A literature analysis of Climate-Induced Circular Migration in Asian Emerging Economies: implications for future spatial planning

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Abstract

Global warming is central to migration, and its effects are equally bad on people experiencing poverty economically with no proper employment opportunities in developing countries, especially the emerging Asian economies. This paper discusses the possibility of climate-induced circular migration to complement the reduction of the impacts of climate change on regional development and vulnerable groups. They follow the range and standards of spatial planning and governance, Indigenous knowledge, and community participation. This article calls for a proactive regional approach the climate-induced migration. The proposed framework of "Define – Include- Recognise" is an effort towards formulating a globally acceptable definition of EDIR, including them into spatial planning policies, and stressing on community-based approach to facilitate their living standard. It improves climatic resilience, promotes protection and sustainable use of natural resources, and supports a society's cultural and economic map. Finally, as stated in this article, there is a need to invest in proactive measures involving traditional knowledge and community participation to combat pathogenic climate-induced migration and achieve sustainable development in emerging Asian economies.

Keywords: climate-induced migration, circular migration, traditional knowledge, spatial planning, regional development, Asian emerging economies

1 Introduction

Global warming is now classified as one of the reasons why people migrate, in particular in newly emerging Asian markets. The migration phenomenon attributable to climate change

not only has environmental effects but also shapes the region's economy and exacerbates the problem of inequalities. Traditional arrangements of migration management may not always be sufficient to meet the emerging climate change issues. Hence, new approaches are required to strengthen the community's resilience and promote sustainable growth. In one such contemporary analysis, even climate change-induced circular migration is offered as a 'devolutionary strategy' to deal with the issue of climate change in the emerging economies of Asia (Ajibade et al., 2020). The basic idea of this article is to develop a framework for the analysis of the interrelations of climate change, migration, and regional development within the context of indigenous community planning and local geography.

With time, climate change is likely to become one of the greatest threats in the twenty-first century, a consequence of which has been migration, especially in underdeveloped regions like emerging Asian economies (Baldwin 2017). Climate change, flooding, hurricanes, storms, and environmental pollution, among many other things, are some forces that make people migrate in search of a better life. One region greatly affected by climate change is Asia, the second largest populous continent after Africa, due to urbanisation and climate change susceptibility.

Climate-induced circular migration which occurs in cycles of people and communities migrating to and from due to climate changes, is slowly on its take as a coping strategy. Such climate resilient strategies aim to protect the most vulnerable groups in society to help them adapt to adverse climate change. At the same time, on the quest search for better economic reasons. Other workers, Brian D Bunt A W (2009), note that such despised social movements have serious consequences for area purpose and development strategies in the most climate change prone areas of Bangladesh, Indonesia, Vietnam, and India where most often poverty and poor infrastructure are not spared. Accepting environmentally displaced people as acceptable to all is the first step to dealing with climate-induced migration (Cattaneo & Peri, 2016). Current understanding fails to comply with the climate migration definition and clarity exists complexities. In this sense, the exchange-migration is termed as a new sub-type of migration, and therefore, the international community is more responsive to the needs of the affected populations. This definition should incorporate the nexus of things within one category, such as climate change, environmental degradation, and uncontrollable migration, including other factors that affect migration.

However, climate-induced circular migration is still poorly recognised in policy discourses and spatial planning policies and strategies, mainly addressing permanent migration or disaster displacement (Norwegian Refugee Council, 2017). This lack of planning widens the vulnerability of both the sending and the receiving regions. Climate change refugees, forced to move due to floods, droughts, and coastal erosion, among other effects of climate change, live in informal settlements in urban areas, exerting tremendous pressure on infrastructure, services, and natural resources. These informal settlements also expose the people to environmental risks thus making it a vicious cycle of vulnerability.

2 Literature review

Studies on climate-induced circular migration in emerging Asian economies reveal important implications for future spatial development. Climate change-induced mobility is now widely considered a necessary and strategic survival strategy in the face of environmental change,

especially in Asian countries where issues of urbanisation, economic development and climate change risks converge (McAdam, 2012) (Piguet et al., 2011). For example, Southeast Asian countries require urgent and strategic urban planning interventions due to the high exposure of the coastal areas to climate change impacts such as sea level rise and extreme weather conditions (Yuen & Kong, 2009). According to the Asian Development Bank, climate change will increase the intensity of extreme weather, make some areas uninhabitable and force people to migrate to survive (Revel, 2012). Bangladesh is a classic case of the problems of emerging economies where environmental factors like sea level rise and river erosion force people to migrate to cities and create slums and other informal settlements, which put a lot of pressure on existing infrastructure (Ahsan et al., 2011). Such a pattern calls for spatial planning to address the issues of migration, congestion and pollution in urban areas.

