Impact Factor (SJIF): 6.126 E-ISSN: 2583-1615

International Journal of Research in Academic World

Received: 12/February/2025 **IJRAW:** 2025; 4(3):67-72 **Accepted:** 18/March/2025

Climate-Induced Migration: Challenges and Policy Responses

[*1]Dr. Sushila Sahu

[*1]Department of English, Yashwant Raw Meghwale Government College, Magarlod, Dhamtari, Chhattisgarh, India.

Abstract

The study investigates climate-induced migration along with its many causes and effects and obstacles and solutions at government level. Climate change prompts population movement because of both extended processes of sea-level rise and desertification together with extreme events such as hurricanes and floods and this migration primarily affects communities that produced minimal greenhouse gas emissions. This paper evaluates the connections between climate change effects on human displacement patterns while also demonstrating failures in present protective standards and surveying resilience improvement solutions and developing complete policy solutions. Both environmental conditions and socioeconomic factors united with political variables control the migration choices making a wide range of mobility patterns that strongly affect both origin and host communities. Three major obstacles exist in the present refugee framework with insufficient financial resources for adaptation and managed retreat and political opposition rising because of security-focused rhetoric. Through detailed analyses of Hondurian, Bangladeshi and Pacific Island communities the author examines multiple policy strategies which unite preventive and adaptive plans with protective measures. The necessary policy solutions for climate change involve international legal developments along with community-managed relocation plans and financial preparedness schemes and unified government management programs that perceive migration as both an adaptation strategy and a response to challenges. The paper establishes key research guidelines and policy approaches to improve climate mobility responses through support of affected communities' self-determinacy while safeguarding their protection in an unstable climate environment.

Keywords: Climate-induced migration, environmental displacement, adaptation governance, planned relocation, climate vulnerability.

Introduction

Climate change established itself as a major global crisis of this century because it generates huge effects on human mobility and population migration (Niva *et al*., 2023) [35]. Rising oceans and harsh weather conditions combined with long-lasting droughts push populations toward relocations that happen either within their country or across international borders. The dependent relation of environmental stressors with social economic and political elements leads to climate-induced migration which needs fast-response policies from scholars along with international organizations (Niva *et al*., 2023) [35].

Studies project dramatic growth of climate-induced migration between 200 million and 1 billion people likely to occur because of climate change during the next fifty years. Climate-induced displacement creates multiple difficulties for both sending and receiving areas that result in severe infrastructural stress and resource conflicts together with possible battles and insufficient legal protections for migrated persons (Prior, 2022) [39]. Low-income nations face the worst effects of environmental impacts while their most vulnerable populations have contributed minimally to the global emissions since their populations relocate due to climate change (Rasmussen, 2023) [40].

The research analyzes difficulties of climate-caused population migration while exploring policies that could help at local, national and international levels (Stojanov *et al*., 2021) [43]. The research explores the following critical aspects:

i). Investigates the data about climate change impacts on human migration patterns and
ii). Recognizes loopholes in present laws and institutions and
iii). Evaluates new methods to protect vulnerable populations and
iv). Develops integrated guidelines through mitigation strategies combined with adaptation approaches along with controlled relocations and protection provisions (Malaker *et al*., 2022) [30].

The paper advances our understanding of societal responses by effectively addressing present objectives in managing one of today's essential global challenges while fostering equity in solutions (Cebrián-Piqueras *et al*., 2023) [15].

Drivers of Climate-Induced Migration

Multiple environmental factors which both develop gradually and manifest suddenly force people to migrate because these factors compromise their basic security and self-sufficiency (Li & Samimi, 2022) [28]. Slow-onset drivers of migration

***Corresponding Author:** Dr. Sushila Sahu

consist of rising sea levels which endanger coastal dwellers and small island nations as well as land degradation that reduces food production and limited water resources that affect drinking water supply and irrigation needs and altered rainfall patterns that challenge conventional agricultural practices (Malaker *et al*., 2022) [30]. Sudden environmental events like hurricanes and floods and wildfires and heatwaves immediately force population displacement by demolishing residential properties and municipal facilities as well as economic structures. These environmental stressors cause different degrees of impact across the world where sub-Saharan Africa together with South Asia and low-lying coastal areas suffer the most although they produce minimal greenhouse gas emissions (Hunter *et al*., 2020) [22].

