Climate Change-Induced Urban Migration and its Impacts on Cities: A Case Study of Bangladesh

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Abstract

Academics and practitioners have recognised the rapidly expanding field of research on human migration, vulnerability, and climate change. To investigate the relationship between climate change-induced human migration and its effects on urban areas, Bangladesh has been taken as a case study. This paper reviews current developments in climate change and urbanisation research in Bangladesh. Notably, the climate-induced migration literature is somewhat stagnated in theorising the concepts of 'migration as adaptation' and investigating the causes, drivers, factors, and dynamics of decision-making about migration or displacements. The urban effects of massive migration in countries like Bangladesh have received no or little attention. Reviewing available literature, this paper claims that Bangladesh needs a systematic transformative territorial/spatial planning approach to identify the weaknesses and strengths of particular regions as well as cities to deal with the impacts of climate-induced migration. It indicates that making resilient cities would be impossible without sufficient and simultaneous considerations of rural resilience.

Keywords: *climate change, climate migrants, Bangladesh, slums, governance*

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Introduction

Centuries-long natural processes have been accelerated by climate change resulting in new patterns of human relocation, increased vulnerability, and an explosive rise in chaotic and fast urbanisation.[1] Therefore, it is imperative to recognise a rapidly expanding body of research on human migration, vulnerability, and climate change. Human migration was formerly thought to be a means of fleeing the environmental dangers and vulnerabilities of one's place of origin to find favourable economic prospects in a new location. As a case study in the research in hand, every year, hundreds of thousands of climate migrants are forced to leave Bangladesh due to natural calamities. Most of them are brought on by abruptly occurring natural calamities like landslides, floods, cyclones, and river erosion. New displacements are also brought about by slow-onset disasters like salinisation and sea level rise. According to some estimates, by 2050, over 35 million residents of Bangladesh's coastal regions could be at risk of being forced to migrate.[2]

Nevertheless, a variety of different viewpoints have evolved in the discussion around adaptation to climate change and its effects. The focus on displacements caused by climatic effects began in the 1980s. It was the scientists and environmentalists, who started looking at displacements from a climate change perspective. Based on their studies and a wider approach, they predicted a climate change-induced human migration in the ensuing decades. Besides developing a theoretical base for climate change-induced human migration, they also wanted to divert attention towards practical measures in the form of migrants' adaptation strategies. Decades on, climate change-induced migration took a serious shape in several countries. Environmentalists were also of the view that climate change-induced migration is another catastrophe that the world is going to witness in the coming decades. The literature indicates that Bangladesh is witnessing a notable number of human displacements due to a variety

of circumstances, such as natural catastrophes, with a significant portion of these relocations occurring in metropolitan areas. They primarily target large cities, like the capital Dhaka, Chattogram, Khulna, and Rajshahi. Malliek contends that non-migration decisions are linked to property ownership, social connectivity, and household economic strength. Numerous studies also concentrate on the variables and motivations behind decisions to migrate or not.[3]

There is a research gap on climate change-induced migration and its impacts on the cities. The effects of climate change-induced migration on cities have not been focused upon as a research area. Although numerous studies have looked at the social and economic effects of migration brought on by climate change, less focus has been placed on the urban effects of internal migration in developing nations' cities, like Bangladesh.[4]

This paper broadly focuses on the research on urbanisation, migration, and climate change in Bangladesh. The paper seeks to illustrate the causes and patterns of rural-urban movement as well as how this poses challenges for Bangladesh's cities. Four sections make up the framework of the paper. Section One includes the introduction part. The conceptual framework and the paper's arguments are given in Section Two. Section Three presents the current patterns of rural-to-urban migration in Bangladesh and analyses the effects on cities based on the available literature. In the fourth section, the literature is thoroughly discussed in the conclusion, along with some policy implications and recommendations for future study areas.

