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The Threats of Climate Change in Nepal: Natural Catastrophes and Global Conflict Frontiers

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Abstract

Nepal, nestled amidst the majestic Himalayas, is uniquely positioned with its delicate geological makeup. This renders it vulnerable to escalating environmental threats, primarily driven by global climate change-induced adversities. These climatic adversities not only disrupt the ecological balance but also create a space for multiple conflict frontiers. The primary objective of this research is to delve into the multifaceted conflicts that include competition for scarce resources, decision-making process, and vested interest of foreign powers that may arise from the climatic challenges especially flash floods, glacier lake outbursts, droughts, landslides, and other catastrophic disasters. The study aims to provide a comprehensive understanding of climatic-induced disaster events and their significant role in the origin of conflicts. Employing a qualitative research design using the tool of comparative analysis, the study investigates the conflicts triggered by these disasters of the past two decades. The study will draw insightful parallels between Nepal's unique situation and other global regions. I will spotlight regions like South Sudan, Rwanda, Syria, and, South and Southeast Asia where climate-induced factors, such as acute water and food shortages, have ignited community tensions and other resource-based conflicts in the historical review and analysis. Within Nepal's borders, I will undertake a detailed historical analysis of the specific cases due to climate change. The study aims to bridge the knowledge gap between climate change and conflict dynamics, offering actionable insights for holistic resource management, disaster risk mitigation, and proactive conflict prevention.

Keywords: Climate conflicts, mega disasters, comparative analysis, resource stewardship, historical review

Introduction

Climate change is a phenomenon that entails substantial and enduring modifications in the Earth's usual weather patterns, encompassing elements like temperature, rainfall, wind behaviors, and related climatic elements. These shifts transpire over extensive timeframes, typically spanning from decades to millions of years, and are frequently instigated by a variety of natural and human-influenced factors. In the contemporary context, the term "climate change" frequently

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alludes to anthropogenic or human-driven climate change. This form of climate change is mainly brought about by the emission of greenhouse gases (GHGs) into the atmosphere. These gases, which encompass carbon dioxide (CO2), methane (CH4), and nitrous oxide (N2O), capture heat from the sun within the Earth's atmosphere, resulting in an overall elevation in the planet's temperature; commonly referred to as global warming (Cappelli , 2020).

Catastrophes or Disasters can be used interchangeably to the events that severely disrupt the regular functioning of a community, surpassing its ability to cope with the available resources. Catastrophes are categorized as mainly natural and unnatural whereas a mega-disaster typically refers to a catastrophic event on an unprecedented scale that causes widespread destruction, loss of life, and long lasting societal and environmental impacts. Mega earthquakes, super storms, megafloods and flash floods, pandemics and nuclear disasters can be in the form of mega-disasters. Besides, catastrophic climate-induced disasters, such as glacier lake outbursts, rapid ice melting, extreme sea-level rise, rise in temperatures with extreme heat, and collapse of major ecosystems have given rise to global challenges. Further, large-scale terrorist attacks involving weapons of mass destruction, like nuclear, chemical, or biological agents, could also lead to mega disasters (RedCross, 2023).

Conflict is defined and measured in various ways within the research literature. Some studies focus on conflicts at the individual level, often involving violent acts, such as crimes like murder, assault, rape, and robbery (Mares & Moffett, 2016). Others examine conflicts that occur between groups of individuals, which can range from conflicts between states (Devlin & Hendrix, 2014) to violence directed against a government, including civil war (Burke, Miguel, & Satyanath, 2009). Additionally, some studies investigate inter-communal violence, which involves conflicts between competing groups within a single state (Detges, Local conditions of drought-related violence in sub-Saharan Africa: The role of road and water infrastructures, 2016), as well as low-intensity conflict or social conflict, such as protests and riots (Bellemare, 2014), and political repression (Wood & Wright, 2016).

Now, the Influence of climate change has generally been seen as relatively minor when compared to other factors driving conflict in the past, and the exact ways in which climate contributes to conflicts remain unclear. However, as increasing risks due to future climate change are faced, a wider range of potential connections between climate and conflicts are emerging and going beyond what has been observed in the past (Mach, Hendrix, Burke, Fearon, & Roessler, 2019).

Regarding the interrelationship between climate and conflict, it has not been identified a consistent and widespread connection between climate change and the onset of conflicts. However, there is a significant consensus that climate changes can contribute to conflicts in specific circumstances and through particular channels (Koubi, 2019). Further possibilities have been recommended in research on the interplay between climatic changes and various socioeconomic, political, and demographic factors in causing conflicts, as well as delving deeper into the underlying mechanisms that link these two phenomena (Koubi, 2019).