The environmental factors rarely act independently because they join existing social economic and political forces which lead people to decide about migration (Li & Samimi, 2022) [28]. Environmental changes intensify their impact because households lack sufficient economic stability and cannot shift to non-climate-dependent lifestyles nor do they have adequate social welfare programs. The vulnerability increases due to poor governance which leads to inadequate disaster risk management and weak institutions and limited access to adaptation resources (Yarveysi *et al*., 2023) [45]. Also, insecure land tenure continues to worsen the situation. Population growth together with urbanization pressures resources to the limit while commanding extensive infrastructure requirements from climate-affected regions thus creating multiple vulnerabilities that make migration stand as an essential adaptation measure (Balsari *et al*., 2020) [13].

A household migrates based on both push elements from their existing location along with pull elements from potential destinations which they evaluate through their internal capabilities and social ties (Balsari *et al*., 2020) [13]. Low-income groups do not possess sufficient capabilities to undertake secure planned relocation or implement technological solutions for adaptation because they lack basic migration resources so they stay in unsafe environments (Shah *et al*., 2023) [41]. People who have intermediate wealth levels together with well-developed social ties usually choose to move ahead of deteriorating environmental conditions through proactive migration. Several migration patterns emerge as a result of environmental changes including short-term and year-round movements and steady population shifts between rural areas and cities across national borders requiring diverse policy solutions to solve climate-related migration issues (Niva *et al*., 2023) [35].

Impacts of Climate-Induced Migration

The movement of people due to climate change causes deep and diverse effects throughout the regions of departure and transit as well as settlement areas leading to transformations in political and economic systems and social infrastructure in various dimensions (Stojanov *et al*., 2021) [43]. Migration from origin areas leads to demographic problems through the loss of working-age individuals and the meltdown of traditional knowledge systems and changes in local communities (Mandal *et al*., 2023) [31]. The monetary support from migrating workers brings essential funds for survival but the departure of senior professionals and young adults can slow down regional growth and weaken the capacity to adapt. Female family members bear multiple duties following male family migration yet they experience limited mobility because of traditional norms and caregiving work and security hazards during displacement (Pardede & Mulder, 2021) [37].

The quick influx of ecological migrants into urban developing country locations often creates problems because it exceeds capacity limitations across infrastructure along with service delivery networks (Huque *et al*., 2020) [23]. Areas that serve as informal settlements usually grow toward spaces known for their environmental vulnerability such as flood-prone territory or unstable mountain slopes leading to fresh disaster hazards (Malaker *et al*., 2022) [30]. Rising compensation gaps with decreased worker benefits affect labour markets and service competition leads to increased societal conflicts between new residents and existing residents. The situation of climate migrants worsens when they migrate between countries since international laws do not grant refugee status and alongside this arise legal protection gaps and language difficulties and xenophobic attitudes (Huang *et al*., 2021) [21].

The massive movement of people because of climate change directly affects regional stability and international relationships in areas which host large migratory flows (Bahar & Dooley, 2020) [12]. Resource competition in immigration regions intensifies current religious and ethnic disputes which leads to instability in unstable political situations (Balsari *et al*., 2020) [13]. International migration patterns create tension in diplomatic relations mainly due to different neighbouring countries' capabilities to receive migrants and organizational differences in their migration management systems. Finish the following sentence. Global climate migration hotspots generate intersecting effects which damage international supply systems alongside redistributing workforces and remittances worldwide yet prompt the urgent need for worldwide multilateral strategies that manage short-term relief together with long-term systems' adaptations (Beltran, 2023) [14].

