COMMUNITY-BASED DISASTER RESILIENCE IN VULNERABLE AREAS: A CASE STUDY OF MON STATE, REPUBLIC OF THE UNION OF MYANMAR

SIKE CHAN

MASTER OF ARTS

IN

INTERNATIONAL DEVELOPMENT

SCHOOL OF SOCIAL INNOVATION

MAE FAH LUANG UNIVERSITY

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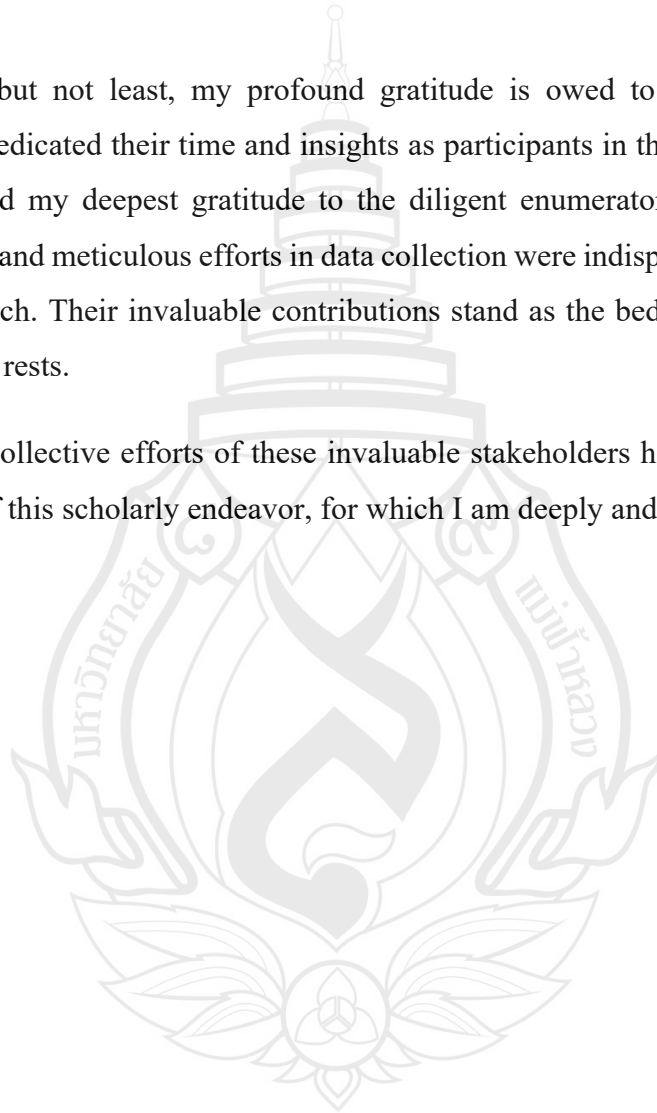
Thesis Title   Community-based Disaster Resilience in Vulnerable
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ABSTRACT

This thesis examines the challenges and dynamics of disaster management in Mon State, Myanmar, emphasizing the integration of human security within local disaster resilience frameworks. By utilizing a qualitative research approach, including in-depth interviews across ten townships, the study uncovers significant disparities in disaster preparedness and the varying effectiveness of institutional frameworks. The Disaster Management Law of 2013 and subsequent policies are scrutinized for their emergency response focus, with critiques highlighting a lack of proactive risk reduction and inadequate engagement with vulnerable demographics and Civil Society Organizations. The analysis reveals a notable reliance on local and informal networks, which, despite governmental shortcomings, facilitate community mobilization and grassroots disaster response efforts. These local networks underscore the community's resilience, particularly in compensating for the gaps left by formal mechanisms amid ongoing military conflicts and political instability. The empirical findings advocate for a polycentric approach to disaster management, aligning with the Sendai Framework to enhance community-based resilience strategies. This approach is supported by the theoretical discourse, which transitions from a state-centric view of security to a more inclusive framework that considers the interdependencies of various security

dimensions, including economic, environmental, and personal security. The thesis concludes with recommendations for a more integrative and adaptive disaster management framework that leverages local insights, prioritizes human security, and fosters comprehensive resilience-building, aiming to bridge the gap between high-level policy formulations and effective grassroots implementation.

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ABBREVIATIONS AND SYMBOLS

CBOs	Community-based Organizations
CSOs	Civil Society Organizations
DDM	Department of Disaster Management
DDR	Disaster Risk Reduction
DRM	Disaster Risk Management
EAOs	Ethnic Armed Organizations
EROs	Ethnic Resistance Organizations
GAD	General Administration Department
GECHS	Global Environmental Change and Human Security
GGDP	Global Gross Domestic Product
HDR	Human Development Report
INGOs	International Non-governmental Organizations
IPCC	Intergovernmental Panel on Climate Change
JICA	Japan International Cooperation Agency
KNDO	Karen National Defense Organization
KNU	Karen National Union
LDCs	Least Developed Countries
LNGOs	Local Non-governmental Organizations
MAPDRR	Myanmar Action Plan on Disaster Risk Reduction
MENA	Middle East and North Africa
MHEWSs	Multi-hazard Early Warning Systems
MoSWRR	Ministry of Social Welfare, Relief, and Resettlement
MSFC	Mon State Federal Council
MSRF	Mon State Revolutionary Force
NDMC	National Disaster Management Committee
NGOs	Non-governmental Organizations

ABBREVIATIONS AND SYMBOLS (continued)

NMSP	New Mon State Party
PPP	Public-Private Partnership
S&R	Search and Rescue Team, also known as Rescue Team
SDGs	Sustainable Development Goals
SFDRR	Sendai Framework for Disaster Risk Reduction
SIDS	Small Island Developing States
TDMCs	Township Disaster Management Committees
TDMPs	Township Disaster Management Plans
UN	United Nations
UNDP	United Nations Development Programme
UNDRR	United Nations Office for Disaster Risk Reduction
UNGA	United Nations General Assembly
UNISDR	United Nations International Strategy for Disaster Reduction
UNOCHA	United Nations Office for the Coordination of Humanitarian Affairs
UNU-HIS	Institute for Human Security, United Nations University
VT/W	Village Tract or Ward Heads
WASH	Water, Sanitation, and Hygiene

CHAPTER 1

INTRODUCTION

1.1 Introduction

This chapter serves as the gateway to the study, establishing the fundamental context and purpose of the research on disaster management in Mon State. Section 1.2, 'Background of Study', delves into the historical and contextual factors that have shaped current disaster management practices. Section 1.3, 'Statement of Problem', identifies the specific challenges and gaps this research seeks to address. In Section 1.4, 'Rationale of Study', the reasons for choosing this particular area of research are discussed, followed by Section 1.5, 'Research Questions', which outlines the key questions guiding the investigation. Section 1.6, 'Research Objectives', specifies the goals the study intends to achieve. Section 1.7, 'Scope of Study', clarifies the boundaries and focus areas of the research. Section 1.8, 'Significance of Study', highlights the potential impact and contributions of the findings. Finally, Section 1.9, 'Conclusion', summarizes the chapter and transitions into the detailed exploration that follows.

1.2 Background of Study

In recent years, parts of Asia, including Myanmar, have been witnessing a surge in extreme weather events such as cyclones, river flooding, and storm surges, which have escalated into disasters. Myanmar, being highly susceptible to these hazards in the region, ranks among the most vulnerable countries to climate change worldwide (MacLeod et al., 2022). Notably, the Global Climate Risk Index 2021 ranked Myanmar as the 2nd most affected country globally during the period 2000-2019, with an increase

in severe droughts and cyclones occurring more frequently than in the past (The World Bank Group, 2021). Cyclone Nargis, a highly destructive storm in 2008, left a devastating impact, resulting in the loss of 140,000 lives, displacing 880,000 people, and affecting millions due to a 12-foot storm surge. Moreover, seasonal flooding has become a recurrent issue in Myanmar, particularly in Mon state, where river overflows have led to significant damage and loss of life. For instance, Mon State has witnessed the adverse consequences of river overflows, with 175 people affected, 75 fatalities, and over 40 individuals reported missing in 2019 (Tun, 2021; United Nations Office for the Coordination of Humanitarian Affairs, 2019).

Geographically, Mon state shares borders with Bago Division to the south of Sittaung River Mouth, Kayin State to the east, Thailand and Tanintharyi Division to the south, and the Andaman Sea and Gulf of Mottama to the west. It is naturally bordered by the Dawna Range to the east and boasts a coastline extending 566 kilometers (352 miles) to the west. Notably, a significant portion of Mon state, around 7 out of 10 townships, is situated at an elevation of 50 feet or less, rendering them susceptible to heavy rainfall during the rainy seasons (see Table 1.1 Key Figures of Mon State Exposure to Disaster). Consequently, floods pose a recurring threat to local communities, resulting not only in the loss of lives but also in considerable economic damage (see Figure 1.1 Areas Impacted by the Seasonal Flood in Mon State from 2015 to 2023). Though every township in Mon state is equipped with a Department of Disaster Management that has been operational for nearly seven decades under the direct control of the Ministry of Social Welfare, Relief, and Resettlement, it is crucial to note that only Mawlamyine and Kyaikmayaw townships have currently implemented a localized Disaster Management Plan. This indicates a potential gap in disaster preparedness and management strategies in other townships within Mon state.

Table 1.1 Key Figures of Mon State Exposure to Disaster

Township	Population Density (per Km^2)	Elevation (ft)	Disaster Typology
Mawlamyine	1,322.6	18	Fire, flood
Chaungzon	185.6	15	Landslide, strong wind, fire, lightning strike
Kyaikmayaw	146.5	18	Flood, fire, storm
Mudon	234.0	31	Fire, flood
Thanbyuzayat	207.3	100	Flood, landslide
Ye	133.1	70	Flood, fire, storm
Paung	193.1	24	Fire, wind, flood, landslide
Thaton	170.9	71.6	Storm, fire, flood, wind
Bilin	83.7	30	Flood
Kyaikto	194.9	35	Fire, flood, wind, landslide

Source Department of Population (2015) and General Administration Department (2019)
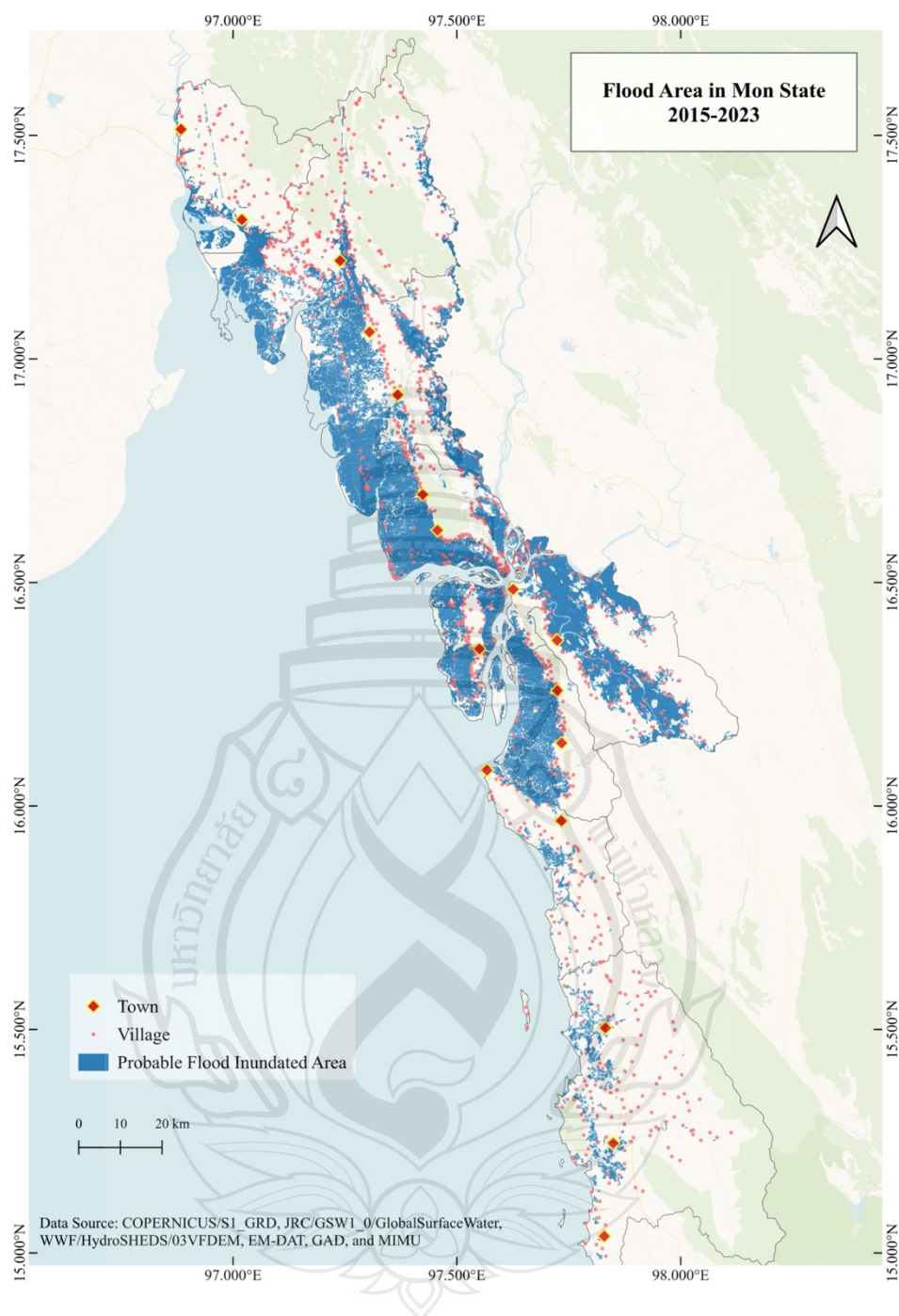
Figure 1.1 Areas Impacted by the Seasonal Flood in Mon State from 2015 to 2023

1.3 Statement of Problem

Considering the escalating frequency and intensity of natural disasters in Myanmar, particularly in Mon state, it is imperative to explore and understand the existing disaster management arrangements and their effectiveness in mitigating the impact of such hazards. Investigating the localized Disaster Management Plan in Mawlamyine township can offer valuable insights into effective disaster resilience practices that can be replicated in other townships. By comprehensively assessing the institutional arrangements, policies, and practices in disaster risk reduction and management, this research aims to contribute to disaster governance and foster more resilient communities, especially in the face of increasing climate-related threats. Understanding the dynamics of disaster management efforts in Mon state is pivotal for formulating evidence-based strategies that can better safeguard vulnerable populations and minimize the adverse consequences of disasters.

Additionally, since the military takeover, Mon State experienced escalated conflict and violence, resulting in significant civilian displacement and casualties. In the northern and southern regions, notably Kyaik-hto, Ye, and Thanbyuzayat Townships, clashes between the military junta and various ethnic armed organizations, including the Karen National Defense Organization (KNDO), Karen National Union (KNU) and the Mon State Revolutionary Force (MSRF), forced approximately 7,000 to 7,500 residents to flee their homes (Department of Humanitarian and Rescue, 2024). The Human Rights Foundation of Monland (2024) documented extensive human rights abuses across southeastern Myanmar including Mon States by the end of January 2024, with large numbers of arrests, injuries, and deaths since the military coup. This situation has triggered a critical need for food and shelter among the displaced populations, with restricted movement in conflict zones further complicating access to essential resources and safety for civilians. The ongoing conflict and the military's disregard for International Humanitarian Law continue to result in a higher toll on civilians compared to combatants, highlighting the urgent humanitarian crisis unfolding in Mon State and its surrounding areas (Department of Humanitarian and Rescue, 2024).

1.4 Rationale of Study

The growing complexity of contemporary disaster risks, primarily fueled by globalization, has underscored the pressing need for effective Disaster Risk Reduction (DRR) policies worldwide. In response to this challenge, the Sendai Framework for Disaster Risk Reduction (SFDRR) emerged as a comprehensive global initiative (Aitsi-Selmi et al., 2015; Faivre et al., 2018; Kelman, 2015). Nevertheless, despite its adoption in various nations, including Myanmar, there remains a conspicuous gap in academic discourse concerning the full implementation and impact of SFDRR, particularly at the local level in regions like Mon State (Dube, 2020; Goniewicz & Burkle Jr, 2019; Maly, 2018). This research addresses this critical knowledge gap, focusing on the necessity of adopting a bottom-up approach to disaster management, emphasizing community resilience, especially among vulnerable segments of society.

A significant novel aspect of this study is the integration of Human Security principles with the Sendai Framework, forging a unique linkage that has thus far received limited attention in scholarly circles. The synergy between Human Security, which prioritizes the protection of individuals and communities from various threats, and SFDRR, which seeks to reduce disaster risk and enhance resilience, presents a promising avenue for comprehensive disaster management strategies. This research aims to explore this novel linkage and its potential implications for disaster governance. Despite increasing scholarly attention to case studies on integrating Human Security principles within the Sendai Framework, most focus has been on countries in the Middle East and North Africa (MENA) region and Small Island Developing States (SIDS). There is a noticeable lack of case studies in conflict-affected Least Developed Countries (LDCs), particularly Myanmar. This research addresses this gap both theoretically and empirically by providing a comprehensive case study.

Furthermore, the study's uniqueness lies in its investigation of community resilience efforts in the absence of central authority. Myanmar, characterized by a complex political landscape and governance challenges, presents a distinctive context for disaster resilience research. This research delves into the dynamics of community-driven disaster resilience initiatives, particularly concerning vulnerable populations, in

a context where central authority may be limited or unreliable. By doing so, it seeks to provide valuable insights into the development of effective and locally relevant disaster resilience strategies, thereby contributing to the broader discourse on disaster governance.

1.5 Research Questions

The primary research questions explored in this thesis are,

1.5.1 What is the current state of community-based disaster management in vulnerable areas of Mon State, Republic of the Union of Myanmar regarding natural disasters as community insecurity?

1.5.2 How do communities collaborate to enhance their resilience in the absence of authoritative interventions concerning community-based disaster management in vulnerable areas of Mon State, Republic of the Union of Myanmar?

1.5.3 How can a more robust integration of human security principles enhance the effectiveness of community resilience efforts within the context of the Sendai Framework?

1.6 Research Objectives

This research aims to achieve three primary objectives,

1.6.1 To study the situation and community-based disaster management in vulnerable areas of Mon State, Republic of the Union of Myanmar

1.6.2 To study plans and policies on community-based disaster resilience in vulnerable areas of Mon State, Republic of the Union of Myanmar

1.6.3 To study problems, threats, and policy recommendations regarding community-based disaster management in vulnerable areas of Mon State, Republic of the Union of Myanmar

1.7 Scope of Study

The scope of this study encompasses a thorough examination of institutional arrangements, encompassing laws, policies, and plans at both union and state levels, and their practical implementation at the local level within the timeframe of 2021 to 2023. Particular emphasis is placed on assessing the resilience of the local community in Mon State, Myanmar, and their capacity to cope with various disasters. Of particular interest are vulnerable groups, such as women, children, and the elderly, who are at heightened risk during disasters.

1.8 Significance of Study

The significance of this study lies in its potential to illuminate existing efforts and recommend strategies for enhancing disaster resilience, thereby making a meaningful contribution to the field of disaster risk reduction and community resilience. Through its investigation and recommendations, this research aims to provide valuable guidance to stakeholders, policymakers, and practitioners, enabling them to develop and implement more effective strategies aimed at safeguarding and empowering vulnerable communities in the face of potential disasters. By delving into the institutional framework and community-level dynamics, the study seeks to assess the effectiveness and adequacy of disaster management practices and identify areas for improvement, ultimately fostering enhanced community resilience. This research endeavors to offer valuable insights to policymakers and stakeholders, facilitating evidence-based decision-making and the design of targeted interventions to protect vulnerable populations and bolster overall disaster resilience within the region.

1.9 Conclusion

This chapter has elucidated the multifaceted and pressing challenges faced by Mon State, Myanmar, in the context of natural disasters and escalating conflict. It

highlighted the State heightened vulnerability to climate-induced hazards, particularly the recurring extreme weather events such as cyclones and floods, which disproportionately impact the region due to its geographical and topographical characteristics. The local disaster management infrastructure, though longstanding, exhibits significant disparities in preparedness across townships, with only a few having robust disaster management plans. This gap underscores a critical need for enhanced governance and strategic frameworks capable of mitigating disaster impacts effectively. The intensification of military conflicts post-coup has compounded these vulnerabilities, had displaced thousands and exacerbated humanitarian needs. This scenario presents a compelling case for adopting a bottom-up approach in disaster management that integrates human security principles with the Sendai Framework to build resilience at the community level, especially among the most vulnerable populations.
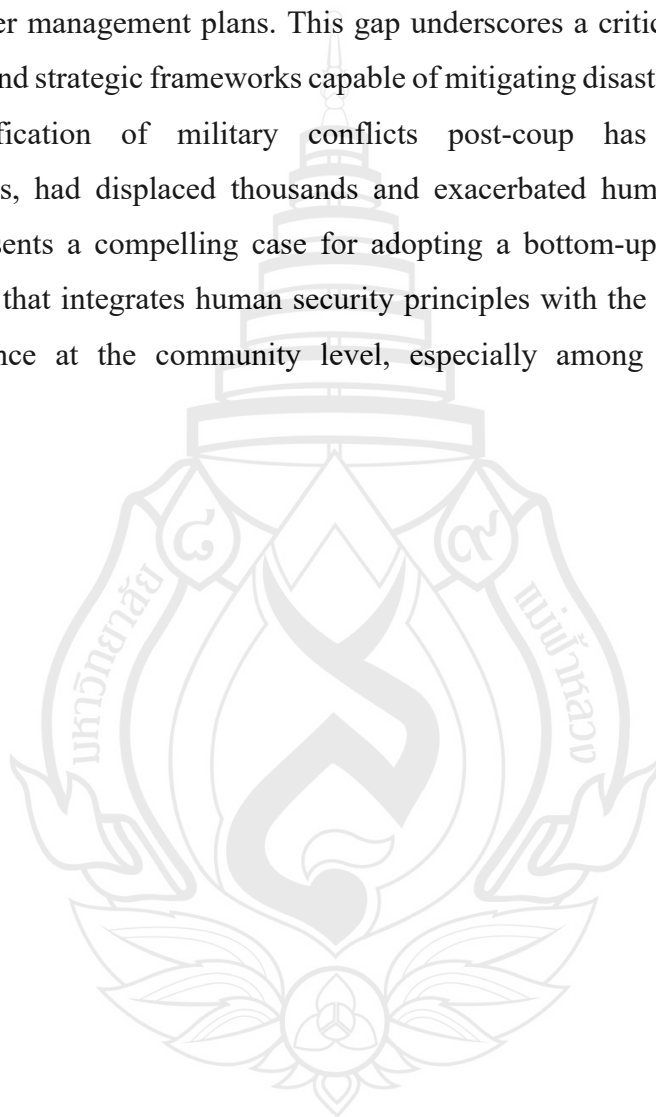
CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

This chapter provides a comprehensive examination of the theoretical underpinnings that inform the study of disaster management in the context of human security. Section 2.2 delves into the relationship between 'Human Security and Disaster', unpacking the concepts of disaster and vulnerability to understand how they impact human security. This discussion expands in Section 2.3, 'Human Security and Community Resilience', which explores the dynamics within communities that contribute to resilience, including a detailed look at community resilience as a standalone concept. The analysis continues in Section 2.4, where the focus shifts to 'Human Security and the Sendai Framework for Disaster Risk Reduction 2015-2030', highlighting the framework's approach to polycentricity and identifying existing research gaps. This chapter further refines these ideas in Section 2.5, 'Conceptualization', before summarizing the key findings in Section 2.6 and proposing theoretical propositions in Section 2.7.

