Displacement and Rehabilitation in Coastal Bengal: Navigating Social Inequalities Inside Climate 'Communitas'

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Abstract

The Sundarbans Delta stands as one of South Asia's most climate-vulnerable regions. This study delves into the transformation of social relationships within communities impacted by natural disasters, employing the 'Liminality and Communitas' framework. The long-lasting effects of disaster-induced displacement profoundly disrupt vulnerable littoral communities in India, challenging their pre-existing social networks and forcing individuals to navigate new social landscapes as they strive to rebuild their lives. This research focuses on actionable strategies to support cyclone-displaced communities along the Bay of Bengal delta rim by applying 'sustainability and self-reliance principles', aimed at fostering resilience and maintaining enduring social coherence. By harnessing local resources, promoting community-led initiatives and encouraging inclusive participation, these communities can empower themselves to restore social bonds and establish sustainable livelihoods. The critical role of community-driven efforts in disaster rehabilitation, capacity building and ensuring access to essential resources cannot be overstated. Restoring and reorganising social relationships after resettlement is vital for regaining what has been lost and forging a resilient community that aligns with broader objectives of self-reliance and sustainable development. This study examines 90 migrant households in the Sundarbans Delta, utilising in-depth interviews with 50 respondents and focus group discussions that engage diverse community members across various age groups and genders.

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Introduction

Hill and Martinez-Diaz (2020) opined on the fact that, regardless of global readiness, climate change is set to trigger widespread migration. Both gradual impacts, like rising sea levels and prolonged droughts, as well as sudden disasters, such as severe storms and wildfires, are forcing people to leave their homes (Hill & Martinez-Diaz, 2020). It is also observed that climate change and migration are among the most pressing challenges of the twenty-first century. However, Sritharan (2023) claimed that there is currently no legal framework in place to protect families who are displaced across national borders due to climate-related disasters. These impacts can manifest in rapid-onset events such as floods and cyclones, as well as in slow-onset events such as rising sea levels, desertification and coastal erosion (Sritharan, 2023). According to Field (2014), the first official reference to human mobility in the context of climate change within the United Nations Framework Convention on Climate Change came in 2010 with the Cancun Adaptation Framework. Vanhala and Calliari (2022) again claimed that this rapid institutionalisation is striking, especially considering how politically sensitive the issue of human mobility is. In contrast, it took decades to develop even non-legally binding frameworks for international cooperation, such as the Global Compact for Safe, Orderly and Regular Migration and the Global Compact on Refugees (Vanhala & Calliari, 2022). Displacement is one form of human mobility influenced by climate change, referring specifically to the forced movement of people. The broader spectrum of human mobility, as recognised by the scientific, humanitarian and advocacy communities and adopted in the Cancun Adaptation Framework, also encompasses voluntary migration and planned relocation. The task force on displacement has extended its focus beyond what its name or original mandate implies. By 2018, the Warsaw International Mechanism for Loss and Damage's Executive Committee expanded the task force's mandate, urging it to continue its work on human mobility, including migration, displacement and planned relocation. As climate impacts intensify, it is likely that the Global South nations that have contributed the least to greenhouse gas emissions will experience the highest number of climate migrants. Among these countries, the most vulnerable will be those with limited financial and social resources (Brown, 2008).

The Sundarbans Delta is a climate hotspot in South Asia, stretching over 3,900 square miles. It is home to 7.9 million people and is also a biodiversity hotspot rich in mangrove forest megafauna (Ghosh et al., 2018; Rogers & Goodberd, 2014). The people of the littoral Sundarbans have lived with uncertainties, but they are not habituated to the intensities of the higher frequencies of cyclones, floods and erosion events that have happened in the recent post-2009 cyclone Aila. Tidal surges measuring 6 m are not uncommon in the delta, which creates

immense pressure on the delta islands as they breach embankments and polders (Gopinath & Seralathan, 2005). The shoreline of the Sundarbans Delta suggests that the western part of the Sundarbans archipelago is being affected due to rising sea level and coastal erosion, as it leads to displacement, loss of agricultural land and human settlement in the islands. A classic case is the Ghuramara island, which is the focus of this article (Chatterjee et al., 2015; Ganguly et al., 2006).