Challenges in Addressing Climate-Induced Migration

The movement of people due to climate change causes deep and diverse effects throughout the regions of departure and transit as well as settlement areas leading to transformations in political and economic systems and social infrastructure in various dimensions (Stojanov *et al*., 2021) [43]. Migration from origin areas leads to demographic problems through the loss of working-age individuals and the meltdown of traditional knowledge systems and changes in local communities (Mandal *et al*., 2023) [31]. The monetary support from migrating workers brings essential funds for survival but the departure of senior professionals and young adults can slow down regional growth and weaken the capacity to adapt. Female family members bear multiple duties following male family migration yet they experience limited mobility because of traditional norms and caregiving work and security hazards during displacement (Pardede & Mulder, 2021) [37].

The quick influx of ecological migrants into urban developing country locations often creates problems because it exceeds capacity limitations across infrastructure along with service delivery networks (Huque *et al*., 2020) [23]. Areas that serve as informal settlements usually grow toward spaces known for their environmental vulnerability such as flood-prone territory or unstable mountain slopes leading to fresh disaster hazards (Malaker *et al*., 2022) [30]. Rising compensation gaps with decreased worker benefits affect labour markets and service competition leads to increased societal conflicts between new residents and existing residents. The situation of climate migrants worsens when they migrate between countries since international laws do not grant refugee status and alongside this arise legal protection gaps and language difficulties and xenophobic attitudes (Huang *et al*., 2021) [21].

The massive movement of people because of climate change directly affects regional stability and international relationships in areas which host large migratory flows (Bahar & Dooley, 2020) [12]. Resource competition in immigration regions intensifies current religious and ethnic disputes which leads to instability in unstable political situations (Balsari *et al*., 2020) [13]. International migration patterns create tension in diplomatic relations mainly due to different neighbouring countries' capabilities to receive migrants and organizational differences in their migration management systems. Finish the following sentence. Global climate migration hotspots generate intersecting effects which damage international supply systems alongside redistributing workforces and remittances worldwide yet prompt the urgent need for worldwide multilateral strategies that manage short-term relief together with long-term systems' adaptations (Beltran, 2023) [14].

A crucial barrier to dealing with climate migration stems from insufficient legal and normative rules that exist between national and international institutions. The modern systems to protect refugees founded on the 1951 Refugee Convention lack specific environmental criteria which establish refugee status thus denying legal protection to climate-displaced populations (Cebrián-Piqueras *et al*., 2023) [15]. Millions of people relocated by climate change find their legal protection incomplete because the Global Compact for Migration along with the Platform on Disaster Displacement maintain voluntary status with widespread uneven implementation across countries (Lanjouw, 2021) [27]. This protection gap faces additional complexity because it is hard to separate environmental factors responsible for migration from other drivers thereby creating definitional issues that affect policy response effectiveness. Climate mobility remains unintegrated because different governing institutions responsible for climate change mitigation and disaster response along with development and migration governance continue to have ambiguous jurisdictional responsibilities making their approaches disjointed (Farbotko, 2023) [17].

The lack of funds together with insufficient resources makes it challenging to create effective responses mostly in developing nations where climate impacts are most severe (MIGRATION, AGRICULTURE, 2023) [33]. The insufficient financial support for adaptation measures that can stop forced migrations continues since developed countries fail to deliver their $100 billion climate finance commitment annually to developing nations (Magistro *et al*., 2024) [29]. Programs that focus on managed retreat and planned relocation require minimal funding due to land purchase expenses combined with infrastructure building expenses and social integration initiatives. The financial ability of migrant host areas remains limited to cover new costs of providing services to handle increased populations particularly during disaster emergency responses. The money shortage for climate migration programs becomes worse because national budgets and worldwide development agendas choose to solve urgent problems instead of thinking about migration issues (Balsari *et al*., 2020) [13].

Political and social resistance acts as a major challenge because nationalist movements and strict immigration rules limit available policy choices in various host nations (Guliyeva *et al*., 2021) [19]. The public misconception of climate migrants as security risks leads countries to adopt border restrictions which might drive migrants towards riskier migration routes. Local communities resist state-led relocation programs because they harbour strong ties to their homelands while struggling with economic challenges and they do not trust temporary relocation programs which previous governments have executed poorly in terms of preventing them from becoming separated from their cultural heritage or obtaining economic stability (O'Brien & Bobongie-Harris, 2023) [36]. The implementation of even well-made policy frameworks faces resistance which intensifies because of governance problems such as corruption and insufficient inter-sector and multi-level government coordination and limited institutional capacities thus damaging affected communities' trust in official response systems (Khan *et al*., 2022; Newiak *et al*., 2022) [26, 34].

