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Understanding Climate Displacement in Nepal: A Qualitative Look through the Story of Samjung

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Abstract

This research paper explores the emerging crisis of climate induced displacement in Nepal, with qualitative focus on the village of Samjung in Upper Mustang. As climate change accelerates glacial retreat and disrupts traditional water sources, Himalayan communities face existential threats that go beyond loss of livelihood impacting the cultural identity, ancestral heritage and mental well-being. Drawing from the secondary data including government reports, climate studies and media documentation the study highlights how environmental shifts have forced Samjhung inhabitants to relocate amplifying a broader trend in the Himalayas. The paper critiques the current adaptation policies and emphasizes the urgent need for culturally sensitive, community centered climate resilience strategies. By studying Samjung this research aims to contextualize the broader perspective of Nepal's vulnerability to climate change and advocate for urgent action at both national and international level.

Keywords: Climate displacement, Samjung, Himalayan Vulnerability, Cultural Heritage Nepal Policy

1. Introduction

Nepal is a landlocked country, has an extremely varied and complex climate driven by uneven terrain and regional weather systems. Within few hundred kilometers the country's elevation changes from the lowland of 70m in the Terai to the top of the world Mt Everest (8,848m). Nepal is considered as one of the top ten countries most likely to be impacted by global climate change (WFP , 2009) but is one of the least contributors to the emissions of greenhouse gases (GHG) according to the 2016 reports. Data trends of Nepal from 1975 to 2005 showed that temperature rise by 0.06 degree annually. According to the recent 2025 report from meteorological agencies across the world have predicted a high probability of wetter and hotter

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than normal summer monsoon most of South Asia in 2025. The Hindu Kush Himalayan terrain spread across the eight south Asian countries of Afghanistan, Bangladesh, Bhutan, China, Myanmar, Nepal and Pakistan. Surmise experts from the international center of Integrated Mountain development (ICIMOD) in their HKH Monsoon Outlook 2025. On the other hand rising temperatures can accelerate cryosphere melting, contributing o short term increases in river flow or discharge and heightening the risk of glacier lake outbursts flood and in combination with wetter monsoon can enhance heat stress and cause waterborne diseases. Increasingly many of these communities are facing risks from rapidly melting glaciers which can lead to glacial lake outburst floods. In August 2024, two such outbursts caused significant damage in Thame village, located in the Mt. Everest region. There are around 25,000 other glacial lakes in the Himalayas with 47 identified as potentially dangerous in Koshi , Gandaki and Karnali river basins shared by Nepal, China and India. However a few glaciers are regularly monitored and even fewer have established early warning systems.

Climate change is one of the major challenges of modern times. Its impacts are manifold and vary from sea level rise (especially relevant to those living in coastal areas) to the increased frequency of extreme events such as cyclones and storm surges which not only poses problems to property and infrastructure but also to human health. Climate change is also associated with damages to the physical and natural environment as well as to biodiversity. The monsoon rainfall in Nepal like any other south Asian country is to a large scale corelated with regional climatologically phenomenon but as yet the total rainfall has not shown any decreasing or increasing trends due to climate change. However, there are signs of changes in the dates of onset and retreat of the monsoon as well as the number and frequency of extreme precipitation events, although more analysis is still needed to confirm this. In 2009 reports from ICIMOD one of the visible impacts of climate change in the Himalayan region is the retreat of the glaciers many at the highest rates than seen in the other mountain regions. United Nations Framework Convention on Climate Change (UNFCCC) defines climate change as “a change of climate which attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods. Greenhouse gases is considered as the major force in causing the accelerated climate change. Earths average temperature has risen by 1.5 degree over the past century and is projected to rise another 0.5 to 8.6 degree over the next years. Rising global temperatures cause significant impacts on weather and climate. Many places have seen changes in rainfall, resulting in more floods, drought or intense rainfall and recently many places have also experienced the impacts on changing climates oceans and warming and becoming more acidic, ice caps are melting and sea levels are rising. These changes will likely present challenges to our society and our environment.

As Nepal faces more frequent and severe floods, droughts and glacial melt the need for urgent action is clear. While progress has been made much more is needed at both the national and international levels. The window of opportunity to act is closing rapidly and Samjung is a living example to the world.

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1.1 Research questions

i. How has climate change contributed to the displacement of Samjung Village?
ii. What are the cultural, emotional and mental health consequences of this displacement?

