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Human Rights, Climate Migration, and Digital Identification Systems: A Qualitative Inquiry into Legal Policy Challenges

Tanveer Tajuar Jonak¹; Rabeya Sultana Raka¹;
Tanjila Rehan Tanha¹; Tanjia Akter Jinu¹; Mahenaz
Akter¹; Kazi Abdul Mannan²

¹Department of Law, ²Professor, Department of Business Administration, Shanto-Mariam University of Creative Technology, Dhaka, Bangladesh

Corresponding Author: Tanveer Tajuar Jonak, Email: tajuar17@gmail.com

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Abstract

Climate change is increasingly driving large-scale human displacement, creating complex challenges at the intersection of human rights, migration governance, and digital technology. This study examines the legal and policy implications of climate-induced migration in relation to the growing use of digital identification systems. Drawing on a qualitative methodology based on secondary data, the research analyses international legal frameworks, human rights principles, and digital governance practices. The findings reveal significant protection gaps in existing refugee and migration laws, which fail to adequately recognise climate migrants as rights-bearing individuals. At the same time, digital identification systems, while offering opportunities for improved service delivery and inclusion, pose substantial risks related to surveillance, data misuse, and exclusion. By integrating human rights theory, mobility justice, and data governance frameworks, the study highlights the dual role of digital technologies as both enablers and potential sources of vulnerability. The article argues for a rights-based approach to climate migration governance, emphasising legal recognition, inclusive digital system design, and strengthened accountability mechanisms. Ultimately, it calls for coordinated global action to ensure that technological innovation aligns with the protection and empowerment of displaced populations.

Keywords: Climate migration; human rights; digital identification systems; data governance; mobility justice; displacement; legal policy.

1. Introduction

Climate change has increasingly emerged as one of the most significant drivers of human displacement in the twenty-first century. Rising sea levels, extreme weather events, desertification, and environmental degradation are reshaping patterns of human mobility across the globe. According to recent estimates, millions of people are displaced annually due to climate-related disasters, with projections suggesting that this number will continue to rise significantly in the coming decades (McLeman, 2013; Piguet, 2022). This phenomenon, often described as climate-induced migration, presents complex legal, political, and ethical challenges that transcend traditional frameworks of international law and governance.

Despite its growing importance, climate migration remains inadequately addressed within existing legal regimes. The 1951 Refugee Convention, which forms the cornerstone of international refugee law, does not explicitly recognise environmental or climate-related factors as grounds for refugee status. Instead, it defines refugees as individuals fleeing persecution based on specific criteria such as race, religion, nationality, membership in a particular social group, or political opinion (Gomes, 2017). As a result, individuals displaced by climate change fall into a legal grey area, often lacking formal recognition and protection under international law. This gap has led to increasing scholarly and policy debates regarding the need for new legal instruments or the reinterpretation of existing frameworks

to accommodate climate migrants (Apap & Harju, 2023; Piguet, 2022).

The human rights implications of climate-induced displacement are profound. Displacement disrupts access to basic rights, including the right to adequate housing, clean water, food security, health, and education. Vulnerable populations-particularly those in low-income and climate-sensitive regions such as South Asia and Sub-Saharan Africa-are disproportionately affected (Haque Khan, 2024). In countries like Bangladesh, where large populations live in low-lying coastal areas, climate change exacerbates existing socio-economic vulnerabilities and creates new forms of displacement both within and across national borders. The intersection of climate change and human rights thus necessitates a comprehensive approach that integrates environmental justice, social equity, and legal accountability.

At the same time, rapid advancements in digital technology are transforming the governance of migration and displacement. Digital identification systems, including biometric databases, digital ID cards, and blockchain-based identity platforms, are increasingly deployed by governments and international organisations to manage migrant populations and deliver humanitarian assistance. These systems are often promoted as tools for enhancing efficiency, transparency, and inclusion, enabling displaced individuals to access essential services such as healthcare, education, and financial support (Caribou, 2026). For instance, digital IDs can facilitate identity verification in contexts where

traditional documentation has been lost or destroyed during displacement.

However, the adoption of digital identification systems also raises significant legal and ethical concerns. Issues related to data privacy, surveillance, consent, and exclusion have become central to debates on digital governance. Migrants and displaced populations are particularly vulnerable to these risks due to their precarious legal status and limited access to legal remedies. The use of biometric data, for example, can expose individuals to surveillance and potential misuse of personal information, especially in contexts where data protection frameworks are weak or non-existent (Flaim & Nawyn, 2024). Moreover, digital identity systems may inadvertently exclude individuals who lack access to technology or who are unable to meet registration requirements, thereby reinforcing existing inequalities.

