

Lifestyle Transitions in 'Monga'-Affected Regions: A Micro-Level Study in Northern Bangladesh

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Abstract

This study examines the gradual lifestyle changes in the Monga-affected regions of northern Bangladesh, focusing mainly on the Nilphamari district. Monga, a cyclical phenomenon, exacerbates unemployment, food shortages, and poverty, forcing many agricultural workers to abandon farming. This research explores Monga's impact on vulnerable populations and their coping strategies, including migration to urban areas for low-wage employment. A qualitative methodology was employed, including in-depth interviews and focus group discussions with 30 randomly selected respondents from Dimla Upazila in the Nilphamari district. Findings reveal that illiterate labourers and marginal and landless farmers are most affected, often migrating to cities seasonally for survival despite harsh conditions, relying on microcredit loans and the mercy of nature. Lifestyle changes at both the micro and macro levels are found in Monga-affected zones; changes include variations in consumption, livelihood, challenges, and social costs in personal and community relationships and diversification in agriculture. Government and NGO interventions play a critical role in alleviating these challenges by creating alternative employment opportunities. The study's limitations include a small sample size and geographical focus, which may limit the generalizability of its findings. However, the practical implications suggest that targeted interventions can mitigate Monga's impact, offering valuable insights for policymakers. This research provides original insights into the socioeconomic transformations caused by Monga, shedding light on the survival strategies of the affected population.

Keywords: *Monga, Seasonal migration, lifestyle transition, livelihood adaptation, coping strategies.*

1. Introduction and background of the study

Agriculture accounts for 11.38% of Bangladesh's GDP, making it a crucial economic sector (BBS, 2023). However, agriculture in the region is highly susceptible to climatic stressors, with recurrent droughts posing significant threats to food security (Adnan, 1993; Ericksen, 1996). The northern region, particularly the *Barind* Tract, is frequently affected by drought, leading to delayed planting and reduced crop yields (Islam et al., 2014). The cumulative effects of reduced rainfall, insufficient water resources, and declining crop yields are particularly acute in rice production, which relies heavily on seasonal rainfall. Drought affects 3 to 4 million hectares of agricultural land yearly, directly impacting food grain production and farmers' livelihoods (Miah et al., 2017). The phenomenon of Monga, a seasonal period of acute poverty and food insecurity,

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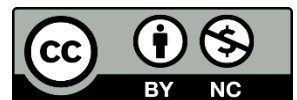
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has deeply impacted the lifestyle of communities in the northern regions of Bangladesh, particularly during the pre-harvest and post-planting months of September to November (after the Aman crop) and March to April (after the Boro planting). These seasonal fluctuations disrupt agricultural activities, leading to widespread unemployment and diminished access to food. Monga has been extensively documented as a recurring challenge that severely impacts agriculture, food production (Ahmed, 1982; Ericksen et al., 1993), land degradation, and the economy (Paul, 1998). It affects micro and macro levels, bringing profound socioeconomic consequences to households, communities, and regions. Famines have historically affected Bangladesh, where agriculture is heavily dependent on monsoon winds, making the region vulnerable to crop loss and scarcity (Paul, 1998). Monga, a seasonal famine, predominantly affects areas along the Teesta and Brahmaputra rivers, impacting around 10% of the population due to river erosion and poor water management (Rob, 2005). The crisis primarily hits marginalized and landless farmers, leading to severe food shortages during Ashwin and Kartik due to a lack of employment (Rabbani, 2011). While microcredit schemes have proven less effective, alternative employment opportunities are essential for alleviating poverty (Muhammad, 2005). However, Monga is also an artificial issue exacerbated by single-crop farming and inadequate infrastructure (Chowdhury, 2018). At the household level, Monga-induced unemployment severely changes family relationships, role-sharing responsibilities, and seasonal migration patterns (Paul, 1998). The most affected communities rely heavily on informal local job markets, often turning to NGOs for support (Rabbani, 2011). These communities adapt to new agricultural realities, such as crop diversification and adjustments to non-traditional agricultural practices, marking a significant lifestyle transition in Monga-prone areas (Ericksen et al., 1993). While local households adopt various strategies to cope with Monga such as migrating to cities, engaging in temporary work, or planting drought-resistant crops, these measures underscore the population's resilience and vulnerability. In many cases, reliance on external aid from NGOs and government interventions has increased significantly (Paul, 1998). The ongoing vulnerability of these populations calls for comprehensive development strategies that address the root causes of Monga, including improving food security, economic stability, and overall well-being (Ahamad et al., 2011; Al-Maruf et al., 2022). The increasing impact of climate change is exacerbating Monga's conditions. Drought, in particular, is a critical consequence of climate change, leading to crop failure and disrupted livelihoods in northern Bangladesh (Reza et al., 2018). Unlike other natural disasters, droughts develop slowly but have long-lasting effects on communities, disrupting local agricultural production and changing cropping patterns (Islam, 2024). Berrang-Ford et al. (2011) highlighted the connections between climate change and food insecurity, pointing out gaps in the literature that impact sustainability and societal resilience. Reduced rainfall intensifies drought conditions, particularly in the Barind region, where consecutive dry spells and diminished precipitation are frequent (Greve, 2016). Droughts affect 3 to 4 million hectares of land each year, leading to decreased agricultural production (Miah et al., 2017). Drought, driven by meteorological and socio-ecological factors, occurs approximately every 2.5 years in Bangladesh, causing severe crop damage and exacerbating food insecurity (Rahman, 2016; Miah et al., 2017). It impacts northern Bangladesh's socioeconomic condition, making this situation even more dire, especially given the overdependence on traditional agricultural methods and the lack of advanced irrigation technologies (Mondol et al., 2024). Poor water management and technological droughts contribute to water scarcity, complicating efforts to meet the needs of the growing population (Mondol et al., 2024). Over the past decades, crop cultivation and production have been significantly affected across various regions of Bangladesh (Al-Amin et al., 2019; Amin et al., 2014; Aryal et al., 2020). These challenges mirror the global competition for natural resources such as land, water, and energy (Mondol, 2024). Intensified drought conditions limit agricultural production and underscore the need for sustainable water resource management to mitigate drought impacts (Akter, 2014 & Rahman, 2016; Ruane et al., 2017), and price hikes cause severe food crises, starvation, and different socioeconomic trauma for the farmers and day labourers. Natural and artificial causes intensified drought-led socioeconomic inequalities. The impact of drought is worsened by insufficient drought management strategies, resulting in decreased