Over the past two decades, storms, floods and wildfires have been the leading causes of displacement. Climate change amplifies these hazards by increasing their frequency and intensity in many regions. While it remains challenging to directly attribute specific disasters to climate change, its influence is clear. Not all effects are sudden; gradual changes like rising annual temperatures, rising seas and uncontrollable riverbank erosion also contribute to displacement over time (Brown, 2008). The narrative in scientific literature and policy reports often frames climate migration as an impending security crisis despite the lack of solid empirical scientific evidence to support this perspective (Boas et al., 2019). It is evident from the available literature that, due to lack of empirical evidence and a gap in understanding, the concept of 'climate mobility' became a thing, but further research claimed the fact that climate-induced mobility is based on the fact that climate change itself has some specific impacts like sea level rise, recurrent erosion, increased drought and high-frequency cyclones, etc. This issue manifests in two primary dimensions: natural and human impacts. Natural impacts encompass water scarcity, increased salinity, deteriorating soil quality, heightened humidity and shifts in precipitation patterns. Human impacts include disruptions to livelihoods, escalating debt, recurrent home damage and reconstruction, and the erosion of community bonds, stability and security (Almulhim et al., 2024; Mayer et al., 1995; Neumann et al., 2015). The term 'refugee' in the context of climate-induced migration requires greater attention, as it often presents complex challenges. Erosion events, for example, do not occur uniformly and result in unequal impacts on those living in affected or nearby areas. Communities residing along riverbanks are frequently forced to relocate due to continuous erosion. However, these individuals do not typically identify themselves as 'homeless asylum seekers'. Rather, they perceive themselves as being in a situation of involuntary displacement, where returning to their homes is no longer a viable option and their displacement is not a matter of personal choice. In cases where harmful environmental conditions are linked directly or indirectly to systemic violations of economic and social rights, it is essential to carefully examine the unique circumstances of each claim. Understanding human and social vulnerability, particularly how socio-economic factors and discrimination lead to unequal exposure to climate disasters, is crucial for determining refugee status (Sritharan, 2023).

The prevailing concepts among judicial authorities and leading scholars in refugee law are that the Refugee Convention has limited applicability to human mobility in the context of climate change (Pijnenburg & Rijken, 2020). This view stems from the understanding that climate-related harm is fundamentally different from persecution. Specifically, climate-related harm does not meet the criteria of persecution, because it lacks the involvement of human agents. However, the 1951 Refugee Convention does not provide a clear definition of persecution but

in climate mobility the concept of 'persecution' is not possible, as the evidence suggests it's one emerging situation of livelihood challenges and displacement, suggesting that the drafters may have intentionally left the concept open to interpretation to allow for flexibility (Sritharan, 2023). This study provides a synthesis of the complex connections between climate change, migration and community restructuring in coastal Bengal, equipping policymakers and planners with the tools needed to design targeted interventions and strategies that address the distinct needs and vulnerabilities of regions affected by climate-induced migration. The article begins by outlining the literature on the connection between climate and migration, with a focus on the diverse climate impacts and interactions. It then details the methodology used to systematically collect and analyse the data. Following this, the findings are presented, which are subsequently discussed in relation to existing research, highlighting their broader implications. The article concludes with key takeaways, noting limitations and offering recommendations for future research.

The progressive degradation of natural environments critical to sustaining human settlements is anticipated to intensify population displacement, raising pressing concerns about the health vulnerabilities of climate migrants. According to Bowen et al. (2012), climate-induced migration poses a growing threat to human health, with potential increases in suffering, disability and mortality. Understanding these health impacts and developing targeted policy interventions is crucial as climate change continues to reshape human habitats. Research by Hazra et al. (2010) highlighted temperature changes in the Bay of Bengal and the Sundarbans during the 1990s, revealing an increase of 0.019°C in air temperature over both land and sea. If this trend continues, it is projected that temperatures in the region could rise by as much as 1°C by the mid-2020s. Further studies have documented a rise in sea surface temperatures (SSTs) in the Bay of Bengal, particularly in the eastern Sundarbans, where SSTs have increased by approximately 0.5°C per decade since 1980 (Ghosh et al., 2018; Singh, 2010). These findings underscore the urgency of addressing the compounded effects of climate change on vulnerable populations.

Literature Background and Theoretical Association

According to Rahman and Barua, 'Socioeconomic conditions between the origin and destination areas of displacement people. There is no change of socioeconomic conditions between the origin and destination areas of displaced people' (Barua & Rahman, 2018). In spite of the fact that statistics and numbers play a very crucial role in deciphering the factual evidence, it has failed deliberately while describing human societies through changing time. It is generally not enough to hold the greater picture of the rehabilitating communities and their multiple issues across the globe. Climate-induced mobility has received its due attention after the increased number of climate-related calamities globally. According to the International Organisation for Migration (IOM, 2007) report, in South Asia, the weather-related human mobility was 5.9 million between 2013 and 2023, mostly caused by flood or storm events (Beyer, 2023).

Climate change scholarships can be divided into three phases: it would be (a) denial phase, (b) facts and evidence accumulation and (c) critical cumulation. So, most probably, we are in the last phase of critical cumulation with the available evidence and facts. Statistics alone are insufficient to fully capture the complexity of displacement, especially given the lack of comprehensive studies on the social, economic and psychological disruptions caused by climate-induced forced displacement (Bercht, 2021, Bougnoux, 2014).

This type of displacement differs fundamentally from other forms, as it often leaves little possibility for return, primarily due to frequent erosion and sea surges. Previously, communities had access to vast areas of habitable and agricultural land, much of which has now been lost to rapid riverbank erosion. Riverbank erosion is mostly human-made in the case of the Sundarbans, as, according to Kalyan Rudra, slit accumulation is the main factor which is contributing to the erosion events. The slit accumulation at Kolkata port has increased four times between 1999 and 2003 after the making of the Farakka barrage, upstream accumulation at the Farakka barrage and less slit-laden water downstream at the Ganga–Brahmaputra–Meghna delta get the maximum erosion, as well as the combined impact of sea surge, salinity intrusion and canal cutting, which gave space to more coastal vulnerabilities (Rudra, 2018; Ghosh et al., 2018).