The intersection of climate migration and digital identification systems presents a unique set of challenges that require careful examination. On one hand, digital technologies offer innovative solutions for addressing the needs of displaced populations, including improved service delivery and enhanced accountability. On the other hand, they risk exacerbating vulnerabilities and undermining human rights if not designed and implemented within a robust legal and ethical framework. This duality highlights the need for a critical and interdisciplinary approach to understanding the implications of digital identity in the context of climate-induced displacement.

This study seeks to contribute to this emerging field of inquiry by exploring the legal and policy challenges at the intersection of human rights, climate migration, and digital identification systems. It adopts a qualitative research approach based on secondary data analysis, drawing on academic literature, policy reports, and legal documents. The study is guided by three central research questions: How do existing legal frameworks address the rights of climate migrants? What role do digital identification systems play in migration governance? And what legal and policy challenges arise from the integration of digital identity technologies in the context of climate migration?

By addressing these questions, the article aims to provide a comprehensive understanding of the opportunities and risks associated with digital identification systems in managing climate-induced displacement. It also seeks to highlight the need for rights-based approaches that prioritise the dignity, autonomy, and protection of affected populations. Ultimately, the study underscores the importance of aligning technological innovation with human rights principles to ensure that the benefits of digital transformation are equitably distributed and do not come at the expense of vulnerable communities.

2. Literature Review

The concept of climate migration has gained increasing attention in academic and policy discourse over the past two decades. It broadly refers to the movement of individuals or groups driven primarily by climate-related

environmental changes, including both sudden-onset disasters such as floods and hurricanes and slow-onset processes such as desertification and sea-level rise (McLeman, 2013; Piguet, 2022). However, there is no universally accepted definition of climate migration, which complicates efforts to develop coherent legal and policy responses.

Scholars have debated the extent to which climate change can be considered a primary driver of migration, as opposed to one of many interacting factors, including economic conditions, political instability, and social networks (Maretti et al., 2019). This complexity has led to the development of various terminologies, such as “environmental migrants,” “climate refugees,” and “disaster-displaced persons,” each reflecting different conceptual and normative assumptions (Gomes, 2017). While the term “climate refugee” is often used in popular discourse, it lacks legal recognition and is considered problematic by many scholars due to its potential to oversimplify the multifaceted nature of migration (Piguet, 2022).

Empirical studies have demonstrated that climate change acts as a threat multiplier, exacerbating existing vulnerabilities and influencing migration decisions in complex ways (Wu & Wang, 2018). For example, in regions affected by water scarcity or declining agricultural productivity, individuals may migrate as a coping strategy to secure livelihoods. In other cases, extreme weather events can trigger sudden displacement, forcing communities to relocate temporarily or permanently. These patterns highlight the need for a nuanced

understanding of climate migration that accounts for both environmental and socio-economic factors.

2.1 Legal Frameworks and Protection Gaps

The existing international legal framework for migration and displacement is ill-equipped to address the challenges posed by climate-induced mobility. The 1951 Refugee Convention and its 1967 Protocol remain the primary instruments governing refugee protection, but they do not explicitly include environmental or climate-related factors as grounds for asylum (Gomes, 2017). As a result, individuals displaced by climate change are generally not eligible for refugee status, leaving them without access to international protection mechanisms.

Several scholars have proposed expanding the definition of refugees to include climate migrants or developing new legal instruments specifically tailored to environmental displacement (Apap & Harju, 2023). Others argue for a more pragmatic approach, suggesting that existing human rights frameworks and regional agreements can be adapted to address the needs of climate migrants (Piguet, 2022). For example, the principle of non-refoulement, which prohibits the return of individuals to situations where their rights would be violated, has been interpreted in some cases to include environmental risks.

At the national level, policy responses to climate migration vary widely. Some countries have developed migration policies that incorporate environmental considerations, while others rely on ad hoc

measures. This fragmentation creates significant challenges for cross-border coordination and protection. Furthermore, the lack of legal recognition for climate migrants contributes to their marginalisation and vulnerability, as they often lack access to legal status, employment opportunities, and social services (Haque Khan, 2024).

2.2 Human Rights Perspectives on Climate Displacement

Human rights frameworks provide an important lens for understanding the impacts of climate migration. Displacement often results in the violation of fundamental rights, including the right to life, health, housing, and an adequate standard of living (UN, 2021). These violations are particularly acute in contexts where displacement occurs rapidly and without adequate planning or support.