Policy Responses to Climate-Induced Migration

A proper policy solution to climate-induced migration needs extensive multileveled governance and should combine preventive along with adaptive and protective measures (Cebrián-Piqueras *et al*., 2023) [15]. There is present international activism to enhance legal safeguards through regional institutions such as the Platform on Disaster Displacement and the African Kampala Convention that include climate displacement recognition. Fiji together with New Zealand lead other nations by implementing humanitarian visas to help climate-displaced people while providing guidelines for their relocation which encourages both cultural and community involvement (Hidalgo *et al*., 2021) [20]. Memory serves as a blueprint for national policies which centre on developing resilient communities through primitive financial instruments as well as climate-proofed construction and various self-sustainability programs along with sophisticated forecasting systems to diminish migratory stress. Planned migration pathways created through labour mobility schemes together with educational opportunities and skills partnerships between countries allow forced migrants to transition into dignified planned mobility which supports both migrants and host communities (Das, 2020) [16].

The best policies work from a framework which provides rights-based integrated solutions because they understand climate migration represents both an adaptation measure and an upcoming challenge (Simpson *et al*., 2024) [42]. Such approaches unite policies across different sectors to deal with root causes as they simultaneously prepare the way for future population movements. Because of their success Medellín Colombia and Surat India have become examples for cities worldwide regarding their implementation of planning approaches which incorporate migrant requirements into urban resilience planning (Jain & Jehling, 2020) [24]. The combination of international climate funds and development assistance and private sector investments together with domestic resources can be achieved by resilience bonds and forecast-based financing to perform proactive instead of reactive crisis management. For success the affected communities need to actively participate in decision-making while their traditional knowledge and cultural relations with territories guide policies toward mobile alternatives beyond adaptation limits. The approach makes implementation easier by strengthening community involvement which results in better trust and local participating while delivering services that fit local needs better than outside-prescribed solutions (Kamau, 2022) [25].

Table 1: Case Studies of Climate-Induced Migration

Citation	Location	Key Remarks
Wrathall *et al*. (2019) [10]	Honduras	The research observed how Hurricane Mitch (1998) set off migration patterns which continued for numerous decades. The study established a direct link between disaster-related migration and household socioeconomic status and personal social support connections before the hurricane occurred. The likelihood for households with cross-border ties to choose international migration increased significantly.
Rigaud *et al*. (2018) [8]	Sub-Saharan Africa, South Asia, Latin America	The World Bank predicts through their Groundswell report that under pessimistic circumstances these regions will have 143 million people migrating internally by 2050. The report has pinpointed vulnerable areas for climate migration followed by proof that implementing development strategies could lower migration rates by up to 80%.
Cattaneo & Peri (2016) [4]	Global (155 countries)	The rise in temperatures led to population movement between middle-income economies rather than low-income countries which indicates that poverty serves as a barrier for people to move during environmental stress.
McMichael *et al*. (2021) [7]	Fiji	Experts recorded the process through which communities initiated their own relocate initiatives when facing sea-level rise. The analysis also covered cultural aspects of retreat which explained departure rituals from ancestral territories and barriers to social unity following relocation.
Ayeb-Karlsson *et al*. (2020) [2]	Bangladesh	The research utilized Q-methodology to understand subjective feelings of immovable residents who face frequent flooding. The research uncovered non-economic migration obstacles which combined place attachment with sociocultural norms and gender restrictions preventing vulnerable people from leaving their hazardous areas.
Sedova & Kalkuhl (2020) [9]	Indonesia	Researchers studied the permanent effects of drought events on rural-urban migration through time. The research discovered that prolonged agricultural productivity decreases created substantial population shifts to urban areas depending on land property security and family background.
De Sherbinin *et al*. (2023) [5]	Caribbean Small Island Developing States	This study investigated migration functions as a strategic response to hurricane areas. Population migration increased after disasters occurred while residents also adapted their locations by using remittance funds to improve housing and infrastructure.
Heslin *et al*. (2019) [6]	Syria	The research studied the connections which developed between drought in the pre-war era and both rural-urban migration and resulting conflicts. The analysis explored government policymaking combined with social inequality systems in order to refute simple explanations of "climate-conflict-migration" processes.
Adger *et al*. (2021) [1]	Vietnam Mekong Delta	Spate-onset salinization has changed the nature of rice farming communities as documented in research which explains the development of planned seasonal migration for preserving communal connections across urban-rural livelihood areas.
Boas *et al*. (2019) [3]	Multiple global regions	The analysis of migration at various research sites debunked widespread notions about widespread climate-induced border crossings. Research findings indicate that internal evolution of migration patterns occurs before external international relocation takes place.

