# Original Research Article

# Explanation of the Political Economy of Disasters in Nepal

### ****ABSTRACT:****

*A disaster is a significant disruption in the normal functioning of the natural life of a public or society, leading to widespread socio-psychological, physical, economic, or environmental losses. It occurs when a hazard breaks out in a vulnerable population and harms them. Nepal ranks among the most natural hazard-prone nations globally regarding earthquakes and hazards led by climate change, like heavy rainfall, landslides, floods, droughts, etc. Its vulnerability is largely attributed to rapid urbanization and unplanned rural development in its fragile land. These trends have intensified exposure to risks for a growing population segment, as emergency services' weak capacity to respond effectively. The absence of strong disaster management frameworks at both local and national levels, insufficient legislation related to disaster mitigation and urban planning, and inadequate public awareness and community preparedness may be the factors contributing. The geological situation and inadequacies have not only escalated the frequency and intensity of hazards but have also represented missed opportunities to foster resilient and safer communities. Applying qualitative descriptive analysis, this study aims to explain the political economy of disaster with special reference to the current earthquake (Gorkha earthquake 2015 and* earthquake struck in mid-Western Nepal in November 2023) *disaster in Nepal. The study found that, as the geophysical processes of the natural hazard cannot be changed, integrating mitigation components and techniques is the key to reducing vulnerability. Although natural calamities have no class or group favoritism, evidence shows that the poor and marginal people, who are disproportionately affected by disaster, are bonded by rescue, relief, and recovery. Growing evidence indicates that some disaster-affected people face challenges in resuming normal life several months after the disaster. The study concludes that well-preparedness for response to the probable disaster and comprehensive planning with sufficient resources are critical for post-disaster reconstruction to ensure effective and equitable recovery.*

**Keywords:** Disaster impacts; Dynamic pressures; Unsafe conditions; Vulnerability

### INTRODUCTION

A natural hazard is an event that nature can cause in normal settings. When such an event occurs and the danger to human civilization is realized, it becomes a disaster. This kind of understanding comes from science, history, local knowledge, and people's perception and reaction to response to these events. According to the UNISDR (2009), a disaster is a natural event that has the potential to cause major damage, including loss of life, property damage, and serious social or economic troubles. Scientists, including natural and socio-economic, and political, can jointly analyze and play a key role in studying these events and the factors that turn them into disasters, helping to build resilience and inform effective strategies for disaster preparedness. Since disasters occur in a political setting, addressing them requires a strong political commitment to mitigate their impact. The Political economists can evaluate the organizational role on hazards and disasters, examining how ruling elites and ordinary people strive to create meaningful traditions amidst hardship. It also reveals how economic structures contribute to vulnerability and how elites use specific economic, political, and ideological tools to retain power. Additionally, it explores how political and economic agendas influence recovery efforts.

Throughout history, societies have faced the difficult decision of whom to sacrifice and whom to aid in times of disaster. For much of human history, natural hazards were seen as acts of divine wrath, a sign of the gods' displeasure. To pacify these deities and alleviate disasters, people would offer goods, animals, or even human lives following religious practices. However, those times have passed. Achievements led by modern science have empowered human civilization with a clearer understanding of the causes of natural hazards and contributed to strategies aimed at their prevention or mitigation. Natural hazards, which are events arising from environmental forces, only escalate into disasters when they affect human populations that lack the resilience to withstand their impact without significant harm to life or property (Schwab et al., 2007). According to the United Nations International Strategy for Disaster Reduction (UN/ISDR, 2004), a natural disaster is defined as a substantial disruption to the functioning of a community or society, resulting in extensive human, material, economic, or environmental losses that exceed the community’s capacity to manage using its resources. Disasters result when hazards impact vulnerable populations, producing losses and injury, devastation, and disruption. They can be natural, like earthquakes, floods, and famines, or human-made, such as manufacturing accidents or armed conflict. Not only immediate physical losses or damages, disasters have long-term economic effects by reducing productivity, affecting public investments, and rising costs of living, particularly for the poor. Sometimes they may generate secondary events, creating a chain of effects that expose communities to multiple, interrelated disasters. As a result, a community may be exposed to multiple disasters due to these cascading effects.

Nepal is recognized as one of the most disaster-vulnerable countries globally, ranking 23rd in terms of exposure to natural hazards. It is also classified as the 30th most at-risk nation for flooding, the 11th most vulnerable to earthquakes, and the 6th in terms of susceptibility to climate change impacts. Overall, it is considered one of the world's high-risk hotspots for natural disasters, ranking 20th in terms of overall disaster risk (UNDP, 2012). Recent earthquake disasters in the Gorkha earthquake that hit Kathmandu and the periphery, and earthquakes in Midwestern Nepal have threatened the capital city and its peripheral areas, with great devastation. Although the movement of tectonic plates and the fragile structure of land are natural causes of hazards, the underdeveloped economy, rapid urbanization, poor planning, resource constraints, absence of vulnerability reduction measures, rampant corruption, and most importantly, lack of awareness of the community are the main reasons for increasing this defenselessness. Numerous activities associated with the present trend of rapid urbanization and haphazard urban development in the core area as well as in the peripheral agricultural lands are responsible for increasing disaster vulnerability, exposing a higher percentage of the population to seismic and environment-related hazards, and decreasing the capacity of urban and emergency services to cope with disaster in many ways. Rapid urbanization and unplanned development in city centers and surrounding agricultural areas have exposed a larger portion of the population to seismic and environmental hazards. While the effective and efficient urban infrastructure and emergency services in managing disasters are overlooked, these factors will accelerate the change of urban centers and peripheral areas into high-risk zones, but have also undermined opportunities to create safer, more resilient communities in newly developing regions. Though the natural geophysical processes cannot be altered, these disaster mitigation strategies and technologies at all stages of development can be instrumental in minimizing vulnerability.