production, higher unemployment, and elevated food prices. Droughts particularly affect people experiencing poverty, including marginalized communities and labourers, by reducing their access to food. During droughts, affected individuals often receive support from relatives and neighbours, but many are forced to sell their land, goods, and other assets at low prices to purchase food (Reardon et al., 1988). Some victims resort to temporary migration, while others consume wild foods in extreme hardship (Jallow, 1995). The frequency of drought in northwestern Bangladesh continues to pose significant challenges to food security and sustainable development. In 1997 alone, drought reduced food grain production by around one million tons, with a financial loss estimated at USD 500 million (Islam et al., 2011). The increasing severity of droughts threatens sustainability and development in the region (Warner & van der Geest, 2013). Drought management strategies have not been adequately developed, resulting in lower agricultural output and rising food prices. This intensifies poverty among marginalized communities, further deepening socioeconomic inequalities (Paul, 1995; Alamgir et al., 2015). Efforts to combat Monga have been uneven. Despite some successes through government initiatives, including expanding social safety net programs (BSS, 2020), many issues remain. Poor infrastructure, limited employment opportunities, and an over-reliance on single-crop farming have exacerbated the problem (Chowdhury M., 2011). Monga is not only a natural issue but also a result of artificial factors, such as insufficient policy interventions and economic planning (New Age, 2005). Without comprehensive reforms and sustained efforts from the government, political entities, and NGOs, Monga continues to recur annually, leaving northern Bangladesh's most vulnerable populations at risk (Muhammad A., 2005). The recurring nature of Monga highlights the need for long-term, sustainable solutions that integrate modern technology, improved water management, and diversified livelihood opportunities to break the cycle of poverty (Chowdhury, 2011; Al-Maruf et al., 2022; Mondol et al., 2024). Comprehensive reforms and proactive policy measures are essential to prevent future crises and ensure the socioeconomic stability of northern Bangladesh (Islam, 2009; Rahman, 2016). The recurrence of Monga reveals the necessity for comprehensive and proactive measures to prevent crises, ensure economic stability, and build resilience among vulnerable populations (Siddiki & Ansari, 2017). While some government initiatives, such as social safety net programs, have attempted to address Monga, inadequate policy interventions and over-reliance on single-crop farming continue to drive seasonal food insecurity (Mazumder & Wencong, 2012; Zug, 2006).

This study examines these dynamics through the lens of two theoretical frameworks: Neoclassical economic theories suggest migration as a rational response to income disparities, especially during Monga, as individuals seek regions with more employment opportunities. The human capital model complements this view, focusing on skill acquisition and adaptability in response to economic pressures. Individuals invest in their skills by migrating or diversifying their income sources, enhancing their economic resilience in the face of climatic and seasonal hardships. In northern Bangladesh, Monga-induced unemployment pressures both men and women to adopt new coping strategies, reshaping traditional gender roles. Additionally, the study explores the role of local and governmental support in these transitions, identifying both strengths and limitations of these systems. In northern Bangladesh, Monga-induced unemployment pressures both men and women to adopt new coping strategies, reshaping traditional gender roles. Understanding how Monga affects agricultural occupations and lifestyle shifts in northern Bangladesh will contribute to a nuanced view of socioeconomic changes in drought-affected regions. The recurring nature of Monga highlights the need for sustainable strategies that address immediate coping mechanisms and enhance long-term resilience. Through this framework, the study aims to illuminate the intersection of economic pressure, skill development, and adaptive migration, with the ultimate goal of informing policies that support sustainable development and break the cycle of poverty and food insecurity.

2. Objective of the study:

Despite the recurring nature of Monga and its severe socioeconomic impacts, much of the existing research has focused on macro-level economic analyses, often overlooking affected populations' adaptive strategies and lifestyle transitions. This study seeks to bridge that gap by examining the localized responses and resilience mechanisms in Monga-prone areas. By focusing on the lived experiences of the affected communities, the research aims to provide insights to inform more sustainable, community-centred interventions. The specific objective of this study is to explore the lifestyle transitions of communities in Monga-prone areas. To explain the adaptive strategies employed to combat the impacts of Monga. To analyze the socioeconomic impacts on the populations affected by Monga.

3. Rationale of the study:

The motivation for this study is rooted in the urgent need to address the persistent socioeconomic impacts of Monga. This seasonal famine continues to affect livelihoods, intensify poverty, and drive migration in northern Bangladesh, especially in the Rangpur region. Despite numerous interventions, Monga remains a formidable challenge, disrupting agricultural stability and disproportionately impacting vulnerable groups. This study aims to bridge a crucial research gap by focusing on the gendered aspects of climate-induced migration, highlighting the distinct adaptive strategies employed by men and women. This research seeks to guide policy reforms and enhance community-focused interventions by examining drought-related agricultural disruptions and household resilience. The findings are intended to inform the development of climate-resilient agricultural practices to help break the recurring cycle of poverty and food insecurity in Monga-prone regions.