There is ongoing debate over the appropriate terminology for individuals who migrate due to environmental or climate-related factors, as climate change often intersects with other migration drivers in complex ways. Environmental changes such as water scarcity, soil degradation, erosion, land deterioration and flooding frequently combine with socio-economic pressures like poverty and inequality, prompting people to migrate (Almulhim et al., 2024).

According to Panigrahi, Scudder's 'just rehabilitation' theory and 'Risk and reconstruction model' help to identify the fact that rehabilitation indeed involves planning, efforts of the resettlers to adapt to the new settings, economic opportunities and new community formation. However, there are also associated risks, like landlessness, joblessness, homelessness and marginalisation. Instead of the fact that rehabilitation can be reversed by reemployment, structural planning and land-based resettlement, it has very low potential for the victims of rehabilitation, whether its climate change or other sociopolitical reasons. Mostly, the already vulnerable and marginalised communities are having the worst impacts of climate change. Those who live near the coast or islands are the frontliners when it comes to excessive flooding, sea surges and recurrent riverbank erosions (Chatterjee & Shrivastava, 2024).

Climate 'Refugee' Communities: As Conscious Decision-makers

The concept of becoming a climate refugee remains underexplored, primarily because policymakers have historically focused on the 'anthropogenic impacts of climate change' on the Earth as a whole, rather than addressing its direct effects on human communities. This broader focus often overlooks the reality faced by many communities forced to rehabilitate due to permanently degraded environmental conditions and the loss of their habitats. However, the term 'climate refugee' should not imply passivity; these communities actively exercise agency

in deciding whether to migrate or remain settled on their native land, making conscious decisions in response to climate change. Their lived experiences and decision-making, conscious and rational thinking processes cannot be sidelined in favour of merely quantifying the broader anthropogenic impacts on the planet as according to the Habermas model of rational thinking, communicative rationality pertains to the practices of communication within a community, where members actively engage in dialogue to establish mutual understanding. Being rational in this context implies that the individual seeks to connect with their interlocutor, aiming to share the content of their communication effectively. This process involves the deliberate and conscious selection of appropriate tools to facilitate meaningful exchange (Boero, 2006).

Habermas' concepts have been widely applied in communication studies, primarily as frameworks for understanding processes and systems of rationality (Spracklen, 2009). However, these applications often fall short of fully addressing the broader societal issues and concepts that Habermas sought to explain. Historically, the examination of rational arguments, ethical thought and reasoning has been central to philosophical enquiry, with figures such as Kant playing a pivotal role in conceptualising society and culture as finite segments of an otherwise infinite and meaningless existence. Kant argued that human beings strive to decipher this infinity through collective consciousness, attributing meaning based on the context, place and time. Habermas advanced these ideas by bridging the divide between totalitarian and relativistic perspectives, emphasising the relevance of universal reason and 'grand theory' in modern society. His work reasserted the significance of universal principles in a time characterised by increasing scepticism towards overarching narratives. Drawing upon and synthesising the contributions of classical social theorists such as Weber, Durkheim and Kant, Habermas developed a comprehensive framework for understanding social action. His theory highlights the role of communication in shaping human consciousness and underscores the importance of dialogic processes in the construction of meaning and social cohesion (Bernstein, 1985).

The decision-making process surrounding migration or non-migration, particularly in the context of climate change, can be analysed through the lens of Habermas' theory of communicative action. Habermas posits that human actions are deeply rooted in communication, which is instrumental in constructing social realities and coordinating collective responses within lifeworld (Habermas, 1987). The disruptions caused by climate change manifested through rising sea levels, environmental degradation and socio-economic vulnerabilities intersect with lived experiences and necessitate communicative responses that shape decisions related to migration.

Figure 1 depicts the fact that there are three types of climate-induced human displacement patterns chosen by impacted communities or forced upon them: (a) those who choose to migrate voluntarily, (b) those who stay back voluntarily and (c) forced migrates who have to move forward without any chance of return. Here we can suggest that better dwelling and stability of a community is one privilege that depends upon wealth and resources.
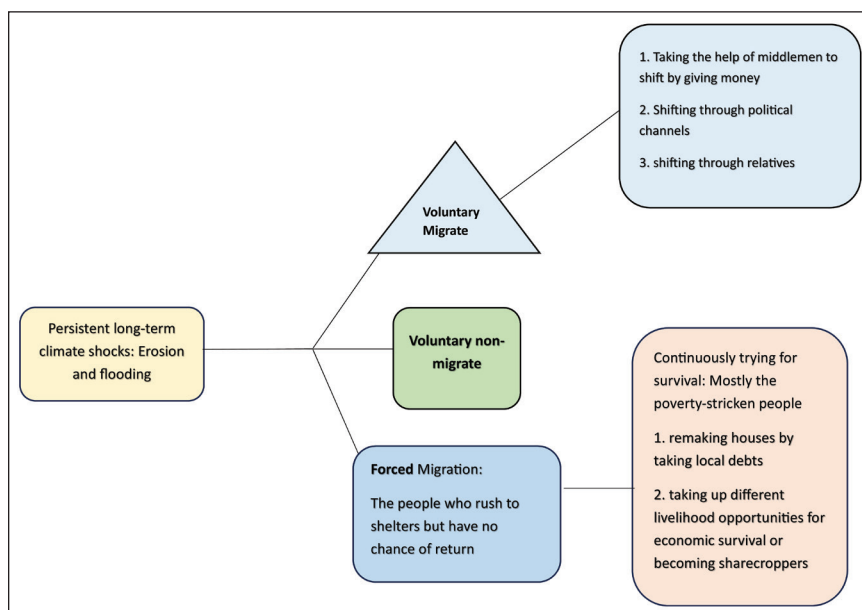
Figure 1. Conceptual Framework for Uneven Climate Mobility.