Further, the relationship between climate change and conflict is rooted in an argument about resource scarcity and competition over the means of sustainment. The climate-induced natural disasters such as desertification, rising sea levels, and spread of the pandemic, along with the increased frequency and severity of short-termed natural disasters especially flash floods, massive flooding due to heavy rainfall, tsunami and hurricanes disrupt economies,

reduce the supply of natural resources increasing internal displacement of population along with migration out of affected areas. Competition between haves and haves-not can also intensify, resulting in a rise in conflict and tensions, where wars are fought over recapturing of food and water resources. Hence, climate change and resource scarcity may lead to violent conflict and, significantly higher risk of violence according to the deterministic views (Philip & Marjolein , 2008). Large-scale catastrophic events with widespread and severe impacts have the potential to contribute to or aggravate conflicts in several ways. Such disasters can disrupt access to essential resources such as food, water, and energy, resulting in the displacement of a large population potentially leading to social tensions and conflicts over access to jobs, housing, and basic services.

Since Nepal is nestled amidst the majestic Himalayas and uniquely positioned with its delicate geological makeup, renders vulnerable to escalating environmental threats, primarily driven by global climate change. Such changes manifest intensified natural disasters - flash floods, glacier lake bursts, and fierce storms. These climatic adversities not only disrupt the ecological balance but also create a space for global powerhouses' flight deck. The interrelation of conflict and emerging threats due to climate change-induced mega disasters needs to be explored in the context of Nepal. Any disaster fluctuates to mega when loss of lives and public properties will be beyond the response capacity of a state disaster management mechanism. During the aftermath of any mega-disaster, conflicts can arise due to various factors, including vested interest of foreign powers, differences in priorities, resource allocation, and decision making process. Such conflicts may occur between different levels of government, among various agencies and organizations, and foreign military interferences involved in disaster response.

So, climate change poses a significant threat to fundamental aspects of human security, including economic well-being, food security, and societal stability. In the aftermath of any large-scale natural catastrophes or disasters due to climate change, conflicts may arise due to various factors, including vested interest of foreign powers, differences in priorities, and resource allocation which are the focus areas of my research problem. The study aims to understand the conflict through disaster disaster-specific lens in reference to past climate change-induced mega disasters globally to examine the breeding of new types of conflicts and the threats of climate change in Nepal on Natural Catastrophes and Global Conflict Frontiers issues.

Review of the literature

In this section, the researcher has reviewed and analyzed the available literature on the relationship between disaster and conflict due to climate change. The exploration will provide grounds for reasoning the role of climate change-induced mega disasters in breeding the variations of conflicts. Many researches have been conducted on the related issues and it has been recommended by many authors for the need of exploration conflicts induced by mega-scale natural disasters due to global climate change. However, this research argues that Nepal may face the threats of climate change due to natural catastrophes and global conflict frontiers during the period of such disaster management.

Climate change is considered a multiplier to start new varieties of conflicts as it interacts and converges with other existing risks (Barnes & Hodgson, 2016). The increasing fragility

situation is due to conflicts surrounding natural resources and livelihood in security. The negative impacts on livelihood through food, water or land scarcity increase the grievances of the people. The rise in non-state actors may be the result of grievances existing where ungoverned space and lack of legitimacy of a state may be exploited by such non-state actor groups. Climate change in general will increasingly challenge the ability of States to deliver services and provide stability (Homer-Dixon T. , 1994).

Many researchers have focused on finding the Climate-Conflict nexus in the academic literature prioritizing the main scopes on finding the causal chains between climate change and conflict and exceptions of new violence due to climate change (Nordas & Gleditsch, 2007). Climate change-induced disasters generate insecurity, frustration, scarcity of important resources, and weakened enforcement of law and order which are frequently suggested to increase the likelihood of armed conflict (Homer-Dixon T., 1999).

Several studies on the relation between natural disasters and the risk of violent conflict have concluded with a positive relation between disaster severity and the level of political unrest leading to armed conflict. Even it has been claimed that earthquakes can actually stimulate intrastate conflict by producing scarcities in basic resources, particularly in developing and third-world countries where competition for scarce resources is most intense (Brancati, 2007). Notably, regions already ravaged by conflict, like Afghanistan and Yemen, have experienced exacerbated humanitarian crises due to climate-related disasters recently. These instances underscore the strong but not yet fully recognized connections between vulnerability, conflict, and the impacts of climate change (Buhaug & Uexkull, 2021).