The principle of universality in human rights law implies that all individuals, regardless of their legal status, are entitled to basic rights and protections. However, in practice, the realisation of these rights is often constrained by state sovereignty and resource limitations (Gomes, 2017). This tension is evident in the treatment of migrants and displaced persons, who may face discrimination, exclusion, and exploitation.

Recent scholarship has emphasised the need for a rights-based approach to climate migration that prioritises the dignity and agency of affected populations (Yaqoob Siddiqui et al., 2024). Such an approach involves integrating human rights considerations into climate adaptation and migration policies, as well as ensuring

meaningful participation of affected communities in decision-making processes. It also requires addressing structural inequalities that contribute to vulnerability, including poverty, gender inequality, and lack of access to resources.

2.3 Digital Identification Systems and Migration Governance

Digital identification systems have become an integral component of contemporary migration governance. These systems use digital technologies to establish and verify individuals' identities, often through biometric data such as fingerprints, facial recognition, or iris scans. They are widely used in humanitarian contexts to register refugees, distribute aid, and facilitate access to services (Caribou, 2026).

Proponents of digital identity systems argue that they can enhance efficiency, reduce fraud, and improve service delivery. For example, digital IDs can enable displaced individuals to access financial services, healthcare, and education, even in the absence of traditional documentation. In humanitarian settings, digital systems can streamline aid distribution and ensure that resources reach intended beneficiaries (Khaund, 2025).

However, critics highlight several risks associated with digital identity systems. One major concern is the potential for surveillance and misuse of personal data. Migrants and refugees may be required to provide sensitive biometric information without fully understanding how it will be used or shared (Flaim & Nawyn, 2024). In contexts where data protection laws are

weak, this information can be exploited by governments or third parties, potentially leading to discrimination or persecution.

Another concern is the risk of exclusion. Digital identity systems often require access to technology and infrastructure, which may not be available to all individuals. Those who are unable to register or verify their identity may be excluded from essential services, exacerbating existing inequalities (Caribou, 2026). Furthermore, technical errors or system failures can result in the denial of services, highlighting the need for robust safeguards and accountability mechanisms.

2.4 Ethical and Legal Challenges in Digital Identity

The integration of digital identity systems into migration governance raises complex ethical and legal questions. Key issues include data privacy, informed consent, accountability, and cross-border data sharing. These challenges are particularly pronounced in the context of climate migration, where individuals may move across multiple jurisdictions with varying legal frameworks.

Data privacy is a central concern, as digital identity systems often involve the collection and storage of sensitive personal information. Ensuring that this data is protected from unauthorised access and misuse is critical for safeguarding individuals' rights (Tabassum & Faklaris, 2024). Informed consent is another important issue, as migrants may not fully understand the implications of providing their data, particularly in emergencies.

Accountability and governance are also key challenges. Digital identity systems are often implemented by a combination of state and

non-state actors, including international organisations and private companies. This raises questions about who is responsible for ensuring compliance with human rights standards and addressing potential harms (Alvarez-Pallete et al., 2026).

3. Theoretical Framework

This study adopts an interdisciplinary theoretical framework that integrates human rights theory, mobility justice, digital governance, and socio-legal analysis to examine the complex intersection of climate migration and digital identification systems. The integration of these perspectives allows for a holistic understanding of how legal norms, technological systems, and power relations interact to shape the experiences of climate migrants.

3.1 Human Rights Theory

Human rights theory provides the normative foundation for this study, emphasising the universality, indivisibility, and inalienability of rights. Rooted in international legal instruments such as the Universal Declaration of Human Rights (UDHR), this framework asserts that all individuals are entitled to fundamental rights regardless of their nationality or legal status (Donnelly, 2013). In the context of climate migration, human rights theory highlights the obligation of states and international actors to protect displaced populations from rights violations, including the denial of access to housing, healthcare, and livelihood opportunities.

The application of human rights theory to climate-induced displacement underscores the inadequacy of existing legal frameworks,

which often fail to recognise climate migrants as rights-bearing subjects. Scholars argue that the principle of non-discrimination requires extending protections to all individuals affected by environmental change, regardless of whether they meet the traditional definition of a refugee (Gomes, 2017). Moreover, the concept of “human rights-based approaches” (HRBA) emphasises the need to integrate human rights principles into policy design and implementation, ensuring participation, accountability, and transparency (OHCHR, 2006).