'Liminality' and 'Communitas' Approach for the Disaster Recovery: Mobility as an Adaptation Mechanism

Disaster-led displacement is often treated as a superficial term for action, with limited in-depth discussion by academic communities or policymakers regarding the lived experiences of those affected by climate change or disaster-related crises. Victor Turner's theory of 'communitas' might offer valuable insights into the dynamics of rehabilitated communities following displacement caused by climate change. Disasters and climate change events, whether through sudden impacts or long-term effects, frequently exacerbate vulnerability among affected communities. Many of these individuals rely on a single source of income or livelihood, making their precarious living conditions even more challenging to recover from in the aftermath. Richardson, who tried to apply the theory of 'communitas' in disaster recovery earlier, described the nuances of disaster impacts on small communities who have limited resources, personnel and infrastructure needed for disaster recovery (Richardson, 2014).

Disaster recovery is an intricate and multifaceted process that remains largely underexplored, particularly in terms of the socio-psychological factors involved that often defy quantification. When individuals are compelled to abandon their social security and stability to embrace mobility as a survival mechanism, it disrupts structural societal norms. This phenomenon gives rise to an unstable form of society that transcends traditional social structures, roles and rules. The communities undergo a stage of ambiguity where they fail to understand their real existence.

Understanding Community Resilience and Mobility in the Face of Climate Change: A Theoretical Reflection

Through extensive research and analysis, the importance of theoretical frameworks in understanding real-world situations became evident. The application of theories such as *lifeworld theory* and *communicative action* provided valuable insights into community dynamics before disaster-induced displacement and rehabilitation. These theories helped shed light on how communities become familiar with disaster preparedness, strive to survive through community participation and maintain their social structures amidst adversity.

However, localised communicative actions, although initially effective in fostering awareness and resilience, often proved insufficient to counter the rapid onset of climate-induced challenges. Communities faced increasing instances of erosion, flash floods and other climatic disruptions, which undermined their efforts to sustain their social and economic structures. Despite their collective efforts and participation, the accelerating pace of climate change forced many to make difficult choices. Faced with unrelenting environmental pressures, these communities entered a state of liminality, being temporarily uprooted and transitioning from their homeland to neighbouring regions. Many found themselves living in disaster camps for days, struggling to gather the resources and strength to build safe shelters for their families. Some, in desperation, occupied unused government land to construct temporary housing, often leading to conflicts with authorities. The lack of secure and well-planned governmental strategies to address climate-induced mobility further exacerbated the situation. Governments often failed to recognise the growing impact of climate change on human displacement, leaving communities to navigate these transitions with minimal support. Most often, these communities choose de-territorialisation as a means for survival from extreme poverty and the impacts of climate change. The situation is so sensitive at one end, where a few people wait for their fate as they do not have the disaster recovery cost on their own (Patnaik, 2023).

In this context, the theoretical association between lifeworld theory, communicative action and real-world scenarios becomes validated. These frameworks not only help us understand the lived experiences of affected communities but also highlight the gaps in institutional responses to climate-related mobility. The resilience, participation and agency of these communities underline the urgent need for policies that address the realities of climate-induced displacement, ensuring sustainable and humane solutions for those forced to migrate due to environmental changes. This reflection emphasises the critical role of theory in bridging the gap between academic insights and the pressing challenges faced by vulnerable communities, calling for integrated efforts from policymakers, researchers and local actors to address the multifaceted impacts of climate change on human mobility in recent times.

Climate Mobility and Failed Community Participation: A Way Forward for India in Planned Relocation After the Cancun Adaptation Framework

The Cancun Adaptation Framework, established in 2010, recognised relocation as an adaptation strategy for individuals and communities affected by climate

hazards (IFRC, 2021). However, it did not explicitly define relocation as a fundamental right for communities to access social benefits or long-term support. While the framework obligates nations to ensure safe relocation for those impacted by climate-related hazards, the process often remains temporary, focusing on evacuation rather than permanent solutions. In India, as in many other democratic societies, relocation is rarely acknowledged as a sustained or comprehensive form of assistance, leaving affected populations without the long-term support they need.