Theoretical underpinning on conflict and disaster

The research link between disaster and conflict through environmental scarcity started a long time back from the period of Malthus, 1798. Thomas Malthus, an economist and demographer coined the theory on population growth in which he argued that resources such as food production would grow arithmetically meaning the rate of growth in food supply would be much slower than the rate of population growth giving rise to the disaster, also called "Malthusian Catastrophe." According to Malthus, population growth is limited by the availability of resources. Population would grow to a point where there were not enough resources to support everyone, leading to widespread famine, disease, and death (Broten, 2017).

Many other contemporary investigators working on climate change-induced conflicts are largely in alignment with the long-standing research trend on climate change and conflict. Johan Galtung introduced the theory of structural violence existing in the society in 1969 which states peace should be built after the problems caused by structural violence are eliminated (Ercoskun, 2021). With the same theoretical lens, we can study climate change-induced conflicts in the theme of global warming where the developed countries are considered as the main triggers for the structural anthropogenic violence. The research agenda on social responses associated with war-related disasters has been shifted to investigating the causal relationships between disaster and conflict through empirical research applying the theories of disaster and conflict management after the 1990s.

Further, it has been argued that climate change will act as a stressor in the larger environment that, along with other important conditions such as fragile economy and vulnerable security, will make large-scale violent conflict more likely. Homer noted that there was a direct causal

relationship between climate change and violent conflict but climate change is an important background force that escalates other risk factors associated with conflict (Homer-Dixon T. , 1999). Other potential causal factors with a view that climate change-induced disasters such as droughts, prolonged dry seasons, abnormally high temperatures, excessive rainfalls, and flash floods are associated with increased levels of conflict (Hendrix , 2012). Further, interest in disaster diplomacy emerged as phenomenological studies to explore the influence of disaster on conflict due to climate change (Kelman, 2006).

Methodology

The various research methods have been explored before selecting the suitable and more practicable approach to my research article. Among many research methods, the pragmatic worldview philosophical research design that arises out of actions, situations, and consequences rather than antecedent conditions will be adopted during this research process. This philosophical lens provides the freedom of choice to adopt any methods, techniques, and procedures that best meet the need and purpose of this study. Mixed method research both qualitative and quantitative can be used for the best understanding of the research problem which is to find the likelihood of the emergence of a new type of conflicts due to climate change-induced mega-disasters in Nepal. Hence, the mixed methods as strategies of inquiry will be chosen. Strategies of inquiry are types of qualitative, quantitative, and mixed methods designs or models that provide specific direction for procedures in research design (Creswell , 2007). As we know, there are various types of qualitative research approaches that became clearly visible during the 1990s and 21st century which includes case studies, ethnography, ground theory, phenomenological, and narrative research (Creswell, *Research Design*, 2009).

Since this study is focused on the climatic disaster events that tend to conflicts in society, the case study approach as a strategy of inquiry has been adopted. The cases selected are bounded by a certain time and activity, where detailed information on the defined research problem is being collected using a variety of data collection procedures over a sustained period of time which has covered the disaster events of the last two decades. Another research approach is the ethnography study which is an intact cultural group in a natural setting over a prolonged period by collecting primarily observational and interview data. Adopting such an approach may not give the proper outcome for the purpose of this study. Next is the grounded theory strategy of inquiry in which the researcher derives a general, abstract theory of process, action, or interaction grounded in the views of participants that involves multiple stages of data collection and refinement and interrelationship of categories of information (Charmaz, 2006). It compares data with emerging categories constantly and theoretical sampling of different groups to maximize the similarities and differences of information. As this study may not be able to cover a wide range of participants, it is less likely to apply this grounded theory approach in my research. Another is phenomenological research where the researcher identifies the essence of human experiences about a phenomenon as described by participants. Due to lived experiences, phenomenology has been marked as philosophy as well as a method and procedure that involves studying a small number of subjects through extensive and prolonged engagement to develop patterns and relationships of meaning (Moustakas, 1994). In this process, the researcher brackets his or her own experiences to understand those of the participants in the study. Due to the limited time frame of the study, this grounded theory approach will be

discarded. The final strategy of qualitative inquiry is narrative research in which the researcher studies the lives of individuals and asks one or more individuals to provide stories about their lives. Such information is often retold by the researcher into a narrative chronology. In the end, the narrative combines views from the participants' lives with those of the researcher's life in a collaborative narrative (Clandinin & Connelly, 2000). As the research problem is related to disaster events and their impact on conflict, this approach of narration may not be feasible in this study. Another strategy of inquiry to be used can be a quantitative approach which has invoked post-positivist philosophical worldview during the late 19th and throughout the 20th century. Among two strategies of inquiry: survey and experiment, survey research can be adopted to study that provides a quantitative or numeric description of trends in climatic-induced disasters and their effects on conflicts. It also includes cross-sectional and longitudinal studies using questionnaires and structured interviews for primary data collection with the intent of generalization of the impact of natural climatic disaster events on the likelihood of emergence of new types of conflict.