3.2 Mobility Justice Framework

The mobility justice framework, as articulated by Sheller (2018), provides a critical lens for analysing the unequal distribution of mobility and immobility across different populations. This framework examines how power structures, including political, economic, and environmental factors, shape individuals’ ability to move and access resources. In the context of climate migration, mobility justice highlights the disparities between those who can migrate safely and legally and those who are forced into precarious or irregular migration pathways.

Climate change acts as a “mobility disruptor,” disproportionately affecting marginalised communities that lack the resources to adapt or relocate (Sheller, 2018). For instance, low-income populations in coastal regions may face displacement due to rising sea levels but lack the financial means to migrate internationally. At the same time, restrictive immigration policies in destination countries further limit their mobility options.

The mobility justice framework thus emphasises the need to address structural inequalities and ensure equitable access to mobility as a fundamental aspect of social justice.

3.3 Digital Governance and Data Justice

The rapid proliferation of digital technologies in migration governance necessitates a theoretical framework that addresses issues of data governance and digital justice. Digital governance refers to the policies, institutions, and practices that regulate the collection, use, and sharing of digital data (Kuner et al., 2020). Within this domain, the concept of data justice has emerged as a critical perspective, focusing on fairness, equity, and accountability in the design and implementation of digital systems (Taylor, 2017).

Data justice emphasises the importance of protecting individuals’ rights in digital environments, particularly in relation to privacy, consent, and data ownership. For climate migrants, who often occupy vulnerable positions, the risks associated with digital identity systems are particularly acute. Biometric data collection, for example, raises concerns about surveillance, data breaches, and misuse by state or non-state actors (Flaim & Nawyn, 2024). The principle of “dignity-by-design” advocates for the integration of human rights considerations into the development of digital technologies, ensuring that systems are designed to respect and protect users’ rights from the outset (Alvarez-Pallete et al., 2026).

Furthermore, digital governance frameworks highlight the challenges of cross-border data flows and jurisdictional inconsistencies. Climate migrants often move across multiple legal regimes, each with different standards for data protection and privacy. This fragmentation complicates efforts to ensure accountability and safeguard individuals' rights, underscoring the need for international cooperation and harmonisation of legal standards (Kuner et al., 2020).

3.4 Socio-Legal Perspective

The socio-legal perspective complements the above frameworks by examining the interaction between law, society, and technology. Rather than viewing law as a static set of rules, socio-legal scholarship emphasises its dynamic and context-dependent nature, shaped by social practices, institutional arrangements, and power relations (Banakar & Travers, 2005). This perspective is particularly relevant for understanding the implementation of digital identity systems in migration contexts, where legal norms often intersect with technological infrastructures and bureaucratic practices.

In the context of climate migration, the socio-legal approach reveals the gap between formal legal protections and lived realities. While international human rights law provides a normative framework for protecting displaced populations, its enforcement is often limited by political and institutional constraints. Similarly, digital identity systems may be governed by formal regulations, but their practical implementation can result in unintended consequences, such as exclusion or discrimination (Flaim & Nawyn, 2024).

By integrating socio-legal analysis with human rights, mobility justice, and digital governance frameworks, this study provides a comprehensive theoretical foundation for examining the legal and policy challenges at the intersection of climate migration and digital identification systems. This interdisciplinary approach enables a deeper understanding of how structural inequalities, legal gaps, and technological innovations interact to shape the experiences of climate migrants.

4. Methodology

This study employs a qualitative research design based on secondary data analysis to explore the intersection of human rights, climate migration, and digital identification systems. Qualitative research is particularly well-suited for examining complex social phenomena that involve multiple dimensions, including legal, political, and technological factors (Creswell & Poth, 2018). By focusing on in-depth analysis of existing literature and policy documents, this study aims to generate nuanced insights into the legal and policy challenges associated with climate-induced displacement and digital identity systems.

The use of secondary data allows for the synthesis of a wide range of perspectives, including academic research, policy analyses, and reports from international organisations. This approach is appropriate given the global scope of the research topic and the availability of extensive literature on climate migration and digital governance.

4.1 Data Sources and Collection

The study draws on multiple sources of secondary data, including:

- Peer-reviewed journal articles
- Books and academic monographs
- Policy reports from international organisations (e.g., United Nations, World Bank)
- Legal documents and international treaties
- Reports from non-governmental organisations (NGOs)

Data were collected through a systematic literature search using academic databases such as Scopus, Web of Science, and Google Scholar. Keywords used in the search included “climate migration,” “environmental displacement,” “digital identity,” “biometric systems,” “human rights,” and “data governance.” Boolean operators (e.g., AND, OR) were used to refine search results and ensure relevance.