2.2 Human Security and Disaster

Throughout the last two decades, the concept of "human security" has morphed significantly since it was coined by the UN Development Programme in its 1994 Human Development Report (HDR) (United Nations Development Programme, 1994). Conventionally, security was often perceived in terms of safeguarding national borders, but the HDR introduced a broader perspective, emphasizing the importance of individual and community safety. This shift in focus has led to a reevaluation of security

paradigms, transcending traditional notions of security centered on the protection of state interests (MacFarlane & Khong, 2006). Consequently, scholars and practitioners have increasingly contested and expanded the meaning of security to encompass diverse dimensions (Snyder, 2008). Further, human security encompasses far more than just military and economic security and is concerned with human development and well-being (King & Murray, 2001). The security perspective of Jorge Nef (1999) consists of five dimensions: ecology, economics, society, politics, and culture. Although these dimensions are interconnected, they nonetheless represent different aspects of security. This holistic approach underscores the importance of addressing not only physical security but also social, environmental, and cultural dimensions (Alkire, 2003).

Human security is conceptualized as a multidimensional framework aimed at safeguarding individuals and communities from various threats, both chronic and sudden (UNDP, 1994). The HDR emphasized four key attributes of human security: universality, centrality to individuals, interdependence, and proactive prevention. Additionally, it delineated seven interrelated dimensions of security: economic, food, health, environmental, personal, community, and political (see Table 2.1 The Seven Elements of Human Security).

The Commission on Human Security (2003) has delineated five fundamental tenets that underscore the significance of human security. Firstly, it emphasizes a people-centered approach, where the welfare and well-being of individuals take precedence. Secondly, it advocates for seamless integration with human development and human rights frameworks, recognizing the interdependent nature of these aspects. Thirdly, the concept of human security encompasses a comprehensive spectrum of threats, acknowledging the multifaceted nature of challenges faced by individuals. Fourthly, it involves the active participation of diverse stakeholders beyond the purview of the government, signifying the collective responsibility in ensuring human security. Lastly, it proposes a bi-modal strategy that amalgamates protection from higher authorities with empowerment initiatives from grassroots levels, thereby fostering a holistic and inclusive approach to human security.

Table 2.1 The Seven Elements of Human Security

No.	Security Element	Definition
1.	Economic Security	Achieving a basic level of economic well-being
2.	Food Security	Assuring the physical and economic accessibility of food
3.	Health Security	Providing minimum protection against diseases and unhealthy lifestyles
4.	Environmental Security	Protecting the environment from short- and long-term degradation
5.	Personal Security	Providing physical protection against violence
6.	Community Security	Preserving traditional relationships and values and the preventing violence between sects and ethnic groups
7.	Political Security	Providing fundamental human rights protection for all

Source UNDP Human Development Report (1994)

In 2003, the Human Security Commission identified two fundamental dimensions of human Security (Ogata & Sen, 2003). The first pertains to the concept of "freedom from fear", which revolves around the mitigation of violence, as eloquently advocated by Sadako Ogata (see Figure 2.1 Four Dimensions of Human Security). The second-dimension concerns "freedom from want", which addresses the alleviation of poverty, as aptly articulated by Amartya Sen. These pillars collectively underscore the core principles of Human Security, encompassing both protection from threats to personal safety and the eradication of socio-economic deprivation. "Freedom from fear" entails protection from violence and the denial of civil liberties, while "freedom from want" addresses the fulfillment of basic needs such as a balanced diet, adequate housing, and decent jobs (Kumssa & Jones, 2010).

In 2005, the UN Secretary-General, Kofi Annan (2005), introduced a third element to the conceptualization of human security, aimed at better encompassing contemporary issues - the "freedom to live in dignity", with a particular focus on addressing insecurity arising from experiences of humiliation. Subsequently, a fourth

pillar of human security, referred to as "freedom from hazard impact", gained prominence in the context of enhancing community resilience in the face of environmental challenges. This pillar was advocated by Brauch (2005), and associated with the GECHS (Global Environmental Change and Human Security) and the Institute for Human Security at the United Nations University (UNU-IHS). Notably, this dimension emphasizes the relevance of human security in comprehending vulnerability resulting from factors such as poverty, disease, and limited economic opportunities stemming from weak governance and underdeveloped infrastructure, as documented in the UNGA (United Nations General Assembly) report of 2004.
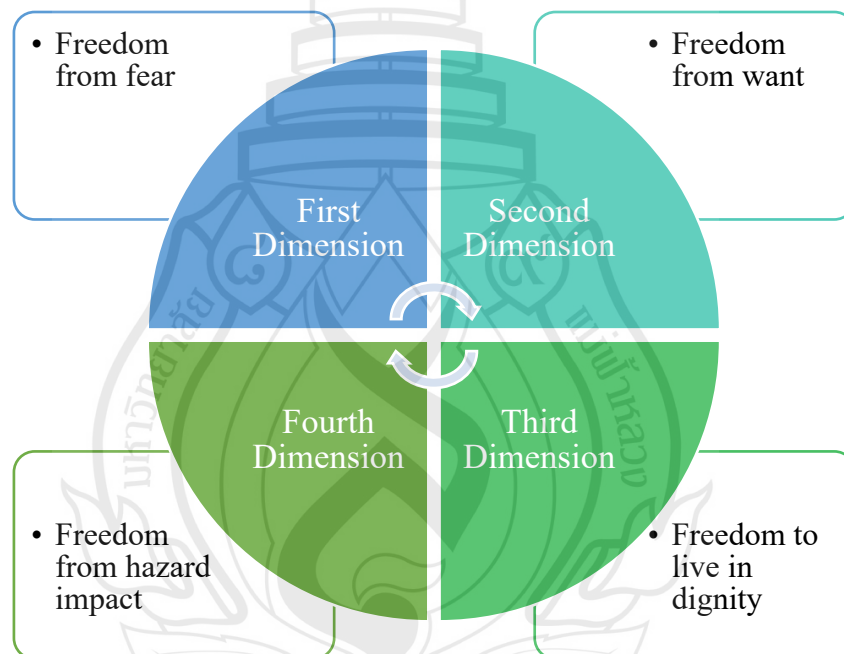
Source Ogata and Sen (2003), Annan (2005) and Brauch (2005)

Figure 2.1 Four Dimensions of Human Security

Human security, as delineated by Howe (2012), represents a multifaceted paradigm that transcends disciplinary boundaries, drawing insights from diverse fields such as strategic and security studies, development studies, human rights, international

relations, and the study of international organizations. This interdisciplinary approach converges on the fundamental concept of protection, emphasizing the need to address global vulnerabilities at the level of individual human beings. Werthes et al. (2011) contribute to this discourse by highlighting the importance of assessing human security as a policy outcome, particularly within the scopes of fiduciary duties, prevention, response, and reconstruction. Their analysis reveals a notable strength in policy development concerning the responsibility to act but identifies deficiencies in prevention and rebuilding efforts. Despite these challenges, there is growing recognition of human security as both a framework for policy and an outcome of the policy, evidenced by the increasing involvement of civil society organizations and governments in designing programs and incorporating human security principles into development strategies, both domestically and internationally.

To further promote the implementation of human security principles, the Japan International Cooperation Agency (JICA) has developed the Seven Perspectives on Human Security (Shinichi et al., 2022). These perspectives serve as a guiding framework, emphasizing key principles such as a people-centered approach, empowerment, vulnerability focus, comprehensive addressing of freedom from want and fear, flexible and inter-sectoral threat assessment and response, collaboration with government and local communities, and strengthening partnerships for assistance impact maximization. "Human Security 2.0", a JICA initiative launched in 2019, emphasizes three critical points: ensuring that people's lives, livelihoods, and dignity are safeguarded; empowering individuals, organizations, and societies to realize their potential; and fostering resilience to diverse threats (JICA, 2019). This approach advocates for a synergistic combination of top-down protection efforts by the state and bottom-up empowerment initiatives by civil society and individuals, aiming to create a resilient system and society capable of addressing contemporary challenges effectively.

In the realm of security, a shift of focus is imperative, directing our attention toward the intricate interplay of fortifying and empowering a community. One of the sub-concepts, community security, encompasses endeavors dedicated to shielding, reinforcing, and nurturing the welfare of a localized collective amidst a backdrop of adversities. This comprehensive approach inherently entails adept disaster

preparedness and efficient response mechanisms. In the words of the United Nations Development Program, community security represents the convergence of human security, human development, and state-building approaches, strategically implemented at the grassroots (UNDP, 2018). A modern instantiation of community security, when circumscribed to a narrower context, envelops not only the safeguarding of collective well-being but also the individual sphere of protection. The core tenet of this paradigmatic approach resides in the meticulous assurance of emancipating communities and their constituents from the shackles of trepidation. However, a more comprehensive rendition of the contemporary definition encompasses a broader spectrum of societal concerns, underscoring the imperative to ensure a state of liberation from deprivation. Analogous to the paradigms of community safety and citizen security, it fervently advocates an inclusive, multi-pronged framework, meticulously curated through an astute analysis of localized requisites.

According to Otani (2014), the aftermath of the Hanshin-Awaji Earthquake highlights the risks inherent in policies exclusively targeting vulnerable individuals, neglecting the vital aspect of community security. Human existence's intrinsic connection to communal frameworks necessitates a comprehensive approach, as intricate interdependencies shape disaster response and recovery within each distinct community. To counter the specter of social isolation, post-disaster considerations must prioritize community security, encompassing not only the provision of residences but also the deliberate design of spaces fostering interaction and shared identity. Rooted in recovery and resilience, community security's essence lies in establishing a cohesive societal unit, an anchor for rehabilitation that demands sustained efforts from the immediate emergency response onward. Moreover, the elderly's experience reveals robust social networks in shelters, a testament to deep-rooted connections developed within pre-disaster local communities. Initiatives addressing community insecurity hinge on facilitating the accumulation of social capital, nurturing trust, cooperation, and shared endeavors to heighten community security. The focus on the elderly underscores community security's significance in post-disaster settings, fortifying collective well-being and resilience, underscoring its enduring relevance across the entire trajectory.

2.2.1 Disaster

The occurrence of disasters is a serious threat to human security, as they undermine human economic and social foundations, thereby affecting the survival of the human race (Yamada, 2015). As defined by Barnett (2003), security refers to the state of being protected from or not being exposed to danger, emphasizing the importance of ensuring the safety of individuals and communities. The impact of natural disasters on human security is profound, as they undermine access to livelihoods, clean water, food, property, homes, health care, and education Intergovernmental Panel on Climate Change, 2014; Rüttinger et al., 2015). In addition, climate change's pervasive effects are widely recognized as a threat multiplier for disasters (Huntjens & Nachbar, 2015). A continuation of climate change could progressively undermine livelihoods, posing a threat to human security (Intergovernmental Panel on Climate Change, 2014).

According to Tanaka (2019), threats to human security can be categorized into three main types: threats to survival, well-being, and dignity, which can originate from physical, living, and social systems. Survival threats include natural disasters, diseases, and social violence. Well-being threats encompass economic impacts, environmental degradation, and governance failures. Dignity threats involve discrimination, social exclusion, and psychological trauma from physical and living systems' events. Tanaka argues that threats to human security can originate from all three systems, interact with each other, and amplify each other (see Figure 2.2 Threats to Human Security). Therefore, promoting human security requires a comprehensive understanding of threats. The causes of human insecurity are rooted in these systems, with physical hazards often exacerbated by human and ecological interactions, while social and political instability, economic mismanagement, and structural inequalities further compound the risks (see Figure 2.3 Causes of Human Insecurity). Addressing these threats requires understanding the complex interplay of natural, social, and economic factors that influence human security. Moreover, cooperation between diverse actors is also essential, such as states, international organizations, the private sector, and civil society organizations.

Source Tanaka (2019)

Figure 2.2 Threats to Human Security

Physical System
- Natural hazards due to geological, geographical, and climatic dynamics
- Interaction with Living System (e.g., diseases post-disasters)
- Impact of resource endowment and climate change

Living System
- Pandemics and epidemics
- Ecosystem changes affecting agriculture and forestry

Social System
- **Social Setti**ng as such ethnic composition, social capital, horizontal inequalities
- **Political Setting** such as crime, violence, anarchy
- **Economic Setting** such as policy mistakes, development, global economic system

Source Tanaka (2019)

Figure 2.3 Causes of Human Insecurity

According to the International Strategy for Disaster Reduction (United Nations International Strategy for Disaster Reduction, 2009), a disaster is characterized as a profound disruption of a community's functioning, giving rise to extensive human, material, economic, or environmental losses, which surpass the community's inherent capacity to cope using its available resources. In academic discourse, the concept of disaster has been subject to diverse interpretations. According to Fritz's perspective, a disaster is characterized as an event that occurs within a concentrated time and space, wherein a society or a relatively self-sufficient subdivision of society confronts grave peril, leading to significant losses in terms of its members and physical assets. Consequently, the social structure experiences a disruption, impeding the fulfillment of essential societal functions (Fritz, 1960). A similar view of disaster is presented by

Quarantelli (1985), those who view disaster as a temporal and spatial phenomenon marked by the inability of a society or community to carry out all or some of its social functions due to natural or technological catastrophes. Importantly, these consequences surpass the knowledge and capacity of the society or community to effectively manage the situation.

The Sendai Framework for Disaster Risk Reduction 2015-2030 (SFDRR 2015-2030) elaborates on the following discourse of disaster (UNGA, 2016): Small-scale disasters only affect local communities but require support beyond the affected. Large-scale disasters affect society and require national and/or international support. The frequent or infrequent disaster is categorized by its frequency and likelihood of occurrence as well as its impacts on the affected community or society as a whole. A cumulative or chronic effect can be felt by a community, or even by society as a whole. Disasters with slow onset develop gradually over a prolonged period and are typically related to desertification, drought, epidemics, and sea-level rise. Sudden-onset disasters are triggered by hazard situations such as tornadoes, flash floods, earthquakes, chemical explosions, volcanic eruptions, road traffic accidents, and critical infrastructure failures.

Herbert William Heinrich is credited with introducing the concept of Heinrich's Law, commonly known as the Law of 1:29:300. The principle holds that for every major accident, there are typically 29 minor accidents preceding it and approximately 300 anomalous signs (Heinrich, 1941). In essence, a noticeable accident, which draws attention due to its magnitude, merely represents the visible tip of an iceberg, concealing a myriad of earlier accidents and occurrences that serve as warning signs of an impending disaster. Originally, Heinrich's Law found application in the context of industrial disasters, but its significance has since been extended to encompass a broader spectrum of accidents, disasters, and failures in contemporary society. The 1:29:300 rule holds substantial value in that it establishes a quantitative framework for understanding the evolutionary process of incidents, commencing from minor accidents and culminating in catastrophic events. This rule provides valuable insights into the underlying dynamics and patterns of incidents, enabling a more comprehensive comprehension of their development and escalation.

Heinrich's application of the Domino Theory to disaster scenarios elucidates a sequential "direction of flow" leading to the occurrence of disasters. The interconnectedness and complexity of numerous causative factors ultimately culminate in the manifestation of disasters or accidents. This constitutes a key argument of the Domino Theory, which underscores the progression from causative elements to the resultant human and physical calamities. According to this theory, accidents are likely to occur if there are three pivotal conditions. The first condition involves genetic components or social phenomena that are unfavorable to humans. The second condition arises from flaws caused by the first either inherited or acquired. The third condition is characterized by unsafe actions as well as mechanical and physical aspects. While rectifying the first and second conditions of inherited elements or social environment and human defects poses challenges, Heinrich emphasizes the significance of the third condition. By prioritizing safety education and reinforcing safety mechanisms, the risk stemming from the third condition can be significantly mitigated. Heinrich contends that if the third condition is effectively eliminated, it becomes possible to avert disasters before they materialize (Heinrich, 1941). This highlights the proactive nature of disaster prevention through targeted risk reduction measures, as advocated by the Domino Theory.

The Normal Accident Theory was introduced by Charles Perrow based on empirical observations from the 1979 nuclear accident at Three Mile Island. According to Perrow (1999), a normal accident is an event that occurs as the result of the unforeseeable interaction of multiple failures. Complex, unforeseeable, and inextricable failures are inevitable in high-risk systems. Modern technology and mechanical structures are intrinsically linked to accidents in technologically advanced societies, which are inherently exposed to risk and constitute a normal aspect of life. A chain of malfunctions can arise when one of the interconnected technologies fails to function properly in such elaborate systems, where individual technologies interconnect seamlessly through a feedback loop.

A risk society concept, as proposed by Ulrich Beck, arose during the mid-1980s as a result of structural and deep challenges facing industrial societies, particularly within science and technical safety. In his influential work, "World Risk Society", Beck

contends that contemporary society has transformed into a "risk society", characterized by pervasive risks and hazards. He emphasizes the proliferation of cross-border risks and international perils that transcend the capacities of individual nation-states to address in isolation (Beck, 1996). Moreover, Beck advocates for a comprehensive approach to analyzing industrial society, encompassing social, historical, and technological perspectives (Alexander, 2006). This holistic outlook aims to encompass the multifaceted nature of risks and hazards arising from complex interdependencies within contemporary societies, necessitating a broad and nuanced understanding of the challenges posed by risk society. By embracing this comprehensive perspective, Beck endeavors to offer solutions to the intricate and interrelated issues posed by the modern risk society paradigm.

Pelling (2003) contended that Complexity Theory offers valuable insights for comprehending strategies to cope with disasters. Notably, Complexity Theory features a significant concept known as "emergence", which highlights the unexpected nature of disasters, manifesting with unforeseen causes at unpredictable locations. In Drabek and McEntire's (2003) explanation, "emergence" occurs when individuals form temporary organizations in response to disasters. Accordingly, Beck's Risk Society and Perrow's Normal Accident Theory share a similar understanding with Complexity Theory, which recognizes the intimate relationship between increasing complexity and the emergence of risks. It is therefore imperative to grasp the distinctive characteristics of disasters as well as develop innovative disaster response strategies tailored to the complexities of contemporary society by applying the core tenets of Complexity Theory, including nonlinearity, self-similarity, fractals, self-organization, and emergence. By embracing these fundamental aspects of Complexity Theory, researchers and practitioners gain valuable tools to navigate the intricacies of disaster dynamics and devise effective response strategies suited to the challenges of our modern world.

2.2.2 Vulnerability

The risk of disaster is not caused by natural hazards alone, and they are not the only factors to consider. Affected populations' vulnerability, exposure to these natural hazards, and coping capacities are also critical factors to consider (Pulhin et al., 2021).

For instance, Raut & Meyer (2017) found that poor, marginalized communities, women, and children are the most vulnerable to disasters and the hardest hit when disaster strikes because of a lack of resources, social injustice, power imbalance, and limited opportunities. Climate catastrophes destroy ecosystems through extreme weather events, changes in hydrological cycles, and rising sea levels. Loss of livelihood leads to poverty and a worsening of the situation. In turn, people become starved, deprived of water, deteriorating health conditions, forced migrations, and victims of violence (Cameron, 2011). As a result, it will pose significant threats to the security of individuals, states, and nations as well as to the global security of upcoming centuries (Adger, 2010). Thus, a decrease in livelihoods results in greater vulnerability to shocks and stress as well as a decrease in the ability to prepare, cope, and adapt (DFID, 2004).

Vulnerability is a term that first appeared in disaster discourse during the 1970s. In Taking the naturalness out of natural disasters, O'keefe et al. (1976) argued that natural disasters are more often caused by socioeconomic vulnerabilities than by natural causes. The term vulnerability was first used by mechanical and systems engineers when referring to construction methods such as housing, bridges, and factories (Twigg & Bjatt, 1999). The concept was popularized largely by Timmerman (1981), who made the connection between resilience and vulnerability. As a concept, vulnerability is not based on a well-defined theory, nor is it measured by widely accepted indicators (Watts & Bohle, 1993). Even though vulnerability indicators are in the process of being developed, efforts to develop them have not been coordinated between disaster communities. Despite definitions, the general consensus appears to indicate that vulnerability to disasters is not solely determined by a lack of wealth (Manyena, 2006). Vulnerability arises from a complex range of factors relating to physical, economic, political, and social susceptibility to harm resulting from an interdependent natural (hazard) and anthropogenic pressure.

According to Twigg (2015), vulnerability is a product of economic, social, cultural, institutional, and political that shape people's lives and their surroundings. Wisner et al. (2003) argue that social processes determine who is most vulnerable to hazards as well: their residence and workplace, their building type, their level of preparedness, their knowledge of hazards, their financial status, and their physical well-

being are not attributes of nature in and of itself, but of society as a whole. In the current literature, it has been shown that people in disadvantaged social or political positions, such as ethnic minorities, are more likely to be vulnerable to social problems mainly due to poverty and its symptoms, such as poor access to basic services. However, the research has not been as thorough as it could be. Urban or rural residence is one of the key characteristics of vulnerability (Field et al., 2012; Groppo & Kraehnert, 2017; Hanson et al., 2011).

The factors that affect households and communities go beyond individual choices and have significant correlations with factors such as age at the time of disaster, income and wealth, employment opportunities, and general socioeconomic characteristics. On a national level, climate change poses the greatest threat to developing countries. The poor are disproportionately affected by the degradation of the environment and the loss of its natural protections and other benefits. The poor tend to settle in heavily polluted or degraded environments for economic reasons, and these environments, in many cases, are especially susceptible to the effects of these technical or manmade hazards, such as polluted rivers and landfills, as well as natural hazards like floods or extreme weather.

Like resilience, vulnerability is also a socially constructed concept. Aside from being primarily discussed from the perspective of developing countries, Morrow (1999) argues the American people, such as the poor, the elderly, women-headed households, and recent residents, are also at a greater risk of being affected by disasters. By training residents in search and rescue, emergency communications, first aid, fire suppression, care and shelter, and disaster mental health, Lichterman (2000) asserted the community could become a "resource rather" than a "victim". "Comprehensive vulnerability management" is suggested by McEntire et al. (2002) as a paradigm for understanding and reducing disasters for scholars and practitioners. According to this paradigm, most triggering agents include natural, technological, civil, and biological hazards, functional areas mainly preparedness and response, actors particularly emergency managers and first responders in the public sector, variables mainly physical infrastructures, and disciplines such as sociology and public administration are associated with disaster vulnerability.

In summary, in the evolving discourse on human security, the conceptual shift from traditional state-centric security paradigms to a more inclusive and comprehensive framework is evident. Initially articulated in the 1994 UNDP Human Development Report, human security has broadened beyond military and economic concerns to encompass individual and community safety, underlining the interdependence of security, development, and human rights. This perspective, significantly enriched by further scholarly and practical advancements, acknowledges multiple dimensions of security - economic, food, health, environmental, personal, community, and political - each essential for safeguarding human dignity and well-being. The adoption of multifaceted security frameworks like Jorge Nef's five-dimensional model and the inclusion of proactive, preventive measures reveal an ongoing reevaluation of what constitutes security. Notably, the concepts of "freedom from fear" and "freedom from want", and later "freedom to live in dignity" and "freedom from hazard impacts", reflect an acute awareness of the diverse threats individuals and communities face, from violence and poverty to environmental degradation and disasters. The emphasis on community security, in particular, highlights a critical area where localized resilience-building and inclusive policymaking intersect, pointing towards a security paradigm that values both protective measures and empowerment strategies, acknowledging the complex interplay of global vulnerabilities and local capacities in crafting sustainable, human-centric security strategies.