The need to combat the resultant losses caused by hazards can be manifold. In the short term, when a disaster strikes, the primary concerns are the potential intangible and tangible losses due to casualties' fatalities, injuries, and missing persons. And tangible losses like physical and functional consequences on services, buildings, and infrastructure, and direct economic loss (Claudia & De Lucia, 2024). In the long term, indirect consequences, social trouble, and environmental degradation may become of greater importance. Many consequences are intangible and cannot be measured or quantified easily. In most vulnerability assessments, the focus is typically on tangible losses that can be measured and assigned a monetary value, while intangible losses are generally described qualitatively. This disparity poses significant challenges when attempting to integrate both types of losses into a comprehensive impact analysis (Andrade et al., 2018,). For disaster-prone communities, the extensive damage caused by such events remains a critical concern. Moreover, assessing vulnerability to natural hazards like earthquakes is inherently complex, often regarded as an ill-structured problem, one that lacks a single, definitive, or objectively optimal solution. Literature indicates several contrasting definitions of vulnerability and numerous conflicting perspectives on what should or should not be included in the broad vulnerability assessment.

The combined philosophical foundation of natural and social science insights that shapes our understanding and response to hazards and disasters. Natural sciences offer measurable data and predictions, while social sciences offer observed knowledge, together guiding research, policy, and actions to mitigate disaster impacts and enrich resilience. Likewise, philosophical underpinnings have a role in making policies toward reducing disaster impacts and nurturing resilience. With special reference to earthquake disasters in Nepal-2072 and 2023, the main concern of this paper revolves around analyzing the political economic questions like: what are the root causes of disasters that pressure the community to unsafe conditions? What possible socio-economic impacts may be in the short and long run? Who are the most vulnerable people, and why do disasters hit the poor hardest? And how can these vulnerabilities be minimized?

## METHODS AND MATERIALS

Applying the critical analysis, this paper focuses on the socio-economic and political aspects of disaster. The conceptual motivations are drawn from the Pressure and Release (PAR) model developed by Wisner et al. (1994) as an alternative approach to challenge the traditional belief in divine causality of natural disasters. Addressing the underlying question of the production of vulnerability in political-economic spaces, it argues that disasters are the consequence of socio-economic structure and poorly coordinated development outcomes. The materials used to carry out this study are basically *focused on Gorkha earthquake 2015 and* earthquake struck in Mid-Western Nepal in November 2023 *disaster in Nepal.* The data, information and resources were taken from various Government and nongovernment reports, newspaper articles, books, academic journals, as well as online resources. Some brief interviews with government officials and activists over electronic correspondence were conducted to cross-check the evidence.

## RESULT AND DISCUSSION

## Political economy of disaster

The related literatures on disaster studies show that the issue has evolved to include political and economic dimensions rather than purely natural ones that significantly shape vulnerability, preparedness to respond, and recovery. Social inequalities, weak governance, and economic systems often worsen hazards and disaster impacts. Scholars like Wisner et al. (2004) reasoned that disaster risk stems from both hazards and socially constructed vulnerabilities, whereas Klein (2007) focused on how disasters are utilized to advance neoliberal agendas, leading to inequality. Political decisions related to visible relief efforts, or preparedness plans, are always blamed on skewed toward accessible and corruption (Fan, 2013), as seen in Bangladesh and other developing countries (GSDRC, 2013; Rahman & Hickey, 2019). Decentralization has been explained potential, but it cannot be effective without adequate capacity (UNDRR, 2019). Disaster recovery and management need trustworthy, transparent governance and equitable delivery. Community involvement, in some cases, compensates for state deficiencies, as it was proven in Mexico City’s 1985 earthquake (Pelling, 2003). Some of the support for disaster relief assistance is shaped by geopolitical deliberations rather than directed solely by humanitarian requirement (Fink & Redaelli, 2011). A political economy viewpoint is indispensable to address the root causes and the progression of vulnerability and ensure a fair and resilient recovery.

Disasters are not only triggered by natural forces such as tectonic movements, storms, heavy rainfall, floods, and landslides, but also by socio-economic and political factors such as poverty and weak governance. These underlying issues make the poor excessively vulnerable. Living in hazard-prone areas, often without structurally safe housing, a lack of access to early warning systems, the poor and marginalized communities are hit the hardest when disasters occur. This has been a consistent pattern throughout history, especially in less developed regions, where marginalized communities have borne the impact of calamities. Societies have always faced moral and political choices about who receives aid and who is left behind. The political economy of disasters deals with how hazards and disaster vulnerability is shaped by nature and human-made systems. It may be wrong to say that all disasters are shaped primarily by social factors. Some natural events are driven mainly by environmental forces, with human vulnerability playing a minimal role, aside from people being in the wrong place at the wrong time. However, even in such random events, powerful elites often seek to preserve their dominance by employing their socio-economic, political power, and ideological tools to manage the consequences (Paniagua & Vogler, 2022). The crucial point about understanding why disasters happen is not only natural events that cause them; they are also the product of social, political, and economic environments. Each society has different socio-cultural groups/economic classes of people living in the same area. These diverse groups/ classes may be exposed to the same hazard risk and may differ in the forms of their adaptive capacity. Socio-economic class influences vulnerability within a society. The poor are more exposed to disaster, and are most affected by those exposed, and have less access to recovery assistance in the same event. Natural disasters are worse for the poor, whether one means poor countries or poor households within a given country (Hallegatte et al., 2020). We can observe the situation of the current earthquake disaster in which communities in Kathmandu and along the major roadside get rescue and relief fast, whereas communities in remote areas are overlooked and still out of reach.