A Conceptual Look at Climate Change and Climate Migrants

It is commonly acknowledged that anthropogenic and natural environmental change, especially climate change, can affect human behaviour and patterns of movement. Researchers from a wide range of disciplines have focused a great deal of emphasis on the connections and consequences between human migration and

climate change over the last few decades. Arguably, the forerunners of migration studies regard environmental change as one of the major drivers of human mobility. However, as environmental change gained international attention in the 1980s, issues like environment-induced migration were once again brought up for discussion. This kind of 'strange disappearance and sudden reappearance' is how the author characterises the theme of environment and migration's presence and absence.[5]

However, it was also evident in the literature that there was a disagreement over how to define climate migrants and refugees. For example, one may argue that, although not covered by the UN Refugee Convention, climate migrants should be more vulnerable than refugees as defined by the UN. The phrase 'environmental refugees' is also emphasised in contrast to the traditional UN definitions of refugees, which include 'internally displaced persons' and 'displaced by development projects'. Lester Brown's original classification of environmental refugees was based on three subcategories: temporary displacement as a result of transient environmental stress; permanent displacement as a result of ongoing environmental change; and temporary or permanent displacement as a result of increasing resource-base degradation. The phrase has been popularised since by using examples of human mobility or displacement due to environmental change, such as the 'environmental exodus' and 'desertification-induced displacement', which are examples of waves of environmental refugees from the Czech Republic, Poland, and Southeast Germany.[6]

Furthermore, there exist scholarly works that scrutinise the notion of 'climate migrants' as a potential danger to global security. Regarding this, Bettini offers a valuable typology of discussions on migration caused by climate change, classifying maximalist and minimalist viewpoints. The possibility that the large influx of climate migrants could spark violent conflict worries maximalists greatly.

However, the concepts of 'human security' and 'migration as adaptation' are frequently used by minimalists to refute this deterministic viewpoint. For instance, the term 'environmental refugee' is imprecise and inconsistent, and studies on this topic are unable to explain why people keep relocating to China's notoriously polluted cities of Chongqing and Mexico City.[7]

Climate Change-Induced Migration and its Urban Impacts

Migration has been framed in recent studies as a formal policy action that gives advantages and reduces negative impacts in response to climate change, as well as an adaptive approach. The Global Compact for Migration and the Intergovernmental Panel on Climate Change (IPCC), both adopted the idea of 'migration as adaptation,' which was first introduced by the International Organisation for Migration. The idea to investigate the background, causes, and effects of migration brought on by climate change is also accepted by individual scholars. For instance, there is literature on various human migrations in the twentieth century due to various natural reasons. Like the displacement of a massive population due to crop failure in eastern Oklahoma. It has also been observed that severe flooding and droughts also compelled people to leave their homes and move to safe and secure places. And this was one of the adaptive methods that the migrants adopted for centuries. Similarly, the literature also discovered that while migration rates decrease in impoverished countries, they rise in middle-class economies and lead to greater migration to cities and other countries.[8] Jacobson discovered recently that the char dwellers of Bangladesh's Padma, Jamuna, and Meghna floodplains migrate periodically as a means of adaptability to the nearby places to lower risks and uncertainties related to the erosion threat. In addition to socioeconomic status, education level, and kinds of livelihood, there is a connection between

short-distance migration and changes in Burkina Faso's climate, specifically in terms of rainfall.

The phenomenon of climate change-induced migration came under rigorous research when it was observed that migrants move to the same types of places as an adaptive strategy. Different trends and patterns were observed by researchers after studying various cases. Jacobson *et al* observe that climate migrants do not necessarily find a good liveable place. Climate migrants face severe hardships, which lead them to more vulnerabilities. Migrants face maximum hardships in terms of economic opportunities and basic livelihood. Moving from rural to urban areas frequently forces the migrants to become even poorer. Using the Bhola Slum in Dhaka as an example, this work analyses how, in unstable urban environments devoid of basic human necessities, one set of hazards associated with being a rural immigrant is frequently substituted by another. To see the possibility of migration as transformative adaptation, this paper calls for redefining the concept of adaptation as a sociopolitical process that involves fights over authority, knowledge, and subjectivities.[9] Further on, Fabrice *et. al.,* observe that for a researcher three types of perspectives and contexts are very important in properly managing research on climate change-induced migrants. The three perspectives are to bring under consideration the indigenous origin of the migrants, the community lineage of the migrants and where they started their livelihood when they migrated. A conceptual schema of climatic migration outcomes offered by the author divides migration into three categories: adaptive migration, maladaptive migration, and survival migration. Three categories of migrants were also identified in the literature using a 'decision framework' based on environmental causes of migration, i.e., environmental emergency migrants (EEM), who must flee their homes due to catastrophic events like a cyclone, flood, tsunami, or earthquake; environmentally forced migrants (EFM), who must leave their homes to avoid a specific environmental hazard like soil erosion;

and environmentally motivated migrants (EMM), who may leave their homes in anticipation of a declining environmental condition like land degradation. Additionally, the author uses a framework of relationships between the environment, economy, and society to highlight the influence of the environment in the decision-making process related to migration.[10]