2.3 Human Security and Community Resilience

In the realm of scholarly discourse, David Chandler (2012) emerges as a prominent figure among the few authors who have successfully integrated the concepts of human security and resilience within a comprehensive conceptual framework. His notable work, dated 2012, delves into an exploration of the merits surrounding military intervention and the Responsibility to Protect (R2P) paradigm in the context of post-conflict scenarios. Chandler critically observes how discourses about human security have been co-opted to rationalize Western involvement in internal conflicts. Significantly, Chandler's perspective on "bottom-up" human security, which correlates

resilience with empowerment, holds particular significance in our understanding. Particularly in the aftermath of disasters or conflicts, the enduring achievement of freedom from fear and want necessitates that communities possess a certain degree of agency and control over their security.

Atienza et al. (2018) contend that the attainment of freedom from fear, and want, and the preservation of human dignity are intricately entwined with the resilience and fortitude exhibited by communities. In essence, human security encompasses safeguarding against a spectrum of threats, ensuring survival, and the capacity to endure shocks and disruptions, while social resilience entails the community's ability to not only absorb but also adapt to such adversities. The confluence of human security and resilience is exemplified when communities effectively adapt to limit their future vulnerability and risk. The process of rehabilitating and enhancing resilience against environmental disasters transcends the mere absence of want at the individual or collective level; it is equally concerned with sustainable freedom from fear. Consequently, an amalgamation of both these facets contributes to the cultivation of social resilience and the fundamental right to live with dignity. Resilience, as a concept, should inherently encompass human security and robust community structures and must be closely associated with the ideals of freedom from want, freedom from fear, and the pursuit of dignified living, both at the individual and collective levels. To advance a more comprehensive understanding, a systematic exploration of the interplay between resilience and the principle of human security holds considerable potential.

In the context of exploring the interplay between community resilience and human security, participants in the Workshop on Community Resilience and Human Security: From Complex Humanitarian Emergencies to Sustainable Peace and Development posited that these two concepts are intrinsically interdependent (RSIS Centre for Non-Traditional Security (NTS) Studies, 2014). Community resilience serves as a protective mechanism, shielding individuals from various hazards, shocks, and anxieties, while simultaneously bolstering their ability to confront and navigate these vulnerabilities. The multi-faceted advancement and fortification of community resilience hold promise in facilitating the realization of human security objectives. Reciprocally, addressing issues of human insecurity can contribute significantly to the

cultivation of community resilience. In situations where a community grapples with insecurity across multiple dimensions, its capacity to effectively absorb and respond to adverse shocks becomes compromised.

The concept of resilience plays a pivotal role in recognizing and harnessing the inherent talents and assets present within peaceful communities, thus endowing them with vital resources to confront crises effectively. By fostering resilience, communities attain a higher level of empowerment, cultivating self-sufficiency that proves invaluable during times of disaster, ultimately leading to an augmented state of human security, even in the face of disruptive events. Moreover, community resilience endeavors to address the consequences and ramifications of disasters, with a particular focus on achieving "freedom from hazard impact". Additionally, when communities develop a profound sense of ownership and engagement with strategies aimed at enhancing security and progress, it further contributes to their overall well-being and stability.

2.3.1 Community

Often, the concept of community can be reduced to merely referring to a specific local geographic location (Cutter, 2016; Kruse et al., 2017; Norris et al., 2008). Despite decades of discussion in the social sciences, disaster risk management (DRM) literature rarely seems to address the complexity of communities (Barrios, 2014; Buggy & McNamara, 2016; Titz et al., 2018). The community can be viewed in many ways: as a local scale of analysis; as a network of actors and interactions (Pauwelussen, 2016; Wilkinson, 1970); as the totality of social structures within a specific location (McManus et al., 2012; Theodori, 2005); as an arena for sharing identity and belonging with others (Kuecker et al., 2011); as a network for specific types of actors, such as professional groups or people attached to places (Cox, 2005; Gurney et al., 2017; Wenger, 2000). In Hunter's model, there are three dimensions: ecological (space and time), social structural (networks and interactions), and symbolic cultural (identities, norms, and values). Further research shows that homogenous (local) communities seldom exist, as power imbalances are inherent in all communities. Moreover, communities change over time and space, as they host different actors, interests, and processes specific to one location as well as those that go beyond that location.

Furthermore, communities are continuously forming and reforming in response to external and internal pressures that threaten the continuation of their existence and function.

Based on general social science literature relevant to DRM and resilience, Räsänen et al. (2020) examine community in three ways: place-based community, interaction-based community, and community of practice and interest. Initially, the community was understood as the aggregate of all the individuals and social structures within a specific geographical region, such as a village, which included the population, organizations, institutions, and authorities inside. Secondly, community refers to networks of interactions between people that focus on informal cooperation and everyday life, as well as civil society organizations. The third concept of community is the community of practice and interest, which refers to networks of specialized and/or professional actors that work together on common activities, envision a shared identity, and align activities toward a shared goal. Study results indicate that interaction-based communities play a more visible role in disaster recovery and response than place-based communities, while professionalized communities appear to dominate.

It has been argued by some scholars including Buggy and McNamara (2016) and Titz et al. (2018) that community-based DRM and climate change adaptation have failed in part because of a simplistic understanding of what community means. Considering a community as a homogenous group of people in a particular location may ignore power dynamics, changing cultural contexts, and root causes of vulnerability. Therefore, defining and conceptualizing a community in the context of disaster resilience is a crucial step.

2.3.2 Resilience

Resilience is a term used originally by engineers, particularly in materials engineering, about structures like bridges and buildings' capability to recover after suffering damage (Zolli & Healy, 2013). This concept was introduced to ecology by Holling (1973) in the 1970s and attracted much attention. During the 1980s and 1990s, it was also used in the humanities and social sciences and calls, for social resilience became more prevalent after the 2000s. As a multidisciplinary concept, there has also been a great deal of progress in the field of disaster resilience. With the United Nations'

(2005) Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters, the word "resilience" became widely used in the field of disasters. The Sendai Framework for Disaster Risk Reduction 2015-2030, the updated version of the Hyogo Framework, further emphasizes the importance of investment in disaster risk reduction in building resilience to disasters (UNISDR, 2015). On top of that, resilience encompasses a variety of subjects, for instance, physical security, business continuity, emergency planning, hazard mitigation, and the ability of the built environment (e.g., facilities, transportation systems, and utilities) to cope with and recover rapidly from disruptive events (McAllister, 2016).

According to Holling (1973), resilience is initially defined as the ability of a system to persist and the system's "ability to absorb change and disturbance and still maintain the same relationships between populations and state variables". Gunderson (2000) later argued that resilience is an adaptive capacity rather than a static property of a system. Having sprung a wide variety of definitions of resilience from multiple disciplines as summarized by Norris et al. (2008), resilience in the context of disasters is defined as

"The ability of a system, community or society exposed to hazards to resist, absorb, accommodate, adapt to, transform and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of essential basic structures and functions through risk management"

(United Nations Office for Disaster Risk Reduction, 2016)

The concept of resilience is socially constructed. Because disaster resilience is not yet a mature science, no definitions, conceptual frameworks, or theoretical frameworks have been established (Jones, 2021; Parker, 2020; Parker et al., 2010; Räsänen et al., 2020; Uscher-Pines et al., 2013). In their study of resilience, the authors conclude that community and disaster resilience describe the intrinsic capacity of a community to resist and recover from disruptions. According to the social-ecological interpretation, thresholds are crucial to societies' ability to adapt to crises.

Recently, researchers Biggs et al. (2015) have isolated the principles necessary to build resilience by identifying the seven most crucial principles: (1) diversity and

redundancy, (2) connectivity, (3) slow variables and feedback, (4) complex adaptive systems thinking, (5) learning, (6) participation, and (7) polycentric governance. Amongst multiple scholars who outline principles of coastal resilience, the most comprehensive theoretical principles are, as suggested by Beatley (2009), comprised of focusing on the long term, avoiding high-risk areas, locating critical infrastructure outside of high-risk areas, utilizing natural resources such as wetlands, decentralizing infrastructure, and planning sustainably.

Griffith (2018), outlined the essential principles of coastal resilience based on his extensive literature reviews: long-term approach, guided development, relocated infrastructure, community approach, diverse approach, cohesive plan, and plan for disasters. To maximize coastal resilience, scholars suggest the use of local hazard mitigation plans, comprehensive plans, zoning, and coastal setbacks from the high tide line, and the use of sea-level rise predictions in planning and community involvement (Schechtman & Brady, 2013).

2.3.3 Community Resilience

The available academic literature concerning community resilience is notably extensive, and it can be broadly categorized into two primary streams. The first stream pertains to community resilience approached from a systems perspective, encompassing aspects like infrastructure and organizational structures. The second stream, on the other hand, adopts an approach centered around community strengths, agency, and self-organization.

In the context of a systems approach, as advocated in the World Economic Forum's 2013 Global Risks Report, the concept of resilience is expounded through the examination of five distinct sub-systems. These sub-systems encompass robustness, which involves the reliability and ability to absorb and endure shocks; redundancy, signifying the presence of surplus capacity in terms of infrastructure and a diverse range of solutions and strategies; and resourcefulness, which pertains to the flexibility exhibited in terms of creativity, innovation, and the capacity for self-organization. Additionally, the approach underscores the significance of response mechanisms that encompass open communication and inclusive participation, along with recovery plans

integrated within a multi-stakeholder process and a responsive regulatory feedback system.

To comprehend the extensive body of literature about community resilience, Norris et al. (2008) have presented a comprehensive framework that conceptualizes community resilience as a dynamic "network of adaptive capacities". This framework encompasses various essential dimensions, namely economic development, information and communication, social capital, and community competence. By adopting this multifaceted approach, the authors emphasize the necessity to complement traditional top-down approaches with bottom-up, community-based approaches to effectively address resilience-building endeavors. Notably, this framework proves to be highly valuable in facilitating comparative analyses of community resilience across different countries or cities, enabling researchers and policymakers to discern patterns and distinctions in the resilience dynamics of various communities.

To summarize, in the scholarly examination of human security and community resilience, the integration of these concepts reveals a deep interconnectedness essential for effective post-crisis recovery and sustainable development. Key figures like David Chandler have critiqued the application of human security narratives in justifying Western interventions, while promoting a bottom-up approach that emphasizes resilience as a form of community empowerment. This perspective aligns with broader discussions where human security is not merely about survival but also involves the capacity of communities to manage and adapt to various threats, thus enhancing their resilience. The literature consistently supports the notion that community resilience acts as both a protective buffer against immediate crises and a foundational element for achieving lasting human security. Furthermore, resilience in this context transcends the individual or isolated community efforts; it requires a systemic approach that encompasses economic, social, and infrastructural dimensions, promoting a dynamic and adaptive capacity within communities. Such approaches encourage communities to not only respond to but also anticipate and transform in the face of adversities, thereby fostering environments where human security and resilience are interdependent and

mutually reinforcing. This holistic view is crucial for formulating strategies that address the multifaceted challenges communities face in maintaining security and resilience.

2.4 Human Security and Sendai Framework for Disaster Risk Reduction 2015-2030

Given the perpetual and imminent threat posed by disasters in numerous countries worldwide, proactive anticipation, meticulous planning, and comprehensive reduction of disaster risk have become imperative and urgent imperatives. The Hyogo Framework for Action (HFA) 2005-2015 emphasized the imperative of constructing resilient nations and communities to mitigate the loss of lives and assets across social, economic, and environmental domains (UNISDR, 2005). This framework, established at the 2005 UN World Conference on Disaster Reduction, advocated for the engagement of various stakeholders in Disaster Risk Reduction (DRR) efforts and underscored the significance of community-level involvement to foster self-reliance and resilience (UNISDR, 2005). Following the HFA, the Sendai Framework for Disaster Risk Reduction (SFDRR) emerged as its successor, envisioning a 15-year, voluntary, and non-binding commitment involving states and other stakeholders (Aitsi-Selmi et al., 2015). The SFDRR entrusts the primary responsibility of disaster risk reduction to states, with other stakeholders sharing the duty to achieve significant reductions in disaster risk and associated losses (Aitsi-Selmi et al., 2015). Political intervention is essential for implementing this framework, aligning it with national and local plans to foster resilience and security in regions susceptible to disasters.

The SFDRR places a strong emphasis on human security, aiming to reduce disaster risk and safeguard lives, livelihoods, and assets (UNISDR, 2015). It highlights synergies among global frameworks and initiatives and emphasizes local implementation to overcome institutional barriers. The SFDRR promotes active participation from governments, academia, private sectors, civil society organizations (CSOs), and communities, fostering collaboration among stakeholders (UNISDR, 2015). It also aims for increased national and local DRR strategies, enhanced cooperation with developing countries, and the expansion of multi-hazard early

warning systems. Nation-states are encouraged to implement these targets per local contexts. By integrating the principles and targets outlined in the SFDRR into national and local strategies, stakeholders can work collaboratively to build resilience and mitigate disaster risk effectively. This approach fosters a sense of ownership and belongingness within communities, empowering them to prevent, reduce, and respond to potential disasters proactively (UNISDR, 2015).

The Sendai Framework outlined by the UNISDR (2015) encompasses seven global targets, each intended to shape and propel the course of disaster risk reduction efforts. These targets include a notable aspiration to substantially curtail global disaster mortality, measured as the number of deaths per 100,000 of the global population, from 2020 to 2030 in comparison to the period from 2005 to 2015. Furthermore, there is a concerted aim to significantly diminish the number of affected individuals, reducing the average global figure per 100,000, from 2020 to 2030 when contrasted with the span from 2005 to 2015. Another crucial target involves reducing disaster-related economic losses, which will be gauged as a proportion of the global gross domestic product (GGDP) by the year 2030. In tandem with this objective, the focus lies on substantially diminishing disaster-related damage to critical infrastructure and essential services, such as health and education facilities, thereby fostering their resilience by the end of the aforementioned period.

Moreover, the framework aspires to witness a substantial upswing in the number of countries equipped with national and local Disaster Risk Reduction (DRR) strategies by the year 2020, reinforcing the significance of strategic planning and preparedness at various governance levels. As well as enhancing international cooperation with developing countries, it aims to ensure that the framework is effectively implemented by 2030 with adequate and sustainable support. Lastly, an overarching objective is to improve the availability and accessibility of multi-hazard early warning systems (MHEWSs) and comprehensive disaster risk information, rendering them accessible to the populace by 2030. These targets collectively strive to usher in a global paradigm shift towards disaster risk reduction, promoting resilience and safeguarding the well-being of communities and nations worldwide.

In the pursuit of these targets, the conference highlighted four overarching priorities for action. First and foremost, it emphasized the paramount importance of understanding disaster risk to facilitate informed decision-making and strategic interventions. Secondly, it underscored the need to fortify disaster risk governance, ensuring robust mechanisms for risk management and mitigation. Thirdly, there is a pressing call for investing in disaster risk reduction to bolster the resilience of vulnerable regions and communities, recognizing that proactive measures hold the key to mitigating the impact of disasters. Finally, the framework emphasizes the necessity of enhancing disaster preparedness to mount an effective and timely response when disasters strike. Moreover, it advocates for the principle of "Build Back Better" in recovery, rehabilitation, and reconstruction efforts, aiming to create stronger and more resilient communities in the aftermath of disasters (UNISDR, 2015).

Sendai Framework advocates a broader and more people-oriented approach to disaster risk reduction that integrates the most crucial principles of human security. Particularly, community involvement is an existing problem in developing countries, particularly, and the Sendai Framework acknowledges this gap. To reduce disaster losses to lives, livelihoods, productive assets, and cultural heritage (UNISDR, 2015), strategies are proposed for shifting focus from disaster prevention to community engagement, awareness, and mobilization. It recognizes that multi-hazard and multisectoral disaster risk reduction practices must be efficient and effective when they are inclusive, accessible, and inclusive of all groups. In the Sendai Framework, top-down and bottom-up approaches are also advocated to enable women, children, the elderly, and persons with disabilities to be empowered and protected.

Priority 4, in the Sendai Framework, places importance on improving disaster preparedness to respond to and recover from disasters. It emphasizes the need to "Build Back Better" during recovery, rehabilitation, and reconstruction efforts. This priority acknowledges the increasing threat posed by growing disaster risks and the vulnerability of people and assets. Drawing lessons from calamities it highlights the necessity to strengthen disaster preparedness for response, anticipate events proactively integrate disaster risk reduction into response planning and ensure strong capacities for both response and recovery at all levels. A crucial aspect of Priority 4 is empowering

women and individuals with disabilities to take on leadership roles in promoting gender universally accessible measures for response, recovery, rehabilitation, and reconstruction. This focus on inclusivity and diversity contributes to building resilience within nations and communities in the face of disasters.

A mutually reinforcing relationship exists between disaster resilience and human security. Insecurity is both the cause and consequence of disasters according to the human security approach. Often, disasters have consequences that extend beyond their immediate effects, many of which involve human security. Food insecurity, unemployment, poverty, and environmental degradation are examples of these problems. Climate change and disaster risk could undermine efforts to eradicate poverty and achieve a higher level of human security by 2030. However, the current state of human security leaves communities vulnerable to disasters, increasing disaster risks. The disproportionate impact of disasters on economically marginalized individuals can be seen in how they are disproportionately impacted by them. A community's human security standing can indicate whether -and to what extent- vulnerable groups like women, children, the disabled, and the elderly will be disproportionately affected in disasters. In this regard, enhancing human security can be viewed as both a disaster prevention and a recovery strategy.

Human security can enable resilience builders to move beyond an agency-centric approach that leads to overlaps and lost synergies. The purpose of this study is to identify people's needs, vulnerabilities, and capacities and, accordingly, design comprehensive solutions tailored to their specific context. By promoting multi-stakeholder, bottom-up approaches to disaster risk reduction and addressing the underlying causes of community insecurity and challenges, the study promotes communities both locally and communally in building resilience to climate change and disasters.

An analysis based on human security is important in this study because it first identifies and analyzes multisectoral threats holistically; and then develops local resilience-building strategies and action plans that are context-specific and prevention-oriented, protecting lives, livelihoods, and assets while empowering vulnerable groups and communities at the same time. The human approach promotes solutions that are

beneficial to promoting and protecting human dignity and lives, so in this way, it has a unique value.

2.4.1 Polycentricity

Polycentricity, initially proposed by Polanyi (1951) and further developed by Elinor and Vincent Ostrom, serves two interrelated purposes (Ostrom et al., 1961). First, it acts as a descriptive tool to understand emergent social, institutional, and political orders, particularly those that do not rely on a price system for coordination. Second, it functions as a normative policy instrument aimed at enhancing self-governance. The concept underscores that centralized coordination is not the sole method of achieving order. Normatively, polycentricity bolsters the case against hierarchical control, advocating for self-governance instead. While hierarchy is often justified on the grounds that its absence leads to chaos and disorder, evidence suggests that bottom-up, self-governing emergent orders can be more productive, equitable, and resilient (see Table 2.2 Types of Governance Systems). According to Aligica and Tarko (2012), polycentric systems are characterized by three main features: multiple independent decision-makers or governance centers, an overarching system of rules and norms, and a complex emergent order resulting from the interactions of these decision-makers within the overarching framework.

Table 2.2 Types of Governance Systems

	Centralized	Decentralized
Coordinated	Top-down hierarchical (coordination as command-and-control)	Polycentricity (coordination as emergent order)
Not coordinated	Rent-seeking (decentralized lobbying to a central authority)	Fragmented (anarchic)

Source Aligica and Tarko (2012)

However, the SFDRR and many disaster management plans emphasize the necessity of a strong state to effectively manage disaster risk. The SFDRR places the state at the core of DRR, identifying it as the primary entity responsible for protecting and supporting its citizens. Therefore, state-led DRR approaches must be inclusive, engaging all societal segments, including marginalized groups such as women, children, youth, people with disabilities, elderly individuals, and indigenous populations. Reducing risk relies on a strong state capable of enforcing domestic laws, fulfilling international obligations, and providing effective disaster governance (Clark-Ginsberg et al., 2022; Siddiqi, 2018; Walch, 2018). While normative DRR strategies can be applied in stable, centrally governed contexts, these assumptions do not hold in fragile and conflict-affected contexts (FCAC) as eloquently proven by Patel et al. (2021). Although the SFDRR advocates for DRR adaptation to local contexts, it lacks specific guidance for scenarios involving conflict or fragility (Peters, Peters, et al., 2019). People living in these contexts often fall outside the inclusivity aims of the SFDRR due to its state-centric approach. Ensuring inclusive risk reduction necessitates addressing the needs of those in FCAC, where the state is often unable or unwilling to implement equitable DRR measures due to weakened governance structures and the impacts of ongoing conflict (Peters et al., 2019).

The importance of polycentric governance extends to contexts where communities are divided, disintegrated, or displaced, particularly in situations of chronic conflict where state authority is weakened, contested, or non-existent. In such scenarios, exploring community-based approaches to disaster risk reduction and governance is vital. As highlighted by the UNDRR (2023) in its Report of the Midterm Review of the Implementation of the Sendai Framework for Disaster Risk Reduction 2015-2030 (MTR SF), Member States should aim for polycentrism. This comprehensive governance model involves multiple decision-making sources working collaboratively to achieve positive development outcomes. In polycentric arrangements, risk management responsibilities are clearly defined and distributed across a broader governance structure, ensuring adaptability and effectiveness at various scales. Recognizing the limited progress in implementing the Sendai Framework in various regions, including post-conflict areas, the MTR SF also

acknowledges that stability, protracted crises, violence, and armed conflict are systemic risks that require a comprehensive understanding.

Empirical evidence from Ukraine's decentralized crisis response during the Russo-Ukrainian war illustrates how polycentric governance can enhance resilience in protracted and extreme crises (Keudel & Huss, 2024). Similarly, in the case of Armenia and Turkey, polycentric governance enables transboundary water cooperation despite ongoing interparty conflicts and the absence of diplomatic dialogue (Altingoz & Ali, 2019). While this cooperation may not lead to broader improvements in relations or peacebuilding, it holds potential for advancing DRR in FCAC (Patel et al., 2021). Additionally, polycentricity has been documented to bring about sociopolitical change, as seen in the post-Marmara earthquake in Turkey (Pelling & Dill, 2010) and the regime change in the Philippines in 1986 (Heijmans, 2012). Despite these successes, the potential for polycentric governance to realize the triple nexus—integrating humanitarian assistance, development cooperation, and peacebuilding—remains largely unexplored to date.