### Disasters are man-made

Scientists have recently categorized hazards as natural, man-made, or hybrid. Hazards originating from the Earth System are natural. Nature creates hazards, but the actions or inactions of people, societies, and governments are disasters (Parker & Ronald, 1994). A hazard refers to a natural phenomenon when the physical process occurs from various natural sources, like geological, hydrological, meteorological, or biological events, as well as human-induced causes such as environmental degradation or technological failures. Disasters arise when these hazards intersect with conditions of vulnerability and a lack of adequate capacity to manage or mitigate the risks. A hazard only turns into a disaster when it affects a population or setting that is exposed and vulnerable (UNSTT, 2012). Hazards that communities can manage their resilience using their resources and capabilities will be considered an ongoing process. We cannot stop an earthquake outbreak, but we can prevent it from becoming a disaster. Disasters are not merely natural. These are deeply connected to human actions, ideology, socio-political structures, like poverty, disparity, careless urban planning, and environmental degradation. Vulnerability, shaped by natural setting and socio-political systems, turns hazards into disasters, making them largely avoidable rather than accidental.

The hazards, particularly those classified as natural hazards, are not a significant threat to human civilization at all times and places. Although earthquakes, floods, and rainstorms can be deadly, far more people suffer from less visible but equally serious challenges. In many less developed countries, violence, disease, and hunger are persistent problems, often worsening in the aftermath of disasters. While some earthquakes, floods, landslides, and storms have caused massive loss of life, focusing solely on these events overlooks the millions who survive such disasters but continue to face serious risks. Far more deaths result from conflict, preventable diseases, and malnutrition tragedies that are often seen as routine. Though labeled as ‘natural,’ they are largely influenced by economic and political conditions that, if improved, could allow people to live longer and healthier lives.

### Media Framing during Disaster

The role of the Media during disaster time is crucial. People get information, frame their perception, and prepare for a response according to the information they get. But sometimes political actors attempt to misuse media coverage in their interest rather than journalistic ethics. Sometimes, the media over-sensitizes the situation and makes it difficult for critical analysis, and sometimes their commentary may overlook deeper insights into the structural causes of disaster vulnerability. Mainstream media often frames disasters as purely natural events in their headlines, highlighting their physical foundations while overlooking the multifaceted social, political, and economic influences that shape their effect. This approach of analysis leads to confusion about the reality that disasters are deeply rooted in socio-economic and political power structures, leading to dynamic pressure of vulnerability. And the vulnerable populations, especially the poor and marginalized, are often compelled to live in hazard-prone areas. Lack of access to disaster relief and recovery resources often reflects favoritism and systematic inequality. Disparities in access to resources, information, and post-disaster aid disclose the uneven burden of risk and vulnerabilities. The socio-political and economic contexts in favor of natural elucidations divert the attention from ongoing crises like starvation and epidemics, which are largely a result of unfair socio-economic systems rather than nature alone.

**Vulnerability and disaster impacts**

Vulnerability, derived from the Latin vulnerary meaning "to wound," refers to the susceptibility of individuals or communities to harm, particularly from natural hazards, due to limited coping capacity (Lundy & Janes, 2009). It is the degree to which individuals or communities are exposed to, impacted, and become unable to recover due to their limited coping capacity. It also includes long-term conditions that may hinder prevention, preparedness, and recovery from catastrophes. Vulnerability with socio-economic conditions encompasses a combination of physical, psychological, and environmental factors that weaken resilience. Not only does it intensify the impact of disasters, but it can also hinder response efforts and continue subsequently. Anderson and Woodrow (1990) classify it into physical/material, social, and psychological/motivational dimensions, while environmental vulnerabilities are often overlooked in existing literature.

Physical vulnerability belongs to the physical structures that determine their potential damage in the case of a disaster. Humans are vulnerable to events that threaten their physical bodies, food sources, shelters, and the surrounding environment. For example, economically poor and disadvantaged people and communities tend to experience greater hardship during disasters compared to wealthier groups. This is often because they settled in high-risk areas with lower financial safety nets, such as savings or insurance, and may suffer from poor health. These factors make them more vulnerable to disasters and mean a harder time surviving and recovering from a calamity than people who are better off economically. The Psychological or Motivational Vulnerability is the emotional and mental factors that impact an individual or community in their ability to respond effectively to hazards and recover from disasters. Fear, shock, lack of self-confidence, feeling of helplessness, and a weakening of willpower and hope. Social vulnerability can be defined as the capacity of individuals or communities to foresee, manage to cope with, and recover from the effects of disasters. It is characterized by a lack of sufficient knowledge and skill, shortages of access to information, essential services, and needed resources.