Future Directions for Research and Policy

The research about climate-induced migration needs to solve several essential problems which will support more efficient policy responses. Research data collection methods must be improved to track migration behavior in areas affected by climate change through time-based studies supported by mobile phone data and images obtained from space. Studies should surpass basic climate-migration relationship discoveries by evaluating different intervention methods to determine effective adaptation strategies that lower displacement risks as well as analyzing mobility initiatives that lead to positive results for migrants and host communities (Fielmua *et al*., 2017; Marotzke *et al*., 2020) [18, 32]. Further research needs to explore how climate mobility affects distinct population sectors ranging from women to elderly citizens and disabled individuals along with low-income groups due to the varying strengths between risks and adaptability capabilities. The combination of multiple academic fields including climate science with migration studies and development economics and cultural anthropology enables better comprehension of regulatory aspects in migration selections that transcend economic dimensions. Emerging research must determine the specific thresholds that indicate the failure of in-situ adaptation as well as the point at which managed retreat measures become essential for policymakers to determine proper intervention times (Adger *et al*., 2024) [11].

Multiple progressive policy advances need to develop simultaneously to solve the complex problems of climate mobility. At both international and national levels the existing legal frameworks need transformation to include modern protection instruments for climate-displaced people or create additional complementary protection routes in existing migration systems (Stojanov *et al*., 2021) [43]. The funding instruments must adapt to implement anticipatory measures instead of emergency relief programs which create proactive adaptation systems for planned relocation and dignified migration contexts. Forecast-based financing and catastrophe bonds alongside climate insurance schemes need to expand on a large scale. The solution demands policy unity between separate fields even though they operate independently—these consist of climate adaptation, disaster risk reduction, urban planning and migration governance. The need for institutional changes can bridge these approaches effectively (Cebrián-Piqueras *et al*., 2023; Petzold *et al*., 2023) [15, 38]. The future needs to base its policy making on acknowledging climate migrants as actors who possess knowledge and capabilities rather than treating them as helpless victims. Participatory governance systems must be developed to include meaningful involvement of climate-vulnerable people

within planning processes which also protect their rights to movement together with their protection needs in our climate-disrupted world (Cebrián-Piqueras *et al*., 2023; Wray *et al*., 2023) [15, 44].

Conclusion

Environmental change forces populations to move a challenge that connects environmental changes to human movements and development sustainability in unpredictable ways. Environmental factors drive migration based on their gradual changes combined with unexpected shifts which are worsened by existing social inequalities as well as inadequate governmental leadership. Climate-induced migration creates effects that spread across three sections: the places from which people move, transit areas and the locations where they relocate which disbalance communities while eroding social bonds and economic strength and political security structures. The resolution of these problems demands elaborate solutions because protection gaps exist in laws, resources are limited and governments resist action. Governance levels now develop promising policies through international initiatives such as the Platform on Disaster Displacement and innovative strategies like the planned relocation guidelines of Fiji and at city level including communities. Effective solutions to climate migration derive from understanding migration as a challenge to adaptation as well as a survival strategy and by combining climate and mobility governance systems and engaging affected communities in decision-making throughout implementation. Worthy progress in climate change mitigation requires researchers to address intervention effectiveness along with distributing vulnerability data and building legal safeguards and financial preparedness systems that uphold mobile populations' rights and autonomy.