Table 1: literature review table related to climate-induced circular migration

Author(s)	Study Focus	Key Findings	Implications for Spatial Development
McAdam, J 2012.	Strategic role of mobility in response to environmental changes in Asian countries	Migration is increasingly considered a necessary survival strategy in Asia, where urbanisation, economic development, and climate risks intersect.	Calls for integrating migration as a key component of urban planning, focusing on resilient infrastructures to accommodate mobility patterns.
Piguet et al. 2011	The relationship between climate change, migration, and urbanisation in Asia	Migration is a vital adaptation mechanism for communities affected by environmental changes.	Strategic planning is needed to manage migration flows, ensuring sustainable development while addressing congestion and urban sprawl.
Yuen & Kong 2009	Impact of climate change on coastal areas in Southeast Asia	Southeast Asia's coastal regions face severe risks from sea level rise and extreme weather, necessitating urgent urban planning interventions.	Highlights the need for climate-resilient spatial planning, focusing on coastal cities and rural-to-urban migration challenges.
Revel (Asian Development Bank) 2012	Climate change and extreme weather's impact on migration in Asia	Extreme weather and uninhabitable areas will drive mass migration as a survival strategy.	Urges governments to incorporate climate migration into spatial planning to mitigate

			unplanned urban growth and improve infrastructure resilience.
Ahsan et al. 2011	Case study of Bangladesh's migration due to environmental factors (sea level rise, river erosion)	Environmental degradation forces mass migration to urban areas, leading to slums and informal settlements, which strain urban infrastructure.	Recommends the development of spatial policies to manage urban growth, address informal settlements, and prevent infrastructure overload.
Leighton et al. 2011	Lack of policies addressing climate-induced migration and disaster response in Asia	The absence of policies for addressing climate-induced migration weakens community resilience and hampers adaptation efforts.	Calls for comprehensive migration policies and spatial frameworks integrating disaster response, adaptation, and urban development planning.
Ferris, E. 2015	The role of planned relocation as a climate adaptation strategy	Planned relocation can support affected communities by providing shelter, income, and services, but it needs to be properly executed.	Suggests spatial development that supports planned relocations, integrating services for displaced populations and ensuring sustainable living conditions.
Munslow & O'Dempsey 2010	The combined effects of climate change and globalisation on health and migration patterns	Vulnerable groups often migrate from dry interior regions to flooded coastal areas, worsening living conditions and health outcomes.	Calls for spatial planning that addresses public health, access to services, and infrastructure needs in high-risk areas.

Source: Author's Literature Survey

Furthermore, the absence of clear policies and frameworks for addressing climate change-induced migration makes it imperative for governments to reconsider disaster response and

migration policies to improve resilience and adaptation strategies (Leighton et al., 2011). As a form of adaptation that requires executing planned relocations, it should be made clear why and how it is achieved, as well as its effect on the affected communities regarding shelter, income and services (Ferris, 2015). The situation worsens because of the interaction of the within cities and rural migration and climate change health impacts offset by globalisation because poor people will move from dry interior areas to coastal wetland slums (Munslow & O'Dempsey, 2010).

Migration is one of the flowing areas determined and directed through spatial planning and also results in sustainable measures' development. Environmental factors, along with social factors, particularly in regard to climate regards, tend to be very important if integrated within also national and local spatial planning processes. This has to be a multi-focused approach that considers the sociological and environmental effects of the migrations and includes land, transport and services. Spatial planning policies must be followed to prevent the worst affected communities from being displaced and promote sustainable land use in the receiving region.

Community health implications and views must be factored into climate-related movement strategy implementation. Migration is one of the climate change consequences and an adaptive strategy that requires the people's participation. By engaging the affected populations in the planning and implementation process, the cross-border migration policies can be designed to make sense in that area and allow effective migration strategies.