Out of all these existing research methods, the library research methodology with a qualitative approach is being used to explore the new types of disaster-induced conflicts within the period of the last two decades. Comparative case studies on increasing climate change-induced mega disasters on similar conflicts that emerged nationally, regionally, and internationally are being examined. This study therefore stresses the need for the theoretical understanding to find out the link between climate change and violent conflict. Qualitative generalization on the possibilities of emerging new types of conflict in Nepal based on climate change-induced disaster has been concluded by using a triangulation data verification model checking the validity and reliability of collected qualitative data.

Case Study and Analysis

The case study is carried out to uncover insightful parallels between Nepal's unique situations and other global regions. Specifically, regions like Syria, South Sudan, Rwanda, and South and South East Asia are being taken into consideration where climate-induced factors, including severe food and water shortages, have sparked communal tensions and resource-driven conflicts. Within Nepal's borders, the focus is on historical analysis of climate-induced disasters mainly the Seti, Koshi, and Melamchi flash floods along with natural catastrophes, mega earthquake-2015.

In the cases of South Sudan and Rwanda, climate change has led to the scarcity of resources mainly food and water which forced communities to raid the neighborhood or migrate to new areas in search of opportunities that bring new arrivals into struggle for existence and competition with the landowners leading to communal conflict (Homer-Dixon T. , 1994). Similarly, the causal links of climate change and conflict were dissected through the scarcity of resources due to droughts and famine as the reason for conflicts in Syria which can be further explained as follows:

Syria Case

The civil war in Syria started in March 2011 as the result of interrelated factors such as regime change, religious and sociopolitical reasons, and challenges associated union climate variability and the availability and use of fresh water. Water and climatic conditions have played a direct role in the economic crises of Syria. Due to natural water scarcity, early development of

irrigation process, complex relegations, and ethnic diversity, there is a long history of conflicts in this regime (Gleick, 2014). The impacts of climate change have been seen through the scarcity of water and reduction in economic activities given crises to disputes on sources of water. In Syria, water-related conflicts have occurred in many forms including control and dispute over access to water and water systems and use of water as a weapon through terrorist activities. Water scarcity has been a persistent issue in Syria. In the northeastern part of the country, the population has historically relied on the Euphrates River, groundwater sources, and relatively higher rainfall levels for their water needs. Nevertheless, in recent times, the Euphrates River dams have experienced an unprecedented decline in water levels, groundwater reserves have reached their lowest levels in the past two decades, and the region has seen a significant decrease in rainfall over the last three years. These circumstances underscore the difficult challenge that Syria is currently facing in addressing the ongoing water scarcity brought about by climate change (Ocha, 2023). The increase in violence in Syria over the role that water plays in development disputes and economic growth has clearly given the pictures of crises in climate change-induced conflicts in the region. Syria endured a severe drought period spanning from 2006 to 2010, and more recently, in 2020 and 2021, it faced another bout of drought with historically low rainfall levels. Additionally, between 2017 and 2022, there were 699 documented incidents of attacks on crops and agricultural land, which further exacerbated food scarcity and led to a significant increase in food prices (OCHA, The Links between Conflict and Hunger in Syria: Conflict, Hunger and Aid Access, 2023).

Now, I delve into the connection between climate change and conflict by examining how resource scarcity, stemming from climate change resulting in droughts and famine, has played a pivotal role in triggering conflicts in South Sudan, as outlined below:

South Sudan Case

In the case of South Sudan, the long-term conflict has paired with drought caused by climate change giving rise to food scarcity. The climate change has affected the rainfall patterns of the region. Less consistent rainfall harness droughts that contributed to the food crises. It increased the internal migration and competition for capturing water and other resources flaring up the conflict (Bergholt & Päivi, 2012). The study was conducted in South Sudan to investigate the extent of climate changes, variability, and the incidents of climate disaster events that were linked with conflicts. Using the meteorological data, records of conflicts, ,floods and drought, the research found out that there was a decrease in rainfalls and an increase in temperature since 1970s, also increase in flood and drought since the 1900's. Conflicts occur after floods or drought which implies that climate change-induced disasters have been contributing to commercial conflicts in South Sudan. Thus, climate change causes a Scarcity of resources and forces communication to send neighbors or migrate to new areas to look for opportunities brings competition between new arrivals and landowners leading to communal conflict (Homer-Dixon T. , 1994). Thus, the local level climate-induced stress feeds into national level political instability that causes violent conflicts. Former UN Secretary General Banki Moon had also referred, the climate change as violent conflict in Darfur "Amid the diverse social and political causes, Darfur conflict began as an ecological crisis, arising at least in part from climate change". This statement also clarifies that one of the root causes of the conflict in Sudan is climate change-induced natural catastrophes (Mabey , Gulledge , & Bernard , 2011).