India's approach to climate mobility is fraught with significant challenges that hinder effective action and long-term solutions. A major issue lies in the fragmented institutional response, where climate mobility remains poorly integrated into disaster management and as a core climate adaptation framework. Policies tend to emphasise short-term evacuations for public safety, as highlighted by the UNHRC (2014), rather than comprehensive plans for relocation and rehabilitation. Additionally, the lack of legal recognition for climate refugees or environmentally displaced persons, compounded by semantic barriers, deprives affected communities of formal rights to planned relocation and support. While community participation is often cited as a priority, insufficient funding and government backing significantly limit its capacity to address large-scale climatic disruptions effectively. Local-level resource and funding gaps further impede the implementation of robust climate adaptation and mitigation strategies.

Despite its reputation as a nation offering safe havens to asylum seekers, India is not a signatory to the 1951 Refugee Convention or its 1967 Protocol. Refugee rights are determined by India's own criteria, influenced by factors such as social stratification, gender norms, religious beliefs, and the need to maintain national sovereignty and peace. As a result, access to resources and secure housing is not guaranteed to all refugees, leaving many displaced individuals in precarious conditions. The complex social, cultural and political contexts of asylum seekers and the diverse needs of communities compound these challenges, creating barriers to achieving basic rights.

India currently lacks a dedicated policy framework for addressing climate-induced displacement. The absence of a widely accepted definition of 'climate refugee' and insufficient empirical evidence have hampered meaningful policy discussions. Climate change is a global challenge that requires local solutions, as its impacts are unevenly distributed. For instance, the Bay of Bengal faces a far greater threat from rising sea levels than other coastal regions in India. Therefore, regional policy plans must be developed before implementing a national framework to safeguard the security, rights and resources of those displaced by climate change. Effective policy-making requires integrating theoretical and empirical insights; yet such an approach is often missing in India's climate policy discussions. Policy appraisals are essential for bridging this gap. As defined by the OECD (2008), policy appraisal is a systematic process of evaluating evidence, considering costs, benefits, risks and uncertainties, and comparing policy options to aid decision-making. By adopting a structured appraisal process, according to Chauhan, the right to development and right to a safe environment will be balanced on the scale of justice and equity (Chauhan, 2019). India can develop targeted policies to address the multifaceted challenges of climate mobility.

Uneven Internal Mobility Justice Framework

This framework highlights the disparities in voluntary mobility among communities affected by erosion. Those who possess substantial land holdings and resources are typically privileged, enabling them to relocate freely to nearby islands. These individuals often have the advantage of choosing their new location on the basis of connections with relatives and acquaintances. In contrast, impoverished communities that have repeatedly lost their land and are attached to their current location due to a sense of belonging or fear of the unknown face significant challenges. These vulnerable groups often rely on intermediaries for assistance, which can expose them to exploitation and fraud. Migration further exacerbates social divisions, creating fragmented religious and caste-based communities. In their original homelands, these groups coexisted, but upon relocation, marginalised communities are often pushed to the peripheries, such as the fringes or riverbanks, while dominant caste groups secure central areas of the islands. This spatial segregation is often a deliberate choice by those with greater socio-economic power, reinforcing pre-existing social hierarchies. Internal mobility is thus a complex phenomenon influenced by caste, religion and class dynamics. The process is inherently uneven, as only those with sufficient resources have the autonomy to choose where to move. In contrast, others are compelled to seek support from political entities or rely on temporary shelters, reflecting stark inequalities in access to mobility and resilience.

Study Area, Data and Sampling

South 24 Parganas, one of the most disaster-prone regions in India, encompasses primarily coastal and riverside areas. This district is frequently impacted by recurrent cyclones, floods, high tides and erosion events. Baksi et al. (2003) highlighted that rising sea levels, particularly across Sagar Island, have exacerbated erosion, with the island losing approximately 2.6 mm annually. Similarly, Gopinath and Seralathan (2005) argued that increased erosion in the area is attributed to population growth and the overuse of groundwater resources. This study employs qualitative research methods to explore the lived experiences of climate-impacted communities. Semi-structured interviews were conducted to collect first-hand data, allowing participants to share detailed descriptions and perspectives. Each interview lasted approximately 15–20 minutes. However, identifying participants proved challenging, as many individuals are mobile, seeking stability and resources. The study focuses on recent migration events following Cyclone Yaas, with participants primarily relocating from Ghoramara Island to safer areas such as Ganga Sagar Island and Kakdwip. While many have resettled for better livelihood opportunities and security, others remain on their native islands in makeshift homes due to strong emotional ties to their ancestral land, despite the risks of submersion. Fieldwork identified climate-induced migrant communities from 2023 in areas such as Bankim Nagar Panchayat in Kakdwip and Ganga Sagar Colony 1 in Ganga Sagar, within the South 24 Parganas district, particularly in Sagar and Kakdwip blocks. Many of these migrants are squatters, forming new settlements in rehabilitated areas of Sagar Island and Kakdwip. The emerging
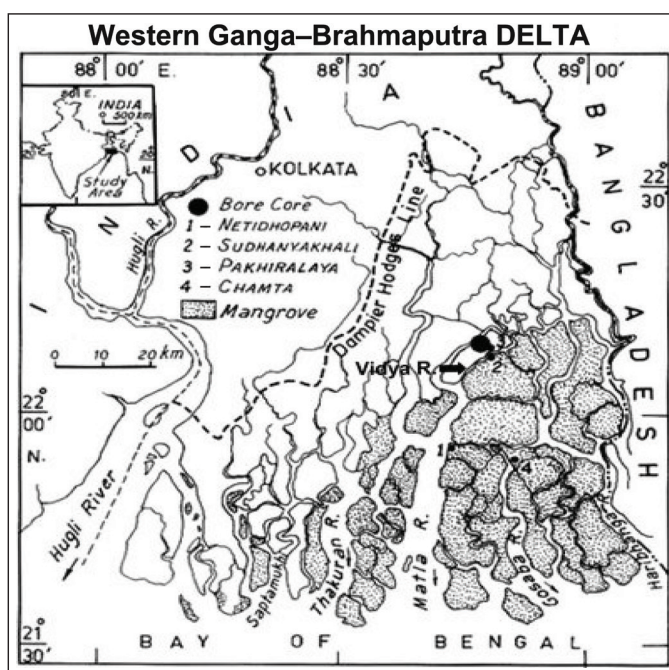
Figure 2. Map of the Sundarbans.
Source: Hait and Beiling (2009).