4. Literature review:

Over the years, a wealth of research has focused on the socioeconomic, environmental, and climatic factors contributing to Monga and the strategies affected populations employ to cope with and adapt to the crisis. This study synthesizes the literature on lifestyle transitions in Monga-affected regions, focusing on micro-level studies that explore how local communities navigate the challenges posed by food insecurity and economic vulnerability. Elahi and Ara (2008) emphasized the lack of income-generating activities during the pre-harvest season. The cyclical nature of poverty in the Monga-affected regions of northern Bangladesh leaves families highly vulnerable to food insecurity, particularly during the lean season when agricultural employment is scarce (Adnan, 1993; Zug, 2006). During this period, known as 'Monga', rural households face significant challenges as they struggle to meet their basic needs due to reduced income opportunities (Rahman, 1995; Elahi & Ara, 2008). Consequently, many families are forced to adopt coping strategies, such as borrowing money or migrating temporarily to urban areas in search of work (Sultana, 2010; Ahmed et al., 2016). Climate change has also emerged as a significant driver of Monga. Islam et al. (2014) explore the agroecological impacts of drought in the region, revealing how decreasing rainfall and prolonged dry spells intensify the conditions that lead to Monga. Miah et al. (2017) further assess drought patterns using the Standardized Precipitation Evapotranspiration Index (SPEI), demonstrating a direct correlation between climatic conditions and the severity of food shortages in northern Bangladesh. Mazumder and Wencong (2012) find that Monga-affected households experience severe food insecurity and income volatility, primarily due to limited employment opportunities and inadequate infrastructure. The study emphasizes the need for targeted interventions to stabilize incomes and improve food security during this period. Khandker and Mahmud (2012) and Rahman (1995) delve into the economic behaviours of rural communities, showing how families often resort to temporary migration, asset sales, or borrowing to survive the lean period. Al-Maruf et al. (2022) highlight that migration is often a necessary survival strategy rather than a choice, shedding light on the need for policy measures to address rural economic insecurity. Devnath and Nayak (2021) examine this migration pattern, noting its role as a coping mechanism and a potential long-term livelihood strategy. Coffey et al. (2014) provide evidence from India, suggesting that temporary

labour migration can alleviate the immediate financial pressures caused by food insecurity. However, it only sometimes provides a sustainable solution. Similarly, Sultana (2010) analyzes rural-urban migration in Bangladesh and its socioeconomic consequences, highlighting both the opportunities and challenges faced by migrant workers. This migration often leads to the breakdown of traditional family structures, creating new social dynamics within rural communities (Sultana, 2010). Khaleque (2023) highlights that low-income households face significant barriers to accessing sufficient, nutritious food, leading to a cyclical link between poverty and malnutrition. Faisal and Kabir (2005) explore the gender-water nexus in rural Bangladesh, illustrating how women, who are often responsible for managing household water and food resources, bear a disproportionate burden during periods of scarcity. Mallick (2024) reveals how migration patterns differ between men and women, with women frequently being left behind to manage households in increasingly challenging conditions. The gendered impact of Monga also extends to labour markets and income-generating activities. Akter et al. (2014) examine how food prices and income shocks affect household food security, finding that female-headed households are particularly vulnerable due to limited access to formal employment and credit markets. This study highlights the need for gender-sensitive interventions addressing women's challenges in Monga-affected regions. Ahamad et al. (2011) examine the seasonal unemployment in Northern Bangladesh, highlighting how limited employment opportunities during the lean season drive voluntary migration. The study identifies outmigration as a common coping mechanism for affected households. Aryal et al. (2020) identify various adaptation strategies, including crop diversification, improved water management, and adopting climate-resilient agricultural practices. However, as Al-Amin et al. (2019) suggest, the success of these strategies depends heavily on intra-household dynamics, particularly the ability of households to mobilize labour and financial resources for adaptation. Rahman (M.A.) emphasizes the role of community bonds, social stigma, and cultural values in shaping individuals' experiences of poverty and coping strategies. This perspective suggests that policies addressing poverty should consider these non-economic factors to develop more comprehensive and practical solutions. Aziz et al. (2022) advocate for crop diversification as a means of climate-smart agriculture, which can help reclaim marginal lands and reduce vulnerability to food shortages during Monga. This approach is echoed by Bahinipati (2020), who assesses the economic costs of droughts in rural India, drawing parallels with the drought-prone areas of northern Bangladesh and emphasizing the need for sustainable agricultural practices to mitigate the effects of climate-induced food insecurity. Rahman (2017) provides a historical overview of government policies to improve Bangladesh's food security, highlighting successes and ongoing challenges—Rejesus et al. Work on *Global Food Security* highlights how adaptive farming practices, policy interventions, and technological advancements can mitigate food insecurity in vulnerable regions. They also explore the role of international cooperation in enhancing the local food system's ability to withstand shocks and ensure sustainability. Berrang-Ford et al. (2019) track global climate change adaptation among governments, noting that while Bangladesh has made significant strides in policy development, implementation at the local level still needs to be consistent. Islam, Siddiki, and Ansari (2018) reveal that local communities attribute Monga not only to climatic factors but also to systemic socioeconomic issues, such as inadequate agricultural practices and market access. Ahmed et al. (2016) explore how local organizations have transformed vulnerability into resilience by promoting alternative livelihoods, such as small-scale entrepreneurship and vocational training. Existing research provides a comprehensive understanding of the cyclical nature of poverty in Monga-affected regions (Adnan, 1993; Zug, 2006). A recurring theme is the limited availability of agricultural employment during the lean season, which exacerbates food insecurity (Rahman, 1995; Elahi & Ara, 2008). Zaman (2011) highlights the effectiveness of these programs in reducing poverty through stable income opportunities, particularly for marginalized communities in rural areas. Consistent employment can mitigate seasonal vulnerabilities, reducing the need for strategies like temporary migration or borrowing during lean periods. Migration emerges as a predominant coping strategy, with seasonal labour migration to urban areas offering temporary relief (Sultana, 2010; Ahmed et al., 2016). Islam (2021) highlights how