Inclusion criteria for selecting sources were as follows:

- Relevance to the research topic
- Publication in peer-reviewed journals or reputable institutional reports
- Focus on legal, human rights, or technological dimensions
- Publication within the last 10–15 years (with some seminal works included)

This systematic approach ensures the reliability and validity of the data used in the study (Bowen, 2009).

4.2 Data Analysis

The study employs thematic analysis as the primary method of data analysis. Thematic analysis involves identifying, analysing, and interpreting patterns or themes within qualitative data (Braun & Clarke, 2006). This method is particularly suitable for synthesising diverse sources of secondary data and generating insights into complex issues.

The analysis was conducted in several stages:

- **Familiarisation:** Reviewing and summarising key sources to understand the overall landscape of the literature.
- **Coding:** Identifying relevant concepts and assigning codes to segments of text.
- **Theme Development:** Grouping codes into broader themes, such as legal gaps, human rights implications, and digital governance challenges.
- **Interpretation:** Analysing the relationships between themes and linking them to the theoretical framework.

This iterative process allows for a comprehensive and systematic analysis of the data, ensuring that key patterns and insights are captured.

4.3 Analytical Framework

The analysis is guided by the interdisciplinary theoretical framework outlined in Section 3. Specifically:

- Human rights theory informs the evaluation of legal protections and rights violations.

- Mobility justice provides insights into inequalities in migration and access to resources.
- Digital governance and data justice frameworks guide the analysis of technological systems and their implications.
- Socio-legal perspectives contextualise the interaction between law, policy, and practice.

By integrating these frameworks, the study ensures a multi-dimensional analysis that captures the complexity of the research topic.

4.4 Ethical Considerations

Although this study relies on secondary data and does not involve human subjects, ethical considerations remain important. The research adheres to principles of academic integrity, including proper citation of sources and avoidance of plagiarism. Additionally, the study critically engages with existing literature, acknowledging potential biases and limitations.

Special attention is given to the ethical implications of digital identity systems, particularly in relation to vulnerable populations (Mannan & Farhana, 2026). The analysis emphasises the importance of informed consent, data privacy, and accountability, aligning with broader ethical standards in research and policy (Kuner et al., 2020).

4.5 Limitations

Despite its strengths, the study has several limitations:

- **Reliance on Secondary Data:** The use of existing literature limits the

ability to capture real-time experiences of climate migrants.

- **Lack of Empirical Case Studies:** The study does not include primary data or fieldwork, which could provide additional insights.
- **Potential Bias in Sources:** The findings are influenced by the perspectives and methodologies of the selected sources.

Future research could address these limitations by incorporating primary data collection, such as interviews or case studies, to complement the findings of this study.

5. Findings and Analysis

The analysis of secondary data reveals a complex and multi-layered interaction between climate-induced migration, human rights protections, and the deployment of digital identification systems. Four major thematic findings emerge: structural legal gaps in recognising climate migrants, intensification of human rights vulnerabilities, the ambivalent role of digital identification systems, and governance fragmentation and accountability deficits.

5.1 Structural Legal Gaps in Climate Migration Protection

One of the most consistent findings across the literature is the inadequacy of existing international legal frameworks in addressing climate-induced displacement. The 1951 Refugee Convention remains the dominant legal instrument governing cross-border displacement, yet its definition of a refugee is narrowly framed around persecution and does not extend to environmental or climate-

related causes (Gomes, 2017; McAdam, 2012). This legal limitation creates a “protection gap,” leaving climate migrants without formal recognition or enforceable rights under international law.

Scholars argue that this gap is not merely a technical issue but reflects deeper structural biases in international law, which prioritise state sovereignty and political persecution over environmental and socio-economic drivers of displacement (Apap & Harju, 2023). As a result, individuals displaced by climate change are often categorised as “voluntary migrants,” despite being compelled to move due to existential environmental threats. This misclassification undermines their claims to protection and assistance.

Furthermore, the legal ambiguity surrounding climate migrants leads to inconsistent policy responses at the national and regional levels. Some countries have introduced temporary protection measures or humanitarian visas, but these are often discretionary and lack long-term security (Piguet, 2022). The absence of binding international obligations results in a patchwork of policies that fail to provide comprehensive protection.