refugee communities predominantly originate from Ghoramara Island, Lohachar Island and Mousuni Island.

The Sundarbans Delta spans India and Bangladesh, with this study focusing on the southernmost tidal and erosion-sensitive islands in India (Figure 2). These include Nayachar, Lohachar, Ghoramara, Sagar, Jambudwip, Mousuni, Namkhana, Lothian, Surendranagar, Bulchery, Chulkati, Dhanchi, Dalhousie and Bhangaduani, all of which have been severely impacted by climate change (Chatterjee et al., 2015). According to the Centre for Science and Environment (CSE, 2012) Report and Chatterjee et al. (2015), the Sundarbans is administratively divided into North 24 Parganas (6 blocks) and South 24 Parganas (13 blocks). Of the 102 islands in the southern Sundarbans, 48 are designated as reserved forests and remain off-limits to human habitation. The remaining 54 islands, which are heavily populated, are protected by a 3,500 km-long embankment that prevents saline water intrusion during high tide. Despite the region's rich biological resources, local populations face extreme poverty, compounded by adverse physical conditions, high salinity and ongoing crustal subsidence.

Participants for this study were selected through purposive sampling, guided by specific inclusion criteria. These criteria included:

1. families recently displaced from Ghoramara Island or Ganga Sagar Island;
2. individuals aged 18–40 years, as they often serve as decision-makers during crises, with particular attention to the increased vulnerability of children, the elderly and persons with disabilities; and

3.   families with parents still residing on Ghoramara Island who are unwilling
     to relocate voluntarily.

Informed consent was obtained from all participants before the interviews. The participants represented diverse socio-economic backgrounds, which significantly influenced their migration decisions and the selection of new settlement locations. To avoid the confusion of the readers, here the climate-induced human displaced communities have been termed as CLDCs.

Results and Discussions

This study was based on 90 migrants' households in the Sundarbans Delta. The analysis is based on detailed interviews carried out among 50 respondents and a series of interviews and focus group discussions with community members from different age groups and both genders.

Forced Displacement and Place Detachment

The analysis of the thematic interviews pointed out that climate-led displaced communities' or CLDCs' lived experiences show significant transformation in their social dynamics, emotional health and means of subsistence (Table 1). Localised ecosystems have been degraded by ongoing environmental degradation, including high-frequency sea encroachments, river bank erosion and rising soil salinity, forcing these populations to adapt in intricate and varied ways. These incidents demonstrate how environmental-led vulnerabilities altered people's lives and decision-making processes, highlighting the regional effects of global climate change. Due to their lifetime exposure to high tides and erosion, respondents commonly expressed a widespread dread of being uprooted and drowned. Many repaired islands are still seen as unstable despite relocation attempts, which causes constant concern about the safety of families and neighbourhoods in the future.

This heightened uncertainty underscores the emotional toll of environmental instability and its influence on community cohesion. Increasing salinity and declining soil fertility were among the most commonly cited challenges. Respondents reported that these changes have drastically reduced agricultural productivity, undermining traditional livelihoods such as beetle leaf farming, rice cultivation and vegetable gardening. Fish ponds, once integral to local food systems, have also been rendered unusable. This loss of productive land has compelled individuals and families to seek alternative means of subsistence, often resulting in displacement. Displacement patterns of the CLDCs can be classified into three distinct categories:

1.   **Voluntary migration for stability:** Some individuals choose to migrate
     pre-emptively, seeking long-term safety and stability for their families.
     This group prioritises future security over attachment to their ancestral
     land.

Table 1. The Impacts of Climate-led Forced Displacement on Rehabilitating Communities.