recurring job scarcity during Monga drives families toward coping mechanisms like asset liquidation, seasonal migration, and short-term borrowing. Mallick (2024) emphasizes the need for a deeper exploration of the gendered aspects of migration and resource management, pointing to a significant research gap. Additionally, while adaptation strategies such as crop diversification have been proposed (Aziz et al., 2022), their success depends on household dynamics and access to resources, which remain underexplored (Al-Amin et al., 2019). This study extends existing research on Monga by providing a nuanced analysis of climate-induced migration's socioeconomic and gendered impacts. While the literature provides a robust understanding of Monga's socioeconomic and climatic drivers, gaps remain, particularly regarding gender-sensitive interventions. Most studies highlight the disproportionate impact on women, yet few provide targeted strategies to address this issue. While previous studies have explored general migration patterns and coping strategies, this research focuses on how seasonal migration affects male and female household members differently. It addresses gaps in gender-sensitive interventions and explores how women are left behind to adapt to the challenges of Monga. Additionally, the study assesses the long-term sustainability of migration and its role in transitioning from short-term survival to permanent livelihood strategies. By integrating these insights with climate-resilient agricultural practices, this research offers targeted solutions to enhance community resilience and inform more effective interventions.

5. Methodology

This study employs Creswell’s (2003) qualitative, quantitative, and mixed-method approaches, including narrative research, phenomenology, grounded theory, ethnography, inclusion of marginalized voices, and case studies in Monga-affected regions of northern Bangladesh.

Table:1 Creswell's (2003) framework for research design

Research Design Component	Description
Research Approach	Qualitative methodology, focusing on exploring individual and community-level changes in Monga-affected regions of northern Bangladesh.
Data Collection Method	In-depth interviews, focus group discussions (FGDs), and participant observation. These methods will help capture personal experiences and community-level shifts caused by Monga.
Sampling Strategy	Purposive sampling is selected for participants directly affected by Monga, including farmers, local labourers, and women from the Nilphamari district.
Data Analysis Method	The thematic analysis identifies recurring themes and patterns in the data. It involves reading transcripts, selecting significant statements, formulating meanings, and organizing them into clusters of themes and sub-themes.
Steps of Analysis	<ol style="list-style-type: none"> 1. Read and reread transcripts for familiarization with the data 2. Identify significant statements. 3. Formulate meanings from the statements. 4. Cluster meanings into themes and sub-themes 5. Integrate findings and provide exhaustive descriptions. 6. Validate the findings through peer review and participant feedback.
Validation	Triangulation through multiple data sources (interviews, FGDs, and observations) and member checking with participants to ensure the accuracy and trustworthiness of findings.
Outcome	An in-depth understanding of lifestyle transitions, adaptive strategies, and socioeconomic changes within the Monga-affected communities. Results will help inform future policies and interventions for these regions.

This study, by nature, is cross-sectional, qualitative, and exploratory, using 30 in-depth interviews and two focus group discussions with a combination of males and females of all categories of ages—young and old. The selection of these methods aligns with Hay's argument that in opting for a qualitative research design, we are influenced by the theories we are concerned with, by studies undertaken by other researchers in our interpretive communities that we have found interesting, and by the research questions we wish to ask—all of which are

interrelated" (Hay, 2010). The qualitative approach is suitable for capturing the nuanced and complex experiences of individuals living under the seasonal hardship known as 'Monga'. In-depth interviews are conducted to understand personal experiences, perceptions, and coping mechanisms related to Monga. Focus group discussions allow participants to disclose information they may have in common with others and share similar perceptions and experiences, some of which they would not feel comfortable divulging in an individual interview (Krueger, 1994; Raine et al., 2010). Respondents, heads of the Monga-affected households, are asked to join FGD in a semi-structured interview on all relevant topics. Here, participants share similar and non-similar perceptions, knowledge, and ideas. Primary data were collected through cross-checking questions.

Study area and sampling

The study area focuses on the Gayabari and Khagakharibari unions of Dimla Upazilla in Nilphamari, targeting individuals aged 18 and above, divided into two age groups: young adults (18-36) and adults (36 and above). To ensure a representative sample, a stratified random sampling approach was applied to capture diversity across critical demographic and socioeconomic factors, including economic status, family structure, and employment status. This stratification allowed for a more comprehensive view of lifestyle and occupation changes within the Monga-affected population. Participants were categorized based on economic status (low, middle, and high-income), family structure (nuclear, joint family), and current employment status (unemployed, semi-skilled, skilled labourers). Twenty (20) household heads were selected as primary respondents, ensuring detailed insight into household-level livelihood standards and lifestyle adaptations. Participants were randomly selected within each stratum to minimize bias and enhance the study's representativeness. A rapport-building phase facilitated by convenient local communication fostered a supportive environment for open discussion. Following Yin's (2016) approach to qualitative studies, sampling continued until data saturation was reached. Ethical guidelines were strictly followed, ensuring confidentiality through coding and thematic data presentation. This structured sampling approach enhances the study's credibility and supports a nuanced understanding of the targeted population's adaptive strategies and lifestyle transitions.

Data collection and data analysis techniques

Semi-structured interview guidelines help the researcher to have detailed data on their narratives. Permission for audio-based data collection was asked to capture all the long-detailed information with rich information after obtaining the consent of all respondents. The data accuracy was maintained by further questioning and checking others' perceptions. The collected data were coded with pseudonyms, and analytical points were figured with all assembled data. The local narrations are converted into English immediately after the data collection. The transcribed paper helps to draw some significant transition points of the 'Monga' affected area. The data saturation point stops the data collection and narrative making.

6. Trustworthiness of the Study

To ensure the reliability of our research, we followed the Guba and Lincoln criteria, emphasizing credibility, dependability, transferability, and confirmability. We established trust with participants through two months of intensive engagement in their natural settings in the Gayabari and Khagakharibari unions, Dimla Upazilla, and Nilphamari Sadar. Using in-depth interviews and focus group discussions allows for data triangulation—cross-verifying information from multiple sources. This method helps identify patterns, discrepancies, and consistencies, enhancing the trustworthiness of the data. Focus group discussions offer a platform where participants can clarify and expand on their views in the presence of peers, providing immediate feedback and validation of the data collected from individual interviews. Confirmability was strengthened through an audit trail performed by an impartial specialist in qualitative research. We achieved

transferability by providing detailed descriptions and data until saturation and expanded our findings' scope through additional interviews.