References

1. Adger WN, Crépin AS, Folke C, Ospina D, Chapin FS, Segerson K & Walker B. Urbanization and migration as adaptations to socio-environmental shocks in Vietnam. Proceedings of the National Academy of Sciences. 2021; 118(22):e2023358118.
2. Ayeb-Karlsson S, Kniveton D & Cannon T. Trapped in the prison of the mind: Notions of climate-induced (im) mobility decision-making and wellbeing from an urban informal settlement in Bangladesh. Palgrave Communications. 2020; 6(1):1-15.
3. Boas I, Farbotko C, Adams H, Sterly H, Bush S, van der Geest K & Hulme M. Climate migration myths. Nature Climate Change. 2019; 9(12):901-903.
4. Cattaneo, C., & Peri, G. (2016). The migration response to increasing temperatures. *Journal of Development Economics*, 122, 127-146.
5. De Sherbinin A, Bergmann J, Clement V, Hering J & Vinke K. Climate mobility in the Caribbean: Adaptation strategy or failure? Current Opinion in Environmental Sustainability. 2023; 61:101259.
6. Heslin A, Deckard ND, Oakes R & Montero-Colbert A. Displacement and resettlement: Understanding the role of climate change in contemporary migration. In Research Handbook on Climate Change Adaptation Policy. Edward Elgar Publishing, 2019, 382-401.
7. McMichael C, Katonivualiku M & Powell T. Planned relocation and everyday agency in low-lying coastal villages in Fiji. *The Geographical Journal*. 2021; 187(4):315-328.
8. Rigaud KK, de Sherbinin A, Jones B, Bergmann J, Clement V, Ober K & Midgley A. Groundswell: Preparing for internal climate migration. World Bank, Washington, DC, 2018.
9. Sedova B & Kalkuhl M. Who are the climate migrants and where do they go? Evidence from rural India. World Development. 2020; 129:104848.
10. Wrathall DJ, Mueller V, Clark PU, Bell A, Oppenheimer M, Hauer M & Davis J. Meeting the looming policy challenge of sea-level change and human migration. Nature Climate Change. 2019; 9(12):898-901.
11. Adger WN, Fransen S, Campos RS de, & Clark WC. Migration and sustainable development. In Proceedings of the National Academy of Sciences, 2024, 121(3). National Academy of Sciences. https://doi.org/10.1073/pnas.2206193121
12. Bahar D & Dooley M. Refugees as assets not burdens: the role of policy, 2020. https://apo.org.au/node/274811
13. Balsari S, Dresser C & Leaning J. Climate Change, Migration, and Civil Strife [Review of Climate Change, Migration, and Civil Strife]. Current Environmental Health Reports. 2020; 7(4):404. Springer Science+Business Media. https://doi.org/10.1007/s40572-020-00291-4
14. Beltran P. Climate and Cross-Border Migration. In IMF Working Paper, 2023, (250), 1. International Monetary Fund. https://doi.org/10.5089/9798400261879.001
15. Cebrián-Piqueras MA, Palomo I, Lo V, López-Rodríguez MD, Filyushkina A, Fischborn M, Raymond CM & Plieninger T. Leverage points and levers of inclusive conservation in protected areas. In Ecology and Society, 2023, 28(4). Resilience Alliance. https://doi.org/10.5751/es-14366-280407
16. Das M. History of Darjeeling District Migration between 1872-2011. *In Journal of advances in social science and humanities*. 2020; 6(9):1302. https://doi.org/10.15520/jassh.v6i9.531
17. Farbotko C. Best Practices for Addressing the Legal and Policy Challenges of Climate Mobility, 2023. https://www.unicef.org/globalinsight/reports/best-practices-addressing-legal-and-policy-challenges-climate-mobility
18. Fielmua N, Dugle G & Mwingyine DT. Migration as an Adaptation Strategy to Climate Change: Influencing Factors in North-western Ghana. *In Journal of Sustainable Developmen.* 2017; 10(6):155. Canadian Center of Science and Education. https://doi.org/10.5539/jsd.v10n6p155
19. Guliyeva A, Averina L. Yu., Grebennikov OV & Shpakov AĖ. Regional gap in human capital: determinants of education and urbanization. In E3S web of conferences, 2021, 301, 3004). EDP Sciences. https://doi.org/10.1051/e3sconf/202130103004
20. Hidalgo DM, Nunn PD, Beazley H, Sovinasalevu JS & Veitayaki J. Climate change adaptation planning in remote contexts: insights from community-based natural resource management and rural development initiatives in the Pacific Islands. In Climate and Development. 2021; 13(10):909. Taylor & Francis. https://doi.org/10.1080/17565529.2020.1867046
21. Huang B, Ma Y, Ruan J & Tang J. Research on Legal Regulation of the UNSC's addressing the Issue of Climate Refugees. In Advances in Social Science, Education and Humanities Research/Advances in social