2. Literature Review

2.1. Climate Justice and Inequality

Nepal despite contributing only about 0.02%of global greenhouse gas emissions is one of the most climate vulnerable countries (WMO,2023; CRI, 2025). This stark imbalance reflects a major climate justice concern; countries least responsible for climate change bear its most devastating consequences. UN Secretary General Antionio Guterres visit to Annapurna Base camp in October 2023 highlighted Nepal's fragility. He stated that "Nepal has lost close to one third of its ice in just over thirty years." And warned of melting glaciers, glacial like outbursts floods and rising global sea levels (News,2023). The Himalayan cryosphere is melting at record rates, while local communities who depend on snow fed rivers and springs face increasing threats survival.

Climate change has also placed biodiversity at risk. Nepal is home to more than 6000 rivers, 118 ecosystems, and over 3.9 % of the world's mammals, 8.9% of birds, and 3.7% of butterflies (Paudel & Bhattarai, 2015; Caltech,2023). This richness is being degraded by a combination of rising temperatures, erratic precipitation and anthropogenic activities such as deforestation, overexploitation and mining.

These losses highlight the deep injustice; Nepal is paying the price for a crisis it did not cause, underlining the moral and ethical imperative for international climate finance and support for adaptation. In May 2025, Nepal hosted the first Sagarmatha Sambad, a global mountain, climate summit reaffirming its commitment to protecting high altitude ecosystems and promoting collaboration on glacier preservation ahead of COP28. At Everest Summiteers Summit in late May 2025, authorities pledged to fund cleanup efforts removing 11 tons of waste and corpse and called for stricter regulation to prevent overcrowding and environmental damage on Mt. Everest. In march 2025, the government announced increased funding for glacier modernization of meteorological forecasting and digitalized early warning systems under the sustainable water resources management adaptation strategy. The launch of Nepal Adaptation Plan, 2021-2050, Nepal's inaugural NAP, approved in October 2021 details 64 prioritized adaptation initiatives across nine sectors, including agriculture, biodiversity and disaster risk reduction. It combines USD 1.5 billion in domestic funding with USD 45.9 billion in external finance through to 2050.

Within the Forestry Sector Strategy (2016- 2025), Nepal aims to increase forest cover to 45% by 2030 and reduce deforestation. It also promotes community-based forest management watershed protection and carbon trading mechanism. There is commitment under REDD + frameworks and the Hariyo Ban Program are strengthening carbon monitoring and payments for ecosystem services. The President Chure – Terai- Madhesh Conservation Area Program supports sustainable resource use in ecologically sensitive zones like Chure range.

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Nepal's new climate policies and global engagements reflects a strong commitment to environmental and cultural resilience. However, challenges in coordination, funding and community inclusion persist. The samjung case reminds policymakers that climate crisis are lived experiences, deeply intertwined with culture, memory and identity not just physical relocation. For effective adaptation, Nepal must align technical infrastructure with social and ecological fabric of its communities, ensuring that identity and heritage are safeguarded alongside forests, water, and climate.

2.2. Environmental Migration and Ecosystem Collapse

Nepal's geography from subtropical plains to tundra like Himalayan makes it extremely sensitive to climatic shifts. According to the Department of Hydrology and Meteorology (DHM), the country's average maximum temperature increased by 0.056 degree Celsius per year from 1971 to 2019, with Himalayas warming faster than the global average. These shifts are directly threatening water access. Many highland communities like Samjung depend on snow fed mountain springs. As glaciers retreat and snow fall declines springs dry up, resulting in severe agricultural collapse and ultimately leading to forced migration.

A 2022 National Climate Survey reported NPR 415 billion losses to agriculture and water dependent sectors over five years caused by hydrological changes, crop failures and pest outbreaks. Samjung is one such village where this environmental degradation forced the abandonment of ancestral lands. Glaciological records also show that glaciers like AX010 in the Dudh Koshi region have retreated rapidly since the 1970s losing mass and flow speed, further confirming the accelerating pace of environmental collapse (n Kadota et al, 2000). These climate induced changes are no longer isolated events. They form a growing pattern of displacement placing Nepal within the global conversation on climate migration. Where migration is not a choice but a necessity driven by water scarcity and ecosystem failure.