Social vulnerability is the creation of social inequalities and social factors that influence or shape the susceptibility of various groups to harm and that also govern their ability to respond. It is central to recognize that social vulnerability is not exclusively determined by exposure to hazards but also by the sensitivity of the socio-economic system and its capacity to prepare for, respond to, and recover from such events (Turner et al., 2003). Individuals or groups who face social, economic, or political marginalization are more likely to face severe impacts from disasters, whereas communities that are well-organized and well-established with strong internal cohesion and support are generally more resilient and less affected. Literature also highlights that vulnerability is a product of both physical exposure and entrenched social structures (Wisner et al., 2004; Cutter et al., 2003; Adger, 2006), such as less privileged communities, due to their limited resources, often live in hazardous locations and poorly built housing, making them more susceptible to disaster impacts (Wisner et al., 2004), their capacity to recover is ominously constrained, reinforcing cycles of vulnerability and poverty (Cutter et al., 2003). Socially marginalized groups such as lower castes, ethnic minorities, children, the elderly, and other disadvantaged populations are often disproportionately affected by disasters (Blaikie et al., 1994). In many cultural contexts, women are accountable for the domestic sphere, like caregiving tends to be more exposed and burdened during catastrophes (Enarson & Morrow, 1998).

The environmental changes are not only issues limited to global warming but also climate change, landslides, and floods. Sustainable development for communities without harming ecosystems and socio-cultural and livelihood aspects is also more important. Y.K. Wang, B Fu, and P Xu (2012) using the Valuation of Ecosystem Services and Tradeoffs(VEST) method in the Wenchuan earthquake found that the area destroyed by the earthquake was small, and the loss of ecosystem services was nevertheless considerable. There were serious losses, followed by carbon storage and water-related ecosystem services. It is recognized that many significant nonmarket effects result from natural disasters, including environmental impacts, but these are overlooked because these impacts are mainly not marketed and are exceptionally difficult to quantify and monetize. The environmental vulnerability is also shaped by the complex interplay of ecological degradation, socio-economic inequality, and inadequate governance (Adger, 2006). These interconnected and overlapping factors underline that vulnerability is not only about physical exposure but is also deeply rooted in the socio-economic structure of inequalities. However, these losses or benefits take a long period to appear after an extreme event or are often not readily apparent.

Disaster can impact communities in various ways—physically, socio-culturally, economically, and environmentally. The physical impacts include loss of life, injuries, illnesses, and damage to property, agriculture, infrastructure, and the natural environment. These are the most visible and are typically the first to be reported by the media and authorities. Socio-psychological, economic, and cultural impacts encompass distress, population changes, economic losses, disruptions, and political instability and unrest. Following a disaster, it is essential to conduct immediate assessments to evaluate both direct and indirect impacts. These assessments should address the diverse needs of affected individuals and the community about damage to social, economic, physical, and environmental resources. Accurate evaluations of damage, losses, and possible consequent effects, and a preparedness plan are critical for effective emergency response in short-term recovery and long-term reconstruction planning.

## Two cases from the recent earthquake disaster in Nepal

Case 1. According to the government statement and media reports, the hazards and socio-economic and physical impact of the earthquake disaster in 2015 were:

Magnitude:7.6

Casualties: more than 8790

Injuries: About- 22300

Lost: About- 4000

Displaced; - 500000 HHs

Damage to property and built structures: more than 510772

Completely lost community settlement: more than 2 dozen

Temporary migration of people: About 12,0000 from Kathmandu Valley

Case 2. A 5.7 magnitude earthquake struck the Jajarkot, Rukum, and Salyan Districts in mid-Western Nepal in November 2023. The disaster claimed the lives of 153 individuals and left at least 375 injured. It was strongly felt across western Nepal and northern India, marking the deadliest earthquake in Nepal since 2015. The earthquake and its after-effects caused extensive damage across these districts. 19,423 houses were completely smashed, while 39,369 sustained partial damage. (Sources: National Society for Earthquake Technology-Nepal(NSET)

### Analyzing the overall situation

As Nepal ranks among the most disaster-prone countries globally, these disasters have severely impacted human lives, physical infrastructure, and social structures, often disrupting development by diverting resources from ongoing projects to emergency relief and reconstruction. Although reported disaster-related losses are substantial, the real impacts are likely far greater. Beyond the major catastrophes that attract international attention and aid assistance, numerous smaller, less-publicized hazard events have been reported to occur frequently. These smaller incidents often go unnoticed but can be devastating for poor communities, wiping out their limited resources and trapping them in a continuous cycle of poverty.

### The Pressure and Release Model

To Alexander (2000), vulnerability is the likelihood that a person or asset could suffer harm, damage, or disruption when exposed to a hazard. It reflects the potential for loss in specific elements at risk. On the other hand, involves the probability of such a loss occurring based on the expected intensity or magnitude of a hazard. Similarly, Wisner et al. (2004) explain that disaster risk is a combined outcome of the natural hazard itself and the number of people exposed to it, along with their differing levels of vulnerability to that particular threat. There are three elements here- Disaster Risk (R), hazard(H), and Vulnerability(V), with Coping capacity(C), whose relations can be schematized in a quasi-equation as: Risk(R) = Hazard (H) x Vulnerability (V) / Capacity (C).

To analyze risk within the context of vulnerability in specific hazard scenarios, these interconnected elements represent the progression of vulnerability and help explain how and why certain communities are more severely affected by hazards. The Pressure and Release (PAR) model provides a simple framework for demonstrating how disasters occur when natural hazards affect susceptible populations, allowing for the analysis of risk in the context of vulnerability in particular hazard situations. According to this model, systemic problems and ingrained sociopolitical factors are established as the source of vulnerability. The model shows that a confluence of dangerous circumstances, dynamic forces, and underlying reasons leads to vulnerability. These interrelated components illustrate the evolution of vulnerability which supports in the explanation of how and why some groups are more negatively impacted by risks. This is not necessarily meant as a quantifiable equation but rather as a conceptual backdrop for understanding risk and its components. However, one fundamental mathematical truth plays a crucial role in this equation. The concept that risk cannot exist without hazard or vulnerability is fundamental to the PAR model, which gives less emphasis on the hazard component, which means opportunities for hazard reduction are not a primary focus. However, significantly reducing vulnerability results in a significant risk reduction, and theoretically, eliminating vulnerability would eliminate risk. The model highlights the system's interaction and progressive nature (Hammer et al., 2019).