The issue is further complicated by the distinction between internal and cross-border displacement. While internally displaced persons (IDPs) may receive some protection under frameworks such as the UN Guiding Principles on Internal Displacement, those who cross international borders due to climate change often fall outside any formal protection regime (McAdam, 2012). This creates a legal paradox in which the most

vulnerable populations—those forced to leave their countries—may have the least protection.

5.2 Intensification of Human Rights Vulnerabilities

The findings indicate that climate-induced displacement significantly exacerbates existing human rights vulnerabilities. Displacement disrupts access to essential services, including housing, healthcare, education, and employment, leading to a deterioration in living conditions and well-being (UN, 2021). These impacts are particularly severe for marginalised groups, including women, children, and indigenous communities.

The right to adequate housing is frequently compromised in displacement contexts, as migrants are often forced to settle in informal or overcrowded settlements with limited access to basic infrastructure (Haque Khan, 2024). Similarly, the right to health is jeopardised due to inadequate sanitation, limited access to medical services, and increased exposure to environmental hazards. These conditions can lead to the spread of diseases and long-term health consequences.

Another critical issue is the erosion of legal identity and documentation. Climate migrants often lose identity documents during displacement, which can hinder their ability to access services and assert their rights. This loss of legal identity intersects with broader issues of statelessness and exclusion, further marginalising affected populations (UNHCR, 2020).

The literature also highlights the psychological and social impacts of displacement, including trauma, loss of

community, and cultural disintegration (Maretti et al., 2019). These dimensions are often overlooked in policy discussions but are integral to understanding the full scope of human rights implications.

Importantly, the analysis reveals that human rights violations in climate migration contexts are not only the result of environmental factors but also of governance failures. Weak institutional capacity, lack of coordination, and inadequate policy frameworks contribute to the persistence of these vulnerabilities (Yaqoob Siddiqui et al., 2024).

5.3 Digital Identification Systems as a Double-Edged Sword

Digital identification systems emerge as a central theme in the analysis, characterised by their dual potential to both alleviate and exacerbate the challenges faced by climate migrants. On one hand, digital IDs can enhance access to services by providing a reliable means of identity verification. In humanitarian contexts, biometric registration systems have been used to streamline aid distribution, reduce fraud, and improve efficiency (Caribou, 2026; Gelb & Metz, 2018).

For climate migrants who have lost their physical documents, digital identity systems can serve as a critical tool for re-establishing legal identity and accessing essential services. For example, digital IDs can facilitate access to financial services, enabling migrants to receive remittances or participate in economic activities (Gelb & Metz, 2018). This can contribute to greater economic inclusion and resilience.

However, the analysis also reveals significant risks associated with digital identity systems. One of the primary concerns is the potential for surveillance and data misuse. Biometric data, once collected, can be difficult to anonymise and may be used for purposes beyond those originally intended, including law enforcement or immigration control (Flaim & Nawyn, 2024). This raises concerns about the erosion of privacy and the potential for abuse by state or non-state actors.

Another critical issue is the risk of exclusion. Digital identity systems often require access to technology, stable internet connectivity, and literacy, which may not be available to all migrants. Those who are unable to register or verify their identity may be excluded from essential services, creating a new form of digital inequality (Caribou, 2026).

Technical challenges, such as system errors or data mismatches, can also lead to wrongful exclusion. For example, biometric systems may fail to accurately identify individuals due to changes in physical characteristics or poor data quality. Such errors can have severe consequences, including denial of aid or legal recognition (Gelb & Metz, 2018).

5.4 Governance Fragmentation and Accountability Deficits

The governance of climate migration and digital identity systems is characterised by fragmentation and a lack of clear accountability mechanisms. Multiple actors, including national governments, international organisations, and private companies, are involved in the design and implementation of digital identity systems. This creates complex governance structures

with overlapping responsibilities and limited coordination (Kuner et al., 2020).

One of the key challenges is the lack of international standards for digital identity systems, particularly in humanitarian contexts. While some frameworks, such as the General Data Protection Regulation (GDPR), provide robust data protection standards, their applicability is often limited to specific jurisdictions (Kuner et al., 2020). This creates inconsistencies in how data is collected, stored, and used across different contexts.

Accountability is further complicated by the involvement of private sector actors, who may not be subject to the same legal obligations as state actors. This raises questions about transparency, oversight, and the ability to seek redress in cases of harm (Taylor, 2017).