Similar research has also looked at the socio-economic and environmental effects of migration. Various researchers have examined the social ramifications of disaster-induced migration in Bangladesh and discovered that a household's susceptibility is contingent upon its ability to generate revenue. Their research focuses primarily on the sociological repercussions at the point of origin of migration, excluding the effects that arise once migrants are relocated to a new location, like a metropolis.[11]

Nonetheless, current research offers a deeper comprehension of the motivations behind migration while focusing less on the effects of migration on the urban target population. Hence, the strategy adopted by the climate migrants to live in urban areas or major cities has severe negative impacts on the home population in many ways. This research primarily targets the area of urban-to-rural migration patterns and their ramifications. It takes the case study of Bangladesh because of the subject and case relevancy. The future of urban planning and development is critical to addressing climate migration for three reasons. Bangladesh is extremely vulnerable to climatic effects because of its unfavourable terrain and coastal areas. People living in the coastal areas have a dual problem, in the first place they are vulnerable to climatic impacts and on the other hand, they have meagre living resources. For instance, due to its unique location between the Himalayas to the north and the Bay of Bengal to the south, it frequently experiences landslides, hailstorms, droughts, cyclones, floods, and storm surges. It is also acknowledged that the current state of climate change has a significant impact on

Bangladesh's propensity for natural disasters. This type of physical environment disrupts the long-term goals of the government and the long-term Sustainable Development Goals. Human migration at a large scale poses major hindrances to sustainable development in Bangladesh as it diverts priorities to drastic events posed by climate change.[12]

Secondly, cities serve as the hubs for economic growth. These are the conglomerations of wealth, commercial activity, and opportunity brought about by contemporary technological innovation. The best places to establish a living are cities. For this reason, Bangladesh is likewise experiencing an overwhelming trend of poor urbanisation, similar to other emerging countries. It appears that poverty in rural areas is moving to metropolitan areas. Furthermore, the prospect of building resilient cities may be further complicated by the presence of additional climate-vulnerable villages.

Thirdly, these climate migrants, who view migration as their last and best option want to reside in cities but the municipal authorities in Bangladesh are unable to offer them enough support (housing and other environmental services). As a result, with each natural disaster, there is a rising number of urban slums in the major urban cities. Urban authorities are under tremendous strain as a result of the growing and seemingly inevitable scale of the informal economy in cities.[13]

There is a research gap concerning climate migrants and their impacts on urban cities in the context of Bangladesh. Bangladesh is a developing country and is one of the most vulnerable countries to climatic effects in the world. Therefore, it is crucial to address the issues of how this human mobility process affects (host) cities, as well as the reasons for and volume of climate migrants' migration to the cities and how they adjust to their new surroundings to build resilient and sustainable cities.

Climate Change and Patterns of Coastal/Rural to Urban Migration in Bangladesh

Every year, hundreds of thousands of climate migrants are forced to leave Bangladesh due to natural calamities. Most of them are brought on by abruptly occurring natural calamities like landslides, floods, cyclones, and river erosion. New displacements are also brought about by slow-onset disasters like salinisation and sea level rise. According to some estimates, by 2050, over 35 million residents of Bangladesh's coastal regions could be at risk of being forced to migrate. There are 19 coastal districts with the highest risk of disaster, along with those along the major river banks (Padma, Meghna, and Jamuna). Over 4 million additional climate migrants fled their homes in 2019 as a result of natural catastrophes, including the destructive cyclones Fani and Bulbul. Notably, forecasts indicate that soon the average fresh migration could reach 1,214,715 people. However, in 2009, 2013, and 2019, Bangladesh had the greatest number of displaced people. It is also evident that the country must deal with a sizeable number of new displacements brought on by disasters every year.[14]

According to the United Nations Population Fund (UNFPA), it was challenging to determine the precise migration category as a result of climate extreme occurrences, but urban migration in Bangladesh reveals the categories and patterns of general internal migration in Bangladesh. The migrant population is divided into two destinations: rural and urban, as evidenced by the literature. It is noteworthy that in contrast to other categories of movements, a significant percentage of migrants relocate from rural to urban areas. For instance, in 1991, rural-urban migrants made up over half of all migrants. Even though this percentage dropped significantly between 2004 and 2011, it still has the greatest number of migrants. Prior research has also shown that over two-thirds of the increase in the urban population since 1971 can be attributed to migration from rural to urban areas.[15]