In summary, polycentricity, developed by Michael Polanyi and later expanded by Elinor and Vincent Ostrom, serves as both a descriptive tool for understanding complex social orders without central coordination and a normative policy tool advocating for self-governance. It challenges the notion that centralized control is essential for order, showing that decentralized, self-governing systems can be more productive, equitable, and resilient. While the Sendai Framework for Disaster Risk Reduction (SFDRR) emphasizes a strong state as central to disaster risk management, this state-centric approach often excludes those in fragile and conflict-affected contexts (FCAC) where governance is weak. Polycentric governance offers an alternative by enabling local-level cooperation and decision-making, as evidenced by successful cases like Ukraine's crisis response during the Russo-Ukrainian war and Armenia-Turkey transboundary water cooperation. Despite these examples, the potential for polycentric governance to integrate humanitarian aid, development, and peacebuilding (the triple nexus) remains underexplored.

2.4.2 Research Gap

Even though community-based approaches are becoming increasingly recognized in disaster risk reduction literature, a significant research gap remains regarding how human security principles can be effectively integrated into disaster risk reduction policies and practices, as stipulated in the Sendai Framework. Both the Sendai Framework and the concept of human security share a common objective of enhancing the well-being and security of individuals and communities facing disasters (Robles, 2022; UNISDR, 2017). However, the extent to which human security principles are integrated into community resilience strategies within the framework remains poorly understood. Although the Sendai Framework acknowledges the significance of human security, its practical application within disaster risk reduction and resilience-building efforts remains inadequately explored. Therefore, there is a pressing need for research that investigates how human security principles can be effectively implemented within the framework, ensuring that disaster risk reduction and resilience-building strategies prioritize the dignity, rights, and well-being of community members (Shaw et al., 2021). Moreover, the Sendai Framework, while recognizing the importance of human security in disaster risk reduction, lacks specific guidance on how to translate this concept into actionable policies and practices at the community level of Mon State in Myanmar, further emphasizing the research gap in this critical area.

In summary, the Sendai Framework for Disaster Risk Reduction 2015-2030 represents a significant evolution in global disaster risk reduction (DRR) policies, succeeding the Hyogo Framework with an enhanced focus on reducing losses and strengthening resilience across multiple scales, from local to international. This framework underscores the critical role of states while promoting extensive collaboration among various stakeholders, including governments, civil society, the private sector, and local communities, aiming to integrate disaster risk reduction into broader development agendas effectively. Notably, it articulates seven specific targets aimed at reducing disaster mortality, affected populations, economic losses, and damage to infrastructure and services by 2030, along with enhancing national and local DRR strategies, international cooperation, and the availability of multi-hazard early warning systems. The framework's four priorities emphasize understanding disaster

risks, strengthening disaster governance, investing in DRR for resilience, and enhancing disaster preparedness for effective response and to "Build Back Better" in recovery, rehabilitation, and reconstruction. This approach advocates for a more inclusive, community-focused strategy that recognizes the necessity of empowering vulnerable groups such as women, children, the elderly, and persons with disabilities, promoting a holistic view that disaster resilience is fundamentally intertwined with human security. The Sendai Framework's alignment with human security principles highlights the intersection between safeguarding individual and community rights and fostering resilience, posing challenges and opportunities in integrating these principles into actionable DRR policies and practices.

2.5 Conceptualization

In the context of Mon State, Myanmar, integrating human security principles into the Sendai Framework for Disaster Risk Reduction (SFDRR) can significantly enhance community-based disaster resilience. The conceptual framework to achieve this encompasses several critical components: the recognition of disasters as a threat to human security, the prioritization of vulnerable communities, engagement of local and central governments, the empowerment of communities through a human security approach, the implementation of polycentric governance, and the foundational support of the SFDRR. Each of these components contributes to a robust strategy aimed at bolstering resilience and ensuring the well-being of individuals and communities in Mon State (see Figure 2.4 Conceptual Framework).
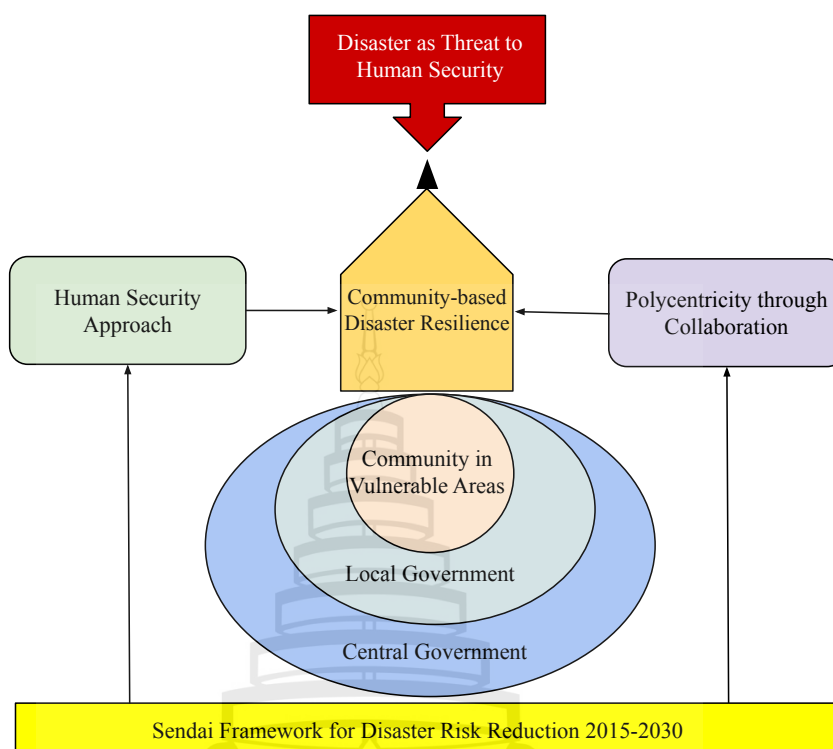
Figure 2.4 Conceptual Framework

Disaster as a Threat to Human Security: Recognizing disasters as a multifaceted threat to human security is the starting point of this framework. In Mon State, the prevalent natural disasters, such as cyclones and floods, pose significant risks not just physically but also economically, socially, and environmentally. These disasters threaten fundamental human securities including livelihoods, health, and personal safety, thereby necessitating a broad-based approach to disaster risk reduction.

Community in Vulnerable Areas: The communities in Mon State, particularly those in low-lying coastal and riverine areas, are acutely vulnerable to natural disasters. Emphasizing these communities within the framework ensures that strategies are tailored to the specific risks and vulnerabilities they face, thereby enhancing their resilience through targeted interventions.

Local and Central Government: The roles of local and central governments are crucial in supporting and implementing disaster risk reduction strategies. Local governments are instrumental in the direct administration and immediate response to

disasters, while the central government provides overarching policies, resources, and coordination. Effective communication and collaboration between these governmental levels are vital for disseminating information, mobilizing resources, and implementing SFDRR principles effectively.

Community-based Disaster Resilience: Placing community-based disaster resilience at the forefront of the framework acknowledges the power of local knowledge and capacities in managing disaster risks. Empowering communities in Mon State to lead resilience efforts ensures that interventions are culturally appropriate, widely accepted, and directly address the specific needs and strengths of the community.

Human Security Approach: Integrating a human security approach involves focusing on the protection and empowerment of individuals and communities to enhance their capacity to face and recover from disasters. This approach aligns with the broader goals of the SFDRR by emphasizing not only protection from hazards but also the enhancement of resilience through sustainable, equitable development practices that address underlying vulnerabilities.

Polycentricity through Collaboration: Polycentric governance, characterized by multiple centers of decision-making that operate independently but collaboratively, is essential for implementing a layered and nuanced disaster risk reduction strategy. In Mon State, encouraging collaboration among local authorities, community leaders, NGOs, and other stakeholders can lead to more innovative, adaptable, and responsive disaster management practices.

Sendai Framework for Disaster Risk Reduction 2015-2030: The SFDRR provides a global blueprint for reducing disaster risk through the integration of economic, structural, legal, social, and environmental dimensions of risk management. By aligning local and national strategies with the SFDRR, Mon State can ensure that its disaster risk reduction initiatives are globally informed and locally executed, promoting sustainable development and reducing losses in disasters.

This conceptual framework offers a comprehensive approach to integrating human security principles within the SFDRR to build community-based disaster resilience in Mon State. By focusing on the empowerment of local communities and

leveraging both local and global knowledge and resources, the framework aims to create a resilient, secure, and sustainable environment in the face of natural disasters.

2.6 Conclusion

In conclusion, this chapter has delineated the transformation in understanding human security, moving from a state-centric security paradigm to a more inclusive and holistic framework that emphasizes individual and community well-being. Initially emphasized in the 1994 UNDP report, human security now integrates various dimensions such as economic, food, health, environmental, personal, community, and political security, which are crucial for human dignity. Scholars like Jorge Nef and critics like David Chandler have significantly shaped this discourse, advocating for multifaceted and proactive security measures while critiquing Western-centric interventions. The discussion also underscores the role of community resilience, viewing it as both a shield against crises and a foundational pillar for sustainable security, necessitating a systemic approach that embraces economic, social, and infrastructural integration. Furthermore, the notion of polycentric governance introduced by figures like the Ostroms offers a compelling alternative to centralized control, promoting decentralized, cooperative decision-making as seen in diverse international contexts. This framework thus advocates for a polycentric approach within the Sendai Framework for Disaster Risk Reduction to foster local empowerment and build disaster resilience in Mon State, aiming to merge local insights with global resources to cultivate a secure, resilient community landscape.

2.7 Propositions

Building on the insights gained from the previous review, six propositions have been formulated for empirical evaluation through a case study of Mon State, Myanmar.

Proposition 1: The concept of human security has evolved from traditional state-centric security to encompass individual and community safety across multiple

dimensions including economic, food, health, environmental, personal, community, and political security (UNDP, 1994; MacFarlane & Khong, 2006; King & Murray, 2001).

Proposition 2: Human security integrates a proactive prevention approach, focusing on the protection from threats and the empowerment of individuals through multidimensional frameworks that include "freedom from fear", "freedom from want", "freedom to live in dignity", and "freedom from hazard impacts" (Ogata & Sen, 2003; Kofi Annan, 2005).

Proposition 3: Disasters pose a serious threat to human security by undermining economic and social foundations, exacerbated by climate change, which serves as a threat multiplier (Yamada, 2015; Barnett, 2003; Intergovernmental Panel on Climate Change, 2014).

Proposition 4: Vulnerability to disasters is not only shaped by natural hazards but also by socioeconomic factors, power imbalances, and lack of resources, which determine how populations cope with disasters (Pulhin et al., 2021; Raut & Meyer, 2017).

Proposition 5: Community resilience involves both systems-based and agency-centered approaches, focusing on infrastructure, organizational structures, and community strengths and self-organization (Norris et al., 2008; World Economic Forum, 2013).

Proposition 6: The Sendai Framework advocates for a comprehensive approach to disaster risk reduction, integrating human security principles to enhance resilience and reduce vulnerabilities through inclusive, community-based strategies (Aitsi-Selmi et al., 2015; UNISDR, 2015).

Proposition 7: Polycentric governance provides a viable alternative to centralized disaster management, particularly in conflict-affected areas, by enabling localized decision-making and cooperation among multiple governance actors (Ostrom et al., 1961; Patel et al., 2021).

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Introduction

Chapter 3 outlines the methodological framework employed in this study to examine disaster management practices in Mon State. Section 3.2, 'Research Design', delineates the overall approach and methods used to conduct the research. Following this, Section 3.3, 'Sampling Design', details the criteria and process for selecting study participants, while Section 3.4, 'Data Collection', describes the techniques and tools employed to gather relevant data. Section 3.5, 'Data Analysis', explains the methods used to interpret the collected data, and Section 3.6, 'Ethical Consideration', discusses the ethical standards adhered to throughout the research process. Finally, section 3.7, 'Research Limitation', acknowledges the constraints and potential biases inherent in the study. Finally, Section 3.8, 'Conclusion', summarizes the chapter and transitions into the next chapter that follows.

3.2 Research Design

Considering the dynamic nature of the research field in Myanmar, this study employs an exploratory and inductive approach to effectively address its research inquiries. First, the investigation extensively explores institutional structures, encompassing legal frameworks, policies, and action plans at both national and state levels, along with their tangible implementation over the past years. Second, a qualitative research design is adopted to achieve a comprehensive understanding of the subject matter. This study explored the intricacies of localized disaster management strategies within Mon State, Myanmar, specifically examining regions afflicted by

flooding across a selection of ten townships (see Figure 3.1 Research Site Divided by Ten Townships). The research spanned from December 2023 through March 2024, employing a qualitative methodology. A primary focus is placed on evaluating the resilience of the local community in Mon State, Myanmar, and their preparedness to cope with various calamities.
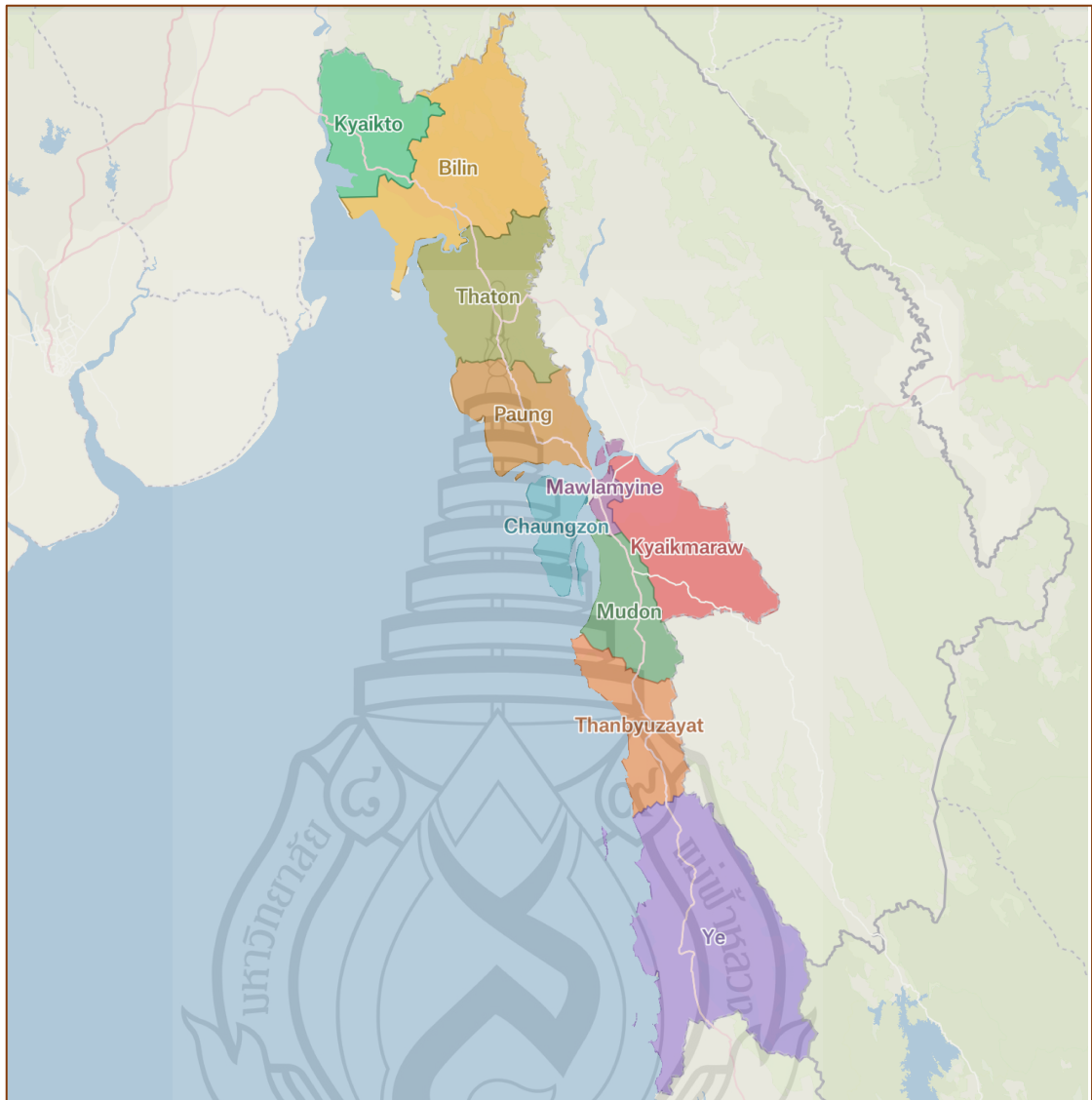
Figure 3.1 Research Site Divided by Ten Townships

3.3 Sampling Design

Participants were chosen through a purposive sampling method, where selection criteria were meticulously defined according to their involvement in climate policy formulation, disaster risk management, and community activation. This approach ensured a comprehensive spectrum of professional knowledge was represented in the study. A total of 20 participants were selected for in-depth interviews, ensuring

representation from all ten townships of Mon State, Myanmar (see Table 3.1 List of Research Participants).

Table 3.1 List of Research Participants

Serial No.	Participant	Number
1.	Township Rescue Team	*10
2.	Mon State Minister	1
3.	Mon State Parliamentarian	1
4.	Religious Leader	1
5.	Environmentalist	1
6.	Policy Analyst	1
7.	Political Party Leader	1
8.	Citizen Journalist	1
9.	Weather Forecaster/Climatologist	1
10.	School Teacher	1
11.	Legal Expert	1
Total		**20**

Note *1 participant from each township

3.4 Data Collection

Firstly, documents such as legislation, policy briefs, and official action plans were methodically gathered from publicly accessible secondary sources to analyze the framing and evolution of discourse within institutional texts concerning community resilience in Mon State, Myanmar. Secondarily, primary data collection was achieved via detailed interviews with central figures, encompassing leaders of ten township rescue teams, a policymaker, an NGO worker, and the Minister of Mon State. Additional interviewees included a political party member, a policy analyst, a legal specialist, a climate advocate, a religious authority, a citizen journalist, an

environmentalist, a meteorologist, and a schoolteacher. These interviews were organized around open-ended questions, facilitating extensive insights and supplemented by further queries to delve into evolving themes.

3.5 Data Analysis

Firstly, discourse analysis was applied to evaluate the considerations and dynamics within institutional structures, including legal frameworks, policies, and action plans at both national and state levels. This analysis helped in understanding how these structures are discussed and implemented, revealing the underlying assumptions, power dynamics, and impacts over the past years. Secondly, the thematic analysis employed a robust approach to dissecting the qualitative data collected through the in-depth interviews. Initially, the empirical evidence was carefully documented, transcribed, and translated into English. The transcriptions were then subjected to thematic analysis employing a combination of inductive and deductive coding strategies. A detailed list of codes was developed based on predefined research questions (deductive codes), serving as a coding master list. Throughout the analysis, newly emerging codes were identified and integrated into the coding master list as appropriate. *Dedoose*, a software tool designed for mixed method research, was employed to conduct a systematic and detailed analysis of the qualitative data, which allowed for the examination of various data sources and patterns. In the final stages, visualization of results aided in interpreting cross-sectional data, identifying patterns, and discerning trends. Additionally, rigorous validation procedures were implemented to uphold the credibility and reliability of the research outcomes.

3.6 Ethical Consideration

The study meticulously adhered to ethical considerations to ensure the confidentiality and objectivity of all collected data. Stringent measures were implemented to protect participants' privacy, with their personal information treated

with the utmost confidentiality. Participation in the research was entirely voluntary, without any form of coercion or inducements. Notably, no compensation was offered to respondents to maintain the voluntary nature of their involvement. The principle of informed consent was rigorously upheld, with participants fully briefed on the study's purpose, procedures, and potential risks, empowering them to make informed decisions. The research strictly followed ethical guidelines and protocols established by relevant institutional review boards and regulatory bodies, safeguarding human subjects and upholding ethical integrity throughout the research process.

3.7 Research Limitation

The research encountered certain limitations during the data collection phase, including persistent armed conflicts, limited accessibility to the study area, and reluctance among the respondents to participate. These challenges impeded the smooth progression of data gathering and resulted in some constraints in obtaining a representative sample. Additionally, the presence of armed conflicts affected slightly the safety and security of the enumerators, influencing the extent and depth of data collection. Furthermore, restricted access to certain areas hindered the ability to gather comprehensive data from all targeted locations. Despite these limitations, every effort was made to address and mitigate these challenges while ensuring the rigor and integrity of the research endeavor.

3.8 Conclusion

In conclusion, this research leverages an exploratory and inductive approach to examine the resilience and preparedness of communities in Mon State, Myanmar, in managing climate-related disasters. In addition to policy discourse analysis on institutional frameworks, by employing a qualitative research design and purposive sampling, the study gains deep insights from a diverse group of 20 participants representing a broad spectrum of roles from ten townships. The data collection through

in-depth interviews and the subsequent rigorous analysis using both inductive and deductive coding techniques facilitate a comprehensive understanding of community-based disaster management dynamics. Ethical standards were stringently maintained throughout the research process to ensure confidentiality, voluntariness, and informed consent. Despite facing challenges such as armed conflicts and limited accessibility, the research successfully navigated these obstacles to provide valuable findings that contribute significantly to the field of disaster risk management in Myanmar.

CHAPTER 4

FINDINGS

4.1 Introduction

Chapter 4 systematically presents the data gathered and analyzed during this investigation into disaster management in Mon State. Section 4.2 is divided into two subsections: the first examines six key policy documents under 'Analyses of Institutional Frameworks', providing insight into the formal strategies governing disaster response; the second part, 'Empirical Findings', explores the practical aspects of disaster management, including the effectiveness of state mechanisms, the role of community-led resilience efforts, and the integration of human security principles within the Sendai Framework. The chapter culminates in Section 4.3, 'Conclusion', which synthesizes these insights to outline the main outcomes of the research, illustrating both the strengths and weaknesses of current disaster management practices and offering a critical appraisal of the gaps between policy intentions and practical implementations.