Further, I shall explore the link between climate change and conflict in greater depth by analyzing how resource scarcity, driven by climate change-induced droughts and famine, has served as a significant catalyst for conflict in Rwanda during the genocide of 1994. This will be outlined as follows:

Rwanda Case

Even in the case of Rwanda Hutu-Tutsi crises-1993, the role of environmental scarcity was limited, but not insignificant for the rest causes of the conflict. The climate change-induced environmental scarcity affected the food production which increased grievances, weakening the legitimacy of the regime. The civil war, structural adjustment, fall in coffee prices and Rwanda's geostrategic position as a landlocked country with few opportunities for economic diversification, boosted the grievances that resulted in weakening regime legitimacy (Homer-Dixon T. , 1999). There was a serious scarcity of food and water. Especially, in the southern region of the country hit by several droughts between the 1980s and 1990s. Water scarcity was critical to the personal, domestic industrial, and agricultural needs. Such environmental scarcities due to climate change began to impact the social sectors such as agricultural production, intense migration, and loss of legitimacy by the state. Before the genocide, various regions of Rwanda experienced severe food scarcity, primarily driven by drought and famine. The root cause of the Rwandan genocide can be traced back to the growing disparity between available land, food resources, and the burgeoning population. This imbalance resulted in widespread malnutrition, hunger, recurring famines, and intense competition for arable land, ultimately contributing to the tragic events of the Rwandan genocide (Magnarella, 2015).

At the regional level, South Asia and South East Asia are both extremely vulnerable to climate change and also deeply affected by conflicts which is reinforced by the following facts:

Regional Case

South Asia and South East Asia have been greatly affected by climate change and conflict. Both regions are characterized by social, political, ethnic, and religious diversities. Several countries in these regions are experiencing sustainable economic growth whereas others are pushed to economic crises. Many countries in both regions are facing the challenges of growing socioeconomic inequality. Linked to the unequal distribution of economic resources in some countries; many religious, ethnic, or political minority groups continue to be marginalized by economic and political processes. Both the regions are experiencing an increase in temperature sea-level rise, together with an increased prevalence of extreme climate-related events, such as floods, cyclones, tsunamis, and droughts. A large population resides in bank of rivers and oceans sides making themselves vulnerable to climate change-induced disasters as they rely on agriculture and fishing for the main source of their economy. South and South East Asia have the longest coastlines in the world leaving it heavily exposed to extreme weather eventualities and crises at sea-level such as Jakarta, Mumbai, Cox Bazar, Manila, Bangkok, and Ho Chi Minh City. The most common violence present in these regions is communal conflicts, riots, rebels, and insurgency. In South Asian Countries, post-disaster conflict due to climate change-induced disasters are more prevalent due to unequal distribution of resources and weak disaster response preparedness plans. Several studies show that armed rebel groups in the Philippines and Naxalites in India can make use of the societal consequence of climate events to gain power in ongoing conflict. They may adopt a coping strategy to increase food security for

the group, as a recruitment tactic, or any opportunistic behavior. There is also evidence of young people joining armed groups after the prolonged drought in Afghanistan in 2006-2007 and the increased financial capacity of rebels like LTTE following the 2004 Terrorism in Sri Lanka. Conflict can reduce coping capacity through the loss or forced sale of assets, reduced availability and quality of basic services, and impair overall resilience (Evan, 2011).

Increasing variability in Asia's monsoon system is causing crises due to the unexpected flash floods, heavy rain fall, and melting of snow and glacier in higher Himalayan ranges. The region has a series of conflict hotspots which are often clustered in areas of high population density, typically along coastal areas which are also subject to high climate change vulnerabilities. Natural disasters can exacerbate conflict, deepening grievances through the unequal distribution of protective, preventive, and response measures. The exploitation of economic opportunity through criminal activities is also a significant impact of disasters or when disasters create a smoke screen and launching pad for political or military objectives. So, climate change has been emerging as a new cause of fragile statehood for many states in both the region which are characterized by the fact that the state institutions have very limited or no capabilities to perform key public service functions hence losing the states' legitimacy (Hefele, Vogel, & Lee, 2016).