In the case of climate change-induced urban migration, the target urban centres for the migrants remained different. The migrants' patterns are not always the same for their destinations because of a variety of reasons related to basic livelihood and economic opportunities. Nearly two-thirds of the migrants relocate to the districts of Chattogram and Dhaka. 42 per cent of in-migrants have lived in Dhaka alone. The total distribution of in-migrants by district also shows that more people migrate to Bangladesh's east than its west. The eastern region is home to the megacity Dhaka and the second-largest city, Chittagong, which outweighs the cities of the western region. Furthermore, the proportion of in- and out-migration varies across districts. For example, Dhaka has a high net migration rate because the district has relatively little out-migration compared to in-migration. This also applies to the nearby Dhaka districts of Munshigang, Gazipur, and Narayanganj, where there is a significant inflow of immigrants. Conversely, some districts: Barisal, Bhola, Patuakhali, Chandpur, Faridpur, Sherpur, Mymensingh, and Rangpur have noticeably greater rates of out-migration than in-migration.[16]

Nonetheless, the literature indicates that Bangladesh is seeing a notable number of human displacements due to a variety of circumstances, such as natural catastrophes, with a significant portion of these relocations occurring in metropolitan areas. They primarily target large cities, like the capital Dhaka, Chattogram, Khulna, and Rajshahi, to improve living conditions and provide chances for earning a living. As a result, migration brought on by the environment could affect the cities. People who migrate from rural to urban areas due to natural disasters or climate change suffer greatly on an ecological, social, and political level. This is so because human movement brought on by disasters disrupts children's education, ruins people's regular means of subsistence, and raises the danger of ailments including infectious and water-borne diseases. The effects of migration on society, the economy, politics, and the environment are further

covered in the section that follows, with a special emphasis on what is occurring in Bangladesh's cities.[17]

Climate Change-Induced Migration: Impacts on Cities

Most of the negative effects of migration brought on by climate change are seen in cities of developing countries, placing enormous strains on the governance, sustainability, and availability of social and environmental services as well as infrastructure. The impacts of climate change-induced migration on cities in Bangladesh can be broadly classified into four areas based on the available literature. The four categories are: the spread and establishment of slums in the cities; the ramifications on the urban sectors and service delivery; the growth of black unregistered and black economy; and the increase in poverty.

Growth of Urban Slums and Urbanisation of Poverty

The word "slum" is a name that captures the suffering of the impoverished who must fight against poverty to survive in this world. It is a collection of unplanned residential houses on either privately or publicly held vacant land. These homes typically have straw leaves, gunny sacks, polythene paper, bamboo, etc. for their walls and roofing. If it is located in an area that is considered to be a slum, then they live in a tin shed. These homes are significantly less hygienic and physically, improperly-maintained than typical metropolitan residential areas. This group of people is typically impoverished and compelled to live in unsanitary conditions because of financial constraints.

Bangladesh is ranked sixth globally in terms of the number of people living in slums, at 30.4 million. Bangladesh has 13,938 slums, according to the Census of Slum Areas and Floating Population 2014 released by the Bangladesh Bureau of Statistics (BBS). This sum was only 2991 in 1997. The distribution of slums across Bangladesh's administrative divisions is displayed in Table 1. Among the divisions,

Dhaka has the highest percentage of slum dwellers with 46.56 per cent. Although the Chittagong Division still contains half of the Dhaka Division, it also has a large number of slum areas.[18]

Table 1

Distribution of Slums in Bangladesh

Division	Total Number of Slums	Percentage of Slums
Barisal	205	1.47
Chattogram	3,305	23.71
Dhaka	6,489	46.56
Khulna	1,684	12.08
Rajshahi	421	3.03
Rangpur	422	3.04
Sylhet	1,412	10.13
Total	13,938	100

Source; Bangladesh Bureau of Statistics.