Table 2: Spatial Planning and Linkage to Climate-Induced Circular Migration

Aspect of Spatial Planning	Linkage to Climate-Induced Circular Migration	Implications for Future Spatial Planning
Land Use Management	Climate change affects agricultural productivity, leading to migration. Migrants require proper allocation of land in receiving areas.	Spatial planning must ensure sustainable land use, considering both current needs and the potential for future migration pressures.
Transport and Infrastructure	Migration places additional pressure on transport networks, particularly in urban areas. Climate-induced migrants may relocate to regions lacking in infrastructure.	Development of resilient transport networks is critical to ensuring that migrants have access to services, employment, and shelter.
Housing and Shelter	Migrants often need affordable housing, and climate-induced migration can lead to informal settlements. Environmental hazards also affect the safety of housing.	Spatial planning should focus on creating climate-resilient, affordable housing in both urban and rural regions.
Disaster Risk Management	Climate-induced migration is often triggered by natural disasters (e.g., floods, droughts), which increase the need for planning that mitigates	Strengthening disaster risk management in spatial planning is essential for both prevention and recovery,

	disaster risks in vulnerable regions.	reducing forced migration.
Water Resource Management	Migrants may relocate due to water scarcity or flooding caused by climate change. Overpopulation in receiving areas can strain water resources.	Spatial planning needs to include sustainable water management practices to mitigate resource conflicts in migration-prone areas.
Economic Development	Climate-induced migration affects local labor markets, which can lead to imbalances in sending and receiving regions.	Spatial planning policies should promote job creation in resilient sectors, ensuring that economic opportunities are available.
Public Health and Services	Migrants often face challenges in accessing healthcare and basic services. Climate change can exacerbate health issues (e.g., heat stress, waterborne diseases).	Planning for climate-induced migration must incorporate health infrastructure and services tailored to the needs of migrant communities.
Social Cohesion and Integration	The influx of climate migrants can strain social relationships in receiving areas. Migration also disrupts traditional ways of life and community structures.	Spatial planning must promote social integration and community-building initiatives to prevent conflict and promote inclusivity.
Sustainable Natural Resource Use	Migration can increase pressure on natural resources in receiving areas. Climate change already stresses these resources (e.g., land, water, forests).	Future spatial planning should integrate sustainable resource management strategies, balancing human needs with environmental preservation.
Cultural Heritage Protection	Migrants, especially indigenous people, often face challenges in preserving their cultural identity in new environments. Climate change can also damage cultural sites.	Spatial planning should recognise and protect cultural heritage while integrating migrants into new environments without cultural loss.
Governance and Community Participation	Community involvement is key in addressing migration challenges. Local knowledge and participation in planning processes ensure strategies are tailored to the needs of vulnerable groups.	Proactive governance must include climate adaptation policies, involving migrant communities and recognising indigenous knowledge.

Source: Author's Literature Survey

3 Discussion

The continuing climate change drives people to migrate, mainly in the poorer countries where poverty and weak government make the situation more difficult for the climate

refugees. This type of migration involves people leaving their homes due to environmental changes like climate change, sea level rise or adverse weather. It affects the economically vulnerable in societies living near the ocean who depend on delicate environmental resources. In this situation, circular migration motivated by climate change is unfolded as an opportunity to embrace appropriateness as it helps the people or society move between places and their places.

Most investigative assessments fail to find solutions to climate change and human migration due to the late operationalisation of politically naïve definitions for the people residing within the environment. The existing migration system and policies are highly proactive and reactive, resulting in negative impacts or solutions to prevailing conditions of vulnerability. Migrants whose socio-economic status puts them at the lower level are usually politically invisible and are void of political patronage, aggravating their social or economic deterioration. There is no rational ordering of policies to this means of moving. Hence, there are conflicts when they migrate to and fro (Koser, 2010).

This scholarly article maintains that effective policies like engaging citizens in inclusive and pre-emptive spatial planning can help in averting the challenges posed by the issue of climate change-induced migration and instead using them to enhance regional development. Promotion of healthy practices such as incorporating climate migration within national and local development plans subject government support to infrastructure development, provision of land and housing for the incoming sods, and provision of key employment to both the sending and receiving regions. In this respect, spatial planning has turned out to be an anticipatory mechanism for controlling the pattern of migration flows, alleviating the pressure of development in the cities and conserving the environment in both rural and urban centers (Matias, 2017).