4.2 Analyses of Institutional Frameworks

This section critically evaluates six legislative and policy foundations shaping disaster management in Mon State. It begins with an examination of the 'Disaster Management Law, 2013', followed by the 'Disaster Management Rules, 2015', both of which establish the legal and operational structures for disaster response. The section further explores strategic initiatives such as the 'Myanmar Action Plan on Disaster Risk Reduction (MAPDRR), 2017' and the 'Myanmar National Framework for Community Disaster Resilience, 2017', which aim to enhance disaster resilience at the national and

community levels. Additionally, local strategies are scrutinized through the 'Kyaikmayaw Township Disaster Management Plan, 2015' and the 'Mawlamyine Township Disaster Management Plan, 2017', highlighting localized responses and adaptations (see Figure 4.1 Policy Framework on Natural Disaster Management).
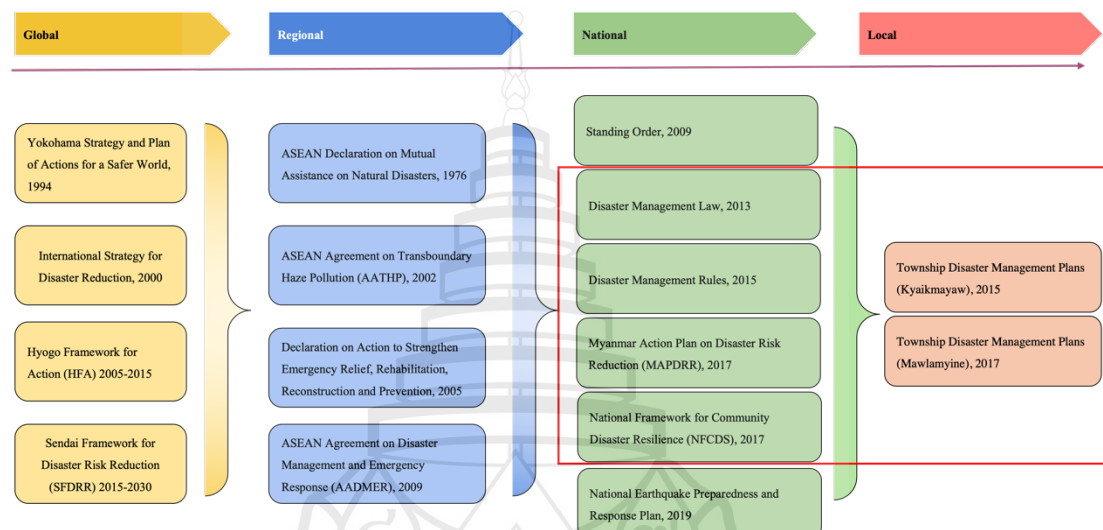
Figure 4.1 Policy Framework on Natural Disaster Management

4.2.1 Disaster Management Law, 2013

The Disaster Management Law (2013) reflects efforts to align with international frameworks such as the Hyogo Framework for Action and the ASEAN Agreement on Disaster Management and Emergency Response. While the law emphasizes risk information, preparedness, and coordination with various stakeholders, critical gaps remain that hinder its effectiveness and inclusivity. Firstly, the law's emphasis on emergency planning and response over prevention and risk reduction is a significant gap. Effective disaster management requires a balanced approach that not only responds to crises but also proactively mitigates risks to reduce the impact of disasters. Secondly, insufficient recognition of the roles of Civil Society Organizations (CSOs) in the disaster management cycle poses another challenge. CSOs often play crucial roles in community resilience building, advocacy, and support services during disasters.

Ignoring their involvement limits the diversity of approaches and resources available for effective disaster management.

Moreover, the law falls short of addressing the complex vulnerabilities of different demographic groups, such as women, children, the elderly, and persons with disabilities. Specific provisions tailored to the needs of these groups are essential for ensuring equitable access to disaster response and recovery efforts. Additionally, the lack of clear communication channels and disparities in knowledge and capacity between central and local disaster management councils hinder efficient and coordinated disaster response efforts. Furthermore, the absence of references to the private sector in the Disaster Management Law is a notable gap. The private sector plays a vital role in disaster risk reduction, either by exacerbating vulnerabilities or providing critical resources and expertise. By not including provisions for private sector engagement, the law misses an opportunity to leverage these resources for more effective disaster preparedness and response.

4.2.2 Disaster Management Rules, 2015

The Disaster Management Rules (2015) set forth in the provided document offer a structured approach to disaster risk reduction, mitigation, preparedness, response, and recovery for Myanmar. These rules establish essential structures and procedures, such as the Disaster Management Centre and various Disaster Management Bodies, providing a foundation for coordinated action during and after disasters (see Figure 4.2 Institutional Structure of Disaster Management in Myanmar). However, upon critical analysis, it becomes apparent that these rules lack specificity in crucial areas that could significantly enhance community resilience and human security, in line with the Sendai Framework. There is a notable absence of mechanisms for meaningful community engagement and empowerment, which are pivotal for effective disaster management. While the Rules mention public awareness programs and training, they fall short of incorporating participatory approaches that empower local communities in decision-making processes. The Sendai Framework underlines the importance of community-based disaster management, suggesting the incorporation of such participatory mechanisms within the Rules for more inclusive and effective disaster management strategies.

Furthermore, the Rules could benefit from clearer guidelines on integrating disaster risk reduction (DRR) measures into sectoral and local development plans, as highlighted by the Sendai Framework. While the Rules outline technical assistance and collaboration with relevant Ministries and Government Departments, they lack specifics on how the Ministry of Social Welfare, Relief, and Resettlement will ensure this integration. The Sendai Framework emphasizes the mainstreaming of DRR into all sectors, which would contribute to reducing underlying risk factors and building long-term resilience. Including provisions within the Rules to facilitate the integration of DRR considerations into various sectors, such as infrastructure, agriculture, and health, would align Myanmar's disaster management efforts more closely with international best practices.

Additionally, the Rules could benefit from improved monitoring, evaluation, and review mechanisms to adapt to evolving risk landscapes, as recommended by the Sendai Framework. While the Rules mention Disaster Reduction Youth Volunteer Forces, a positive step towards engaging youth in disaster management, they lack clarity on roles, responsibilities, and training. Strengthening the capacity of these volunteer forces and defining their tasks within the disaster management framework would ensure their effective contribution to resilience-building efforts. Lastly, the Rules briefly address the needs of vulnerable populations, but there is room for improvement to ensure their inclusion and protection throughout all phases of disaster management. Concrete measures and specific guidelines within the Rules on how to address the unique needs and vulnerabilities of vulnerable groups would reinforce the overall framework for disaster risk reduction and management in Myanmar.
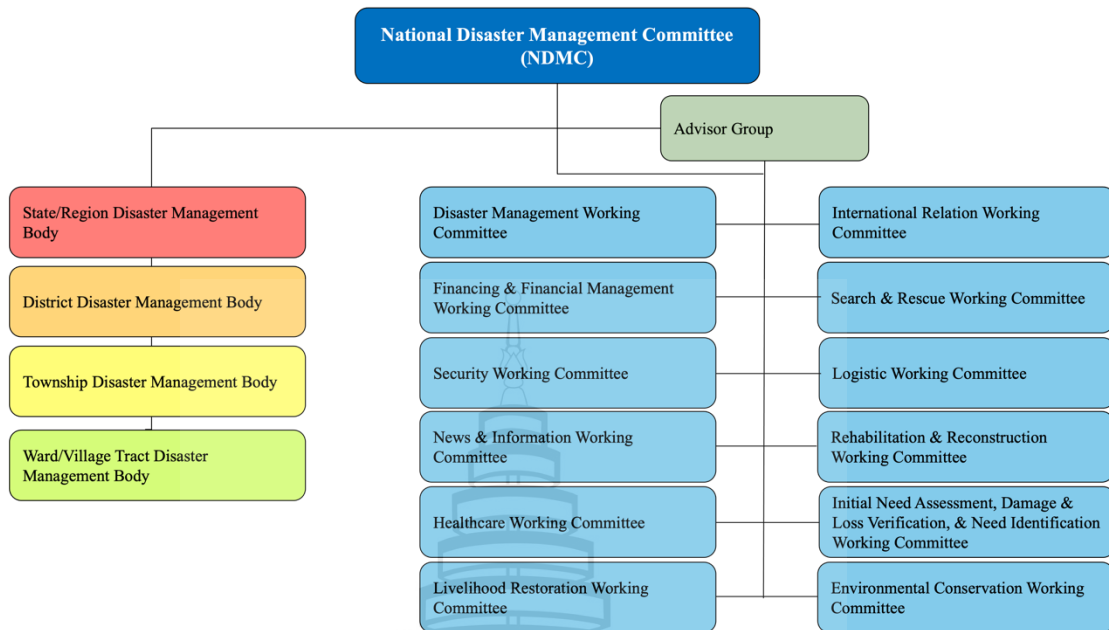
Source Tun (2022)

Figure 4.2 Institutional Structure of Disaster Management in Myanmar

4.2.3 Myanmar Action Plan on Disaster Risk Reduction (MAPDRR), 2017

The Myanmar Action Plan on Disaster Risk Reduction (MAPDRR) (2017) presents a commendable effort towards addressing the multifaceted challenges posed by disasters through a holistic and unified strategy. Notably, the plan's acknowledgment of resilience as integral to sustainable development reflects an understanding of the long-term impacts of disasters on socio-economic progress. By recognizing the devastating effects of past events such as Cyclone Nargis and the 2015 floods, the MAPDRR 2017 underscores the imperative to manage risks proactively rather than merely reacting to disasters. This emphasis on a comprehensive approach aligns well with the principles outlined in the Sendai Framework and other related frameworks.

The plan's structured framework, comprising 32 priority actions under four pillars, namely risk information and awareness, risk governance, risk mitigation, and preparedness for response, rehabilitation, and reconstruction, provides a clear roadmap

for implementation. Each action is meticulously defined with objectives, activities, outputs, and designated lead agencies, demonstrating a thoughtful and well-organized approach. This structured strategy not only enhances the plan's transparency but also lays a strong foundation for effective coordination and collaboration among diverse stakeholders, including government bodies, development partners, the private sector, civil society organizations, and communities. Such multi-stakeholder engagement is crucial for the success of disaster risk reduction and resilience-building initiatives, aligning with the principles of community resilience and human security.

However, despite these strengths, the MAPDRR 2017 reveals notable gaps that require attention for the plan's optimal effectiveness. One significant gap is the initial oversight in explicitly including the private sector as essential stakeholders in disaster risk reduction activities, which was rectified in the 2017 iteration of the plan. Nevertheless, the need for more detailed strategies to enhance private sector engagement and collaboration remains apparent. Additionally, the plan could benefit from a stronger focus on addressing the specific needs of vulnerable populations, such as women, children, people with disabilities, and the elderly. Tailored measures aimed at these groups would not only enhance the inclusivity of the plan but also ensure that the most marginalized communities are adequately supported in disaster risk reduction efforts. Moreover, while the integration of disaster risk reduction, climate change adaptation, and sustainable development goals is a positive step, a more detailed roadmap for mainstreaming these aspects into national development plans is necessary. This would involve clarifying the alignment with specific SDG targets and implementing robust monitoring and evaluation mechanisms to assess progress and impact. Additionally, enhancing governance strategies, especially at the sub-national level, would further strengthen the plan's overall effectiveness in achieving its objectives.

4.2.4 Myanmar National Framework for Community Disaster Resilience, 2017

The Myanmar National Framework for Community Disaster Resilience, developed in 2017, presents a comprehensive approach aimed at enhancing disaster resilience at the local level. The framework's emphasis on empowering local

communities and building their capacity to prepare for, respond to, and recover from natural disasters aligns with the principles of community resilience and human security. By recognizing the multidimensional nature of disasters, including both extreme events and recurrent "everyday disasters", the framework acknowledges the diverse challenges faced by communities in Myanmar. This holistic approach is in line with the Sendai Framework, emphasizing the need for inclusive and sustainable development practices to mitigate disaster risks.

However, a critical analysis of the framework reveals several gaps that need to be addressed for optimal effectiveness. Firstly, the framework highlights the high disaster risk faced by communities in Myanmar, especially the poor and vulnerable. While this recognition is crucial, the framework falls short in providing detailed strategies to address the specific needs of these marginalized groups. A more targeted approach, tailored to the socio-economic vulnerabilities of these communities, would ensure that resilience-building efforts are inclusive and equitable. Additionally, the framework's focus on community-based disaster risk management interventions as "stand-alone" activities may limit their scalability and sustainability. To truly strengthen resilience, these interventions need to be integrated into broader development processes at the village level, aligning with the Sendai Framework's emphasis on mainstreaming disaster risk reduction.

Furthermore, the framework could benefit from a more explicit inclusion of the private sector as essential stakeholders in disaster resilience efforts. Given their role in economic development and infrastructure, engaging the private sector in disaster risk reduction initiatives would enhance their effectiveness and sustainability. Additionally, the framework's emphasis on the evolving process of decentralization and increasing investments in various sectors presents opportunities for strengthening disaster resilience. However, these opportunities need to be capitalized on through clear policy guidelines and mechanisms for coordination among stakeholders at different levels. Enhanced governance strategies, especially at the local level, would facilitate the integration of disaster risk reduction into local development planning processes, ensuring a more coordinated and effective approach.

4.2.5 Kyaikmayaw Township Disaster Management Plan, 2015

Community resilience and human security form the bedrock of effective disaster management, particularly crucial at the local level where vulnerabilities and capacities are intimately understood. This is exemplified in the case of Kyaikmayaw Township in Myanmar, offering insight into the delicate balance between policy frameworks, institutional setups, and the practical realities of disaster risk reduction. The township's geographic location in the flood-prone Mon State presents recurrent challenges, from floods to sporadic fire hazards, necessitating a robust disaster management approach.

At the heart of disaster resilience lies the Township Disaster Management Plans (TDMPs) and the recognition by the Government of Myanmar of the indispensable role of township-level administration, namely Township Disaster Management Committees (TDMCs). The "Guideline on Township Disaster Management Plan" underscores the importance of these plans in fostering effective communication and coordination among government departments and local communities. In Kyaikmayaw Township, these plans are pivotal, serving as a vital link between the community's needs and the strategies outlined at the national level. However, a critical analysis reveals gaps in the structured layout of the Kyaikmaraw Township Disaster Management Plan (2015) and insufficient prioritization of hazards, hindering its effectiveness.

Assessing capacities and challenges at the departmental level sheds light on both strengths and areas for improvement. While some departments exhibit a basic understanding, issues persist due to limited training, staff turnover, and inadequate resources. The revised TDMP seeks to address these gaps through holistic approaches such as integrating qualitative and quantitative methodologies, stakeholder consultations, and aligning with national disaster management guidelines. However, challenges such as resource constraints, lack of dedicated disaster risk reduction (DRR) training for department heads, and limited awareness within departments underscore the urgent need for comprehensive capacity-building efforts. Strengthening institutional arrangements through the Township Disaster Management Committee (TDMC) and its sub-committees offers a structured framework, requiring active engagement from all stakeholders to ensure a coordinated response during all phases of disaster management. Efforts to revise the TDMP and enhance local capacities are

commendable steps forward, yet sustained commitment from stakeholders, increased training opportunities, and improved resource allocations will be vital in building a resilient Kyaikmayaw Township, steering it towards a safer and more secure future for its residents within the Mon State.

4.2.6 Mawlamyine Township Disaster Management Plan, 2017

The Mawlamyine Township Disaster Management Plan (2017), established under the framework of Myanmar's Disaster Management Law, embodies a proactive stance towards disaster preparedness and mitigation at the local level. Rooted in the principles of the Sendai Framework for Disaster Risk Reduction, this plan places a strong emphasis on community resilience and human security. It underscores the critical role played by the township as a linchpin in disaster management, acting as the vital conduit between grassroots communities and higher-level governmental bodies. Given that most government departments function at the township level, it becomes a pivotal hub for coordinating disaster response and risk reduction initiatives.

Central to the plan is the call for a well-coordinated approach, aimed at fortifying collaboration among the various response organizations operating at the township level. This concerted effort seeks to enhance the accountability of these entities in their disaster mitigation and preparedness endeavors. By clearly outlining responsibilities and obligations before, during, and after disasters, the plan aims to systematize mitigation activities and streamline emergency response and recovery efforts. Grounded in insights gleaned from past disasters, it meticulously identifies the vulnerabilities and resources available within the township, laying down a solid foundation for effective disaster management strategies.

The formulation of the Mawlamyine Township Disaster Management Plan was a collaborative endeavor, involving a spectrum of stakeholders ranging from governmental bodies to non-governmental organizations and local community members. This inclusive process not only cultivates a sense of ownership of the plan within the community but also ensures the incorporation of diverse perspectives and invaluable local knowledge into the fabric of disaster management strategies. From hazard assessments to the establishment of specialized disaster management committees and working groups, the plan encompasses a comprehensive array of

elements. Each committee is entrusted with specific roles such as information dissemination, emergency communication, search and rescue operations, relief work, healthcare provisions, environmental considerations, and more. This multifaceted approach underscores the holistic nature of disaster management, recognizing the interconnectedness of various sectors in ensuring an efficient response and resilient recovery.

Furthermore, the plan embraces an adaptive outlook, acknowledging the dynamic nature of disaster risk. It advocates for regular updates and rehearsals to refine strategies and integrate lessons learned from past experiences. This forward-looking approach resonates with the principles of community resilience and human security, which lie at the heart of the Mawlamyine Township Disaster Management Plan. By striving not only to mitigate the immediate impacts of disasters but also to safeguard the well-being, livelihoods, and assets of its residents, the plan charts a course toward sustainable and resilient growth for the township. Through the integration of disaster mitigation considerations into development projects, it envisions a future where Mawlamyine Township stands as a beacon of safety and security amidst the challenges posed by natural disasters.

4.3 Empirical Findings

This section presents a comprehensive analysis of empirical findings. It explores the multifaceted landscape of disaster management in Mon State, Myanmar, uncovering critical insights across several interlinked themes. First, it evaluates the 'Current State of Disaster Management in Mon State', identifying systemic strengths and weaknesses within existing institutional frameworks and operational strategies. Building on this foundation, the research highlights 'Community-led Resilience Building Efforts Amidst Authoritative Absences', emphasizing how grassroots initiatives effectively bridge the gaps left by limited governmental intervention. Further analysis is devoted to the 'Integration of Human Security Principles in the Sendai Framework for Enhanced Resilience', proposing modifications to better align national disaster response strategies with the holistic objectives of human security. Lastly, the

paper addresses the 'Possibilities and Challenges in Implementing Human Security in Disaster Response in Mon State', critically assessing the practical implications of adopting a human security approach within the regional context of Mon State and outlining potential pathways alongside significant obstacles to its realization.

4.3.1 Current State of Disaster Management in Mon State

Section 4.3.1 of the study delves into the 'Current State of Disaster Management in Mon State', revealing a landscape characterized by significant challenges and grassroots adaptation. Firstly, the analysis exposes the 'Insufficient Government Intervention and Infrastructure', highlighting a notable deficiency in official support and the inadequacy of disaster-related infrastructure. Secondly, it focuses on the 'Increasing Reliance on Local and Informal Networks', illustrating how communities within Mon State are compensating for governmental shortcomings by bolstering local networks that facilitate disaster response and management. This section collectively underscores the critical need for enhanced support and recognition of local efforts to strengthen disaster resilience in the region.

4.3.1.1 Insufficient Government Intervention and Infrastructure

First, many interviewees expressed concerns over the insufficiencies in existing disaster management laws, highlighting a critical lack of binding regulations that effectively govern both local and foreign entities. One legal expert noted,

"There is a definition of natural disaster in the Disaster Management Law, but there are no regulations regarding foreign entrepreneurs."

Mi Ni Lar (assumed name, personal communication, 2024, February)

This statement underscores a gap in legislation that fails to address the complexities introduced by external business interests which may exacerbate local vulnerabilities. Furthermore, the need for more comprehensive legal frameworks is evident, with her statement,

"When drafting laws and policies, we need to include the voices of the people in the region so that it is not written and decided by just a group of people."

Mi Ni Lar (assumed name, personal communication, 2024, February)

This highlights a pressing need for a local participatory approach in law-making, ensuring that the policies are not only inclusive but also representative of the community's needs and perspectives.

The interviews provide a critical perspective on the gaps in urban design and planning in the context of disaster management. As highlighted by one citizen journalist, the failure to adequately address urban planning issues such as insufficient drainage systems and emergency routes exacerbates the impact of disasters in areas like Mawlamyine. He remarks,

"One serious problem is the unsystematic new housing in urban areas like Mawlamyine which neither have enough drainage system nor routes for emergency response like firefighters."

Nai Thit (assumed name, personal communication, 2023, December)

This indicates a significant oversight in urban planning that undermines the community's ability to withstand disasters effectively. As a result, the resilience of the community is compromised, leaving them more vulnerable to the adverse effects of natural catastrophes. Similarly, as the Mawlamyine Township Rescue Team leader noted,

"The flooding is mainly because garbage is not properly disposed of, so garbage often clogs drains."

Ma Sein (assumed name, personal communication, 2024, February)

Furthermore, one policy analyst underscores the critical need to intertwine strategic disaster response planning with both urban and rural development efforts, advocating for comprehensive planning that encompasses various aspects of community resilience. He stated,

"This plan needs to be linked to urban and rural planning, as well as clear procedural responsibilities in the management system."

Ko Lwin (assumed name, personal communication, 2024, February)

The insufficient government intervention and inadequate infrastructure for disaster management in Mon State have been consistently highlighted across the interviews, painting a picture of a community left largely on its own to handle recurring natural calamities. One religious leader vividly described the situation:

"A lot depends on the government to survive these natural disasters. Since the government in our country is not good enough, preventive measures cannot be properly managed. So, the people suffer more."

Venerable Uttama (assumed name, personal communication, 2024, January)

This statement underscores a critical gap in governmental responsibility and effectiveness, where essential services and infrastructure such as early warning systems and disaster preparedness are either lacking or poorly executed. The absence of robust governmental support not only hampers immediate response efforts but also inhibits the community's ability to prepare for and mitigate the effects of disasters effectively.

Despite the establishment of Depart of Disaster Management at various administrative levels, their effectiveness during actual disasters has been repeatedly questioned. Interviewees pointed out recurring issues such as non-compliance among the populace and a notable deficiency in expert participation within these teams. The legal expert explicitly stated,

"Natural Disaster Management Teams are formed in the states, regions, or townships according to the law, but they are not binding."

Mi Ni Lar (assumed name, personal communication, 2024, February)

This lack of enforceability and authority undermines the effectiveness of preparedness and response strategies. Additionally, the challenges are compounded by a general non-compliance among the population, with one of the Parliamentarians lamenting,

"The challenge is multi-faceted, and we also face a lack of compliance by the people."

Daw Phyu (assumed name, personal communication, 2024, March)

This points to a disconnect between policy implementation and community engagement, which is crucial for effective disaster management. Similarly, the Mudon Township Rescue Team leader identified a significant gap in public adherence to disaster preparedness guidelines, stating,

"The difficulty is that people do not follow the rules when it comes to natural disasters."

U Win (assumed name, personal communication, 2024, February)

This finding indicates a need for continuous and targeted educational efforts to ensure community compliance and safety during emergencies, highlighting the importance of regular training and awareness programs. Such initiatives must be designed to effectively communicate the risks and the necessary precautions, fostering a culture of preparedness that can significantly reduce disaster-related casualties and damage.

Another area of concern is the emergency response resources, which are described as inadequate to meet the community's needs during disasters. The situation is exacerbated by the government's sporadic involvement and the unreliable nature of their assistance. The religious leader again expressed frustration over this issue, noting,

"When it comes to helping and rescuing people affected by natural disasters, the equipment is still incomplete. For example, when there is a landslide, there were no excavators to evacuate people trapped underneath and they couldn't arrive in time. That's why people died though they shouldn't have."

Venerable Uttama (assumed name, personal communication, 2024, January)

This lack of necessary resources not only delays the rescue operations but also leads to unnecessary loss of life, highlighting the severe implications of the government's failure to provide adequate support.

The reliance on local and informal networks for disaster response is a direct consequence of these governmental shortcomings. In the absence of effective government-led interventions, communities have been compelled to organize

themselves and mobilize whatever resources they can gather. This is evident from the community's initiative as described by one citizen journalist:

"Whenever disasters occur people help each other before the emergency response team arrives. People and organizations also come to help each other by distributing food and water."

Nai Thit (assumed name, personal communication, 2023, December)

While this showcases the resilience and solidarity among the community members, it also underscores the necessity due to the lack of a reliable governmental disaster response mechanism.

Moreover, the sporadic and inadequate governmental responses are not only a result of poor planning but also reflect a broader issue of neglect and mismanagement. As one meteorologist pointed out,

"The early warning system provided by the weather forecast is important in reducing the impact of natural disasters such as floods, cyclones, and extreme temperatures. It helps authorities and individuals to take precautionary measures, evacuate vulnerable areas if necessary, and minimize loss of life and property."