There is a wide range of literature that addresses the expansion of slums in Dhaka. The said literature argues that this uncontrollable process of rural poverty's urbanisation mostly affects Dhaka city. Dhaka is described by Abdul Mohit as a city of 'slums and climate change'. He also referred to Dhaka as a 'city of poverty'. Remarkably, one-third of Bangladesh's urban population already resides in the city. Dhaka is among the megacities that are expanding the quickest in the globe, with between 300,000 and 400,000 new immigrants arriving per year. According to a 2006 survey conducted by CUS, NIPORT, and MEASURE Evaluation, roughly 37 per cent of Dhaka's urban population dwells in slums. The Slum Areas and Floating Population 2014 census, shows that Dhaka city is home to 24.39 per cent of Bangladesh's 13,934 urban slums. Despite having a relatively huge population, the city's slums only make up 5.1 per cent of the total land area. For example, Dhaka's gross population density is less than 121 people per acre, while the slums have a population

density of 891 people per acre, over seven times greater than the average for the city.[19]

Table 2 illustrates that in 1991, 275,000 people were living in Dhaka's slums, making up 13 per cent of the city's overall population. In 1996, a different survey revealed that 718,143 people were living in the city's 2,156 slums. According to a 2005 assessment conducted by the Asian Development Bank (ADB), 1.5 million people were living in 3,007 slums throughout the city (i.e., 20 per cent of the total population). With 3.4 million people living in the Dhaka Metropolitan Area (DMA), there were 4,966 slums, according to a 2014 survey conducted by CUS, NIPORT, and MEASURE Evaluation. This indicates that between 1996 and 2014, the number of clusters increased by 70 per cent, and the population in slums multiplied twofold. 643,735 people were living in 3,399 slums spread throughout two municipal corporations in Dhaka, according to the 2014 Census of Slum Areas and Floating Population. The World Bank also predicted that in the ensuing ten years, there will be eight million people living in Dhaka's slum areas. Over the past three decades, the distribution of slums has stayed mostly unchanged, with the majority of the increase occurring on the outskirts of the city.[20]

Table 2

Growth of Slums in Dhaka

Year	No. of Slums	Population	Percentage
1991	3,456	275,000	13
1996	2,156	718,143	10
2005	3,007	1.5 million	20
2014	4,966	3.4 million	37

Impacts on Urban Infrastructure and Service Delivery

The demands placed on municipal infrastructure and services are impacted by the growing influx of climate migrants. This is

because slums appear out of nowhere in the backyards of high-rise buildings, beside train tracks, above flooded floodplains, in environmentally dangerous areas, and on the borders of construction sites. Empirical studies reveal that Dhaka's impoverished population faces limited availability of healthcare and educational resources. In Dhaka, barely 33 per cent of female migrant workers and 52 per cent of male migrant workers (aged 15 and above) are literate, according to a World Bank survey. Only 12 per cent of the young migrants had the chance to continue their education to the graduation level. Another study also revealed that 50 per cent of them had completed secondary or higher-secondary education. Less than 54 per cent of families in Dhaka have access to healthcare facilities; the percentage would be even lower for the impoverished.[21]

Beyond these social services, there is very limited access to other critical infrastructure in the slums. Research indicates that those living in urban slums are not provided with enough municipal services, such as clean water, sanitary facilities, and shelter. Kraemer discovered that migrants from rural to urban areas reside in subpar homes constructed of subpar materials. Additionally, the literature revealed that the water quality was extremely low and that the supply was still wildly inconsistent. Moreover, the World Bank study discovered that 70 per cent of Dhaka slum households lack access to piped water and live below the poverty line, which is defined as having an income of less than $2.50 per day. There were also apparent private water vending systems in several Dhaka city slums. Nonetheless, the impoverished had to pay prices that were several times more than those of official, legal water. However, several case studies carried out between 1975 and 2002 provide an overview of the water sources used by Dhaka's urban poor. Although the categories of water sources differ, there has been a noticeable rise in the proportion of water consumers, with tap usage rising from 1 per cent in 1975 to almost 40 per cent in 2015. This clearly shows that the urban poor are receiving

better water services. Even so, the vast majority of them continue to rely on unofficial water sources, such as hand tube wells (pump), dug wells, lakes, and rivers.[22]

Only 20 per cent of urban poor have access to sanitary latrines and most of them continue to utilise other unhygienic latrines. According to a 1993 survey by the Centre for Urban Studies, 67 per cent of Dhaka's urban poor utilise electricity, while 33 per cent still do not have access to it. According to the report, just 22 per cent of urban poor people have access to gas facilities, and 72 per cent of them cook with traditional fuel. Since the town lacks a waste collection system, over 60 per cent of the impoverished simply throw their trash on the road or in public areas.[23]

Informal Economic Growth and Hurdles of Governance

Climate change-induced migration creates major hurdles in smooth governance and developing informal economy networks. Access to social and environmental services and the expansion of the informal (illegal) sector provide the biggest challenges to Bangladesh's municipal authorities. Numerous studies have examined the rise in poverty, urban vulnerability, the rise of the informal economy, and the obstacles and difficulties facing urban governance because of the very large number of informal communities (slums) in Bangladesh's cities.