Recent regional cases of adverse climate change effects due to global warming in the glaciers of the Himalayan region can be taken as a reference from the flash flood in Sikkim during the last rainy season of 2023. In India's northeastern region, Sikkim, the glacier lake outburst resulted in massive flash floods causing the death of more than 47 people and over 100 missing along with the destruction of critical infrastructures like roads and bridges. The incident was attributed to a sudden cloudburst occurring over Lhonak Lake in the northern part of Sikkim rapidly moving torrents of water down the Teesta River. Lhonak Lake is a sizable, glacier-fed water body located at the base of a melting glacier. An examination of the satellite images reveals that over 60% of the water contained within the lake was discharged following the intense rainstorm triggering the glacial lake outburst. The melting of glaciers in the Himalayan region is the result of a rise in temperature due to global warming giving rise to flash flooding catastrophes (Regan, Farooqui, & Sharma, 2023).

Lastly, when we shift our focus to the localized impacts of climate change-induced natural catastrophes and their potential to give rise to various forms of conflict within Nepal, we can analyze the role played by such disasters in the emergence of new conflicts as follows:

Case Study of Nepal

In the context of Nepal, this study will investigate the extent of climate change, variability, and the incidents of climate disaster events through a historical content analysis lens and will look for connecting links with possibilities of emerging new conflicts. Out of 77 districts of Nepal, 64 are prone to some type of disaster. Nepal is ranked 16th in vulnerability to natural multi-hazards 7th for the number of deaths resulting from all floods, landslides, and avalanches, and 8th position for flood-related deaths alone. Globally, Nepal ranks 11th position in terms of relative vulnerability to earthquakes and ranked 4th most vulnerable country in terms of Maplecroft's climate change vulnerability index in 2011 with the rating of "Severe" which is the highest category. Climate change and extreme disasters threaten to reverse development gains and put more than 18 million people into poverty by 2030 (Dhungana, Pain, Khatri, Gurung, & Ojha,

2013). Within Nepal, a few specific disasters such as the Seti and Melamchi flash flood, the Koshi flood, and the mega earthquake of 2015 are discussed as follows:

Seti Flash Flood

A massive flash flood was triggered in Seti River on 05 May 2012 due to a landslide near Machhapuchre Mountain, sweeping the settlements in the downstream bank of Seti River. The major damages occurred with the killing of 17 people and the missing of more than 50 persons and damage to infrastructures and livelihoods where suspension bridges and the water supply system to Pokhara were also damaged. It was investigated that the flood occurred due to a heavy buildup of snow, ice, and mud from avalanches as the result of heavy rainfall for more than 3 days. The avalanche created a blockage restricting the flow of the Seti river but later on, the flow of the river broke out through the blockage causing a devastating flash flood in the river (Nepal, 2012). This event can also be connected with the climate change-induced disaster due to the rise in temperature and impact on glaciers of the Himalayan region (Dhungana, Pain, Khatri, Gurung, & Ojha, 2013).

Koshi Flood-2008

The disastrous Koshi flood of 2008 was caused due to breach of an embankment of the Koshi Dam which was built by India in 1959 on the grounds of Koshi treaty between India and Nepal. According to the Treaty, embankments were to be constructed and routinely maintained by the government of India to control the flooding in Bihar state of India. The floods raised two main issues; firstly, whether the flood control measures are appropriate, and secondly, to what extent the institutional management of floods is scientific. Three villages; Shreepur, Haripur, and Paschim Kausaha of Sunsari district were severely affected by the flood (Shrestha, Ahlers, & Bakker, 2010). This is an example of mega flooding that may impact in mass migration of local people giving rise to an internally displaced population. And, also such internal migration has been analyzed as a source of internal conflicts that of inter-personal violence in nature which may arise due to a lack of resources for basic needs in the long run (Mares & Moffett, 2016).

Melamchi flash flood

The flash flood in the Melamchi River on 15 June 2021 was supposed to take place due to multiple anthropogenic and climatic factors that devastated river corridor settlements and livelihoods resulting in internal displacement of people and affecting their economic activities. Though the early warning from upstream communities helped to reduce the further damages downstream of the river, the flooding forced the victims to outmigration for labor for economic sustainment, and vulnerable families were pushed to seek alternative livelihoods away from home (Maharjan et al., 2021). The event of Melamchi flash flood is an example of unseasonal heavy rainfall due to climate change-induced mega disasters connected with the rise in global temperature and its impact on glacier of the Himalayan region (Dhungana, Pain, Khatri, Gurung, & Ojha, 2013).