science, education and humanities research, 2021. https://doi.org/10.2991/assehr.k.211220.288
22. Hunter N, North MA, Roberts D & Slotow R. A systematic map of responses to climate impacts in urban Africa. In Environmental Research Letters. 2020; 15(10):103005). IOP Publishing. https://doi.org/10.1088/1748-9326/ab9d00
23. Huque S, Pattanaik S & Parthasarathy D. Cityscape Transformation and the Temporal Metamorphosis of East Kolkata Wetlands: A Political Ecology Perspective. In Sociological bulletin/Sociological Bulletin. 2020; 69(1):95. SAGE Publishing. https://doi.org/10.1177/0038022919899020
24. Jain M & Jehling M. Urban cycle models revisited: Insights for regional planning in India. In Cities, 2020, 107, 102923). Elsevier BV. https://doi.org/10.1016/j.cities.2020.102923
25. Kamau G. ICT4D Research in Developing Countries: A Call for Pragmatism Approach. *In International Journal of Computer and Information System (IJCIS)*. 2022; 3(2):51. https://doi.org/10.29040/ijcis.v3i2.67
26. Khan M, Parvaiz GS, Abbas A, Jehangir M, Hassan NA & Bae J. A Model for Understanding the Mediating Association of Transparency between Emerging Technologies and Humanitarian Logistics Sustainability. In Sustainability. 2022; 14(11):6917. Multidisciplinary Digital Publishing Institute. https://doi.org/10.3390/su14116917
27. Lanjouw A. De-colonizing conservation in a global world. *In American journal of primatology,* 2021, 83(4). Wiley. https://doi.org/10.1002/ajp.23258
28. Li Q & Samimi C. Sub-Saharan Africa's international migration constrains its sustainable development under climate change. In Sustainability Science. 2022; 17(5):1873. Springer Science+Business Media. https://doi.org/10.1007/s11625-022-01116-z
29. Magistro B, Abramson C, Ebanks D, Debnath R & Alvarez RM. Identifying American climate change free riders and motivating sustainable behavior. In Scientific Reports, 2024, 14(1). Nature Portfolio. https://doi.org/10.1038/s41598-024-57042-w
30. Malaker T, Islam L & Das S. Reason behind Living in a Disaster-Prone Coastal Region: A case study on Sarankhola Upazila, Bangladesh. *In International journal of humanities, social sciences and education*, 2022, 9(7), 1. https://doi.org/10.20431/2349-0381.0907001
31. Mandal B, Pradhan KC, Mohanty P & Muhammad T. Migration status, physical limitations and associated self-rated health: a study of older Indian adults. In BMC Geriatrics, 2023, 23, 1. BioMed Central. https://doi.org/10.1186/s12877-023-04002-0
32. Marotzke J, Semmann D & Milinski M. The economic interaction between climate change mitigation, climate migration and poverty. In Nature Climate Change, 2020, 10, 6, 518). Nature Portfolio. https://doi.org/10.1038/s41558-020-0783-3
33. Migration, agriculture, 2023. http://www.fao.org/3/I8297EN/i8297en.pdf
34. Newiak M, Wane AA & Segura-Ubiergo A. Good Governance in Sub-Saharan Africa. In International Monetary Fund eBooks. International Monetary Fund, 2022. https://doi.org/10.5089/9781513584058.071