The findings suggest that addressing these governance challenges requires a coordinated and rights-based approach that integrates legal, technological, and institutional perspectives. Without such an approach, the risks associated with digital identity systems may outweigh their potential benefits.

6. Discussion

The findings of this study underscore the urgent need for a reconfiguration of legal and policy frameworks at the intersection of climate migration, human rights, and digital governance. This discussion critically interprets the results through the theoretical lenses outlined earlier, highlighting key tensions, implications, and pathways for reform.

6.1 Rethinking Legal Categories and Normative Frameworks

One of the central insights emerging from the analysis is the inadequacy of existing legal categories in capturing the realities of climate-induced displacement. The exclusion of climate migrants from the refugee definition reflects a broader limitation of international law, which is rooted in mid-twentieth-century geopolitical contexts and has not evolved sufficiently to address contemporary environmental challenges (McAdam, 2012).

From a human rights perspective, this gap represents a failure to uphold the principle of universality. If human rights are truly universal, they must extend to individuals displaced by climate change, regardless of the specific cause of their displacement (Donnelly, 2013). This calls for a rethinking of legal frameworks to incorporate environmental factors as legitimate grounds for protection.

However, expanding the refugee definition is not without challenges. Critics argue that doing so could dilute the existing protection regime or create political resistance among states (Apap & Harju, 2023). As an alternative, some scholars advocate for the development of complementary protection mechanisms, such as regional agreements or soft-law instruments, that can address the specific needs of climate migrants without altering the core refugee framework (Piguet, 2022).

6.2 Mobility Justice and Structural Inequality

The findings strongly align with the mobility justice framework, which emphasises the unequal distribution of mobility and its underlying power dynamics (Sheller, 2018). Climate change disproportionately affects populations that are already marginalised, limiting their ability to adapt or migrate safely. At the same time, restrictive immigration policies in destination countries further constrain their mobility options.

This dual constraint creates a form of “trapped populations,” who are unable to move despite facing severe environmental risks (Maretti et al., 2019). Addressing this issue requires not only legal reforms but also broader socio-economic interventions to enhance adaptive capacity and resilience.

The concept of mobility justice also highlights the ethical implications of climate migration. Developed countries, which have historically contributed the most to greenhouse gas emissions, have a moral responsibility to support affected populations (Piguet, 2022). This raises questions about global justice and the need for equitable burden-sharing in addressing climate-induced displacement.

6.3 Digital Identity and the Politics of Data

The integration of digital identification systems into migration governance introduces new dimensions of power and control. From a data justice perspective, the collection and use of personal data are not neutral processes but are embedded in broader political and economic structures

(Taylor, 2017). For climate migrants, digital identity systems can both empower and constrain, depending on how they are designed and implemented.

The concept of “digital dispossession” is particularly relevant in this context, referring to the ways in which digital systems can extract and exploit personal data without providing adequate benefits or protections (Flaim & Nawyn, 2024). This is especially concerning for migrants, who may have limited ability to consent or challenge the use of their data.

At the same time, digital identity systems have the potential to enhance inclusion and access to services. The key challenge lies in balancing these benefits with the need to protect individual rights. This requires a shift towards rights-based digital governance, where principles such as privacy, transparency, and accountability are embedded in system design (Alvarez-Pallete et al., 2026).

6.4 Towards Rights-Based and Inclusive Policy Frameworks

The findings highlight the need for integrated policy approaches that address the interconnected challenges of climate migration and digital governance. Such approaches should be grounded in human rights principles and informed by interdisciplinary perspectives.

First, there is a need to develop legal frameworks that recognise and protect climate migrants. This could involve expanding existing instruments or creating new ones that specifically address environmental displacement. In either case,

the focus should be on ensuring access to rights and services, rather than strictly categorising migrants based on legal definitions.

Second, digital identity systems must be designed with a strong emphasis on inclusion and equity. This includes ensuring accessibility for marginalised populations, providing alternatives for those who cannot use digital systems, and implementing robust safeguards against exclusion and discrimination (Caribou, 2026).

Third, governance mechanisms must be strengthened to ensure accountability and transparency. This includes establishing clear roles and responsibilities for different actors, as well as mechanisms for oversight and redress. International cooperation will be essential in this regard, particularly in addressing cross-border data flows and harmonising legal standards (Kuner et al., 2020).

Finally, there is a need for greater participation of affected communities in policy-making processes. Climate migrants should not be treated merely as passive recipients of aid but as active agents with valuable knowledge and perspectives. Incorporating their voices can lead to more effective and equitable solutions.