7. Results and discussion

Socio-demographic characteristics of the respondents

To understand lifestyle transitions in Nilphamari during Monga (seasonal famine), two focus group discussions (FGDs) with ten participants each and 20 in-depth interviews (IDIs) were conducted. The participants, consisting of males and females aged 18 and above, have limited access to education (generally below high school level) and often experience unemployment during drought periods.

Table:2 Socio-demographic characteristics of the respondents

Respondents' category (Head of the household)	Education	Significant transitions in individual and community life
Rural men and women Young (18-35)	Primary: 3 Secondary: 2 Graduate: 0 Illiterate:5	<ul style="list-style-type: none"> • Seasonal migration, compromise in safety and security of family members • Irregular income, Undervalued wages in the locality in Climate-induced vulnerability • Long-distance migration to the city • Disturbances in family and community relationships • High dependency on microcredit loans from various organizations • Adjustment in daily meals and Nutritional deficiency • School dropouts and Early marriage • Shifting livelihood patterns from traditional farming to modern farming and non-farming occupations in the informal job market • Developing suitable adaptive strategies for new conditions and Easier mobility • Negative community perceptions of individual and community identity • Changes in traditional coping strategies
Rural men and women Adult(36-above)	Primary: 5 Secondary:2 Graduate: 0 Illiterate:3	<ul style="list-style-type: none"> • Less interest in transitioning to non-agricultural occupations • Reliance on social safety nets • Adjustments in meals and nutrition • Family disturbances during migration • Economic hardship leads to social stigma and a Negative impact on community bonds. • Reduced mobility rate and Less cooperation with changes • High dependency on microcredit loans • Less interest in long-term migration • Older cohorts facing challenges in maintaining traditional roles and adjusting to new traditional coping strategies

Both FGDs revealed that nearly all families view seasonal migration as a primary coping mechanism to address the challenges posed by drought. Like male participants, many female respondents—particularly those under 35—wanted to seek employment opportunities in urban areas to supplement family income. Others preferred finding alternative income sources, such as handicrafts or small-scale enterprises, within their rural communities. The study highlights how economic necessity drives both male and female participants to consider seasonal migration a vital coping strategy. Younger women, particularly, expressed interest in urban migration or alternative rural employment, illustrating evolving gender roles in coping with Monga-induced economic hardships.

Lifestyle transition

Northern Bangladesh’s population has tremendous problems with livelihood, migration, income generation, and food management in the lean season. Therefore, prolonged climate disasters, mainly drought and flood, exacerbate the impact on affected communities' economic, social, and cultural sectors. Drought disrupts traditional family structures, cultural practices, and connection to the land (Rigby et al., 2011; Gupta et al., 2011). Lifestyle transition with cultural challenges especially points to gender expectations as women play a crucial role in cultural reproduction within domestic areas by playing coping strategies against natural calamities through traditional knowledge (Rigby et al., 2011). Drought significantly impacts agricultural production and market dynamics: crop availability, crop diversity, and supply, while price inflation in the market challenges consumer behaviour and food consumption patterns. The recurrence of drought puts small farmers at high risk, experiencing substantial economic losses and livelihood uncertainties (He Y, Ahmed T, 2022). The COVID-19 pandemic has further exacerbated psychosocial and socioeconomic crises in Bangladesh, with partial lockdowns leading to increased community transmission, economic burdens, and GDP loss (Bodrud-Doza et al., 2020). Rural markets are affected by the severity of drought, and young cohorts migrate to urban areas due to reduced agricultural production, employment, and wages, which negatively affects the manufacturing and service sectors (Bastos et al., 2013). Rural households, particularly small landholders and labourers, migrate to seek non-agricultural employment opportunities (Jülich, 2011; Debnath & Nayak, 2021). This drought-induced migration is especially prevalent among younger cohorts and can lead to relative population decline in affected areas (Bastos et al., 2013). Respondents claim that migration pattern varies with age and priority in the study area. Job insecurity in northern Bangladesh remains acute during the lean season. A larger male or female population migrates in search of work. These seasonal labourers express their migration tendency according to their skill, choice, and age (Mazumder & Wencong, 2012; Zug, 2006; Al-Maruf et al., 2022).

Adaptive Strategies in Monga-Prone Areas: A Household-Based Analysis

Table :3 Adaptive strategies

Adaptive strategies	Descriptions	Percentage of gender-based task distribution
Crop diversification	Shift to multiple crops, drought-resistant seeds	70% of respondents accept drought/flood-resistant seeds and move to livestock.
Changing sowing time	Planning the sowing time according to the available water, soil moisturizer using limited water resources.	60% of total respondents are aware of early sowing benefits, constrained by resources.
Inter-cropping	Remixing/ growing multiple crops together	80% of male members know the full knowledge of intercropping 35% of females with adults know
Creating mini pond	Mini ponds store water and keep moisture and nutrients in crop beds.	Mostly, 80% of Males as labourers create mini ponds.
Mulching	Covering plant roots, investing in human labour and low-cost materials to cover	Females are primarily responsible; 35% of males assist.
Reducing firm/field size	Reducing the area of the field	100% of males decide; female-headed households manage independently.
Institutional help: training, cost-free seed fertilizer	Free, installment-oriented loan, Go, and NGO membership	Mostly females, 80% take NGO help with training, awareness growing programs, microcredit loans
Economic management	Loans, asset selling for survival	90% of male respondents report hardship; 80% of females sell property for survival