Mega Earthquake-2015

An earthquake of magnitude 7.8 Richter scale with an epicenter approximately 77 km northwest of Kathmandu occurred killing more than 9,000 and 23,000 people injured (Cook et al., 2016). The earthquake was the result of friction between the Indian and Eurasian plates

along the Himalayan arc. Though it is not a climatic change-induced disaster it can set a stage for the analysis of the aftermath of disaster management conflicts. The presence of more than 34 international humanitarian aid agencies and rescue teams was the source of roots for new types of conflicts if the Government of Nepal and the Nepali Army had not handled them wisely and professionally. The operation "SANKATMOCHAN" (Liberation from crises) was immediately launched in the lead role of the Nepali Army in coordination with all national stakeholders working hand-in-hand during mega disaster management in line with the National Disaster Response Framework of Nepal. The Nepali Army Crises Management Center (NACRIMAC) and Multi-National Military Coordination Center (MNMCC) were established immediately as per the mandate given by the constitution of Nepal and the National Disaster Response Framework (HQs, 2015). With this, the management and mobilization of 18 foreign military search and rescue (SAR) teams including teams from superpowers (USA, China, and India) became more coordinated and synchronized. The violations of Oslo guidelines from the foreign SAR teams were strongly observed and those situations were diplomatically handled by the Nepali Army with its highest level of professionalism. It was a fact that all those 18 search and rescue teams could save only 19 lives with their more than a month of SAR operations (HQs, 2015). Even, the flight sorties for rescue missions were comparatively much less than those conducted by the Nepali Army. Such activities strongly direct the vested interests of superpowers in the rise of interstate conflict considering the geostrategic location of Nepal (Devlin & Hendrix, 2014).

Analysis of the Cases

The analysis of cases in the context of climatic-induced flash flooding disasters, it provides valuable insights into the vulnerabilities of climatic-induced natural disasters and the likelihood of communal conflicts due to forced internal migration, reduced economic activities, and rise in internally displaced population in the affected areas. Conflicts stemming from mega climatic change catastrophes may increase in the future due to escalating effects of climate change massive flash floods, floods in plain regions land slide in hilly regions, and droughts. The conflicts are likely to be driven by various factors that are born from environmental degradation, scarcity of natural resources, internal displacement, and competition for basic needs.

The likelihood of conflicts due to climate change-induced mega disasters may be the conflicts related to the scarcity of natural resources such as food, water, and arable land. Another may be the conflicts on displacement and migration due to extreme weather events, and environmental degradation. As such displacement and migration can lead to conflicts due to competition of local communities for resources and opportunities as in the context of South Sudan and Rwandan cases. Rest may be the conflicts due to competition for energy resources like fossil fuels, renewable energy infrastructures, and power generation, whereas others can be transboundary water conflicts, food security, and agriculture conflicts, healthcare and pandemic conflicts, humanitarian aid and assistance conflicts, indigenous and land right conflicts, conflicts due to security concerns and militarization and geopolitical tensions due to control over strategic resources and territories in vulnerable regions.

The Emergence of Threats due to Climate Change in Nepal

The analysis of various cases in the context of climatic-induced flash flooding disasters, has provided valuable insights into the country's vulnerabilities to such disasters and the likelihood

of communal conflicts due to forced internal migration, reduced economic activities, and rise in internally displaced population in the affected areas.Top of Form

Climate change is the result of gradual changes in temperature and weather patterns giving rise to extreme weather events like flash floods and droughts along with drastic alterations in the climate system. So, the climate change in Nepal is leading to a sudden rise in the events of natural disasters especially flash floods, glacial lake outbursts, and droughts creating severe humanitarian, economic, and environmental consequences as discussed in the national case study portion of this research paper. Climate change and environmental degradation can further complicate the situation by altering the timing and volume of river flows. Besides, climatic-induced disasters have implications for the broader geopolitics and security.

Nepal, due to its geostrategic location, could become a potential hotspot for conflicts related to resource scarcity, displacement, and competition over strategic interests about mega-disasters such as the mega earthquake-2015 in, where some of the international search and rescue teams did not want to leave Nepal even after the search and rescue operation was declared over by the Government of Nepal (Poudyal Chhetri, 2018). This shows that Nepal may face dual threats; the immediate and direct impacts of natural catastrophes driven by climate change and the long-term indirect consequences related to global conflicts in reference to the International case studies portion of this study. It seems Nepal is experiencing an acute and complex set of challenges resulting from climate change which encompass both immediate and responsive potentiality to shape the regional conflicts with geopolitics dynamics. The urgency of addressing climate change and its dual threats to Nepal using holistic and integrated approaches to mitigate these dual threats ensures the well-being security and sovereignty of Nepal and its people.