7. Conclusion

This study has explored the complex and evolving relationship between human rights, climate-induced migration, and digital identification systems through a qualitative analysis of secondary data. The findings demonstrate that climate migration presents a

profound challenge to existing legal and policy frameworks, exposing critical gaps in international protection regimes. The absence of formal recognition for climate migrants under the current refugee system leaves millions without adequate legal safeguards, reinforcing their vulnerability and marginalisation.

At the same time, the increasing reliance on digital identification systems in migration governance introduces both opportunities and risks. On one hand, these technologies can facilitate access to essential services, enhance administrative efficiency, and provide displaced individuals with a means of establishing identity in the absence of traditional documentation. On the other hand, they raise serious concerns related to data privacy, surveillance, exclusion, and accountability. Without appropriate safeguards, digital identity systems risk exacerbating existing inequalities and creating new forms of digital vulnerability.

The study underscores the importance of adopting a rights-based approach that integrates human rights principles into both legal frameworks and technological systems. Such an approach requires rethinking traditional legal categories to include climate migrants, as well as ensuring that digital governance mechanisms prioritise dignity, inclusion, and accountability. It also highlights the need for greater international cooperation, particularly in addressing cross-border challenges and harmonising data protection standards.

Furthermore, the research emphasises the value of interdisciplinary perspectives in understanding the intersection of climate

change, migration, and digital technology. By combining insights from human rights theory, mobility justice, and data governance, the study provides a comprehensive framework for analysing these issues and identifying potential solutions.

In conclusion, addressing the challenges of climate migration in the digital age requires not only legal reform but also ethical and technological innovation. Policymakers, practitioners, and researchers must work collaboratively to develop inclusive and sustainable solutions that protect the rights and dignity of displaced populations. Only through such coordinated efforts can the global community effectively respond to the growing realities of climate-induced displacement while ensuring that digital transformation serves as a tool for empowerment rather than exclusion.

References

- Alvarez-Pallete, J. M., et al. (2026). *Personal data as a human right*.
- Apap, J., & Harju, J. (2023). Climate-induced migration and global policy responses.
- Banakar, R., & Travers, M. (2005). *Theory and method in socio-legal research*. Hart Publishing.
- Bowen, G. A. (2009). Document analysis as a qualitative research method. *Qualitative Research Journal*, 9(2), 27–40.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101.
- Caribou. (2026). *Digital identity and migration governance*.
- Creswell, J. W., & Poth, C. N. (2018). *Qualitative inquiry and research design: Choosing among five approaches* (4th ed.). Sage.
- Donnelly, J. (2013). *Universal human rights in theory and practice* (3rd ed.). Cornell University Press.
- Flaim, A., & Nawyn, S. J. (2024). Identity digitalisation as dispossession and entrenched displacement. *Frontiers in Human Dynamics*.
- Gelb, A., & Metz, A. (2018). *Identification revolution*. Centre for Global Development.
- Gomes, C. (2017). *Human rights and climate migration*.
- Haque Khan, A. B. M. I. (2024). Climate change, displaced people and refugees.
- Khaund, B. (2025). Digital identity management for refugees.
- Kuner, C., Bygrave, L. A., & Docksey, C. (2020). *The EU General Data Protection Regulation (GDPR): A commentary*. Oxford University Press.
- Mannan, K.A., & Farhana, K.M. (2026). *The Principles of Qur'anic Research Methodology: Deriving the Process of Knowledge from Revelation*. KMF Publishers. Open Access (CC BY 4.0). DOI: <https://doi.org/10.64907/xkmf.book.pqrm.26.02.12>

- Maretti, M., et al. (2019). Climate migration trends.
- McAdam, J. (2012). *Climate change, forced migration, and international law*. Oxford University Press.
- McLeman, R. (2013). Climate and human migration systems.
- OHCHR. (2006). *Frequently asked questions on a human rights-based approach to development cooperation*.
- Piguett, E. (2022). Migration and climate change.
- Sheller, M. (2018). *Mobility justice: The politics of movement in an age of extremes*. Verso.
- Tabassum, S., & Faklaris, C. (2024). Digital privacy for migrants.
- Taylor, L. (2017). What is data justice? *Big Data & Society*, 4(2).
- UN. (2021). *Global water and sanitation report*.
- UNHCR. (2020). *Global trends in forced displacement*.
- Wu, Y., & Wang, X. (2018). Global climate migration projections.
- Yaqoob Siddiqui, S., et al. (2024). Human rights in the digital age.