Fig 1-: The Pressure and Release (PAR) model in Nepalese context showing the progression of vulnerability

Dynamic progression of vulnerability

Limited Access to

* Power
* Resources
* Structures.

Ideologies

* Economic system
* Political system
* Social system

Root Causes CccausesCauses

Lack of

* Local Resources
* Awareness & Preparedness
* Research& Training

Macro forces

* Population changes
* Environmental factors
* Poor Planning and monitoring

Dynamic Pressures

* Physical Poor construction
* Lack of spaces
* Social/institutional
* Weak early warning systems
* Marginalization
* Macro forces
* Population changes
* Environmental factors or Planning and monitoring

Unsafe Conditions

* Earthquake
* Flooding
* Land-slide
* Drought
* Wind-storms
* Epidemics

Natural Hazards

Source: Basic concept borrowed from (Wisner et al., 2004)

The diagram shows that the Pressure and Release (PAR) model, as demonstrated (Wisner et al., 1994) views that disasters occur where socioeconomic pressures and physical exposure intersect and disasters are the outcome of this intersection. It identifies three key components on the social side: root causes, dynamic pressures, and unsafe conditions, and one on the physical side: the natural hazard itself. The Root causes in the model refer to deep-seated economic, demographic, and political systems that shape how resources are distributed among different social groups. The dynamic pressures are the mechanisms through which the root causes manifest in local contexts. Unsafe conditions are the precise vulnerabilities that exist in particular locations and times, influenced by environmental, economic, or social factors. Key characteristics of vulnerable groups in society are class, caste, ethnicity, gender, age, and seniority. Mostly, the marginal groups are the most vulnerable and affected people, and their lack of access to political power and voicelessness further leaves them omitted from national and international assistance. This means that risk can be lowered even in hazardous situations if vulnerability is lowered and the coping strategy is strong. Risk Hazards× Lower Vulnerability/Higher Coping strategy​⇒can lower overall risk.

For instance, the Gurkha Earthquake 2015 (7.9 Richter Scale), shaking Kathmandu and surrounding areas for 57 seconds that caused damage estimated $1–5 billion and left about 9,000 people dead, over 1.5 million injured, and half a million homeless and the 2023 Western Nepal earthquake (magnitude 5.7) as well were not solely caused by natural disasters. The analysis indicates that the devastating effects were mainly caused by poor physical structures rooted in widespread poverty, limited access to education and healthcare, weak infrastructure, and marginalized rural populations that create a foundation of risk. The dynamic pressures are inadequate urban planning, poor disaster preparedness, a lack of effective local emergency systems, and rapid population growth. Once the earthquakes hit, the unsafe conditions, like poorly built structures, damaged services, and geographically isolated areas, were affected more. The lack of space, weak preparedness, poor coordination, and lack of early warning enlarged the disasters’ impact. The analysis indicates that disasters are socio-politically constructed, and underlying vulnerabilities can be addressed through inclusive governance, localized preparedness, and resilient infrastructure.

Though international donors committed approximately $4.1 billion for Nepal’s reconstruction in June 2015 (World Bank, 2020), Reports indicate that the funds received and utilized have been significantly less. Critical analysis challenges that limited its long-term impact on sustainable livelihood recovery. Housing grants to impacted communities have been reported to succeed, but vulnerable people still encounter difficulties in rebuilding due to economic burdens and unmet cultural or everyday needs. Some resorted to debt or migration, and others returned to unsafe and damaged homes, intensifying future earthquake vulnerability (Michaels & O’Donnell, 2025). Though humanitarian aid can play a critical role immediately in meeting urgent needs, overlooking the support for livelihood after disasters may cause serious and unexpected hardships for affected households. Recovery is complicated by various structural challenges, resource-poor rural settings, but it was often fragmented, inadequate, and driven by conventional, market-oriented approaches (Karki et al., 2022). The challenges faced by marginalized groups in post-disaster recovery, like a lack of land ownership, financial resources, and equitable access to state resources, perpetuate social inequalities (Titz, 2021)

### Social/psychosocial and environmental impacts

Gritty and Flynn (1997) presented a research review conducted over 25 years, reported that disasters can cause a wide range of negative psychological responses. The study found that the observed effects are mild and temporary in most cases, reflecting "normal people responding normally to a very abnormal situation." The vast majority of disaster victims experience only mild psychological distress. However, they also report positive outcomes, such as strengthened family relationships, a reduced emphasis on material possessions, and increased family happiness. The data showed only minor differences in the impact of damage or losses caused by hazards. Factors like psychological and environmental tend to be short-term after an event, and are frequently not readily apparent. When a disaster strikes, the main focus is on the potential impacts, including loss of life, injuries, missing individuals, damage to buildings, infrastructure, and essential services, and the immediate economic losses incurred. Indirect economic losses, socio-psychological disruption, and environmental degradation may become more significant only in the long run. Consequences that are difficult to measure or quantify are intangible losses like loss of social cohesion, community disruption, reputation losses, psychological impacts, cultural effects, and others. Analyzing the vulnerability assessments, the tangible losses are often measured and quantified, while intangible losses are described at best.