2.3. Cultural and Mental Health Impacts of Displacement

While the physical impacts of climate change are measurable its emotional and cultural consequences are often overlooked. Displacement in Nepal not only means losing land and livelihood, but also losing rituals, language, identity, and memory. As Padhy (2015) argues, climate induced relocation is major cause of acculturation stress, PTSD, and depression. The case of Samjung is emblematic. Villagers expressed deep trauma over being uprooted: *"I don't know how to pray in a new land. The mountains knew my name"* said a woman after being relocated in 2025 (Source; AP News, 2025). This psychosocial loss reflects what cultural trauma theorist like Kai Erikson describes *"A tear in social fabric"* – where identity is no longer grounded in place or history.

Longer droughts and repeated displacement are also linked to increase in violence, suicide rates and diminishing mental health among rural population (Padhy,2015). As economic instability and government inefficiency drive more people abroad, migration becomes both symptom and coping mechanism. For example, foreign labor permits jumped from 512,878 in 2014 to over 7771,000 in 2023 indicating socio economic despair and environmental pressure. Nepal's mental health system remains under resourced and mental health is often excluded from climate adaptation policies. The emotional wounds of displacement especially for indigenous and rural

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communities require attention not just from psychologist but also from planners and policy makers.

Methodology

This study uses a qualitative approach, relying on secondary data from government reports Like National Adaptation Plan, NGO publication (ICIMOD, UN) and news articles. Sources were selected based on their relevance to climate induced displacement and their coverage of the Samjung case. Data were analyzed thematically focusing on three categories they are environmental triggers, cultural impacts and policy responses.

The Case Study of Samjhung : A Village Displaced

Samjung is located a five hour walk from Jomsom – Korla highway the village once screamed purity and the population engaged in animal husbandry and agriculture. Samjung nestled at nearly 13,000 feet has become to disappear not to war, not to infrastructure but to climate change. High in the arid cliffs of Upper Mustang where prayer flags once flew in every ancient stone home, a quiet tears and goodbyes is unfolding. The Village of Samjung is an example. This is sadly the reality of every untold story in Nepal.

Samjung was once sustained by glacial melt, snow fed springs and communal resilience passed down through generations of Gurungs. But over the past two decades, the community watched their natural water resource vanish. Glaciers retreated, Snow stopped falling, the village spring ran dry, fields once with buckwheat and barley turned to dust. In 2016, the crisis became undeniable. According to the reports the entire village began moving to New Samjung some 15 kilometers away with the help of the mustang monarch. Upper Mustang is among the hardest hit regions. In recent years multiple villages like Dhe and Yara have also started discussing or planning relocations. The story of Samjung forces us to reckon with some uncomfortable truths. Truths about climate change is not a distant threat it will dismantle heritage, families and faith in real time. Adaptation plans in Nepal must be culturally sensitive not just technically sound. Moving people is not enough we must ensure traditions move with them, the case of Samjung should be documented studied and taken seriously because climate change is only talked about policies are made but not implemented.

Climate change is quietly changing because people can live and work by disrupting the very land that were used for framing, water access and weather patterns. (Neil Adger, University of Eseter). *"The key driver for moving or migration is the water scarcity"* says Amina Maharjan (ICIMOD, 2025). Up to 80 percent of the glacier volume in the Hindu Kush and Himalayas could vanish in this century if greenhouse gases aren't drastically cut in a 2023 report. Migration can be easier if the government looks out for you but in Samjung the issue of migration has been a story for 15 years, 18 household were relocated, the mountains that was once a home to many is now a barren land and a reality to the world that this village is an example of many to come. According to the ward officer the resettlement was done in a nearby village donated by the monarch there. The construction was done by the local government and 50 percent was covered by the Swiss organization.

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Results and Discussion

In recent years, Nepal has experienced an alarming rise in climate induced disasters, with extreme weather events substantial loss of life, infrastructure and livelihood. One of the most devastating incidents occurred in June 2021, when extreme rainfall and hydrogeological processes triggered a disaster in Melamchi damaging the lower Indrawati region and resulting in an estimated NPR 66 billion in losses. Similarly in 2023 flooding in eastern Nepal severely impacted Hydropower infrastructure incurring damages worth NPR 8.5 billion. In August 2024, a glacial Lake outburst flood (GLOF) in Thame Village, located in the Mount Everest region, caused widespread destruction. This event highlighted the threat posed by Nepal's more than 25,000 glacial lakes, 47 of which have been classified as potentially dangerous. Many of these lakes are shared across borders with China and India. Yet only a few are monitored and even fewer have functional early warning systems in place. These hazards illustrate Nepal's fragile geographic context and the limited capacity of existing institution to respond effectively. Nepal's vulnerability is further magnified by the socio-economic limitation of a developing nation ranging from weak infrastructure and limited financial resources to insufficient technological preparedness. These factors compound the effects of unpredictable weather patterns, frequent flash floods, and accelerating glacier melt pushing the country into an increasingly uncertain climate future.