Interviews	Round 1 Emerging Primary Codes	Round 2 Broader Themes
'We have never ever imagined that small erosion events of the coastal areas would lead us to become "Homeless" forever, we have not only lost our houses, but we have lost our livelihood together. Few of us also couldn't afford the mental abrupt stress so, a few committed suicide, one day when there was a heavy storm at our island, all of the corners of our island got eroded, even no higher space was there for us to survive, till the officials came and rescued us, we were all in shock and trauma, they (the officials) gave us temporary places to sustain until they sanctioned two acres of land to each family and livelihood options for us, it (climate change) was very real for all of us, we did not know any terms like these before, but we faced it as "change" in weather pattern, we also wants to know more about these issues in future for safe escape, the increased severity will disappear the remaining island within habitants as it seems, but you know, till, our island sinks these island will be also drowned together, so everyone is living with insecurity now'. 'It was mid-morning, and a few of us were awake as we were doing duty at the river bank to secure our houses from high tides by cutting grids and repairing mud embankments, as it was our last resort. Suddenly, one of us heard a sound of breaking a portion of the wall. One portion of the embankment broke in just a fraction of a second. We could not make it with our body pressure. Water began intruding, and we started floating toward our villages with the flow of water. The devastation was scarier when we couldn't find higher positions to save our lives. While we were protecting the embankment, some of us were trying to secure their domestic animals at nearby flood centres'.	Recurrent erosion events, we have changed our livelihood due to increased salinity, temporary reliefs and long-term insecurity, the fear of an unknown place, losing of the motherland, forced to move to another island, forced resettlement to another island, detachment to the island, detachment to communities and people.	Forced displacement, detachment, insecurity

(Table 1 continued)

(Table 1 continued)

Interviews	Round 1 Emerging Primary Codes	Round 2 Broader Themes
'I have one request to you: kindly don't call me a "Refugee". What I understand by that is that we are beggars and we have nothing to call our own. As you know, I had one Bigha agricultural land and one well-maintained house before rehabilitation to this island; I was from a respected, rich family'. 'When you had land and resources, suddenly, you become homeless on an unknown island, and people, it has impacted our daily life a lot, we have lost our friends and families, our own neighbours who are from different religions couldn't get their houses near us in the new place'.	Losing bighas of land, becoming poverty ridden, the longest procedure to climate change, uncertainty, homeless	Identity fallacies, landlessness, resettlement
'Certainly. None of us could have ever imagined that these seemingly small erosion events would leave us homeless indefinitely. It's not just about losing our houses; it's about losing our entire way of life. Some of us couldn't bear the sudden mental strain and tragically took their own lives, not just that, we became really insecure here, we feel like our trauma is leading us to a way where we can't trust the new neighbours here, we are not comfortable anymore like the way we live in our motherland before'. 'The incident of marriage elopement has also increased in our area, as the headman of our communities dispersed, no one respects the value of elders now, out of fear, we are also not keeping our daughters after the age of 18, (marriage age in India), that's why they don't opt for education here'. 'The severity of the erosion event during storm surge, has made our memories shaken, whenever I try to sleep, I remember the man, who was trying to figure out how to save the island at that moment and swept away by the water stream. You know, we couldn't sleep for days due to the trauma of that disaster'.	We were traumatised by the disaster events. Trauma leads one man to suicide on the new island. Trauma leads our children to drop out of school, and we started pushing our daughters into marriage to protect community values.	Disaster Trauma

2. **Forced migration due to displacement:** Those whose lands have been completely eroded are often forced to migrate. This involuntary displacement reflects the acute physical and economic vulnerabilities associated with environmental degradation.
3. **Volatile non-migrants:** A third category includes those who remain mobile yet attached to their original land, often due to cultural or emotional ties. This group, primarily consisting of individuals above 50 years of age, tends to return to their islands despite the risks. Their decision to stay mobile rather than permanently resettle reflects a deep sense of place attachment and intergenerational values.

The emotional consequences of displacement are pronounced. Participants frequently expressed feelings of anxiety, trauma and loss associated with separation from their ancestral lands. These lands were not only a source of economic stability but also held cultural and emotional significance. The rapid transformation of stable livelihoods into precarious conditions underscores the psychological burden borne by these communities. At the same time, the dynamic nature of environmental risks has prompted the formation of new social relationships and groups. Communities have adapted by reshaping social networks in response to changing environmental conditions. These emergent social dynamics are critical for mutual support and resilience, reflecting the ways in which human agency and collective action are mobilised in the face of adversity.

Identity Crisis, Landlessness and Resettlement

The continuous erosion of western islands in the Bay of Bengal, such as Ghoramara, has resulted in profound disruptions to the lives of affected communities. Over several decades, land erosion has significantly reduced the total area of Ghoramara Island, from 7.4 km² in 1979 to 4.31 km² in 2011 (Chatterjee et al., 2015; Gopinath & Seralathan, 2005). Entire villages, including Khasimara Char and Lakhimnaryanpur, have been submerged, forcing residents to migrate in search of stability and security. This persistent environmental degradation has not only stripped these communities of their land and livelihoods but has also resulted in deep-rooted socio-economic and cultural repercussions, including identity loss and increasing poverty. The erosion and subsequent displacement have caused irreparable damage to the cultural identities of affected populations. Communities that once led settled agricultural lives now face a profound sense of dislocation. The trauma of losing their ancestral lands, which hold cultural and emotional significance, is exacerbated by the challenge of integrating into new social settings. Migrants often encounter hostility and prejudice from the established residents of their host islands, which hinders their ability to rebuild community ties and re-establish a sense of belonging. Moreover, institutional barriers, such as reliance on identity cards and ration provisions tied to government relief programmes, further complicate the process of rehabilitation. These documents, often damaged or rendered invalid during displacement, symbolise the fractured connection between the displaced individuals and their former lives. The inability