35. Niva V, Horton A, Virkki V, Heino M, Kosonen M, Kallio, M., Kinnunen, P., Abel, G., Muttarak, R., Taka, M, Varis O & Kummu M. World's human migration patterns in 2000–2019 unveiled by high-resolution data. In Nature Human Behaviour, 2023, 7(11). Nature Portfolio. https://doi.org/10.1038/s41562-023-01689-4
36. O'Brien G & Bobongie-Harris F. Revitalization of First Nations languages: a Queensland perspective. In The Australian journal of language and literacy. 2023; 46(2):183). Springer Nature. https://doi.org/10.1007/s44020-023-00036-4
37. Pardede EL & Mulder CH. The roles of family resources and family structure in moving from the parental home and village among young Indonesians. In Population Space and Place, 2021, 28(1). Wiley. https://doi.org/10.1002/psp.2535
38. Petzold J, Hawxwell T, Jantke K, Gresse EG, Mirbach C, Ajibade I, Bhadwal S, Bowen K, Fischer AP, Joe ET, Kirchhoff C, Mach KJ, Reckien D, Segnon AC, Singh C, Ulibarrí N, Campbell D, Crémin É, Färber L, Garschagen M. A global assessment of actors and their roles in climate change adaptation. In Nature Climate Change. 2023; 13(11):1250. Nature Portfolio. https://doi.org/10.1038/s41558-023-01824-z
39. Prior HM. How Can Music Help Us to Address the Climate Crisis? In Music & Science, 2022, 5. *SAGE Publishing*. https://doi.org/10.1177/20592043221075725
40. Rasmussen JB. Advancing Environmental Justice through the Integration of Traditional Ecological Knowledge into Environmental Policy. In Challenges, 2023, 14(1), 6. Multidisciplinary Digital Publishing Institute. https://doi.org/10.3390/challe14010006
41. Shah SH, Harris LM, Menghwani V, Stoler J, Brewis A, Miller, JD, Workman CL, Adams EA, Pearson AL, Hagaman A, Wutich A & Young SL. Variations in household water affordability and water insecurity: An intersectional perspective from 18 low-and middle-income countries. In Environment and Planning F. 2023; 2(3):369). SAGE Publishing. https://doi.org/10.1177/26349825231156900
42. Simpson NP, Mach KJ, Tebboth M, Gilmore EA, Siders AR, Holden PB, Anderson B, Singh C, Sabour S, Stringer LC, Sterly H, Williams PA, Meyer ALS, Cundill G, Rosengaertner S, Nunow A, Amakrane K & Trisos CH. Research priorities for climate mobility. In One Earth. 2024; 7(4):589. Elsevier BV. https://doi.org/10.1016/j.oneear.2024.02.002
43. Stojanov R, Rosengaertner S, Sherbinin A. de, & Nawrotzki R. Climate Mobility and Development Cooperation [Review of Climate Mobility and Development Cooperation]. Population and Environment. 2021; 43(2):209. Springer Science+Business Media. https://doi.org/10.1007/s11111-021-00387-5
44. Wray B, Veidis E, Flores EC, Phillips AA, Alani O & Barry M. A Call to Action for Gender Equity in Climate Leadership. *In American Journal of Tropical Medicine and Hygiene*. 2023; Vol. 108(6):1088). American Society of Tropical Medicine and Hygiene. https://doi.org/10.4269/ajtmh.22-0674
45. Yarveysi F, Alipour A, Moftakhari H, Jafarzadegan K & Moradkhani H. Block-level vulnerability assessment reveals disproportionate impacts of natural hazards across the conterminous United States. In Nature Communications, 2023, 14(1). Nature Portfolio. https://doi.org/10.1038/s41467-023-39853-z.