The author of this paper contributes to this debate by addressing the need to understand climate migration through a broader lens and particularly through the acknowledgement of the fact that climate migrants are not just passive victims but rather active participants who come with existing ecological restoration knowledge and practices that are useful. Migrants usually actively seek new occupants of the land and applicable skills for other beneficial activities such as environmental protection more than the native people within, which is beneficial in marketing spatial and economic visions. In this regard, climate-related Indigenous knowledge, for example, the management of fisheries or deer means helps promote the building of people's resilience to climate change, empower the communities to manage and protect their cultural resources, and enhance their sense of cultural and personal identity.

4 The proposed framework of "Define – Include – Recognise

The proposed "Define – Include – Recognise" framework offers a structured approach to addressing climate-induced circular migration. First, by providing a universal definition for environmentally displaced people, the framework seeks to improve the visibility and legitimacy of climate migrants in policy discussions. A clear definition will facilitate the development of legal protections and ensure that these populations are recognised in national and international migration frameworks.

Second, by including environmental migration in spatial planning policies, governments can pre-emptively design migration routes, build climate-resilient infrastructure, and develop urban centres that accommodate fluctuating migration patterns without compromising sustainability. This proactive approach is particularly vital in coastal regions of the Global South, where sea level rise and extreme weather events are displacing millions of people.
Finally, recognising the value of community-based strategies and integrating traditional knowledge into planning processes allows policymakers to tap into the resilience and adaptability of migrant communities (Smirnov et al., 2023). By empowering local communities to participate in planning decisions, governments can ensure that migration policies are contextually relevant and responsive to the needs of vulnerable populations. This also fosters a sense of ownership among migrants, enabling them to actively contribute to the regeneration of ecosystems and rural development strategies.

Table 3: Define – Include – Recognise

Framework Component	Key Focus	Challenges Addressed	Proposed Solutions	Implications for Spatial Planning
Define	Establishing a universal definition for environmentally displaced populations (EDP).	Lack of legal recognition and legitimacy of climate migrants.	Develop a globally accepted definition that includes the interconnections between climate change, environmental degradation, and migration.	Provides legal clarity and recognition for climate migrants, improving their visibility in policy frameworks and ensuring targeted interventions.
Include	We are integrating climate-induced migration into national and local spatial planning policies.	Migration management is often reactive, focused on post-impact responses.	Incorporate environmental migration into spatial planning policies, addressing land use, infrastructure, housing, and economic development to accommodate circular migration patterns.	Creates climate-resilient infrastructure, balanced urbanisation, and land management that accounts for migration pressures and environmental sustainability.
Recognise	Recognising the value of	Marginalisation of migrant	Empower migrant	Fosters social cohesion protects

	community-based strategies and traditional knowledge in migration planning.	communities and loss of traditional knowledge.	communities to participate in decision-making processes and leverage their traditional knowledge to enhance climate resilience and contribute to regional development.	cultural heritage and integrates traditional practices into planning processes, ensuring contextually relevant solutions.

Source: Author's Literature Survey

To summarise, if there are thoughtful considerations regarding spatial planning and multi-level governance, climate-induced climate migration can be used as a positive development. This paper calls for further regional action, which aims at addressing not only the humanitarian issues of the migrants but also the enhancement of climate resilience by endorsing the indigenous peoples' knowledge. If the "Define – Include – Recognise" paradigm is embraced, governments in the Global South will pave ways for climate-displaced people to prosper within broader conservation, social cohesion, and regional development objectives. It changes the approach of viewing migration to be managed as a problem to viewing it as an opportunity to build up and sustain resilience and development to climate change.

5 Conclusion

The issue of climate change and its effects, such as the migration of people, will bring more difficulties to address for developing Asian nations, requiring novel approaches that consider sustainable and social development. Finding ways to "climate-induced circular migration" through policy formulation will also help manage space, traditional knowledge, and local community xenophobia in combating climate change, migration and regional development policies. The framework 'Define – Include – Acknowledge' stresses quick and comprehensive action on climate-induced migration while bringing in the key aspects of participation, power dynamics and building competent societies. By connecting, policymakers, communities and stakeholders can work to ensure that the future is sustainable and resilient.

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