Awais Paracha and Masud Parves Rana investigated the water supply system in a Dhaka informal neighbourhood and discovered that the public utility service is politically motivated by the positions and personal interests of system participants, and it lacks regulatory rules for decision-making by any statutory organisations. According to the authors, urban informality is the deliberate behaviour of opportunists who use the public interest to justify their exhibition of a distorted reality on the front end in exchange for their own political and financial gain at the expense of state institutions that are already in a precarious position. In assessing how well the water delivery

system in Dhaka serves the urban poor. They also assert that institutional, social, and political variables play a significant role in Bangladesh's environment. It is also observed that the urban poor in Rajshahi city receive water supplies that vary according to their precise location and that not every slum has equal access to all aspects of the supply system. The authors noted a few more impediments in addition to the expense, including decisions made at the centre, apprehension when contacting the authorities, and a lack of understanding regarding how to obtain environmental services.[24]

According to Parves Rana and Irina, several studies highlight and assess the problems slum communities face while also making ideas for remedies. They viewed that on Dhaka's informal housing, certain literature advocates an inter-sectoral approach to development as well as a reduction and redirection of the migrant flow from Dhaka to other regions of the country as a means of addressing housing scarcity. Other literature also highlights the potential and constraints facing Non-Governmental Organisations (NGOs) in their efforts to solve issues of informal housing, as well as the implications of slum evacuation for human rights. The authors suggest that the Bangladeshi government recognise the human rights of the destitute and permit the development of slums in their current location by combining NGOs and providing security of land tenure. The literature has also looked at the role that NGOs and the government have in the growth of slums. Parves Rana and Irina also examine social exclusion as a concern and its connection to the unofficial housing market in Dhaka. They investigated the effects of eviction fear on the lives of urban poor people who are not recognised as members of society by examining an eviction case from a Dhaka slum.[25]

The partnership approach's ability to provide hygienic amenities for Bangladesh's urban poor was assessed through research. The authors expressed optimism that the system could still work with

proper community management in place when discussing the difficulties experienced by a community-based water supply system in a Dhaka slum. In a different study, the bureaucratic and socio-political barriers to local participatory water governance have been highlighted. Furthermore, they discovered that the efficient operation of community-based water delivery for the urban poor is hampered by unbalanced representations of actors in participation and a lack of decentralisation.[26]

On the other hand, this section offers substantial proof of the negative effects of Bangladesh's rural-to-urban migration induced by climate change. The literature that is now available describes in detail the hardships that migrants face in urban areas, especially regarding housing scarcity, water supply, and sanitation. Most significantly, the migration of people from rural to urban areas brought on by climate change has become an external burden for local government and is posing serious obstacles to good governance.

Conclusion

Conclusively, there is a certain stagnation in the literature on climate migration when it comes to theorising migration as adaptation and investigating the motivations, variables, and dynamics of decision-making concerning migration or displacements. In the context of climate migration, little research has been done on the effects of migration on cities in Bangladesh. It is evident from specific cases of rural-to-urban migration how dangerously it is impeding the implementation of good governance in the cities. The evidence evaluation indicates that urban migration poses significant problems to urban policies in their attempts to address this externality, in addition to providing opportunities for temporary or alternative solutions for livelihoods and resettlements. Like many developing countries, Bangladesh has several difficulties, such as the extreme urbanisation of poverty (in large cities), a lack of social and environmental services, and the growth of the informal economy and

its effects on the implementation of good governance. The effects of rural-to-urban migration seem to be entirely unanticipated, and the authorities are unprepared for them, even disputing that there are migrants in the cities.