Household-based analysis represents the Monga-prone area and represents the healthy people of the Monga-prone area. Table 3 outlines the various adaptive strategies employed in response to Monga, highlighting differences in knowledge and responsibilities between males and females and the challenges faced in implementing these strategies. Crop diversification is widely accepted

across genders, with 70% of respondents adopting drought-resistant seeds and livestock. Inter-cropping knowledge is higher among men (80%) than women (35%), reflecting male-dominated control in agricultural decision-making, except in female-headed households. Labour-intensive tasks such as mini-pond creation are largely managed by men (80%), whereas mulching tasks see higher female involvement (65%). Financial hardship is common, with 90% of males reporting financial struggles and 80% of females relying on asset sales to cope. Women particularly depend on institutional support like microcredit and training provided by NGOs, with 80% of female respondents indicating its necessity for sustaining adaptive strategies. The household-based analysis underscores the socioeconomic pressures and resource limitations within Monga-prone communities, highlighting the importance of tailored support and resources for gender-specific adaptation strategies.

Gendered role in coping strategies

In the Monga-affected regions of northern Bangladesh, gender plays a distinct role in the strategies people use to cope with seasonal socioeconomic hardship. Men’s responsibilities generally include physically intensive tasks such as creating ponds, practising crop diversification, and managing water infiltration, directly engaging them in farming techniques (Mazumder & Wencong, 2012; Zug, 2006). Women also play a significant role in addressing malnutrition and adjusting family consumption patterns to alleviate food shortages (Islam, 2021; Siddiki & Ansari; Al-Maruf et al., 2022). According to respondents, there is a noticeable difference in intercropping knowledge between genders; men typically possess more extensive expertise due to their direct involvement in agricultural production. However, some female respondents challenge this view, noting that women contribute significantly to farming and participate actively in community-based agricultural activities despite often receiving less formal training; this illustrates traditional and evolving roles among men and women in coping with Monga, with each gender contributing unique knowledge and skills to mitigate economic impacts.

Comparison of Seasonal Migrants and Non-Migrants: Migration Patterns

Temporary migration between rural areas is prevalent among agriculture-dependent households in northern Bangladesh, with longer-term migration limited by family demographics, costs, social networks, and urban risks (Mishra, 2016; Murrugarra et al., 2011). This strategy addresses fluctuating incomes and climate shocks, as explained by neoclassical economic theories and the aspiration-capability framework (Coffey et al., 2014; Khandker & Mahmud, 2012). Personal motivations and socioeconomic contexts shape migration choices, with the human capital model highlighting the impact of age, education, and skills (Sjaastad, 1962; De Haas, 2021). Poor households with limited skills face barriers that restrict their local market participation, often resulting in longer-term migration. In contrast, those with higher education and skills are better equipped for extended urban stays (Haas, 2021). Migration costs, social networks, and uncertain income sources create fears of urban migration, leading some to prefer rural destinations (Khandaker & Mahmud, 2012).

Table 4: Seasonal migration in northern Bangladesh. (data from focus group discussions, IDIs)

Migration Types	Seasonal non-migrants	Seasonal migrants
Destination	Rural to rural	Rural to urban
Demographic Factors	Strong family/community bonds, small families	Extended families, lack of farmland
Perception	Fear of distance, urban negativity, social stigma	Urban stigma, honour concerns, risk calculation
Skills	Primarily agricultural labour, less skilled	Semi-skilled, skilled labour
Income	Inconsistent, minimal savings	Stable income, better economic prospects
Decision Making	Group decision, short-term migration	Individual decision, longer migration duration
Social support	Limited network, fear of social tagging	Stronger social networks

Table 4 summaries seasonal non-migrants and seasonal migrants in terms of migration patterns, motivations, and challenges. This data highlights demographic constraints, income sources, and social influences shaping migration decisions in Monga-affected areas. Non-Migrant Challenges: Seasonal non-migrants, limited by demographic constraints (e.g., family size, elder care), tend to stay in less distant rural areas, facing irregular income, social stigma, and minimal job opportunities. Seasonal migrants, mainly young and semi-skilled, migrate to urban centres for reliable income and the support of urban social networks (Al-Maruf et al., 2022; Mazumder & Wencong, 2012). Migration decisions are primarily individual and often driven by the lack of farming land and inadequate income sources. However, peer networks and community influence can encourage individuals to adapt to the migration challenges. This comparison underlines the socioeconomic dynamics of seasonal migration, showing that while migrants achieve better income stability, non-migrants remain bound by financial and demographic barriers that hinder relocation opportunities.

Two agricultural lean seasons and migration

The effects of agricultural seasonality (Khandker & Mahmud, 2012), limited availability of alternative economic opportunities, and temporary migration are a common, and often the only viable, strategy for the rural poor to cope with agricultural lean periods. Consequently, most temporary migrants in Bangladesh originate from this region (ibid, 2012; Mobarak & Reimão, 2020). In the Nilphamari district, two major crop seasons, Aman (June/July-December) and Boro (January to May/June), are observed yearly. Other crops like potato, vegetables, mustard, onion, maize, and jute are grown as third crops in highland areas (early harvested Aman-late planted Boro) or (early harvested Boro-late Aman) (Rana & Qaim, 2024). The Boro period has much land flexibility and much crop diversification. Comparing Aman, the locals of the Dimla said the theme '*kalma r kam thakle babu, ar na thakle kabu.*' (Meaning of the Bengali poem: Job of field keeps farmers king in agricultural labours.)

Table:5 Lean seasons

lean season	Duration	Month names	Agricultural timing
Aman lean season	2-3 months	Mid-August to mid-November	between planting and harvesting Aman paddy
Boro lean season		Mid-February to April	between planting and harvesting the Boro paddy

The focus groups discuss the shortage of income opportunities in local markets during lean seasons, leading to seasonal hunger and famine-like situations. Dropping of wage rates and artificial market policies leads to hunger and, therefore, turns it into famine (Monga). To manage hunger, high-yielding crop varieties, microcredit programs, and government-initiated projects (Kabikha projects, construction projects) have been implemented to combat risks. Marginal farmers and agricultural labourers often skip meals and face nutrition deficiencies due to low-quality diets (Lomborg, 2016; Raihan, 2022). According to the data, most of our respondents have primary education, land ownership, and a large family structure, like adopting seasonal and short-distance migration on a temporary basis.