### Disasters hinder development

Though governments and donor agencies often finance disaster relief and recovery by diverting funds from development initiatives, the consequences of such reallocations are typically not reported in official statistics, and they usually undermine poverty reduction efforts, disproportionately hurting the poor. These effects on poverty and food shortages can be far more intense. Disasters can overwhelm the coping capacity and mechanisms, which have long-term impacts on people's livelihoods. The situation becomes more complicated when one disaster is compounded by other cascading effects. Hazards like droughts, floods due to heavy rainfalls, not only cause immediate food shortages, but they also have long-run impacts and lead to setbacks in recovery and development. Additionally, Disasters and Climate Change reveals that natural disasters can lead to significant increases in poverty rates. For instance, in Mozambique, events like cyclones and floods have resulted in a 25–30% drop in per capita food consumption and a 12 to 17.5 percentage point rise in poverty rates (Hallegatte et al., 2020).In this way, disasters can hinder economic development by abolishing physical capital, and people's savings and possessions, diverting resources toward relief and reconstruction, and psychologically demotivating individuals towards further economic activities.

Nepal’s development has been significantly hindered by disasters by damaged physical infrastructure, disrupted livelihoods, increasing poverty, and hindering progress made. Studies explain its fragile geography, unplanned urbanization, and weak governance as the causes of disasters and highlight the economic setback, livelihood disruption, increased climate-induced hazards, and overall development as the disaster's impact on the country's development. The World Bank (2019) notes that rebuilding diverts national resources away from development. Dixit (2003) found that floods and landslides frequently destroy agricultural land and displace communities in the Terai and Hill regions. The Weak and inefficient governance, lack of local capacity, and insufficient integration of risk-sensitive land use planning delay sustainable development (UNISDR,2019; ADB,2020). Climate-induced hazards like glacial lake outburst floods (GLOFs) are increasing and pose long-term development threats (NAPA,2010).

### Disasters deepen disparity

People have diverse and dissimilar resources, coping capacities, and support systems to cope with the disaster. The degree to which people's livelihoods are at risk depends on the combination of personal and social factors. Social vulnerability is exposed when people, individually or in groups, are deeply influenced by existing social inequalities. These inequalities affect how people are expected to be harmed and how well they cope to recover. As Cutter and colleagues (2003) explain, it's not just the hazard itself, but the social context that shapes who suffers most and who bounces back more quickly. There is a relationship between a person’s socio-economic class and disaster vulnerability, their ability to cope with disaster, and economically reconstitute their lives after a disaster. Disaster-related research remarked that people with advanced socioeconomic position benefited better and less likely to encounter upcoming losses with fewer variations in their income whereas the poor people have lost their property, income and ongoing opportunities. It is, however, important to note that social vulnerability is not registered by exposure to hazards alone, but also resides in the sensitivity and resilience of the system to prepare, cope, and recover from such hazards (Turner et al., 2003).

Neither each individual in a community, each community in society, nor a country has the same access to resources and opportunities, nor are they equally exposed to risks from hazards. The socio-economic and political dynamics determine whether someone has enough land to farm, reliable sources of clean water, or safe sources of income, and a secure home to live in. These dynamics play a critical role in determining who is most vulnerable at the time when disasters strike. Though it is difficult to predict when, where, and how the hazards will break out, factors like the nature and type of work, the style and standard of living and work, the quality of housing, level of protection and preparedness, access to information, and financial resources determine the possible impact. It is not shaped by nature itself, but by societal structures. So, a person’s risk level is closely tied to their social identity and position, such as class, income level, gender, ethnicity, age, ability/disability status, or immigration background. This means disaster risk isn’t just about the natural hazard itself, but it is about who is most likely to suffer because of underlying social inequalities. As Wisner et al. (2004) argue, understanding disaster risk involves looking at both the likelihood of hazard exposure and how power and inequality within society influence that exposure. For better understanding, we must go beyond hazards and examine the different levels of vulnerability among social groups that determine the impact of disaster and are exposed to risks from hazards. It is not that it stems from nature, but from socio-economic and political systems at local, national, and even global levels that shape the position of vulnerability. It is these systems that we have that are responsible for shaping who has access to healthcare, safe housing, income level, and secure living and working conditions, all of which influence how a disaster affects people. Disasters not only cause immediate destruction, but they also bring further cascading impacts, which have long-term consequences that are often overlooked in the analysis and planning. These effects slow the recovery and development efforts, deepening social inequalities. For instance, children from families affected by disasters may struggle to continue their schooling, mothers have to face increased responsibilities and workloads, and people may lose their jobs and sources of income. Disaster can also lead to a rise in domestic violence and sexual harassment. Children who work, often out of their locality, face greater dangers from floods, landslides, and drought, and are more likely to suffer from malnutrition, illness, or even death. Beyond the visible damage to buildings and infrastructure, disasters also weaken health systems. Disaster can make people more vulnerable to hunger and disease by increasing poverty and malnutrition, further lowering their ability to recover or resist illness. This, in turn, put extra pressure on urban areas, especially slums, where living conditions are already difficult.

Disasters in Nepal have consistently revealed and intensified existing topographical, socio-economic, and identity-based inequalities with vulnerable groups, like the rural poor, women, and Dalits, disproportionately (Dixit, 2015; ADB, 2015). Following the 2015 Gorkha Earthquake, these communities suffered greater losses due to inadequate housing and access to assistance, while wealthier urban people recovered more rapidly (NPC, 2015). Gender –based disparities with increased violence make women face sensitive risks of violence and economic uncertainty, with often ignored in recovery planning (CARE Nepal, 2016). Low-income and landless populations in Terai are repeatedly impacted by floods, with delayed and insufficient relief further marginalizing them (ICIMOD, 2018). These patterns underscore that disasters deepen disparities rather than equalize vulnerabilities.