To achieve the Sustainable Development Goals, the government of Bangladesh has notably started short-, mid-, and long-term development planning strategies. These strategies include Bangladesh Delta Plan 2100, Vision 2041, Second Perspective Plan, and Five-Year Plans. These plans are implemented in conjunction with UN Agenda 2030. Regretfully, these plans primarily concentrate on hotspot-specific, thematic, and sectoral strategies, policies, and programs while neglecting regional imbalances, population size differences, resource distribution, natural disaster frequency, and the creation of climate and environmental migrants. However, as this analysis shows, Bangladesh has geographical disparities concerning the growing trend of climate migrants, the urbanisation of poverty, and the extreme suffering of the urban poor. It contends that Bangladesh, like many developing countries, needs a methodical transformative territorial/spatial planning strategy to determine the advantages and disadvantages of specific places at the divisional (macro), district (meso), and upazila (micro) levels.

The study's inability to pinpoint the precise number of environmental refugees or climate migrants moving to Bangladesh's cities was one of its limitations, primarily rooted in the unavailability of a document that details the precise number of migrants across various categories in Bangladesh (especially related to migration caused by the environment or climate change). While it was not possible to offer cause-specific accounts of migrants and their suffering in the cities, the assessment still provides a starting point for debating and evaluating the significance of migration's effects on urban destinations, with a special emphasis on urban landscape planning that acknowledges the coexistence of informal environmental migrants and mainstream

urban residents. This conclusion ends by arguing for responsible administration of both rural and urban migration brought on by climate change. It is believed that creating resilient cities will be challenging if rural resilience is not given enough thought. Furthermore, in prosperous, well-run cities, the vulnerability of low-income inhabitants to climate-related dangers is dramatically decreased.

Recommendations

Firstly, to comprehend the dynamics, causes, and drivers of migration and displacements, it is imperative to address how climate change affects migration. To enhance comprehension of migratory categories and urban policy measures, for instance, spatial and temporal information about permanent migration, temporary displacements, and immobility results after a disaster occurrence is essential.

Secondly, rethinking the relocation plans for climate refugees inside and between cities may be a significant area of study in migration studies. Since a large portion of climate migrants are known to relocate temporarily or permanently from their places of origin to cities due to economic motivations, a forward-thinking plan is therefore required to relocate them to appropriate locations, such as the closest place of origin or to secondary/small cities that are less affected by migration. It is best to dissuade migrants from travelling to migratory hotspots like Dhaka and Chattagram. As a result, Bangladesh's urban strategies will need to place more emphasis on secondary cities to fairly distribute or balance the vulnerabilities brought on by migration. Furthermore, a comprehensive planning strategy is necessary to take into account a variety of issues at the regional and national levels in addition to the difficulties faced by these vulnerable populations at the individual and neighbourhood levels. Consequently, a multi-scalar framework is needed to analyse

the issues of migration brought on by climate change and to offer answers.

It would be essential to create low-income housing programs in the cities to protect the human rights of climate migrants. Bangladesh is one of the many emerging nations without any policies in this area. To create and organise urban housing landscapes that provide adequate social and environmental services for low-income urban dwellers - the majority of whom are maladaptive climate migrants - this may be the third area of research focus. Applying the concept of the entitlement approach in this context may help to explain why climate migrants are frequently disregarded and socio-politically distinct in urban areas.[27]

Fourthly, a major obstacle facing urban stakeholders is creating an appropriate institutional and legal framework for regulating land development and minimising the unauthorised or informal possession of urban land. Given that the climate migrants lack legal rights to the land they have taken over, a fully transformative approach to land management could be beneficial in resolving this issue. Further research is necessary in the area of transformative land management for urban poor, which challenges the current adaptive or earlier top-down approach to decision-making.

Finally, it is suggested that giving rural resilience adequate consideration and building resilient cities is imperative in this regard. Furthermore, low-income populations' exposure to climate-related risks is significantly reduced in successful, well-governed cities, it is not and may even be greatly increased in unsuccessful, poorly governed cities. Power struggles inherent in daily adaptation practices among households, communities, and nations do not occur in a vacuum. At all intervention levels, adaptation becomes an integral part of ongoing efforts to assert knowledge about matters crucial to survival, frame understandings, assert authority or reaffirm it, and claim access to opportunities and resources that are contested. Additionally, research

suggests that, with the right regulations in place, migration could be a useful detour to reach the objectives. As a result, it endorses the need for an integrated approach to governance to address vulnerabilities brought on by climate change in both rural and urban areas.[28]

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