'Mafiz' is a Social Construction in Northern Bangladesh

The term "mafiz" in northern Bangladesh is steeped in social stigma. It is commonly used to describe individuals from seasonal floating communities who engage in repetitive migration and belong to marginalized cultural backgrounds. Historically, "mafiz" has evolved to signify not only poverty and hunger but also connotations of "rootlessness" and "backwardness." This term labels seasonal migrants as "rootless life holders," a phrase that implies a lack of stability, societal value, and cultural currency (Mazumder & Wencong, 2012; Al-Maruf et al., 2022). Respondents highlighted that such language further marginalizes these communities, dividing them from other labour groups and normalizing discriminatory attitudes towards them. During focus group

discussions, it became evident that seasonal migration—driven by economic necessity during lean agricultural seasons—does offer employment opportunities but brings significant social risks. Anis, a 32-year-old seasonal labourer, pointed out that while migration can alleviate immediate financial pressure, it places seasonal migrants in precarious positions in urban centres. Migrants often live in overcrowded slums (*bastis*), which pose health and safety risks, particularly for families displaced by natural disasters like floods and droughts. Female respondents further highlighted the strain migration places on family dynamics. Anisa, a 20-year-old migrant, explained that when male family members migrate, remaining family members are left with additional responsibilities that disrupt traditional family roles and heighten vulnerability. This shift may weaken family ties, increasing the risk of relationship breakdowns, multiple marriages, and even divorce. Another respondent, Rahim, an older man, shared that migration pressures have led to school dropouts among young family members, who then join the cheap labour force early, facing lifelong economic and psychological hardships. Sakina, a 25-year-old migrant, described how mutual support within migrant groups alleviates stress and isolation. They share knowledge about safe migration routes, trusted companies, and strategies for navigating urban environments. This solidarity among seasonal labourers strengthens their resilience and helps them collectively endure migration difficulties. Adding further context to "mafiz" highlights not only the weight of this social label but also the complex interplay of economic, cultural, and social challenges that define the lives of northern Bangladeshi seasonal migrants.

Social cost for female migrants:

Women migrating under traditional and religious norms encounter substantial social changes, often facing the need to adjust practices related to purdah and deal with stigma if uncovered in front of non-mahram men. This societal stigma can lead to isolation and stress, particularly as female migrants enter unfamiliar environments (Mazumder & Wencong, 2012; Ahamad et al., 2011). Amena Begum, a seasonal labourer, explains that many female migrants find work in informal sectors, with typical roles including house helpers (Bua), day labourers in brick kilns, garment workers, and positions in construction, hotels, restaurants, or childcare centres. Female migrants are often subject to wage exploitation, physical and verbal abuse, legal discrimination, and social isolation. With limited education and social networks, they are especially vulnerable to exploitation, lacking secure housing and healthcare. These barriers contribute to the broader issue of social marginalization, revealing the high social costs female migrants bear in pursuit of economic stability (Zug, 2006; Rahman, 2023).

Migration Decision: An Analysis of Push and Pull Factors

A variety of interconnected push influences migration decisions among individuals in *Monga*-affected areas and pull factors, with kinship and community networks playing a central role in facilitating temporary migration (Mazumder & Wencong, 2012; Zug, 2006). The local economy frequently suffers during *Monga* due to reduced agricultural production and high unemployment, leading to insufficient income opportunities (Islam, 2021). Environmental challenges such as inadequate water supply, irregular rainfall patterns (including pre-monsoon and delayed monsoon rains), and the increasing impact of climate change create additional pressures. Respondents like *Farida* highlighted the importance of staying connected via cell phones to navigate unfamiliar locations, access accommodation, and receive help in times of need. Despite the potential dangers of urban life, many are compelled to migrate due to economic instability, the impacts of drought, and the collapse of local markets. Migrants often rely on community networks and shared knowledge of migration routes to mitigate these risks. However, the decision remains a complex balancing act between the push factors of rural hardship and the pull factors of urban opportunity. Farmers usually take loans from relatives, neighbours, and 'mahajans' on interest. The sandy and fertile soil of Dimla upazila is highly suitable for crops like onion, garlic, peanut, and banana, particularly the *shabri kola* (Banana) variety. Non-seasonal crops provide more significant benefits to farmers compared to other crops. Some farmers also

grow jute (Tosha Paat) during the monsoon after harvesting IRRI-28 rice. While pulse cultivation is not widespread in Bangladesh, farmers in Dimla are experimenting with pulses as Rabi crops, which improve soil quality by increasing nitrogen content and support agricultural sustainability. NGOs like *RDRS*, *Proshikha*, and *Grameen Bank* are actively promoting and popularizing pulse cultivation in the area. NGOs in the study area work to enhance the capabilities of marginal labourers and farmers by providing training in better farming methods, handicrafts like handloom industries, woollen shawls, and local boutique skills such as sewing, applique, block printing, and embroidery. The *Char* region presents new opportunities for agriculture, livestock, and winter crops, improving farmers' incomes and self-sufficiency. The reports of focus group discussion pointed out that droughts majorly destroy crop production, make imbalances in water flow and water resource preservation, and ultimately impact the livelihood of farmers and livelihood. The regular and irregular floods also destroy crop production. The data on migration decisions in Monga-affected areas largely align with neoclassical economic theories, as wage differentials between rural and urban regions drive individuals to migrate for higher income opportunities. These choices reflect rational, income-maximizing behaviour central to the "push-pull" economic model.