The summer monsoon season (June- September) is critical to the region hydrology, especially in the Hindu Kush Himalayan (HKH) region where the monsoon precipitation is vital for replenishing water systems, above normal rainfall has increased the risk the destructive flooding, particularly in the plains and foothills regions. Historical data reveals that 72 % of all floods recorded in the region between 1980 and 2024 occurred during this monsoon season.

In response, organization such as ICIMOD have developed forecasting toolkits that predict precipitation, temperature and river discharge 2-10days in advance. These are now being used by Nepal's hydrometeorological departments to support early warning systems and climate risk management. However, limited financial, technical and human resources continue to hinder large scale deployment, making international support critical.

As emphasized in forums like COP28, developed nations must uphold their commitment to support vulnerable countries like Nepal, which contribute negligibly to global emissions 0.02, according to WMO,2023 but face disproportionate impacts.

An impact assessment study using Likert scale-based quantile analysis involving 16 climate vulnerability variables found a mean score 1.9025 which is well above the risk threshold of 2. This indicates that the population is experiencing significant climate related impacts-particularly in the form of biodiversity loss, agricultural disruption and mental health diminishing.

The case of Samjung Village has further brought mental health into public disclosure, linking ecological collapse to emotional and cultural trauma. Climate induced displacement not only disrupts infrastructure and food systems but also severs, communities from their ancestral lands and identity. Given the growing urgency, Nepal must prioritize adaptation through technology

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community driven resilience strategies and mental health integration, while continuing to advocate globally to climate justice, replacing greenhouse gas emitting systems with green industrialization and nature-based solution is essential not only for migration but also for preserving cultural continuity in high-risk regions.

Conclusion

Although Nepal allocates 32.5% of its national budget to climate action, gaps remain in execution, especially at the community level. Local governments, accounting for 47% of climate spending often lack coordination, technical capacity and meaningful community engagement. While measures like afforestation, early warning systems, green infrastructure and watershed restoration show promise their nationwide deployment is uneven.

The story of Samjung is not an isolated tragedy. It is a warning one that reflects the painful truth that climate change is no longer a distant threat but an unfolding reality, deeply woven into the ecological, cultural and emotional fabric of vulnerable Himalayan communities. What Samjung lost its land, its water, its ancestral spirit cannot be recovered through relocation alone. It signals a deeper failure the gap between national climate policy and lived experiences.

Nepal has made commendable strides in recent years. The National Adaptation Plan (2021 – 2050) Everest Summit Sustainability Pledge, increased budget allocations for climate action and renewed emphasis on glacial lake monitoring and biodiversity conservation are critical steps in the right direction. However, Samjung's displacement shows that policies on paper do not always translate into protection on the ground.

To ensure that no other villages turn into the next Samjung Nepal must take bold steps like localizing climate governance that ensures that policies like NAP and the President Chure Conservation Program empower communities at the ward and municipal levels with funding, authority and technical support. Government should think about protecting cultural and ecological identity like resettlements plans must go beyond building infrastructure they must go preserve spiritual landmarks, community rituals and intergenerational memory. Nepal's a lot of glaciers are unmonitored the government should monitor and organize spring revival programs and early warning systems in region at risks of water stress.

Climate induced trauma and cultural grief must be addressed in national adaptation frameworks, particularly for indigenous and rural communities. The Everest cleanup and summit policy must evolve into enforceable national guidelines that balance tourism, conservation and revenue sharing with local communities.

If Samjung is forgotten more villages will vanish into the climate crisis. But if it is remembered academically, politically and spiritually then samjung becomes more than a loss. It becomes a lesson. A lesson that resilience is not only about rebuilding structures but about protecting stories, identities and ecosystems that cannot be relocated. Nepal now stands at crossroads. Its policies show promise but only through inclusive, culturally grounded and community led implementation can nation prevent the next Samjung and shape a climate resilient future for generation to come.

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