### Poverty and the Capacity to cope with disaster

Natural hazards, disasters, and socio-economic vulnerability to hazards are closely linked and mutually reinforcing factors. People are vulnerable because they are poor and lack resources, and because they are poor and lack resources (Middleton & O’Keefe, 1998). Disaster damages vary greatly across the region (Neumayer et al., 2014). The marginal areas, poor and socially deprived clusters, are frequently most exposed to hazards, reproducing in their social, cultural, economic, and political environment. Biswas and Nautiyal, (2023) investigated that people at risk and having potential losses are vulnerable. Disasters cause temporary hardship and suffering, they also play a supporting role in long-term poverty. Poverty at the household level is the most significant factor influencing vulnerability. It shapes the people's livelihood, their access to essential services, their means of livelihood, and their ability to obtain financial and other resources. As a result, they have limited options for managing consumption over time to cope with shocks. There is an interconnection between the natural hazards and the socio-economic system that can limit the effectiveness of support systems at the community level. The vulnerability, especially when it worsens by poverty, discrimination, and disparity intensified by the careful livelihood decisions that poorer households often adopt to avoid risks.

The ability of individuals, communities, and organizations to utilize available resources to manage and adapt during crises or disaster situations is called coping capacity. It is a combination or package that includes a wide range of human capacity with physical, financial, organizational, or social factors, such as traditional skills used by the community in coping with disasters, leadership, and management capacity, that help reduce disaster risks or lessen their impacts. Coping capacities upkeep households and communities in planning for, mitigation, and recovery from disasters. While physical and material losses may be severe, survivors retain intangible strengths with knowledge, experience, community networks, leadership structures, and cultural or social ties. For example, people who lose their homes to stay or farm to crop during floods often rescue with usable temporary shelters, rely on stored food, or use farm tools to restart planting. Individuals may seek work or a job utilizing their skills through migration, drawing on existing skills. These social and organizational resources play a crucial role in recovery. Cooperation, solidarity, determination, and support are vital to facilitate the capacities to cope with psychological shocks. The importance of community-level coping strategies in disaster underscores the response, especially in contexts where public support is limited and disaster impacts are growing. The External support for charitable initiatives for humanitarian support should recognize and strengthen these local capacities, rather than undermining community resilience. Development programs must strengthen the community’s coping mechanisms, not erode them. International and national humanitarian responses must engage with local capacity and coping strategies.

### Disaster Management and Recovery

Each community at risk of disaster should have pre-disaster planning, ensuring the logistical preparedness to efficiently handle potential disasters, and adopting suitable measures to minimize vulnerabilities, like reducing the risk of human injury, death, and damage. The mitigation strategies are to reduce risks and organize plans for immediate response to disaster threats. At the time of a hazard, responses may include life-saving actions, and immediate humanitarian needs like food, shelter, clothing, and basic healthcare are necessary. Public safety, as well as assessing damage and distributing resources, follow simultaneously. Priorities may gradually shift towards clean up, making repairs, restoring essential utilities, restarting public services, and completing the overall cleanup.

Literature highlights three interconnected concepts of disaster recovery. The rebuilding of normality, emergency management, and ongoing recovery. First, the objective of reestablishing a normal community is to bring functions disrupted by a disaster, typically envisioned as returning to pre-disaster conditions (Smith & Wenger, 2006). Second, it denotes a specific phase within the emergency management cycle, commencing after the immediate threat has been stabilized and continuing until the community resumes regular activities (Coppola, 2015). Third, it indicates a dynamic process through which recovery goals are achieved, incorporating both pre-disaster plans and post-disaster adaptations (Lindell, Prater, & Perry, 2006). Rebuilding physical infrastructure may be the focus of the process, but it should not forget to address the economic resilience of the affected community. Disasters often expose pre-existing weaknesses in local systems, including limited organizational capacity, staffing shortages, and insufficient resources (EDA, 2017). The effective recovery may necessitate that the government, development organizations, and relevant stakeholders provide additional human resources, support for capacity-building, and other specialized training to facilitate effective recovery and promote long-term resilience.

Choosing the right method for reconstruction after a disaster may involve several factors, and they should be considered. The availability of resources, organizational responsibility and capacities, the socio-political environment, logistic supports, and the expectations of the affected communities (Davidson et al., 2007). Depending on these conditions, stakeholders may adopt different construction strategies within the same disaster context. The commonly adopted approaches are contractor-driven, donor-driven, and owner-driven reconstruction approaches. In the first type, professional contractors are responsible for designing and building homes; in donor-driven reconstruction, donor organizations manage housing reconstruction on behalf of beneficiaries; and in owner-driven, reconstruction is done by homeowners themselves, supported by financial aid, technical guidance, and construction materials. Regarding post-disaster reconstruction projects in developing countries, UNDRO (1982) has advocated the community participatory approach. There are various ways in which people affected can participate in post-disaster housing reconstruction projects, but not all types of participation ensure the best deployment of their capabilities (Davidson et al., 2007). Social, psychological, and environmental recovery are equally important but take time.