Gender Roles in Migration and Coping Strategies: Historical and Cultural Context

Historically, women's roles have centred around home and family support, a pattern reinforced by cultural norms that value women's presence in the household. However, these norms are gradually evolving. The reports of focus group discussion pointed out that as economic pressures rise, women increasingly seek income-generating activities, like handicrafts or small-scale rural work. In contrast, younger women, in particular, desire to participate in seasonal urban migration, challenging traditional boundaries. This shift demonstrates the evolving dynamics of gender roles, with both men and women adapting in ways that reflect broader socioeconomic changes (Zug, 2006; Al-Maruf et al., 2022).

Climate Change and Its Intensifying Impact on Migration and Coping Strategies

The increasing frequency and severity of extreme weather events—such as prolonged droughts, erratic rainfall, and seasonal flooding—directly impact agriculture, the primary livelihood in these regions. These disruptions lead to lower crop yields and reduced income, heightening food insecurity and pushing families to adopt adaptive strategies like seasonal migration and crop diversification (Mazumder & Wencong, 2012; Ahamad et al., 2011). As climate change escalates the frequency of Monga periods, it also intensifies women's workload in domestic and economic spheres, often compelling them to seek income-generating activities outside the home. Climate change places additional pressure on the existing socioeconomic framework, making community resilience efforts increasingly complex and urgent.

Microcredit Intervention on Local Life: An In-Depth Analysis of Impacts

For many participants, microcredit creates a debt cycle that is challenging to escape rates (Mazumder & Wencong, 2012; Zug, 2006). Respondents commonly reported anxiety over weekly instalments, known locally as "kisti," which often come with high interest. These high-frequency payments reduce the ability of borrowers to save or invest in other income-generating opportunities, thus perpetuating poverty rather than alleviating it. Many individuals in Dimla Upazila reported taking additional loans to cover existing debt payments, thus falling into a cycle of borrowing from one lender to pay another. This practice, driven by survival needs, leads to higher debt burdens that trap families in poverty, as a significant portion of their income goes toward repaying interest rather than improving their living conditions. Lack of knowledge and the absence of collateral schemes make it difficult for borrowers to manage unexpected crises, particularly during drought or Monga seasons. As a result, some borrowers are forced to sell assets, further entrenching their poverty. In times of financial distress, some borrowers are compelled to sell valuable assets, including livestock, which are vital sources of income. Financial decisions are frequently driven by urgent needs—such as covering costs for child marriage,

health crises, or temporary income gaps—rather than investments in income-generating activities that could improve long-term prospects. In summary, while microcredit programs provide critical short-term financial relief, high-interest loans, frequent repayments, and lack of financial literacy among borrowers can lead to a dependency that restricts long-term economic growth and perpetuates poverty. Addressing these issues would require reevaluating microcredit practices, including interest rate adjustments, financial education initiatives, and enhanced crisis-management support to reduce the debt burden and empower borrowers toward sustainable economic mobility.

Conclusion

This study has explored the complex challenges facing communities in Monga-affected regions of northern Bangladesh, shedding light on the interconnected effects of seasonal poverty and the necessity of lifestyle transitions. The findings reveal that Monga disrupts livelihoods, food security, and traditional gender roles, prompting various adaptive strategies at both household and community levels. Short-term coping mechanisms, such as temporary migration and reliance on informal credit, are widely adopted but carry inherent risks and reinforce economic vulnerability. In contrast, households that pursue longer-term strategies—such as income diversification, improved agricultural practices, and community-led initiatives—demonstrate a transition toward resilience. These findings contribute to and challenge existing theories, offering valuable insights into how economic pressures, migration patterns, and gendered coping strategies interact in complex ways. The reliance on neoclassical economic theories and the human capital model helps frame migration as a rational response to income disparities; however, the data also suggest that cultural and social factors heavily influence gendered adaptations. For example, women's growing involvement in economic activities reflects an evolving response to structural economic pressures, challenging traditional norms and expanding the scope of the human capital model in this context. This study underscores the need for an integrated approach to address Monga, combining economic, social, and environmental strategies. Local and governmental support systems are essential in facilitating these transitions, though gaps in accessibility and effectiveness persist. Future research should further investigate the evolving dynamics of Monga within the framework of climate change and socioeconomic shifts, especially regarding how these factors may alter migration and coping strategies for both men and women.

Limitations and future research scope:

This study focuses on a specific area within the drought-prone regions of Bangladesh, which limits the generalizability of its findings to areas with different socio-cultural or environmental contexts. The sample size—consisting of 20 respondents (10 male and ten female) and two focus group discussions (FGDs) with 20 participants—while providing valuable insights, is relatively tiny for capturing the full diversity of perspectives that may exist within the broader population. Despite efforts to use random sampling within the chosen area, the small sample size inherently limits the study's ability to represent all demographic and socioeconomic segments. Additionally, the reliance on household heads as primary respondents may unintentionally exclude valuable insights from other household members, particularly younger adults and elderly dependents. Future research could benefit from a larger, stratified sample that includes a broader range of demographic characteristics, such as varied income levels, family structures, and educational backgrounds, to improve representativeness. Social desirability bias is another potential limitation. Given the researcher's presence and the study's focus on coping strategies, participants may have felt inclined to provide responses that align with expected or culturally acceptable behaviours, potentially skewing the data. Future studies could mitigate this risk by incorporating anonymous surveys or indirect questioning techniques to reduce pressure on respondents to conform. Expanding the geographical scope of future studies could provide a comparative analysis between different drought-prone regions, capturing variations in socio-cultural adaptation and coping strategies. Additionally, longitudinal studies that track lifestyle

changes over time would add depth to understanding the long-term impacts of drought conditions on these communities. Further studies in different regions with conducted studies in different regions with varied socio-cultural contexts to enhance the generalizability of findings. Comparative studies across regions may reveal broader patterns and unique local influences on lifestyle transitions and livelihood transformation impact on individual and community levels. Using a large sample size from the broader context can explore new dimensions of the Monga-affected community.

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