Mehm Rot (assumed name, personal communication, 2024, January)

However, he also noted that,

"Sometimes, when the forecast source data has an error, the reporters also make mistakes. The original is bad, and the copy is also bad."

Mehm Rot (assumed name, personal communication, 2024, January)

This highlights the critical need for improving the accuracy and reliability of early warning systems, which are crucial for effective disaster management. Enhancing these systems will ensure that timely and precise information is available, enabling better preparedness and response strategies that can significantly mitigate the impact of disasters on vulnerable communities.

Finally, the interviews reveal a profound disconnect between governmental promises and their actual implementation on the ground. Many community members

express a sense of abandonment, having to rely on their own resources and resilience to cope with natural disasters. One poignant reflection from the religious leader encapsulates this sentiment:

"Natural disasters happen at any time. No one can know in advance. Therefore, it is necessary to take preventive measures on a regional and community basis."

Venerable Uttama (assumed name, personal communication, 2024, January)

This call for proactive and localized planning points to a significant gap in government policy and action, emphasizing the need for a more integrated and responsive approach to disaster management that genuinely addresses the needs and realities of communities like those in Mon State.

4.3.1.2 Increasing Reliance on Local and Informal Networks

In Mon State, the increasing reliance on local and informal networks for disaster management reflects a deeply entrenched community resilience and a proactive stance in the face of governmental inadequacies (see Figure 4.3 Disaster Management Actors Mapping in Mon State). The interviews underscore how local NGOs, monks, and community groups have become the backbone of disaster response and management. The religious leader highlighted the pivotal role of these groups, stating,

"Monks and civil society organizations encourage, and support people affected by natural disasters in their own regions and communities. Rescued in time."

Venerable Uttama (assumed name, personal communication, 2024, January)

This reliance on local networks is not merely a choice but a necessity, as these groups often step in to fill the void left by the lack of adequate government response mechanisms.

These community-led efforts are diverse and range from emergency response to long-term resilience building. For example, local NGOs not only provide immediate relief but also engage in educating the community about disaster preparedness. One climate activist described the community's proactive measures:

"People should cooperate with civil society organizations and experts to plan for disaster risk reduction, such as community mobilization, resettlement, etc. at their capacity."

Nai Tala (assumed name, personal communication, 2024, January)

This approach is indicative of a shift towards more sustainable and community-driven disaster management strategies that leverage local knowledge and resources. It underscores a growing recognition of the value of integrating indigenous practices and community insights into formal disaster response frameworks, enhancing both the relevance and effectiveness of these strategies.

Moreover, the involvement of informal networks in disaster management extends to grassroots mobilization and resource gathering. Communities often rely on monks and local leaders to coordinate relief efforts, which includes collecting donations, organizing shelters, and distributing essential supplies. The climate activist explained,

"Whenever flooding occurs, the community-based organizations work together with village heads and monks for emergency response and community mobilization, evacuation to shelters, and collecting donations."

Nai Tala (assumed name, personal communication, 2024, January)

This exemplifies how deeply embedded these networks are in the fabric of disaster management in Mon State, making them crucial actors in the resilience framework. The citizen journalist describes,

"Monk monasteries serve as refuges for flood victims and function as community hubs where donors gather to provide assistance."

Nai Thit (assumed name, personal communication, 2023, December)

This highlights how communities react swiftly to disasters, utilizing mutual aid and leveraging monk monasteries as pivotal shelters. This rapid mobilization not only provides immediate safety but also fosters a strong sense of solidarity and resilience among community members during crises.

The reliance on local networks also highlights a significant aspect of community empowerment in disaster management. By taking matters into their own hands, communities not only address immediate needs but also build a sense of collective responsibility and empowerment. The citizen journalist noted,

"Our family has faced disasters like floods and fire outbreaks. Learning from the first experience with flood, we have to set up the mezzanine floor for storage just in case of flooding."

Nai Thit (assumed name, personal communication, 2023, December)

Such initiatives demonstrate the community's adaptive strategies to cope with and mitigate the effects of disasters, driven by firsthand experiences and local wisdom. The legal expert shared,

"In a natural disaster, we can see that the people's collective strength against the disasters caused by nature is stronger than before the coup."

Mi Ni Lar (assumed name, personal communication, 2024, February)

This statement highlights the resilience and resourcefulness of communities in mobilizing local resources and support networks to combat the adverse effects of natural disasters. It underscores the capacity of these communities to effectively coordinate and utilize available assets, enhancing their ability to respond to and recover from crisis situations efficiently.

Finally, the strategic importance of these networks in filling governmental gaps is underscored by their capacity to adapt and respond more swiftly than bureaucratic structures. An environmentalist remarked,

"Government projects and programs don't reach out to the grassroots people. Only collaboration with CSOs can reach the people on the ground."

Ma Thiri (assumed name, personal communication, 2023, December)

This statement not only critiques the inefficacy of governmental efforts but also praises the agility and effectiveness of local networks in disaster response. This agility stems from their deep roots within the community, enabling them to act quickly

and effectively in times of crisis, thereby underscoring their indispensable role in the broader disaster management landscape of Mon State.
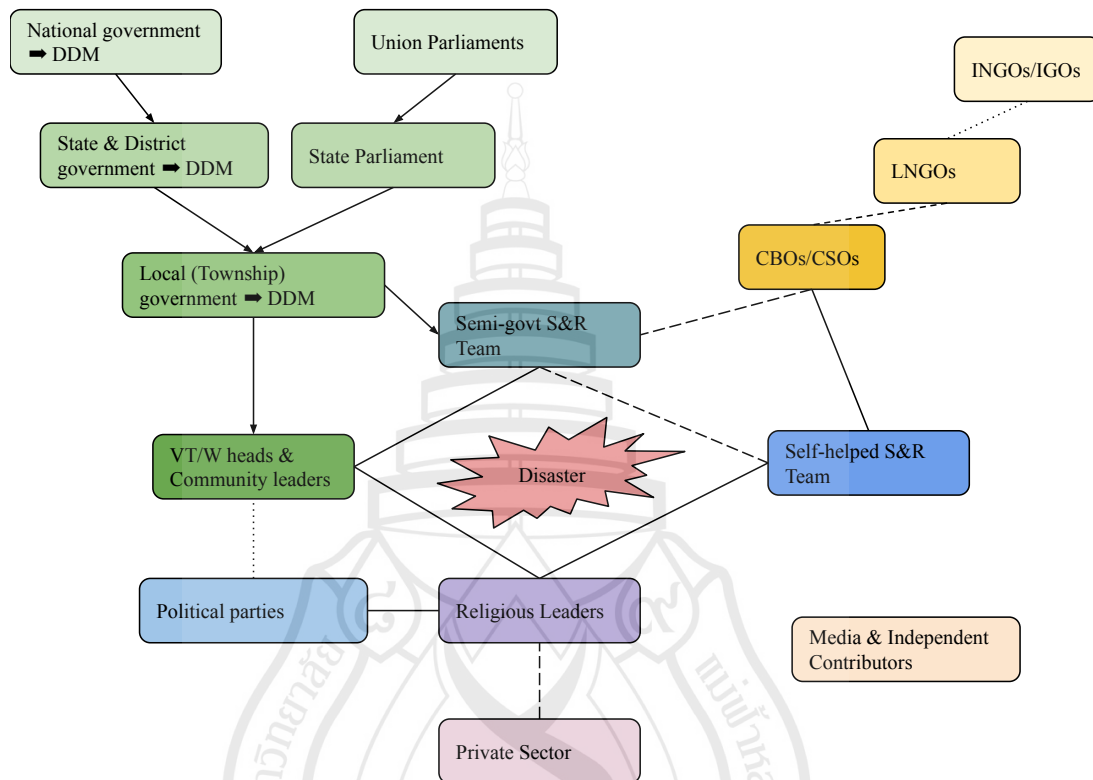
Figure 4.3 Disaster Management Actors Mapping in Mon State

4.3.2 Community-led Resilience Building Efforts Amidst Authoritative Absences

Section 4.3.2 examines the proactive steps taken by communities in Mon State under the theme 'Community-led Resilience Building Efforts Amidst Authoritative Absences.' It first explores how these communities are 'Enhancing Local Knowledge and Preparedness', demonstrating an empowering shift towards utilizing indigenous knowledge and practices to mitigate disaster impacts. However, it also scrutinizes the 'Challenges of Self-Reliance in Disaster Preparedness', revealing the inherent difficulties faced by communities that must often rely solely on their resources and

capacities with little external support. This section highlights both the strengths and vulnerabilities inherent in community-driven approaches to disaster resilience in environments marked by limited governmental presence.

4.3.2.1 Enhancement of Local Knowledge and Preparedness

One key aspect of these efforts is the distribution of weather information, which is vital for preparing communities to respond to imminent natural threats. The meteorologist illustrated the importance of accurate weather forecasts:

"The early warning system provided by weather information is important in reducing the impact of natural disasters such as floods, cyclones, and extreme temperatures."

Mehm Rot (assumed name, personal communication, 2024, January)

This approach not only helps mitigate the immediate impact of disasters but also serves as a foundational tool for long-term preparedness, enabling individuals to make informed decisions about their safety.

Training and capacity building are other critical components of enhancing local knowledge and preparedness. Many community leaders and NGOs have initiated training programs to equip residents with the necessary skills to respond to emergencies. The environmentalist detailed their efforts:

"In terms of local practices, people in rural areas are more likely to store their foods in case of disasters like dried fish and shrimp, fermented fruits, etc. I recommend conducting community-based research on the evaluation of people's livelihood in every area and present it as evidence for policy advocacy."

Ma Thiri (assumed name, personal communication, 2023, December)

Such initiatives are crucial for fostering a culture of preparedness that transcends immediate disaster response, emphasizing sustainable practices and long-term resilience. By ingraining these values into community behaviors and planning processes, they not only mitigate the impacts of current threats but also strengthen the overall capacity to handle future emergencies.

Moreover, these educational efforts often focus on practical skills that are directly applicable in disaster situations. The environmentalist shared their experience with community training:

"I have learned from training that when a disaster occurs, we have to take our necessities such as ID cards, medicines, and food for a few days. I share what I have learned to the people around me."

Ma Thiri (assumed name, personal communication, 2023, December)

This hands-on approach not only enhances individual readiness but also reinforces community solidarity and mutual assistance during crises, a vital component of resilience. By actively involving community members in preparedness efforts, it builds a collective sense of responsibility and strengthens the bonds that are essential for effective response and recovery when disasters strike.

Additionally, local initiatives often include innovative ways to disseminate knowledge and foster a proactive attitude towards disaster preparedness. For instance, one schoolteacher noted the role of schools and informal education in building awareness:

"Students have the opportunity to learn about natural disasters from Life Skill for half an hour of class time. It would be better if the natural disaster curriculums from foreign countries such as Japan and Indonesia could be updated and taught to teachers in Myanmar."

Daw Aye (assumed name, personal communication, 2024, February)

This integration of disaster education into formal and informal learning settings is pivotal in cultivating a well-informed community capable of effectively responding to natural disasters. By embedding these essential teachings across various educational platforms, it ensures that individuals of all ages gain the knowledge and skills necessary to enhance their preparedness and resilience in the face of emergencies.

In Bilin Township, the local rescue team's efforts illustrate the acute awareness and proactive measures taken to mitigate the impact of natural disasters,

particularly floods and landslides. The team's preventative strategies include monitoring water channels and creating drainage systems:

> *"As a preventive measure, when the creek is flooded, they look at the position of the water channel and dig drainage ditches in advance. Although there is prevention, there is no full resilience."*

U Hlaing (assumed name, personal communication, 2024, February)

This reflects an ongoing struggle to achieve complete preparedness against natural disasters by acknowledging a gap between current measures and the ideal comprehensive disaster management framework.

However, socioeconomic factors significantly hinder effective disaster preparedness, particularly in poorer neighborhoods. The Mawlamyine Township Rescue Team leader pointed out that despite knowledge dissemination efforts, economic hardships prevent communities from adequately preparing for disasters:

> *"Our neighborhood is very poor, so no matter how much knowledge is given in preparation, they can't do it. They are struggling to make ends meet, and no other choice but only to have to deal with natural disasters."*

Ma Sein (assumed name, personal communication, 2024, February)

This finding underscores the need for integrated approaches that address both economic and educational barriers to build more resilient communities. By tackling these foundational issues together, strategies can be developed that not only enhance disaster preparedness but also empower individuals through improved livelihood opportunities and access to knowledge.

Finally, the emphasis on local knowledge and preparedness is not merely about surviving disasters but also about adapting to the increasing frequency and severity of these events due to climate change. Communities are increasingly recognizing the need to integrate traditional knowledge with modern scientific understanding to enhance resilience. The environmentalist underscored this by stating,

"As the saying goes, prevention is better than cure. We have to balance ecosystems with economic growth for sustainable development. We have to preserve our water resources, and forest reserves."

Ma Thiri (assumed name, personal communication, 2023, December)

This holistic approach to disaster preparedness underscores the community's adaptive strategies, aiming not only to survive the immediate impacts but also to thrive in a changing environmental landscape. By focusing on sustainability and resilience, it equips communities to handle both current and future challenges, fostering an environment where they can recover and prosper despite adverse conditions.

4.3.2.2 Challenges of Self-Reliance in Disaster Preparedness

One of the major challenges highlighted in the interviews is the inadequacy of local infrastructure and resources, which are essential for effective disaster response. The religious leader described the dire situation:

"When it comes to helping and rescuing people affected by natural disasters, the equipment is still incomplete. For example, when there is a landslide, there are no excavators to evacuate people trapped below and they cannot arrive in time. That's why people die when they shouldn't."

Venerable Uttama (assumed name, personal communication, 2024, January)

This statement underscores the critical lack of necessary tools and equipment that hampers effective response efforts, forcing communities to rely on whatever limited resources they have at their disposal.

The situation is exacerbated in conflict zones, where access to aid and logistical support is often restricted or entirely cut off. One political party leader explained the compounded difficulties:

"Due to the current conflicts, the government doesn't provide any assistance. During the previous government, the parliamentarians proposed and discussed the assistance to disaster-prone communities and control the extractive industries like Mawlamyine Cement company (MCL). Nothing can be done now due to

widespread armed conflicts in 9 out of 10 townships in Mon state. People have to take care of themselves."

Mi Daewi (assumed name, personal communication, 2024, January)

This scenario highlights the intersection of political instability and natural disaster preparedness, where communities find themselves doubly vulnerable. The convergence of these challenges not only complicates immediate response efforts but also undermines long-term resilience planning, making it crucial to address both dimensions simultaneously for effective disaster management.

Moreover, the reliance on self-help and community solidarity, while showcasing the resilience and initiative of local populations, also highlights significant challenges. Communities often lack the technical knowledge and skills needed to effectively manage disaster risks. One of the Paung Township Rescue Team leaders and religious leader noted,

"As climate change gets more serious year by year, disasters in our community become more frequent like seasonal floods, and hill-slide. We don't know how worse it will get. We can see the crop damage caused by floods, sometimes week-long floods mostly in rural areas."

U Soe (assumed name, personal communication, 2024, February)

"Natural disasters happen at any time. No one can know in advance. Therefore, it is necessary to take preventive measures on a regional and community basis."

Venerable Uttama (assumed name, personal communication, 2024, January)

This points to the need for greater knowledge sharing and capacity building within communities to enhance their readiness and response capabilities. Particularly, the Mawlamyine Township Rescue Team leader noted,

"If we are given training on how to respond to natural disaster, we can follow it. If we are not trained, we will be in a very dangerous position."

Ma Sein (assumed name, personal communication, 2024, February)

Financial constraints also pose a significant challenge for these self-reliant communities. The costs associated with preparing for and responding to disasters can be prohibitive, especially in economically disadvantaged areas. Kyaikhto Township Rescue Team leader lamented the financial struggles, stating,

"In our team, everyone is self-reliant and self-funded, and if something happens, even those who work abroad, they all help out. There is no planning in advance. When it happens, we immediately respond and solve it ad-hoc."

Daw Moe (assumed name, personal communication, 2024, February)

Similarly, the Mudon Township Rescue Team leader highlighted financial constraints and the reactive nature of public and donor support, noting that funding often arrives only after disasters have already inflicted significant damage. This delayed financial response hampers proactive measures and continuous preparedness, underscoring the need for more consistent and preemptive funding strategies, as he described,

"Donors also donate and support after a natural disaster occurs, (without funds) we cannot make disaster preparations for the rescue teams."

U Win (assumed name, personal communication, 2024, February)

These indicate a reactive rather than proactive approach to disaster management, largely due to financial limitations. This trend of responding only after disasters strike limits the ability to implement preventative measures and reduce potential damage, highlighting the need for more forward-thinking funding strategies.

Maintaining stable volunteer forces has also been a significant challenge, influenced by factors such as political instability, economic hardship, and the transient nature of the workforce. Chaungzon Township Rescue Team leader reflected on the volunteer situation by saying,

"Charitable relief organizations do not have stable manpower. People left when they have to go to work. They just volunteer in their spare time. They left when they got to work."

U Thein (assumed name, personal communication, 2024, February)

This statement underscores the ad hoc nature of disaster response teams, which often consist of part-time volunteers whose availability may not coincide with the urgent needs of a disaster scenario. The lack of professional, full-time staff in key roles can impede the strategic planning and execution of disaster management tasks, thereby affecting the overall resilience of the community.

Finally, the psychological toll on individuals and communities that continually face these challenges cannot be understated. Constant exposure to disaster threats without adequate support leads to significant mental and emotional stress. Thaton Township Rescue Team leader expressed this sentiment:

"We have to find donors for the necessary items. Donations from rich people. Then we buy the items and deliver them to those who need them. When there are no donors, the team tries hard and deliver as much food as we can. There is a lot of difficulty in this."

U Thaung (assumed name, personal communication, 2024, February)

This highlights the ongoing struggle and the heavy burden shouldered by community leaders and volunteers who endeavor to protect and support their communities under challenging circumstances.

4.3.3 Integrating Human Security Principles in Sendai Framework for Enhanced Resilience

Section 4.3.3 delves into how integrating human security principles into the Sendai Framework can bolster disaster resilience, specifically within the context of Mon State. It begins by discussing 'Grassroots Efforts in Adapting to Climate Change', highlighting local initiatives that not only respond to immediate disaster threats but also proactively adapt to long-term environmental changes. The section then examines 'Building Institutional and Community Collaboration', emphasizing the need for a cohesive strategy that bridges local knowledge with institutional frameworks to enhance disaster preparedness and response. This analysis underscores the potential for a more holistic approach to resilience, rooted in both community engagement and strategic policy integration.

4.3.3.1 Grassroots Efforts in Adapting to Climate Change

Conservation efforts have become a cornerstone of the community's response to climate change. Residents and local NGOs have recognized the urgent need to preserve natural resources as a buffer against environmental degradation. The meteorologist discussed the importance of this approach:

"Addressing climate change requires a collective effort by empowering the people of Mon State. They should focus on raising awareness about sustainable practices such as resource conservation, reforestation projects, and using renewable energy sources whenever possible."

Mehm Rot (assumed name, personal communication, 2024, January)

This sentiment underscores a holistic view of sustainability that not only addresses immediate environmental impacts but also fosters a long-term commitment to ecological health. It emphasizes the importance of integrating sustainable practices into daily life and policy-making, ensuring that environmental preservation is maintained across generations.

The Kyaikmayaw Township Rescue Team leader provides a poignant insight into the recurring challenges and adaptive strategies employed by local communities in response to annual flooding exacerbated by the confluence of the Ataran, Gyaing, and Thanlwin (Salween) Rivers. The severity of the flooding impacts agricultural cycles profoundly, as noted:

"Because of the floods, the farmers on this side stopped farming at the beginning of the year. Cultivation is done after the flood period. Because of the floods, the house building in this area started to be built with long stilt houses. Cattle animals were also moved to the higher land in advance."

Nai Htaw (assumed name, personal communication, 2024, February)

Adaptations to these challenges include architectural changes, such as constructing houses on stilts and repositioning essential grain stores to higher ground, demonstrating a localized response to recurring natural threats.

Reforestation projects have gained particular traction as a tangible method of combating the adverse effects of deforestation and land degradation, which have been exacerbated by agricultural expansion and illegal logging. One of the Mon State ministers highlighted the proactive nature of these projects:

"To preserve the forest, we must plant trees and forests. There are trees, but no forest. Rubbers are planted everywhere in Mon State. Now the forest law has been revised. I asked for a new forest map in order to restore the forest."

U Kyi (assumed name, personal communication, 2024, February)

These efforts are part of a broader strategy to restore ecological balance, enhance biodiversity, and reduce the incidence of landslides and floods—common occurrences in areas stripped of their natural vegetation.

Waste management initiatives have also been critical in reducing the environmental footprint of communities in Mon State. Proper waste disposal and recycling practices help prevent pollution, reduce the spread of disease, and improve the overall quality of life. The meteorologist noted,

"We need to focus on waste management systems... Implementing disaster preparedness plans at the community and individual levels includes managing our waste better to prevent environmental disasters."

Mehm Rot (assumed name, personal communication, 2024, January)

This approach is indicative of an integrated strategy where disaster risk reduction is linked with environmental management practices. By aligning these two areas, the strategy ensures that ecological sustainability is at the forefront of mitigating disaster impacts, fostering a resilient and environmentally conscious community.

The integration of these grassroots efforts into the broader context of human security is vital. By aligning local actions with global frameworks like the Sendai Framework, communities are not only addressing their immediate vulnerabilities but are also contributing to global goals of risk reduction and sustainability. The climate activist reflected on the importance of this alignment:

"Most communities are not well-organized in preparation for disaster. In the long run, to solve the climate-induced disasters, people have to conserve their environment and the government or authority has to be in place and must have plans for mitigating climate change effects."

Nai Tala (assumed name, personal communication, 2024, January)

This statement highlights the necessity of coordinated efforts between communities, governments, and international bodies to tackle the challenges posed by climate change effectively. Such collaboration is essential to pool resources, share knowledge, and implement comprehensive strategies that address the multifaceted impacts of climate variability on a global scale.

Finally, these grassroots efforts are a testament to the resilience and adaptability of the communities in Mon State. Despite facing numerous challenges, including limited resources and ongoing conflicts, the commitment to sustainable practices reflects a strong determination to safeguard their environment and future. Thanbyuzayat Township Rescue Team leader summed up this sentiment:

"Every year the climate change worsens, so we should preserve the environment without damaging it."

Ko Aung (assumed name, personal communication, 2024, January)

This proactive stance not only enhances community resilience but also sets a precedent for other regions facing similar environmental and climatic challenges.

4.3.3.2 Building Institutional and Community Collaboration

One significant aspect of this collaboration is the partnership between local communities and non-governmental organizations (NGOs), which has been instrumental in driving forward disaster preparedness initiatives. The climate activist described the synergy between these groups:

"People should cooperate with civil society organizations and experts to plan for disaster risk reduction, such as community mobilization, resettlement, etc. at their capacity."

Nai Tala (assumed name, personal communication, 2024, January)

This partnership often extends to international bodies that bring additional resources and expertise, enabling more comprehensive disaster risk management strategies. These collaborations are essential for pooling resources, sharing knowledge, and devising strategies that are culturally appropriate and geographically specific, ensuring that disaster preparedness is both effective and sustainable.