to access consistent support or secure recognition in their new settlements exacerbates their feelings of alienation and marginalisation. The economic impacts of displacement are equally severe. The forced abandonment of agricultural lands, betel leaf farms and fish ponds once integral to their livelihoods has left displaced populations economically vulnerable. Many families initially attempt to relocate within their islands, but ongoing erosion, combined with poor living conditions and resource scarcity, compels further migration to neighbouring islands. Resettlement in new locations often fails to restore economic stability, as these communities face limited access to land, employment opportunities and social networks. The economic precarity of displaced populations is compounded by the high costs of migration, including transportation and the establishment of basic living conditions. These financial burdens plunge many households into deeper poverty, making it increasingly difficult to recover and rebuild.

The intertwined challenges of identity loss and poverty create a cycle of socio-economic marginalisation for CLDCs. The loss of cultural and social anchors disrupts collective resilience, while economic instability undermines the capacity to adapt and thrive in new environments. This dual burden is particularly acute in the context of climate change, where the erosion of natural resources is accelerating and intensifying vulnerabilities. The case of Ghoramara Island exemplifies the compounded impacts of climate change-induced displacement, where physical loss of land leads to profound social and economic consequences. Addressing these challenges requires a multi-dimensional approach that prioritises the restoration of livelihoods, fosters social inclusion and recognises the cultural significance of land and identity. Effective rehabilitation efforts must go beyond providing physical resettlement to ensure sustainable development, social cohesion and psychological support for displaced communities. By doing so, it becomes possible to mitigate the lasting impacts of climate-led displacement and support these populations in reclaiming their dignity and stability.

Conflict of Rehabilitation and Social Inequality

Respondents frequently highlighted the challenges of resettling in new locations, where conflicts with long-term inhabitants over limited resources, such as land and water, are common. These tensions often exacerbate social isolation, undermining the cohesion necessary for effective integration and adaptation. The impacts of climate migration extend to educational infrastructure and opportunities. Continuous erosion and inadequate planning often render schools unsafe or inaccessible. The shortage of teachers and deteriorating infrastructure lead to increased school dropouts, depriving children of educational continuity and limiting future prospects. Social inequality further compounds these challenges. Middlemen, who facilitate migration, often prioritise wealthier, high-caste families willing to pay for assistance, leaving poorer, marginalised groups with few options. Consequently, these groups are frequently forced to settle in less secure, erosion-prone areas, perpetuating cycles of displacement and vulnerability. This systemic exclusion underscores the broader inequalities exacerbated by climate change.

Relocation to new areas disrupts the social cohesion of the CLDCs. The bonds and support networks formed in their original settlements are often difficult to replicate in new locations. Neighbours may view newcomers with suspicion, leading to isolation and a lack of community solidarity. In many cases, displaced families find themselves living in fragmented units, with little connection to their new neighbours or broader community structures which also enhance their social trauma. This erosion of social ties creates a sense of alienation and loneliness among displaced populations, further exacerbating the challenges of adaptation. While some families manage to stay together, the broader neighbourhood cohesion that once provided collective support is often irreparably damaged.

Conclusion

This study sheds light on the lived experiences of communities in the Bay of Bengal region as they navigate the multifaceted challenges posed by climate change. It underscores the complex interplay between environmental vulnerabilities and socio-economic factors shaping migration patterns, community restructuring and resilience strategies. The distinctions between voluntary and forced migration reveal how climate-induced mobility is not merely a reaction to environmental threats but a socially embedded process influenced by cultural values, emotional ties and survival strategies. The findings highlight that climate change exacerbates existing vulnerabilities, particularly for marginalised populations, by intensifying displacement, disrupting livelihoods, and imposing psychological and emotional burdens. These challenges are further compounded by institutional neglect and the uncertainty inherent in unstable environments. However, the resilience and adaptive innovations demonstrated by local communities underline their agency and capacity for survival amidst adversity. By fostering community cohesion and addressing systemic inequalities, future policies can help mitigate the sociocultural challenges faced by climate-affected populations. To mitigate these challenges and support at-risk communities, targeted interventions are essential. Such measures should address both immediate physical vulnerabilities, such as erosion and salinity, and long-term psychological impacts, including trauma and loss of cultural identity. Policies and programmes must prioritise inclusive and community-centred approaches, recognising the significance of social cohesion and cultural attachment in rebuilding livelihoods and fostering resilience. Ultimately, this research reinforces the need to understand climate-induced migration and adaptation as dynamic, socially embedded phenomena. By integrating scientific insights with local knowledge, future strategies can better support affected populations in navigating the uncertainties of a changing climate while promoting sustainable and equitable outcomes.

Acknowledgements

Data Availability Statement

The anonymised data can be provided upon request. They are not publicly available to protect the privacy of research participants. Translations of respondent quotes have been slightly adjusted by the authors for grammatical accuracy while preserving their original meaning.

Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship and/or publication of this article.

Funding

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