on preventive measures and timely construction aligns with the resilience-building principles of diversity and learning (Biggs et al., 2015). However, the challenges they face in full resilience and the need for more assistance post-disaster point to potential gaps in the integration of Human Security Principles within the SFDRR (UNISDR, 2015). Additionally, the interviews with the political party representative and citizen journalist shed light on community resilience through mutual aid and local initiatives. Their emphasis on grassroots efforts resonates with the principles of empowerment and community agency highlighted by the Commission on Human Security (2003). However, the bureaucratic hurdles and lack of infrastructure planning they mention point to the challenges in translating these principles into actionable policies, as noted by Shaw et al. (2021).

The reliance on self-funded rescue teams, as seen with the Paung and Kyaikmaraw teams, showcases the community's intrinsic motivation and resilience. Their emphasis on local initiatives and collaborative preparation aligns with the SFDRR's "people-centered approach" (UNISDR, 2015) and the principles of community resilience (Holling, 1973). However, the challenges they face in terms of technical limitations and restrictions on movement highlight the need for a more inclusive approach that considers diverse contexts, as emphasized by the Commission on Human Security (2003).

The thematic analysis further reinforces the potential benefits of integrating Human Security Principles within the Sendai Framework context. The emphasis on trust and understanding in disaster response systems aligns with the Commission on Human Security's call for a people-centered approach (2003). The focus on community-led initiatives and resource allocation resonates with the SFDRR's emphasis on local implementation (UNISDR, 2015). Conversely, the environmental consequences highlighted by the environmental minister point to the need for a more holistic approach to resilience that considers ecological sustainability alongside human well-being. The call for bottom-up policymaking and education aligns with the principles of community empowerment and capacity-building (Commission on Human Security, 2003; UNISDR, 2015).

## 5. Conclusion

The findings of this study on community-based disaster management in Mon State, Myanmar, underscore the potential benefits of integrating Human Security Principles within the framework of the Sendai Framework for Disaster Risk Reduction (SFDRR). Through a multifaceted analysis of various perspectives on resilience, human security, and disaster response, the study reveals both successes and areas for improvement. The thematic analysis illuminates the critical role of trust and understanding in disaster response systems, as emphasized by policy analysts and community stakeholders. Community-based





organizations and youth volunteers have demonstrated crucial roles in bridging gaps left by governmental inefficiencies, highlighting the importance of grassroots initiatives in disaster preparedness and response.

Environmental degradation, unsustainable land use practices, and the vulnerability of coastal communities further underscore the interconnectedness of environmental and economic factors in resilience. Calls for reforestation, sustainable resource management, and bottom-up policymaking align with Human Security Principles that prioritize the protection of individuals and communities. The study also sheds light on the challenges faced by rescue teams, political representatives, and citizen journalists, emphasizing the need for more inclusive and collaborative approaches to disaster management. While local initiatives and community resilience are evident, bureaucratic hurdles and technical limitations pose significant obstacles.

Moving forward, the integration of Human Security Principles within the SFDRR framework is essential for enhancing resilience at both the local and national levels in Myanmar, particularly in vulnerable states like Mon. A comprehensive, people-centric, and context-specific approach, focusing on prevention and capacity-building, is necessary. This includes empowering local communities, strengthening early warning systems, and fostering cross-sectoral collaboration.

Policy recommendations should prioritize increased budgetary provisions for disaster risk reduction at the local level, alongside demands for strengthened international cooperation from the central government and the international climate community. By embodying the Principles of Human Security and a bottom-up empowerment approach, Myanmar can significantly improve its resilience, ensure human security, and mitigate the impacts of frequent and extreme climatic events in vulnerable regions like Mon State. Further research in this area should explore the effectiveness of these proposed measures and their impact on enhancing community resilience and well-being.

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