International bodies, in particular, play a crucial role in these collaborations by providing technical support and funding for disaster resilience projects. One policy analyst highlighted the impact of this support:

"In Mon state, there is a state-level natural disaster assistance and response committee formed by UN agencies, non-international government groups, and local non-governmental organizations and civil society groups."

Ko Lwin (assumed name, personal communication, 2024, February)

This collaborative model allows for a more robust implementation of the Sendai Framework's guidelines, which advocate for reducing disaster risk through partnerships and integrated management approaches. Such international involvement not only amplifies local efforts but also helps embed global best practices into local disaster management strategies.

The interviews strongly advocate for more inclusive law-making processes that prioritize environmental conservation and community resilience. There is a clear demand for legislation that is not only protective but also empowering for local communities. The legal expert emphasized,

"Laws should be bottom to up, not top to bottom."

Mi Ni Lar (assumed name, personal communication, 2024, February)

This advocates for a grassroots approach to policy development that ensures laws are reflective of and responsive to the needs of those most affected by disasters. This shift towards more participatory governance models in disaster management can significantly enhance the efficacy of responses to natural disasters, ensuring that they are more adaptive, culturally sensitive, and aligned with the broader objectives of human security.

Local NGOs are often at the forefront of implementing these collaborative projects, acting as intermediaries between international donors and the community. They help translate global policies into action that fits the local context, ensuring that initiatives are both practical and beneficial to the local population. For example, the political party leader mentioned,

"We collaborate with CSOs, community-based organizations (CBOs) in providing assistance."

Mi Daewi (assumed name, personal communication, 2024, January)

This type of collaboration is crucial for adapting large-scale strategies to the nuanced needs of local communities, thereby enhancing the overall effectiveness of disaster risk reduction efforts.

Education and capacity building are also central themes in these collaborations. Joint efforts often focus on training local residents and leaders in disaster response and risk reduction techniques, thereby building local capacity to manage disasters independently over time. The meteorologist noted,

"As part of our collaboration, we provide training in meteorology and climate science, which teaches them the skills to analyze weather patterns and make accurate forecasts."

Mehm Rot (assumed name, personal communication, 2024, January)

This educational component is vital for sustaining long-term resilience and enabling communities to proactively manage their disaster response strategies. By equipping individuals with the necessary knowledge and skills, it ensures that communities are not only prepared to react in times of crisis but also capable of mitigating risks before disasters strike.

Finally, these collaborative efforts are underscored by a shared commitment to improving human security through enhanced disaster preparedness. By integrating local, national, and international resources and knowledge, these partnerships help build a more resilient framework that can withstand the challenges posed by natural disasters. The policy analyst encapsulated this approach:

"It's necessary to establish mutual trust and common understanding in disaster response systems. Additionally, it would be better if a separate group consisting of community members could be developed and a separate fund could be established to respond to natural disasters at the community level."

Ko Lwin (assumed name, personal communication, 2024, February)

This holistic approach not only strengthens community preparedness but also fosters a more cohesive and coordinated response to the multifaceted challenges of disaster management. By incorporating diverse perspectives and expertise from various sectors, it ensures a comprehensive strategy that addresses both immediate and long-term needs, enhancing overall community resilience.

4.3.4 Possibilities and Challenges in Implementing Human Security in Disaster Response in Mon State

The implementation of disaster preparedness strategies in Mon State has become increasingly crucial as the frequency and severity of natural disasters rise. Educational programs and early warning systems are pivotal in fostering community readiness by imparting essential knowledge and skills for disaster response. These initiatives not only disseminate information but also empower individuals and communities to make informed decisions and take proactive measures to protect their lives and properties. Ye Township Rescue Team leader emphasized the role of education in enhancing preparedness, stating,

"We, firstly, try to educate people about disasters on dos and don'ts by raising awareness. We also collaborate with CSOs in disaster preparedness."

Ko Minn (assumed name, personal communication, 2024, January)

This holistic approach integrates education with collaboration, ensuring that vital information is tailored to the specific environmental and cultural contexts of Mon State. By closely aligning educational initiatives with local traditions and ecological realities, it guarantees that disaster preparedness strategies are both relevant and effectively implemented within the community.

Early warning systems form another critical component of disaster preparedness, providing timely and accurate information that helps people evacuate hazardous areas, secure property, and brace for the impacts of impending disasters. The effectiveness of these systems hinges on their ability to rapidly disseminate information across a broad area and to diverse community populations. Ye Township Rescue Team leader also noted the increasing community engagement with these systems:

"People in our community become more interested in weather broadcasting news. They also spread the news mouth to mouth. In the past, they didn't pay attention to it. Now they take it more seriously."

Ko Minn (assumed name, personal communication, 2024, January)

This shift underscores a growing recognition of the value of early warning systems and a deeper commitment to utilizing these tools for enhanced safety and security. As communities increasingly prioritize these systems, they are better positioned to respond proactively to threats, thereby significantly reducing potential harm and fostering a more resilient environment.

Integrating human security principles into these educational and early warning systems underscores the commitment to addressing comprehensive safety needs of individuals, including protection from chronic threats like hunger and disease, as well as from sudden disruptions in daily life patterns. These programs prioritize the well-being of individuals as central to disaster preparedness and response efforts, aiming to build resilient communities capable of withstanding various shocks. However, the integration of these principles is not without challenges, particularly amid the current political crisis affecting trust and cooperation. The Ye Township Rescue Team leader again highlighted these difficulties, saying,

"Some people can get prepared. At the moment, we face a lot of challenges attributed to the political crisis... We had trust in each other. But now some organizations look at us doubtfully even if we don't take any side and just work for all people."

Ko Minn (assumed name, personal communication, 2024, January)

Furthermore, implementing human security principles in local disaster management frameworks in politically volatile regions like Mon State presents complex challenges. Human security aims to protect individuals from widespread threats and stabilize their livelihoods, but integrating these principles into disaster response strategies often conflicts with existing political and administrative frameworks. Political instability can significantly impede effective disaster response, with authorities sometimes more focused on maintaining control than on the well-being of the populace. The Ye Township Rescue Team leader also explained,

"At the moment, we face a lot of challenges attributed to the political crisis... We are not allowed to reach some areas controlled by EAOs."

Ko Minn (assumed name, personal communication, 2024, January)

These political barriers complicate both immediate response efforts and long-term recovery and mitigation strategies essential for resilience. The presence of such obstacles hinders the effective coordination and implementation of disaster management plans, thereby delaying crucial interventions and undermining the overall capacity to withstand and recover from adverse events.

Finally, technical and logistical challenges significantly hinder the effective implementation of human security in disaster management. Many local organizations lack the resources to adequately train staff or acquire sophisticated equipment, which is crucial for integrating human security concepts into disaster response. The Ye Township Rescue Team leader expressed concerns about these gaps:

"We face technical and mechanical (equipment) difficulties... and we don't have enough capacity to do holistically."

Ko Minn (assumed name, personal communication, 2024, January)

Additionally, logistical issues, compounded by Mon State's varied terrain and socio-economic diversity, often prevent timely and efficient aid delivery to the most affected areas. Challenges in transportation, communication, and coordination of aid further complicate the holistic implementation of human security, as he echoed:

"Transportation and mobilization are also restricted... It's difficult to deal with both SAC and EAOs."

<div align="right">Ko Minn (assumed name, personal communication, 2024, January)</div>

These hurdles not only impact immediate disaster responses but also affect overall community resilience, highlighting the need for improved strategies that prioritize human security. By addressing these challenges with a focus on safeguarding lives and livelihoods, communities can enhance their capacity to withstand and recover from disasters more effectively.

4.4 Conclusion

The institutional frameworks governing disaster resilience in Myanmar are extensively explored, revealing strengths and areas requiring improvement across several key documents and plans. The Disaster Management Law of 2013 is aligned with international frameworks, yet it is critiqued for prioritizing emergency response over risk reduction and for insufficiently incorporating Civil Society Organizations and addressing diverse demographic vulnerabilities. The Disaster Management Rules of 2015 and the subsequent Myanmar Action Plan on Disaster Risk Reduction (MAPDRR) of 2017 are praised for their structured approaches and stakeholder inclusivity but criticized for inadequate community engagement and vague integration with sustainable development goals. The Myanmar National Framework for Community Disaster Resilience of 2017 emphasizes targeted strategies for marginalized groups and calls for resilience efforts to be more integrated into development processes. Local-level plans like those of Kyaikmayaw Township and Mawlamyine Township underline the critical role of community resilience and coordinated responses, spotlighting the need for comprehensive, inclusive, and adaptive frameworks to enhance disaster management effectiveness across all levels of governance.

The empirical analysis of disaster management in Mon State highlights both systemic strengths and notable weaknesses. It emphasizes the importance of

community-led resilience efforts, especially in the face of limited governmental intervention, and discusses the integration of human security principles to enhance disaster resilience as per the Sendai Framework. The empirical findings reveal a significant reliance on local and informal networks, which compensate for governmental inadequacies by fostering community mobilization and grassroots disaster response strategies. The analysis also acknowledges challenges in implementing human security in disaster responses, especially given the political instability that hampers effective disaster management practices. Despite these hurdles, the section points to a resilient community adapting to complex disaster management landscapes, advocating for more integrated and holistic approaches that prioritize human security and sustainable development in the face of natural calamities.
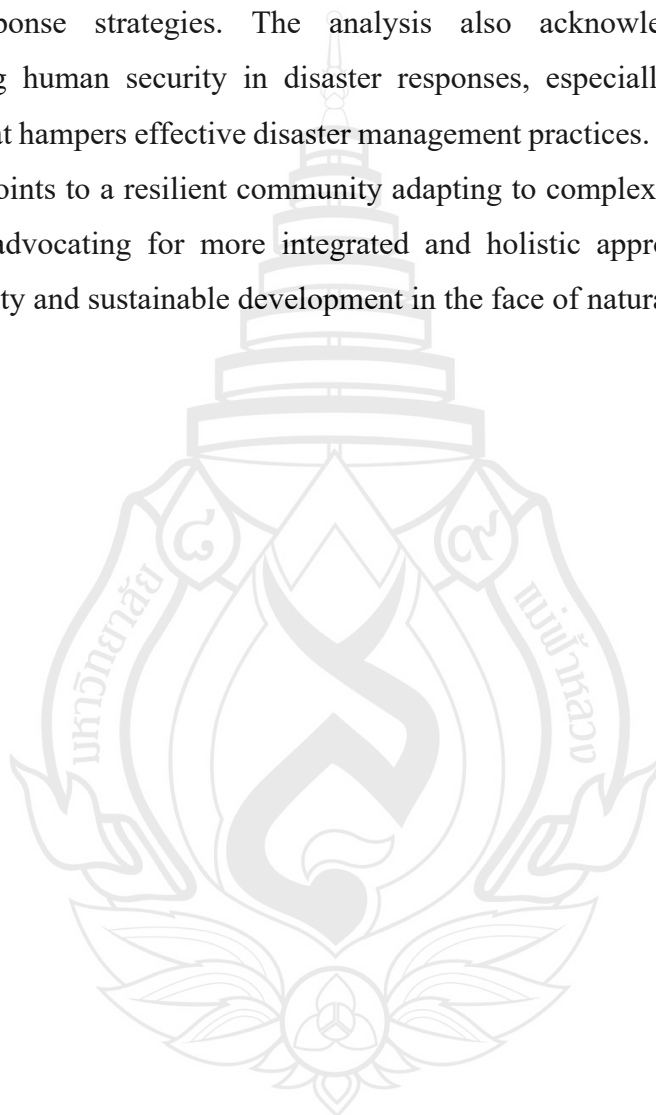
CHAPTER 5

CONCLUSION, DISCUSSION AND RECOMMENDATION

5.1 Introduction

Chapter 5 serves as the culmination of the study, synthesizing insights and proposing future directions for disaster management in Mon State. It begins with Section 5.2, 'Summary of Findings', which consolidates the core discoveries from the institutional and empirical analyses. The narrative progresses into Section 5.3, 'Theoretical Discussion', which contextualizes these findings within broader theoretical frameworks. Following this, Section 5.4, 'Conclusion', encapsulates the overall implications of the research, while Section 5.5, 'Recommendations', outlines actionable strategies for enhancing disaster resilience. Finally, Section 5.6, 'Recommendations for Further Study', identifies gaps in the current research and suggests areas for future inquiry, setting the stage for ongoing academic and practical engagement with the topic.

5.2 Summary of Findings

Section 5.2, 'Summary of Findings', encapsulates the comprehensive conclusions drawn from the study's dual analysis of disaster management in Mon State. It commences with 5.2.1, the 'Summary of Institutional Framework Analyses', which evaluates the effectiveness and alignment of the six institutional frameworks with the needs and challenges specific to Mon State. This is followed by 5.2.2, the 'Summary of Empirical Findings', which consolidates the practical outcomes from community engagements and the application of human security principles within these frameworks.

This section effectively bridges theoretical frameworks with grassroots realities, offering a robust synopsis of the research's key insights.

5.2.1 Summary of Institutional Framework Analyses

The Disaster Management Law of 2013 emphasizes preparedness and coordination but overlooks prevention and comprehensive risk reduction. It underrepresents the critical roles played by Civil Society Organizations in the disaster management cycle, limiting the effectiveness of the law. The absence of provisions for engaging the private sector and addressing specific needs of vulnerable demographic groups like women, children, the elderly, and people with disabilities highlights critical gaps. The law also struggles with communication discrepancies and coordination challenges between central and local disaster management bodies.

The Disaster Management Rules of 2015 provide a foundation for disaster response but lack mechanisms for significant community engagement and empowerment, crucial for effective disaster management as emphasized by the Sendai Framework. The rules also fall short in integrating disaster risk reduction into sectoral and local development plans, and they provide insufficient guidelines for monitoring, evaluating, and adapting to evolving risk landscapes. Despite mentioning Disaster Reduction Youth Volunteer Forces, the rules lack clarity on their roles and responsibilities.

The MAPDRR 2017 outlines a commendable approach to disaster risk reduction through a multi-stakeholder strategy. It incorporates lessons from past disasters like Cyclone Nargis and emphasizes resilience as integral to sustainable development. However, the plan initially overlooked the significant role of the private sector, which was only corrected in later iterations. More detailed strategies are needed to engage private stakeholders effectively and to focus more on vulnerable populations to ensure inclusivity and comprehensive support in disaster risk reduction efforts.

The Myanmar National Framework for Community Disaster Resilience 2017 emphasizes local empowerment and capacity building for disaster preparedness, reflecting the Sendai Framework's principles. Yet, it requires more explicit strategies for involving the private sector and enhancing governance at local levels to integrate disaster risk reduction into development planning effectively. The framework identifies

the high disaster risks faced by vulnerable communities but needs more concrete measures to address their specific needs.

The Kyaikmayaw Township Disaster Management Plan underscores the importance of local understanding in managing disaster risks. The plan's emphasis on coordinated response and community resilience is crucial, yet it reveals gaps in hazard prioritization and departmental capacities. Enhancements are being made through holistic approaches, including stakeholder consultations and integration with national guidelines, which are vital for a resilient Kyaikmayaw Township within Mon State.

Mawlamyine Township's Disaster Management Plan, grounded in the principles of the Sendai Framework, stresses community resilience and a systematic approach to disaster preparedness. The plan involves a wide array of stakeholders to ensure diverse perspectives and resources are utilized effectively. It also advocates for regular updates and rehearsals to refine strategies and integrate lessons learned, emphasizing the dynamic nature of disaster risk and the need for adaptive strategies.

5.2.2 Summary of Empirical Findings

The extensive interviews conducted across Mon State have unveiled profound insights into the region's disaster management challenges, coupled with its resilient community responses. A primary finding concerns the inadequacies in current disaster management laws, particularly the absence of binding regulations that govern both local and foreign entities. This legislative gap, as noted by legal experts, does not effectively address the complexities introduced by external business interests, which may exacerbate local vulnerabilities. The need for a comprehensive legal framework that includes the voices of the local populace is urgent, emphasizing a participatory approach to law-making that reflects and respects the community's needs and perspectives.

Another significant issue highlighted is the deficiencies in urban planning, specifically in disaster-prone areas like Mawlamyine. Interviewees identified critical flaws such as inadequate drainage systems and poorly planned emergency routes, which severely compromise the community's resilience to disasters. There is a recognized need to integrate strategic disaster response planning within urban and rural

development frameworks, ensuring that procedural responsibilities in disaster management are clear and actionable.

Furthermore, the effectiveness of the Department of Disaster Management at various administrative levels has been questioned due to recurrent issues like non-compliance among the populace and a shortage of expert participation. This undermines the effectiveness of preparedness and response strategies, emphasizing the need for more enforceable and authoritative management structures. Furthermore, the recurring theme of inadequate government intervention portrays a community largely left to fend for itself, highlighting a stark absence of essential services like early warning systems and robust governmental support in disaster preparedness.

Additionally, Local and informal networks have emerged as vital components of the disaster response system due to governmental shortcomings. These networks, which include local NGOs, monks, and community groups, are instrumental in mobilizing resources and organizing relief efforts. Their actions not only demonstrate community solidarity but also fill the significant void left by inadequate government response mechanisms. This community-driven approach is further exemplified by their involvement in grassroots mobilization and resource gathering, underscoring their crucial role in enhancing community resilience to natural disasters.

Moreover, the sporadic and inadequate governmental responses, compounded by a general neglect and mismanagement, necessitate a more integrated and responsive approach to disaster management that genuinely addresses community needs. The reliance on local knowledge and networks, coupled with a proactive stance toward disaster preparedness, is indicative of a shift towards sustainable and community-driven disaster management strategies that leverage local resources and expertise.

Finally, the challenges posed by technical and logistical constraints significantly hinder the effective implementation of human security in disaster management. The varied terrain and socio-economic diversity of Mon State often prevent timely and efficient aid delivery, highlighting the need for improved strategies that prioritize human security and community resilience.

5.3 Theoretical Discussion

In Chapter 2, seven propositions, derived from the literature review, are delineated. The connections between the theoretical framework and the research findings are subsequently explored in the following sections.

Proposition 1: The concept of human security has evolved from traditional state-centric security to encompass individual and community safety across multiple dimensions including economic, food, health, environmental, personal, community, and political security (UNDP, 1994; MacFarlane & Khong, 2006; King & Murray, 2001).

The proposition that human security has expanded beyond traditional state-centric models to embrace a more holistic approach covering economic, food, health, environmental, personal, community, and political security is convincingly supported by the research findings from Mon State. This broader conceptualization is crucial as it acknowledges the multifaceted threats individuals and communities face, particularly in regions with limited state capacity or governmental inefficacy, as demonstrated in Mon State. The findings illustrate that deficiencies in government intervention and infrastructure not only compromise physical safety but also undermine economic stability and health security by failing to provide adequate disaster management and response mechanisms. This shift in understanding human security aligns with the observed grassroots adaptations where local networks compensate for these deficiencies, thereby ensuring community resilience and safety across multiple dimensions.

However, while the proposition effectively captures the breadth of human security concerns, it could be expanded to more explicitly include the dynamic interplay between these dimensions, especially under the pressures of political instability and environmental change. The research from Mon State shows how environmental threats, exacerbated by inadequate governmental structures, can undermine political and community security, leading to a cycle of vulnerability where each dimension of security is interdependent. This interconnectivity suggests that efforts to bolster one aspect of human security, such as economic or environmental, can have cascading

effects on others, such as health and personal security. Therefore, a more integrated approach to human security, which not only recognizes these individual dimensions but also addresses their intersections, would provide a more comprehensive framework for understanding and mitigating the multifaceted risks faced by communities, especially in disaster-prone and politically volatile environments like Mon State.

Proposition 2: Human security integrates a proactive prevention approach, focusing on the protection from threats and the empowerment of individuals through multidimensional frameworks that include "freedom from fear", "freedom from want", "freedom to live in dignity", and "freedom from hazard impacts" (Ogata & Sen, 2003; Kofi Annan, 2005)

This proposition advocates for a proactive, prevention-focused model of human security that incorporates comprehensive freedoms, including "freedom from fear", "freedom from want", "freedom to live in dignity", and "freedom from hazard impacts." The findings from Mon State lend considerable support to this proposition. The multifaceted challenges revealed through insufficient governmental intervention and reliance on local and informal networks underscore a significant need for empowerment and protection strategies that address these diverse freedoms. The lack of effective disaster management infrastructure and the resulting dependency on grassroots networks illustrate a substantial gap in "freedom from hazard impacts" and "freedom from fear." The community-driven responses, while showcasing resilience, also highlight the "freedom from want" as communities struggle with insufficient resources to handle disasters effectively.

However, the proposition could be expanded to better incorporate the complexities of political instability and its impact on human security. In Mon State, political and administrative inadequacies exacerbate vulnerabilities, complicating the straightforward application of the human security framework proposed by Ogata, Sen, and Annan. The findings suggest that while the framework is crucial, its implementation requires adaptations to address political and systemic challenges that may hinder the actualization of these freedoms. For instance, the integration of human security principles into local disaster management strategies is often thwarted by political instability, which could impede proactive prevention measures. Thus, while

the proposition is vital for guiding security strategies, it could potentially benefit from a deeper exploration of how to navigate and implement these principles in politically and administratively complex environments like Mon State.

Proposition 3: Disasters pose a serious threat to human security by undermining economic and social foundations, exacerbated by climate change, which serves as a threat multiplier (Yamada, 2015; Barnett, 2003; Intergovernmental Panel on Climate Change, 2014).

The proposition that disasters threaten human security by undermining economic and social foundations, amplified by climate change as a threat multiplier, is robustly substantiated by the research findings from Mon State. The data reveals that insufficient governmental infrastructure and intervention, coupled with inadequate disaster management, exacerbate vulnerabilities within communities, aligning with the notion that disasters significantly destabilize human security. The systemic deficiencies noted - such as poor urban planning and lack of enforceable disaster management policies - directly impact the economic stability and social cohesion of affected areas. These issues are worsened by climate change, which intensifies the frequency and severity of natural disasters, thereby increasing the strain on already fragile infrastructures and resources.

However, while the proposition captures the broad impacts of disasters on human security, it might underrepresent the adaptability and resilience capacities of local communities. The findings from Mon State illustrate a significant reliance on local and informal networks, which not only compensate for governmental inadequacies but also foster a form of community resilience that mitigates some of the threats to human security. These grassroots efforts, which include community-led education, resource distribution, and emergency response, suggest that while disasters pose severe threats to human security, the capacity of communities to adapt and respond can serve as a critical buffer. Therefore, any comprehensive analysis of disasters' impact on human security should also consider these adaptive strategies alongside the vulnerabilities.

Proposition 4: Vulnerability to disasters is not only shaped by natural hazards but also by socioeconomic factors, power imbalances, and lack of resources, which

determine how populations cope with disasters (Pulhin et al., 2021; Raut & Meyer, 2017).

The proposition that vulnerability to disasters is shaped not only by natural hazards but also by socioeconomic factors, power imbalances, and resource availability is thoroughly validated by the research findings from Mon State. These findings elucidate how systemic deficiencies and socioeconomic conditions exacerbate the community's vulnerability. Insufficient governmental intervention and the lack of a robust infrastructure underscore a scenario where systemic inefficiencies directly affect disaster preparedness and response. The research points out the critical gaps in urban planning, legal frameworks, and governmental accountability, all of which influence how effectively a community can respond to and recover from disasters. This connection highlights the importance of the proposition by demonstrating that the scope of disaster management extends beyond mere natural factors to include broader socioeconomic and political dimensions.