## NEPAL'S EXPERIENCE WITH DISASTER RECOVERY PLAN

Following the Gorkha Earthquake 2015, Nepal adopted a comprehensive, phased approach to recovery aimed at restoring normalcy and rebuilding resilience. The key objective was to restore normalcy through the reconstruction of over 800,000 houses, the restoration of heritage sites, and the revival of essential infrastructure (NPC, 2015). The key strategy was housing grants in tranches, supporting an owner-driven reconstruction (ODR) model, which empowered households to rebuild with financial aid and technical assistance. This strategy aligns with global disaster recovery concepts and the journey progressed from immediate relief, such as shelter provision and needs assessments, to the structured planning phase, guided by the Post Disaster Needs Assessment (PDNA) and the Nepal Earthquake Recovery Framework (NERF) (NPC, 2015). This mirrors Coppola’s (2015) concept that conceptualized recovery not just as the physical rebuilding of infrastructure, but as a complex, long-term process involving restoration of social, economic, and environmental systems disrupted by a disaster. The ODR model aims to be supported by over 3,000 trained engineers and masons, emphasizes community participation, as advocated by (UNDRO, 1982) represents the dynamic, adaptive recovery process described by (Lindell et al., 2006). It was an integrated approach that balanced infrastructure, community engagement, and capacity-building for long-term resilience. Despite its successes, Nepal faced challenges typical of developing countries, such as institutional delays, coordination issues, and resource constraints (EDA, 2017). The reconstruction strategies, primarily owner-driven, with some donor- and contractor-driven components, were shaped by local needs, resource availability, socio-political context, and community expectations, consistent with Davidson et al. (2007). In general, it demonstrates how context-sensitive and participatory modalities can effectively translate the theoretical recovery framework into practical, resilient outcomes.

Countries like Nepal are often unprepared and in confusion, which will emerge in the future. Nepal’s current experience showed that after a disaster, communities are often unprepared for the confusion that follows. Planning for long-term recovery can be challenging when ongoing humanitarian aid, cleanup, and reconstruction efforts still require consideration. The initial emergency response winds down, priorities shift toward repairing, restoring utilities, restarting public services, and cleanup. The affected community must then create a clear vision for rebuilding its economy. Crafting an effective economic recovery plan through sounding community participants may require time, leadership, and adequate resources, all of which are often limited after a disaster. However, an effective disaster strategic plan developed after a disaster can offer a chance to reassess economic goals with consideration of disaster-related vulnerabilities and to design strategies and actions for sustainable long-term recovery. Moreover, recent findings show that governments and donors often redirect resources away from ongoing development programs in response to disasters. While the consequences of such shifts are difficult to quantify due to their exclusion from official data, they are likely to disproportionately harm the poor by undermining poverty alleviation efforts. The repercussions of poverty and food security can be significantly more severe, yet remain invisible in national-level reporting.

Disasters can overwhelm existing coping mechanisms and lead to enduring disruptions in livelihoods, like droughts and sudden food crises, which can also produce lasting 'ratchet effects' that hinder recovery between events. From numerous explanations, the time is ready for preparation. Building and repairing of structures, and reorganizing and replacing activities are necessary at an incomparable rate during recovery efforts. Businesses and private people may have available cash from possessions and insurance payments. Industry and businesses that were only marginally lucrative earlier to the tragedy face the most important choices about staying in business, relocating, or changing direction. Remittances are often motivated to assist the concerns of those sending money to their families, so it is sensible to expect an increase in such support following a disaster, when loved ones are in sharp need. Enormous global disaster relief and rescue efforts, as well as important global economic and technical help for long-term renovation of the economy, can be expected. For confidential advance, the country should have to make an economic development strategy. It is time to review plans and bring them up-to-date as essential. A well-thought-out post-disaster strategic plan offers the opportunity to reevaluate economic objectives in light of vulnerabilities to disaster and establish strategies and action steps toward long-term recovery. Society and community without such plans can hardly get help from international agencies. In addition to planning for their growth, communities have to be visionary in planning for public property surplus and enlargement. Continued investment in infrastructure, human resources, capacity development, conflict resolution, and long-term psychosocial support is essential for recovery plan. The real success lies in shifting the people's perception that reconstruction of physical infrastructure is the final objective, underlining that it serves as a foundation for people to recover and rebuild their lives and economic well-being for long.

## CONCLUSION:

Natural hazards are not purely tragic and disastrous; they become catastrophic when hazards impact vulnerable populations with weak coping capacities. Experiences show that the poor and marginalized groups suffer the most due to vulnerable situations and limited resources and elite suffer less and recover faster through access to power, resources, and systems. The geo-physical and socio-economic marginalization, poor infrastructure, and weak governance are the root causes that push communities into unsafe conditions, making them susceptible to disaster impacts. Overwhelming loss of life, property, and health hazards are the immediate impacts, and the consequences of entrenched poverty and inequality are long-term consequences. The state can lessen disaster impacts by lowering the unsafe and vulnerable situations and enhancing the coping strategies, taking preventive measures, ensuring fair distribution of relief, and implementing scientific recovery plans. However, in many cases, the government has failed in these responsibilities, exposing weaknesses in governance and accountability.

While the hazards cannot be prevented, their impacts can be reduced through proper preparedness and mitigation strategies. Minimizing the vulnerability, the state must take proactive responsibility through transparent relief distribution, scientific recovery planning, and community empowerment. So, long-term recovery requires well-planned, inclusive strategies that go beyond physical reconstruction to rebuilding livelihoods and communities. A disaster-resilient future requires visionary management, inclusive planning, and investment in both infrastructure and people. Nepal's experience highlights a lack of readiness, strategic vision, and effective governance, making sustainable recovery and international support difficult. To move forward, the country must develop a clear recovery roadmap that prioritizes both infrastructure and human well-being.

Disclaimer (Artificial intelligence)

Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc.) and text-to-image generators have been used during the writing or editing of this manuscript.

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