Nepal shares several transboundary rivers with its north and south neighboring countries, China and India respectively which can indeed lead to conflicts and disputes over water resource management. Some of the main transboundary rivers are the Ganges, Brahmaputra which is called Yarlung Tsangpoin Tibet, and their tributaries. These rivers originate in China and India and traverse through Nepal, and then flow into Bangladesh and other downstream areas. Nepal heavily depends on the rivers for water resources, including irrigation, drinking water, and hydropower generation. Any changes in water sources can have a significant impact on agriculture, energy generation, and overall water security. Inter-state disputes can arise due to differences in water management practices, competition for water sources, and variations in water flow caused by factors like climate change, dam construction, and deforestation. The sustainable management of transboundary rivers in the region requires cooperation and agreements among the countries. The bilateral and multilateral agreements are assisting in establishing rules and mechanisms for sharing water resources and resolving conflicts.

Various mitigation measures are being taken by the government of Nepal to prevent mass flooding through the adoption of preventive measures such as the design of the Sapta-Koshi high dam in the Koshi river through bilateral agreement between India and Nepal which may sow the seed of the conflict due to the inundation of vast agricultural land. Also, the foreign military support for search and rescue during such disasters should be judiciously handled to prevent the possibility of foreign ingress towards the sovereignty and independence making Nepal a table ground of superpowers due to its geo-strategic location. The experience gained through the participation and mobilization of search and rescue foreign military teams including

superpowers and other neighboring countries and their achievement need to be critically assessed. The vested interests of superpower friendly countries and the necessity to strictly follow the Oslo Guidelines 1994 in which respect for sovereignty, impartiality, neutrality, and respect for socio-cultural dimension of victim nations are main agenda during the mobilization of foreign search and rescue teams need to be expedited (OCHA, 2007). The lessons learned through that mega earthquake search and rescue operation in which some of the foreign search and rescue teams did not follow the Oslo guidelines and stayed in Nepal for more than months, also shows the mentality of occupying Nepal as a vital ground of dominance in the long run which shows the possibility of the emergence of global conflict frontiers of superpowers in Nepal due to climate change induced mega-disasters.

Conflicts stemming from climate change catastrophes may increase in the future due to escalating effects of climate change basically massive flash floods, floods in plain regions and land slides in hilly regions, and droughts. The conflicts are likely to be driven by various factors that are born from environmental degradation, scarcity of natural resources, internal displacement, and competition for basic needs. The likelihood of conflicts in Nepal due to climate change-induced mega disasters may be the conflicts related to the scarcity of natural resources such as food, water, and arable land. Another may be the conflicts on displacement and migration due to extreme weather events, and environmental degradation. Such displacement and migration can lead to conflicts due to competition of local communities for resources and opportunities as in the context of South Sudan and Rwandan cases. Rest may be the conflicts due to competition for energy resources like fossil fuels, renewable energy infrastructures, and power generation, whereas others can be transboundary water conflicts, food security, and agriculture conflicts, healthcare and pandemic conflicts, humanitarian aid and assistance conflicts, indigenous and land right conflicts, conflicts due to security concerns and militarization and geopolitical tensions due to control over strategic resources and territories in vulnerable regions.

Conclusion

The conflicts due to climate change-induced mega disasters have always become the point of interest of many scholars in the last two decades. The international, regional, and national comparative case studies have come up with the characteristics of climate change-induced natural catastrophes of mega-disasters in nature that may bridge the knowledge gap between climate change and conflict dynamics, offering actionable insights for holistic resource management, disaster risk mitigation, and proactive conflict prevention. The occurrence of climate change-induced mega-disasters in Nepal has the potential to trigger a variety of conflicts through natural catastrophes of large scale and global conflict frontiers. Such conflicts may primarily be rooted in the scarcity of vital natural resources like food, water, shelter, and arable land. Moreover, there may be conflicts arising from the displacement and migration of people due to extreme weather events and environmental degradation. These events can lead to competition among local communities for resources and opportunities, mirroring the situations observed during the South Sudan and Rwanda crises. Furthermore, these conflicts may also be fueled by the competition for energy resources encompassing fossil fuels, renewable energy infrastructure, and power generation. Additionally, there could be other conflict sources, including disputes over transboundary water resources, issues related to food

security and agriculture, challenges surrounding healthcare and pandemics, humanitarian aid and assistance concerns, disagreements over indigenous and land rights, conflicts driven by security considerations and militarization, and geopolitical tensions linked to the control of strategic resources and territories in vulnerable regions. The potentialities of conflicts due to climate change require proactive measures, regional and international cooperation, and comprehensive strategies to integrate climatic adaptation and disaster risk reduction. National efforts to build disaster resilience to reduce the likelihood of conflicts by promoting equitable resource management along with addressing the underlying causes of vulnerability will be a milestone in mitigating conflicts rooted in climate change-induced mega-disasters in future.

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