However, the proposition could further emphasize the dynamic nature of these socioeconomic factors and how they interact with each other to compound vulnerability. For instance, in Mon State, the reliance on local and informal networks is not just a response to inadequate government services but also a reflection of community resilience and social capital, which play pivotal roles in disaster management. This interaction suggests that while socioeconomic factors contribute to vulnerability, they also foster resilience through community-driven responses. Therefore, any discussion on vulnerability should also consider these adaptive capacities and how they can be supported or enhanced. The research findings from Mon State offer a profound insight into these dynamics, showing both the challenges and the community's ingenuity in addressing and adapting to these challenges, thereby providing a more nuanced understanding of the proposition.

Proposition 5: Community resilience involves both systems-based and agency-centered approaches, focusing on infrastructure, organizational structures, and community strengths and self-organization (Norris et al., 2008; World Economic Forum, 2013).

The proposition that community resilience encompasses both systems-based and agency-centered approaches is well-supported by the comprehensive findings from Mon State. The data underscores the pivotal role of infrastructure and organizational frameworks, alongside the indispensable agency of local communities in building resilience. For example, the deficiency in governmental support and infrastructure has catalyzed the community's reliance on local networks and self-organization, highlighting the intersection of systems-based shortcomings and the compensatory agency-centered actions. This aligns with the proposition, illustrating how both infrastructure (or the lack thereof) and community agency are crucial in shaping resilience. Moreover, the community-led initiatives, such as local knowledge enhancement and grassroots disaster preparedness, demonstrate the practical manifestations of agency-centered approaches. These are not only compensatory but also strategic, leveraging local strengths and capacities to mitigate and respond to disasters effectively.

However, while the proposition captures the dual aspects of resilience building, it might benefit from explicitly addressing the dynamic interactions between these systems and community agency. The findings from Mon State suggest that these interactions are not just parallel but deeply interconnected, often with systemic failures prompting increased community agency and vice versa. For instance, insufficient governmental structures often push communities towards self-reliance, which then evolves into structured community-led efforts that aim to fill systemic gaps. An emphasis on how these elements influence each other could provide a more nuanced understanding of resilience, highlighting potential areas for strengthening the synergy between system-based supports and community agency. This perspective would be critical for designing interventions that not only address the immediate gaps but also reinforce the long-term sustainability of resilience efforts by harmonizing structural supports with community capabilities.

Proposition 6: The Sendai Framework advocates for a comprehensive approach to disaster risk reduction, integrating human security principles to enhance resilience and reduce vulnerabilities through inclusive, community-based strategies (Aitsi-Selmi et al., 2015; UNISDR, 2015).

The Sendai Framework's advocacy for integrating human security principles into disaster risk reduction is significantly reflected in the grassroots actions and community resilience observed in Mon State. The framework's emphasis on inclusive, community-based strategies to enhance resilience and reduce vulnerabilities is validated by the reliance on local and informal networks for disaster management in the region. The findings from Mon State reveal a critical gap in governmental intervention and infrastructure, which has propelled communities to self-organize and utilize local networks and knowledge to respond to disasters. This adaptation not only compensates for state deficiencies but also aligns with the Sendai Framework's approach by fostering a community-based resilience system that enhances "freedom from fear" and "freedom from hazard impacts."

However, while the proposition aligns well with the observed practices in Mon State, it appears to overlook the complexities introduced by political instability and the specific socio-economic challenges that can hinder the effective implementation of such frameworks. In contexts like Mon State, where political instability and conflict exacerbate vulnerabilities, the Sendai Framework's principles need to be adapted to more effectively address these additional layers of complexity. The practical application of the framework in such settings must consider the dynamics of conflict, the availability of resources, and the actual capacities of local institutions to engage in meaningful disaster risk reduction. Therefore, while the framework's comprehensive approach is crucial, its implementation strategies should be diversified to account for the unique challenges faced by communities in politically sensitive and resource-scarce environments.

Proposition 7: Polycentric governance provides a viable alternative to centralized disaster management, particularly in conflict-affected areas, by enabling localized decision-making and cooperation among multiple governance actors (Ostrom et al., 1961; Patel et al., 2021).

This proposition highlights the potential of polycentric governance as a viable alternative to centralized disaster management, emphasizing its advantages in conflict-affected areas through localized decision-making and cooperation among various governance actors. This proposition is strongly supported by the findings from Mon

State, where the failure of centralized governmental interventions has necessitated the emergence and strengthening of local and informal networks. These networks have effectively filled the void left by the government, managing disaster responses more adaptively and contextually, which aligns with the principles of polycentric governance.

However, while polycentric governance emphasizes decentralization and local autonomy, the findings from Mon State suggest a need for better integration and coordination between these local efforts and broader governmental and international strategies. The success seen in local governance highlights the resilience and innovation at the community level but also underscores the challenges of scaling these efforts without adequate support or resources. Thus, while the proposition rightly supports polycentric governance, it is plausible to understate the necessity for an overarching framework that ensures coherence, resource distribution, and strategic alignment across different levels of governance, which are crucial for sustaining these efforts in the long term.

5.4 Conclusion

The research conducted in Mon State illuminates critical insights into the intersection of human security, disaster management, and community resilience. The research findings highlight significant gaps in disaster management within Mon State, revealing the inadequacies of existing institutional frameworks to effectively address the unique challenges faced by this region. Despite the formal structures put in place by laws and regulations such as the Disaster Management Law of 2013 and the Disaster Management Rules of 2015, there exists a considerable disconnection between the central intentions and local applications. These frameworks frequently fall short in preventing disasters and engaging crucial community sectors, including vulnerable populations and the private sector. Additionally, the empirical evidence underscores the resilience of the community's grassroots responses, albeit often compensating for the gaps left by governmental inadequacies. This duality between institutional intentions and practical outcomes forms a critical aspect of the study, advocating for a

reevaluation of disaster management strategies to be more inclusive and effectively integrated into local realities. The analysis within the theoretical framework illuminates the critical role of local empowerment and capacity building, echoing the need for a holistic approach that not only recognizes individual dimensions of security but also their interdependencies. Such an approach would foster more sustainable and effective disaster management practices, prioritizing not just response and recovery but also proactive prevention and resilience-building across all sectors of society.

In conclusion, this research illustrates a pressing need for an integrative and adaptable framework in disaster management that bridges the gap between high-level policy formulations and grassroots implementation. The findings advocate for the adoption of strategies that are contextually relevant, participatory, and inclusive, particularly emphasizing the role of local communities in shaping these strategies. This study corroborates the propositions of the theoretical discussion, advocating for a comprehensive approach that leverages local knowledge and capacities, addresses socio-political and economic vulnerabilities, and integrates human security principles into every facet of disaster management. Moving forward, it is imperative that disaster management policies not only respond to the immediate challenges but also strategically anticipate future risks, thereby enhancing the resilience and security of vulnerable communities in Mon State and beyond.

5.5 Policy Recommendations

This provides targeted advice derived from the research findings, aimed at enhancing disaster management practices across various sectors in Mon State. It starts with 5.5.1, offering specific 'Policy Recommendations to Government Agencies', emphasizing the need for improved legislation, coordination, and resource allocation. Subsequently, 5.5.2 addresses 'Policy Recommendations to Civil Society Organizations and Non-Governmental Organizations (CSOs/NGOs)', focusing on enhancing community engagement, training, and local capacity building. 5.5.3 turns attention to the 'Private Sector and Related Parties', proposing collaborations that leverage private innovation and resources for disaster resilience. Finally, 5.5.4 presents

'Policy Recommendations to the Community', encouraging grassroots actions and local leadership in preparedness activities.

5.5.1 Policy Recommendations to Government Agencies

Priority 1: The government should ensure that the 'National Emergency (Disaster) Fund' is not only allocated effectively across Union to States and Regions but also used efficiently. These funds should be invested in Disaster Risk Reduction (DDR) initiatives rather than being limited to donations for disaster victims. This strategic investment is crucial in building resilient infrastructure and enhancing the capacity to mitigate the impacts of disasters.

Priority 2: The Department of Disaster Management (DDM) must spearhead the formulation of localized disaster management plans for each township. These plans should incorporate comprehensive risk assessments tailored to the specific needs and vulnerabilities of each township. By considering the unique disaster typologies, residency vulnerability factors, and the overarching challenges posed by Climate Change, these plans can significantly bolster local preparedness and response capabilities.

Priority 3: Policy process in disaster management should be inclusive, integrating meaningful contributions from local Civil Society Organizations (CSOs) and Ethnic Armed/Resistance Organizations (EAOs/EROs) including New Mon State Party (NMSP). This participatory approach ensures that the policies formulated are grounded in the realities and needs of the communities they aim to protect, thus enhancing the effectiveness and acceptance of disaster management strategies.

5.5.2 Policy Recommendations to Civil Society Organizations and Non-Governmental Organizations (CSOs/NGOs)

Priority 1: Local Civil Society Organizations (CSOs) should take the initiative to deploy affordable early warning systems and disseminate user-friendly disaster awareness information. This effort should be supported by partnerships with International Non-Governmental Organizations (INGOs) or United Nations agencies to ensure the implementation is informed by global best practices and advanced technologies. Furthermore, these local CSOs should conduct regular Water, Sanitation,

and Hygiene (WASH) training, and first-aid courses, critically equipping the community with essential skills and knowledge to effectively respond in the initial stages of a disaster. These training sessions should be tailored to the specific needs and vulnerabilities of the communities they serve, ensuring that they are both practical and accessible.

Priority 2: Empowerment of community-based informal leadership groups, such as Community-based Organizations (CBOs), religious leaders, and community elderlies, is essential for enhancing local disaster preparedness and response capabilities. These groups often hold significant sway within their communities and can mobilize grassroots support effectively. Policies should support these leaders through training programs that enhance their capacity to lead and manage disaster response efforts. Additionally, providing these leaders with resources and authority to implement disaster management initiatives can lead to more resilient communities. This empowerment not only recognizes and utilizes the existing social structures and leadership but also ensures that disaster response becomes a more integrated part of community life, thereby enhancing the overall effectiveness of interventions.

Priority 3: CSOs and NGOs at local, state, and national levels should actively advocate for the adoption of a 'Humanitarian Ceasefire' during disasters. This policy recommendation involves lobbying conflict parties to agree temporarily to cease hostilities when a disaster strikes, thereby facilitating safe and efficient delivery of emergency aid. Such advocacy should emphasize the humanitarian benefits and the necessity of protecting vulnerable populations during crises. The success of this initiative depends on the collaborative efforts of NGOs across various levels, leveraging their collective influence and networks to negotiate these ceasefires.

5.5.3 Policy Recommendations to the Private Sector and Related Parties

Priority 1: Businesses engaged in high-impact sectors such as mining and agriculture, especially those operating near residential areas, must strictly adhere to land use and forest policies. This adherence not only mitigates the environmental impacts that can exacerbate the effects of natural disasters but also safeguards communities from potential hazards. Regulatory compliance should be enforced through robust monitoring and penalties for violations, ensuring that business operations do not

compromise the safety and well-being of nearby communities. Additionally, these sectors should be encouraged to adopt sustainable practices that balance economic interests with ecological preservation and community safety.

Priority 2: The private sector should actively participate in the development and implementation of Climate and Disaster Risk Transfer systems through Public-Private Partnership (PPP). These systems are designed to mitigate financial losses by transferring the risks associated with climate-related disasters from individuals and governments to private entities. By investing in such mechanisms, the private sector can play a critical role in enhancing economic resilience against the increasing frequency and intensity of natural disasters. Effective risk transfer systems require innovative financing solutions and cooperation between government agencies and private companies to ensure they are accessible and beneficial to all stakeholders involved.

Priority 3: Construction firms have a crucial role in building disaster-resilient communities by adhering to advanced urban planning and architectural practices. This involves designing and constructing housing and infrastructure that are sensitive to disaster risks, including the integration of emergency evacuation exits, efficient drainage systems to prevent flooding, and materials that are durable against natural forces such as earthquakes and hurricanes. Such practices not only enhance the safety and durability of buildings but also ensure that urban areas are better prepared to handle the aftermath of disasters. Construction firms should work closely with local governments and experts in disaster management to ensure that new developments meet the highest standards of safety and resilience.

5.5.4 Policy Recommendations to the Community

Priority 1: Communities should actively participate in early warning systems, disaster awareness training, and emergency drill courses. These initiatives must be designed to be inclusive and engaging, ensuring broad community involvement. Local authorities, along with NGOs and CSOs, should facilitate regular workshops and drills that simulate disaster scenarios, providing practical, hands-on experience that can be critical in an actual emergency. Furthermore, the effectiveness of early warning systems relies heavily on the community's responsiveness and understanding of the protocols,

making their active participation essential. Tailored programs that address specific local risks and vulnerabilities can increase the relevance and impact of these training sessions.

Priority 2: Each village or ward should establish a Community Center that doubles as a disaster response hub. These centers should be strategically located to be easily accessible during emergencies and equipped with essential Water, Sanitation, and Hygiene (WASH) facilities. They should also have adequate space to serve as temporary shelters for residents displaced by disasters. Funding for these centers can be sourced from local government budgets, supplemented by national disaster management funds and international aid. Community Centers should also serve as focal points for distributing information and resources during non-crisis periods, thereby maintaining their relevance and operational readiness.

Priority 3: Community-based Search and Rescue (SAR) teams should be established and properly funded to ensure they are equipped to respond effectively to emergencies. These teams require professional training that could be enhanced through international cooperation, such as partnerships with Japan International Cooperation Agency (JICA), which can provide both policy and technical expertise. Such international collaboration can bring advanced skills and technologies to community-level teams, significantly boosting their capabilities. Funding for these initiatives should be a joint effort involving local governments, national funding allocations, and possibly private sector contributions, emphasizing the critical role of local communities in initial disaster response efforts.

By implementing these policy recommendations, Mon State can strengthen its disaster management capabilities and build more resilient communities capable of effectively responding to and recovering from natural disasters. These measures should be integrated into broader development strategies that prioritize human security, environmental sustainability, and inclusive governance.

5.6 Recommendations for Further Study

Firstly, given the broadened understanding of human security encompassing economic, food, health, environmental, personal, community, and political security, future research should focus on interdisciplinary and holistic approaches that integrate these dimensions. There is a need to investigate how these various aspects of security influence one another and the mechanisms through which improvements in one area could potentially enhance others. Particularly, studies could explore the dynamic interplay between political stability, environmental sustainability, and economic resilience, providing a comprehensive framework that reflects the interconnected nature of these issues, especially in regions like Mon State where political and environmental challenges are prevalent.

Moreover, future studies should explore the effectiveness of polycentric governance in managing human security across different political environments, especially those marked by political instability or conflict. Research should focus on how decentralized decision-making and local autonomy can be balanced with the need for coordination and oversight from central authorities. This study would benefit from comparative analysis across various regions with similar vulnerabilities but differing governance structures to understand the conditions under which polycentric governance most effectively enhances disaster resilience and community safety.

Lastly, further study on the "triple nexus" referring to the interlinkages between humanitarian, development, and peace efforts should explore how the integration of these domains can be optimized to enhance human security in politically volatile and disaster-prone regions like Mon State. This research should examine the practical applications and challenges of implementing a holistic approach that not only addresses immediate humanitarian needs but also fosters long-term developmental goals and contributes to peacebuilding. Specifically, the study could investigate how humanitarian interventions can be designed to simultaneously support development infrastructure and mitigate conflict, thereby creating a sustainable environment where reduced vulnerabilities contribute to lasting peace.
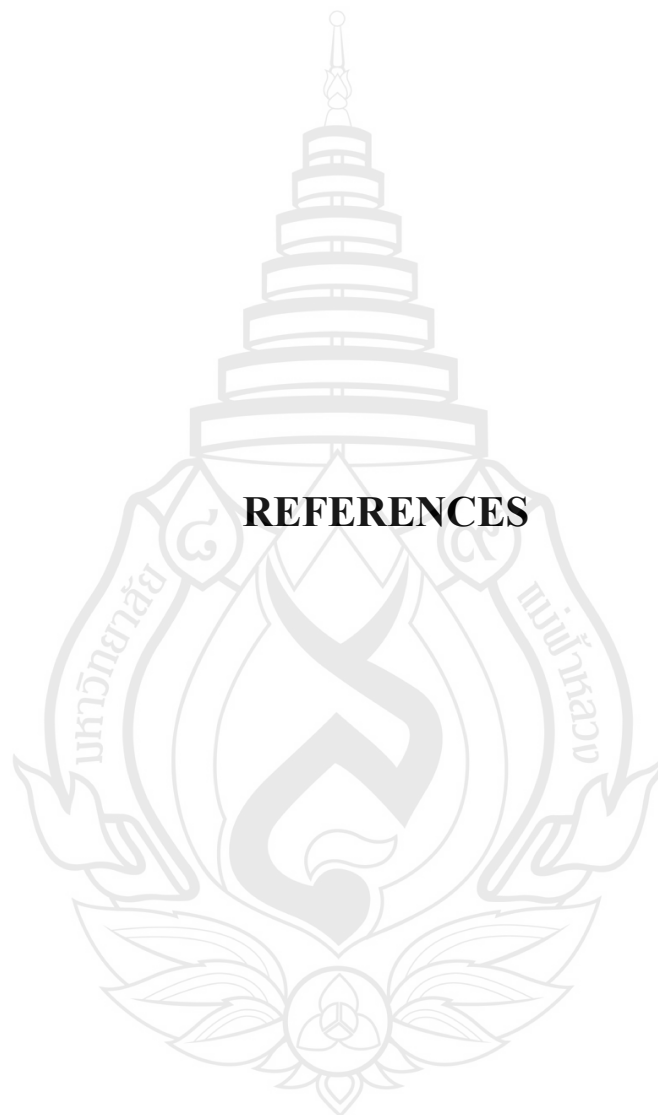
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APPENDICES

APPENDIX A

DOCUMENT CERTIFYING HUMAN ETHICS

NIDA Clinical Trials Network

Certificate of Completion

is hereby granted to

Sike Chan

to certify your completion of the six-hour required course on:

GOOD CLINICAL PRACTICE

MODULE:	STATUS:
Introduction	N/A
Institutional Review Boards	Passed
Informed Consent	Passed
Confidentiality & Privacy	Passed
Participant Safety & Adverse Events	Passed
Quality Assurance	Passed
The Research Protocol	Passed
Documentation & Record-Keeping	Passed
Research Misconduct	Passed
Roles & Responsibilities	Passed
Recruitment & Retention	Passed
Investigational New Drugs	Passed

Course Completion Date: 17 June 2023

CTN Expiration Date: 17 June 2026

Eve Jelstrom

Eve Jelstrom, Principal Investigator
NDAT CTN Clinical Coordinating Center
Good Clinical Practice, Version 5, effective 03-Mar-2017
This training has been funded in whole or in part with Federal funds from the National Institute on Drug Abuse, National Institutes of Health, Department of Health and Human Services, under Contract No. HHSN27201201000024C.

APPENDIX B

INTERVIEW QUESTIONS

Research Question 1: What is the current state of community-based disaster management in flooded areas of Mon State, Republic of the Union of Myanmar regarding natural disaster as community insecurity?

Table B1 Semi-structured Interview Questions for Research Question 1

Research Objective	Interview Question
1) To study the situation and community-based disaster management in vulnerable areas of Mon State, Republic of the Union of Myanmar	1. What are the ways people in Mon State, Myanmar prepare for and deal with natural disasters like floods or earthquakes in their communities?
	2. Can you tell me about any instances where local communities in Mon State worked together to make their neighborhoods safer from disasters?
	3. How do you think the government and local leaders can help communities in Mon State become more prepared for disasters?
	4. Have you personally experienced a natural disaster in Mon State, and how did your community respond to it?
	5. What do you think are the biggest challenges for communities in Mon State when it comes to staying safe during natural disasters?

Research Question 2: How do communities collaborate to enhance their resilience in the absence of authoritive interventions concerning community-based disaster management in flooded areas of Mon State, Republic of the Union of Myanmar?

Table B2 Semi-structured Interview Questions for Research Question 2

Research Objective	Interview Question
2) To study plans and policies on community-based disaster resilience in vulnerable areas of Mon State, Republic of the Union of Myanmar	1. How do communities in Mon State collaborate with each other to enhance their resilience in the absence of authoritative interventions?
	2. Are there any success stories you've heard about where communities in Mon State have improved their disaster preparedness without outside help?
	3. What role do local leaders or influencers play in fostering collaboration and resilience within the communities?
	4. Are there any cultural or traditional practices that contribute to community collaboration and disaster resilience in Mon State?
	5. What are the main obstacles or conflicts that communities encounter when trying to collaborate on disaster resilience efforts?

Research Question 3: How can a more robust integration of human security principles enhance the effectiveness of community resilience efforts within the context of the Sendai Framework?

Table B3 Semi-structured Interview Questions for Research Question 3

Research Objective	Interview Question
3) To study problems, threats, and policy recommendations regarding community-based disaster management in vulnerable areas of Mon State, Republic of the Union of Myanmar.	1. What kind of support do you believe would be most helpful for communities in Mon State to become more resilient to disasters? 2. Could you provide some real-life examples of how integrating human security principles has improved community resilience in disaster-affected areas? 3. Can you provide examples of how the Sendai Framework has been applied or could be applied to improve disaster preparedness and recovery in Mon State? 4. In your opinion, what are the key ingredients for "building back better" after a disaster in Mon State, and how can communities achieve this? 5. What recommendations would you offer to policymakers, community leaders, and individuals to better integrate human security principles into disaster preparedness and recovery efforts within the Sendai Framework?

ADDITIONAL INTERVIEW QUESTIONS

1. How severe are the natural disasters (floods, landslides, strong winds, etc.) In Mon State?

2. Weather news is also an early warning system for natural disasters such as floods, cyclones, and extreme temperatures. How important is this system to reduce natural disasters in Mon State?

3. How interested are people (especially Mon State residents) in weather news?

4. In the past, people only listened to weather reports issued by the government, but now everyone with a mobile phone can easily access the news. How would you personally like to comment on this as a weather forecaster on social media?

5. As someone who publishes weather news regularly, how many challenges and difficulties do you face?

6. What kind of help would you like the relevant external organizations to provide for the weather reporter to continue in the long term?

7. What do you want the people of Mon State to do to cope with climate change and natural disasters? We would like to discuss your suggestions.

8. How are the rescue organizations planning for natural disasters?

9. The Disaster Management Law has been enacted at the federal level since 2013. In practice, how are the various levels of authorities (state, township, ward, and rural) already managing?

10. Regarding natural disasters, what kind of arrangements have been made at all levels of authority (state, township, ward, and rural), including the previous parliament?

11. How do political parties help? What challenges are there when carrying out disaster relief?

12. How resilient do you think communities are?

13. What would you recommend to the community and the relevant authorities so that they can survive the natural disaster?

CURRICULUM VITAE

CURRICULUM VITAE

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2019   Post-graduate Diploma

                             Development Studies

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PUBLICATION

Chan, S., & Maung, M. P. M. (2020). An analysis of financial inclusion for poverty
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